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Sloan, Samuel, 1815-1884

Philadelphia, PA: J. B. Lippincott & Co., 1861

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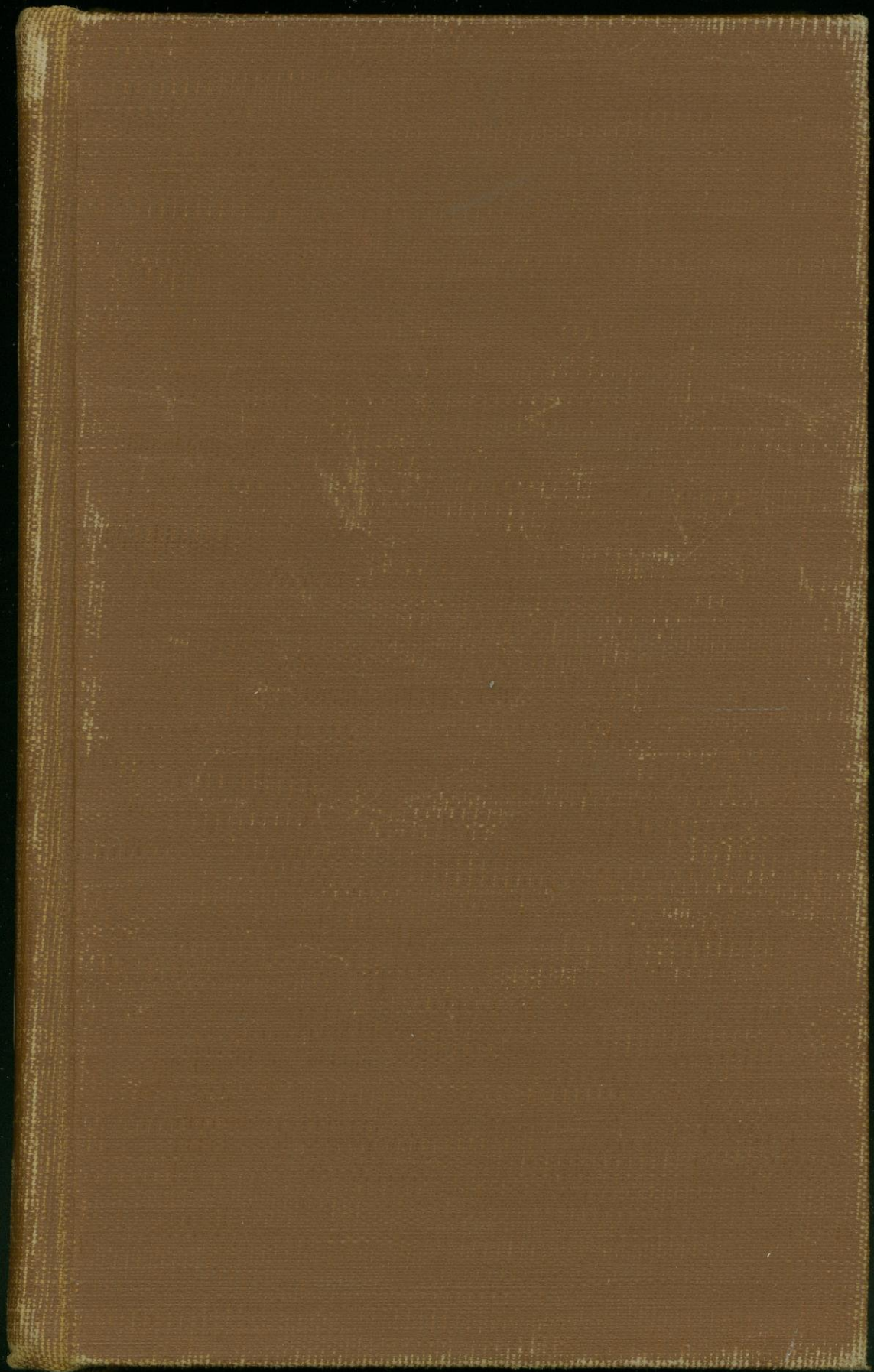
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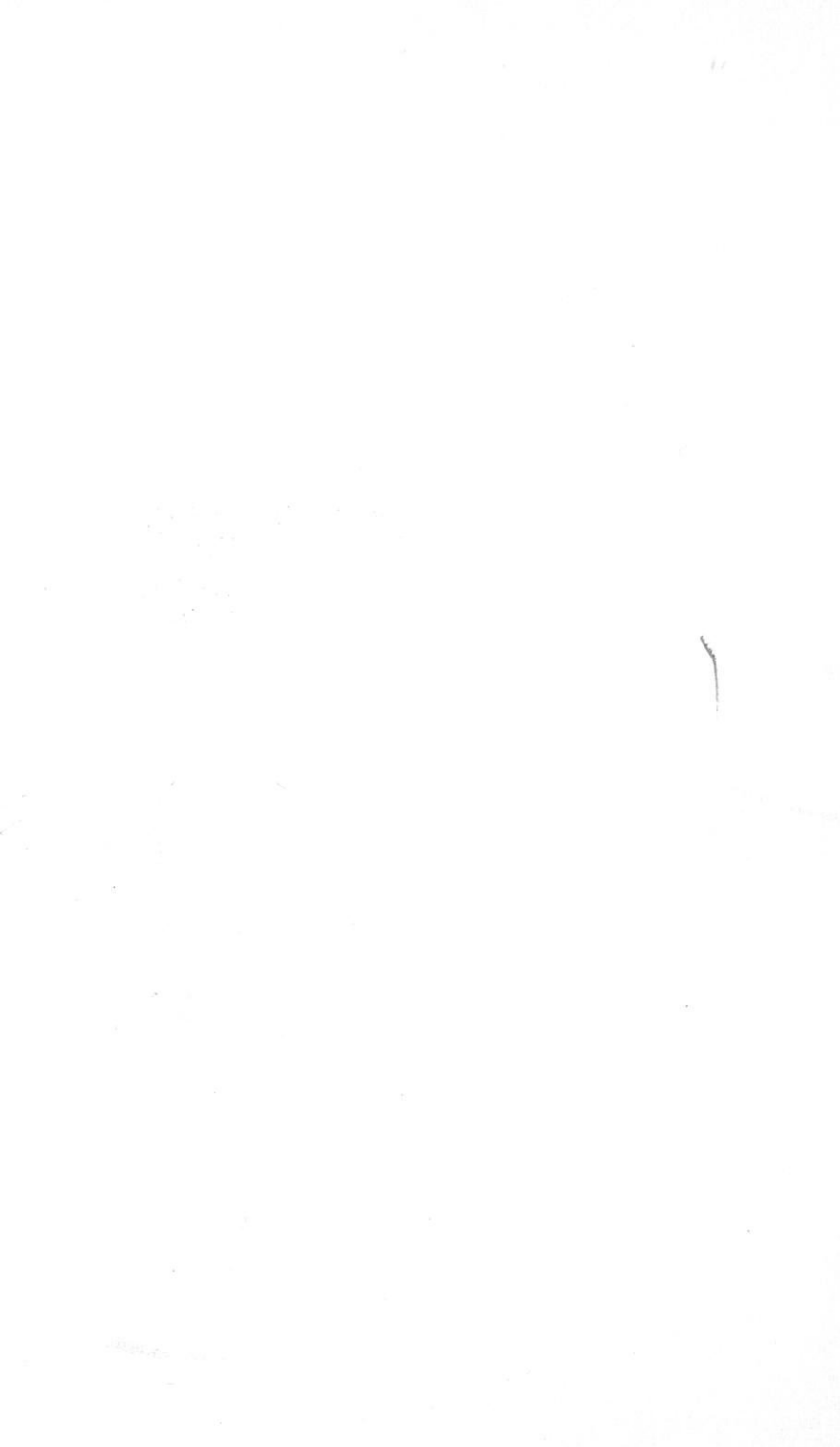
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S L O A N ' S

H O M E S T E A D A R C H I T E C T U R E .

SLOAN'S
HOMESTEAD ARCHITECTURE,

CONTAINING

Forty Designs for Villas, Cottages, and Farm Houses,

WITH ESSAYS ON

STYLE, CONSTRUCTION, LANDSCAPE GARDENING, FURNITURE,
ETC. ETC.

ILLUSTRATED WITH UPWARDS OF 200 ENGRAVINGS.

BY

SAMUEL SLOAN,

ARCHITECT,

AUTHOR OF THE "MODEL ARCHITECT," "CITY AND SUBURBAN ARCHITECTURE," "CONSTRUCTIVE
ARCHITECTURE," ETC.



PHILADELPHIA:
J. B. LIPPINCOTT & CO.
1861.

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PREFACE.

BUT little preface is deemed necessary to the publication of this series of Designs. All will admit that popular works on Architecture are a desideratum of the day and nation, which the industry and ability of Architects must be heavily taxed to supply. Society needs to be awakened, and, where the light has already dawned, to be encouraged and assisted in the development of the highest charms belonging to that spot of which so much has been said and sung—HOME.

No influence is more potent in producing changes in the workings of the great machinery of society than that of the PRESS. The reforms wrought by its agency are heralded too constantly and praised too loudly for this fact to be overlooked or forgotten a moment by those who wish to wield their influence in the great cause of advancement; and the present rapid development and general application of the art of WOOD-ENGRAVING opens a field for the interchange of ideas by linear illustrations totally unheard of in former times. With these influences at work, guided by intelligent minds, among an industrious and energetic people the future of American Architecture promises to take as high rank in the Art world as is allotted to the productions of any age or country.

DOMESTIC ARCHITECTURE having its foundation in the simplest wants of our nature, is in its first stages a rude manifestation of art. But as society emerges from a state of simplicity, its concomitants become in proportion more complex and varied, and furnish in the one department of making provision of suitable dwelling-places a wide and ever-expanding field for the genius

of the modern Architect. And it is necessary to the most perfect development of the general character of these dwelling-places that the people should be induced to seek the acquaintance of the Architect; that they should hear what he has to say to them through the medium of books; that they should learn that his mission and business in this world is not merely to draw columns and entablatures after the set form and proportions given by Palladio or Michael Angelo, but to be the minister of NATURE in this department of ART, and thus promote harmony between the works of man and the works of God. The popular feeling too prevalent concerning the Architect is, that he is the hero in a certain drama called "THE FIVE ORDERS," who plays his part, compass and scale in hand, intensely devoted to trigonometry, columns, flutes, and acanthus leaves or Ionic spirals, while the appliances of domestic comfort are supposed to be as remote from his sphere of knowledge and action as the earth is from the moon. While we confess that the conduct of the profession has done much to engender, nourish, and sustain this prejudice in the popular mind, we most emphatically deny the name of ARCHITECT to the mere imitator of ancient models, with the same propriety that we deny the name of MAN to his outward form or semblance without the vital principle. The true Architect, and more particularly the rural Architect, should possess, with the knowledge of architectural fitness deduced from ancient models, a love of nature, with an artistic perception of her beauties and the relationship that ought to exist between the artificial and the natural, along with the capacity for carrying his designs into effect. Without these qualifications, and the practical knowledge of building that can only be acquired by the faithful study and observation of years, he is poorly fitted for the responsibility of improving or even maintaining the standard of taste in Rural Architecture.

We present in this work a series of designs not only showing what has been done, but suggestive of what may be done. Many of these have been executed within the last few years in different

parts of the Union, some are now being erected, and others have been prepared expressly for publication.

Some hints on LANDSCAPE GARDENING are offered with the hope of encouraging attention to the embellishment of the surroundings of country homes, a matter to the importance of which the popular feeling has not as yet been fully awakened. This art is so intimately related to Rural Architecture as to be almost inseparable from it in proper practice,—for the relative beauty of a country house depends almost as much on the scenery in which it is placed as on the intrinsic merit of the design.

In addition to the subjects ordinarily falling under the consideration of the Architect, we introduce an essay on HOUSE-FURNISHING, accompanied by illustrative cuts, exhibiting the principal articles of furniture in the most approved modern styles.

At one time during the preparation of our work, we proposed, for the sake of variety, the insertion of a few colored lithographs; but a little further consideration induced us to relinquish that idea and carry the whole through with wood-engravings, although the latter course involved a much greater expenditure of time and money.

SAMUEL SLOAN, ARCHITECT,
No. 152 South Fourth Street, Philadelphia.

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HOMESTEAD ARCHITECTURE.

Drawings.

“When we mean to build,
We first survey the plot, then draw the model;
And when we see the figure of the house,
Then must we rate the cost of the erection,
Which if we find outweighs ability,
What do we then but draw anew the model?”

SHAKSPEARE'S HENRY IV.

IF the bard of Avon had been himself an architect, he could not have presented a clearer view of the practical elementary duties of the profession; and the flight of three centuries, so far from having impaired the necessity of the course indicated, has only rendered its terms more obligatory. As the requirements of living become more complicated with the growth of refinement, from the higher interest that obtains for the comfort and welfare of society, the difficulties of happy combinations and orderly arrangement are greatly increased; and this in some cases to such an extent that, without a realization on paper of the peculiar properties of the projected structure, such as its adaptation to the end in view and its aspect as a thing of beauty, there is a danger of

running into inextricable difficulties before the accomplishment of the intended result.

As order is a fundamental principle in all things of artificial origin, having their basis in reason, it follows that without it, human performances would exhibit a disorder only equaled by the minds that conceived them. And it is a remarkable fact, that nothing is more promotive of the development of an orderly mind than the study of figures and lines, and their delineation and disposal with regard to symmetry and relative beauty. Architectural drawing, embracing the representation of plans, elevations, and isometrical and perspective views, as a study furnishes a great field for mental improvement. Carpenters and stone-masons attain a degree of architectural knowledge unknown to other mechanics, which is accounted for by the fact that they employ more or less of the art of drawing to make themselves and each other understood; in almost all cases when full drawings are given for a building, a carpenter is intrusted with the superintendence, to see that they are fairly executed. We do not mean by this that every carpenter is an architect, or that it would be best for him to attempt to thrust into the already crowded profession, but that it is, in the first place, necessary for every mechanic to understand the principal conventional peculiarities of representation as practiced by architects; and, in the second place, that *everybody* (for in this country *everybody* has the chance) should study the elements of architectural drawing, "practical geometry," and this without regard to sex or occupation. Such knowledge, in the hands of the mechanic, enables him to carry out whatever ideas

may come to him from the pencil of the designer, in compensation for which ability he is sure to receive a higher rate of wages than his less qualified competitors, and the applause that is always awarded to the intelligent over the ignorant.

We do not think that the study of architecture ought to be restricted to our own sex. Hear what an eminent writer says on this subject: "It is not," says he, "in order that they may be able to draw columns, for this is merely the means, not the end of the pursuit, that we would suggest the propriety of ladies applying themselves to what has hitherto never been included within the circle of female acquirements; but that they may thereby cultivate their taste, and ground it on something less baseless and shifting than mere feminine likings and dislikings. And when we consider how wide is the province, how influential the authority which the sex are apt to claim in such matters; how much, in all that regards ornamental furniture and interior embellishments, depends on the refined or trivial taste of our fairer halves, it must be acknowledged that to initiate them into such studies would not be an act of perfect disinterestedness. Independently of its subsequent advantages, the study of the grammar of architecture, or, in other words, the elementary practice of architectural drawing, would be highly beneficial to the youthful pupils, inasmuch as it affords immediate application of the simpler principles of geometry; as it forms the hand to correctness, the eye to a scrupulous examination of forms, and, consequently, implants habits of careful deliberation and attention, as well as the seeds of taste."

The foregoing is from the pen of a celebrated English author, who holds that "the improvement which in the last fifty years has taken place in landscape gardening, is; in a great measure, owing to the more general adoption of the art of sketching landscapes from nature, as a branch of female education. If the study of landscape drawing by ladies has led to the improvement of landscape gardening, why should not the study of architectural drawing on their part lead to the improvement of domestic architecture?" We cordially indorse the suggestion here offered, and lay it before the fair portion of our readers, with the hope that it will meet with their hearty approval, and lead to a development of female talent in a hitherto untried enterprise. We do not mean that it will ever be admissible for ladies to assume, to the full extent, the practical duties of the architect, such as intermixing with the workmen on the scaffold for the purpose of directing their operations, but that in the field of design and arrangement, they may stand on as high ground as their masculine competitors.

In this work we show the **GROUND-PLANS**, a term which may be explained as a horizontal section of a building taken at the level of the window-sill, or about two feet six inches above the plane of each floor. On account of the smallness of the scale on which they are drawn, the divisions of these are denoted by letters, facilitating convenient reference to the text, in which a full explanation is given. The elevation of every design is exhibited in **PERSPECTIVE**, by which the appearance of the building when erected is more accurately represented than by any other manner. Some of the designs we have litho-

graphed in colors, a pleasing and effective method of representation, but less piquant and characteristic of architectural precision than the wood engravings, to which, by the way, we would call attention as indicating the progress of the art in this country. We have interspersed a few illustrative details which are of much importance to the practical man, and only regret that our limits do not permit us to enter more largely into that department of the architect's labor.

Selection of a Site.

“Near some fair town I'd have a private seat,
Built uniform, not little nor too great;
Better if on a rising ground it stood,—
On this side fields, on that a neighboring wood;
A little garden, grateful to the eye,
Where a cool rivulet runs murmuring by,
On whose delicious banks a stately row
Of shady limes or sycamores should grow.”

NOTHING is more important in the preliminary arrangements for building, than the selection of a proper situation. And upon this the question arises, what is a proper situation? The answer may be embodied in general terms as follows: a situation that will not be detrimental to the enjoyment of health or comfort, that is easily accessible from a public highway, and that commands a view of the best scenery which the country affords.

As our houses are built for the enjoyment of comfort, convenience and pleasure, we do injustice to ourselves, if we neglect anything conducive to these ends. First of all, it is well to note whether the neighborhood in which we propose to build bears evidence of the healthfulness of its climate by the sanitary condition of its inhabitants. If we are satisfied on this point, the next thing to be considered is the location of our own particular dwelling; desir-

able results can be insured by the exercise of a well cultivated judgment on this too frequently neglected point; indeed, the finger of Nature points unerringly to the proper qualifications of a spot intended for human habitation, and asserts in the most positive language to even the moderately educated perception, that the low marsh or foggy "bayou" is not the place for the physical comfort of man.

The advantages of placing a residence on rising ground (and by this we mean a gentle elevation, not a high hill or mountain) are too numerous and self-evident to need extended comment here; but we will briefly touch on some of the prominent benefits attending such a choice. And here, with all deference to the pioneers who so nobly laid the foundation of our present greatness as a people, let us remark that their example in the location of habitations was not such as we could wish the people of a more enlightened age to follow. The limpid stream, followed to one of many gushing sources, was the index that pointed out to the hardy settler his place of sojourn. Very convenient indeed was it to drink water from the living fountain that bountiful Nature had prepared far back in the course of her undisputed reign, and no wonder that the rude cabin was projected and built on a site within a moderate distance of the "spring," whether it issued from the steep hill-side or meandered quietly forth through the low, damp valley. This accounts for the present unhappy location of many residences throughout the country; the spot thus consecrated to home and its associations is not readily or willingly deserted by the succeeding generation who wish to

rear a permanent and handsome residence; there are charms in that old site and its surroundings that cannot be sacrificed for any new scenery, or abandoned on account of malarious emanations or exposure to the bleak winds of winter. But a day of change is coming, and we hail its dawning with delight; instead of being entirely concealed or disagreeably obtruded on the view, the homes of the rural population are taking their proper places in the landscape in which they neither serve nor govern, but form a constituent part. Instead of taking the house to the "spring," the "spring" is brought to the house, an easy triumph in this scientific age. Montgolfier did more than invent the balloon; he made as near an approach to the vainly sought "perpetual motion" as scientific records can yet show: we allude to his invention of the "hydraulic ram," an apparatus for impelling water to a great height without the application of extrinsic force. We know of one of these in the neighborhood of West Chester, Pa., that sends a sufficient quantity of water to the house for all the domestic purposes of a moderate establishment, and supplies the stock-yard with water besides, and this through about 1200 feet of pipe, the dwelling-house being at an altitude of at least 175 feet above the "spring" or source from which the water emanates. Another method of obtaining a supply of this indispensable article, is the sinking of wells; in some sections, however, this is attended with considerable cost, and not unfrequently with ill success in the procurement of a suitable quality of water; in such a case, the remaining alternative is the collection, in cisterns of

suitable dimensions and construction, of the rain-water thrown off the roof during the copious winter rains. During a late tour in the South, we observed that water for domestic purposes is obtained almost exclusively by this method, and were at first surprised, on calling for refreshments, to have set before us a goblet of ice water that surpassed in transparency the far-famed Schuylkill or Croton.

We make these remarks to show that important as it is to have a natural fountain near the house, it is not a sufficient inducement for braving the evils arising from a bleak summit exposure or a low unhealthy valley.

Convenience to a line of public travel is a point that needs no argument to make its importance apparent. It seems to be one of the fixed habits of mankind, to locate near the wayside, and there is no demand for any change rendered necessary by the advancement of society. The progress of public improvement generally, and the facilities afforded by railroad and steamboat for travel and the transportation of commodities, are hastening the day when stage-coaches and *road-wagons* will be forgotten, and in which the once well beaten highway will be but comparatively an obscure by-way. But the more permanent public thoroughfares, the river and the railroad, stand in no danger of such abandonment; and in selecting a country home, we should assert as a fixed condition that a river or railroad must be convenient, and within view, if possible. We build not for ourselves alone; the stranger passing by, whether he be countryman or foreigner, or whether he travels by coach, boat, or car, is delighted by the

sure tokens of the influence of social progress exhibited in the landscape dotted with houses, and that delight is infinitely increased by the taste manifested in the location of those houses with relation to surrounding scenery. It then should be borne in mind that a country house is built to be seen, and after the ruling principle of salubrity of air and convenience of access, this consideration is secondary in importance only to the fact that it is to *see from*; to be conducive to the enjoyment of its inmates by being so situated and arranged as to afford the most happy prospect of the beauties of the surrounding country, for each individual landscape has its own peculiar beauties, if we only take the pains to seek them from a proper point of view. Now, although no specific rules can be given, each particular section of country requiring for itself a local investigation, attention to the following hints may be profitable.

Avoid, as you would a pestilence, all low, damp situations; the effluvia from such are injurious to health in all seasons; proper drainage being if not entirely impeded, greatly embarrassed, the quantity of malarious exhalation is greatly increased by the consequent accumulations of foul matter.

Never build in the heart of a thick clustered wood, where the influence of the sun would only prevail a few hours of each day. A wood on the north or northeast side is admissible, and even to be sought for shelter; but this should be as clear as possible from the under-growth of noxious plants so common in the more fertile lands of the United States. A few shade trees tastefully disposed are a desideratum, but the influence of thick shade close

around a house, whether natural or artificial, tends to humidity and the generation and retention of vapors, alike injurious to the durability of the house and the health of its inmates. It fosters dampness in the walls promotive of chilly interiors, discolored paper, loosened plaster, decayed timbers, and a train of evils ending in premature decay. Another reason for not surrounding a house closely with thick foliage, is its consequent concealment from the public eye. Every building, and particularly every human dwelling, deserves to occupy a position in its particular landscape in proportion to the pretension it makes as the offspring of human effort. To the finest production of art should be accorded the most prominence, while those of less importance should be comparatively quiet in asserting their claims to notice, and, collectively, all should be in consonance with and in subordination to the natural aspect of the country.

The summit of a mountain or high hill is to be sedulously avoided, on account of the prevalence and force of bleak winds, and the greater difficulty of access. To some very aspiring and imaginative people these reasons may be insufficient; and indeed we must confess that the pleasure derived from the occupancy of a summit residence when nature is clothed with the verdure of spring, the gay flowers of summer, or the melancholy autumnal "sere and yellow leaf," is scarcely outbalanced by the unmitigated rigor of the winter winds, or the probable cost of approach. To look upon a great expanse of country stretched out before and around you, bounded by the blue horizon; to contemplate the endless variety of scenery, and the different effects of light and shade on the

verdant wood, the cultivated field, and the silvery winding stream, are not only sources of superior pleasure, but have a tendency to an elevation of mind that no effort of art can rival. But a gentle eminence should be preferred. Far enough above the streams or marshes of the vicinity to be exempt from the heaviest exhalations of injurious tendency, and sheltered by high grounds or timber on the northern aspect, would be our *beau ideal* for a site, on the principles we have enunciated. Then let us be within a few hours' drive of some railroad or navigable river. Next, seek the best possible view of the landscape around us; if not a navigable river, let us have in view a running brook to glitter in the morning or evening sun on its "clear winding way to the sea," and as great a variety of field and forest as can be brought within the scope of vision. We must see, too, as many of our neighbors as possible, and allow them to see us; in short, we must, in a land like ours, where equality is an element of society, strive to make ourselves agreeable without being immodest, and contribute our share to the stock of universal advancement with an exhibition of judgment and taste, and without manifestation of either extravagance or parsimony.

Remarks on Style.

WHEN we speak of a building being in the Grecian, Italian, Gothic, or any of the numerous well-known *sub*-styles, we mean that the spirit rather than the sum total of the peculiarities of that style has been seized upon and infused into it. No design in this work can be pointed out as a fac-simile of any ancient or foreign specimen of architecture; but ancient forms and details have too long appealed to the tastes or prejudices of mankind for the architect to dream of their abandonment. They have been consecrated to architecture by long-continued use and the admiration of by-gone ages; and, so far as their existence depends on intrinsic beauty of form and the laws of proportion, they are bound to be immortal. The orator or poet would not be more culpable for laying aside the teachings of the past than would the architect for neglecting the precedents set before him in the works of the ancient masters. Each might substitute a chimera of his own, and the failure of all would be alike pitiable. Instead of eloquence and poetry, the listening audience would be fed on the rudiments of an unintelligible language; and instead of a pleasing combination of forms resulting in the most happy effects, unmeaning piles of brick and stone at every step would greet our vision.

By the adoption of some one of the known modes or styles of building, the structure is invested with an interest that it would not otherwise possess. The popular mind is easily reached through a medium combining beauty of aspect with antiquity of origin; it is affected by an appreciation of the present interwoven with a veneration for the past. Hence the architect who studies the ancients, to imbibe the spirit of their performances rather than to follow them servilely through beauty and deformity, is certain to be most successful in the production of good designs for the present day.

The Gothic or pointed style, and the Grecian or horizontal style, are the types of the two great elements of architectural design. All the divisions and subdivisions that figure so largely on the page of the historian and tourist are merely so many petrified phases of national practice at a given time, handed down to us under the name of the nation or people under whose auspices they assumed their distinguishing peculiarities. It is, however, foreign to our present purpose to trace any of these to their fountain head, and show how, step by step, they reached their highest perfection, or how, in the hands of skillful masters, they were combined with each other to astonish and delight the art world: it is enough to remark, that the American architect has a living source of satisfaction in the thought that it is possible for him to aid in setting a national stamp on the architecture of his country. That this is possible, a convincing proof is furnished to our hand in "beautiful Venice, the bride of the sea." Look for a moment at the Church of St. Mark. Roman, the legitimate

descendant of Grecian art, but not less national, had reached its climax, and the fountain of Gothic beauty seemed exhausted, when lo! we see a structure arise bearing the impress of Roman and Gothic art harmoniously blended, and yet developing a character so clearly and decidedly its own, that none have ventured to gainsay or question its nationality.

Grecian architecture and its lineal successors, Roman and Italian, are imbued with a spirit of repose and quietness that contrast powerfully with the lively character of the Gothic mode. The origin of this apparent antagonism is attributable to the prevalence of horizontal lines in the former and of vertical in the latter. That these can be reconciled to each other with happy effect, is verified in the example alluded to, as well as in the famous Milan Cathedral and many contemporary buildings. But the accomplishment of such a feat is the highest evidence of artistic skill that an architect can stamp on the face of his performance: few dare it, and of the few, not a moiety can be said to be successful.

Domestic architecture in ancient nations seems to have been neglected, or at least to have occupied but an inferior position. While temple after temple was reared to their gods, and tomb and triumphal arch to their heroes and kings, the Grecian and Roman people lived in hovels. The same may be said of the people of Britain and the Continent during the palmy days of Gothic art. As the equality of mankind approaches nearer to being acknowledged as a fixed element in human society, we see a change taking place, and for centuries back the masses have been gaining ground on the aristocracy. And when

the dwelling of the private citizen finally became a subject for the display of the taste and genius of the architect, he naturally enough looked to the most magnificent specimens of ancient or contemporary public architecture for his guide in the selection of forms and details; and as a consequence, we see domestic buildings, even down to modern times, wearing the exact dress of the heathen temple, or the livery of the medieval church or castle. By degrees, however, domestic architecture is improving, and that improvement is accelerated by copying nothing ancient or foreign further than its application is in strict consonance with the requirements of domestic life. In public buildings, we may, if we choose, with some degree of propriety and prospect of success, copy the Grecian or Roman temple, or the Gothic cathedral; but for the citizen's home, the introduction of details derived from those sources presupposes their entire subordination to the domestic character of the building of which they are to form a part. What we mean to say is, that architectural *style* should never seem to rule out the expression of the END IN VIEW. This may be more fully explained by the following incident: In passing by a fine residence, the location of which we need not name, a friend inquired whether it was a church, college, or court-house; which we were not able to answer until we approached close enough to determine by the drapery in the windows that it was a dwelling-house. It was a classic building and a fine specimen of architecture; but was it domestic architecture? Some one has very well said that the ancient practice should be treated as a *servant*, not as a master. Without doubt the gentlemanly

proprietor of the classic house above spoken of, would have scorned to receive from the painter's hand the picture of Apollo as his own portrait, and yet he has permitted his architect to disguise, under the semblance of a heathen temple, the real character of his place of residence, although one is not more at variance with the true spirit of living art than the other.

Without condemning what has been done, and with great hopes for the future of rural building, we pass sentence on servile imitation as being unworthy of the genius and spirit of the American people. There is an element of originality in American enterprise that seems to have slumbered in nothing more than in the pursuit of architecture as a fine art, and once fully awakened to the importance of its cultivation, it is destined to set its mark high in the record of nations. But this can only be done by the application of the best talent the country can afford, irrespective of the profits likely to accrue to the leaders of the profession. So long as the uneducated builder is permitted to take the lead in designing and constructing our edifices, to the exclusion of the true architect, so long must we fall short of the high standard within our reach.

Admiration of ancient forms and details leads the uncultivated judgment to apply them without regard to order or congruity, and the result is always offensive to the refined perception of the true artist. The constituent elements of style are proportion, beauty of form, harmony of arrangement, and unity of effect; without these, no style can exist, nor can a building be said to be an architectural composition in which any of these elements are neglected.

But first of all, in domestic structures let attention

be paid to unity; that is, the production of a WHOLE, and the expression of the END IN VIEW, the latter being manifested by chimney-tops, verandas, entrance-ways, windows, etc., the absence or concealment of any of these features being destructive to the domestic character of the building. Then let the proportion of parts be considered, for without this no real satisfaction will be derived from the inspection of a building of any kind. Whatever details are introduced of an ornamental character should be the best, chosen with regard to gracefulness of form, never so elaborate as to produce a striking contrast with larger masses of plain surface, but culminating in extreme points or exhibited lines of construction, as in nature the flowers grow not on the stalk but on the branches.

Harmony expresses the radical idea conveyed by the term as employed in musical composition, and its importance cannot better be illustrated than by the momentary violation of its principles in the choir or orchestra. Mr. Loudon says the term is "transferred from music to architecture, and implies such a composition of lines and forms as will produce a powerful, a varied, and an agreeable whole. Where great contrasts exist among the parts, and yet all of them are in accord, the effect is harmony," and "harmony therefore supposes unity, contrast, variety, order, proportion, and various other subordinate beauties. Notwithstanding this, however, harmony in architecture as in music may exist independently of ornament or of any distinctive character."

Hints on Construction.

FROM the importance of good walls as a primary demand in all buildings, it follows that the consideration of the quality of materials of which they are composed, as well as the manner in which the conjunction or adhesion of parts can be most thoroughly effected, is a matter of no small consequence.

STONE.—Being a natural production, and not only adapted to the requirements of building with but little preparation, but from its nature conducive to the permanency of artificial structures, stone, as an element of wall building, is entitled to the first rank, and therefore to early notice. Without going into a geological disquisition on the subject, we may speak of the relative value of different kinds of stone; not always with the certainty we could wish, from the fact that time enough has not elapsed since an interest has been awakened to the vast importance of knowing the qualities of the stone employed. Experience seems to be the best test; although the science of chemistry may be sufficient for the geologist, the architect is better satisfied with the proofs of time.

Granite, according to geology the primary rock, exists in great abundance in this country, and has

already been employed to a great extent for building purposes. The best specimens within our knowledge of granite for public buildings are from the quarries of Quincy and Fall River, Mass.; but there are qualities of lighter cast, and therefore better adapted to rural architecture, found in various parts of the country, of which the quarries at Lieperville, Pa., furnish an instance.

The elemental formation of granite renders it of great value in point of durability, and it is recommended for foundations preferably to all other kinds of stone. It may be known by its granular structure, from which it takes its name: its component parts being quartz, mica, and feldspar, distinctly or confusedly blended together. It is very easily worked into the rougher kinds of masonry, but does not admit of fine polish or finely-cut mouldings. It may be employed in rural buildings approaching the rustic character; but is not highly commended, on account of the somber aspect communicated by its color.

Sandstone and limestone are abundant in the United States, but the many available qualities of each render a detailed notice of them entirely out of the question. The absorbent nature of sandstone, and the consequent liability to suffer from the effect of heat and cold, has rendered its durability a matter of some doubt; but we can point to numerous examples where it has stood the test of climate for years, and from present appearances may stand for generations.

The light-brown sandstone of Connecticut and New Jersey, the soft, light-gray stone of Cincinnati, and the warmer-tinted stone of Mount Joliet, Ill., take the

first rank as valuable and agreeable materials for rural building. All these have an excellent effect in combination with surrounding verdure, are easily wrought, and exhibit to the best advantage the execution of ornament. We should not neglect to notice the stone imported from Nova Scotia, known under the name of "Pictou," or Acadia freestone. Latterly this stone has been extensively used in the vicinity of Philadelphia, and aside from its delightful shade of color, is recommended as a durable material. Nothing could be more suitable for the refined architecture of a suburban villa.

Of limestones, those of Vermont, Pennsylvania, and Missouri are the best known, and are all extensively employed in building in their respective localities. Where the color approximates light-bluish gray, as it does in the Pennsylvania specimens, the effect is very pleasing; but the others are so white as to be objectionable for rural buildings, unless the mass of the building is kept in subjection by the influence of foliage.

The principal objection that has been urged against stone houses, is that they are always *damp*. This is true, as they are usually constructed without any attention to the possibility of preventing this fruitful source of calamity. Stone walls having their foundations in damp soil, will inevitably be damp from capillary attraction, common lime mortar forming no impediment to the upward passage of moisture into the main wall of the house, which as a consequence will seldom be quite dry. The most effectual remedy for this is to build the under-ground portion of the walls with mortar made of Rosendale or any similar

cement. The interior apartments of a house in which the plaster is laid immediately on the stone walls must always be more or less damp, because all stone is in some degree pervious to water, and will therefore transmit the dampness from without, and because the inner surface of the wall, maintaining nearly the same temperature as the outer, condenses, or, as it were, extracts the moisture from the atmosphere of the apartments. Two methods are offered for the prevention of this, both depending on the intervention of a hollow space for the circulation of air. The first is to firr-off the plastering with vertical wall strips; the second, to form a hollow wall by building up a single thickness of brick on the inside, and connecting it with the stone wall while in the course of erection.

With regard to the effect of the natural color of stone employed in the external surface of houses, a late writer has the following very pertinent remarks: "In choosing stone as a material for building, not only should the size of the house be considered—the more dignified and grave character of the *mansion* allowing with good effect the employment of a much darker stone than the simple and more cheerful character of the small cottage—but the expression of the style of architecture should also be considered. A light and cheerful villa, composed in the Italian or Venetian style, would almost lose its expression of cheerfulness if built in dark-blue limestone, while a Gothic villa or mansion of large size would have its antique character supported and developed by such a material. A little reflection will convince any observing person of taste, that the *color* of a stone building has a great deal to do with its expression, and with the effect it

has upon our feelings; and that the outward hue which the material employed will force the edifice forever after to represent to the eye, is a point worthy of very serious consideration."

BRICK.—In portions of the country where stone is not easily obtainable, it becomes necessary to substitute brick. While these make a firm, durable, and excellent wall, they are not so satisfactory as stone in an architectural point of view for country houses; yet by various expedients, the principal objection to the use of bricks in rural building, to wit, their harshness of color, is overcome. The objection to stone on the score of internal dampness may be urged with equal force against brick, and the same remedies are found necessary.

In various parts of Europe, it has long been the practice to build hollow walls, and it is now admitted to be the best mode of building brick houses. It gives a greater amount of strength with an equal quantity of brick and mortar; as a preventive of dampness, dispenses with the necessity of the usual practice of firing-off with wood; saves the cost of lathing the interior walls, the plaster being laid directly on the inner face of the brick-work. It is alleged, however, and perhaps with some foundation in truth, that in warm, Southern climates, the wood-firing is the best preventive. Whatever theories may be advanced on the subject, experience must be admitted as the most satisfactory test, and the superiority of the hollow wall over the wood-firing, in point of durability and exemption from the dangers of fire, must give way to the imperative demand for dryness in dwelling apartments.

In fig. 1, A represents a 16-inch wall, the hollow space being 4 inches. The outer section of the wall is a double course of bricks, and the inner a single course, connected to the former by the tie-brick *a*.

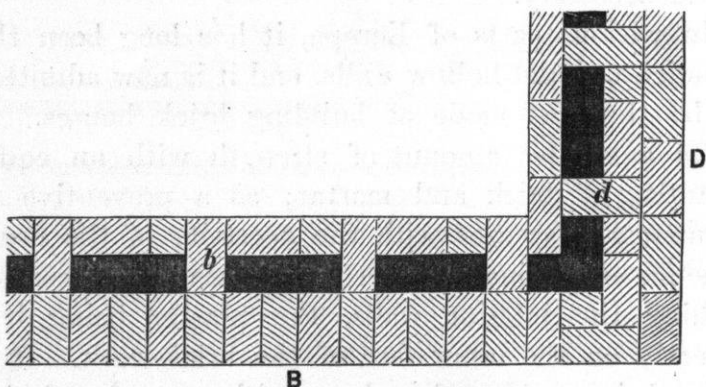
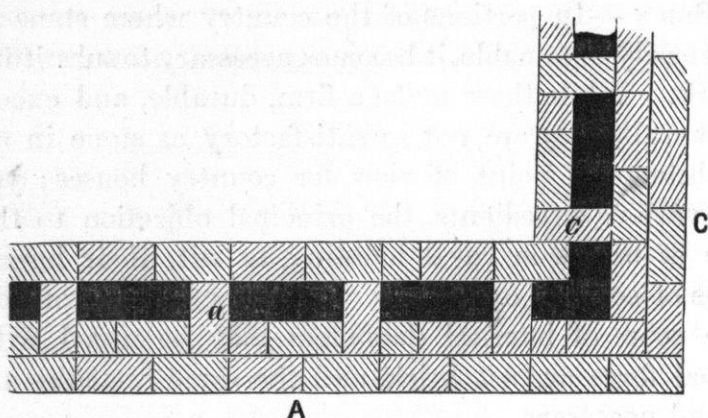


FIG. 1.—HOLLOW 16-INCH WALL.

In the second course of this wall, B, the position of the tie-brick, is changed to *b*, increasing the strength of the wall by breaking the joints. The position of the tie-bricks will thus be alternated throughout the whole height of the wall. Laying every alternate course with *headers*, as shown at B, is favorable to strength, but is not admissible unless the exterior is

to be stuccoed or cemented. When to be left smooth for coloring or painting, stretchers, as shown at C and D, are preferable for the outside of the wall. The bond is then formed by splitting the bricks of the outer course as at A, fig. 2, and completing the thickness with a course of three-quarter tie-bricks, or cutting the corners of the stretchers and laying the tie-brick diagonally, as at B, fig.

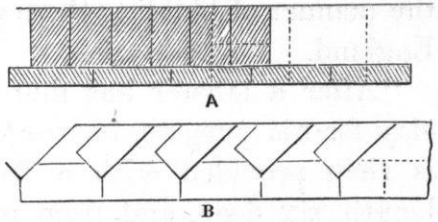


FIG. 2.—SECRET BOND.

2. Either of these methods apply more satisfactorily to a solid 12-inch wall.

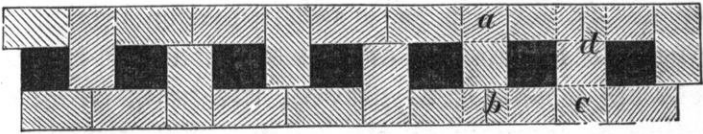


FIG. 3.—HOLLOW 12-INCH WALL.

The hollow 12-inch wall shown at fig. 3 is a simple and cheap expedient where a moderate height of wall is required, without the necessity of supporting a great weight. By the addition of another brick on the outside, a 16-inch wall is attained, but not so highly recommended as that shown at fig. 1. The dotted lines show the position of the bricks *b* and *d* in the next course, which, lapping on *a* and *c*, give the necessary bond.

EARTHEN WALLS.—In districts such as our Western prairies, where neither wood, stone, nor bricks are easily procured, the subject of building with unburnt bricks or *pisé* is worthy of considerable attention. In Europe, South America, and Mexico this mode of

building has been extensively practiced, and with success. It is well known that in portions of the former country, buildings two hundred years old are found in a good state of preservation. Here is the account given by Mr. Denson, an English author, of the manner of building these walls in Cambridgeshire, England.

“After a laborer has dug a sufficient quantity of clay for his purpose, he works it up with straw; he is then provided with a frame eighteen inches in length, six deep, and from nine to twelve inches in width. In this frame he forms his lumps in the same manner that a brick-maker forms his bricks; they are then packed up to dry by the weather; that done, they are fit for use as a substitute for bricks. On laying the foundation of a cottage, a few layers of bricks are necessary to prevent the lumps from contracting a damp from the earth. The fire-place is lined, and the oven is built with bricks. I have known cottagers, where they could get the grant of a piece of ground to build on for themselves, erect a cottage of this description at a cost of from £15 to £30. I examined one that was nearly completed, of a superior order: it contained two good lower rooms and a chamber, and was neatly thatched with straw. It is a warm, firm, and comfortable building, and my opinion is that it will last for centuries. The lumps are laid with mortar, they are then plastered, and on the outside rough-cast, which is done by throwing a mixture of water, lime, and small stones against the walls before the plaster is dry, which gives them a very handsome appearance.”

Almost any kind of clay will answer for this pur-

pose; the tempering is easily accomplished by treading it with cattle, the straw being added while the mixing is going on. The most convenient and economical size for these unburnt bricks is undoubtedly less than given in the above extract, viz., one foot long, six inches wide, and four inches thick. The exterior walls of a cottage built in this way may be two bricks or twelve inches thick; all short partitions not over one story high may be six inches or one brick in thickness; in both cases there is an opportunity for perfect bond. All the window and door frames should be made of stout two-inch plank, and inserted as the building goes up; these give additional strength to the wall, and being made to correspond with the thickness of the wall, give opportunity for covering the joints with both inner and outer casing. Stone lintels and sills are preferable, but as they are not likely to be had conveniently in a section where this mode becomes necessary, a piece of ordinary three by twelve inch joist, cut a foot longer than the width of opening, may be inserted as a substitute. The best roof for this species of cottage is made with shingles; some have asserted that *thatch* may be substituted, but we have no unity with the idea, and would only assent to it when the possibility of procuring a superior article is out of the question. The projection of roof ought not in any case to be less than two feet, so as to afford protection to the walls from rains.

STUCCO.—An expedient for rendering either rough stone or brick walls pleasant to the eye is found in stuccoing; that is, external plastering. An argument against stucco is, that it is an architectural fiction;

but this consideration, so important in the eyes of the architect, is outweighed by the practical advantages gained by its use. Nor are these alone embraced in the facility with which the asperities of a stone or brick surface are concealed, or the opportunity afforded to portray a resemblance to fine range-work. A coat of stucco protects the wall and enhances the warmth of the building, and its color can be modified at any stage, at a very slight cost, to suit the taste of the proprietor; and it becomes, therefore, to all who wish to procure the greatest amount of beauty and comfort at a minimum expenditure, a material of no small value.

We are aware that there exists a great prejudice in this country, in the minds of both architects and others, against the use of stucco, but that it is strictly just, seems scarcely supported by facts; no doubt but the art, practiced by badly qualified mechanics, has suffered much depreciation in consequence, in the eyes of the public; but when we remember that a great proportion of the finest modern buildings in Europe are built of brick and stucco, we ought to be incited to pay attention to the true secret of success. It is, after all, very simple. Lime of the best quality, fresh from the kiln, dry-slaked (that is, not slaked to a *paste*) and screened by a fine sieve or inclined screen, is the first essential ingredient. After thoroughly washing the sharpest sand that can be procured, to remove all particles of loam or clay, mix it with the lime in powder, in the proportion of *two parts sand* to one of lime; then add water, and temper it *thoroughly*, and the stucco is ready for laying on. Care must be taken to remove with a

stiff brush or broom all particles of loose dirt, mortar, etc., that might otherwise interfere with the adhesion of the stucco. Apply the mortar in two coats, the latter before the former is thoroughly dry; and the permanency of the color will be greatly enhanced if the wash by which it is communicated is put on immediately, so as to set with the stucco, the surface of the latter being floated up to a true surface.

A very durable and cheap species of external plastering, extensively used in Eastern Pennsylvania, is that known as "rough-cast," a term sometimes carelessly applied to the stucco above described, but differing from it in finish. The second coat is laid on as evenly as possible *without floating*, and a workman follows the plasterer, with his trowel in one hand, splashing on the rough-cast on the fresh surface of the mortar, and brush in the other, by which the work is completed. The ingredients of rough-cast are pure, fresh-slaked lime and well-washed, sharp sand; these are mixed in a large tub of water until the whole is in a semi-fluid state. A little coloring matter, yellow ochre, or some pigment of similar cast, to vary the color from the glaring whiteness of lime, may be incorporated in the mixture.

We have seen houses in Pennsylvania done in this manner that have stood from eighty to a hundred years, the external plastering bearing no evidence of yielding or displacement, but to all appearance as permanent and likely to withstand the effects of time as the stone wall to which it adhered.

To these remarks on stuccoing, we would add, that every precaution should be taken to prevent the walls

from becoming saturated with water at the top; this can be provided against by giving a considerable roof-projection, and exercising due care in the construction of gutters.

WOOD.—Owing to the great abundance of wood and its consequent cheapness throughout the Union, it will be employed for generations to come for the skeleton as well as the finish of moderately expensive dwelling-houses. The consideration of its importance as the basis of a system of building, so extensively practiced as to embrace three-fourths of all the dwelling-houses in the great West, (and if we leave out the cities and towns, nine-tenths,) becomes a point of vital interest to the Western builder. Building of wood becomes a matter of necessity from the absence

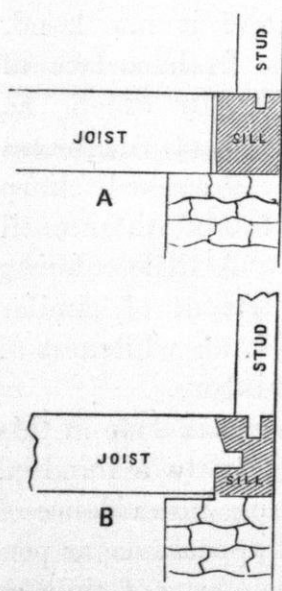


FIG. 4.

of other available material, and being so, it is the business of the builder to cast about for the best method of treatment. The practice of many carpenters, who proceed rapidly at the expense of sound building, cannot be too severely reprobated. We will notice a few points in which this is done. We have seen joists, for instance, laid on the foundation-wall totally disconnected with the sill, as at A, fig. 4, instead of being framed in, as at B. A moment's thought will show

any one the error of the method at A. The slightest settlement of the sill—and it is much more liable to settlement than the floor, from

the greater weight upon it—deranges the relationship between the floor and plastering, much to the injury of the latter. It is evident that the danger of this is obviated by the method shown at B, all being firmly tenoned into the sill, and about one-third of the number pinned at each end; by the insertion of a board under the ends of the joists, the bearing of the wooden superstructure is equalized on the wall, and whatever settlement takes place is gradually communicated to the whole without the derangement of parts.

Another point of faulty construction is seen in the neglect to insert a suitable ridge-beam in the construction of half-stories; the consequence of which is the sides of the building are distended by the thrust of the rafters, the greatest deviation from a straight line being in the middle of the length, or at the greatest distance from any transverse tie. Collar-beams will not prevent this, unless placed below the middle of the rafter, and the nearer they are placed to the foot of the rafter, the greater their efficiency. But the simplest remedy is to support the ridge of the roof with a longitudinal bearer, commonly termed a ridge-plate, say three by ten or fourteen inches in a span of from fourteen to twenty-four feet; in a greater span than this, the bearer should be trussed and bolted. This method of roof-construction is applicable to all *half-stories*, whether the walls be stone, brick, or wood.

A great deal of judgment is necessary in the regulation of dimensions of timber according to the several offices they have to perform. No specific rules can be given, but a few hints may not be amiss to the builder who seeks soundness of construction combined with economy.

All timbers whose principal office is to sustain a vertical pressure, such as joists, beams, rafters, etc., should have their greatest dimension in depth. Thus, we should prefer a joist $2\frac{1}{2}$ by 12 inches, to one 3 by 10 inches, although their sectional areas are equal; and a 2 by 14 inch joist is stronger than either in wood of ordinary tenacity and firmness, but requires bridging in shorter divisions. Corner-posts should be square: sills resting on walls may approximate nearly to that form, 9 and 10 by 12 being the preferable size; studding should be $2\frac{1}{2}$ by 5, 6, or 8, in proportion to the magnitude of the structure in which they are employed. It was formerly the custom to use 3 by 4 studding for very good houses; but aside from the disadvantage of these dimensions in point of strength, the limited space thereby given for the thickness of sash and blinds is a serious objection; it is painful to see the windows of a house flush with the face of the weather-boarding, and it is equally painful to see them on a line with the plastering inside. Whatever thickness, then, can be given to the walls without creating expense, must be an obvious advantage, and we should even prefer, where economy was a ruling consideration, 2 by 6 inch studding to 3 by 4 inch, the cost of these being equal. With regard to bracing, it should ever be borne in mind that the greater the "run" of the brace or strut (*i.e.* the distance from the angle formed by the junction of the timbers braced) the more effectual will the brace perform its office. The only limit to this is set by the deflection or *sagging* of the timber employed for bracing, for which a remedy may be found in counter-bracing; but it seldom occurs that struts of so great a length are required.

There is a system practiced in the West termed *balloon* framing, of which we may give a brief notice; it is a very rapid and convenient method of erecting temporary buildings, and some of its advocates hold that it is equal if not superior to the old method. In the first place, the studding is cut to extend the full height of two stories: the manner of supporting the second floor of joists, however, is the chief peculiarity. This will be understood by reference to fig.

5, where A shows how the bearer, a piece of plank about 2 by 6 inches, is notched into the studding on the inner face; a notch of half an inch in depth gives the joist a hold on this bearer, which is firmly spiked to every stud; B shows the end of joists and face of bearer.

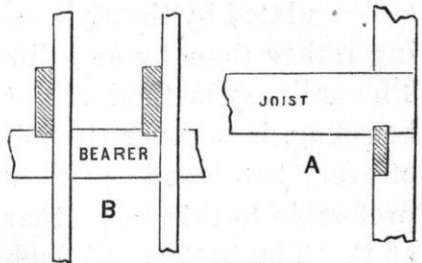


Fig. 5.—BALLOON METHOD.

Fig. 6 represents the old method: A shows a section of the beam or bearer

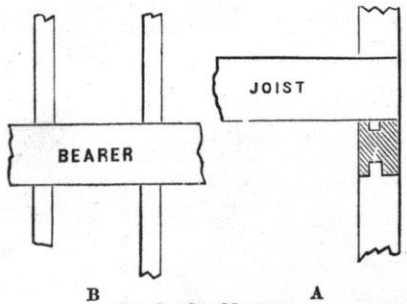


Fig. 6.—OLD METHOD.

into which the upper and lower studding are tenoned and pinned, and B the face of the same. We are not inclined to favor the *balloon* system for first-class wooden dwellings, but believe it may be resorted to with advantage in the temporary class of residences that spring up as the first growth of a new country. The present cheapness of spikes and nails and the facility of construction are much in its favor. Some-

times the bottom sill of such a structure is formed by spiking two joists on the studding, the outside one being sunk flush, as in fig. 7.



FIG. 7.

As to the various modes of covering the framework of wooden houses, much rhetoric has been expended to show that the perpendicular method of boarding is superior to the horizontal, and vice-versa; but each method has its merits, and we approve of the use of either, regulated by the style and pretensions of the building rather than by any difference in intrinsic value. The ordinary method of putting on the perpendicular boarding, is to cover the joint formed by the meeting of every two boards, as shown at A, fig. 8. A method preferable to this, but rather more expensive, is shown at B. The battens, $2\frac{1}{2}$ inches thick, and rebated out

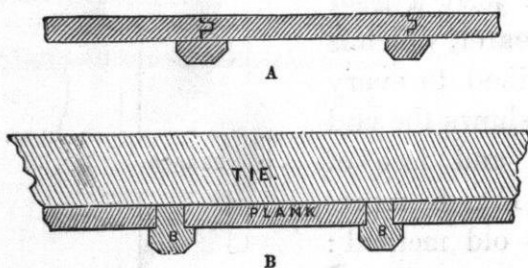


FIG. 8.—BATTENS.

to thickness of the boarding, are nailed to the horizontal ties, confining the boards so as to prevent the necessity of driving nails through them, which is a point of importance, as their splitting by shrinkage is rendered impossible.

It must be acknowledged that the vertical is a truthful method of placing weather-boarding: it is indicative of the nature of the material, and is so far

entitled to regard, but it must also be admitted that it would be out of place applied to a residence in the Italian style. For a cottage of moderate cost and pretensions, particularly if that cottage have high-pitched roof, and a consequent leaning toward the Gothic style, we would give it a decided preference.

There are several methods of putting on the horizontal boarding: the best of these is what is termed the *plow and drop* method, in which each edge of the board has a groove sunk of one-third the thickness of the board; the manner of putting it on is represented at A, fig. 9. The method is shown at B, in which the lower edge of each board is rebated to one-half its thickness, and this rebate rests on the upper edge of the board below. Another method, which we believe has been patented, is to *split*, by a circular saw, boards of $1\frac{1}{2}$ inches thickness and 5 inches wide, thus making two thicknesses, of which one edge of each shall be three-eighths, and the other edge a half-inch thick. These are put on with six-penny nails, with the thick edge downward, as shown at C.

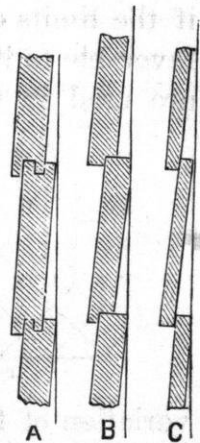


FIG. 9.
WEATHER-BOARDING.

ROOF.—Whatever may be said regarding the liability to early decay in shingles, it is nevertheless a fixed fact that they must form, for generations to come, a large proportion of the roofing material used in this country, at least for the cheaper class of buildings. A shingle roof seems to be the natural cover for a wooden house; of good quality it is equally admissible, in an architectural view, for a stone or

brick house. There are some instances, however, of exceptions to its application to wooden buildings, arising from other considerations: for instance, in the neighborhood of New Orleans, where slates are preferred on all classes of houses, owing to the greater purity of the water thrown off by a slate roof,—an item of importance, where the clouds furnish the water for domestic uses; being imported directly from Wales as ballast, their cost does not much exceed that of shingles.

Slate roofing is a branch of growing importance, and deservedly so. Whatever the style of building, if the limits of intended outlay will admit it, we are favorable to its application. Slates of different colors are used in the same roof, with excellent effect; a

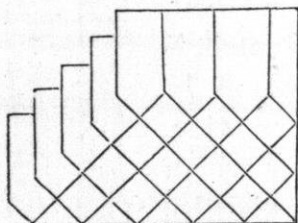


FIG. 10.

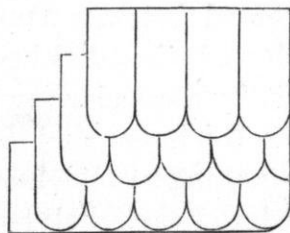


FIG. 11.

variation of form arrests the eye still more, and gives additional beauty to the combination. A shingle

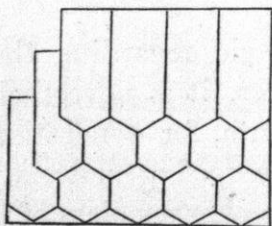


FIG. 12.

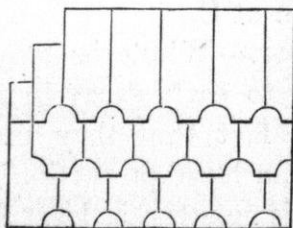


FIG. 13.

roof in which some attention has been paid to ornamental effect, is creative of a feeling in the mind of

the beholder that something more has been attempted than the mere necessity of construction, and that the result is worthy of the attempt.

We give a few examples of various patterns for shingles or slate, fig. 10 to fig. 14, the last being one of many pleasing combinations that may be made; it is worthy of observation that the application of this method of roof ornament is very extended, and only ceases when the roof approaches the minimum pitch for the use of slate or shingles.

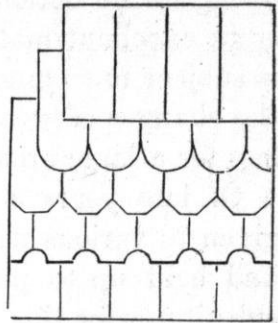


FIG. 14.

Of the numerous available slate quarries in the United States, those of Pennsylvania and Vermont are the principal: the former affords the dark slate, with but very little variety of shade; the latter has red, purple, and green, all of excellent quality for working and durability.

Tin is a well-known and extensively used roofing material, and for low-pitched roofs seems preferable to anything that has yet been invented as a substitute. It should always be well painted before it is laid; experience has proved red-lead to be the most efficient coating that has yet been discovered. Galvanized iron is used to some extent, but being more expensive than tin, and of doubtful superiority, it cannot be so highly recommended for general use; iron that has not gone through this process, corrodes so rapidly as to be entirely unavailable, unless care is taken to keep it thoroughly painted, the expense of which is almost equivalent to a prohibition of its use. Lead

makes a good roof in northern latitudes, but we are assured is almost utterly worthless in the South, owing to the action of the climate upon it. Copper is an excellent material for valleys, gutters, etc., but is subject to so much expansion and contraction from the changes of weather, as to render it almost valueless for a large area of roof.

Of late years a great deal of attention has been given to various methods of roofing, brought forward and held up to public notice as cheap and durable substitutes for tin; these have met with more or less popular favor as their cheapness seemed to entitle them to the consideration of the economist, but they are one by one disappearing, perhaps to be forgotten, or only to be remembered when some new invention of the kind makes its appearance. Warren's Patent Gravel Roofing is the only one within our knowledge that has fairly stood the test of time and weather, but its nature and appearance is such as to render it suitable only for low-pitched or concealed roofs. For out-buildings, such as carriage houses, stables, etc., with roofs nearly flat, we are of the opinion that the gravel roof can be used with safety and advantage.

Much caution is required in the construction of eave-gutters and valleys, as a slight mistake or deficiency in either of these is frequently a source of great annoyance. All the copper or tin for this should be seamed, and soldered on both sides, and tin should, as in tin-roofing, be carefully coated with red-lead on both sides. Particular attention should always be given to the dimensions of these appendages, in proportion to the area of the roof and the consequent volume of water to be discharged; if a

gutter is too small, or has not sufficient current given it, (*i.e.* descent necessary to throw off water,) an overflow takes place, the consequences of which are disastrous to the walls, particularly if they are externally plastered. A result similar to this may be occasioned by too small a vent at the head of the conductor or *down spout*.

In shingle roofs all ridges are formed by *weaving* or trimming each course over the end of the last one from the opposite side, thus making a neat and water-proof finish.

But in slate this cannot be done, consequently the ridge of a slate roof must be covered with copper or tin; in some parts of the country English ridge-tile are used, but unless the building is very large and the roof high, these present a clumsy and unsightly appearance. A very beautiful and ornamental ridge covering is now manufactured of slate, a representation of which is given at fig. 15, but the expense precludes its universal adoption; the example here shown is intended for a pointed roof.

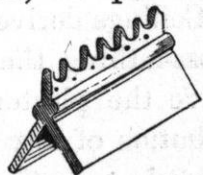


FIG. 15.—RIDGE TILING.

JOISTS AND PARTITIONS.—A point in the setting of joists too frequently neglected, is the *bearing* or distribution of the weight on the wall. We have seen carpenters leave some joists resting on a bearing of one inch, while others would have from four to six inches. Now, ordinarily, the insertion of a joist to the depth of four inches in a brick wall, or six inches in a stone wall, is sufficient for practical purposes—that is, on the assumption that all the materials are good, the brick solid, and the joists of proper dimen-

sions and sound timber; but three grains of common sense will show us that little advantage is derived from the depth of insertion, if, after all, the joist is allowed to bear only upon an inch block, or, as sometimes happens, a trifling pine wedge. No wonder that in some of our would-be fine houses we see the wash-boards and floor parting company, a catastrophe usually attributed to the shrinkage of joists, but often really owing to the above cause.

Lattice bridging is a process of great importance in view of the additional firmness thus given to the floor; no span greater than ten feet should be with-

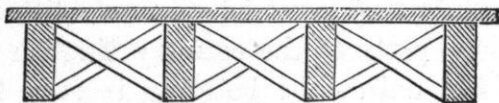


FIG. 16.—LATTICE BRIDGING.

out a course of bridging in the center, and any greater than twenty ought to have two courses.

Ceilings derive additional security from cracking, by cross-lathing the joists with $1\frac{1}{2}$ by 2-inch lath, to receive the plastering lath; this insures a gradual distribution of any shrinking or sagging that may take place in a particular joist, whereas the abrupt departure from the plane of the ceiling by either of the above accidents is almost sure to cause fissures in the plastering.

Where stud-partitions cross a room of large span, some provision for the support of the weight thus added should be made; the simpler mode of doing this is to double and pin together the joists directly beneath the line of partition, but a more effective method is found in the use of struts, (see fig. 17,) where the position of the openings will admit of it.

The crowning or *cambering* of joists is a very good practice; this consists in dressing the upper edge of the joist with a curve in the direction of its length, the rise above a straight line varying from half an inch to an inch, in proportion to the length of the joist; in the first place, this has a tendency to prevent a sagging or deflection of the floor, and in the second place, this sink-

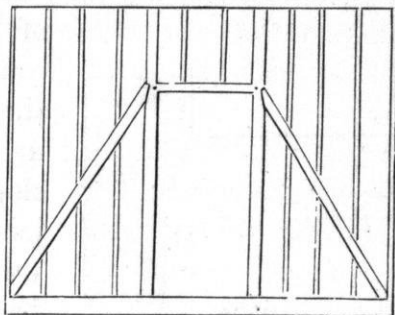


FIG. 17.—TRUSSED PARTITION.

ing must be considerable before the floor in the center falls below the plane of the floor-line at the walls. With the bridging above spoken of, and the crowning here described, it is scarcely possible for a well-joisted floor of reasonable span to succumb to any pressure likely to occur in dwelling apartments. We mean by *well-joisted*, a sufficient number of joists of sufficient dimensions. We would seldom place flooring-joists less than sixteen inches between centers, and never, except for very small apartments, recommend the use of less than two and a half by 10-inch joists. We have already expressed our views on the relative proportions of weight-sustaining timbers, and with a few incidental remarks shall close this article.

Latterly, some attention has been given in practice, to supporting floors on iron rests instead of inserting the joists in the wall. We think this commendable in walls of moderate thickness, but as the cost is something of an item, particularly in country houses where it is desirable to avoid great expenditure,

other methods to subserve the same object may be adopted. This object is to prevent the disintegration and falling of walls, by the leverage of joists burnt off in the middle during a fire, a catastrophe, happily, of rare occurrence in the country, but which, nevertheless, should be in a measure provided against. By sloping back the end of each joist to the inside face of wall, as represented at fig. 18, we make preparation for the emergency. Another expedient now extensively practiced is to project courses of brick from the face of the wall, each course having about an inch projection over that beneath it; this is continued for four or five courses, or until the proper width for bearing is arrived at.

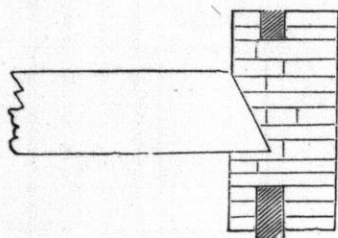


FIG. 18.

The angle-filling thus formed takes the place of the ordinary wood-bracketing for the plaster cornice.

DESIGN I.

Oriental Villa



FIG. 19.

DESIGN I.

An Oriental Villa.

WE enter upon our series by the presentation of a design adapted to the wants of the man of fortune in any section, but particularly suitable for the home of the retired Southern planter. Aside from the novelty of the plan, it has every recommendation for convenience and utility that can be devised for a residence, where not only comfort but luxury is destined to reign. The occupants of such a residence are not only supposed to be wealthy, but fashionable people, and to possess, in common with all the real aristocracy of every section, a character for hospitality, exhibited in the frequent entertainment of numerous guests, and a liberal allowance of time and money for the purposes of social and convivial enjoyment.

The choice of style in this example was less a matter of caprice than the natural growth of the ground-plan adopted. The central apartment, designed as it was, not only for a thoroughfare by which all the adjacent rooms could be entered, besides being so favorably situated as a medium for light and ventilation, naturally suggested the domed observatory. Fancy dictated that the dome should be bulbiform—a remembrancer of Eastern magnificence which few will judge misplaced as it looms up against the mellowed azure

of a Southern sky. In addition to this, the Moorish arch employed in the balconies and the foliated drapery of the verandas will fully sustain us in the application of the term "Oriental," despite the Italian details of cornice and window.

APARTMENTS.—A perusal of the plans with the following description will

enable the reader fully to comprehend the internal arrangements of this design. A, fig. 20, is the rotunda, octagonal in plan, its diameter being 24 feet. Its vertical dimension extends to the top of the observatory, and is finished by an internal dome. From this rotunda are the ad-

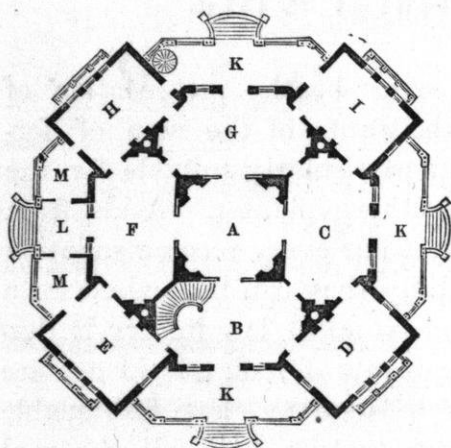


FIG. 20.—PRINCIPAL FLOOR.

adjacent apartments entered on every floor, galleries being constructed for the purpose on a level with all the floors above the principal. Niches for statuary occupy the alternate sides of the octagon, thus affording an excellent opportunity for tasteful decoration. The apartment B, 20 by 34 feet, is the entrance hall, and contains the principal staircase. The adjoining space K is the front veranda, 12 by 40 feet, and can only be entitled by this fact, and perhaps a superior finish in floor and ceiling, to any greater importance than either of the others designated by the same letter, (K,) as their exterior finish is necessarily similar. C is the drawing-room, 20 by 34 feet; D,

reception-room, 18 by 24 feet; E, 18 by 24 feet, F, 20 by 34, and H, 18 by 24 feet, are a suite of family rooms. G is the dining-room, 20 by 34 feet; I, a breakfast-room, 18 by 24 feet; M, M, dressing-rooms to E and H. L is an entrance porch to the apartment F, and at the same time affords an opportunity for the admission of light and air; or it might be converted into an alcove for the room F, by changing the position of the windows and piers to the outer verge of the space,—this would render it easy, if necessary, for the occupant of the room F to gain the privilege of either of the dressing-rooms, M, M; in many cases this no doubt would be desirable. The effect of this alcove, when duly decorated with pilasters and drapery, as viewed from the opposite side of the apartment, when admissible by the uses of the room, would be pleasant indeed; the same modification may be made on the chamber plan.

Turning our attention to the ground floor, fig. 21, we find the apartment A retaining its octagonal shape and the same dimensions, the alternate sides or rather angles being occupied by closets; it is lighted through strong glass in the floor over it, aided by lights in the upper sections of the communicating doors. B is the billiard-room; C, staircase hall; D, smoking-room; E, office; F, play-

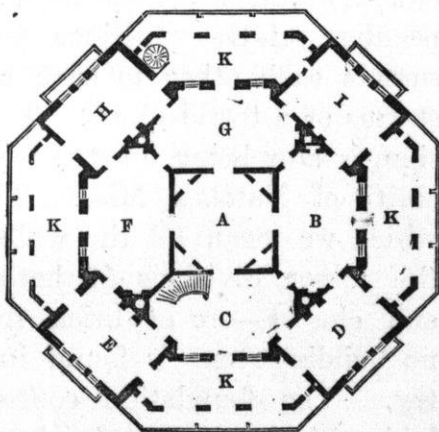


FIG. 21.—GROUND FLOOR.

room for children; G, servants' hall; H, sewing-room; I, store-room; K, areas beneath verandas.

On the second floor, fig. 22, A is the staircase hall;

B, the communicating gallery; C, chambers; D, verandas; H, ward-
robes; I, bath-room. It will be observed that a flight of private stairs on the rear veranda extend from the ground floor to this one; a flight from this to the attic floor is placed opposite to the bath-room I.

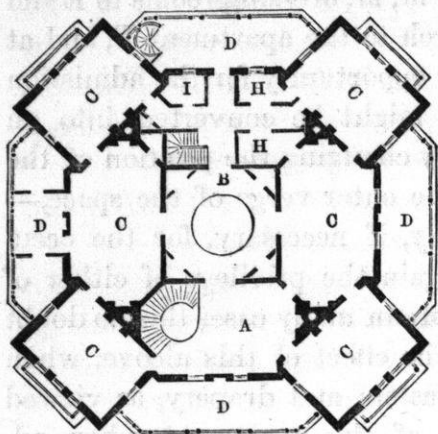


FIG. 22.—CHAMBER PLAN.

CONSTRUCTION AND FINISH.—It would be difficult to conceive a plan in which the abstract elements of strength are more successfully embodied than in the one now under consideration. The walls, by their peculiar relative positions, mutually strengthen and sustain each other to such a degree as to defy the storms of a torrid clime. A residence, after this design, is now being erected for a gentleman in the vicinity of Natchez, Miss. The principal walls—by which we mean all the walls except those forming the minor divisions of bath-rooms, dressing-rooms, and closets—are of brick from the foundation, as no building-stone is found in that section of country. The foundation courses in the bottom are laid with hard-burnt brick, very wide, and grouted with cement, and gradually set off until the proper thickness of the wall is arrived at. This in the

exterior walls is two feet, including a hollow space of three inches between the inner section of nine and the outer section of thirteen inches. Above the line of principal floor, each section in thickness of the exterior wall is eight and a half inches, with a hollow of five inches in width, so as to admit free play to the outside blinds, which, protected by a close casing, slide into the wall, a plan adopted to avoid the disagreeable appearance presented by a circular-headed blind when open.

The fire-places are bestowed on what would otherwise be waste space in the building; this led to the adoption of a manner of venting smoke seldom if ever before applied in dwelling-houses. Four circular shafts, two feet and a half in diameter, into which the fire-places vent, are carried up the full height of the building, furnishing at once an economical and thoroughly efficient mode of attaining the desired end. Dampers are inserted in the throat of each flue to regulate combustion, as more fully explained under the head of "warming and ventilation."

The veranda floors may exhibit their timbers to good advantage, the lower edges of each piece and also the angles formed by the floor and timbers being moulded, and the whole divided into sections, so as to have the effect of bold panel-work. Where a good quality of suitable wood, say yellow pine, cypress, or oak, has been used, oiling and varnishing on the natural color of the wood will be found to have a beautiful appearance; in other cases, painting in suitable chosen ceiling tints may be resorted to.

On the principal floor encaustic tiles could be used with a very pretty effect in the rotunda. This could

be best done by a special design embracing a center-flower, of say 5 feet diameter, surrounded by regularly disposed patterns in bright but not glaring colors; the floor-lights for the apartment beneath may be inwrought with these without detriment to the appearance. The front veranda and also the entrance hall would be greatly improved by floors of marble, in which white should predominate: nor would stairs of white marble, and wainscoting of the same, both in hall and rotunda, be on any account, save that of expenditure, objectionable, but, on the contrary, desirable. In lieu of this, however, some of the hard woods admitting of fine polish may be used for both the stairs and wainscoting of hall: we should give well-selected walnut the preference, and extend its application to the dining-room.

It would be superfluous to attempt the details of a building of this kind within our present limits; any person desiring to adopt the plan, would of course apply to a competent architect for the working drawings.

ESTIMATE.—It is very difficult to say, with any degree of precision, what would be the cost of this villa, without entering into a more specific description of the execution of both the interior and exterior. In this part of the Middle States, however, assuming the walls to be built of good brick, the exterior stuccoed, and the interior finished in a manner consistent with the general character of the design and hints we have given,—the height of the several stories being as follows: first story, nine; principal story, fourteen; second story, twelve; and attic, nine feet,—the total cost would not vary much from \$40,000.



DESIGN II.

An Italian Villa.



FIG. 23.

DESIGN II.

An Italian Villa.

THIS design is intended for the country-seat of a man of ample fortune, and to occupy a site in the midst of highly cultivated and beautiful scenery. Though not remarkably ostentatious, its appearance at once bespeaks it the abode of the wealthy and refined, and demands all the accessories necessary to the highly embellished landscape, such as parks, lawns, and artificial lakes; the possession of these would entitle it to a rank inferior to few country residences within our knowledge. There is an evident partiality existing in some parts of our country for the Italian style of building. Originating in a climate almost similar to that of the middle and southern sections of our country, at least so far as relates to the greater portion of the year, but little difficulty is experienced in modifying it to suit our tastes and habits; and, indeed, it seems to need less modification than any other style, to make it perfectly acceptable to those who seek a union of the useful with a combination of the picturesque and beautiful.

Though not so essentially northern as those styles of which the high roof is a characteristic, its projecting roofs and ample verandas afford pleasing shelter during the dazzling sunshine of our summer months, and furnish an excellent reason for the preference

frequently shown for it in the Middle and Southern States.

In the example before us, it was the object to show as much force and spirit as the nature of the style would allow; for its general tendency is rather to exhibit placid repose, than the result of effort or violent action. The active American mind is not satisfied with the quiet aspect of unbroken horizontal lines; we have, therefore, striven to effect a compromise between the evidences of action and repose, by going the full length that the style permits, and varying the effect by intersecting walls and roof-lines; to complete the picturesqueness of what is already done, we introduce the *campanile* or Italian tower, which, in an irregular composition like the present, will be admitted to be not only a desirable but beautiful feature.

ACCOMMODATION.—The vestibule A, fig. 24, 10 by 10 feet, is entered from the front veranda K, and affords communication not only with the main hall F, but with the drawing-room B, 17 by 33 feet, which will be found occasionally, and perhaps frequently, of very pleasant utility upon the withdrawal of company.

The apartment E, 17 by 18 feet, may be used for a library, or thrown open at pleasure, as an extension of the drawing-room; this can readily be done by sliding doors. The veranda surrounding these apartments will greatly tend to keep them cool in summer, aside from the facility afforded by it for enjoying social promenades in the evening air. To enhance the opportunity for this, we would extend all the drawing-room and library windows to the floor; this

would present a uniform and agreeable appearance, aside from its desirability for the purpose already mentioned.

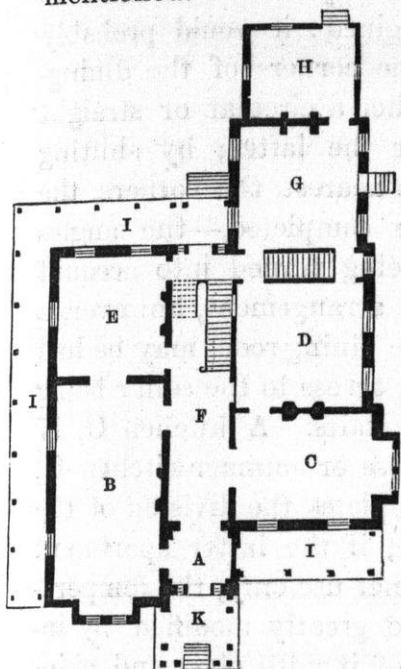


FIG. 24.—PRINCIPAL FLOOR.

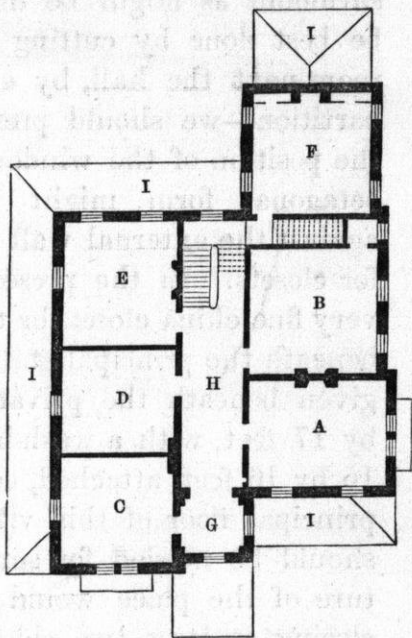


FIG. 25.—SECOND FLOOR.

We notice C, a very pleasant reception-room, having, in addition to two windows opening on the veranda I, a recess opposite the entrance, which is not only an excellent and effective appendage to the room, but tends to diversify the external appearance. D is an ample dining-room, 17 by 18 feet, for a family of eight or ten persons; if it is desirable to have this room of greater proportions, by the removal of the private stairs into the kitchen G, and the consequent extension of the back building, it may be increased to 17 by 22 feet with very little additional cost. The only objection to this would be, that the half-pace of the main

stairs, and consequently the whole of the chamber floor, would be inaccessible to servants from the kitchen; but even this difficulty is not so hard to surmount as might be imagined: it would probably be best done by cutting the corners of the dining-room next the hall, by either a circular or straight partition—we should prefer the latter; by shifting the position of the windows nearest the corners, the octagonal form might be completed,—the angles against the external wall being turned into account for closets. In the present arrangement, however, a very fine china closet for the dining-room may be had beneath the principal stairs, access to the cellar being given beneath the private stairs. A kitchen G, 17 by 17 feet, with a wash-house or summer-kitchen H, 15 by 16 feet, attached, completes the division of the principal floor of this villa; if the latter apartment should be needed for summer use only, the temperature of the place would be greatly modified by inclosing at least two sides of it with glass and pivot blinds; the sun and wind could thus be admitted or excluded at pleasure.

On examination of the second floor, fig. 28, we find five excellent chambers, respectively designated by the letters A, B, C, D, E, and a bed-room F, over the kitchen. It will be observed that provision has been made in all the rooms on both floors, except the chambers C, D, for warming by fire-places. However much this may seem out of date to those accustomed to the modern appliances of hot-air, steam, and hot-water furnaces, our experience convinces us that many years must elapse before the old-fashioned fire-place will be dispensed with in the warmer portions of this country,

—indeed, in view of the nature of the climate and mode of service, we doubt whether any of the above inventions will ever be adopted to the exclusion of the time-honored fire-place.

A small flight of stairs to the observatory may be constructed in the tower G. In addition to the effect of this feature on the aspect of the building, it will give a delightful opportunity for the enjoyment of an extended view of the surrounding scenery.

CONSTRUCTION.—All the important walls of this structure are intended to be of brick, and to rest on foundations of stone carried up to the surface line of the surrounding grounds, if that material can be procured at reasonable cost. The whole area of the building should be occupied by a cellar; this is not only useful for various purposes, but is promotive of the durability of the joists, floors, and whatever accidental wood-work may necessarily occur beneath the first floor.

Where stone is plentiful and can be used with small cost,—for much depends on the nature of the stone, whether it is easily quarried and dressed, and of a suitable color,—we should extend the stone-work to the level of the principal floor, taking care, however, to face the exterior with well-dressed range work, with a projecting course, which would form a drip for the wall below, and make an agreeable line indicating the proper base or beginning of the structure. It must be borne in mind, however, that no stone should be used that would make a violent contrast with the color intended to be given to the body of the building; thus it would be bad taste to exhibit white marble or the white limestone of St. Louis in the foundation walls,

unless the building was intended to be white or nearly so. The idea we wish to convey is not that contrasts should be avoided in detail, but that violent contrasts in any of the essential components of the structure are destructive to harmony of effect.

ESTIMATE.—Assuming the height of stories to be respectively 15 and 13 feet in the clear, and all the verandas, cornices, etc., as well as the interior finish of the apartments, executed in a finished and workmanlike manner, the cost of this building, in the neighborhood of Philadelphia, would be about twelve thousand dollars. This of course does not include the grading of grounds, or the expenditure for any lawn or garden embellishments.

DESIGN III.
Farm House.



FIG. 26.

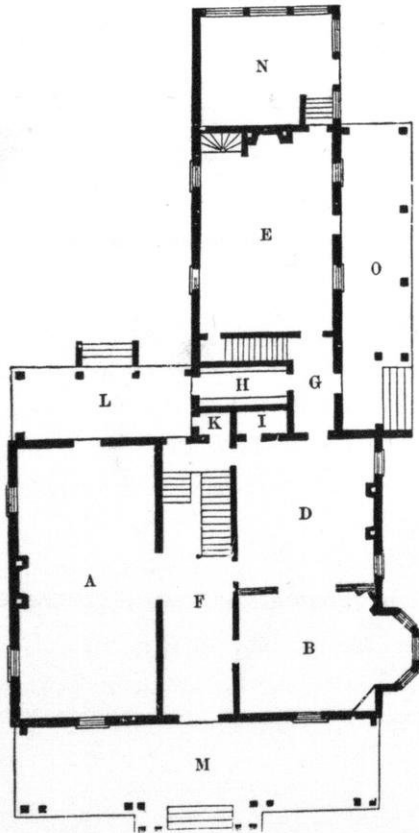


FIG. 27.—PRINCIPAL FLOOR.

DESIGN III.

A Farm-House.

THE proportions of this house are good, and the form pleasing without being complicated; the impression produced on the observer by its general aspect is, that room, comfort, and convenience are within its walls, and that the dignity and hospitality of the gentleman farmer are manifested silently yet plainly by its external expression. It seems, however, in its architectural details to have borrowed somewhat from its city neighbor. We readily suspect that its owner has spent a portion of his life at something else than tilling the soil; that he has been a merchant or a physician, for we often hear of such changes of avocation in this country: at any rate, we must conclude that he is a farmer with some means, and a taste somewhat refined and cultivated by the company he has kept. Yet the design looks essentially like a country house—it could scarcely be recognized as anything else; the few ornaments that it wears cannot disguise its native plainness; it has been born and bred in the country, and all the city polish that it has received cannot conceal the palpable fact. This design might be built in any part of the Union, without reference to the use implied by the appellation of “farm-house” which we have here given it, and it would always be ranked as a country house of considerable importance;

yet there is nothing about it not strictly in accordance with the position in life of a farmer in independent circumstances.

ACCOMMODATION.—The ample veranda in front, fig. 27, with its central feature, is worthy of notice; it seems to invite the passer-by to walk in and share the repose and comfort that exist within. From this veranda we enter the hall F, 8 by 33 feet, which contains the principal staircase, and affords communication with all the best rooms on this floor. A is the parlor, 33 by 16 feet, entered by folding doors, and a good example of a regular, well-proportioned room; when we say well-proportioned, we mean according to our ideas of interiors, rather than in conformity with the rules based on classical authority for the regulation of internal proportions. Of course much depends on the height of the story; in this case it is twelve feet. B, 14 by 16 feet, is a library or sitting-room, or both, as the requirements of the family may dictate. The chief attraction of this room is the octagonal bay, a very pleasant feature, whether contemplated from within or without. The dining-room D is 16 by 18 feet, and on occasions of unusual festivity can be extended by throwing open the sliding doors into the room B. A nice closet to the dining-room is seen at I, and another for the occasional stowing away of various articles of use or wear, such as will readily occur to the mind of any liver in the country. G is a passage from dining-room to kitchen; and H a pantry, represented as shelved on both sides; from the passage G the private stairs extend to the second floor of the back building, which is on a level with the half-pace of main stairs; a passage from the landing of the

former communicates with the latter, rendering all the chambers on the second floor easily accessible to servants, without using the exhibited flight of the main stairs. The apartment E, fig. 27, is designed for a kitchen, and by its dimensions, 15 by 22 feet, it may be readily inferred that we have a partiality for those good, old-fashioned country kitchens that our ancestors delighted in. Beyond this is a one-story apartment N, 12 by 15 feet, intended for a multitude of uses which will not fail to suggest themselves to those acquainted with the requirements of farm life.

On the second floor, the apartments A, B, C, D are fine, well-lighted and ventilated chambers, well provided with closets. The bath-room E may be reached from the half-pace of main stairs, or by steps from the chamber D. F would be very suitable for a bed-room for such female assistants as are generally required about farm-houses. G, accessible only by a small flight of stairs from the kitchen, may be occupied by a farm-laborer; in most cases it is best to provide tenant houses

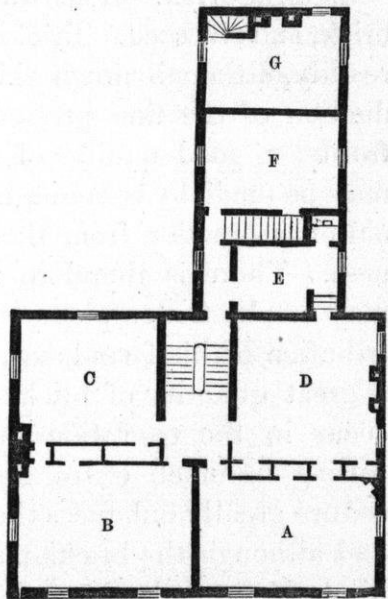


FIG. 28.—SECOND FLOOR.

for such assistants as are required on the farm, yet we not unfrequently find one or two, and sometimes more, favorites not only lodging under the same roof with the farmer, but living on such terms with him

that a stranger might with difficulty recognize the superior.

It is needless to say that a cellar under the whole of this house is a thing indispensable. Every farmer knows the value of space thus obtained, for bins, store-rooms, etc.; these require more or less light and ventilation, according to their several uses. Good attic bed-rooms are easily procured by a little additional cost of fitting up. A pediment corresponding to that in front is required on the rear, as well for head-room and light to the stairs as to balance the design more perfectly.

CONSTRUCTION.—The walls are intended to be of brick, and stuccoed. Bricks can be manufactured very readily, although much skill is required in the production of the fine pressed bricks exhibited in city fronts; a good quality of ordinary brick for walling may be made by common laborers with but very little aid or instruction from those accustomed to the business. There is therefore no reason why the farmer may not, by the employment of a little tact in the distribution of his farm-labor, manage to mould and burn a great quantity of bricks at such intervals as may occur in the operations of a single season without calling in much extra help. Such a mode of procedure greatly enhances the cheapness of his dwelling; and although the bricks may not be of the smoothest kind, if properly burned they yet afford the substance for a permanent building; and as brick-color is never particularly desirable for a country dwelling, it is at once in accordance with utility and good taste to coat the walls with good mortar, the surface of which can be rendered agreeable by any tint that the fancy

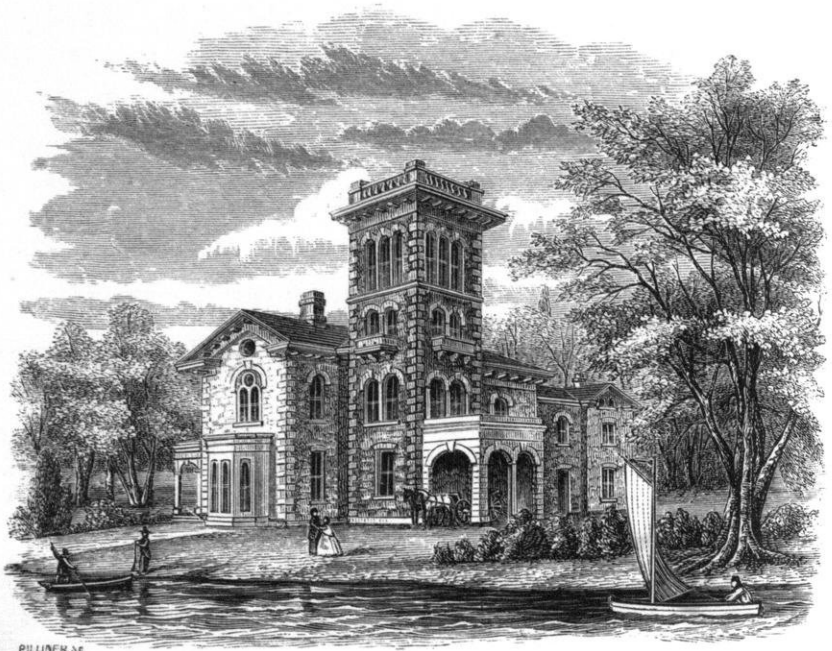
of the proprietor or his architect may suggest. The window heads, verandas, and cornices may be of wood; indeed they are designed with especial reference to the use of that material in their construction. The bay-window we would build of brick. The kitchen and veranda floors should be laid with narrow boards, and the latter saturated with oil. Hard, durable wood should be preferred for these exposed floors, not only on account of exposure to the weather as in the case of the verandas, but for the additional ease thus afforded in maintaining an appearance of cleanliness in the kitchen; this is also greatly enhanced by a careful selection of material, and strictly enforcing the directions of the architect, whose specifications so frequently declare that the floor must be "smoothed off when laid." Good straight-grained, well-seasoned white oak will as nearly answer the requirements above pointed out as any wood within our knowledge; but in making preparations for building it will be found best to avoid the cutting of young timber for the purpose; large old trees, when perfectly sound, and our forests abound with such, are decidedly preferable.

ESTIMATE.—To build this design in the manner here indicated, all the windows having exterior blinds, and rising sashes with weights, and the roof being slate, would cost in the neighborhood of \$6000. Many modifications might be made, however, that would considerably lessen the cost; for instance, to erect the entire structure of wood and cover it with shingles, the expenditure would probably not exceed \$5000. Yet we cannot avoid expressing our preference for the brick walls. If the owner could find it convenient to make his bricks in the manner we have mentioned,

it would be much to his interest, in view of the probable expense of future repairs required by the edifice, and the additional satisfaction yielded by the more permanent structure, to use them at the cost of present disadvantage.



DESIGN IV.
Suburban Villa.



PILLINER.36

FIG. 29.

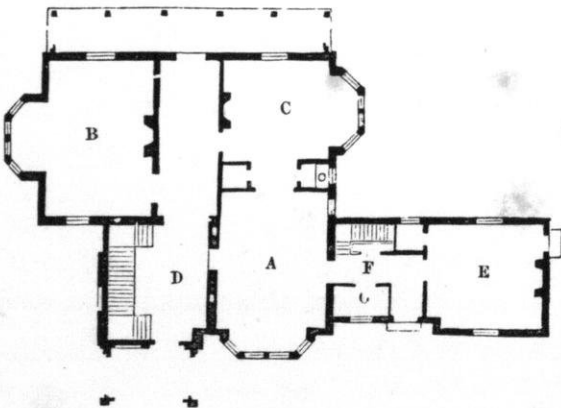


FIG. 30.—PRINCIPAL FLOOR

DESIGN IV.

A Suburban Villa.

THE prime object of a house in town is concentration, that of a house in the country is the enjoyment of external scenery and the free air of heaven. In the town we rarely meet with anything to admire beyond the productions of man, and the eye meets with but little beauty in its daily range except such as may exist in the architecture of the place. On the contrary, the country presents not only such architectural beauties as it may possess for our enjoyment, but the extensive and verdant views of varied scenery, which retain the former in a secondary position.

The influence of two leading principles seems to pervade the villa residences of every age, in directing the disposition of the different apartments: one of these is, shelter from the winds and storms which prevail in the particular situation selected; the other, the enjoyment of the views of the surrounding scenery: hence it is that country residences have in all ages and countries been comparatively scattered and irregular. The conclusion drawn from these observations, and applicable to the present subject, is that a villa residence ought to be more or less characterized by its marked irregularity and tendency to extension.

When we see a dwelling asserting its character by such unmistakable signs, we take for granted that it is a country house; but when it assumes the detail and exquisite polish of city architecture, another rank must be assigned to it: its location is either in some rural village or the suburbs of a great metropolis; strictly speaking, it is not destined for either country or city, although bearing the stamp of both.

DESIGN IV. is of this character: irregular and picturesque in outline, yet subdued and finished in detail, we at once recognize the strong spreading outgrowth of the country district equipped in the habiliments of artificial refinement. Its decorative features are of the Florentine-Italian cast, as indicated by the use of rustic quoins, showing how a strong massive style of building can be rendered subservient to domestic architecture by the introduction of features having a counter-effect; in this we allude to the numerous windows of ample dimensions exhibited in this design. On examination of the rooms, however, none will complain that they are too well lighted. We have no fancy for that sort of domestic economy which, like Miss Havisham's, prescribes merely light sufficient to disturb the darkness of a room, without overcoming or dispelling it. Most of our readers will agree with us in saying that the requirements for internal convenience and the demands of the style adopted for external decoration here meet, and admirably harmonize with each other. Before proceeding with the description of the interior, we would call attention to the drive in front, which forms not only a pleasant adjunct to the base of the tower, but is also a matter of great convenience and utility. Aside from the propriety of

it as a protection to the front entrance, it is obviously of much importance as a shelter upon the occasion of arrivals during a storm.

ACCOMMODATION.—Referring to the plan of the principal floor, fig. 30, we find D at once the entrance and staircase hall, 15 by 18 feet, beyond which an ample passage extends to the rear veranda, furnishing an opportunity for complete summer ventilation as well as a pleasant thoroughfare. The apartment A, 16 by 22 feet, is the dining-hall, which is commodiously situated with respect to access from the hall and principal room, and is well calculated for a sitting-room after the table and its appendages are removed. The apartment B, 15 by 24 feet, is the parlor, or room specially devoted to the entertainment of company. C, 14 by 16 feet, is the library or office, where the gentleman of leisure can enjoy his books and newspapers, or inhale the essence of a fragrant "Havana." A fine veranda extends along the rear of parlor and library, and might be continued to advantage entirely around the library or the drawing-room, as could be determined by the location of the house with relation to the points of the compass; we would recommend both, but rather insist on the latter, as being an addition compatible with both the comfort and beauty of the design. The division designated by the letter E is a kitchen, 16 by 18 feet, communicating with the dining-room by the passage F, and with the yard by a side door, and also by the passage intervening between it and the closet G. The servants' stairs start from the passage F, and afford access to the bed-room L, intended for a servants' sleeping-room, and by a passage to two of the three chambers H. On this

floor, fig. 31, we find the bath-room K, the dressing-room L, and ample closets N; from the main hall M the stairs are continued upward to the roof

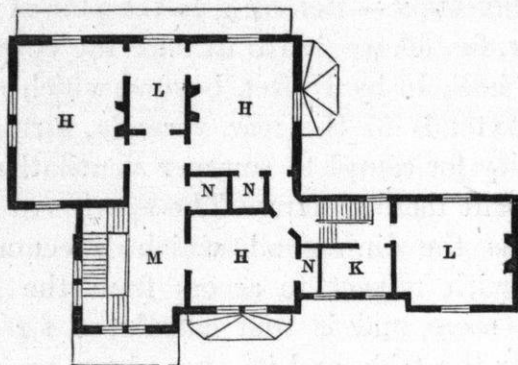


FIG. 31.—CHAMBER FLOOR.

of the tower, with landings at the several floors indicated by the elevation; from the windows of the third floor project balconies of moderate dimensions, which form a very pleasant feature in the external aspect of the building. Unfortunately, the pedestals of the balustrade surmounting the tower are represented too large in the engraving; the consequence is, an appearance of heaviness in the design which it does not actually present when erected, as it has already been in Germantown, near Philadelphia, to the entire satisfaction of its proprietor, a very tasteful and well-educated gentleman: and much to the admiration of hundreds who have visited it.

CONSTRUCTION.—This design is manifestly intended to be executed in stone of a fine quality. There is a delicacy, a chasteness in it that will admit of no trifling with, in the way of introducing any coarse or commonplace material. Notwithstanding the same effect might be produced on ninety-nine one-hun-

dredths of those who see it, by brick, wood, and plaster, yet the finer sensibilities of the artist revolt at the idea of such substitutes. We might indicate several varieties of stone in which this design could be executed to excellent advantage,—one for which we have on many occasions already shown our preference is the Pictou or Acadian freestone; another is the stone from the Mount Joliet quarries, Illinois. We are not fully apprised of the durability of the latter, but can recommend it for beauty of appearance and susceptibility of fine polish. Other varieties exist in different parts of the country; in the neighborhood of Pittsburg and Cincinnati are quarries which produce an excellent quality of stone for the execution of fine details, but few of these varieties approximate so near our *beau ideal* of color for villa walls as the Pictou or Mount Joliet stone. It is scarcely necessary to say that, in speaking of the use of stone in the exterior walls, we allude only to facing them with what is termed *ashlar* work. This is done when the stone is transported a great distance, or procured with difficulty, in order to avoid extravagant expenditure; it being cheaper, under such circumstances, to build the body of the wall (technically called filling-in) with brick.

The roof of this building is intended to be overlaid with tin, a material which can be put on, in the neighborhood of Philadelphia, for about \$10 per square; and, where good mechanics are employed in laying, well merits the precedence given it for all roofs of moderate pitch. The bay-windows, drave, and verandas are also covered with it.

In finishing up the interior, we should recommend

walnut doors to all the principal apartments, especially for those of the first story. Marble mantels, in the library and parlor at least, would be required, to give a finish consistent with the established character of the design. By reference to the dining-room A, the reader will observe that it contains no fire-place. This leads us to observe that the plan was arranged with a view to warming all the principal rooms by a furnace in the cellar; and also accounts for the absence of jambs from the chamber immediately over the dining-room.

ESTIMATE.—The cost of DESIGN IV., if erected in the neighborhood of a large city in the Middle or Western States, would be about \$15,000, with proper supervision by an architect or competent builder. In any event, a house of this magnitude, involving the above outlay, requires that an architect should be consulted for the working plans, as few builders are found competent to do justice to the design from the scale on which it is here presented.

DESIGN V.
A Picturesque Gothic Cottage.



F. J. PILLINER SC.

FIG. 32.

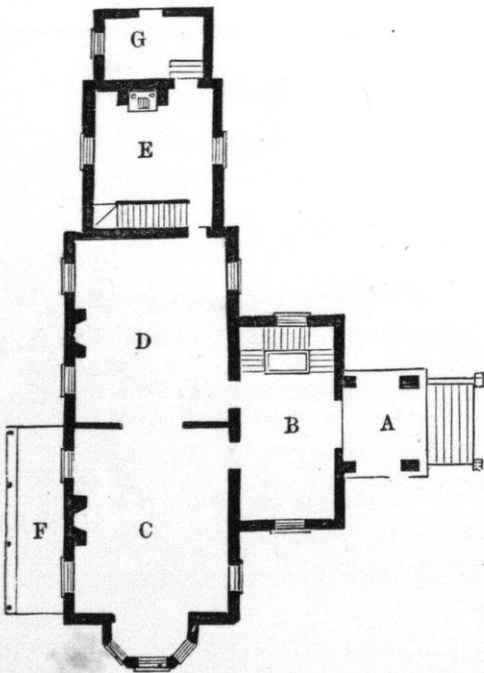


FIG. 33.—PRINCIPAL FLOOR.

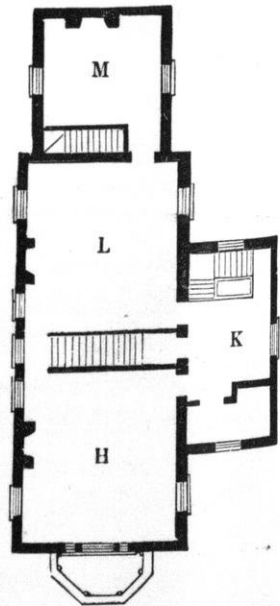


FIG. 34.—CHAMBER FLOOR. (88)

DESIGN V.

A Picturesque Gothic Cottage.

HERE is a cottage which, though too small to be termed a villa, is such a cottage as even a nobleman might dwell in. That the necessaries and comforts of life can be enjoyed within the limits afforded by this design will, we think, be admitted by those who will take a moment for the inspection of its appointments. We must first, however, venture a few remarks on the external appearance of this very spirited design. Its steep roof at once denotes it the legitimate offspring of a northern climate, and all its decorations are opposed to the spirit of passionless repose, which seems to prevade architecture under the influence of Grecian, and we had almost said, Italian skies. To express our meaning more plainly with reference to its character as a whole, it appears, with very little aid from the imagination, to have been impelled upward from the ground to its present magnitude by some strong mysterious influence, rather than slowly and gradually constructed by laying stone on stone. The ideal character with which an object thus becomes invested is what yields delight to the imaginative mind, and is the true source of pleasure derived from the picturesque; to the mind of poetic cast, no evidence appears of the slow, constant toil necessary to develop the structure: it might have shot up to its present size and

proportions as suddenly as the world came into existence at the command of its Creator. Artists account for the effect thus produced, by the predominance of vertical over horizontal lines, the latter being few and entirely subordinate to the former; and the doctrine is sanctioned by all critics and close observers of cause and effect.

By virtue of the aspiring character of the composition, its proper site will be found in the midst of hilly scenery, or on some of the high, broken banks of our noble rivers, where Nature, in spite of the conquering energy of man, still holds a considerable sway. We do not mean that it should be distant or secluded from observation, but within view of some public highway or navigable river; the traveler's eye rests with pleasure on any object that may thus be happily introduced to fill up the chasm between Art and Nature, and reconcile the mind to the infinite distance interposed between our own and the productions of the inimitable creative influence on which we bestow the latter appellation.

The proprietor of this cottage is assumed to be a citizen of refinement, who, in the leisure of summer months, seeks recreation at a distance from the scene of his mercantile or professional labors; his small family retire to this spot with him, rather to enjoy a season of comparative quiet than to give elegant entertainments; if we can find comfortable accommodations for him within the limits designated by the engraving, our end will be accomplished.

We must not omit to note, however, that by dispensing with the more ornamental portions of the exterior details, this would make an admirable farm

cottage for the inland districts. We should direct that all the main features should be preserved intact, the cornice and porches retain their present bold projection, the difference being made solely in the omission of the decorated barge-board, and perhaps the bay-windows. For greater economy, the chimneys might be built in the center of the house, where they were originally designed to be, as will be seen by a glance at the elevation.

ACCOMMODATION.—From the front porch A, fig. 33, the hall B, 8 by 18 feet, is entered: in one end of this, the stairs are located; the remaining portion would serve for a sitting-room for a small company on fine summer evenings. Adjoining this is the parlor C, 15 by 17 feet, and also the dining-room, of the same dimensions. We notice the parlor, to call attention to its pretty bay-windows, and to the veranda that shelters its windows from sun and storm.

The apartment E is the kitchen, 12 feet square in the clear, and attached to this a lean-to G, which may be inclosed or open according to the uses to which it may be applied by the housekeeper; if required for an appendage to the kitchen for cooking purposes, it should be enlarged beyond the given size, 8 by 10 feet, and provided with a fire-place; of course, it will then be a walled apartment with sash windows, and otherwise fitted up to exclude the weather.

Transferring our attention to the plan for chamber floor, it will be seen that a flight of stairs from the kitchen gives access to the bed-room M, fig. 34, suitable for the occupancy of such an assistant as might

properly be lodged in the house. From K we readily enter the chambers H and L, between which excellent provision is made for closets, unfortunately represented in the engraving as stairs to the left; but it will be perceived that there is ample space for stairs to the bed-rooms situated there, in the hall K.

CONSTRUCTION.—The intention, with reference to the construction of this design, is that the walls shall be built of rubble-stone, and neatly pointed on the exterior; the internal plastering being furred-off with wood to prevent dampness. Indeed, we know of no other method so commendable, in point of external fitness for this design, as that of building with stones just as they come from the quarry—a mode indicated by the term “rubble-work,” and which is introduced to good advantage in all masonry where a rustic, picturesque effect is aimed at. For this design, we would recommend the use of a light-colored stone, and the strict avoidance of any dull, somber colors, such as very dark gray or brown; as these, if applied, would tend greatly to impair the beauty of the building.

The cornices, porch, veranda, and finials are intended to be wood thoroughly coated with sand and paint; or, if a good quality of oak or yellow pine is to be readily procured, an excellent effect can be obtained by oiling the natural surface of the wood; when the color of the stone employed is a light gray, or bordering on blue, the contrast is inevitably agreeable, though stronger than would be admissible in a design of tamer architectural character.

ESTIMATE.—Finished as above indicated, a building after this design would cost about \$2200.

DESIGN VI.

A Bracketed American Cottage.



FIG. 35.

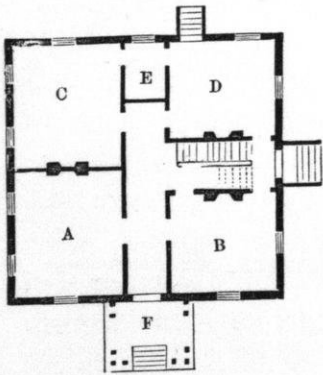


FIG. 36.—PRINCIPAL FLOOR.

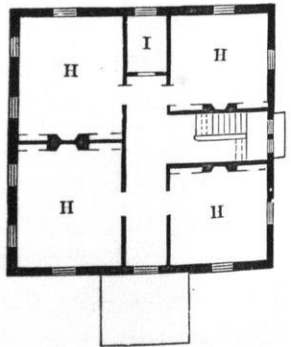


FIG. 37.—CHAMBER FLOOR. (94)

DESIGN VI.

A Bracketed American Cottage.

WE mean what we say when we pay this design the high compliment of calling it American, and we think our readers will sustain us in the application of the very comprehensive term. Simple in form, convenient and economical in arrangement, tasteful yet unassuming in detail, we know of no title so expressive of its deserts as the one we have given it. Although it possesses no trait preventive of its recognition as an important country residence in any part of the Union, we conceive that it would be a decidedly acceptable dwelling to the well-to-do resident of the Western prairie. The umbrage afforded the windows by the canopies and balconies, while enhancing the boldness of the design, contributes greatly to the comfort of the apartments by protecting the glass from the noon-day summer sun, even in the Northern and Western States. On the other hand, the disposition of the fire-places is such as is best calculated to insure good draught in chimneys, and the retention of a greater proportion of the heat generated within the building. The draught of unprotected flues is seriously impeded by the stagnation of the air, cooling on its upward passage, while that of protected flues suffers little from this cause; and when we take into account the addition to the warmth of the house, gained by keeping

the flues at a distance from the outer walls, their advantages in an economical view become at once apparent. Not only does the increased draught of the chimney admit of the fires being kept up with ease, but the heat radiated by the flues, be that much or little, (and it is generally more than they are given credit for,) has its influence on the temperature of the rooms through which they pass.

ACCOMMODATION.—From the front piazza F, fig. 36, the passage of 6 feet wide is entered, which gives access to all the rooms; an outside entrance is also given in the end of the building through the stair hall. A, 16 by 20 feet, is designed for a parlor; B, 16 by 16 feet, is a sitting-room; C, 16 by 20 feet, a dining-room; D, 16 by 16 feet, a kitchen; and E, a pantry, affording also a passage from dining-room to kitchen. We may remark here, that a veranda extending the full length of parlor and dining-room would be a very beneficial addition to this design, both for use and appearance. In accordance with the apparent demand for such an improvement, we have shown it in the perspective. The divisions of the chamber plan, fig. 37, are similar to those on the first floor, with the addition of closets on each side of the chimney fronts in all the chambers, H,—I being a wardrobe.

CONSTRUCTION.—The great abundance of wood in some portions of our country, the facility with which it is transported from a timber region to a prairie, and the ease with which it is adapted to building, will be reason enough for using it for that purpose for generations to come. The design before us is intended to be constructed of wood, the boarding being planed,

grooved, and put on in the horizontal manner, the studding not being more than 16 inches apart; boards of the width of 6 inches, planed and grooved, to be put on as at A, fig. 9, can be procured at many of the lumber mills for \$25 per thousand feet, and we have not the least doubt that in the immediate vicinity of well-timbered districts they can be obtained much cheaper. The foundation walls should be of stone, or if that material cannot be had, hard-burnt brick; but the use of the latter necessarily adds seriously to the cost of the structure.

This design might with advantage be constructed of brick, that is, in case the outlay was not too closely limited. We have such a decided preference for any course calculated to give permanency to building in general and our own designs in particular, that it is only when all chance for a more durable structure is out of the question that we yield to the substitution of wood. Although we acknowledge our admiration of the handsome new wooden houses that are scattered over the face of the country, we cannot help expressing our regret that a few years will render them unsightly and untenantable, while well-treated stone or brick buildings of the same age will scarcely show perceptible marks of disfigurement or decay. In speaking therefore of wooden houses, we speak of them as a thing of necessity, and not to be chosen when a better alternative offers.

The windows should have rising sashes, with weights; two in the dining-room and two in the parlor, extending to the floor, (on the assumption that the veranda before suggested will be extended along the flank.) The chimneys should of course be brick;

very handsome moulded cappings of terra-cotta, which is an excellent and cheap substitute for stone, can be procured at slight expense, where mouldings are required.

ESTIMATE.—An excellent and substantial house may be built after this plan for \$2800, in any part of Pennsylvania,—the stories being 10 and 9 feet in the clear respectively; the exterior painted a warm, drab color, slightly tinged with blue, and the roof covered with white pine shingles, about 5 inches or one-third their length to the weather.

DESIGN VII.

An Irregular Northern Villa.

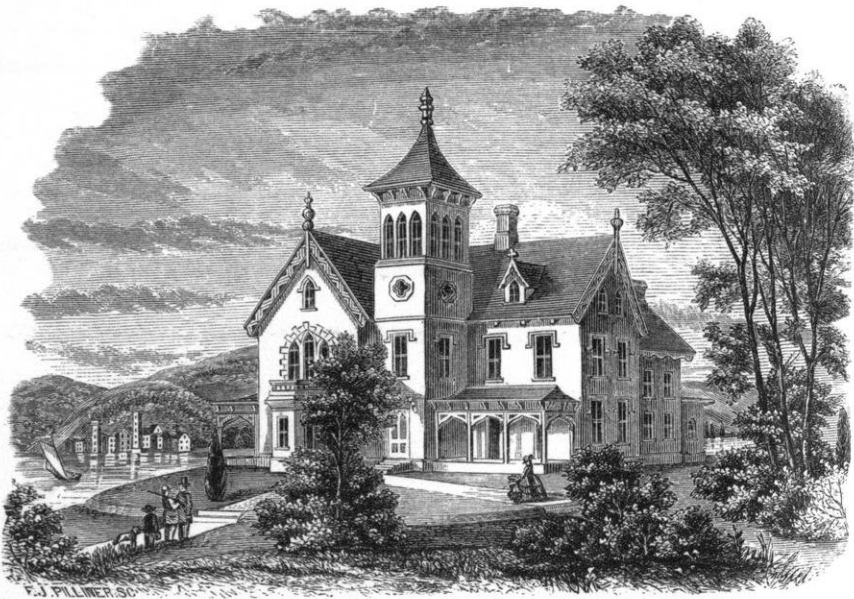


FIG. 38.

DESIGN VII.

An Irregular Northern Villa.

BOLD, beautiful, and peculiar in its manifestation of architectural style, this villa is well adapted to the highest requirements of social life; on the shore of the Northern lake, at the foot of the majestic mountain, or by the waters of the swift-flowing river, seems to be its accordant site; its tone is not in unison with the gentle slope or the level plain,—all its surroundings should be in keeping with the distinctive liveliness of its character. We call it Northern because of the aspiring tendency of its roof and towers, and the adaptation of its interior arrangements to the habits and customs of Northern living.

APARTMENTS.—The front door is in the tower; the vestibule D, fig. 39, entered by it is nine feet square, and affords ingress to the drawing-room A and the front hall G. The drawing-room is 18 by 33 feet, and is further extended in the direction of its length by a very fine bay-window, and is also capable of being further enlarged in the opposite direction, by opening the sliding door to the library C, a room of 18 by 11 feet. The fire-place in this room occupies one corner, and a suggestion is offered by the single line drawn in each for the manner of furnishing the others, which can be executed with excellent effect. The dining-room B,

22 by 17 feet, is a fine, well lighted apartment, communicating with the kitchen E, by the passage H. The kitchen is 17 by 20 feet, and has an appendage F of 10 by 15 feet; this seems to us ample provision for the use of the culinary department. The private stairs, and two fine closets for the dining-room and kitchen, are entered from the passage H. On the second or chamber floor, fig 40, we find K, L, M, fine

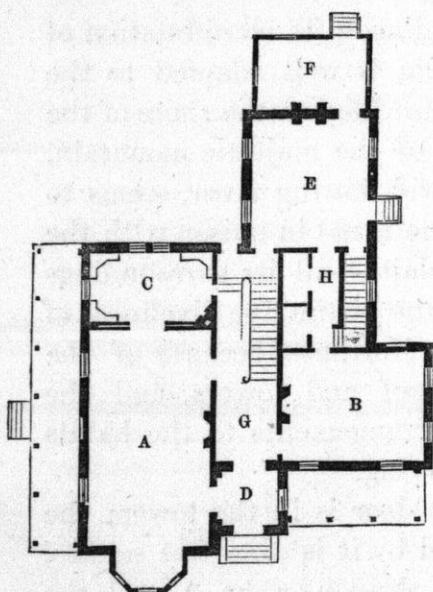


FIG. 39.—PRINCIPAL FLOOR.

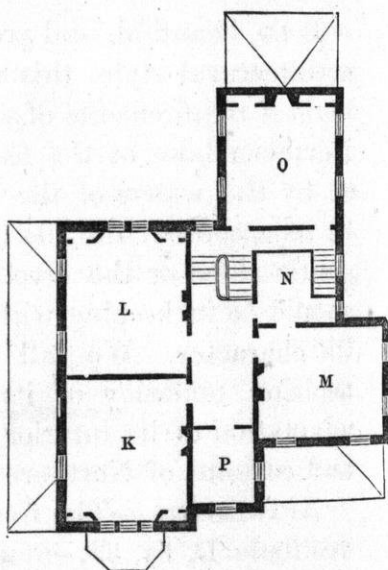


FIG. 40.—SECOND FLOOR.

chambers; N, a bath-room; P, a dressing-room; and O, a sleeping-room for servants. The principal stairs are intended to continue to the loft, where sufficient space will be found for at least three good bed-rooms: from this floor the tower is reached through a passage made by an elevation of the roof for the purpose, and a stairway within it affords the means of reaching the upper section or observatory, a light, lantern-like

structure, from which the surrounding country may be viewed in every direction.

CONSTRUCTION.—This design may be built of brick or stone, and stuccoed. We therefore suggest that it be built of rubble-stone, and the external surface of the outer walls coated with rough-cast, the *voussoirs* or arch-stones of the large triple window being dressed and allowed to project, say an inch beyond the face of the rough-casting. All the hoods over the windows can be run with cement, a projection having been arranged for them in the stone work; this is done with very little trouble, as no precision is required in its execution. The roof should be of slate, laid on close sheathing; a manifest improvement would be cutting the visible portion of the slate after the form of some of the ornamental patterns exhibited in detail in another part of this volume.

The brackets under the eave cornice are merely a continuation of the rafters planed off and modified by a slight curve, as shown by fig. 41, the under side of the sheathing reaching

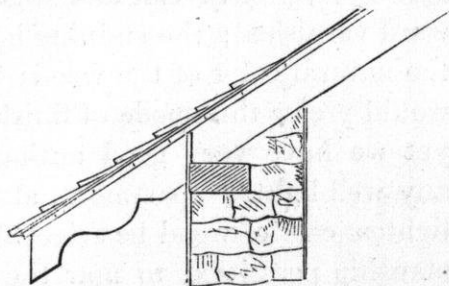


FIG. 41.

over the face of the wall being also smoothed off. The barge-board is eighteen inches wide and cut from a two-inch plank in the manner represented by fig. 42. The veranda will be covered with tin, the posts being about seven inches square and the inter-bracket or head, which gives the Gothic character, cut from the solid plank. The exterior coloring of this building,

in view of the piquancy of its style and its prominence as a feature of the landscape, may be darker than any design we have yet offered, while at the same

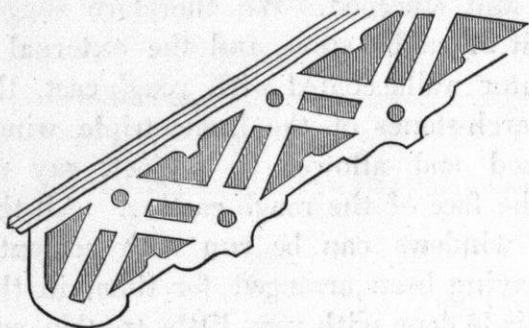


FIG. 42.

time we would avoid all the heaviness of effect produced by lifeless, muddy tints.

With regard to the interior finish, we will only remark in this place, that all the dressings and wainscoting may be of oak and slightly stained, and afterward varnished; the staining heightens and maintains the natural color of the wood; we cannot say that we would prefer this mode of finish in the drawing-room, yet we have very good authority for applying it to any well-lighted apartment, always provided that the lightest cast of wood be selected and no inferior workmanship permitted to mar the acknowledged beauty of the material.

ESTIMATE.—Built of rubble-stone and rough-cast, with a slate roof, the first-story windows having inside blinds, and otherwise finished as we have pointed out, the cost of this villa, in any portion of the Northern or Middle States, will not exceed \$9500. If brick instead of stone were used, the cost would be increased to about \$10,000.



DESIGN VIII.

Model Residence for a Physician.

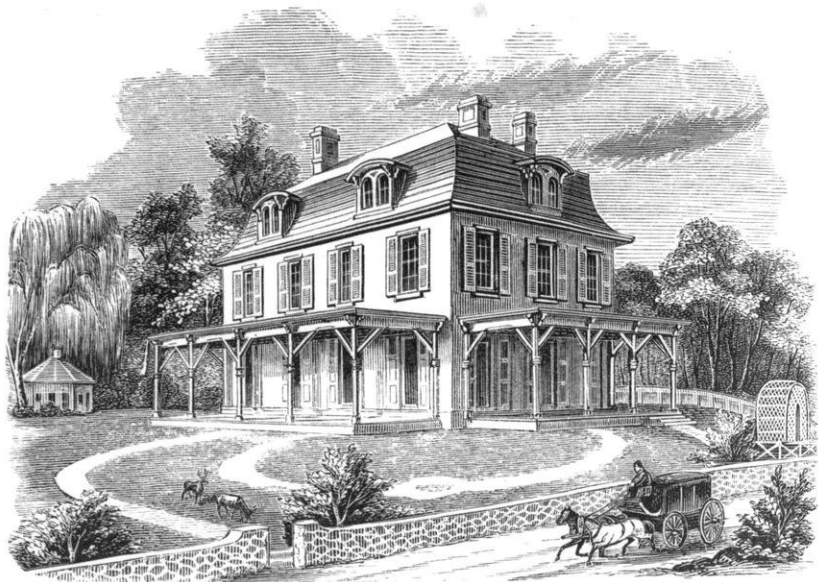


FIG. 43.

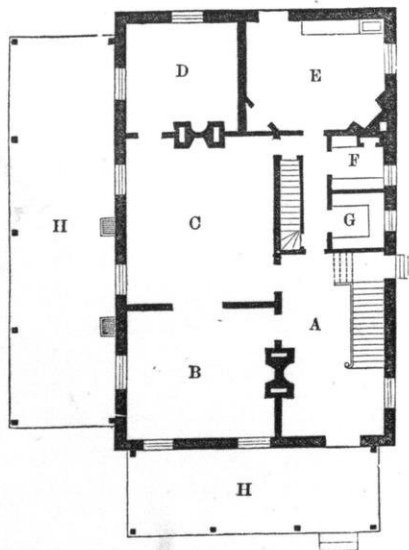


FIG. 44.—PRINCIPAL FLOOR.

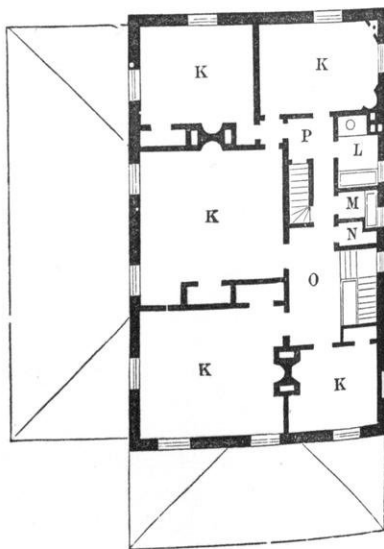


FIG. 45.—SECOND FLOOR.

DESIGN VIII.

Model Residence for a Physician.

ONE of the simplest of all forms—the parallelogram—furnishes the basis of this design. But little beauty ordinarily exists in a structure erected on this plan; yet the hands of a skillful designer may do much toward redeeming it from the repulsive baldness which is too frequently exhibited even in the better class of country houses. If the design before us were divested of its verandas and dormers, and a plain hip-roof substituted for the curved Mansard, with the exception in its favor of chimney tops and window blinds, it would puzzle the amateur to decide whether it should be called a human habitation or a diminutive cotton-factory. But the features above named effectually redeem it from the imputation of leaving the passing traveler in doubt as to its true purpose.

This residence has been erected and is now occupied by Dr. E. C. Evans, in the vicinity of West Chester, Penn. The plans and elevation were prepared by us under his eye, and in accordance with directions and suggestions which he offered during the course of their preparation. Since its erection, he has expressed his satisfaction in decided terms with the result of our combined efforts. Our readers will permit us to add, that Dr. Evans is a gentleman of close observation and

acknowledged intelligence, and while many may dispute his taste, but few can find fault with his judgment: an investigation of the plan of his dwelling will go far to sustain us in the latter allegation.

ACCOMMODATION.—The front entrance is effected through the end veranda H, fig. 44, into the hall A, 12 by 21 feet, which, besides containing the staircase, is ample enough for a small company to resort to for conversation in the pleasant days of summer: being provided with a fire-place, it would be an excellent place at any season for the entertainment of such visitants as are too unscrupulous with regard to the state of their boots to be admitted to the parlor. So much for the hall. On the left, as we enter, we observe B, 17 by 15 feet, one of the cosiest little parlors that you can well imagine; just the right size to entertain all your country acquaintances in, that might feel slighted by being invited to the dining-room. This apartment, designated by the letter C, is 15 by 20 feet. Beyond is a snug little chamber D, 12 feet square: this would perhaps be the best apartment for an office; change the window next the veranda, H, to a door, and we have at once an entrance for the admission of such patients as might prefer coming to see the "doctor" instead of his visiting them. A possible, but less convenient location for an office would be on the second floor, over the hall; a serious objection to this, however, would be the abuse of the principal stairs, and especially the stair carpets. The kitchen E is 15 by 12 feet, and entered from the front hall or the dining-room at pleasure, and has a back door, as every kitchen ought to have; but, by a little inattention, no steps have been provided for it, much less any shelter which

might assume the several forms of piazza, summer kitchen or wood shed. F and G are pantries, adjacent to which is a flight of private stairs.

On the second floor, fig. 45, we find five chambers provided with closets; from the passage P, we ascend to the attic floor. We must, however, not neglect the bath-rooms, L and M; the former containing a water-closet, well ventilated by a flue connecting with the range flue from the kitchen. On the attic plan, fig. 46, in which the perpendicular dimensions of the rooms are obtained entirely in the height of the roof, and the light received from the dormer windows, the chambers are represented by R, S being the hall, T the trunk-room, and U closets.

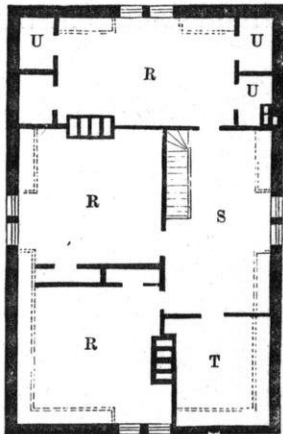


FIG. 46.—ATTIC FLOOR.

CONSTRUCTION.—This design is intended to be built of brick, and rough-cast, and the roof overlaid with shingles. A little ornamentation bestowed on the exposed ends of these would be in perfect keeping with the style of the building. The verandas should be of oak, and stained a little so as to resemble old oak; similar treatment might be bestowed on all the exposed wood-work with very good effect,—of course observing that the external surface of the wall should be colored to harmonize with it. The window heads and chimney caps may be dressed stone. The interior should be finished up in a style of perfect harmony with the exterior, substantial but not ornate. The proprietor may exert his taste in the selection of

paper for the walls; the balance of the decoration must be left to the plasterer and painter,—observing carefully, however, that no very rich ornaments or striking contrasts of color are to be permitted.

ESTIMATE.—The estimate for this design, in the neighborhood of West Chester, was \$3000; but we think it was probably built for a little less under the careful management of the proprietor.

DESIGN IX.

A Small Villa in the Pointed Style.



FIG. 47.

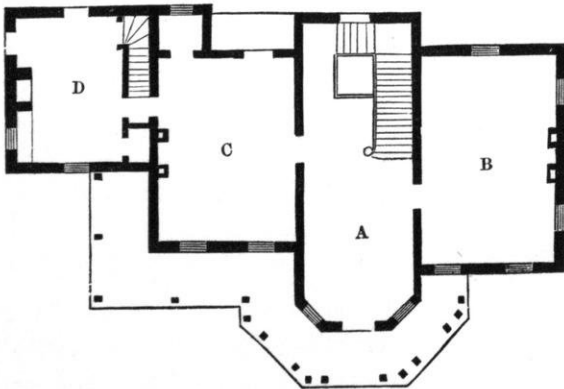


FIG. 48.—PRINCIPAL FLOOR.

DESIGN IX.

A Small Villa in the Pointed Style.

VERY home-like and country-like in its appearance, and yet withal manifesting, too plainly to be misunderstood, that something more is intended than the mere expression of purpose, this design presents a favorable specimen of the development of pointed architecture as applied to rural building. While the high-pitched roof exhibits the principles of the pointed style so strongly as to give the structure its name and character, it will be observed that many minor deviations are made in the details: these, founded on utility, are not sufficient to detract from the characteristic expression of lively aspiration communicated to the building as a mass, by its governing features, its roofs and gables. The deviations alluded to are the segmental window heads and the flat-roofed verandas, with their semicircular interbrackets.

A residence built after this design would be suitable for the occupancy of a small family of considerable means, who wish to live in good style yet do not expect to give a great amount of entertainment.

ACCOMMODATION. — Whether we have made the proper arrangements for the above-mentioned purpose or not, will appear upon an investigation of the plans. Beginning with the first floor, fig 48, we find a very neat veranda, eight feet wide, stretching around the

greater portion of the front: from this the main hall A, 12 by 32 feet, is entered: this contains a fine staircase, and affords a delightful assembling place for the home circle during long summer evenings; and it occurs to us that a piano would be a very appropriate part of its summer furniture. We are very partial to this elevation of the character of the hall, which in a vast number of houses is of little more importance than a mere passage or thoroughfare to the other rooms, including generally a stairway within its limits, and that sometimes an unsightly object. B is the drawing-room, 24 by 16 feet; C, the dining-room, 21 by 16, provided with a good china closet. We think the drawing-room, as well as the appearance of the house, would be greatly improved by a veranda extended along its flank. D is the kitchen, 12 by 17 feet, with a sink at one side of the fire-place: it is also

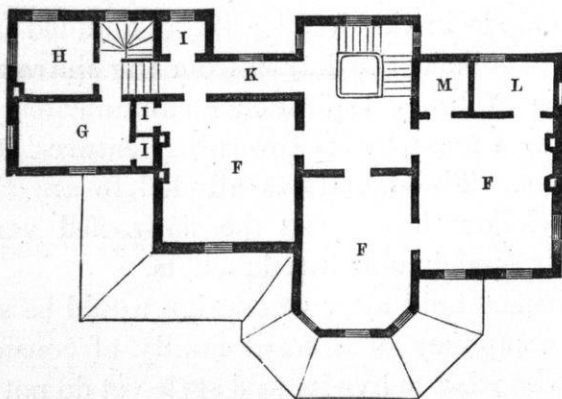


FIG. 49.—SECOND FLOOR.

provided with a closet and private stairs. On the second floor, fig. 49, we find three delightful chambers, F; L, M, and I are closets, and G and H small bed-rooms. Snug sleeping-rooms may be fitted up in the roof, lighted by the dormer windows.

CONSTRUCTION.—This is another example in which we would suggest the use of quarry stone with very little dressing, the joints being pointed up neatly on the exterior surface: we have seen excellent effects produced by the introduction of coloring matter into the mortar; when the color of the stone is very light, the pointing mortar may be of a dark lead color, but, on the contrary, if the stone be inclined to a somber cast, the joints should be white or nearly so. The roof being framed to rest on wall plates and ridge pieces, is designed to be boarded over and covered with slates cut diamond shape. Great care should be exercised in the construction of the dormers, and also of the main valleys; one of the greatest objections urged against roofs of irregular outline is their increased liability to get out of repair, and leak. We have already observed that copper is an excellent material for such valleys, large or small. For the longest valley in the roof before us, a strip of two-pound copper, twenty inches wide, well seamed and soldered at the cross joints, and carefully laid, will be found weather proof and lasting. The ridges may be covered with the same material: to effect this properly, a strip of wood, say one and a half inches thick, is run along the ridge, secured to the sheathing or rafters, extending at least one and a half inches above the surface of the slate; a ten-inch strip of copper is then laid over this and fastened with iron clasps, care being taken that the copper is not pierced. These clasps should be placed about two feet apart and fit tightly over the copper, so as to prevent its displacement by the wind. The slope of the veranda roof indicates that metallic covering for it is indispensa-

ble; for this, tin will be found much better than copper, and has the additional recommendation of being less expensive. We have already said enough on the subject of cellars to convince any one of their utility, even laying aside all consideration of their usefulness as a place of storage, etc. It will be observed, however, that the very moderate elevation given to the principal floor of this design would occasion considerable labor in the excavation of a cellar of the usual depth. Should it therefore not be desirable to have this underground storing room, it will still be necessary to remove the earth from beneath the flooring joists to the depth of at least two feet, and leave openings in the walls for the free admission of air, but so defended with gratings or screens as to exclude domestic animals.

ESTIMATE.—Erected in a substantial and workman-like manner, with the walls and ceilings all done in hard finish, terra-cotta chimney caps, and copper valleys, this design will cost, in this vicinity, about \$4000, it being understood that every part of the work is executed in first-rate style.



DESIGN X.

Villa in the Italian Style.

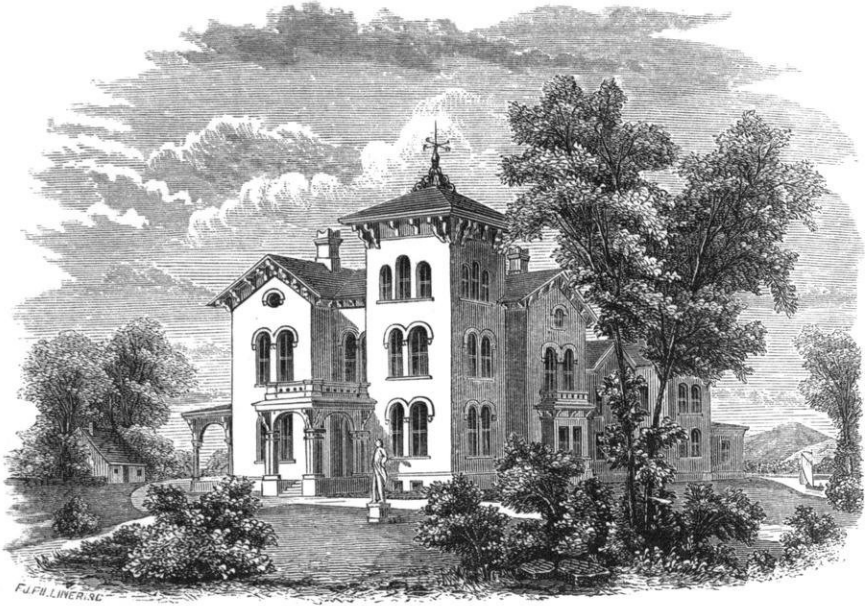


FIG. 50.

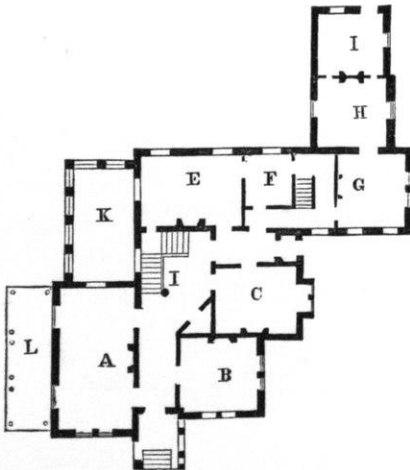


FIG. 51.—PRINCIPAL FLOOR.

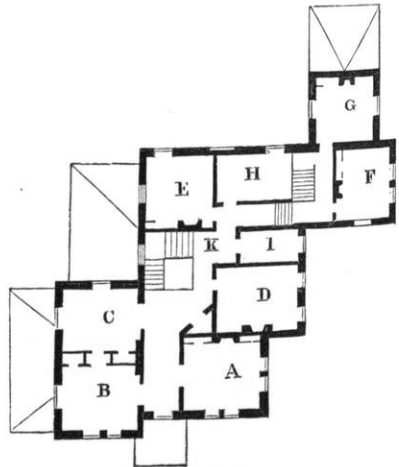


FIG. 52.—SECOND FLOOR.

DESIGN X.

A Villa in the Italian Style.

THE dignity, refinement, and elegance in the leading features of this villa create the impression, on sight, that it is a gentleman's residence. It indicates varied enjoyments, a life of refined leisure, and abounds with tokens of a love of social pleasures. Viewing it in a more strictly architectural sense, the exterior of this design is worthy of particular notice for the *harmony* which pervades it. Although a great diversity of outline and detail is exhibited, no discord is visible. Such a residence requires a site in the midst of a fertile, cultivated country, and needs for its surroundings a full share of such embellishments as can be chosen and arranged only by the well-educated landscape gardener. These include not only trees and shrubbery, but summer-houses, and garden ornaments, such as statuary and vases, all of which require the utmost degree of artistic ability for their disposal. Of course, when within the limits of the intended outlay, marble or bronze statuary is always to be preferred to any substitute that could be named; but where these are, from their costliness, out of the question, terra-cotta or iron may be introduced with propriety: the greatest objection to either being the want of that fineness of detail communicated by the sculptor's chisel. Iron, being likely to corrode

from exposure to the weather, requires a great deal of attention, which, by the way, is a matter to be considered in connection with the subject of cost. Terra-cotta is free from any such liability, and is therefore preferable, at least for such ornaments as are likely to fall under close inspection. The term, simply signifying "baked clay," is applied to all productions of the art of pottery bearing an artistic stamp. Thus, all such articles as are intended for mere practical use, without reference to appearance, we call "pottery," but anything of an ornamental character, such as statuary, capitals of columns, chimney-tops, vases, etc., with the addition of a little extra care in the execution and finish, is entitled to the appellation of "terra-cotta." A few words more for the exterior of DESIGN X., which we think affords something of a study for the amateur. It is irregular in its outline, but it is that sort of irregularity so highly admired by the artist,—an irregularity that, so far from being attributable to any accidental or violent causes, seems to have grown so, as naturally as the forest tree shoots forth irregular branches at irregular intervals, and no one can tell the reason why, or suggest a better place or a better form for them to grow in.

ACCOMMODATION.—The piazza in front, fig. 51, makes a pleasant approach to the main hall. At the point of entrance this is 9 feet wide, but it presently expands to 16 feet, which gives ample room for a fine flight of stairs. B, the reception-room, is 18 feet square. This is the first story of the tower, which forms the central feature in the elevation. The drawing-room A is 18 by 33 feet, with a veranda

extending its full length. The library or office C is 18 by 16 feet, and can boast of a snug little bay-window. Just beyond the library is a side entrance, which separates the dining-room, etc. from the front portion of the house. E, the dining-room, is 24 by 16. From this, as well as the drawing-room, the conservatory K, 14 by 16 feet, is entered. The conservatory is an indispensable feature in the complete villa, and is therefore worthy of the architect's serious attention. In another part of this volume we offer some hints as to the mode of their construction, warming, etc., to which we refer the reader. F is represented as a sort of lobby, but we would suggest that the door next the passage be closed, by which an excellent butler's pantry is formed. The apartment G is 16 feet square, and is destined for a servants' hall or housekeeper's room, as the requirements of the family may dictate. H, the kitchen, is also 16 feet square. Beyond this, the summer kitchen I affords shelter for the carrying on of such domestic labor as can not well be performed in the limits of the kitchen proper. On the second floor, fig. 52, we have four excellent chambers, A, B, C, D, all provided with closets, and all accessible from the main hall. It will be observed that the level of the floor of the bedrooms G and F is below that of the other apartments. These are, however, reached from the landing of the private stairs by a flight of steps in the passage. Of the remaining rooms, H or I may be converted into a bath-room, E being so situated and lighted as to be a very pleasant chamber.

CONSTRUCTION.—Brick walls, built hollow, would be our choice; the exterior stuccoed, and colored in

light, warm tints, with all the dressings and cornices a few shades darker, would be in excellent harmony with the character of the design. The pitch of the roof indicates a demand for metallic covering.

ESTIMATE.—The cost of this building cannot be definitely arrived at without detailed specifications; but we are confident that it can be finished up in a very good, consistent style for about \$15,000. We mean, of course, in localities where the cost of labor and material does not exceed that of Philadelphia.

Cottage with Truncated Roof.



FIG. 53*.

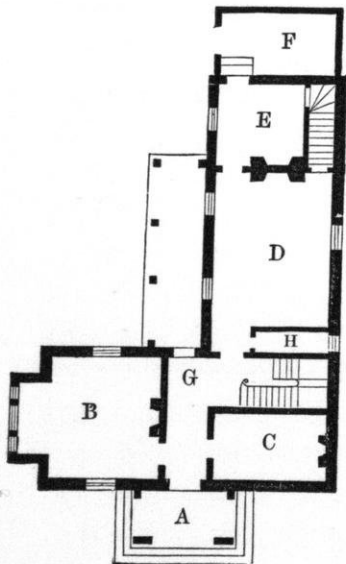


FIG. 53.—PRINCIPAL FLOOR.

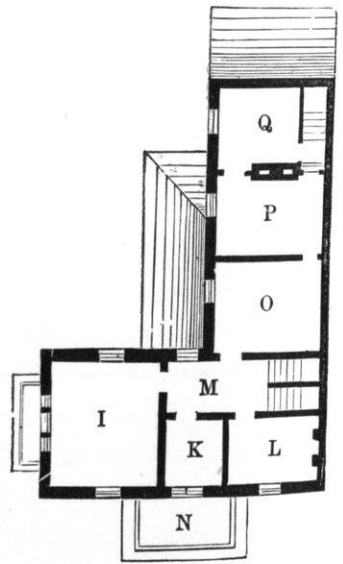


FIG. 54.—SECOND FLOOR. (124)

DESIGN XI.

A Cottage with Truncated Roof.

ONE thing should never be lost sight of in the selection of any distinct and striking style of building: this is, that its peculiarity and piquancy must either be modified to suit a quiet landscape, or, if retained, then a situation should be chosen in which the style will form an accordant feature in the scene. But, as in many cases the site and the character of the surrounding scenery are "fixed facts," it then becomes the duty and business of the architect to make such modifications in the details of the style chosen as are necessary to establish harmony between the natural and artificial features of the landscape. Herein is the peculiar sensitiveness of the artist displayed. The builder may erect permanent edifices, but the skill and perception of the artist alone can determine beforehand whether his labors shall mar or beautify the scenery, of which they are henceforth to be a part. The design before us is highly suggestive on this point. It is picturesque, yet subdued and chastened in picturesqueness, and much less bold and rude than it might have been with propriety, if placed in the midst of wild forest or mountain scenery. And by what means is this taming down accomplished? Simply by truncating the gables of the roof, a process against which the radical constructionist is prone to

exclaim in no moderate terms, but which we defend, on the ground that the artist, like the poet, is entitled to his license. From these remarks, it will be readily inferred that Design XI., essentially bold and striking, has been subjected to such modification as was deemed requisite to bring it into keeping with comparatively quiet, natural scenery.

ACCOMMODATION.—A very neat and effective piazza A is at once the main central feature (fig. 53) and front entrance. Entering from this, we find ourselves in a passage of moderate dimensions, from which we may enter at pleasure the snug little sitting-room C, 8 by 14 feet, ascend the main stairs at G, or initiate ourselves into the very model of a cottage parlor, designated by B, 14 by 15 feet. D is the dining-room, 14 by 18 feet, with an excellent closet H; E, the kitchen, 10 feet square, having a private stairway; and F, a lean-to for a wood shed, or appendage to the kitchen. In case the water for household use is to be procured from a well, it would be very convenient indeed to have the pump beneath this or an adjoining shelter. A very serviceable veranda, approached from the passage G, is worthy of note, and it would, no doubt, be desirable, in most cases, to have an entrance door from this to the dining-room.

Inspecting the second floor, fig. 54, we find M, the landing of the principal stairs, affords access to the rooms J, K, L, M, O, while P and Q are reached from the private stairs. Bed-rooms may be fitted up in the space afforded by the pitch of the roof. These could best be reached by placing a small stairway in the apartment K.

We have thought, while preparing this design, that

its arrangements, although in conformity with the requirements of almost any small, thrifty family, are such as might be frequently sought after for a country parsonage. In the event of its adoption as the home of a minister, the dining-room would necessarily become a sort of living-room; the little sitting-room C would be transformed into a library or study; and the parlor B used only for the entertainment of select company. This is all founded on the assumption, either that the minister has no family, or that one of the chambers on the second floor P might be used as a nursery, should such a convenience be found requisite.

CONSTRUCTION.—It is evident that this cottage may be constructed of brick, stone, or wood, without detriment to its architectural expression. We may here indicate a method of execution which, under certain circumstances, presents a very agreeable appearance: we mean, to use very light-colored bricks in the outer facing,—as near what are called *salmon-bricks* as may be ventured without endangering the durability of the walls. Now, in view of the comparative importance of the roof as a feature of the composition, the prominence of the verandas and cornices, and the smallness of the masses of wall exhibited, it will be perceived that, with relation to the effect of the building as a whole, the walls become a subordinate part, and will be found, particularly if surrounded by as full an apportionment of foliage as such a cottage should have, to present but little of that trying harshness manifested in the preponderance of huge brick masses. Where this mode is adopted, a very neat quality of workmanship is required in laying the

brick; the lighter shades of pressed bricks would of all be the most suitable to the proposed quality of the work. Slate should be preferred for roofing this cottage, but shingles could be very satisfactorily used, with considerably less expenditure.

ESTIMATE.—Judging from the cost of similar designs executed under our especial notice, we would place the cost of the cottage before us at \$3800, if common bricks were exclusively used; if pressed bricks were used for facing, \$4000,—the roof in both cases being slate, laid in varied patterns, and a cellar six feet deep being excavated under the whole house.



PUMP.

DESIGN XII.
 A Suburban Villa—No. 2.



FIG. 55.

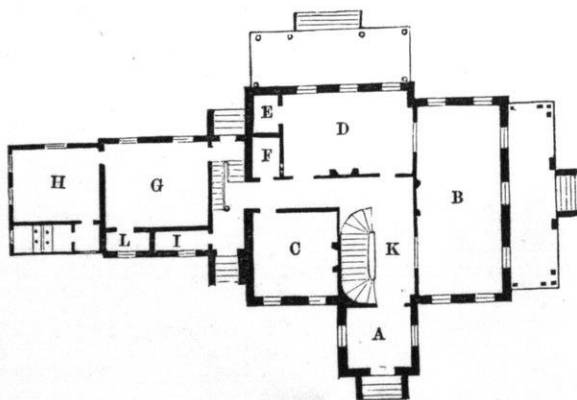


FIG. 56.—PRINCIPAL FLOOR.

DESIGN XII.

A Suburban Villa,

[No. 2.]

HERE is a villa pre-eminently expressive of architectural style, and in which the manifestation of absolute beauty predominates over that of relative. It demands plainly a preference of solid materials for its construction, and a careful attention to the proportion and finish of detail. Stone, therefore, would be the most appropriate material for the facing of the walls; but a less expensive method would be to build it of very fine, smooth brick, laid with what the masons call flush-joints, *i.e.* the mortar cut off in a line with the face of the brick-work, and not *tucked* or pressed in, as is usually done. Then, after the lapse of considerable time, the exterior may be rubbed down with a sharp sandstone, and brushed off, and the surface thus formed be painted and sanded in warm stone tints.

Although we have engraved Design XII. in the midst of a snow-scene, yet it would evidently make a very good Southern house. The addition of a veranda on each side of the tower and external window-blinds would be sufficient to make it passable as such. It would be very desirable, if built in the South, to locate it with the front to the northward.

ACCOMMODATION.—But, for the purpose of descrip-

tion, we assume it to be a Northern residence. A, a delightful vestibule, 15 feet square, (fig. 56,) is large enough to answer the twofold purpose of vestibule and ante-room. The drawing-room B, 20 by 40 feet, is entered from the stair hall K, through folding-doors. At the opposite end of the room another pair of folding-doors gives admittance to the dining-room D, an apartment 25 by 16 feet, to which a china closet E, of fair dimensions, is attached. C, 20 feet square, is a nice, agreeable sitting-room or library. F is an excellent pantry, readily subject, if necessary, to the control and inspection of the mistress. A very nice arrangement is effected by intervening a passage of 7 feet wide between the apartments we have just described and the domestic offices. This passage not only affords access to the kitchen, but also to a little store-room. It contains the private stairs, and affords a front and rear entrance. A great desideratum gained here is the opportunity afforded to cut off from the dining-room, by a through current of fresh air, all scent of cookery in the kitchen. This is a *sine qua non* in a Southern house, when the kitchen is allowed to be connected with the residence, which, indeed, is seldom admissible further South than Virginia or Tennessee. G, the kitchen, is 18 by 24 feet, and provided with a nice closet L. Unfortunately, by an oversight in the preparation of the cut, no jambs are shown for a kitchen range. These, however, should be built in the wall, between the kitchen and the summer kitchen H, so that a flue from the latter can be carried up in the same stack.

Proceeding to the chamber floor, fig. 57, we find six fine chambers, respectively marked N. Three of

them have ample closets, while the others will require wardrobes in addition to the usual articles of chamber furniture. O is designed for a dressing-room, on the

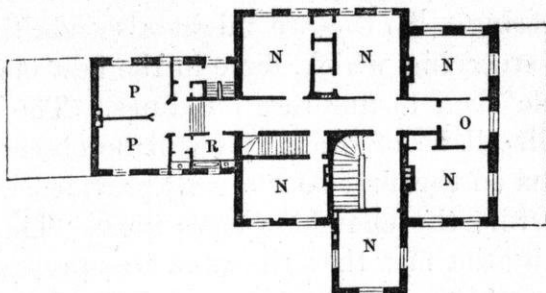


FIG. 57.—CHAMBER FLOOR.

assumption that the adjacent chambers may be occupied by sisters, in which case the dressing-room will be convenient for both. A bath-room and water-closet are shown at R. The bed-rooms P, being situated over the kitchen, are on a level with the half-pace of the private stairs, and consequently below the line of floor in the main building. This requires a flight of steps in the longitudinal passage, for the purposes of direct communication. A flight of close stairs, by which the attic floor may be attained, occupies a convenient position. The divisions on the attic floor may correspond in size and number with those exhibited by the chamber plan, with the exception, of course, of those in the side building, which is not carried to this height. A little stairway from the attic floor leads to the upper section of the tower, a place that is occasionally interesting to both occupants and visitors. A small mounted telescope, or even a strong spy-glass, such as mariners use, adds considerably to the interest of the place.

CONSTRUCTION.—We have already hinted our preference for stone in the execution of this design, and also suggested another method for the exterior wall, which, if not equally satisfactory, might be rendered very pleasing. To this we might also add the expedient of stuccoing, which, done in the best manner, is applicable even to first-rate buildings. The interior walls will all be of brick. It will be observed that the rooms on the first floor are all provided with fire-places, while the chambers have none. This is explained by the fact that the plan was prepared with reference to the application of cellar-furnaces for warming.

The roof is intended to be covered with painted tin, and the gutters formed of the same material, in the projection of the cornice. The chimney-tops, if not executed in stone, can be neatly done with cement, a process requiring considerable skill in the plasterer, but much practiced for the sake of economy.

ESTIMATE.—Faced on the exterior with fine ashlar, the cost of this villa will be about \$11,000; built of brick, in either of the modes prescribed, with stone quoins, balcony, and window-heads, \$2000 might be deducted, assuming that the stone could be procured in the vicinity.

DESIGN XIII.

An Irregular Bracketed Country House.



FIG. 58.

DESIGN XIII.

An Irregular Bracketed Country House.

WE might, with almost equal propriety, have termed this a farm-house. The only objection to this is the probability of impressing the reader with the idea that its application would be accordingly restricted. Indeed, it almost deserves the name of VILLA; but the total absence of ostentation in its external aspect inclines us to the appellation we have bestowed upon it, notwithstanding the villa-like extent of its accommodations. Plain, sensible, and solid, it is within the reach and applicable to the circumstances of many who love convenience without ambitious display, and who prefer dignified plainness to gingerbread ostentation. Architecturally, this design aims at being a country dwelling, manifesting the dignity, comfort, and substantial character of social life that is attainable in the country. There is a growing demand for this class of dwellings. Farmers are becoming rich, merchants and manufacturers are retiring from business; and we know that while the frank modesty of the farmer seldom allows him to aspire to towers or pinnacles, nine out of ten of retired citizens are too plain and practical in their views to seek for more than the embodiment of the various accommodations suited to their modes of life, at the lowest grade of expense requisite to give them

a tasteful and substantial home. Since we have held these points in view, our motive for the comprehensive appellation "country-house" will be at once perceived. Suggestive not only of home comfort, but of the pleasure of social existence, the internal arrangements are in conformity to the demands of a life of business or a life of leisure, while the outward evidence, furnished by the elevation, goes far to sustain the idea that the proprietor, if not in possession of an unlimited store of wealth, has been touched by the spirit of elevated taste, and has declared his inspiration in language susceptible of no double meaning.

The scene chosen to accompany this design is evidently agricultural. We regret that the idea was not more elaborated in the engraving, to show at least a carriage-house and stables; but since our chief object is the improvement of human dwellings, we hope the absence of appendages will not be chargeable to us as a serious deficiency. Yet the importance of out-buildings of a tasteful and appropriate character is undeniable; while the abodes of the "lords of creation" are entitled to our earliest and most earnest consideration, the necessary useful surroundings should not be forgotten; and if we have neglected to notice them, or make them a conspicuous portion of this work, it is only because our limits will not allow that extended and thorough treatment of the subject which its importance demands.

ACCOMMODATION.—A veranda G, fig. 59, furnishes the entrance way to the main hall D. A drawing-room A, 14 by 26 feet, entered by folding-doors from the hall, forms a very interesting portion of this plan, on account of relative situation, its modest little bay-window, and the adjoining veranda, which is ap-

proached through lengthened windows, and communicates in the same manner with the sitting-room. This sitting-room, marked B, is 22 by 14 feet, and

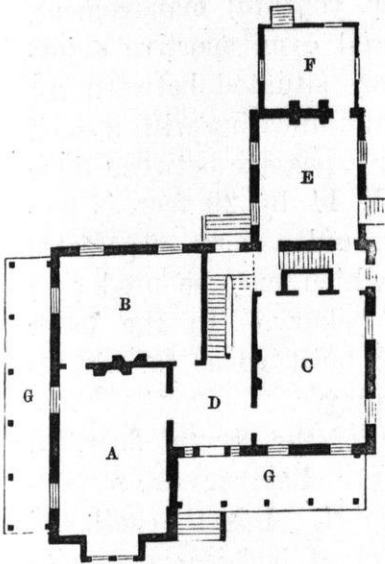


FIG. 59.—PRINCIPAL FLOOR.

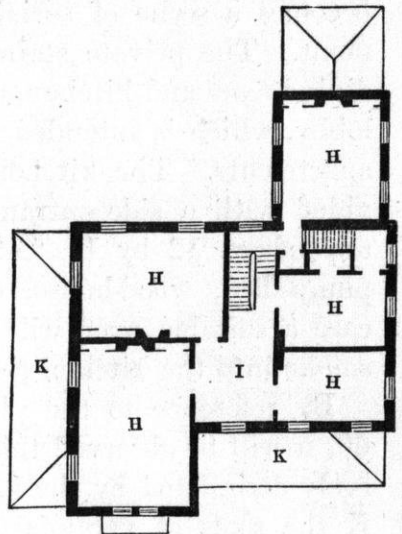


FIG. 60.—SECOND FLOOR.

communicates directly with the drawing-room and main hall. This hall is 12 feet square, and a passage, containing the main stairway, leads to the rear entrance, and affords communication with the kitchen and private stairs. An arch thrown over the stair passage, at its junction with the hall D, will give the latter a complete individuality, and will be not only productive of effect as a feature, but gives opportunity for the introduction of a separate and dissimilar cornice, and, in short, establishes for the main hall a character exclusively its own.

A dining-room, 17 by 24 feet, furnished with china closet, and entered from the main hall, is located in the front portion of the house. With the facilities attendant on the mode of service which generally

obtains in the style of living of which this house is assumed to be an exponent, all the fixtures of the table can be promptly removed, and the apartment, under the auspices of youthful management, becomes a scene of social and even sportive enjoyment. The private stairs are situated between the dining-room and kitchen, communicating with a small lobby, which is intended for a passage between these apartments. The kitchen E, 14 by 20 feet, is provided with a side entrance, and a very respectable appendage, 12 by 14 feet, which may be used as a pump-shed, wood-house, or bakery. In the latter case a suitable oven will be built, so as to vent its smoke into the kitchen chimney.

By reference to the plan of the second floor, fig. 60, it will be observed that the chambers are respectively designated by the letter H. I is the hall, and K the roofs of verandas. Good bed-rooms may be fitted up in the *garret*, care being taken to provide for their ventilation, in addition to that afforded by the gable windows, the method of doing which is specifically described in another part of this volume.

CONSTRUCTION.—Brick, rough cast, with wooden cornices, and slate or shingle roof, may be indicated as the essential components of this structure. The verandas, however, require metallic roofing. The window-heads and sills should be stone. There is no absolute objection to building the walls of rubble-stone. The effect of this would be to make it look more essentially the home of the farmer "to the manor born."

ESTIMATE.—Built in the manner above described, the cost of this dwelling would not vary much from \$6000.

DESIGN XIV.

Small Decorated Country Villa.

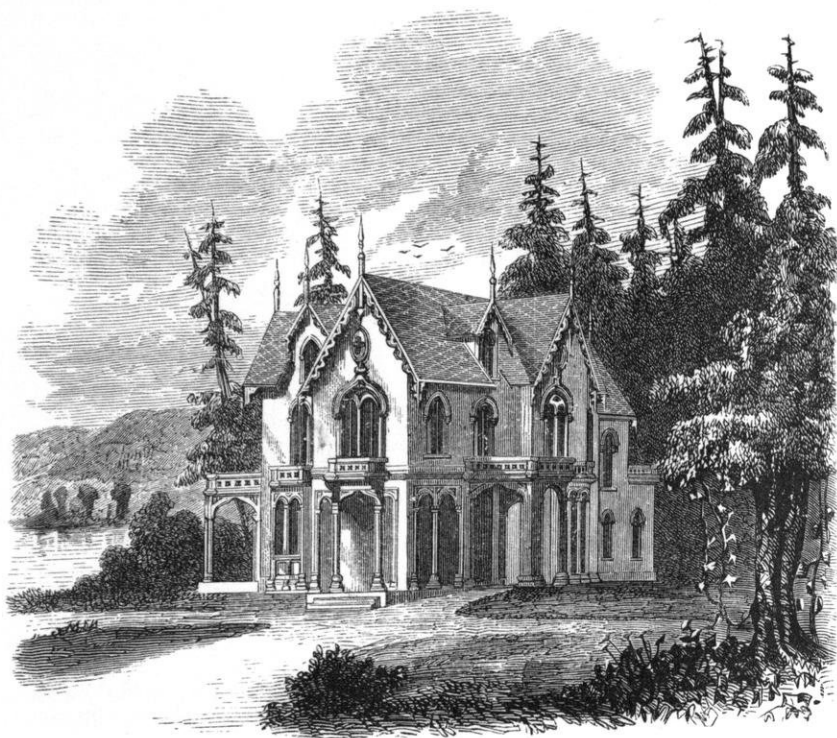


FIG. 61.

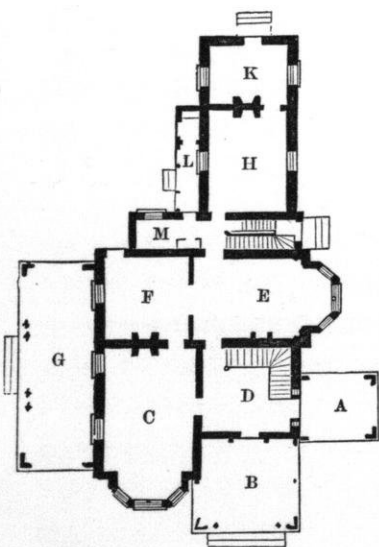


FIG. 62.—PRINCIPAL FLOOR.

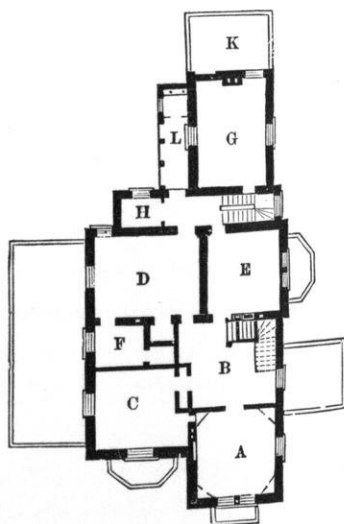


FIG. 63.—SECOND FLOOR.

DESIGN XIV.

Small Decorated Gothic Villa.

THIS design is presented as an example of what may be done in the embellishment of a Gothic residence in the Decorated manner. This is a subdivision of the Pointed style, dating back to the thirteenth century, and considered the perfection of Gothic architecture. The Early English being the first in order of time, flourished in the twelfth century, but toward the latter end of the thirteenth was lost sight of in its more attractive successor, the Decorated. The chief characteristics of the former were small, lancet-pointed windows, (having no tracery, from which it has sometimes been termed the *lancet-pointed* style,) and deeply cut mouldings with a few sculptured enrichments: the whole arrangement being productive of a bold and simple effect. The latter seems but a continuation of the Early English; its principal features are, large windows enriched with graceful, easy-flowing tracery, and a ruling richness of details; it prevailed throughout the greater portion of the fourteenth century, and was finally superseded by the Perpendicular, which is ranked as the last strictly Gothic style.

Whether we have succeeded in investing the design before us with even a moderate share of the expression portrayed by the graceful, ever-upward

tendency of Decorated Gothic, we must leave to our readers to decide. The style in its purity is almost too poetical to be practical, and that artist who combines the two qualities without a jar, may be said to be successful indeed. And yet that we rank it among the possible achievements, may be readily inferred from the attempt here made. One of the principal objections attending the use of pointed windows, is the apparent necessity of abandoning all shutters or blinds; this we have proved in practice not to be an absolute consequence; the difficulty can be surmounted by building walls with a sufficient hollow to admit of sliding shutters, placed within or without the sash, as circumstances may dictate. This of course adds to the cost; but where this is not admitted as an objection, the pointed window can often be introduced with a very happy effect,—we mean in such designs as are under the influence of the pointed roof.

ACCOMMODATION.—The entrance feature to this dwelling, B, fig. 62, is formed by Gothic piers and arches supporting a portion of the building, and may properly be called a *porch*, although not so nearly inclosed as Gothic porches usually are. A is a carriage-drive. From either of these the staircase hall D, 14 by 14 feet, is entered. C is a drawing-room, 14 by 19 feet, with a triple bay-window, a feature of frequent occurrence in domestic architecture of the Gothic period. E is the dining-room, 17 by 14 feet, worthy of marked notice on account of its fine octagonal bay, and capability of extension by opening the folding or sliding doors to F, 14 by 14 feet, ordinarily intended as a sitting-room, but available as an addition to the din-

ing-room on great festive occasions. A wide veranda G shelters the windows of drawing and sitting rooms, and would in most situations be a pleasant place of evening promenade. H, 12 by 16 feet, is the kitchen, having a side door to the veranda L, and a room attached for summer use K, 10 by 12 feet. M is a pantry with a small china closet. Adjacent to these the private stairs and a passage to a side entrance; a door also affords communication with the veranda L. We now notice the second or chamber floors, fig. 63. A, C, D, and E are all first-class chambers, reached from below by the main stairway and through the hall B. F is a dressing-room, H a large wardrobe, and G a sleeping-room entered from the half-landing of the private stairs. K a *flat*, which the country housekeeper would probably use for airing linen, etc., to which end a door is given to the room G. The private stairs are continued to what is properly termed the roof-story, which may be divided into bed-rooms, closets, etc., the light being obtained from the dormer windows.

CONSTRUCTION.—This design was executed in the vicinity of Germantown some years ago, under our superintendence, and met with marked favor among the admirers of Gothic as applied to rural building. The cellar walls are built of stone, and dashed, *i.e.* roughly coated with mortar on the inside; cellar windows provided with grating; main walls built of brick, the exterior coated with stucco, or rough-cast; and the roof covered with slate of diamond form. The gable tracery is wood, carved from heavy plank; the verandas, drive, balconies, and pinnacles are also of wood, thoroughly painted and sanded. A furnace

for warming the building is located in the cellar, with brick air-chamber and the necessary conducting pipe, making a complete system for warming all the principal apartments.

ESTIMATE.—With proper management in the purchase of materials, the cost of the above design, at Philadelphia rates of workmanship, completed in good style, is about \$10,000.

DESIGN XV.

A Cottage for a Mechanic or Clerk.

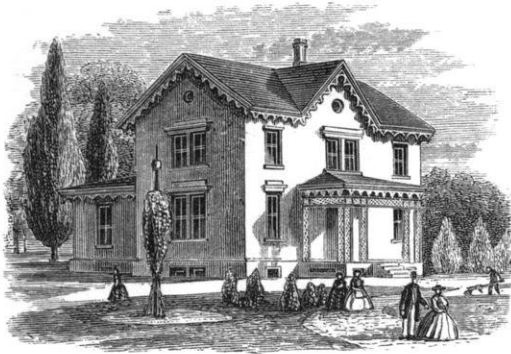


FIG. 64.

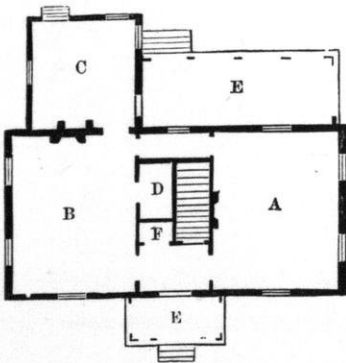


FIG. 65.—PRINCIPAL FLOOR.

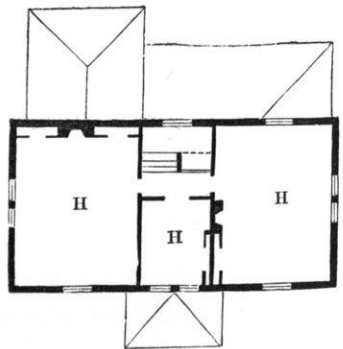


FIG. 66.—SECOND FLOOR. (148)

DESIGN XV.

A Cottage for a Mechanic or Clerk.

SIMPLE, straightforward, and plain almost to a fault, this little cottage is the embodiment of the domestic accommodations usually required by the family of a mechanic in the neighborhood or suburbs of a town or inland city. Almost any mechanic, with a few years constant industry and perseverance, can call such a home his own. The same may be said of the diligent salesman or book-keeper. And when we call to mind, as the result of past observation, how many of each class are struggling under worse circumstances than the ownership of such a cottage would imply, we hope that none will think for a moment that we have marked the grade of their requirements too low, or dishonored them as a class by the appellation bestowed on the plain yet somewhat dignified dwelling represented by Design XV. The humblest mechanic and the low-salaried clerk alike possess that innate pride, or more properly ambition, that poverty or misfortune cannot quench, nor anything but death destroy. Naturally aspiring and hopeful, they toil with high aims, and, if successful, the very experiences of their upward ascent fit them for the station which they reach; if unsuccessful, they only yield up their hopeful ambition with their latest breath. While they are proud to be American citizens, and enjoy the highest privileges that the world affords, a lively

sense of the onward and upward tendency of the human race, tempered by a high regard for the rights of their fellow-beings, is a spur to their endeavors, and, as a consequence, they are found occupying a high rank in the scale of social existence, and it not unfrequently occurs that the highest marks of preferment known in a democratic community are conferred on men who have started in life with a heavy odds against them. No better evidence than this can be adduced to prove the vital goodness of our institutions. An American rather glories than regrets that one of his distinguished countrymen dwelt in a log cabin, that another was a shoemaker, and another a printer. We have no "born great;" all that would be truly great have, happily, a chance to be so without reference to the accident of birth or inheritance.

ROOMS.—A neat veranda E, fig. 65, of trellis-work, gives the necessary shelter to the front entrance; this opens into a vestibule which communicates in turn with the parlor A and the living-room B, and also with a flight of plain, close stairs. The dimensions of the parlor and living-room are respectively 14 by 18 feet; to the latter is appended a good closet D. Another closet F is opened from the front vestibule. The parlor and living-room are connected beyond the stairs by a passage which gives access to the rear veranda E. The kitchen C is 12 by 15 feet. On the second floor, fig. 66, H denotes the chambers, all provided with closets.

REMARK.—This house is intended to be built of wood on stone foundations, and will cost about \$1000.

DESIGN XVI.

Bracketed Village Residence.



FIG. 67.

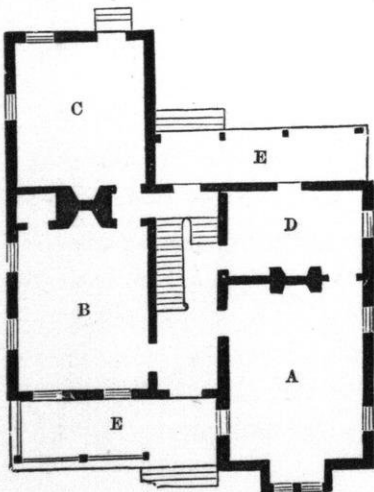


FIG. 68.—PRINCIPAL FLOOR.

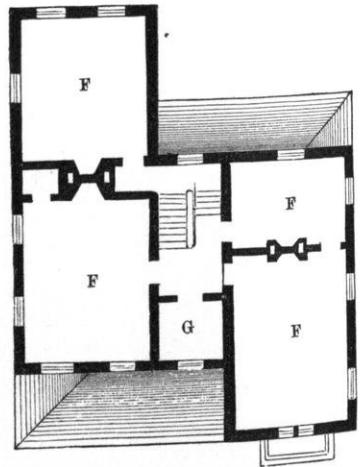


FIG. 69.—SECOND FLOOR.

DESIGN XVI.

Bracketed Village Residence.

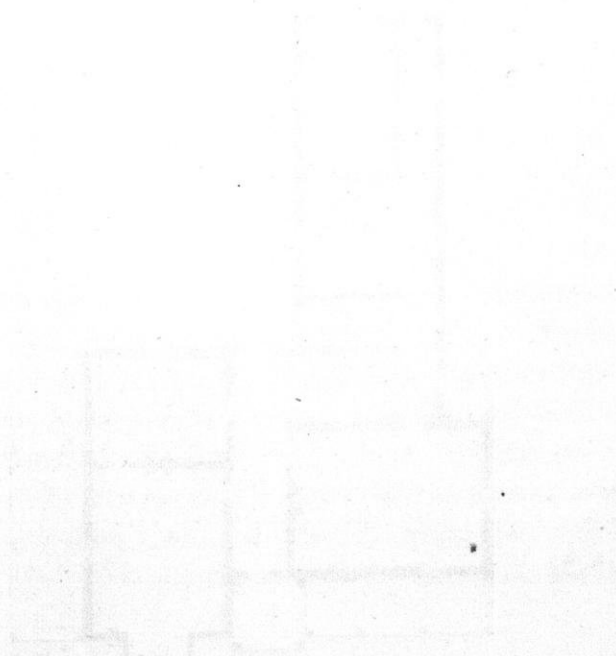
THE first impression made on the mind of the beholder by this design, is that it bears the evidence of a bold individuality of character, and no doubt but a closer examination of its merits would do much to strengthen that impression. No man who is easily influenced by the current of existing opinion would be likely to adopt such a one. It is the index of a mind inclined to seek and delight in a channel of its own, rather than continue in the well-worn course of popular precedent, or assimilate with the tide of prevailing fashion. There are thousands of such; institutions like ours foster and encourage that feeling of self-reliance which disdains to follow where all have the opportunity, and many the ability to choose a course for themselves. May the influence of education enable all such to avoid alike the excesses of individual caprice and the dangerous vagaries of fashion.

ACCOMMODATION.—On the first floor, fig. 68, E is a one-story veranda with a balcony over it; the arched interbrackets, cut from heavy plank, with the balustrade above, give this a tasteful yet bold appearance. On entering, we find a hall seven feet wide, containing the stairs, and affording communication with every room on this floor, including the kitchen and rear veranda. A is a parlor, 15 by 21 feet; beyond it we have the little sitting-room or library D, 15 by

10 feet; the beauty as well as the value of this apartment would be considerably enhanced by fitting it up with tastefully arranged and decorated book-shelves; we mean of course incorporated as a permanent fixture of the room. The dining-room B is 15 by 19 feet, and has an excellent china closet at one side of the chimney, the passage to the kitchen occupying the corresponding space on the other. The kitchen is 15 by 16 feet, and has a rear entrance. To make this more complete, a range might have been shown in the fire-place, with boiler and sink adjacent; this becomes more absolutely necessary where the water for domestic purposes is procured by piping from the public reservoir. Under all circumstances, it is a convenient arrangement, and where the expense is not too serious an obstacle, the construction of a tank in the roof, to be filled by a force-pump at weekly or semi-weekly intervals, is highly recommended. The arrangements of second floor are clearly shown by fig. 69.

CONSTRUCTION.—Either brick or wood may be employed in the erection of this design; it has, however, been prepared with a view to the use of brick, the exterior walls either to be stuccoed, or, if built of fine material, rubbed down and painted. The brackets supporting the roof projection over the front veranda should be 5 or 6 inches thick, and may be effectively made of three equal thicknesses of plank nailed together, the middle section receding, say half an inch, so as to show a sinking in the whole length of the face.

ESTIMATE.—\$2500 will be found sufficient to erect this design as indicated.



DESIGN XVII.
Plain Country House.



FIG. 70.

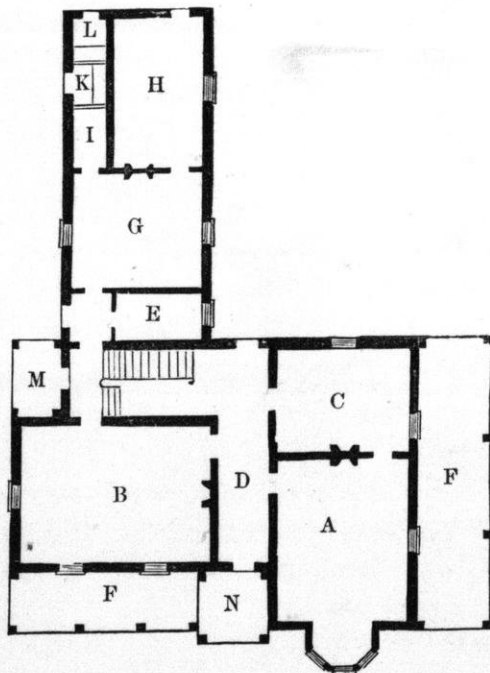


FIG. 71.—PRINCIPAL FLOOR.

DESIGN XVII.

Plain Country House.

PLAIN and unpretending as the exterior of this design may appear, it is nevertheless possessed of considerable merit as a comfortable and convenient dwelling.

A mistake in the engraving, representing a very meager projection on the roof of the rear building, detracts from the appearance of the design as represented, but was not observed in time for correction. The main roof projects $2\frac{1}{2}$ feet, and the roof just referred to ought to project at least 20 inches or 2 feet. A light iron veranda over the bay-window, approached from the chamber P by lengthened windows, would materially benefit the expression of the edifice as a whole. The front veranda roof might be surrounded with a balustrade of plain design; the adoption of which would lead to an increase of dimensions in the veranda posts.

APARTMENTS.—By the inspection of the plan of the principal floor, fig. 71, it will be perceived that the dining-room B, 22 by 16 feet, is the largest apartment on this floor.

D is a passage 6 feet wide, leading from the front entrance N to the staircase hall, and communicating with the sitting-room C as well as the dining-room B and parlor A. The parlor is 15 by 20 feet, with

an octagonal bay-window, and the sitting-room 15 by 12 feet. A little piazza M shelters the side entrance to the staircase hall. Passing on to the rear, we find E a pantry, and G the kitchen, 15 by 14 feet, with a closet I attached. H is a wash-house, 17 by 10 feet, with a rear entrance. The object of the small apartments L and K is apparent: a deep well should be sunk, or an inclined sewer constructed

beneath them. O, P, and Q denote the three best chambers on the second floor, fig. 72. R, entered from the half-face of the stairs, is also a good chamber.

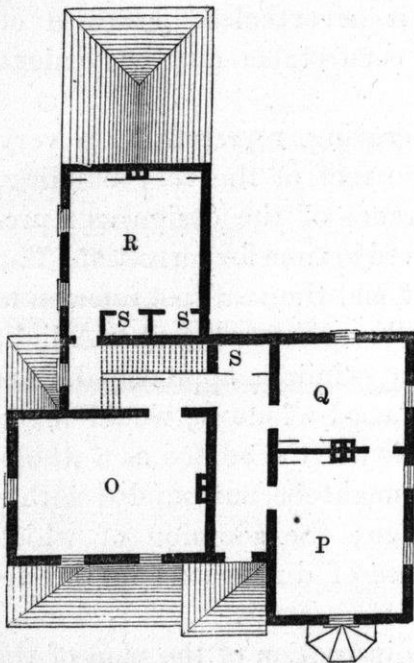


FIG. 72.—CHAMBER PLAN.

CONSTRUCTION.— Nothing would be more suitable for the walls of this design than brick and stucco. The roof deserves to be covered with slate, but, to keep down the cost, shingles may be substituted. The win-

dow-heads should be stone, and the verandas of wood; the latter, as well as the main cornice, painted and sanded.

ESTIMATE.—Erected in the vicinity of Philadelphia, this house will cost in the neighborhood of \$7000.

DESIGN XVIII.

Model Bracketed Cottage.

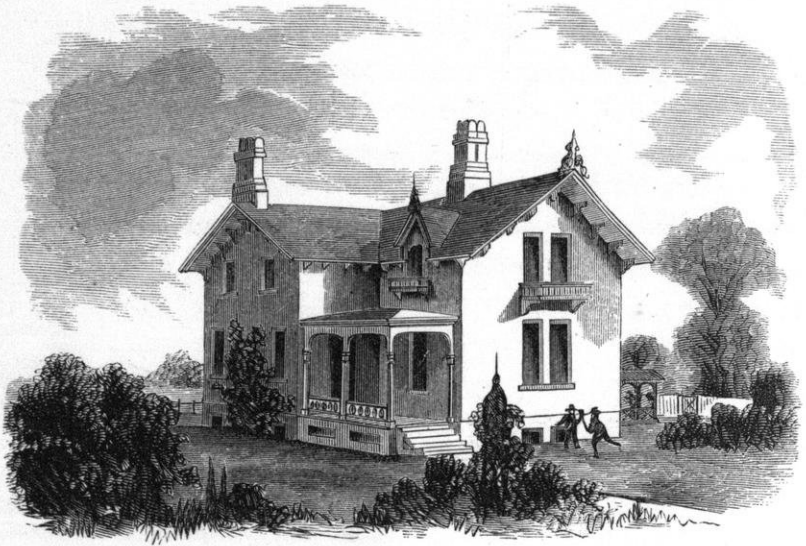


FIG. 73.

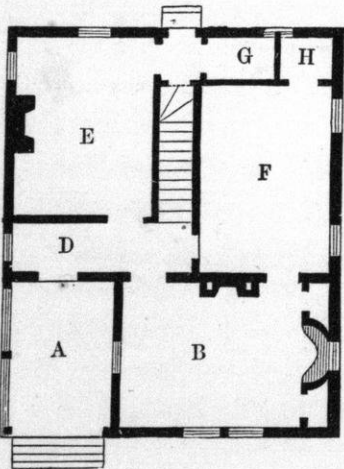


FIG. 74.—PRINCIPAL FLOOR.

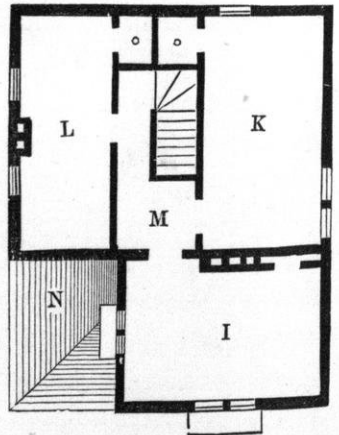


FIG. 75.—SECOND FLOOR.

DESIGN XVIII.

Model Bracketed Cottage.

THERE is something exceedingly piquant and pleasing about this little cottage; and if we were called upon to give a reason for the impression which its appearance produces, we would probably ascribe it to the fact of its having a well-defined character of its own. There is nothing very showy in its mien, and yet it is such a cottage as would rarely fail to arrest the eye of the most careless beholder. Although ultra matter-of-fact people might accuse it of "putting on airs," we think a majority will agree with us that its dress, though bold and decided, is not unbecoming even to a cottage. And to the question, Who wants such a cottage? we answer, Who would not delight to have it? For we are persuaded that many will picture out their future country home with just such a cottage as this for its central feature, To such as may urge the smallness of its size as an objection, we would say that it may be considerably enlarged without detriment to its cottage character.

ROOMS.—A, fig. 74, is a very neat, plain veranda, giving shelter to the front door and the end window of the parlor. D performs at once the office of passage and vestibule. From this we may enter at pleasure the parlor B, the dining-room F, or the kitchen E. This parlor is 14 by 11 feet, and is to be

particularly noticed for its recessed window with permanent seat. In perfect keeping with cottage living, two nice closets occupy the space on each side of the recess. On the principle that "from truth and use all beauties flow," this recessed window can boast of some claim to the attention of the domestic economist, even without an acknowledgment of any intrinsic merit. The dining-room, designated by the letter F, is 14 by 11 feet, and has a china closet H. E is the kitchen, also 14 by 11 feet, provided with a pantry G, and a back door. On the second floor, fig. 75, from the passage or lobby M, we reach the several chambers J, K, and L, all provided with suitable closets. It will be observed, on looking at the elevation, that a part of the height of this story is gained by throwing collar beams across from rafter to rafter, the height at the walls being five feet. This method is adopted with an eye to economy, and to prevent the building from reaching an altitude entirely inconsistent with its importance as a cottage.

CONSTRUCTION.—We should, under favorable circumstances, build this cottage of rubble-stone, and neatly point the exterior joints. Built of pale bricks neatly laid, and surrounded with a profusion of foliage, it would present a very agreeable appearance; but in the absence of foliage, the assistance of paint or stucco should be called in.

ESTIMATE.—This cottage may be built in some parts of this State, where building stone and timber abound, for about \$1200. Built of brick, in the neighborhood of Philadelphia, the cost will not vary much from \$1400, if all the work is done in good style.

DESIGN XIX.
Plantation Residence.



FIG. 76.

DESIGN XIX.

Plantation Residence.

WE offer this as a systematic arrangement of the accommodations required for the family of a Southern planter, clothed with some pretensions to architectural style: to be brief, it is intended to be a practical yet pleasing embodiment of the mode of life practiced among the opulent and intelligent people of the Southern States. With due deference to those who have endeavored to inaugurate a better state of things, we remark that we have been forcibly struck, in traveling through the South, with the apparent indifference to orderly arrangement manifested in the distribution of the domestic apartments and offices. There are of course exceptions to this, where attempts have been made to improve on the old-fashioned random practices, with various degrees of success. But much remains to be done, and, as is usual in the development of any growing system, every step taken and every new ray of light received, seems to unfold a continually expanding range of improvement, and not only to exhibit in their true light the faults and deficiencies in the present condition of things, but also in a measure to foreshadow future progress, inspiring respect for what has already been attempted, and hopeful encouragement in view of what may yet be accomplished.

We give Design XIX. the title "Plantation Residence," because it is eminently adapted to the peculiarities of life on the plantation; and we call attention to it, both on account of its individual value and the hints which it affords to the planter who is in quest of a building plan.

Its appointments are suggestive of the convenience, comfort, and pleasure to be enjoyed within a comparatively moderate compass.

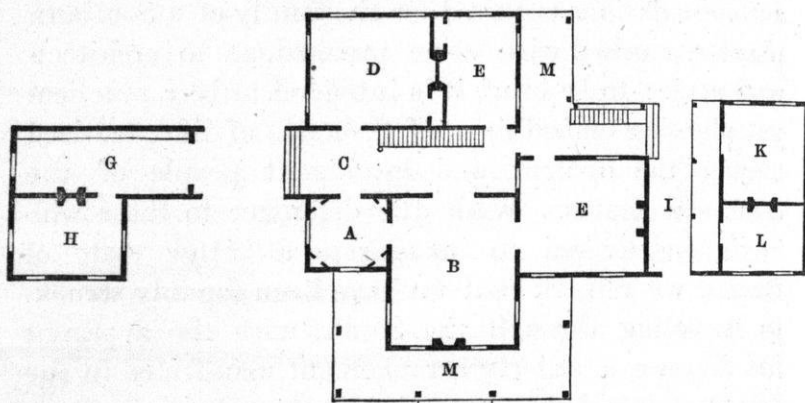


FIG. 77.—FIRST FLOOR.

ACCOMMODATION.—As will be perceived by the ground-plan, fig. 77, the design consists of a center building with two wings, the latter embracing the inferior offices. Every Southerner will assent to the propriety of this arrangement; the warmth of the climate and the mode of service alike demand that all cookery, washing, and, in short, everything requiring the constant use of fire, must be detached from the apartments designed for social intercourse. The entrance hall C, approached from the carriage-way, is 10 feet wide; this carriage-way, after leaving the hall steps, leads back to the out-buildings, for the

accommodation of horses, carriages, etc. A, 12 feet diameter, is the library or office of the planter; one angle of this having a fire-place, the remaining ones are fitted up with book-shelves, making the plan of the apartment a regular octagon. In many cases it would no doubt be found best to make this a reception-room; it is favorably situated for this, communicating, as it does, with the entrance hall and drawing-room B. The latter apartment is 18 by 24 feet, entered by folding-doors from the main hall, and partially surrounded by a veranda of 10 feet in width; D is a sitting-room, 18 by 18 feet; and E, a chamber, 12 by 18 feet. The dining-room E is 18 by 20 feet—(this might be extended from 5 to 10 feet farther in the direction of its length without disadvantage to the appearance of the building)—and communicates with the drawing-room, hall, and rear veranda M, on which there is a flight of private stairs for the use of the servants. The kitchen K, 16 by 16 feet, and the store-room L, 10 by 10 feet, are located in a separate building, with a passage I between, for the delivery at the store-room of articles of domestic consumption. Over K and L, attained by a small flight of stairs on the two-story veranda, are servants' sleeping-rooms. A ten-pin alley G, 10 by 30 feet, and a smoking-room H, 12 by 16 feet, are placed near the carriage-way, opposite the main entrance. These rooms are rather suggestive than practical; no one will fail to perceive that they would be greatly benefited by increased dimensions, and that this increase could be readily made without detriment to external proportions. Over the smoking-room (the ten-pin alley being but one story in height) a room

may be fitted up for the porter and coachman. The carriage-house is seen just beyond in the picture, which, by the way, is a reverse view from the plan.

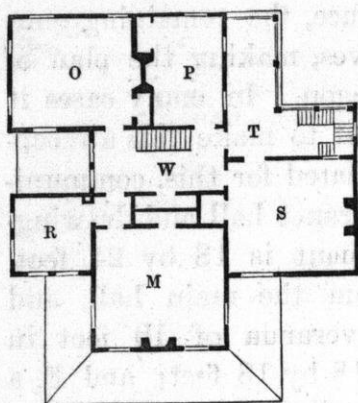


FIG. 78.—SECOND FLOOR.

On the second floor, fig. 78, we have W, the main hall from which we directly enter the chambers M, O, P, R, S, and also reach the veranda T. Thus the servants coming up the back stairs on the veranda, can enter any

chamber without passing through another, a desideratum in all first-class houses.

CONSTRUCTION.—Although this design was prepared with a view to being erected of wood, it may with equal propriety and much more architectural fitness be built of brick and stucco, the cornice and verandas in either case being wood. The roof has pitch enough to admit of either slate or shingles. Unless situated upon a considerable eminence, the elevation of the principal floor should be materially increased.

ESTIMATE.—Built as we have indicated, this design would cost, at Philadelphia rates, about \$10,500; for the latitude of Tennessee, from the best information we can obtain of the relative cost of building, about 20 to 25 per cent. should be added.

DESIGN XX.

Country House for any Climate.

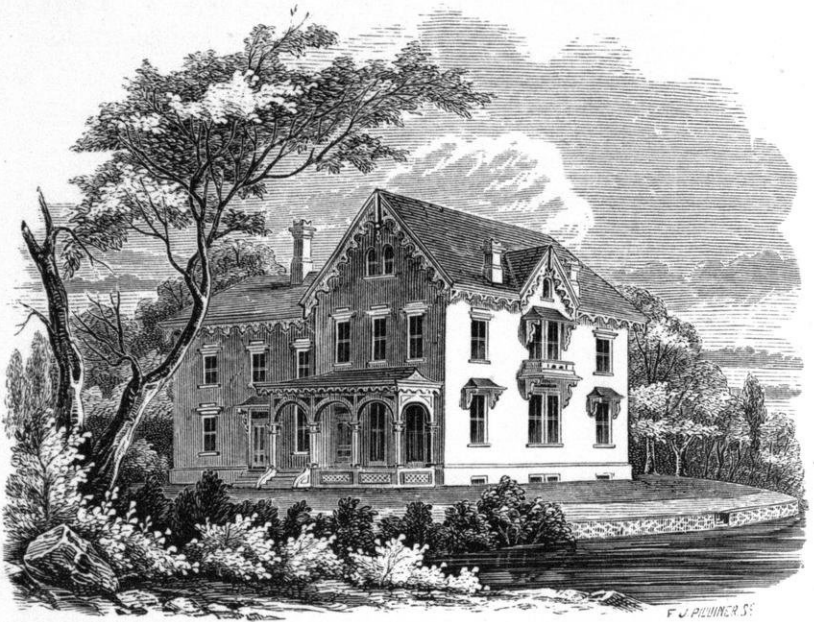


FIG. 79.

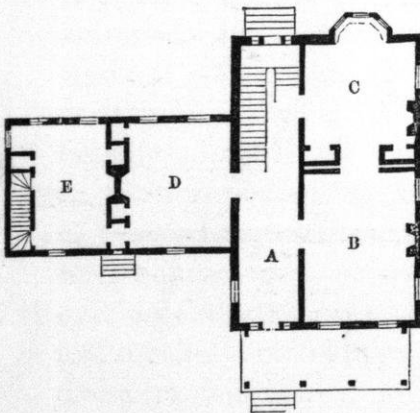


FIG. 80.—PRINCIPAL FLOOR.

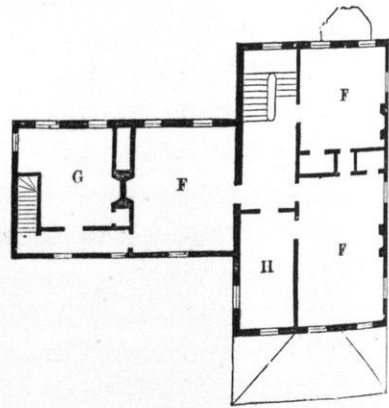


FIG. 81.—SECOND FLOOR. (170)

DESIGN XX.

Country House for any Climate.

A LITTLE examination into the merits of this design, as illustrated by the engravings of elevation and ground-plans, will satisfy any one that our title, if not entirely elegant, has not been chosen without some attention to the correctness of its application. While we are well aware that it is next to impossible to prepare plans embracing all the conditions made imperative by a great diversity of climate, we are not less sensible that compromises can be effected, greatly extending the application of a given plan with but a limited amount of local modifications. To the Southern projector who may conceive a partiality for the idea here illustrated, we would say, give outside blinds and umbrage to all the windows, and build a detached kitchen, and you have a complete Southern house for a family of moderate size. The through hall, which effectually cuts off the dining apartment from the parlor and library, is a very liberal arrangement for a house of this size; and indeed this circumstance, combined with its peculiar application in the plan before us, is the basis of the compromise here intended between the varieties of climate. An excellent expedient, and favorable to privacy and good ventilation, is to place a rising sash or head-light over each door, which can be opened or closed

by a cord. By doing this, the top of the door-dressings are kept in a line with those of the windows, without affecting the proportions of either feature.

ACCOMMODATION.—The hall A, fig. 80, entered from a neat front veranda, is 9 feet wide, and contains the principal staircase. The parlor B is 16 by 22 feet. By opening the sliding-doors, the eye is greeted by the pleasing view of an octagonal bay-window; this is an appendage to the apartment C, a room 16 feet square, which would make a delightful sitting-room or library, according to the choice of the occupants. The dining-room D has two snug, little china closets. The kitchen E, 14 by 10 feet, has a closet and flight of private stairs. On the second floor, fig. 81, we find three good chambers, F, provided with closets, and two smaller ones, H and G, the latter entered from the private stairs.

CONSTRUCTION.—Brick, stone, or wood are equally applicable to construction of this dwelling. If ordinary bricks or rubble-stone are used, it should be stuccoed; if built of wood, the framing should be boarded in the horizontal manner, the angles or corner posts being cased with vertical strips 5 or 6 inches wide, against which the abutting joint of the weatherboarding is made. A roof of shingles or slate is equally admissible, due provision having been made in the framing of the rafters for the greater weight of the latter. The execution of the joinery with well selected and seasoned wood, say white pine or cypress doors and dressings, yellow pine stairs with walnut hand-rail, etc., would be a satisfactory mode of internal finish.

ESTIMATE.—We put the cost of this, under the most favorable circumstances, at \$3200.

DESIGN XXI.

Country Residence in the Gothic Style.



FIG. 82.

DESIGN XXI.

Country Residence in the Gothic Style.

THIS is a representation of a solid, comfortable house, not lavishly but neatly and carefully embellished in the Gothic manner. The plan, as will be seen by inspection, is irregular, which, combined with the diversified roof-lines, is favorable to a picturesque effect; and this tendency is strengthened by the cornices and minor details.

APARTMENTS.—An examination of the plans will make it apparent that this is intended for the residence of a family of culture and refinement, without any desire for ambitious display; they may be very wealthy and very hospitable, but choose to live remote from the vexations of fashionable life. The drawing-room A, 18 by 25 feet, is a first-class apartment; we cannot imagine any more delightful feature than its bay-window; aside from its external effect as a part of the composition, it adds infinitely to the character of the room as a place of social enjoyment. The hall C is 8 feet wide, affording a thoroughfare from front to rear of the building; at right angles with it is the staircase hall, 9 feet wide. The sitting-room B is 18 by 25 feet, and may on special occasions be converted into a dining-room, although provision is made in E for a dining-room for the home circle. This room is 16 by 18 feet, and the kitchen adjoining is 12 by 18 feet. The verandas H are worthy of notice.

The front entrance is indicated by a feature of more massive character than the veranda, which should be executed in stone, or whatever material the walls of the house may be. On the second floor we find three chambers, A, B, and C, and a dressing-room D; in the back building, entered from a passage on a level with the half-landing of the stairs, we find two bed-rooms G and H, and a bath-room K. The attic bed-rooms, lighted by dormer windows, are reached by stairs continued over the main stairs.

CONSTRUCTION.—This house is intended to be built of brick or stone; if of the former material, hollow walls are to be preferred; if of the latter, furring-off with wood is the most suitable expedient to prevent dampness. The design would look very well executed in undressed stone, not laid with the precision of rangework, yet with considerable regard to regularity and evenness of surface. The roof, in any event, should be slate; the verandas and cornices wood, the former being covered with tin. The stiles of the paneled verge-board on the principal gables are dressed from 2-inch plank, moulded and doubled, and each spandrel pierced with a trefoil. The bay-windows are both built of the materials employed in the main walls, whether brick or stone.

The chimney tops are of terra-cotta or stone, but the former being both inexpensive and durable, will be preferred by a majority of proprietors.

ESTIMATE.—Erected in a substantial manner, the internal finish being in consonance with the external style of the building, the cost of this house will be between \$7000 and \$8000.

Ground Plans of Design XXI.

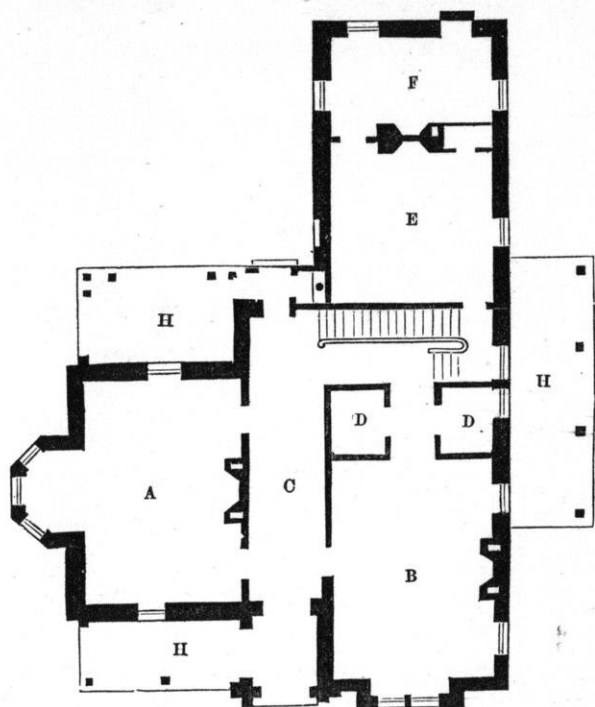


FIG. 83.—PRINCIPAL FLOOR

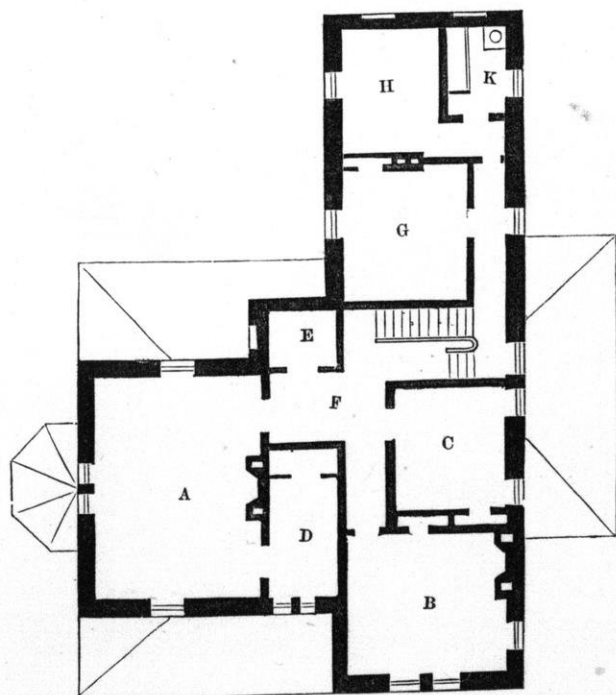


FIG. 84.—SECOND FLOOR.

(176*)

Warming and Ventilation.

It is only within the last century that the attention of scientific men has been turned to the subject of producing and maintaining a proper degree of warmth in human dwellings, on an economical and effective plan. Dr. Franklin and Count Rumford were the first active reformers, and did much beyond their own direct inventions for the improvement of the system then in vogue, to awaken inquiry and stimulate research. Latterly, Dr. Arnott, of London, physician extraordinary to Queen Victoria, stands pre-eminent as an active and efficient reformer of abuses in both warming and ventilation, and so great has been his success that he is entitled to high rank among the benefactors of mankind. A great object of his labors was to inaugurate a thoroughly healthy system of warming, while the saving of fuel engaged his serious attention. He considered "that coal is a part of our national wealth, of which whatever is once used can never, like corn or any produce of industry, be renewed or replaced;" and that "to consume coal wastefully or unnecessarily, then, is not a slight improvidence, but a serious crime committed against future generations." But the most completely successful effort of his life was the perfection of a simple system of ventilation, promotive of the health and comfort of the inhabitants of the humble cottage as well as the stately villa; his achievements on this point alone being sufficient to perpetuate his name to grateful posterity. He based his experiments on "the fact, still very imperfectly comprehended by the popular mind, that what is called an 'empty room,' is a room as truly filled with fluid air—a part of an ocean of known depth which covers the earth—as an open vessel at the bottom of the sea is filled with fluid water; and that the life of a man does not more certainly depend on his inhaling a given bulk of that air about twenty times in every minute, than his health depends on breathing air which is pure. Then, as air once

breathed acts as poison if breathed again, and as many other causes are defiling and vitiating the air where men live and work, there must be, wherever air is confined by walls or otherwise, some fit means of changing it,—that is to say, of effecting ventilation.”

Before proceeding, however, to the subject of ventilation, we propose to offer a few practical remarks on warming, as practiced, and likely to be practiced, in parts of our country where wood only is used for fuel, and where, as a consequence, the open fire-place is retained in preference to grates or stoves. The various modes of warming by hot air, steam, hot water, etc., which obtain in the present stage of modern improvement, will also be briefly touched upon.

A smoky chimney—we mean a chimney that delivers smoke at the lower end—has been, since chimneys were invented, one of the direst of domestic calamities; and it speaks but poorly for the advancement of scientific knowledge among modern masons and bricklayers to hear them assert, both in word and action, that a chimney of good draught is only the result of accident. We hope to convince them of the contrary,—such of them at least as will be at the pains of reading this article, and will give attention to a few simple facts,—to which end we shall concentrate within a brief space such instructions as will enable the apt builder to make himself master of the art of chimney building.

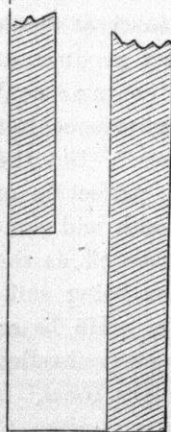


FIG. 85.

The common method of building the flue for an open fire-place is represented in section at fig. 85. Now it has been found that in some cases a chimney in this mode will, in some situations, perform its office in a tolerable manner, while in others its delivery of the smoke at the top is almost a total failure; and the reason given for this is, that the occasional downward action of the wind on the top of the uniform column of air contained in the chimney easily checks the impetus, and changes the direction given it by the ascendant properties of heated air, and the consequence is a deluge of smoke in the room below. The practical method of preventing such a calamity is very simple, and consists in contracting the flue at the throat and top, in compliance with certain conditions expressed as follows: For a

chimney of ordinary dimensions, for an open fire-place, say 12 by 12 inches, it has been found that 4 inches in depth from *a* to *b*, fig. 86, is the best size for the throat; and that, as a general rule, the sectional area of the throat of the chimney should not exceed that of the body of the shaft or flue above it. Thus, of the flue above specified, the area is 144 square inches, from which we find, by dividing 144 by 4, that the width of the throat should not exceed 36 inches. The throat can be enlarged for cleaning, by having a movable piece of soapstone or fire-brick *c* at the top of the back. Having thus disposed of the fire-place and throat, we will now proceed to the contraction of the top of the flue. The rule, founded on experiment, for doing this, is to lessen the sectional area by about one-third of its dimensions: thus, in a 12 by 12-inch flue, the area being 144 square inches, the contraction would be 48 inches, reducing the area of the flue to 96 inches, or to a little less than 10 by 10 inches. This precaution is only necessary where there is a likelihood of a downward current, the contraction of the throat, as already described, being found sufficient in most situations. If, on experiment, this contraction of the top is deemed necessary, it is easily performed, either by removing and replacing a few bricks, or fixing on the top of the flue an architectural terra-cotta chimney shaft, hereafter described in this work.

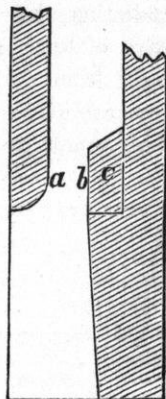


FIG. 86.

The great abundance of coal in some districts, and the facility with which it is transported to others, will for all time to come insure its extensive use as fuel in the simplest method, by burning in grates. For many reasons, we have occasionally recommended the use of the "low-down grate." The advantages claimed for it are, that the ashes are disposed of without any trouble, by falling into an ash-pit in the cellar, and that it is more convenient for warming the feet, etc. The latter is a doubtful advantage. While it is true that a person may warm his feet very quickly by the low-down grate, it is an error to suppose that the floor of the room, or the lower stratum of air within the room, can possibly be as well warmed by a fire on its own level as by one placed a few inches above the floor line. A little explanation may

make this clear. All the warmth communicated to an apartment by grate, stove, or open fire-place is derived from the fire by radiation, that is, by the projection from that source of divergent rays of heat, as a room is lighted by radiation of the rays of light from a candle; and it is worthy of observation that these rays are given off with equal force or strength in every direction. This much premised, our diagram will be understood. Suppose

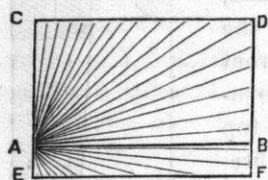


Fig. 87.

C a room, the ceiling line of which is represented at C D, and the floor line at E F, with the fire placed at the point A. The floor receives a fair share of the direct radiation from the fire, and consequently soon acquires a considerable degree of warmth, promotive of the general comfort of the room, unless strong cur-

rents from beneath the doors or defective skirting prevail. Now, if we place the floor at A B, it cannot become warm to any distance beyond the hearth, except by secondary radiation, or rather reflection from the walls and ceiling, the influence of which is weak, as compared with that of the direct rays from the original source.

The subject of consuming smoke has had considerable attention at the hands of reformers in this department. Dr. Franklin conceived the idea of feeding the fire from below. He undertook to do this by fixing the grate bars to revolve as a cylinder. Having placed the charge of coal on the top, the fire was immediately inverted, by giving the cylinder a half revolution. This is the first effort of the kind on record, and since Dr. Franklin's time numerous attempts have been made to accomplish the same object, of all which we shall only notice the invention of Dr. Arnott, which he calls a "smokeless grate." In this the grate somewhat resembles an ordinary grate, but is placed some 18 or 20 inches from the hearth, and has beneath it a coal-box, which is charged at a door of its full width at the top, falling outward. This box has a movable bottom, and, as combustion proceeds, this bottom is raised by a piston having notches, in which the ordinary poker may be used as a lever. The coal-box is so proportioned to the grate as not to need replenishing through the day; but if, on any account, this should become necessary, it is easily accomplished, by merely inserting a broad shovel beneath the fire, which forms a temporary

bottom to the grate, and allows the opening of the coal-box door, and the filling is quickly done. How far this last-mentioned grate is a success in England, we do not know. We have never seen anything of the kind in this country, but think the idea may be of great service to those who are closely interested in the improvement of warming apparatus. So great an improvement upon the ordinary grate would find a ready market in regions where bituminous coal abounds. In those sections where it is exclusively used for fuel, smoke consumers would be kindly welcomed, and we hope to see the day when Pittsburg, and some others of its Western kindred, will no longer be enveloped in the thick, pitchy cloud that now enshrouds them.

Count Rumford, whose authority in such matters is almost beyond question, declared that the greater part of all the heat generated in a common fire ascended the chimney with the smoke, and was therefore wasted, and in corroboration of this assertion cited the close stoves of the continent, which are used with a great comparative saving of fuel. In order to prevent this waste, Dr. Arnott suggests that the throat of the chimney over the grate be contracted, and have at its narrowest part a damper, by which the draught of the chimney can be kept under perfect control. The shaft of this damper may pass through the chimney-piece, or be concealed in the side of the jamb. A sort of compass-plate, however, should be arranged, to mark with certainty the degrees of opening. In connection with this, it is necessary to use a movable plate or hanging door, called a *blower*, by which the front opening of the fire-place can be enlarged or lessened. By a little attention, with these two agencies, the rate of combustion and the desirable brightness of the fire may be admirably governed and maintained.

Not the least great evil of the open fire-place and grate, as ordinarily constructed, is the deficiency in their heating and ventilating action, which, when properly considered, are known to have a great influence on health. The chimney throat above described being so contracted as to allow the passage of but a small volume of air, in comparison with what rises in the ordinary chimney, must greatly diminish the currents or draughts of cold air, from whatever inlets they may come; and as these are a fruitful cause of diseases, their almost total absence will be preventive of such liability. Nor will the heat once received by radiation on the

walls and floor of the room be quickly changed or carried away by such cold currents, but, on the contrary, will remain, and be more thoroughly diffused through the atmosphere of the whole room. To make the prevention of these draughts more perfect, a flue may be brought from the outside, beneath or within the floor, to deliver the air for the supply necessary to combustion at the hearth, where its temperature would be speedily changed, without discomfort to the inmates of the apartment. Another plan for the accomplishment of the same object, is to bring the air by a flue, as above mentioned, to a cell or compartment immediately behind the fire, and give it vent into the room at one side of the chimney breast.

In those sections of the country in which wood is used for fuel, in large fire-places, large flues should be built, say from 12 to 18 inches square. The throat in such cases should be contracted in the same proportion, while the back of the chimney should be built with a considerable inclination forward. No flue for an ordinary coal fire need be over 9 by 13 inches, nor the throat more than 4 by 13 inches. For anthracite fires, whether in stove or grate, no flue need exceed 9 by 9 inches.

But perhaps the most satisfactory mode of building flues yet practiced is to give them a circular form. This is done very rapidly and cheaply, by the use of a cylinder, such as any tin-smith can make, with a strong handle on one end, fig. 88. After the flue has been carried up in the usual manner to the height of at least two feet above the opening of the fire-place, this cylinder may be inserted. After two or three courses are laid, the mason takes it by the handle, and, turning it around at the same time, draws it up to the height of two or three courses more. It is necessary to build against it with a good supply of mortar, keeping the brick back from it at least half an



FIG. 88.

inch, which leaves, when the cylinder is drawn up, a smooth, straight flue. Flues in this form, from 8 to 10 inches in diameter, will be found large enough for any ordinary coal fire.

The subject of ventilation has of late years engaged a good deal of attention, but practice, so far, falls far behind theory. "Many volumes have been written and much rhetoric has been expended on the effort to show that lungs require fresh air. But, although this is a self-evident proposition, to any man, woman, or child who will give the subject a moment's consideration, it is lamentable to

perceive that this *moment's* consideration is seldom given, and that the common practice of ordinary house-building is in opposition to plain sense, as far as ventilation is concerned." Now, a man vitiates or renders unfit for breathing about three or four cubic feet of the atmosphere around him per minute. Nature, however, has beautifully provided means for the dissipation of the poison engendered by the passage of air through the respiratory organs: the air thus exhaled from the lungs being heated to the temperature of the human body—about 98° —immediately rises and gives place to fresh air. The great mass or ocean of air is no more contaminated by this, than would be the great Atlantic by spilling a bottle of ink upon its shores; and thus the animal portion of creation at large suffers no bad consequences from impurities of air produced by breathing. But, owing to the artificial habits of mankind, of which dwelling in close apartments seems a basis, a necessity immediately arises for suitable provision to meet the emergencies occasioned by those habits. In those primitive huts or tents in which the fire was kindled in or near the center, and the smoke allowed to escape by a hole at the apex, no further demand for means of ventilation existed; the vitiated air would mingle with the smoke or current of heated air from the fire, and so pass off harmless. We again quote Dr. Arnott, who invented, and thus describes a "ventilating valve."

"In sitting-rooms, bed-rooms, nurseries, and inclosed places generally, where people assemble, the impure air of the breath, the burned air from lights, the odor of dishes, etc., because heated, and therefore specifically lighter than common air, all ascend first toward the ceiling; but, as in ordinary rooms, no opening exists there for escape, (for an open window-top, in a room which has an open fire-place, only admits the cold air,) they soon contaminate the whole air of the room down to the level of the chimney mouth, through which only can any portion ultimately pass away. In this way arises great, though often unsuspected, injury to the health, and finally to the constitution, of the inmates. The pale faces and scrofulous constitutions of the inhabitants of towns, and of others who live much within doors, are mainly the effects of this evil. The ventilating valve is placed in an opening made from the room into the chimney flue, near the ceiling, by which all the noxious air above referred to is allowed at once, in obedience to the chimney draught, to pass away, but through which no smoke or air can

return. The valve is a metallic flap, close to the opening, balanced by a weight on an arm beyond the hinge. The weight may be screwed on its arm, to such a distance from the axis or center of motion that it shall exactly counterpoise the flap, but if a little farther off, it will just preponderate, and keep the flap, when not acted on by entering air, very softly in the closed position. Although the valve, therefore, be heavy and durable, a breath of air suffices to move it, which, if from the room, opens it, and if from the chimney, closes it; and when no such force interferes, it shuts. The valve is so adjusted, originally, as to settle always in the closed position. An important part of the arrangement is the wire, which descends like a bell-wire from the valve to a screw or peg fixed in the wall within reach of a person's hand, by acting on which the valve may be either entirely closed, or left free to open in any desired degree. In cold weather, or with a few persons in the room, the valve, when opened only a little, allows as much air to pass as is requisite. A flap of thirty-six square inches area is large enough, where there is good chimney draught, for a full-sized sitting-room with company.

"It is to be observed, that if the opening or throat of the chimney flue over the fire be so wide that more air can easily enter than can escape at the chimney top above, the chimney will not take air in also at the ventilating valve. It is essential, therefore, that, with ordinary grates, the register flap be so far closed that, when the fire is lighted, little more than the true smoke shall be allowed to

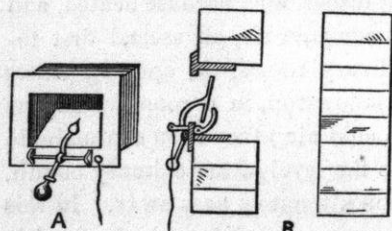


FIG. 89.

enter, and not also, as is usual, much of the pure air of the room escaping with it to waste. A second great fault in common fire-places, is the large space left between the fire and the chimney throat, in rising through which the true smoke contaminates much

good air, which must then be allowed to pass away as smoky air."

Fig. 89. A is a representation of the appearance of Arnott's chimney valve, while B is a section explaining the manner of its operation. The balance-weight could be adjusted over as well as beneath the valve. All attempts to conceal it, by placing it on the inside, have thus far been found to obstruct its proper work-

ing, as the balance is necessarily less perfect, and the hinge more difficult to keep clean.

We have now described the most simple and effective method of winter ventilation suitable for country houses, within our knowledge, but must not leave the subject without noticing summer ventilation. In the greater part of the United States, during several months of the year, it becomes as necessary to guard against excessive heat, as at other times to avoid excessive cold. This is mostly done by opening the windows, and variously modifying the strength and volume of the admitted current, by raising the lower sash or lowering the upper, by opening pivot blinds to various degrees, etc.,—modes which seem, if judiciously practiced, to be susceptible of no improvement in well-arranged houses. Hence the necessity for attention to the subject in the distribution and disposal of the various apartments in domestic building.

But sometimes in upper rooms, and particularly in garrets or half-stories, the heat generated by the action of the sun on the roof is not so easily displaced. This is especially the case in half-stories of back-buildings, where the height of wall between the roof and the floor is insufficient to allow the insertion of windows, and it is consequently impossible to establish a through current in any direction. Now, in order to prevent the accumulation of heated air in such rooms, it becomes necessary to adopt a system operating on the principle explained by fig. 90. Instead of plastering directly on the rafters, the ceiling is kept down a few inches, as at *a* and *b*. On the apex of the roof is placed a little covered ventilator, with Venetian slats in the sides to prevent the ingress of rain. This may be made more or less ornamental, as

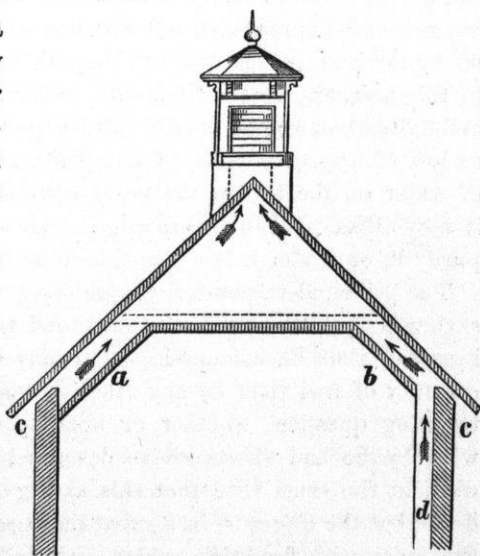


FIG. 90.

its prominency may demand. Small openings being made beneath the cornice *c*, for the admission of fresh air, to supply the vacuum occasioned by the departure of the heated air in the direction of the arrows, it is evident that in warm weather a constant current is maintained in the space between the roof and the ceiling, a medium which prevents the room beneath from becoming excessively heated. We have shown a flue *d*, which affords an excellent means of ventilating any closet, pantry, or store-room on the story beneath. The room over which this arrangement is proposed to be made should have a small valve in the highest part of the ceiling, and opposite to the gable windows at which the air is admitted. Garrets over good chambers are ventilated in this manner, greatly to the comfort of those who occupy the chambers. The openings required can be concealed in various ways, without interfering with their intended use.

We may now return to the subject of warming. We have observed, in some parts of the country, that cast-iron stoves are used to a considerable extent, with no lining to prevent them from becoming red hot. This is an error productive, particularly in close rooms, of the worst consequences. The air that comes in contact with an intensely heated iron surface is deprived of its oxygen, and impregnated more or less with noxious effluvia given off by the iron. Consequently, the inmates of close rooms, heated in this manner, are troubled with headache, debility, and all the evils attendant on the breathing of a poisonous atmosphere, such as loss of appetite, blanched complexions, etc. Nor will a boiler of water on the top of the stove counteract the evil; although it may diffuse moisture through the air of the room, it does not purify it, or render it less offensive to health.

The principal reason for the use of *close* stoves is based on the saving of fuel, it being well understood that a greater amount of heat can thus be communicated to any apartment with a given quantity of fuel than by any other means. It is therefore an interesting question, whether or not any method can be devised whereby the bad effects above described can be effectually remedied, at the same time that this saving of fuel is effected. No doubt but the object is, in a great measure, accomplished by lining the stove with fire-brick, which ordinarily prevents the exterior surface of the stove from attaining a red heat. It has been suggested, by very high authority, that a stove made with an internal

and external ring or thickness of iron, and the space between them filled with water, would be the most perfect for the diffusion of a healthy heat. We do not know that this has been attempted here, nor can we conceive why it should not be successful in the hands of the American inventor.

HOT-AIR FURNACES offer very convenient means of communicating warmth to a dwelling of almost any dimensions. This is effected by a furnace placed in the lower portion of the house, which, being duly provided with flues and registers, heats and distributes, through all parts of the establishment, a quantity of heated air, in proportion to its dimensions and the capacity of the air-chamber in which it is placed. A fundamental point in this system is the supply of pure air to this air-chamber, which in most cases should be provided by a duct or air-passage from that side of the house on which the air is likely to be the most pure and salubrious.

But the objection cited against stoves, when made with thin plates of metal without any lining to prevent them from becoming red hot, applies with equal force to a vast majority of hot-air furnaces now in use. It is therefore no wonder that often, after a trial of a few months, the furnace is discarded, and one of the old methods resorted to. Air delivered from a furnace should never exceed the temperature indicated by 120° Fahrenheit; where the heat reaches from 150° to 180° at the point of delivery, the effects are undoubtedly pernicious. The principle to be attended to in the construction of all hot-air furnaces is, to generate and communicate the greatest amount of heat with a given quantity of fuel, without producing any change in the breathing property of the air. In direct violation of this principle, however, we find, in many furnaces, the plate which acts as the principal generator, immediately over the fire, and consequently the lungs of the unfortunates who seek comfort from that fire are fed on *scorched* air. We believe that Mr. Chilson, of Boston, in his improved cone-furnace, has met with better success than any inventor who has yet asserted his claims to public notice. Not only is his furnace as free from the fault of delivering air too hot, as it seems possible for this class of furnace to be, but is worthy of attention on the score of economy. The fire-box has a lining of brick, and the heating surface is so extended, by means of a system of conical pipes, that the air, in passing over it, does not become violently heated. All rooms,

warmed by this or any other furnace, should be provided with ventilating registers, both at floor and ceiling, the opening and closing of which are placed at the command of the inmates, by means of handles, cord and tassels.

Heating by hot water, although expensive, is probably more favorable to health than any furnace system that has yet appeared. Mr. T. Tasker, of Philadelphia, has perfected the most complete apparatus that we have ever seen. It is styled "Tasker's Self-regulating Hot-water Furnace," from the fact that, being once set for the production of a given temperature, it only has to be supplied with fuel and water, at long intervals, to maintain that temperature. Our limits will not permit us to describe this ingenious invention in full, (a complete description, with illustrative drawings, may be found in our "City and Suburban Architecture,") but having tested it for four years in our own residence, we here take occasion to express our unqualified approbation of its action as a mechanical contrivance and a generator of a pleasant and salubrious heat.

A good deal of inventive talent has been expended on experimental trials with steam as an agent for the diffusion of genial warmth through dwelling apartments; but all the inventions of this kind that have yet met our observation seem to be devoid of the elements necessary to render them favorites with the public. They are successfully applied to public buildings, hotels, hospitals, etc., but their construction and operation being attended with heavy cost and more or less danger, we know of none that we could recommend in unqualified terms for warming country houses.

DESIGN XXII.
 Suburban Residence.



FIG. 91.

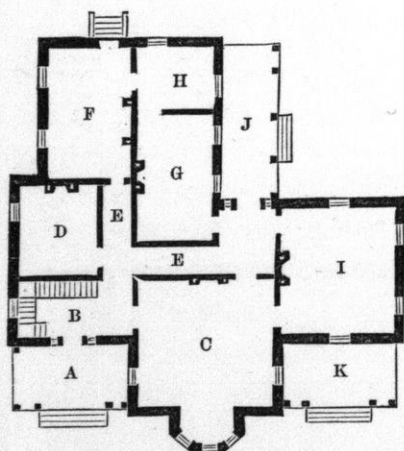


FIG. 92.—PRINCIPAL FLOOR.

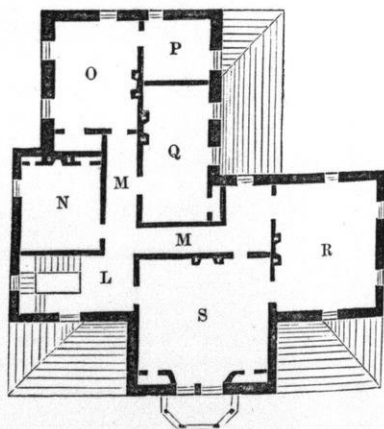


FIG. 93.—SECOND FLOOR.

DESIGN XXII.

Suburban Residence.

THE individuality of this design, as a feature in the landscape, would be too prominent for a strictly rural residence, for which reason we use the term *Suburban*, impressed as we are with the feeling that there is a happy medium to be found betwixt the strictly Urban and Rural, entitled to be called Suburban. Too little attention has generally been awarded to these distinctions by the designer and proprietor, and the consequence is that we sometimes see the oblong, poly-storied residence located outside of city limits, much to the horror of its country neighbors.

Although this design does not strictly belong to any of the historical divisions of style, a little examination will show that the elements of style have not been overlooked or violated in its composition. Horizontal lines seem to prevail, and yet there is a pervading spirit of irregularity and novelty in the details which dissipates at once all ideas of the Grecian character. But the unity and harmony manifested in the composition amply compensate for the want of precedent, and we hope our readers will favor it none the less because it cannot be directly referred to some Gothic or Grecian model.

ACCOMMODATION.—On the principal floor, fig. 92, A is the entrance veranda, and B the main hall containing the staircase. Two passages E, branch off from this

at right angles to each other, by which ready communication is had with the rear entrance and domestic offices. A square parlor C, 20 by 20 feet, occupies the central front projection, and can boast of a very pretty octagonal bay-window. A library 10 by 12 feet, designated by the letter D, is very conveniently situated near the entrance hall. I, a sitting-room, 16 by 18 feet, adjoining the parlor, is entered from the passage C or the back veranda I, through a well-lighted vestibule. K, a veranda adjoining the sitting-room and parlor, is entered from both by lengthened windows. F is the kitchen, 10 by 20 feet, and G the dining-room, 14 by 18 feet; these apartments communicate through a pantry H, 10 by 14 feet.

On inspection of the chamber floor, fig. 93, we find the stair landing, designated by L, with branch passages M, through which communication may be had with all the chambers. S is the best of these, but N, O, Q, and R, particularly the latter, are very desirable rooms. P may be used as a dress-room or converted into a bath-room.

CONSTRUCTION.—The walls of this design are intended to be of rubble-stone, or, as it is sometimes termed, Cyclopean masonry; the coins only as represented in the drawing, fig. 91, to be squared and smoothly dressed. The roof-pitch is such as to admit of slate or shingles for covering.

ESTIMATE.—Under favorable circumstances, the cost of this design would be about \$6500.

DESIGN XXIII.

Cottage in the Rural Gothic Style.

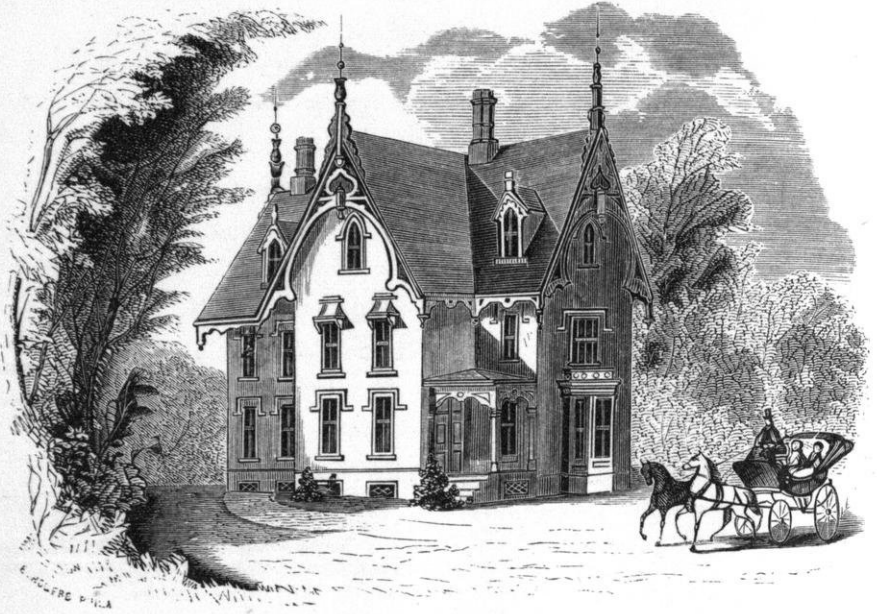


FIG. 94.

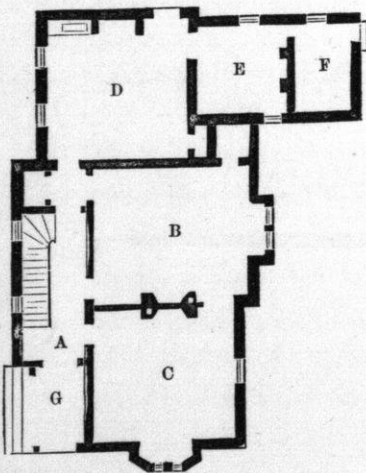


FIG. 95.—PRINCIPAL FLOOR.

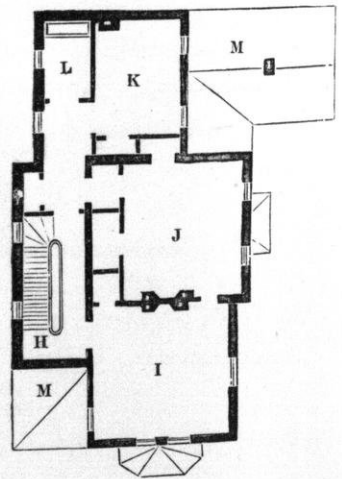


FIG. 96.—SECOND FLOOR.

DESIGN XXIII.

Cottage in the Rural Gothic Style.

WHILE we have endeavored to concentrate within moderate limits the necessary conveniences of a comfortable mode of living for the occupants, we have not neglected the outward expression of taste that contributes so largely to the pleasure of the beholder. A plain building, by a few, simple, well-directed touches, can thus be invested with a character approaching the ornate. A brief analysis of the design before us will attest the truth of the above remark. Remove first the barge and eave treatment, and we destroy at once the *polish* of the expression; but take away the pinnacles, and we greatly weaken the expression itself, almost entirely depriving it of that piquancy that strikes us so forcibly in the present view. The analysis might be pushed further, to the consideration of the effect of removing dormers, changing the style of chimney tops, etc.; but we have said enough to show what

“Great effects from little causes flow.”

ACCOMMODATION.—The internal arrangements of this dwelling are so plainly exhibited on the plan of principal floor, fig. 95, as scarcely to need explanation. G is an open entrance porch. A, 8 by 16 feet, is the entrance hall, and contains a flight of stairs. B, 16 by 18 feet, is the dining-room, lighted by a recessed

twin window, and having an ample china closet attached. The parlor C, 16 by 16 feet, has a nice bay-window, but would be improved by a window extending to the floor on the side next to the entrance porch, an idea not fully conveyed by the engraving. The kitchen D, 16 by 16 feet, is well lighted, and provided with sink, side entrance, and small closet. Adjoining the kitchen there is a wash-house, 11 by 12 feet, and beyond this a wood-house or pump-room F, 7 by 12 feet, having outdoor communication independent of the kitchen.

Ascending to the second floor, fig. 96, we find the stair landing, marked by the letter H, from which we have ready access to the chambers I and J, and to the bed-room K and bath-room L. The chambers, as will be seen, are all furnished with good closets.

Four small sleeping-rooms, lighted by dormer and gable windows, and ventilated in the manner explained by fig. 90, may be fitted up in the space afforded by the pitch of the roof.

CONSTRUCTION.—A very pretty effect would be secured by building this cottage of wood, the weatherboarding being put on in the vertical manner, and the joints battened after one of the methods explained at fig. 8. The gable and eave cornice should be cut from 3-inch plank, in a bold manner, and also the ornament against the base of the pinnacles.

ESTIMATE.—Built of wood, in the manner above described, the cost of this design would not vary much from \$3000, where timber is plenty; built of stone, and the walls furred inside for plastering, \$500 should be added.

DESIGNS XXIV, XXV.

Plain Model Cottages.



FIG. 97.

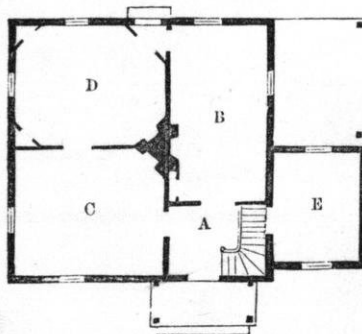


FIG. 98.—PRINCIPAL FLOOR.

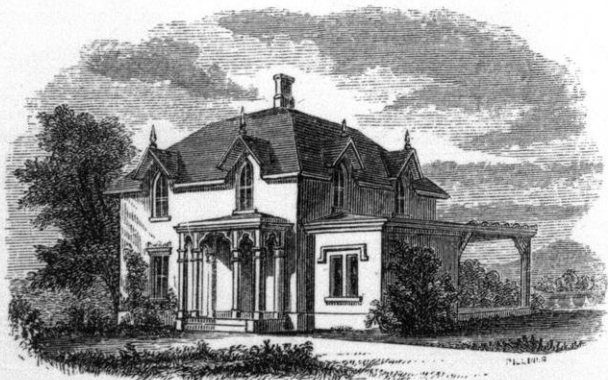


FIG. 99.*

DESIGNS XXIV. AND XXV.

Plain Model Cottages.

THESE designs are presented to show how much convenience can be obtained in the least possible space. Every inch of room is here pressed into service, and from this example it will be readily perceived how much more economical is the cube than the parallelogram or any irregular form that can be applied to building. We feel perfectly safe in offering these as models for cheap and convenient cottages, without any effort at display. It is just the arrangement that thousands in this country want. With a little addition to the outlay, the cornice of Design XXIV. might be bracketed, and Venetian blinds given to the windows, by which the external appearance would be greatly benefited. Design XXV. is a more picturesque elevation of the same plan.

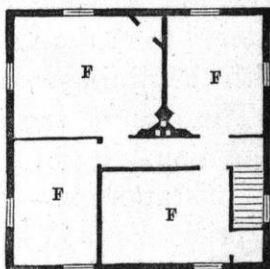


FIG. 99.—SECOND FLOOR.

ACCOMMODATION.—The internal arrangements are very simple. By referring to the plan of the first floor, fig. 98, it will be seen that A is an entrance vestibule containing a simple flight of stairs. The apartment B, 11 by 20 feet, is intended for a living-room or dining-room, it being supposed that the

cooking will be carried on in the small room E, by means of the ordinary cooking-stove. It will be observed, however, that the room D, 16 by 14 feet, has been arranged for a dining-room, being provided with corner closets, by which it is brought almost to the regular octagon form, and favorable to the use of the circular cottage dining-table. By this arrangement, a rear lobby is formed through which these rooms are separately entered. E, a room 10 by 12 feet, may be used for the purpose above named or as a sleeping-room; in the former case, however, the communicating door should be to B instead of to A, as at present. A snug little parlor C, 16 by 14 feet, is entered from the vestibule A, and also communicates with the dining-room.

The plan of the second floor, fig. 99, needs no explanation.

CONSTRUCTION.—This cottage is intended to be built of brick or rough stone, and stuccoed, and the surface faintly lined off in imitation of range-work. If built of wood, it should be weather-boarded in the horizontal manner, with corner strips and dressings, about 6 inches wide, to the openings.

The roof is intended for shingles, although the pitch represented in the view of Design XXIV. appears low for that material; as a caution to the builder, we may remark that shingles should never be laid on a roof the rise of which is less than indicated by an angle of 30 degrees, or about one-fifth of the span.

ESTIMATE.—Without cellar, the cost of these cottages, where stone is convenient, would be about \$700 or \$800; for cellar under the whole, \$50 should be added.

DESIGN XXVI.

Northern Cottage—Gothic Style.



FIG. 100.

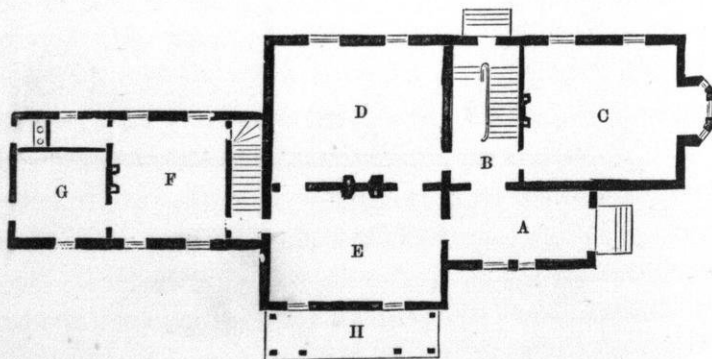


FIG. 101.—PRINCIPAL FLOOR.

DESIGN XXVI.

Northern Cottage—Gothic Style.

THE chief merit of this cottage, architecturally speaking, centers in its picturesque outline and an expression of bold independence. It would be at home in the fertile valley or on the rugged mountain; to the former it would give a quickening touch of life and animation, and it would blend harmoniously in the *tout-ensemble* of the latter.

ACCOMMODATION.—The inclosed porch, 8 by 16 feet, designated by the letter A, fig. 101, and fairly understood by reference to the elevation, fig. 100, is a feature of great value in our climate, defending as it does the entrance doors from the storms of winter, and furnishing a pleasant lounging place in summer. The staircase hall B is 8 by 16 feet. C, 18 by 16 feet, will be immediately recognized as the drawing-room; a triple bay adds greatly to the interest and beauty of this apartment. The sitting-room D is also 18 by 16 feet, and communicates with the hall and dining-room, making it very convenient for the reception of company from either, it being customary in the country to entertain company in the family sitting-room, where formality may be dispensed with, and an atmosphere more congenial to country life and habits indulged in. The dining-room E is 18 by 13 feet. Passing through to F, the kitchen, 12 by 14 feet, we find a flight of private stairs, with steps to the cellar

beneath, and also a good kitchen closet or *lock-up*, and beyond the kitchen an out-building G, of one story in height.

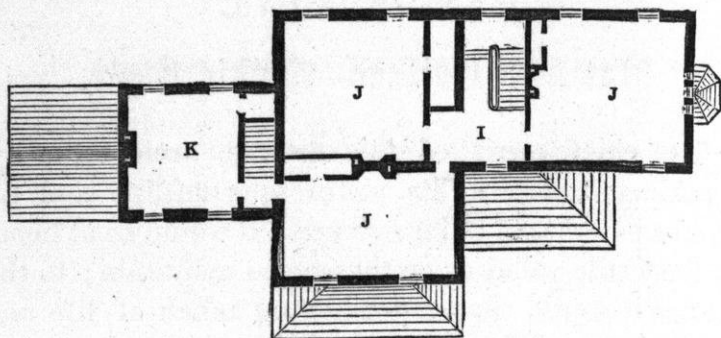
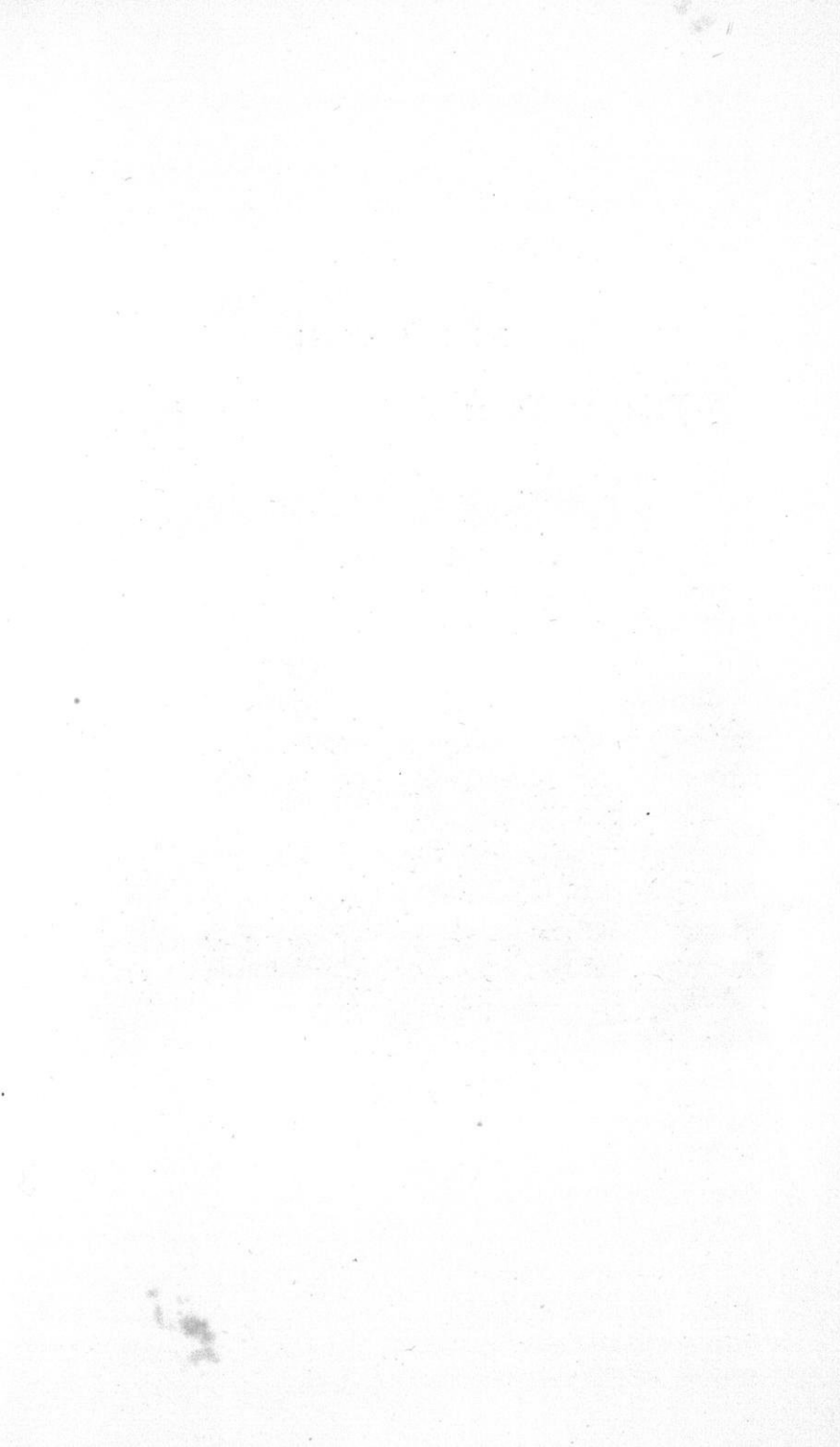


FIG. 102.—CHAMBER FLOOR.

On the second floor, fig. 102, I is a lobby or stair landing, from which three excellent chambers J, are entered. A bed-room K, over the kitchen, is reached by the private stairs.

CONSTRUCTION.—Merely elevation enough to clear the floor joists from danger of sudden decay should be given to the principal floor of this design. The walls are intended to be built of rubble-stone, and pointed; of course the precaution of furring-off of the plastering is not, in such a case, to be neglected on any account. The roof requires slate, cut in various forms, as will be observed by reference to fig. 100, and fully understood by an examination of the details shown in the "Hints on Construction."

ESTIMATE.—It is impossible to give precise estimates for buildings of this class without a detailed specification. The one before us could, under favorable circumstances, be built for about \$1500 or \$2000.



DESIGN XXVII.

Lake or River Villa—Italian Style.

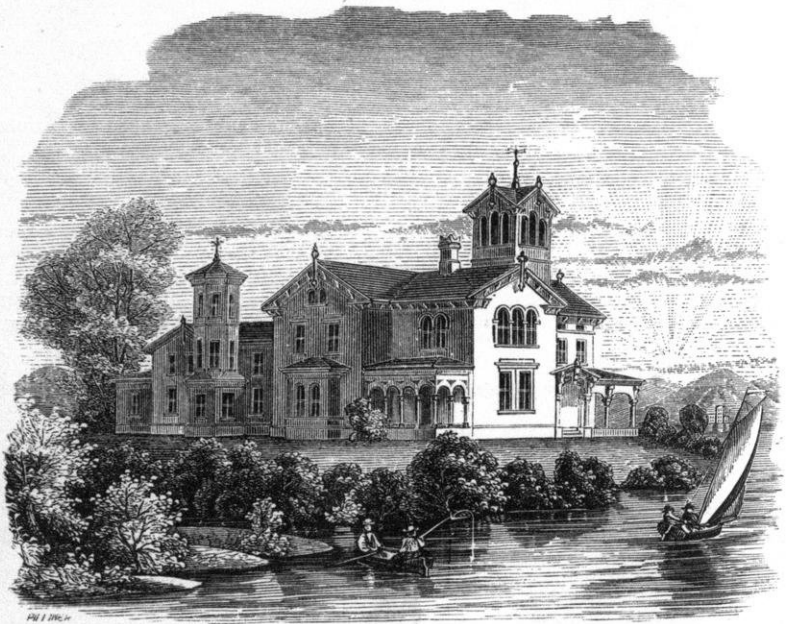


Fig. 103.

FIG. 103.

DESIGN XXVII.

A Lake or River Villa in the Italian Style.

“THE villa architecture of modern Italy,” says Mr. Lamb, an English architect of ability, “is characterized, when on a moderate scale, by scattered, irregular masses, great contrasts of light and shade, broken and plain surface, and a great variety of outline against the sky. The blank wall on which the eye sometimes reposes; the towering campanile, boldly contrasted with the horizontal line of roof, only broken by a few straggling chimney tops; the row of equal-sized, closely-placed windows, contrasting with the plain space and single window of the projecting balcony; the prominent portico, the continued arcade, the terraces, and the variously formed and disposed out-buildings, all combine to form that picturesque whole which distinguishes the modern Italian villa from every other.”

In Italy the roofs are covered with tiles of semi-cylindrical form, which give that feature of the building a distinct and strongly-marked expression. As tiles of this sort are not used in this country, a somewhat similar appearance may be produced, when tin is the material employed for covering, by laying strips or rolls of wood on the roof sheathing at intervals of a few inches, in a vertical direction, and setting the tin closely over them.

The design before us, fig. 103, is an illustration of what Mr. Downing calls *irregular symmetry*; and one cannot help being struck with the boldness of repose evident in the balance of parts thus attempted, regardless of the regular form of counterpoise exhibited by a center and equal wings. There is an ease and gracefulness of expression, combined with rural fitness, that cannot be attained in a more regular form of building. An advantage of the Italian style over the Grecian mode is, that additions can be readily made at any time, and often with great improvement on the original structure. It may be readily imagined that the small tower and all beyond it in the view have been an addition to the front or high portion of the building, and we think our readers will agree with us in pronouncing it far from discordant or unpleasing, being only a further development of the beauty already attained; as in music, the original melody can be rendered more attractive by a great number of harmonious variations. This is a very strong point of superiority in the Italian over the Grecian style, considered with reference to American building. Hundreds of persons of moderate fortune desire to improve their residences at a future period, and by adopting a design in this style, a little foresight leaves everything in a favorable state for additions, with, at the same time, an appearance of present completeness.

ACCOMMODATION.—We will now proceed to examine some of the interior arrangements, as illustrated by fig. 104; principal floor. A is a front piazza, through which the entrance to the vestibule B and main hall G is effected. On the left of the hall is the dining-

room C, 20 by 27 feet, having a recessed window, and the very convenient appendage—a china closet. The drawing-room D is 27 by 20 feet, and can boast of a very pleasant circular bay-window. E is a sitting-

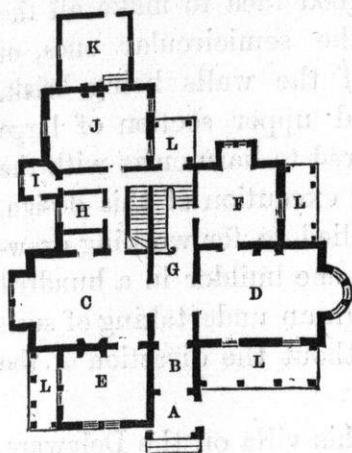


FIG. 104.—PRINCIPAL FLOOR.

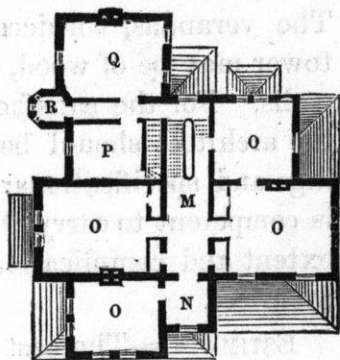


FIG. 105.—SECOND FLOOR.

room, 15 by 20 feet, very finely situated for viewing the country around, having twin windows in two sides; those opening to the veranda L should extend to the floor. The library F is 18 by 18 feet, and also has an adjoining veranda L, accessible by the lengthened window. H is a butler's pantry. The kitchen J, 24 by 16 feet, is disconnected with the main dwelling apartments by a passage from the side tower through to the main hall. A passage at right angles with this is the butler's thoroughfare, through which all communication from the kitchen to the dining-room is carried on. Beyond the kitchen is an out-building with paved floor, the uses of which will readily suggest themselves.

On the second floor, fig. 105, there are four fine

chambers O. M is the hall, P and Q bed-rooms, and R a water-closet.

CONSTRUCTION.—This design is intended to be built of solid materials, brick or stone being equally suitable. It would be a very good idea to make all the window-heads, including the semicircular ones, of stone, even in the event of the walls being brick. The verandas, cornices, and upper section of large tower may be of wood, colored to harmonize with the walls. For the satisfactory execution of this design, the architect should be applied to for working drawings and specifications; not one builder in a hundred is competent to carry through an undertaking of such extent and complication without the direction of the architect.

ESTIMATE.—The cost of this villa on the Delaware, if built of brick, with dressings of Trenton sandstone, would be about \$12,000.



DESIGN XXVIII.

Large Northern Farm House.



FIG. 103.

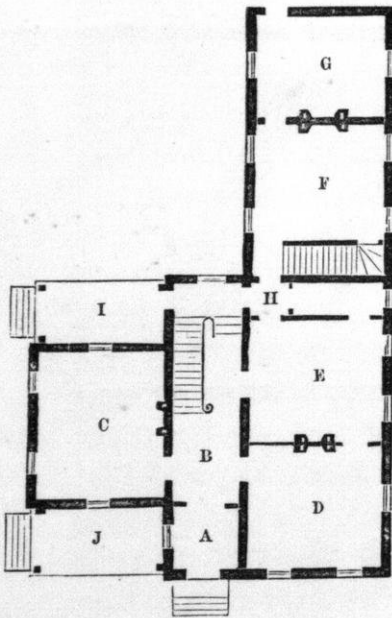


FIG. 107.—PRINCIPAL FLOOR.

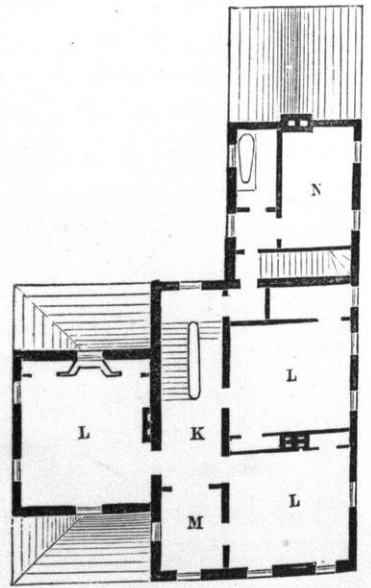


FIG. 108.—SECOND FLOOR.

DESIGN XXVIII.

A Large Northern Farm-House.

THE principal merit of this design rests in its bold expression of purpose. With very little pretension to architectural style, its exterior is still harmonious and tasteful, and cannot therefore be said to be *un-architectural*. It has a rustic sort of beauty that properly belongs to the residence of the farmer—not a beauty derived from neat and careful finish, but from large surfaces and strong projections, and which is more generally pleasing to the eye not cultivated to nice distinctions, than a greater amount of elaboration. And perhaps the reason of this is, that it requires no study to render it intelligible; it speaks, like nature, a language for all, and all understand it and are satisfied.

This house is of course intended for the farmer who has successfully maintained the struggle for a competence through which it is the lot of many to pass, and has reached a condition of life familiarly spoken of as “easy circumstances.” Still the business of the farm must be carried on, and no one can attend to it better than himself. While he is, in one sense, more at leisure than formerly, his mind and eyes are not less active, and several years must elapse before the son can be entrusted with the post that the father has held so long with success. What is more reason-

able than that he should enjoy, during his declining years, the fruits of his early labors, and leave a heritage to his successor that may be a becoming homestead for future generations!

Few such are to be found in our farming districts: too little care in building furnishes no warrant against premature dilapidation, and the consequence is, that the lapse of a few years witnesses the crumbling of walls, decaying of timbers, and a close approximation to utter worthlessness. Against such disasters as these, the builder cannot too sedulously guard. The intelligence of the farmer ought to go hand-in-hand with that of the builder, to prevent the flight of a few years from so fearfully affecting their joint labors. Deficient foundations are often the cause of unsightly and sometimes fatal breaches in the walls. In some instances, perhaps, all skill and foresight may be expended on these in vain; but we are inclined to think such instances very rare indeed. In Northern countries, foundation walls are frequently affected by severe cold; the frost getting beneath walls invariably produces bad results. The remedy for this is to sink the trenches deeper; as a general rule, the depth should not be less than three feet below the surface of the ground. It will be observed, however, that the depth to which the ground freezes varies greatly in different locations, and a certain knowledge of the peculiarity in this respect of a given site should always have due weight with those concerned in building. It being most advisable to keep on the safe side in any enterprise, we should favor no exception from the rule in this. Again, for want of a little care in projecting and cementing the footing courses,

the walls frequently suffer from the burrowing of vermin. The remedy for this is to project a footing course on each side of the wall, to the width of four or six inches, and fill all the interstices with liquid mortar; animals attempting to burrow beneath a wall enter close alongside of the base, but they meet an impenetrable barrier in the projection above described. Such projections as these are very necessary in yielding ground, forming as they do a wider base for the support of the superincumbent wall, and distributing the weight over a greater amount of bearing surface.

Sometimes, in building country houses, it happens that the proprietor of the land has timber of his own available for carpentry, that is, for joists, rafters, studding, etc.; indeed, in well-timbered regions, such as are found in parts of nearly all the States, a man may build a very fine house without the importation of any portion of the wood, either for the framing or joinery. In connection with this fact, it is proper to say that too much attention cannot be given to seasoning all wood intended to enter into the construction either of skeleton or finish of dwelling-houses. We have sometimes seen trees cut down, sawed up, and the joists and scantling made from them performing their office within the lapse of a single week. This is a very great error, and those who commit it are only to be excused on the ground of urgent necessity. All timber should have a full year to season in, after leaving the saw-mill; and in order to insure the most thorough seasoning, all the advantages of a free circulation of air should be given it, by inserting cross-slats or "sticks" between the different layers of scantling or plank, after the well-

known method practiced by country cabinet-makers. All these slats should lie perpendicularly over each other, and should not be less than six feet apart in the length of the board; the foundation having been carefully leveled, the straightness of the plank is one of the desirable results of this kind of management. Another point is to prevent the cracking or "splitting" of the plank at the ends, for which there is no more simple or effective remedy than placing the slats close to the ends while the piling is going on.

Sometimes kiln-drying is resorted to, but this is attended with several objections; the wood thus dried is much harder to work, and does not afterward resist so well the effects of atmospheric changes as that which has undergone the course of weather-seasoning already prescribed. But we must now turn our attention to the design before us and describe its various properties.

APARTMENTS.—Beginning our examination at the principal floor, fig. 107, we find a vestibule A opening into a hall B, 9 feet wide, which contains the stairs, and affords direct communication with the three principal rooms, C, D, E, with the rear veranda I, and through the lobby H to the back building. The apartment C, 18 by 20 feet, is assumed, from its size and evident relations to the others, to be the best in the house, and therefore takes the title of parlor or drawing-room, according to the fancy of the proprietress, than whom none has a better right to decide in such matters; so far as the *dictum* of the architect may be listened to, it is worthy of either name, the propriety of one or the other being determined rather by

the habits of the family than by any peculiar property of the room. *Parlor* has the most domestic sound, and probably ought to be preferred in all houses below the grade of a fashionable villa.

On the right of the hall we have D, 18 by 18 feet, which may be considered as a sort of better sitting-room, in which a moderate company may be entertained without opening the parlor. E, also 18 by 18 feet, is intended for the family sitting-room, and may be used for a dining-room when there is company present. F, 18 by 18 feet, is the living-room or family dining-room; and G, 18 by 16 feet, is the kitchen. An out-building should be here attached, but the size of the plate would not admit its being shown. From the living-room a flight of private stairs communicates with a lobby on a level with the half-pace of the main stairs, and the second floor of the back building.

Fig. 108 shows the divisions of the chamber floor. K is the hall; L, chambers, all having good closets; M, a dressing-room; and N, a bed-room. The bath-room adjacent is to be supplied with water from a tank in the loft. By means of a circulating boiler attached to the kitchen range a supply of warm water can be constantly had for bathing purposes, and is equally desirable in carrying on the culinary operations.

CONSTRUCTION.—This house is intended to be rough-cast on a rough walling of brick or stone. The great projection of the roof is particularly favorable to this treatment of the exterior. Outside blinds are a very valuable item in the finish of this house; but these are seldom shown in drawings on a small scale, as they detract from the appearance of the picture,

while they are well known to have a contrary effect in execution. The roof of this dwelling may be slate or shingles, as the pitch suits either, and the diamond or hexagon form might be introduced with happy effect.

ESTIMATE.—So much depends on the mode of carrying on a building, and the local cost of the materials required, that it is impossible to put down a fixed estimate. The cost of this design in our own neighborhood would not vary much from \$4000.

DESIGN XXIX.

Country House—Gothic Style.



FIG. 100.

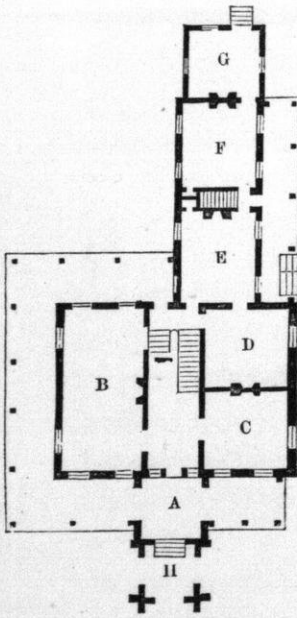


FIG. 110.—PRINCIPAL FLOOR.

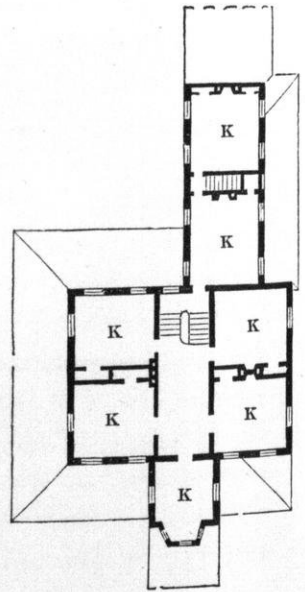


FIG. 111.—SECOND FLOOR. (220)

DESIGN XXIX.

Country House—Gothic Style.

THIS rather unpretending yet very animated design conveys very emphatically the idea of *home*, without regard to climate or location; and on examination, the internal arrangements will be found equally suitable for a Northern or a Southern residence. Its aspect is suggestive of ease and independence in the life of the proprietor, who, by this token, may have abandoned the pursuit of business and betaken himself to the enjoyment of social and domestic pleasure.

It certainly manifests a great amount of domestic feeling, and if it be allowed that there should be an evident sympathy between ourselves and the homes we dwell in, we cannot be far wrong in assigning the proprietorship of this dwelling to the retired merchant or literary connoisseur.

APARTMENTS.—Fig. 110 represents the principal floor, H being a carriage-drive and A a continuous veranda around three sides of the house. Entering through a hall 9 feet in width, we find an excellent drawing-room B, 16 by 30 feet, the chief merits of which consist in its amplitude and symmetrical form. On the right of the hall C, 15 by 16 feet, is an excellent sitting or reception room, and D, of the same dimensions, may be used either for a chamber or library; if for a library or family sitting-room, an-

other window should be given. The dining-room, 14 by 18 feet, (marked E,) is very well situated, being entered directly from the main hall, and having communication through a small lobby with the side veranda and with the kitchen F on the rear. This kitchen is 14 by 15 feet, and has connected with it an out kitchen of 12 by 12 feet. Six large chambers and a smaller one, all marked K, furnish a rare amount of sleeping room, on the second floor, fig. 111.

CONSTRUCTION.—Although this house, with a great deal of propriety, may be constructed of wood, it is preferable to make use of more permanent materials. Rubble-stone covered with rough-cast would be a very economical and satisfactory method of building the walls. A shingle or slate covering would suit the pitch better than any other.

ESTIMATE.—We put the cost of this design, under ordinary circumstances, at \$4000.

DESIGN XXX.
Irregular Country House.



FIG. 112.

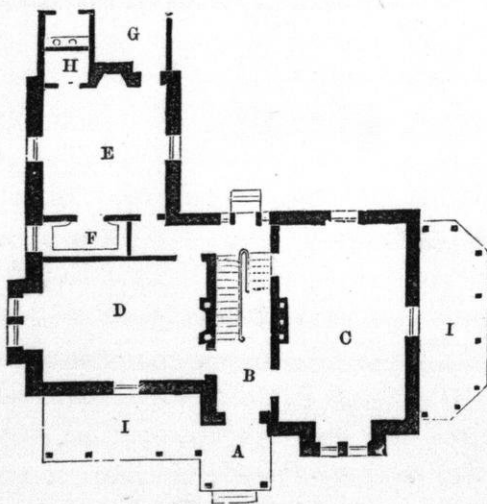


FIG. 113.—PRINCIPAL FLOOR.

DESIGN XXX.

An Irregular Country House.

IRREGULAR in plan and general outline, yet neat and chaste in detail, the design before us is a fair type of the beauty that may be attained without a tendency to extravagance in the exterior adornment of an edifice springing from an irregular basis.

ACCOMMODATION.—By a reference to fig. 113, the plan of first floor, the internal arrangements will be perceived almost at a glance. A through hall B, is entered from the piazza A. This hall contains the stairs, and affords access, by a side passage, to the kitchen E. The parlor C is 15 by 30 feet, and has a rectangular bay window, communicating by a lengthened window with the veranda I. The dining-room D has also a bay window, seen in the perspective view, which, by the way, is reversed from the plan. F is the butler's pantry, G a wood-shed, and H a kitchen closet.

The plan of the second floor exhibits the arrangement of the chambers. K is the landing of the stairs in the front building, from which the three chambers L are entered, and from which also the stairs are continued to the roof-story, in which three very comfortable bed-rooms may be fitted up.

A passage from the half-landing of the stairs leads

to the bath-room M and the adjoining bed-room N, over the kitchen.

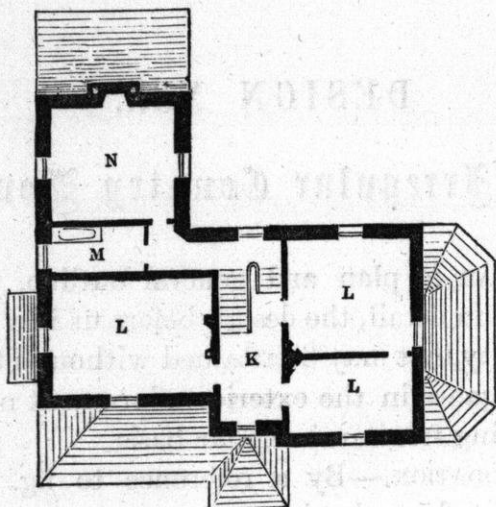


FIG. 114.—SECOND FLOOR.

This house could be very efficiently warmed by a single furnace, the proximity of the flues being quite favorable to that mode: the hall, parlor, and dining-room, and the three chambers over, could all be kept comfortably warm, as the central position of the flues involves but little loss of heat.

CONSTRUCTION.—This design admits with equal facility the use of wood or more solid materials. The thickness of walls, as drawn, indicates the use of stone, which, in many districts, is the cheapest material. The pitch of the roof seems to demand shingle or slate; the drawing represents them of varied form.

ESTIMATE.—Built of stone and rough-cast in a neat, careful manner, and all the workmanship substantial and well finished, the cost of this house, in Pennsylvania or Ohio, will not vary much from \$3500.

DESIGN XXXI.

Anglo-French Villa.



FIG. 115.

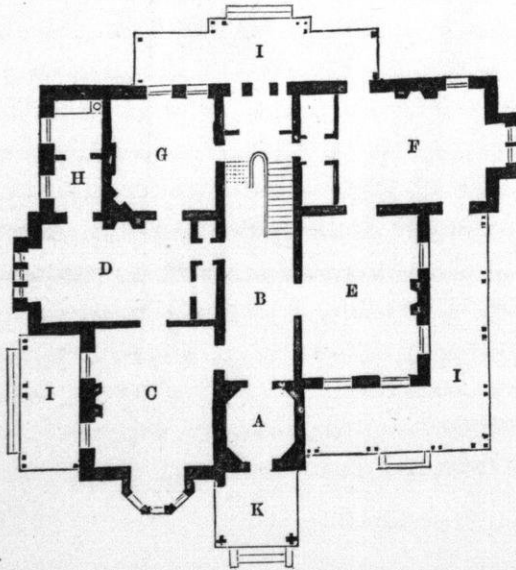


FIG. 116.—PRINCIPAL FLOOR.

DESIGN XXXI.

An Anglo-French Villa.

WE have sought in this instance to combine some of the prominent characteristics of French with the rustic irregularity of English Domestic Architecture, and congratulate ourselves that we have been tolerably successful.

The effects manifested in fig. 115 are worthy of the attention of every designer who aims to produce anything beyond commonplace results. A study of this example will convince him that bold projections alone are not really productive of all that is desirable in architectural compositions. Light and shade are the elements of pleasing effect; but these elements require peculiar treatment, as the euphonious sounds given forth by a musical instrument require the skill of a performer to weave them into melody.

ACCOMMODATION.—Fig. 116 is the plan of the principal floor. The entrance to the main hall B is effected through the veranda K and the tower A. C is a parlor, 17 by 22 feet, and D a family-room, 16 by 22 feet, the former having an octagonal and the latter a right-angled bay-window. E is a very good drawing-room, and F a dining-room, each being 17 by 24 feet. G is a library, 16 by 17 feet; H, a lobby to private bath-room; I, verandas. The *domestic offices*, such as kitchen, wash-house, etc., are supposed to be disconnected from the main building, except by an open

covered way. Altogether, this would make a very good Southern residence.

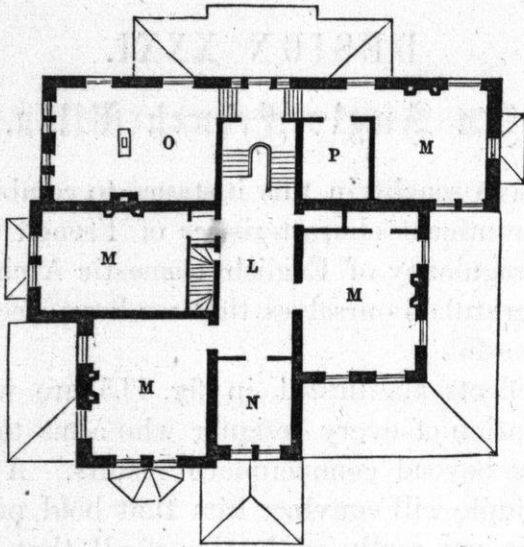


FIG. 117.—SECOND FLOOR.

On the second floor, fig. 117, L denotes the main hall; M, the best chambers; N is a dressing-room; O, a large sleeping-room; P, a wardrobe. It will be seen that the two latter apartments are entered by side flights from the half-landing of the stairs. A flight of stairs leads from the main hall to the roof-story, which contains several good bed-rooms.

CONSTRUCTION.—As will be perceived at a glance, this building is intended to be erected of stone, and roofed with slate. The verandas may be wood or iron; the latter material is preferable, if the limits of the intended cost will permit its use.

ESTIMATE.—The cost of this design may be variously estimated at from \$18,000 to \$20,000, according to the section of country in which it may be erected.



DESIGN XXXII.

Large Country House—Italian Style.



FIG 118

DESIGN XXXII.

Large Country-House—Italian Style.

THE frequent recurrence in this work of designs in the Italian style will no doubt lead our readers to conclude that we are exceedingly partial to that mode of building. Such a conclusion would be eminently just. And we think the designs presented will do much to imbue the minds of our readers with the same prejudices in its favor.

The scene before us, fig. 118, is a very quiet, unostentatious one; the architecture and its surroundings exhibit some spirit, but the tone of both is subdued to an unusual degree. There are many minds who prefer this expression of forced serenity to rule over all demonstrations of animation. The life must be visible and striving to burst forth, but the subduing influence more prominent and powerful; as in a moral subject we sometimes see strongly delineated the evidences of passion, but over all this discover the prevailing element in character called self-government, the influence of which bears heavily on every action and assumes a degree of supremacy under almost every circumstance.

ACCOMMODATION.—The divisions of the principal floor, fig. 119, are easily understood by inspection. K is a drive for carriages, from which the main hall A is entered. This hall is 10 feet wide, and contains

a fine flight of stairs. An improvement on the front entrance, omitted by oversight in the engraving, would be what the old carpenters call an *entry-piece*, with light doors, to form a vestibule: pilasters bear-

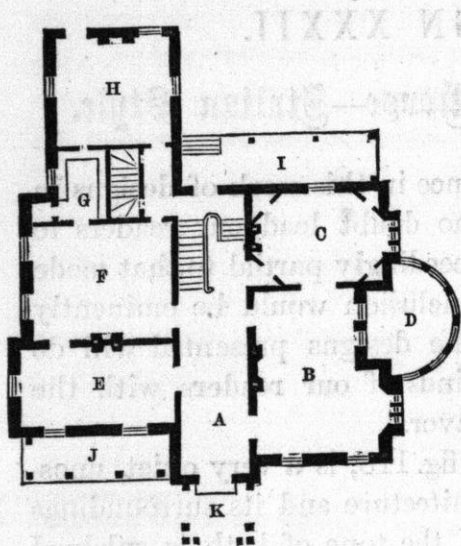


FIG. 119.—PRINCIPAL FLOOR.

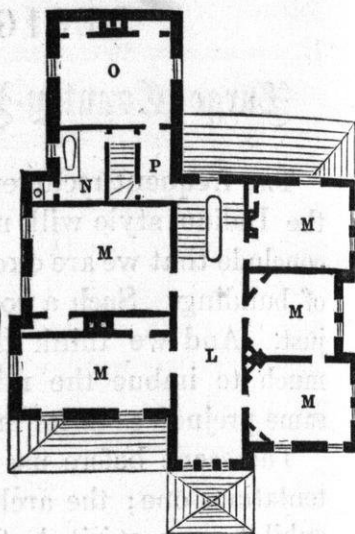


FIG. 120.—SECOND FLOOR.

ing an archway, irrespective of the filling of doors and side lights, thrown across a hall or passage, always received the above name. One of these might be placed to good advantage near the foot of the stairs, the archway in this case being elliptical. The drawing-room B, of irregular plan, is equal in area to a room of 17 by 22 feet. Adjoining it is a semicircular conservatory D, (omitted in the view, fig. 118,) entered by either of the windows, which are extended to the floor. The library C is 14 by 18 feet, and is provided with angular book closets, which may be fitted up with walnut dressings and glazed doors, so that, except a center-table and the necessary chairs and carpet, but little furniture will be required. The sitting-

room E is 12 by 22 feet, and communicates through lengthened windows with the veranda J. The dining-room F is 18 by 21 feet, and has a butler's pantry G communicating with the kitchen by a small slide door. Passing from the hall or dining-room to the kitchen H, we find on the left a flight of private stairs leading to the lobby P and bath-room N, on second floor. The kitchen is 16 by 17 feet, and has a rear door. A manifest improvement here would be the addition of an out-kitchen or wash-house: no dwelling can be called complete except such domestic operations as cannot be postponed for fair weather can all be carried on under shelter. A veranda I forms a very useful and agreeable shelter to the rear entrance of main hall.

On the second floor, fig. 120, L is the main hall. Five apartments, respectively marked M, afford an unusual amount of chamber accommodation. All these rooms are provided with closets; these may be omitted, should the proprietor prefer movable wardrobes. A very appropriate style of wardrobe for these rooms is shown on plate 6, of FURNITURE DESIGNS. O is a bed-room, which any housekeeper will readily find use for.

CONSTRUCTION.—This house should be built of brick. If fine material is used for facings, and the work laid secret-bond throughout, painting may be resorted to with very good results. The mortar-joints in this case should not be *tucked*, but struck flush, so as to present an even surface when finished.

The drive, cornices, verandas, and ventilator will be wood, and should be painted and sanded to correspond with the body of the building. The umbrage over

the windows is designed to be supported on wooden brackets, the covering itself being tin. The roof of the building throughout may be tin or shingle, as found most expedient. Stone heads and sills for the openings, and stone water-table should be procured for this design, if possible. Whatever color these may be—and we should prefer some one of the qualities already named, being careful to avoid cold, gray tints—harmony should be preserved by imitating it in painting the walls with the allowance of a few shades of difference in the strength of tint. With the darker qualities of stone, the walls should be kept lighter than the dressings, and *vice versa*.

ESTIMATE.—Built as above described, the material being of good quality and the workmanship well executed, the cost of this house will not vary much from \$7000.

Exterior Joinery.

UNDER this head, we propose to say something about the construction of verandas, cornices, etc. Properly, the first point considered in this connection is the quality of wood used for the purpose. It is requisite that the kind of wood chosen should be naturally durable, and as free from incidental deflections as possible, such as shakes, knot-holes, etc., and at the same time of such a degree of solidity as is consistent with economy in converting it into the forms and details adopted in exterior finish.

Of all the woods with which this continent abounds, none is more universally used for external mouldings, cornices, and brackets, than the well-known *white pine*. The readiness with which it can be cut, planed, and moulded; its lightness, the ease with which it can be secured by nails, screws, and glue, together with its durability, make it a favorite in all sections where it can readily be procured by importation. It grows in great abundance in Canada, in portions of the Northern States from Maine to Oregon, extending as far South as Virginia. From this it follows that its transportation to the most remote sections of the country is easily accomplished over the great national thoroughfare, the Mississippi River and its tributaries, and through the interior by the numerous

railroads. Hence, with the exception of some of the inland poplar districts of Ohio and Indiana, the cypress regions of Louisiana, and a portion of the Gulf States where yellow pine prevails, we find all over the United States the preference awarded to white pine for outside joinery. We may also remark by the way, that it is an excellent timber for the framing of roofs and floors of large span, owing to its lightness and rigidity; the liability to sag by its own weight being small in comparison with any other timber.

In the Carolinas and the Gulf States, the yellow pine of the country is used for the purposes under consideration, but for the best class of buildings white pine is often imported. The same may be said of Louisiana, where cypress is the ruling timber, and of parts of Indiana and Ohio, where yellow poplar grows in remarkable abundance.

These four species of wood—white pine, yellow pine, cypress, and yellow poplar—are, with a very few exceptions, the materials employed in all the exterior wood-work taking the name of joinery in the United States. Sometimes, for Gothic buildings, oak, walnut, and yellow pine may be used for the barge and eave finish, with very pretty effect, no paint being applied, but merely a stain to give the natural color of the wood a little more depth, and on this a coat of oil, and sometimes a coat or two of varnish of a nature calculated to resist the action of the weather. In such cases the edges of the window-frames and the sash should be of the same material, or at least should correspond in color.

For floors exposed to the weather, any of the above woods, well chosen, are recommended, and we may

add *ash* to the list. In former times, great partiality was shown for this wood for interior floors, particularly of halls and dining-rooms, on account of its purity of appearance and the ease with which it is cleansed; latterly, it is not much sought for any of these purposes; but we drop the hint for the benefit of the localities where it abounds, being well assured that, aside from the difficulty of working, it is an excellent material.

Exterior wood-work does not require that fineness of execution that is so desirable in inside joinery. The points to be gained are correctness of outline and sufficient smoothness of surface to cast off water and receive paint evenly. Hence, mouldings worked by machinery, or brackets sawed by a carefully managed jig-saw, are usually smooth enough, if cut from wood of a moderate degree of solidity, to put up as they come from the mill.

In putting together the members of cornices, brackets, or in fact any outside wood-work, white-lead ought to be freely used in the joints; neat joints filled with white-lead are proof against water; those in which this precaution is not taken are much more liable to take water, by which decay is induced and much damage otherwise frequently done.

We now offer a few drawings for brackets, with hints as to the nature of the design to which they apply. Fig. 121 is made of three thicknesses of plank, the middle section being much the thickest and receding from the profile of the outside sections, which greatly enlivens the character of the



FIG. 121.

bracket. This bracket would apply well to main cornice of Design II.



FIG. 122.

Fig. 122 is sawed from a single thickness of plank, say three inches through, and would be a very acceptable bracket for almost any house of moderate pretensions in the bracketed style, such for instance as Design VI.

Fig. 123 is also cut from a single plank; its size and contour is significant of a heavy overhanging cornice; it would come in play in the tower of Design X.

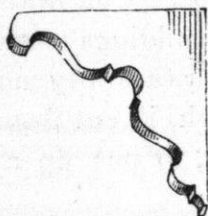


FIG. 123.

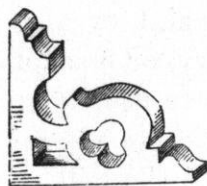


FIG. 124.

Fig. 124 is designed for the base of a tower pinnacle, such for instance as Design II. or XIX.; by inverting it we have a beautiful cornice bracket.

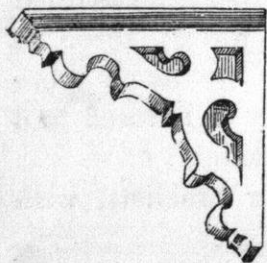


FIG. 125.

Fig. 125 is a bold bracket for a cornice of great projection. These are both represented as cut from a single thickness of plank, but in practice it will be often found expedient to cut them from two or more thicknesses.

Fig. 126 is an ornamental bracket, consisting of a roof and wall piece, having the angle filled with sawed work: this, it will be observed, is intended for an eave cornice where the plancier has the same incli-

nation as the roof. An instance of this may be pointed out in Design XIII.

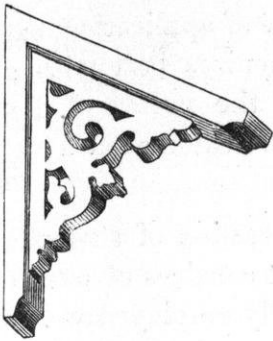


FIG. 126.



FIG. 127.

Fig. 127 is a bracket only to be copied where lightness and elegance are sought, rather than an exhibition of strength or massiveness.

Fig. 128, though graceful in contour, is nevertheless much more significant of strength than the preceding, and against a heavy mass of building with proportionate cornice would be entirely preferable.

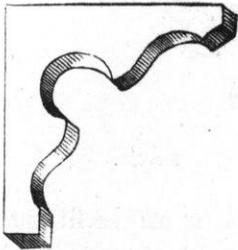


FIG. 128.

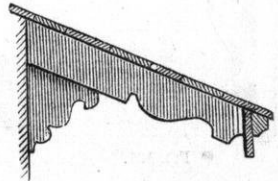


FIG. 129.

Fig. 129 exhibits a very pretty mode of rafter treatment in small, light buildings; sometimes it may be appropriately applied to large dwellings. We have shown the same idea, with less projection and embellishment, at fig. 41. The figure before us is very suitable for the roof of a summer-house.

Fig. 130 is a framed bracket, indicative of great strength by its main contour, yet rendered rather

elegant by the amount of decorative effort expended upon it; it is decidedly of German origin. Such a bracket has a very extensive range of application, but probably harmonizes best with a composition of the nature of Design VIII., where the mansard roof is introduced.

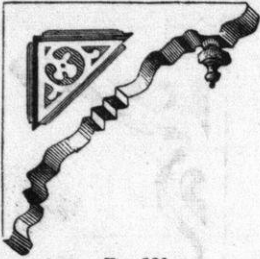


FIG. 130.

Fig. 131 has but very little expression of strength, yet as a decorative feature in light cornices of considerable projection, may be frequently employed with a happy effect. The same remarks apply to fig. 132; both are designed to be cut from a single thickness of plank, in two parts, as shown by fig. 131.



FIG. 131.



FIG. 132.



FIG. 133.

Fig. 133 is an ornamental spandrel or angle filling, which never fails to produce an agreeable appearance when introduced in work of corresponding lightness: a very light veranda, summer-house, or conservatory is greatly enhanced in beauty by having this or a similar ornament in the angle, formed by the posts and frieze.

Fig. 134 belongs to that bold class of brackets which gives so much life and picturesqueness, when well ap-

plied, to high, strong-looking country buildings. On a small scale it makes a very pretty veranda bracket; in either case, it is cut from a single plank.

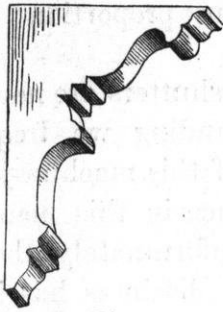


FIG. 134.



FIG. 135.

Fig. 135 is a plain bracket, cut from a single plank, not particularly demonstrative of strength; it would make a very pretty angle filling at the head of a veranda post. Fig. 136 is a great deal more ornate, being made of three thicknesses of plank, with a considerable amount of regard to elaboration.

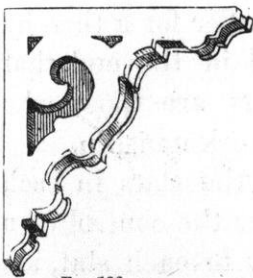


FIG. 136.



FIG. 137.

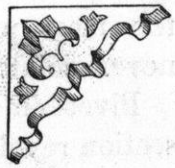


FIG. 138.

Figs. 137 and 138 are both of an ornamental character, and are only applicable in light architecture; either would make a very pretty spandrel bracket for a veranda: they are both made of a single plank.



FIG. 139.

Fig. 139 is a small bracket to be applied where an appearance of considerable strength is required; a little examination suggests that this bracket should have a little more thickness in proportion to its breadth.

Outside Venetian blinds and shutters are now made by machinery, and notwithstanding we frequently hear sweeping condemnations of this machine-joinery, we believe it possible to produce in this manner an excellent quality of work. Unfortunately, the great amount of competition in this business has injured the quality of the joinery by reducing the standard of prices so low as to render the manufacture of good work not even moderately profitable, and the natural consequence is, the country is flooded with the spurious article. But we think a reaction must before long take place. When this bad reputation of machine-work becomes thoroughly diffused, few will buy it, and the counterfeit manufacturer will be obliged to abandon the business; all will suffer for a time by the operation, but it will be found in the end that the most prosperous manufacturers are those who never violated the laws of honest workmanship.

Pivot-blinds, *i.e.* blinds in which the slats in each section revolve simultaneously under the control of a single vertical rod attached loosely to each slat, are now deservedly much in vogue. They are light and airy looking, and although not strictly an architectural appendage, are almost indispensable, and in Southern houses entirely so. By adjusting the slats, the direct rays of the sun can be excluded, and air and light admitted, and, when necessary, they can be con-

verted into a close shutter for defense by securing the vertical rod at one end. But for more perfect security against light-footed agents, it is deemed most proper, in parts of the Northern States, to use the close shutter on first-story windows, and these well secured by ten-inch iron bolts: these, however, look rather less pleasing than the blinds we have just described, and will, we think, ultimately yield to the Venetian blind.

In circular-headed windows, a very unsightly effect is produced by the opening of the blinds to the crown of the arch; and the question arises, how is this to be remedied? Imperfectly, by only opening the blind to the springing line, and perfectly, by sliding the blinds into the wall so as to be entirely invisible. The sill can be extended on each side of the window, and the rail for the sheaves laid upon it, so as to give permanency to the whole system. The strongest argument against this is, that it occasions an unusual thickness of wall; but, on the other hand, it may be met with the fact that the hollow thus formed adjacent to the window may be common to the whole wall, by which the wall is greatly strengthened, if due attention is paid to the bond, and the cost not materially increased. This course was pursued in the erection of Design I. of this work, and might with equal propriety be adopted in any dwelling of considerable magnitude, where the arched window-head is employed.

Veranda-posts of small dimensions, say not exceeding 7 inches square, may be solid; when larger than this, they may be made hollow, of one and a half or two-inch plank. Great care, however, is requisite to prevent the opening of joints from exposure to the

weather; a liberal use of screws should be resorted to, which, with white-lead or glue in the joints will prevent very disastrous results. Where a fine fluted or reeded column is to be made, the staves are glued up as in inside joinery, but with additional care as to the quality of the joints and the general solidity of the column.

Having briefly adverted to the most interesting point of exterior wood-work, we take leave of the subject, with the feeling that the whole compass of the present work would be insufficient to do it full justice. Inside joinery will be treated of in connection with Interior Finish in general.

DESIGN XXXIII.
A Picturesque Villa.

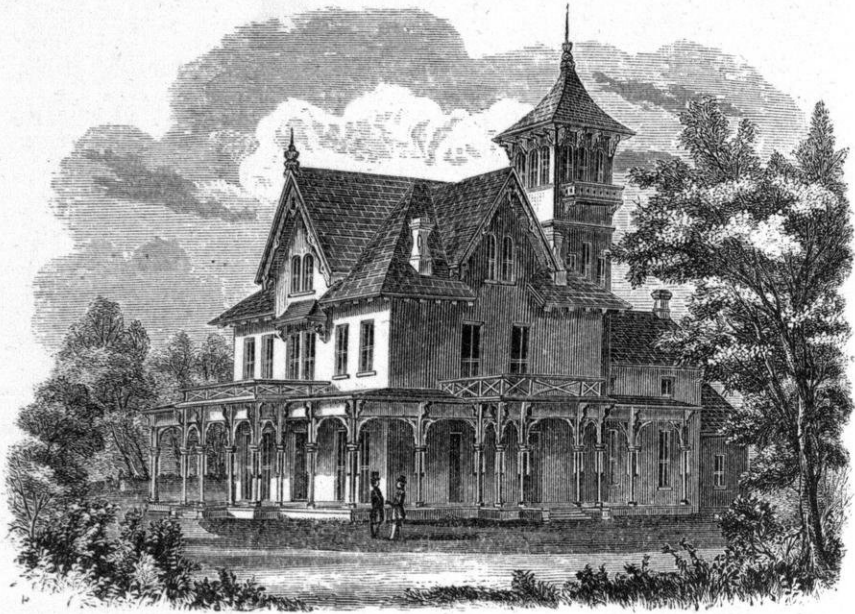


FIG. 140.

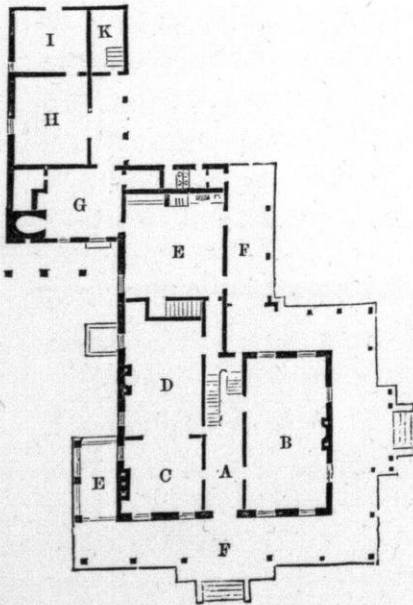


FIG. 141.—PRINCIPAL FLOOR.

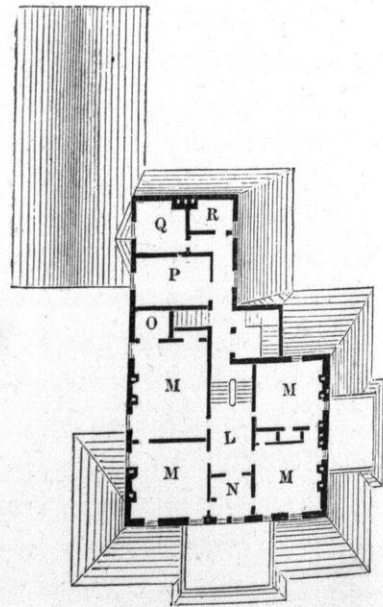


FIG. 142.—SECOND FLOOR.

DESIGN XXXIII.

A Picturesque Villa.

THIS villa has been erected in the neighborhood of Lewisburg, Pennsylvania, and also at Ann Arbor, Michigan, with entire satisfaction to the gentlemanly proprietors. It contains all the apartments necessary to a refined and even luxurious mode of life, as well as the appendages requisite for the independent working of the household economy, which are really indispensable in the country.

APARTMENTS.—The hall A, fig. 141, is entered from the veranda F, and contains the main stairs. It is worthy of remark, that all the principal apartments, the kitchen included, are reached from this hall without the necessity of making a thoroughfare of any room, or passing out of doors. The drawing-room B is 18 by 31 feet, and is a fine example of a symmetrical apartment susceptible of a high style of finish. The veranda extending around three sides of it is accessible by lengthened windows, and affords a fine promenade around to the conservatory E, and to the tower situated at the rear of the main hall. C is a sitting-room, 18 by 25 feet, from which the conservatory is directly entered by a lengthened window. The dining-room D is 18 by 25 feet; the kitchen E is 22 by 24 feet, furnished with range, sink, etc. The one-story building comprises G, a bake-room, 15 by 24

feet, containing an oven; H, the wash-room, 16 by 20 feet; I, a wood-house, 15 by 16 feet; and K, the ice-vault. A close inspection of this plan will enable the reader to perceive that a number of minor appendages not described are included in this arrangement.

The divisions of the second floor are very plainly illustrated by fig. 142. The stair hall is denoted by L, and the four principal chambers by M; N is a dressing-room for the two front chambers, and O a large closet to the adjoining chambers. A bed-room is denoted by P, and a bath-room and closet by Q and R. The attic bed-rooms are attained by a flight of stairs in the tower beginning on this floor.

CONSTRUCTION.—The materials employed in the erection of this villa should all be of first quality, and the workmanship done in the most careful, neat, and substantial manner. The nature of the design is such that its stability, when erected, depends on the firm adhesion and rigid qualities of the parts rather than on the gravitation of matter. It was originally prepared with a view to being erected of brick and roofed with slate, but might very properly be built of wood and covered with shingles.

ESTIMATE.—The cost of this design in the vicinity of Philadelphia, if erected with reference to the above hints, will not vary much from \$8000.

DESIGN XXXIV.

Anglo-French Villa—No. 2.

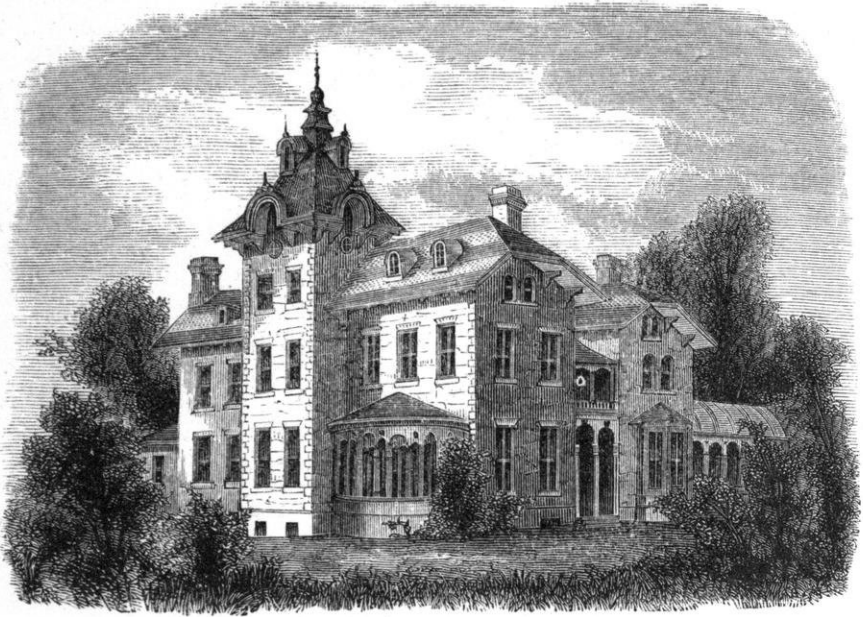


FIG. 143.

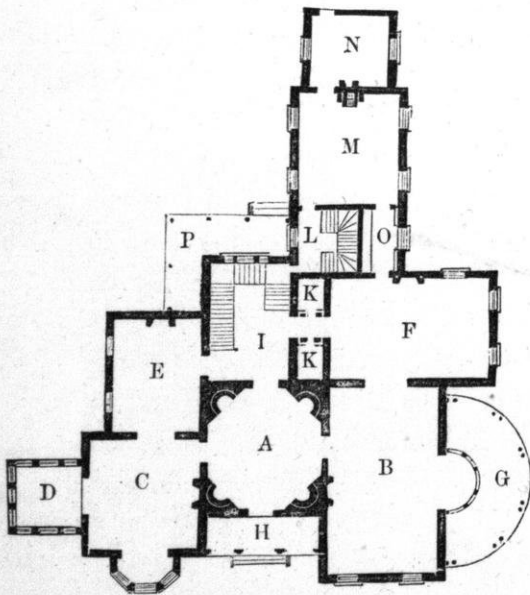


FIG. 144.—PRINCIPAL FLOOR.

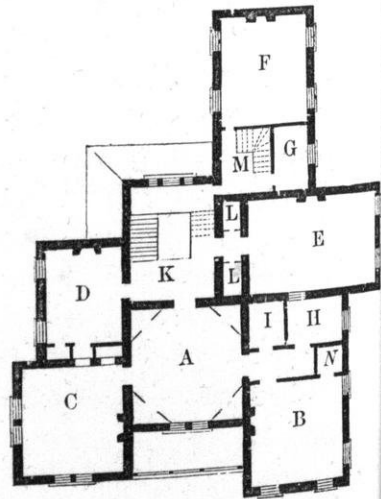


FIG. 145.—SECOND FLOOR.

DESIGN XXXIV.

Anglo-French Villa.

[No. 2.]

THERE is an amount of boldness and strength exhibited in this design that is truly gratifying to the admirers of these qualities in architecture. The beholder instantly perceives in this the residence of a man of wealth, with a taste bordering on the eccentric, yet kept in some degree of regularity by architectural conventionalities.

APARTMENTS.—The front entrance is through the veranda H, fig. 144, from which an octagonal vestibule A, 17 feet in diameter, is entered. The vestibule has niches in the alternate sides, which, occupied by vases of flowers or appropriate statuary, make a very agreeable feature of internal decoration. This apartment is intended for the twofold purpose of vestibule and reception-room, and it would therefore unite in its detail the richness of vestibule finish with the amplitude and comfortable aspect of a reception-room.

The drawing-room B is 16 by 28 feet, with a semi-circular bay and a conservatory of concentric plan attached. A smaller conservatory or green-house D, 10 by 15 feet, for rearing the more delicate sort of flowers in pots or vases, adjoins the parlor C, 16 by 16 feet. A very good family sitting-room is denoted by E, 14 by 18 feet. F is the dining-room, 16 by 24 feet, communicating by folding or sliding doors with

the drawing-room; it is provided with two good closets K, and a passage to the kitchen O.

From the staircase hall I, a side entrance opens into a lobby L, which contains the private stairway and has a side door to the veranda P. Beyond this is the kitchen M, 15 by 16 feet, a well-lighted apartment fitted up with range, etc.; an out-kitchen N, 12 by 12, completes the extension of back-buildings.

The plan of the second floor, shown by fig. 145, corresponds in general arrangement with that of the first. A is an octagonal hall, from which access is had to the chambers B and C, the wardrobe I, the bath-room H, and the front balcony. K denotes the landing of the main stairs, D boudoir, and E a large family chamber, both directly accessible from the landing. M, the landing of the private stairs, is on a level with the half-pace of main stairs, as also is the bath-room G, and the sleeping-room F.

CONSTRUCTION.—As will be observed by fig. 143, this design was prepared with a view to being built of stone laid in the manner known as *broken range-work*, its style and spirit being very favorable to this mode of construction. Slate or shingles of varied patterns would be very appropriate for roof-covering. The details of this building are very peculiar, and would require the greatest care in the architect to elaborate them properly. No proprietor having any regard for its correct expression or permanent construction would entrust the preparation of the working drawings to an ordinary builder.

ESTIMATE.—The cost of this villa, exclusive of the architect's fee, (usually from three to five per. cent. on the building expenses,) will not much exceed \$12,000.

Interior Finish.

VOLUMES might be written on this very interesting subject, but in the present work we can do no more than touch briefly on some of the leading principles of interior treatment, with occasional reference to the details of construction, which should claim the attention of the joiner and decorator.

It will occur to the mind of any one who gives the subject a moment's consideration, that where a distinctive style has been chosen for the exterior of a building, no decided departure from it should be permitted on the interior decorations. Not that the external forms should be repeated throughout the apartments, but that the same spirit of composition should manifest itself plainly and undeniably, even to the uncultivated eye. With a Grecian exterior, anything but a Grecian interior, if style is attempted at all, is unpardonable, and the same verdict applies to all phases of architecture between which there is a radical difference, as between the Grecian and Italian, the Italian and Gothic, etc.

The style of an interior is characterized by the finish of ceiling, with form of the openings and manner of dressing them. The simplest form of ceiling, where style is attempted to be portrayed, is divided into compartments or panels, and may have a very plain cornice with a bed and frieze moulding, and the

usual architrave fillets on the lower edge; this, with square-headed openings, is the type of all Grecian interiors. As a higher display is aimed at, the entire details of the Grecian entablature are introduced, the panels in the ceiling are deeply sunk and moulded, and the openings decorated with pilasters and entablatures in accordance with the fixed proportions of the style. In the Italian, or its legitimate parent, the Roman style, the semicircular or oval-headed opening is introduced, the ceiling is sometimes coved and sometimes flat, but always embellished with more or less foliated moulded work, either in solid plaster or fresco painting; much latitude is allowed in the cornice, but, as a rule, its vertical dimensions should not vary much from one-eighth of the height of the room, having its projections sufficient to give strong lines of shadow. A Gothic interior, or rather an interior in which the spirit of Gothic style is to be maintained, is rendered very pleasing by giving the ceiling the form of a depressed arch; this is readily and cheaply done by furring down from 6 to 10 inches at the sides of the room, (or more where the height of the room is ample,) from the horizontal plane of the under side of the joists, and gradually decreasing the depth of furring up to the middle of the ceiling, which thus becomes the crown of an arch through the whole length of the room. For a simple bed-room treated in this manner, a light cornice of cove profile, run in the angle against the walls, makes a finish of sufficient completeness; but where a higher grade of embellishment is required, it becomes necessary to introduce a longitudinal moulded rib at the apex of the ceiling, membering at the wall-cornice, and various

transverse ribs, and, in wide rooms, other ribs parallel to the length of the room; by this treatment the ceiling is divided into regular compartments, and with neatly moulded ribs, having bosses at the intersections, is greatly beautified.

Before leaving the subject, we will exhibit a few tasteful designs for cornices, irrespective of any particular style. Fig. 146 is a neat and very effective cornice in execution; its contour is referable to Gothic mouldings, and it would perhaps be best to confine its use to Gothic apartments.

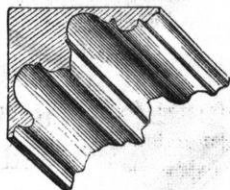


FIG. 146.

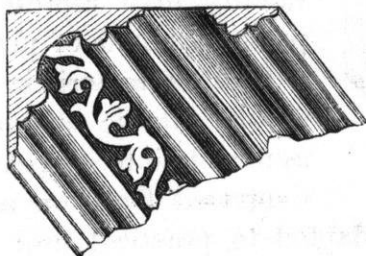


FIG. 147.

Fig. 147 is a very large drawing-room cornice, and applies well to the Italian style of interior. The foliation of the cove may be either solid in plaster of Paris, or imitated by fresco painting.

Fig. 148, although a very good cornice, is not so large as the above; if the cove, however, is foliated by painting, its inferior dimensions will scarcely detract from its elegance, unless the room in which it is placed be disproportionately large.

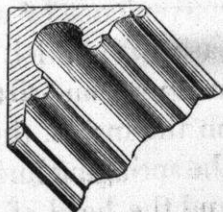


FIG. 148.

Fig. 149 is a very chaste cornice, yet with a strongly-marked character; its terminal mouldings are rather abrupt, but a touch or two by a ready hand in forming the mould will remedy the slight imperfection.

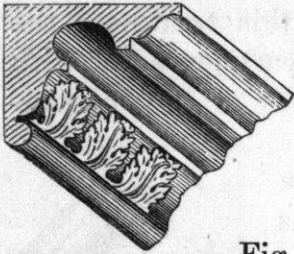


FIG. 149.

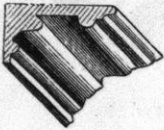


FIG. 150.

Fig. 150 is a neat cornice of almost unlimited application. Its simplicity and the economy with which it can be run are points that recommend it to favor.

Fig. 151, although very simple in section, is, when executed with the fullness and roundness here represented, a very pretty example of plain cornice.

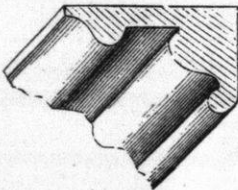


FIG. 151.

The characteristic pointed-head of the Gothic opening is seldom applied to interiors, except in a very depressed form, on account of its

being poorly adapted to practical use; as a general rule, it is much more convenient to have square-headed openings throughout interiors, even when the lancet-pointed arch is used on the exteriors; this is practicable in windows of moderate size, but does not look well in a very large window. We speak of the convenience of square-headed windows in view of the ease with which inside shutters, curtains, etc. can be arranged and fitted. If the pointed finish is retained on the inside, that portion of the inside shutter above the springing line of the arch must be made stationary, and the head of the window curtains will also follow the lines of the arch, terminating at the springing

line; all this, although productive of a very agreeable effect, is attended with increased complication and no inconsiderable expenditure. These remarks apply with equal force to the semicircular or Roman arch. We should not neglect to mention that another expedient is sometimes resorted to when the pointed or semicircular form of head is retained; we allude to sliding the inside shutters into the walls in each side of the window. This is often successfully done in very expensive houses; but there are various objections to it, not the least of which is the liability to get out of order; another is, the space or chasm that must inevitably occur between the springing line and the crown of the arch when the shutter is entirely open, that is, pushed into the wall to its full depth.

We have had occasion to observe the violations of good taste that occur through the country in the interior dressing of windows and doors. Some of our good friends, the joiners, think that the sole merit of a door or window finish consists in its *width* without regard to the dimensions of the opening to be dressed. This is an unfortunate error, and one which should be dispelled as soon as possible. The dressing of an opening should seldom exceed the one-sixth of the width of that opening; in pointed openings it may be much less, and there are some circumstances under which it may be more. In short, while it is an object to avoid extreme meagerness, it is no less a desideratum to shun a clumsiness which comes at so high a rate to the proprietor.

White pine being at once light, rigid, and easily worked, seems to have been intended for many things, but particularly for doors. Apropos to this, however,

we may mention that for first-class doors, mahogany formerly was the favorite wood, but latterly walnut, and in the most expensive houses rosewood has superseded it, partly owing to a ruling passion for novelty, but mostly to the scarcity of a good quality of mahogany. But in evidence of the real value of white pine it may be noticed that nearly all our every-day doors are made of it in regions where it can be procured. Although less skill is required in the joinery of white pine than in that of almost any other wood, yet the painter's art being necessary to render it at all presentable, it can never take position among the fine-grained woods above mentioned, where a superior style of inside finish is attempted.

A sort of mania has arisen in some parts for wide door-stiles; we hear joiners boast of putting eight and ten-inch stiles in a door of ordinary dimensions, as though the achievement were deserving of universal approbation. Now, after the first requisite of the door is attained, which is sufficient strength for the intended use, this excessive width of stile is entirely superfluous. Broad stiles, for the sake of consistency, induce broad panels, and the consequence is, we sometimes see a communicating and sometimes a front door made with a single panel set in a single frame. As to the practical working of such doors we will let their owners answer. If they are not shrunken in dry weather so as to show a terrible gape at the unconfined edge, they are so expanded in damp weather as to preclude a chance of shutting them, a condition of things which needs no comment.

Observation has led us to the conclusion that the stile of an ordinary door should seldom exceed six

inches; perhaps our true meaning on the subject will be better conveyed by saying that the size of all members of a door, and indeed of all panel-work, should be determined, first, with reference to the strength required, and second, with a view to prevent as much as possible the pernicious effects of shrinkage.

The folding-doors of former times have given place to the more convenient and easily managed sliding-doors for extension rooms. The most perfect method of hanging these that has yet been or probably ever will be devised, is to suspend them by large sheaves on a concealed head-rail instead of running them on a floor-rail. The latter method necessarily interposes a line between the rooms, while the other permits the carpet to be continued directly through without interruption. All the ladies, and particularly those who delight in entertaining large companies, will perceive and appreciate the advantage thus afforded.

Frequently in the course of our descriptions of designs we speak of "lengthened windows" or "windows extending to the floor." We allude to the subject here for the purpose of saying that all windows of this kind are intended to be fitted with balanced sash; the lower section being high enough to permit a person to walk through erect, is, when hoisted for that purpose, necessarily partly concealed by casing in the head made to receive it. In narrow openings extending to the floor, the French casement window is sometimes preferred; when properly made and fitted they answer the purpose very well: the principal objection to them is their interference with the arrangement of curtains and drapery on the inside.

A very pretty floor for halls, vestibules, libraries,

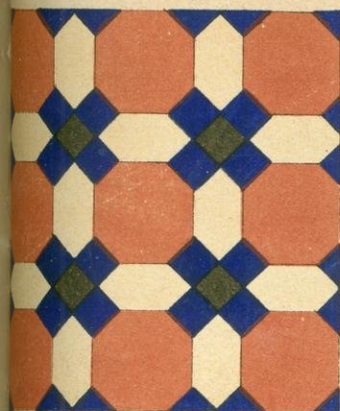
etc. is made of the English encaustic tiles; from the plate, upon which we exhibit six different patterns, an idea may be formed of the extent to which these combinations of forms and colors may be carried. The prices per superficial foot for furnishing and laying are attached to each combination represented, applying, however, to surfaces exceeding one square, or 100 superficial feet; below this quantity the charges are necessarily a trifle higher. The superiority of these tiles for vestibules, halls, conservatories, etc. consists mainly in the fact that their beauty suffers little by abrasion of the colors in a long course of years; they are easily cleansed, and when properly selected with regard to harmony of color, are productive of a gay and lively effect.

On the subject of wooden floors, it is needless to make extended remark. It is well understood by most carpenters; indeed, the principal mystery connected with flooring, viz., the best mode of making and retaining tight joints, owing to the present fashion of covering all floors with carpets and oil-cloths, is considered by many as scarcely worth attention. Yet it must be evident, upon a moment's thought, that a well-laid, close-jointed floor is very desirable under any circumstances. How annoying it is to hear the creaking of a loose board as the arm-chair rocks to and fro, or even as you step carefully across the room! Milled boards, *i.e.* boards planed and matched by machinery, being, when properly wrought, of uniform thickness, are to be greatly preferred where an eye is had to economy as well as to solidity. Secret nailing may be resorted to where the floor is not to be covered, in which case the width of the

ENGLISH ENCAUSTIC FLOORING TILE.

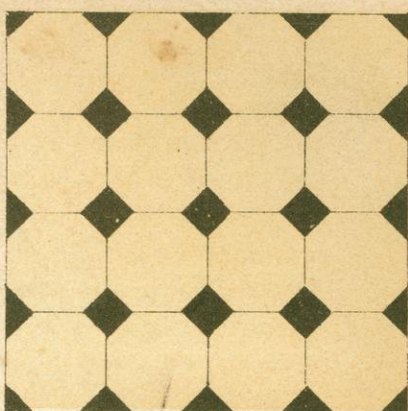
Imported & For Sale by S.A. HARRISON, 1010 Chestnut St. Philadelphia.

No. 1.



40 cts. per Square Foot - laid 50 cts.

No. 2.



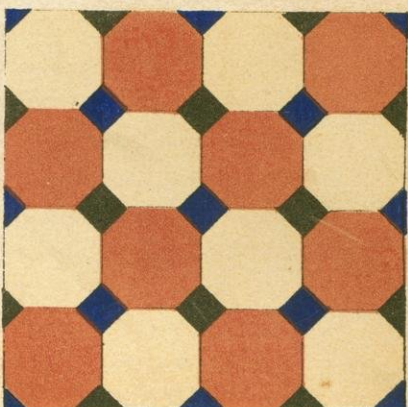
Tile 32 cts. per Square Foot - laid 42 cts.

No. 3.



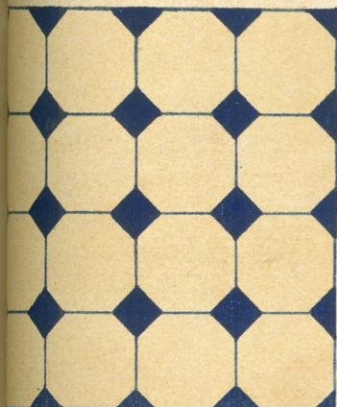
32 cts. per Square Foot - laid 42 cts.

No. 4.



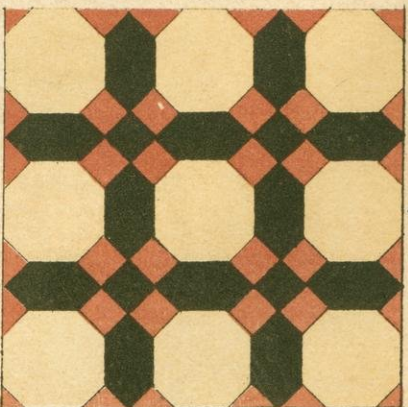
Tile 34 cts. per Square Foot - laid 44 cts.

No. 5.



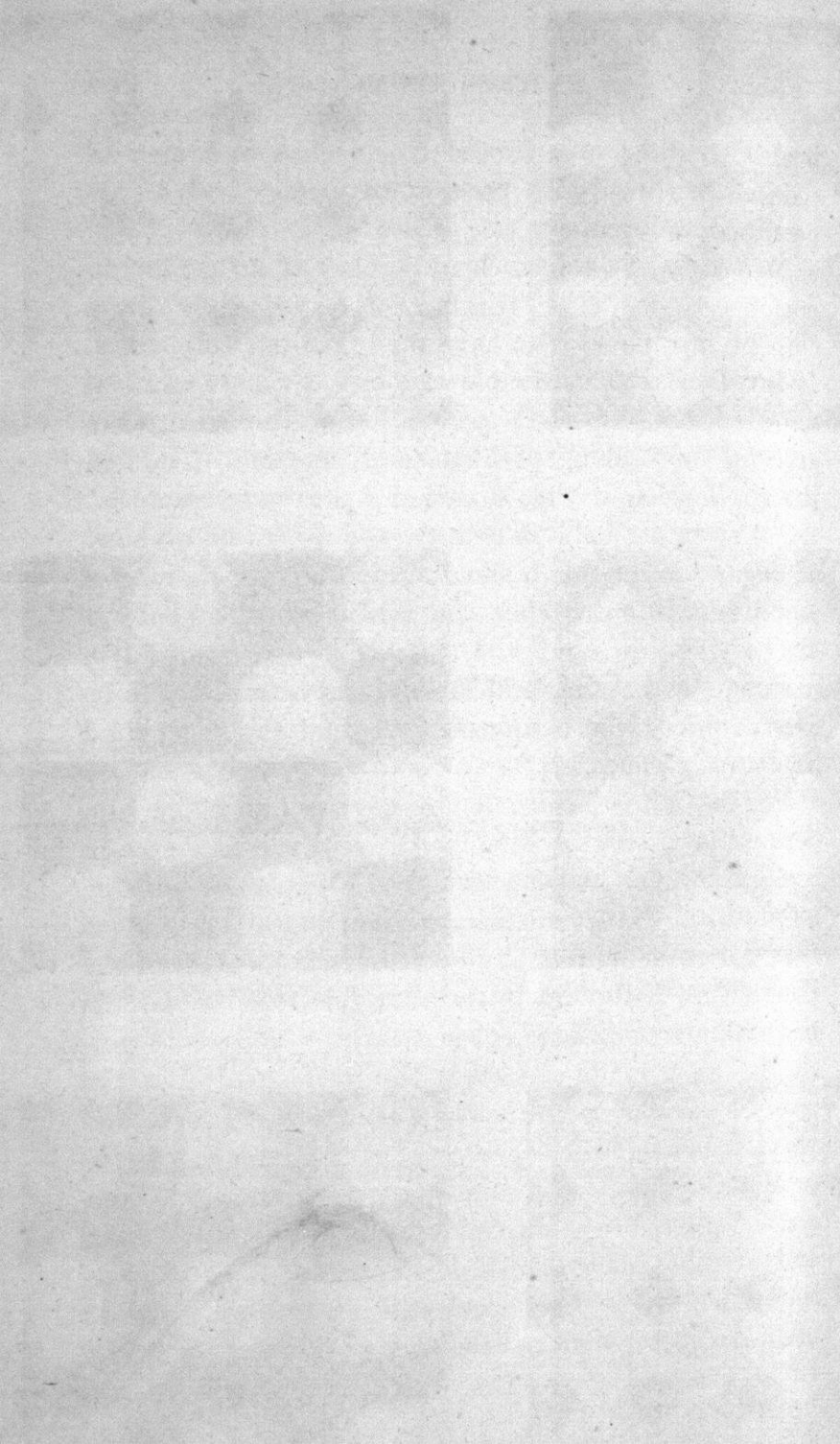
36 cts. per Square Foot - laid 46 cts.

No. 6.



Tile 32 cts. per Square Foot - laid 42 cts.

The Price for laying is estimated for floors of 100 Square Feet or over.



boards should never exceed five inches, and may be reduced to three, with decided advantage both to appearance and quality.

Staircasing is a branch of joinery of so much importance that in cities it is carried on separately by a class of mechanics who have made it their sole study. It involves a considerable amount of mathematical knowledge, and a clear perception of the beauties of graceful lines, along with no small amount of tact in the application of that knowledge and perception.

All staircase halls, where even a moderate amount of display is intended, should have an appearance of amplitude, in order that the ascent may be made at an easy grade, and the curves sweep gracefully; narrow, steep stairs, with abrupt curvature, are to be ever avoided, where anything beyond the most rigid economy is aimed at.

For first-class hand-rails, mahogany has fallen into desuetude, rosewood inlaid with ebony being now in high favor, but very expensive. We know nothing more suitable for general use than the black walnut that grows so abundantly in nearly all sections of the Union. A little tact in staining this wood makes its resemblance to rosewood so nearly perfect as to puzzle the amateur in detecting the imitation. But the natural color of walnut, when heightened by oil and varnish, is itself very agreeable, and by many preferred to the imitation of a more costly material. Fine-grained oak and yellow pine make very pretty risers and step-boards, varnished on the natural color of the wood; the lighter shades of walnut may also be used for this purpose with a very satisfactory effect. It is necessary, where so dark a material as the

latter is used, that the stairs should be well lighted, or that the covering carpet should be of a light cast, in order to prevent an appearance of heaviness and gloom.

A very extended treatise might be written on the treatment of inside wall-surfaces; and indeed it is a very interesting portion of the decorator's business. Whether it be done by painting or papering, the exercise of judgment and good taste is no less necessary. "A handsome room may be quite spoiled by bad finishing, and by ill-chosen colors of the walls and furniture; and the defects of a poor one concealed or at least much diminished by good management in this respect."

We subjoin some extracts from the "Laws of Harmonious Coloring," by Mr. D. Hay, of Edinburgh. "The first and most obvious defect in the coloring of rooms is when there is no particular tone fixed on for an apartment; that is, when one part of the furniture is chosen without any reference to the rest, and the painting done without any reference to the furniture. This generally produces an incongruous mixture; and is, in comparison to a tastefully decorated apartment, as far as regards coloring, what a child produces with its first box of paints to the work of a great master. A second and more common fault is the predominance of some bright and intense color either upon the walls or floor. It is evident that the predominance of a bright and overpowering color upon so large a space as the floor or wall of a room, must injure the effect of the finest furniture. This great error often arises from the difficulty of choosing a paper-hanging or carpet, and our liability to be bewildered among the

multitude of patterns which are produced: the most attractive of which, on a small scale, are often from this very circumstance the more objectionable in regard to their forming a large mass in an apartment, particularly as the artists who design them seem to be regulated by no fixed principles; but, from their repeated deviations from the established rule of harmony, appear to give themselves up to the vague pursuit of novelty alone. A third error is introducing pale colors, which may have been well enough chosen in regard to their tints, but whose particular degrees of strength have not been attended to. Thus the intensity of one or more may so affect those which they were intended to balance and relieve, as to give them a faded and unfinished appearance. This may proceed from applying the fundamental laws without any regard to the minutia; for although it is always necessary to subdue and neutralize such colors as are introduced in large quantities, yet when they are reduced by dilution alone, the effect is very different. There is a fourth defect and rather a common one, and that is, a want of the media which unite and harmonize an assemblage of bright colors which may in other respects be perfectly well arranged; for it is a rule in the higher branches of the art, that confusion of parts of equal strength should always be avoided. A room of this description resembles a Chinese landscape, where foreground and distance are jumbled together. An opposite effect to this is monotony, or a total want of variety; for some are so afraid of committing errors in point of harmony, that neutral tints alone are introduced, and sometimes one tint of this kind alone prevails. Variety is a quality found to exist in

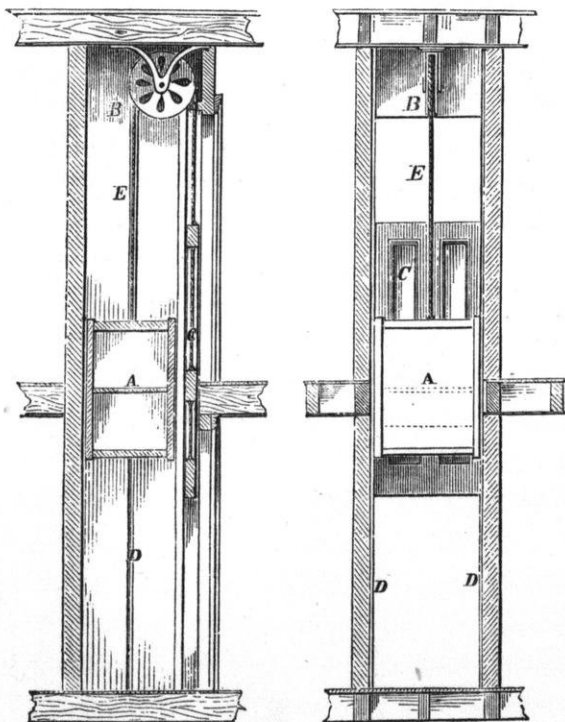
the most trifling as well as in the grandest combination of nature's coloring; and it is, as already observed, in uniting and making an arrangement of various colors harmonious and agreeable to the eye that the skill of a house-painter chiefly consists. It is this which produces what is termed repose in a picture, a quality equally desirable in the coloring of an apartment."

It is clear that the principles above enunciated apply with as much force to the painting of dressings and all interior wood-work as to the treatment of walls.

Although it is entirely beyond our province to enter into the specific details of interior painting, we may add in this connection a single remark that may be of service to the amateur decorator, whether his labors are confined to the cottage or extend to the more pretending mansion. Whatever tints may be used for the walls, it has been observed that if the ceiling is colored a shade darker, it has the effect of apparently lowering its altitude, while a contrary course, viz., painting the ceiling of a lighter shade than the walls, produces a contrary result, making the story appear higher than it really is, and this effect is greatly enhanced if a moderate gradation of shade is given to the walls, from the base upward. This principle may often be applied in plain painting, where it may seem desirable to give an appearance of greater height to a room, and comes frequently into play in the repairs of old houses.

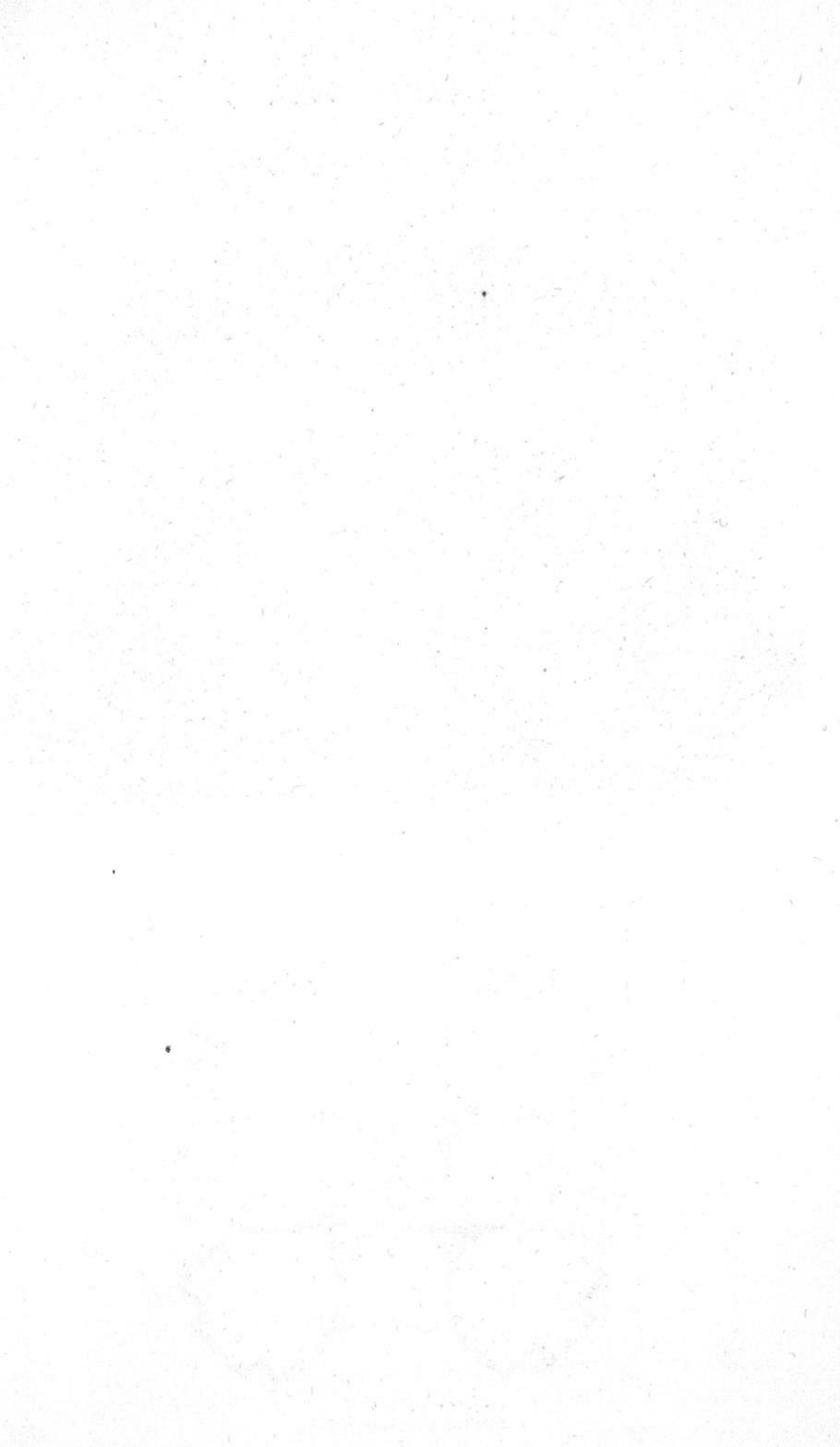
The Dumb Waiter.

THE DUMB WAITER is most frequently used for the transmission of dishes and cookery between the kitchen and dining-room, when, as it sometimes happens in large houses, these apartments are located in different stories.



We here give a representation of the mode of working. A is the movable cupboard which passes

up and down, containing the articles transmitted; this cupboard is balanced by the door C, by means of a cord E passing over a pulley B. The result of this mode of working is, that when the cupboard is down on the kitchen story, the aperture in the dining-room is closed, and *vice versa*. D shows the groove on each side which prevents an unnecessary amount of rubbing and the consequent friction.



DESIGN XXXV.
Clustered Cottages.



FIG. 158.

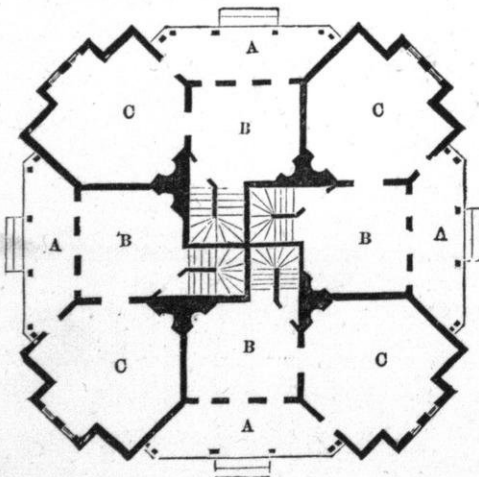


FIG. 159.—PRINCIPAL FLOOR.

DESIGN XXXV.

Clustered Cottages.

It will be observed that the arrangement presented on the elevation before us, as illustrated by the plan, has been devised with an eye to economy, not only of materials and workmanship, but of ground surface. It sometimes occurs that suburban or village lots are to be improved so as to accommodate the greatest number of occupants comfortably within the limit of a small expenditure, and at the same time it is desirable that such improvements should present a tasteful and agreeable appearance.

Suppose a lot, square, or, in the form of a parallelogram, nearly square, the area of which is at best barely sufficient for a small garden to each of four houses proposed to be put on it; such lot could be advantageously improved by placing this cluster of houses in the center, and running the division walls or fences from one of the external angles of each of the projecting wings to the outer boundary, by which an equal division of the ground would be effected.

ROOMS.—The description of one-fourth of the cluster is of course equally applicable to the other portion. The first floor, shown by fig. 159, has two rooms for each tenant, and a veranda 8 feet wide. The living-room B is 12 by 14 feet; the sitting-room is 16 by 17 feet exclusive of the recessed window. From the

living-room a flight of boxed winding stairs leads to the second floor, illustrated by fig. 160, where two small yet comfortable sleeping-rooms D and E are found, each provided with fire-places and suitable closets.

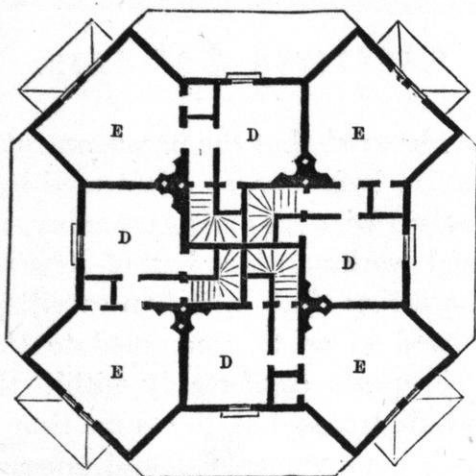


FIG. 160.—SECOND FLOOR.

CONSTRUCTION.—Economy being the leading principle in the erection of such a cluster, it is obvious that whatever materials could be found to answer the purpose, at moderate prices, would usually be preferred without much regard to the results which ultimately follow the use of an inferior article. Prudence dictates the use of solid materials, brick or stone for the walls, although wood is in good keeping with the style of building.

ESTIMATE.—With proper economy, this design can be erected, in the vicinity of Philadelphia, for about \$3000. We have no doubt that in a well-timbered country it can be built of wood, with cellar walls of stone, for \$500 less than the above.

DESIGN XXXVI.

Small Bracketed Villa.



FIG. 161.

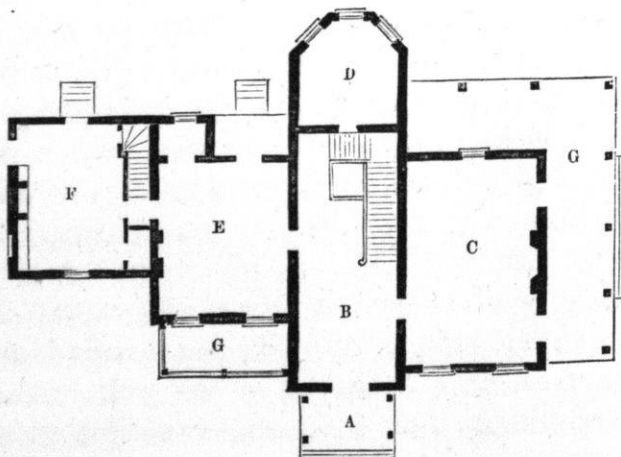


FIG. 162.—PRINCIPAL FLOOR.

DESIGN XXXVI.

Small Bracketted Villa.

THIS is a picturesque-looking villa, and would make a very appropriate residence for a genteel family of moderate size. There is quite an exhibition of bold rusticity, combined with an evident neatness of finish, which pleases to an equal degree the eye of the artist and of the mechanical connoisseur.

The extreme piquancy of expression which this design would otherwise have exhibited is considerably subdued by the truncation of the main roof. Without this, the pitch of roof would not harmonize so well with the round-headed windows and veranda arcades.

APARTMENTS.—Referring to fig. 162, we find the plan of the principal floor. The entrance to the very ample hall B is effected through the front piazza A; this hall is 12 feet wide by 29 feet long, and besides containing a very handsome flight of stairs, may serve also for a reception-room. A very fine drawing-room C, 16 by 24 feet, is entered on the right; while the dining-room E, 15 by 17 feet, is situated on the left; and a snug little library, 12 by 12 feet, occupies what might be termed an extension of the hall. Passing through the dining-room E, we find a flight of private stairs, and still farther on, the kitchen F, 12 by 16

feet. There is a back entrance to the dining-room through a little piazza, and also one to the kitchen.

The second floor, explained by fig. 163, contains five very good chambers marked I, and a number of appendages, such as closets, wardrobes, etc., rarely found in a dwelling of this magnitude. K denotes the landing of the main stairs and also a small sleeping-room at the head of the private stairs; the wardrobes are denoted by L.

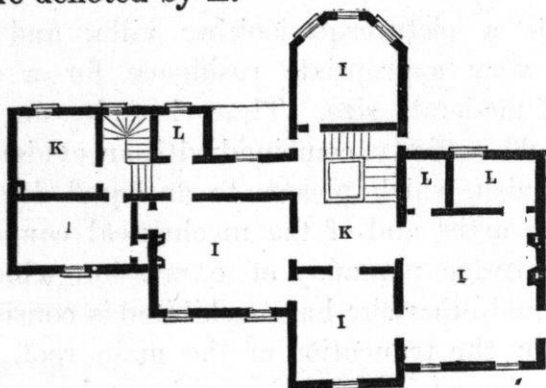


FIG. 163.—SECOND FLOOR.

CONSTRUCTION.—As will be observed, this design has been prepared with a view to the use of rubble-stone in the erection of the walls. The corners are represented as carried up with squared stone for bond, which adds greatly to the architectural effect. The reader who has perused our former descriptions will perceive at a glance that slate or shingles will be the proper roof-covering.

ESTIMATE.—In a neighborhood where rubble-stone is readily procured, and having good facilities for the transportation of such material as is necessarily brought from a distance, the cost of this design will be about \$6000.

DESIGN XXXVII.

Residence in the German Gothic Style.



FIG. 164.

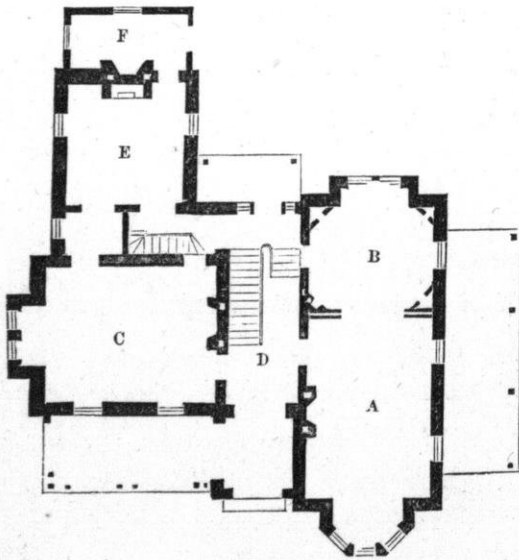


FIG. 165.—PRINCIPAL FLOOR.

DESIGN XXXVII.

Residence in the German Gothic Style.

A VERY neat and lively look has this dwelling; and we think we may say, without being accused of self-laudation, we scarcely know of a plan in which so much convenience is united with an equal amount of picturesque beauty. It was devised for the accommodation of such families as may be composed of but few members, yet are desirous of keeping pace with the modern fashionable modes of conducting household affairs.

APARTMENTS.—Fig. 165 exhibits the divisions of the principal floor. The hall containing the staircase is 10 feet wide and is entered from without through a Gothic porch. This hall has a rear door with side-lights by which it communicates with the back piazza; it has also a side passage branching off at the rear end, containing the private stairs. On the right of the entrance hall is the drawing-room A, 28 by 18 feet, with a bay-window of octagonal form: the apartment B is designed for a library; it is 15 by 18 feet, and has book-closets in three corners, while the fireplace occupies the fourth, by which, except for the recessed window, the plan would be reduced almost to a regular octagon. C is a very fine dining-room, 26 by 20, with a rectangular bay-window, which greatly increases its amplitude. E, 17 by 18 feet, is the kitchen: it will be observed that a very commodious butler's pantry is placed between the kitchen

and dining-room, which may either have communicating doors as represented, or be fitted up with a slide, to prevent as much as possible the scent of cookery from entering the dining-room, a point upon which some people are much more sensitive than others. We think it certainly desirable to exclude everything that betokens the proximity of the kitchen, but there are those who look upon it as a matter of indifference. An out-kitchen F, 9 by 16, completes the plan of the first story.

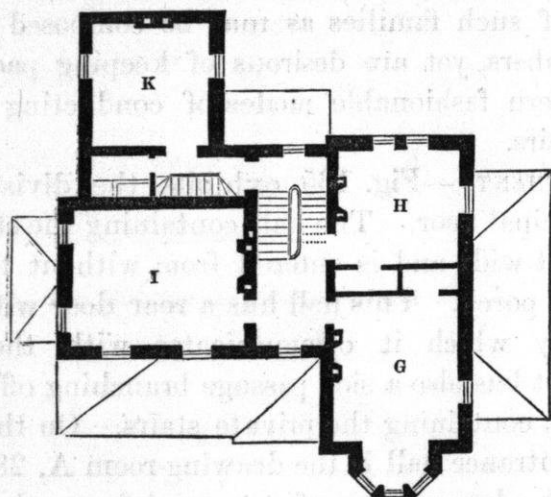


FIG. 166.—SECOND FLOOR.

Fig. 166, the second floor, corresponds with the divisions of the first. A sleeping-room K is placed over the kitchen, a bath-room over the pantry, and chambers over the other principal apartments.

CONSTRUCTION.—This residence would look better perhaps built of the lightest shade of Trenton brown stone than of any other material.

ESTIMATE.—This house, in the neighborhood of Philadelphia, would cost about \$5000.

DESIGN XXXVIII.

Symmetrical Cottage.



FIG. 167.

DESIGN XXXIX.

Workingman's Model Cottage.



FIG. 168.

DESIGN XXXVIII.

Symmetrical Cottage.

WHAT a world of rural enjoyment might be concentrated within the little scene represented by the figure before us! Simple and plain, yet of a very decided character, the owner of such a home need not envy the monarch, the gilded beauties of the palace or the toy that mankind call a scepter.

ROOMS.—The first floor, shown by fig. 169, contains

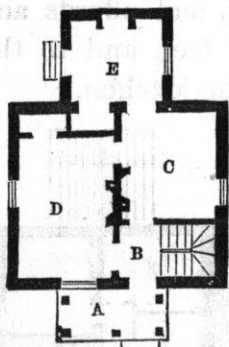


FIG. 169.—FIRST FLOOR.

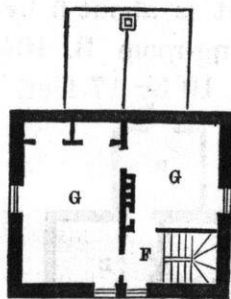


FIG. 170.—SECOND FLOOR.

the veranda A, a becoming shelter to the front door; B, at once vestibule and stair-hall; C, living-room, 11 by 14 feet; D, family-room, 11 by 17 feet, and E, kitchen, 11 by 12 feet.

Fig. 170, the second floor, contains two bed-rooms, G.

ESTIMATE.—Built of brick, this cottage would cost about \$400; of stone or timber, where these materials are plenty, about \$350.

DESIGN XXXIX.

Workingman's Model Cottage.

WE close this series of designs with a very economical little cottage, to which we request the attention of the workingman who has the means to build himself a snug little home. Less expensive than the one we have just described, (fig. 167,) it is almost as commodious and comfortable, and, with a little piazza over the front door instead of the canopy we have given, it would be almost as picturesque.

ROOMS.—A small entrance hall A, contains the stairs; it is about 6 by 12 feet, and affords access to the living-room B, 10½ by 12 feet, and to the best room C, 10 by 17 feet. D is the kitchen.

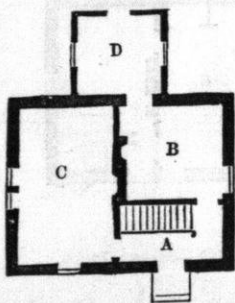


FIG. 171.—FIRST FLOOR.

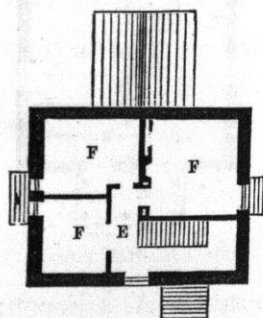


FIG. 172.—SECOND FLOOR.

Fig. 172 exhibits the second floor; E is the stair landing from which all the sleeping-rooms F are entered.

ESTIMATE.—Built in the cheapest manner, with the best management, this cottage may be finished for a trifle over \$300.

GROUND PLANS.

A Double House.

THIS plan is devised with reference to being occupied by two families. The necessity for this often occurs in the improvement of town, or village lots. Under such circumstances it is necessary to preserve in the aspect of dwellings as much of the rural character as possible, and at the same time secure all the conveniences within reach.

ROOMS.—The front entrance is at A, fig. 173; the hall is 6 feet wide, in which is a flight of stairs; B, the living-room, is 12 by 14 feet; adjoining is the

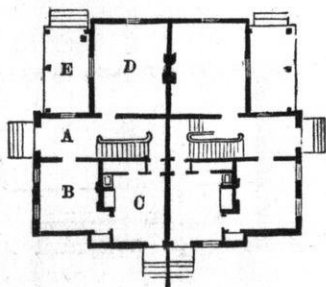


FIG. 173.—FIRST FLOOR.

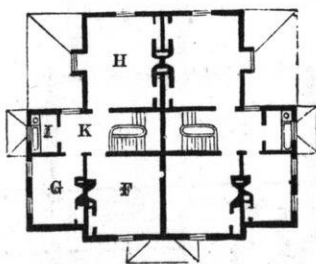


FIG. 174.—SECOND FLOOR.

kitchen C, entered from the hall beneath the stair landing, and containing cooking-ranges, closets, and a side entrance; D is a parlor, and E a veranda.

The plan of the second floor, fig. 174, exhibits K, the stair landing; I, bath-room; F, G, H, chambers corresponding to the size of the rooms below.

ESTIMATE.—This house may be built in plain rural style, of brick, and stuccoed, two stories high, with cellar beneath, for about \$1600.

A Plain Farm Dwelling.

OUR readers will observe a resemblance between this and the general plan of Design XXVI., with this difference, that while the latter is adapted by the proportions of its rooms to an elevation in the Gothic style, the one before us would appear much better in the Italian dress.

ROOMS.—E, fig. 175, is a vestibule or porch, through which an entrance to the main hall D is effected.

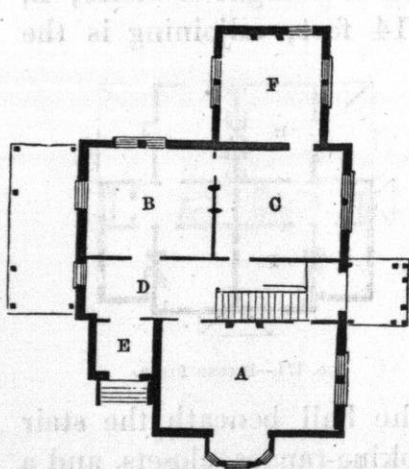


FIG. 175.—FIRST FLOOR.

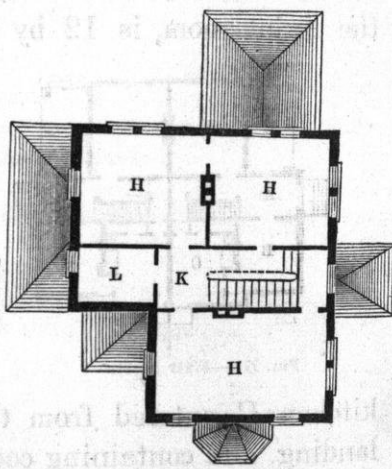


FIG. 176.—SECOND FLOOR.

A is the parlor, 26 by 16 feet; B, sitting-room, and C, dining-room, respectively 16 by 18 feet. Beyond C is the kitchen F, 15 by 16 feet.

The plan of the second floor, fig. 176, shows K the landing of stairs; L, dressing-room, and three fine chambers H.

Carrriage-House and Stable.



FIG. 177.

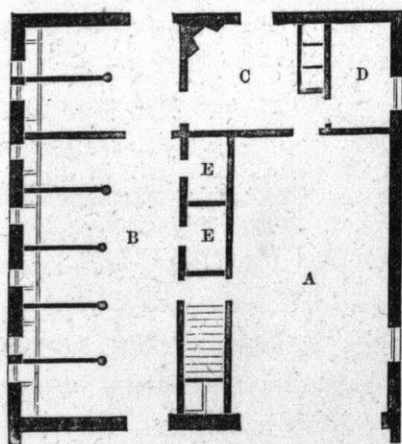


FIG. 178.

Carriage-house and Stable.

WE cannot devote much space to the consideration of this class of buildings, but in offering the accompanying design, can do no less than make a few remarks on a subject the importance of which demands a greater amount of time and attention than we can possibly bestow upon it in the present publication.

The location of this combined stable and carriage-house will always be influenced more or less by the nature of the ground and the relative position of the dwelling to which it belongs.

As a rule, however, it is desirable that the stable should be inconspicuous, that is, comparatively speaking; although such a building as the one here presented, if kept at the proper distance, would not suffer by comparison with the finished villas of corresponding style, yet its subordinate character as a thing of use, will not allow of a degree of prominency that might be dangerous to the dignity of the dwelling.

On fig. 178, A represents the carriage-room, 15 by 26 feet. A wide door permits the ready ingress of wheeled vehicles. B is the stable, containing seven stalls provided with mangers, and suitable light.

It is recommended that these windows be partially obscured by a translucent green blind, and that the walls immediately in front of the horse be painted or washed with green, in order to promote as much as possible the healthy vision of the animal. E, E,

are harness closets; C is a room for the coachman, or which may be used in unfavorable weather for mending harness; two closets are opposite to it, in which oil cans, medicine bottles, etc. may be stored. D is an implement-room, or, under some circumstances, it may be used by the coachman as a sleeping-room.

A flight of steps between the carriage-house and stable leads to the hay-loft, granary, etc. over; these are well lighted, as may be observed on the elevation, and may be arranged according to the wishes of the proprietor.

Embellishment of Grounds.

THE architect labors almost in vain, if, after all, when the building is completed, the embellishment of the surrounding grounds is neglected, or, what is nearly as bad, left to the tender mercies of *soi-disant* gardeners, who really know little more of landscape gardening as a fine art than mankind at large do of the soil and climate of the moon. It is a source of consolation, however, to the architect that there has been a great awakening on the subject latterly, in the United States, and that the prospect for its general advancement is continually brightening. Possessed as we are of every variety of country, from the rugged mountain landscape to the gentle undulations of the far-expanding prairie, including an amount of lake and river scenery unparalleled in the geography of any other country on the globe, we can have no complaint to make against Dame Nature, but, on the other hand, should feel grateful that she is so bountiful to the denizens of this New World, and hope that the field thus open before us will be ultimately improved in such a manner as to become, like the rural embellishments of "merrie England," a source of national pride.

We are informed by history (but we must be brief on this point) that "the Romans were the first who introduced landscape gardening into England, as we

perceive among the remains of their Anglo-Roman villas, but after they had left that country, landscape gardening was little attended to, beyond the abbey grounds, till near the middle of the sixteenth century, during the reign of Henry VIII., when Cardinal Wolsey had Hampton Court laid out to embellish the princely mansion he had there erected."

All landscape gardening, from the above date down to the days of Kent, who flourished in the time of George II., and is the reputed author of the modern style, was done in the ancient or geometrical mode. A masterly hand thus depicts its peculiarities: "A predominance of regular forms and right lines is the characteristic feature of the ancient style of gardening. The value of art, of power, and of wealth were at once easily and strongly shown by an artificial arrangement of all the materials—an arrangement the more striking as it differed most widely from nature. And in an age when costly and stately architecture was most abundant, as in the time of the Roman Empire, it is natural to suppose that the symmetry and studied elegance of the palace or the villa would be transferred and continued in the surrounding gardens."

But "Kent saw the incongruity of artificial design when at variance with nature. The straight walk, the clipped hedge, the tortured yew, sunk beneath the superior chastity of his taste. He made as much improvement as an innovator could do, who had a prevailing bad taste to contend with, but for which he was peculiarly gifted by being a historical painter. According to Lord Walpole, he at once leaped over all boundaries, and the first stroke was the destruction of circumscribing walls, and the introduction of the

ha-ha or sunk fence in their stead; next, the blending and harmonizing the lawn with the park followed, for he at once saw that all nature was a garden, only bounded by lofty hills or the distant horizon, and he was painter enough to feel the charms of landscape. He was also bold and opinionative enough to dare and to dictate, and born with a genius to strike out a great system from the twilight of imperfect essays; for although he realized the compositions of Poussin and Claude, the greatest masters in classic landscape painting, yet Kent, says his lordship, was neither without faults nor assistance, for it was Alexander Pope who contributed to form his taste; and the gardens at Carlton House in London, which he laid out, but since destroyed to make way for a noble terrace, were probably borrowed from the poet's at Twickenham."

It is but justice to the memory of Addison to say that as early as 1712, and before the commencement of Kent's landscape gardening, that celebrated writer, in his papers on the Imagination, published in the "Spectator," prepared the minds of all educated England for the induction of the natural mode. To the poet, the painter, and the tasteful scholar, then, rather than to the practical man, does the world owe the inauguration of a system which, combining the beauties of nature in a harmonious manner with the productions of art, is destined to be coexistent with the truly beautiful in the human mind.

We omit the notice of several who have distinguished themselves in this profession, not on account of their inferiority as artists, but because we wish to be as brief as we can to be consistent with the nature

of our purpose. Nearer our own time we may speak of Humphrey Repton, who was "a beautiful draughtsman and began his career as a landscape gardener about the year 1788." Later we have John Claudius Loudon, whose herculean labors as an author on gardening and rural architecture have contributed more to the diffusion of correct taste in these departments of art, than any single writer of whom we have any knowledge. The first American landscape gardener known to the public as a practitioner of the art, was the late Mr. Andre Parmentier, of Brooklyn, Long Island, who not only furnished plans for laying out the grounds of country-seats in various parts of the Union, but in many cases personally surveyed them prior to giving designs for their improvement, and furnished the plants and trees for the execution of those designs. But it was left for Andrew Jackson Downing to awaken and popularize a taste for sylvan improvements never before universal on this continent. Hear his appeals to the ear of all America: "But if landscape gardening in its proper sense cannot be applied to the embellishment of the smallest cottage residence in the country, its principles may be studied with advantage even by him who has only three trees to plant for ornament, and we hope no one will think his grounds too small to feel willing to add something to the general amount of beauty in the country. If the possessor of the cottage acre would embellish in accordance with propriety, he must not, as we have sometimes seen, render the whole ridiculous by aiming at ambitious and costly embellishments, but he will rather seek to delight us by the good taste evinced in the *tasteful simplicity* of the

whole arrangement. And if the proprietors of our country villas, in their improvements, are more likely to run into any one error than another, we fear it will be that of too great a desire for display—too many vases, temples, and seats, and too little purity and simplicity of general effect." (*Theory and Practice of Landscape Gardening*, p. 19.)

SURFACE OF GROUND.—As the surface of the ground is less easily affected by artificial means than any other material that comes under the care of the landscape gardener, it is always the best policy to select the best natural surface obtainable, with an eye to the improvements that may be made upon it by a few strokes of art. The making of artificial eminences is a very expensive and difficult enterprise, and except done in strict harmony with nature, only demonstrates the inability of man to produce happy results, when in antagonism to a power so superior. The formation of artificial hills in the midst of a natural plain or level prairie fails so much of pleasing as to appear ridiculous to a sensitive perception, because the littleness of the artificial production is rendered painfully apparent by contrast. A perfectly level surface is, of all descriptions of ground, the most difficult to deal with artistically. The most that can be done with it, at a moderate rate of expense, is to diversify it by planting trees and creating some gentle undulations artificially, which, delicately performed, may appear natural. With a building of great magnitude, a level lawn may be in excellent keeping, being, under such circumstances, expressive of grandeur heightened almost to the sublime.

Aside from this, in contrast with the asperities of a

mountainous country, the level expansive plain becomes a source of pleasurable contemplation unaffected by art, which is lasting as the mountains themselves. But the greater part of the surface of the United States is sufficiently diversified to render the location of residences easily susceptible of such improvements as good taste and the local character of the grounds may dictate.

APPROACH.—The road by which access is had to the residence from the public highway is termed the *approach*. Being a primary necessity, it is the most important route or track that takes a place in the system of laying out grounds. In the ancient or geometric style, the approach was laid down with reference to a view of the front of the building, to the exclusion of the *end* elevations; but the modern or natural mode demands that the first view of the house shall not only embrace the main front, but also one of the adjacent ends of the building, thus giving a just impression of its character and magnitude.

“There are two guiding principles,” says Mr. Downing, “laid down for the formation of approach roads: the first, that the curves should never be so great or lead over surfaces so unequal as to make it disagreeable to drive upon them; and the second, that the road should *never curve without some reason*, either real or apparent.”

“Nothing can be more annoying than to see an approach or any description of road winding hither and thither through an extensive level lawn, toward the house, without the least apparent reason for the curves. Happily, we are not therefore obliged to return to the straight line; but gradual curves may

always be so arranged as to appear necessarily to wind around *the groups of trees* which otherwise would stand in the way. Whenever a bend in the road is intended, a cluster or group of greater or less size, and breadth proportionate to the curve, should be placed in the projection formed. These trees, as soon as they attain some size, if they are properly arranged, we may suppose to have originally stood there, and the road naturally to have curved, to avoid destroying them."

We quote from Mr. Repton, already noticed as one of the most celebrated English landscape gardeners, the following rules or governing principles in determining the position and curves of the approach, from which, however, it must not be inferred that it is possible to give rules that will apply in all cases; but they embrace the elemental requisites of the approach, insisted upon by modern landscape gardeners, and we think with a great deal of consistency:—

"*First.* It ought to be a road to the house and to that principally.

"*Second.* Although not naturally the nearest road possible, it ought artificially be made impossible to go a nearer way.

"*Third.* The artificial obstacles which make this road the nearest ought to appear natural.

"*Fourth.* Where an approach quits the high road, it ought not to break from it at right angles, or in such a manner as to rob the entrance of importance, but rather at some bend of the public road, from which a lodge or gate may be more conspicuous, and where the high road may appear to branch from the approach, rather than the approach from the high road.

“*Fifth.* After the approach enters the park, it should avoid skirting along its boundary, which betrays the want of extent or variety of property.

“*Sixth.* The house, unless very large and magnificent, should not be seen at so great a distance as to make it appear much less than it really is.

“*Seventh.* The first view of the house should be from the most pleasing point of sight.

“*Eighth.* As soon as the house is visible from the approach, there should be no temptation to quit it, (which will ever be the case if the road be at all circuitous,) unless sufficient obstacles, such as water or inaccessible ground, appear to justify its course.”

DRIVES.—These may be laid out in conformity with the spirit of the above rules, observing always that they should assume an appearance of subordination to the approach. A drive being intended for exercise and enjoyment of a more secluded nature than can be obtained on a public highway, should always be laid out with an eye to obtaining the best view of the beauties of the place and the surrounding country, from the carriage or on horseback.

WALKS, tastefully disposed, are of importance in every rural scene without regard to extent. Mr. Downing's remarks on this point are so pertinent that we cannot forbear quoting them: “They are intended solely for promenades or exercise on foot, and should therefore be dry and firm if possible at all seasons when it is desirable to use them. Some may be open to the south, sheltered with evergreens, and made dry and hard for a warm promenade in winter; others formed of closely-mown turf, and thickly shaded by a leafy canopy of verdure, for a cool retreat in the

midst of summer. Others again may lead to some sequestered spot, and terminate in a secluded rustic seat, or conduct to some shaded dell or rugged eminence, where an extensive prospect can be enjoyed. Indeed, the genius of the place must suggest the direction, length, and number of the walks to be laid out, as no fixed rules can be imposed in a subject so ever changing and different. It should, however, never be forgotten that the walk ought always to correspond to the scene it traverses, being rough where the latter is wild and picturesque, sometimes scarcely differing from a common footpath; and more polished as the surrounding objects show evidences of culture and high keeping. In *direction*, like the approach it should take easy, flowing curves, though it may often turn more abruptly at the interposition of an obstacle. The chief beauty of curved and bending lines in walks lies in the new scenes which by means of them are opened to the eye. In the straight walk of half a mile, the whole is seen at a glance, and there is too often but little to excite the spectator to pursue the search; but in the modern style, at every few rods a new turn in the walk opens a new prospect to the beholder, and 'leads the eye,' as Hogarth graphically expressed it, 'a kind of wanton chase,' continually affording new refreshment and variety."

ARCHITECTURAL DECORATIONS—TREES, ETC.—In no other way can great changes be effected in a landscape more easily than by planting; every lover of nature, and every observer of the rapid development of the beauties of vegetation and foliage, particularly when under the training of skillful hands, will in a moment perceive that of all the elements of rural

beauty, none occupy a more prominent place than trees and grass. Add to these the embellishments afforded by flowers and creepers, and we have sources of enjoyment within the reach of all, from the possessor of a few roods to the proprietor of an unlimited number of acres.

Now, for the simple cottage these natural embellishments, under refined culture, are the most rational, and with enough of the display of art to insure its ready recognition, are in full harmony with rural life.

Our limits prevent us from entering on the subject of planting; we can only remark that of all modes of embellishment, that accomplished by planting trees, vines, and flowers is most worthy of universal attention. Next to having a home is the feeling that it should wear the appearance of a pleasant home, and nothing tends more to give the impression of such than the presence of verdant foliage and beautiful flowers, and these bearing the tokens of attention from some human hand. Their presence is the type of prosperity, and their absence, of desolation.

A competent landscape gardener should always be consulted in laying out the grounds of a very extensive villa. The experience acquired by actual practice is necessary in the execution of any design or leading idea that may be conceived by the proprietor or artist. Thousands of beautiful designs (on paper) are devoid of beauty in execution, for want of a little tact and judgment in those who execute them.

Parapets, vases, and statuary denote the presence of art in a pointed and emphatic manner, and are inconsistent with scenery so intensely rural and domestic as should always surround a small cottage. But

where a house assumes high architectural pretensions, the harmony between art as exhibited in the house, and nature as exhibited in the surrounding scenery, is delicately maintained by the introduction, to a greater or less extent, of architectural and sculptural decorations.

Summer-houses or *covered seats* are very pleasant features, whether contemplated as a portion of scenery or as places of resort in fine weather. The pavilion and temple form are frequently adopted for these, where the classic style of architecture prevails. In many cases, however, rustic seats should be chosen in preference to the *architectural* kind. Of the latter, we give three examples. Fig. 179 evinces some degree

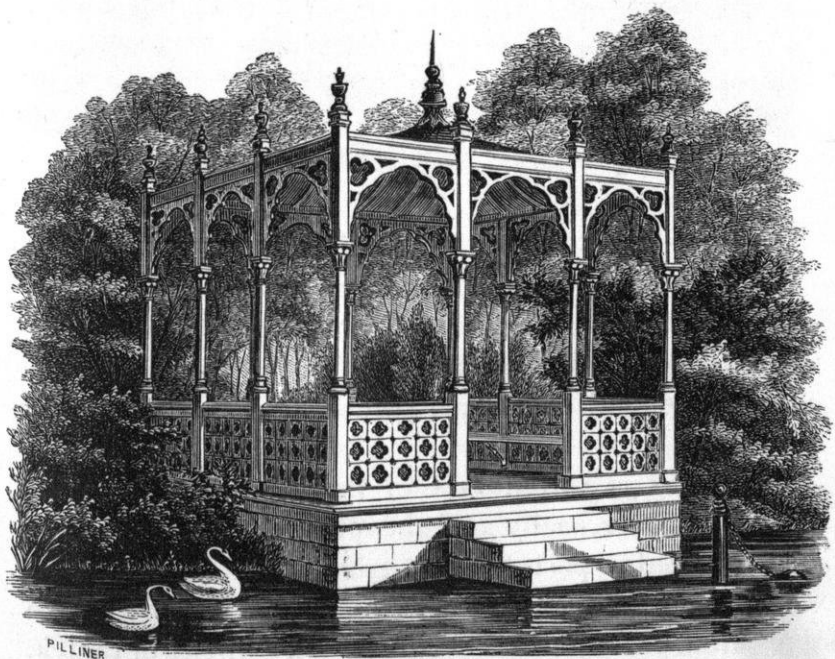


FIG. 179.

of the Gothic taste in its cusping and pinnacles; it should always be so situated as to be seen in connec-

tion with the house, thereby exhibiting its subordination to the principal object in the landscape.

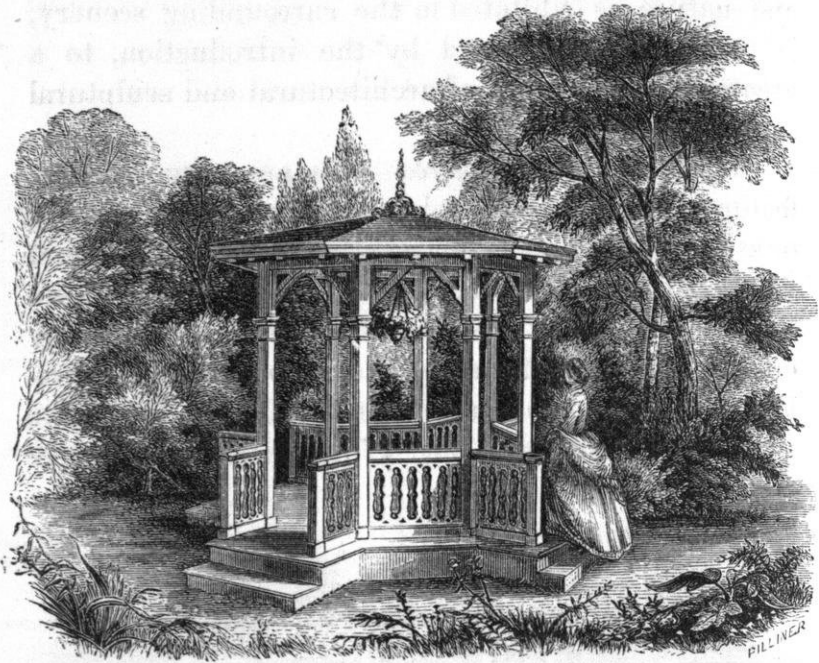


FIG. 180.

Fig. 180 should also be seen in connection with the house; its aspect, though somewhat rustic, has nevertheless too much polish in it to admit of an entire separation from the nucleus of improvement, which the house in all landscape gardening is justly assumed to be.

Fig. 181 is a high type of the rustic covered seat. It is, however, easily and cheaply made, being built by setting cedar posts in the ground, forming a framework for the roof by bending flexible limbs to the required curves, and covering it with shingles or thatch. The other portions of the rustication are completed by selecting limbs of irregular form and securing them

in place with nails; the limbs in every case retaining their bark and natural roughness. In this kind of work, although it must be admitted that considerable

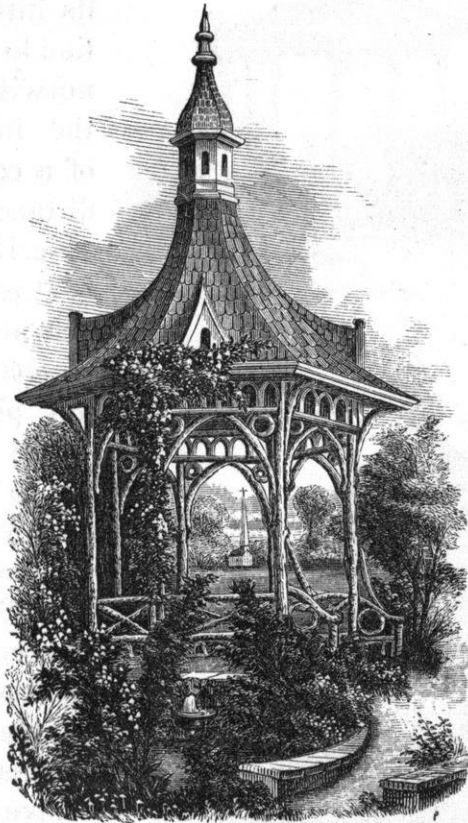


FIG. 181.

skill is requisite to give it a tasteful appearance, it should be borne in mind that the least display of the use of tools accords best with the character of the work. Inasmuch as this sort of structure evinces as much of nature as it does of art, and harmonizes well with sylvan scenery, it may be placed in any spot at a distance from the house, secluded or exposed; but if exposed so as to be embraced in a connected view

with the house, it ought to be in such a manner as to exhibit, by the agency of walks, its intimate relation to the house, notwithstanding the intervention of a considerable distance.



FIG. 182.

Fig. 182 is a very neat covered seat for almost any locality.

A *prospect tower* is a delightful place of resort for the purpose of obtaining a *coup d'œil* or bird's-eye view of the surrounding country. Fig. 183 is a highly finished specimen of a prospect tower; as a general rule for structures of this sort, they should have a less artificial appearance than this, and can be built with great success after the manner prescribed for the summer-house, fig. 181.

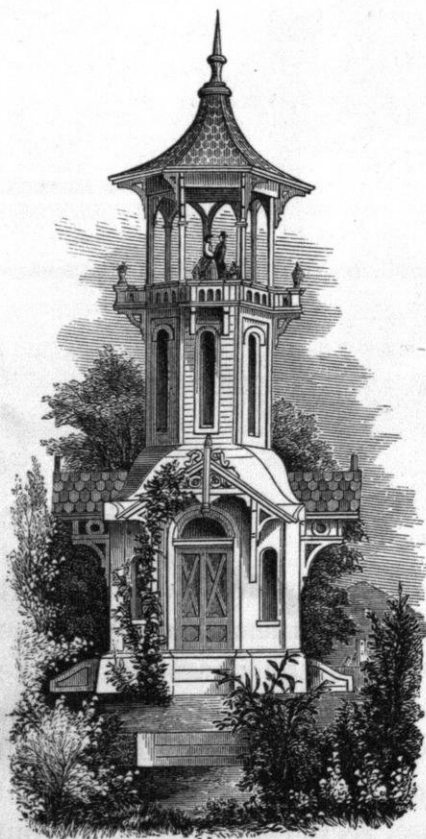


FIG. 183.

THE CONSERVATORY.—
A brief notice of this very desirable append-

age to the villa residence must answer the promise made in the early portion of this work. The best form for conservatories, in view of economy and the best practical working, is undoubtedly the parallel-ogram, although sometimes, for the sake of external appearance, they are made circular or polygonal in plan. We take for granted that it is well known that the roof, as well as the sides of a conservatory where plants are to be successfully grown, *must* be made of glass. A southern aspect is the best, yet east and west exposures do tolerably well, where the admission of light is facilitated by plenty of glass. These remarks apply particularly to conservatories attached to the house, as those in some of the preceding designs.

All conservatories ought to be provided with means for warming them thoroughly, at pleasure, and although the warm-air furnace with common square flue is one of the most simple and inexpensive modes in use, it is inferior to the steam and hot water systems for this purpose: the latter dispenses a moist and genial temperature, and is therefore much more conducive to the healthy growth of plants. The pipes conducting the steam or hot water should be concealed from view: perhaps the best plan of doing this is to place them in a longitudinal air-chamber under the walk, with perforated top to permit the distribution of heated air; the diffusion of which is greatly accelerated by an opening from the outer air to the hot air passage, the admitted air becoming immediately heated and passing into the conservatory.

Fig. 184 is a design for a large conservatory. The center building is intended for an implement-room on

the first story; the second story may be used for the gardener's sleeping-room; while the lantern serves for a look-out, being reached by a small flight of stairs.



FIG. 184.

A cellar for the furnaces necessarily occupies the most of the area beneath this portion of the building, horizontal flues, containing the hot water or steam-pipes, extending thence into each wing.

APPENDIX.

Terra-Cotta.

GARDEN VASES.—No decoration adds more to the natural beauties of a country place at so little expense as a few vases filled with flowering plants. Any expedient therefore that furnishes so much gratification on such terms will be welcomed by those wishing to improve their grounds.



FIG. 187.

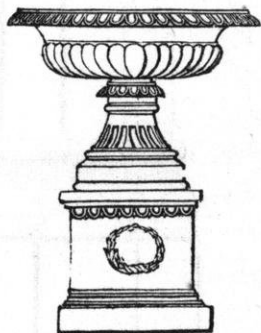


FIG. 188.

We present two cuts, figs. 185 and 186, of terra-cotta vases, which favorably exhibit the degree of perfection to which this mode of ornament may be carried. The material

is well suited for the purpose of growing flowers; being a non-conductor and slightly porous, it is decidedly preferable to iron. Great improvements have been made latterly in the manufacture of terra-cotta vases, both as regards quality and design, and the manufacturer warrants them to stand exposure to the weather in any climate.

CHIMNEY TOPS.—The cuts here given represent tops for chimneys made of terra-cotta, vitrified, so that they are not liable to injury from the action of coal gas, which is so injurious to brick chimneys. As an article of ornament, we certainly approve of their use, particularly on the cottage or villa residence, as they make an appropriate and light finish to chimneys that cannot be produced in brick. In England they are considered indispensable to the finish of a cottage building.

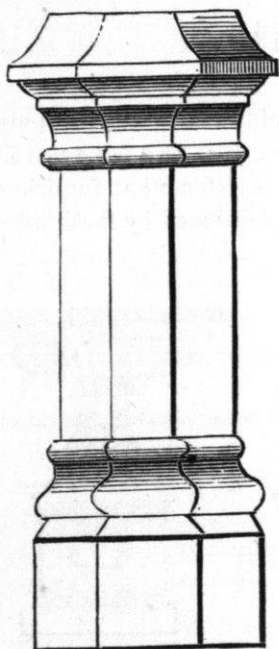


FIG. 189.

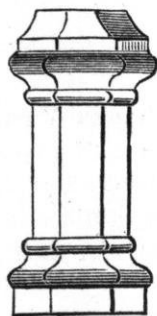


FIG. 190.

For cottages in the Gothic style, these tops should be at least five feet high, with an additional base of brick of about two feet; in the Italian style, from three to four feet is a proper height.

FLUES AND PIPES.—Latterly, smoke and air flues have been made of terra-cotta, of dimensions suitable for all purposes. They are made in pieces of about 18 inches in length and from 4 by 8 to 12 by 18 inches sectional area.

The value and economy of drain pipes made of this material is too well known to need comment here.

Much credit is due to Mr. S. A. Harrison, of Philadelphia, for the manner in which he has conducted the manufacture and sale of the above articles. His warerooms contain a collection of statuary, vases, etc., of terra-cotta, worthy of a visit even from persons not wishing to purchase.

Furniture.

IN addition to the architectural department, we include in this volume a series of designs for appropriate furniture. The drawings are taken from the original articles, composing a part of the stock of the celebrated furniture establishment of Geo. J. Henkels, Philadelphia.

The appropriate furnishing of a house or room in harmony with the style of architecture is of as much importance as the preservation of the order of architecture is on the exterior. Harmony in style of the furniture with the character and purpose of the room—with the colors of the furniture covering, carpet, paper-hangings, or fresco ornaments and the drapery—is important in producing that effect which is so pleasing to cultivated taste. Lavish expenditure on ornament does not always produce the effect desired, and many rooms, where luxury without taste predominates, only serve to display the wealth of the owner. In every mechanical business appertaining to the erection and finishing of a house, the owner has from necessity to rely on the competency of the architect, the mason, carpenter, plasterer, painter, and others, from the fact that he cannot see the house until their skill has produced it according to the plan. But when the furniture is required, it is found in such abundance, in every style and quality ready finished, that the purchaser is tempted to make examination of all the stores. The result is, his ideas become confused, style and ultimate effect are disregarded, and, in a majority of cases, he is dissatisfied with his furniture when placed in the rooms, after having exhausted his patience and money in the selection and purchase. How easy it is to avoid all responsibility by selecting a cabinet-maker who understands his business thoroughly, both in designing and constructing, and placing that confidence in his skill which is unavoidably reposed in the architect and builder! The responsibility then rests where it should, on the cabinet-maker; the cost would also be less, and that pleasing effect would be produced which is difficult to describe but

which carries with it the impress of correctness. The eye may be pleased for a time with abortive and showy designs and flashy colors, yet a reaction is sure to follow, bringing with it disgust and the desire for a change; but with graceful designs appropriate for the purpose intended, with tasteful harmony of colors, or in contemplating beauty in life, pictures representing life or graceful and characteristic representation of inanimate subjects, the eye is never wearied.

The plates accompanying this volume contain the prominent articles required in each room, just sufficient to give a general idea of what is required without going into extended detail. Before proceeding to a description of the articles represented by them, we will detain our readers with a brief account of the materials and manufacture of modern furniture.

In explaining the mechanical construction of cabinetware it will be necessary to describe the nature and quality of the different materials used, and in doing so we will first give a description of the woods, both foreign and domestic, which are most in favor for beauty and durability, beginning with rosewood or *palissandre*. The rosewood used in all civilized countries for furniture and pianos is a native of Brazil; an inferior article is found in other parts of America south of the United States. Brazilian rosewood is the most expensive of all woods in general use in Europe and America, and is celebrated for its beautifully figured grain; great skill is exercised in imitating its grain, in front doors for houses and in various kinds of cheap cabinetware and in carved legs for pianos. It is a very porous wood, although so hard and firm, and contains an acrid oil which destroys the adhesive qualities of glue. This oil must be removed by steaming or by long seasoning; steaming is preferable, as the wood looks fresher and the grain is more perfectly defined if seasoned quickly by this process. Time in seasoning darkens the wood too much when exposed to the action of the atmosphere. Rosewood should always be worked solid in sofas and chairs in the part where the sections are not wide, and where a slight warping would not be observed. In chamber furniture, or in any article where there are wide, plain surfaces, or in long sections, even if narrow, it should always be veneered on soft wood, the growth of the country or latitude in which the furniture is to be used.

It is certain that nature has adapted the wood of a country to

the wants of its inhabitants; for instance, French cabinet-makers veneer fine woods on oak such as grows in Europe, and it answers well for the purpose there, as the climate is moist and wood does not shrink so much as it does here; the oak is also of a softer and more porous nature. In America, cabinet-makers would not dare to use oak for that purpose, as it is of much closer grain; poplar, pine, ash, or cherry is much better. Rosewood is imported in rough logs, most generally split in two pieces through the heart, and sold in this condition almost exclusively by weight; it is very rugged and gnarled, and is very valuable, bringing, in rough logs, from 4 to 15 cents a pound. The finest-grained logs are cut with circular saws into veneers, yielding, with careful sawing, from fifteen to twenty veneers to the inch. This veneer is used by cabinet and piano makers, and for fancy boxes, etc.; a fine rosewood piano is only covered with rosewood the fortieth part of an inch in thickness, and it is well that it is; the thinner the veneering is on the work, the better it will stand the changes of the climate. A veneer of this thickness possesses great contractile power,—in fact it is almost incredible; a plank of solid wood, six inches thick and two feet wide, can be warped $\frac{1}{4}$ of an inch by the contraction of a veneer one thirty-second part of an inch thick. This is caused by the glue wetting and swelling the veneer which the wet glue penetrates, while it does not penetrate sufficiently into the plank to have the same effect on it. The action of the atmosphere in drying the veneer, when it is firmly glued, causes each particle to contract, and the instant contraction of particles is sufficient to draw the plank as described. It therefore requires great skill in the construction of furniture to avoid warping and shrinking.

Walnut is a native of this country, and is found in every section from Canada to the Gulf States; like all other wood, the further North the wood grows, the softer and more porous the grain becomes. The walnut from Canada is less soft and porous, and is only used (without veneering) for the commonest furniture. The walnut from the rich Ohio and Indiana bottom lands is of fine color and quality for cabinet making, and is famous for fine crotch curl or feather veneers. This is formed by the interlocking of the grain of the wood where a limb branches from the trunk. Sometimes an excrescence or wart is found on a tree,

which, when sawed across the grain, resembles tortoise shell in figure.

These warts sometimes weigh as much as a ton, and are very valuable. The walnut of Pennsylvania, Virginia, New Jersey, and Delaware is of very close grain, and on that account is used exclusively by the government for gun stocks; it also makes beautiful and excellent furniture, but it is much more difficult to work than any other walnut, and is not used to much extent for that purpose. Cabinet-makers prefer, as a general thing, to work the softer or Northern wood; Albany, New York, is the great depot for walnut timber, as it is there received from Canada and the Lake States, and selected and measured ready for market. The natural color of Northern walnut is a greenish brown, that of the Middle and Southern States is of a reddish purple. Walnut contains an acrid oil which will decompose copal varnish, and alcohol must be used to neutralize its effects. Discoveries have been made of late years that add much to the beauties of walnut. The addition of dye woods to the alcohol produces nearly the color of rosewood; this, when properly done, is beneficial to its appearance, and improves its durability in furniture. An imitation of this process is made by using asphaltum or black varnish diluted, but it gives a dirty-black color, obscures the grain of the wood, and is easily detected by a purchaser. The grain of the wood when properly colored should show all of the figure perfectly, and be merely changed in color from its original green hue to that of a rich nut brown, shading on red, which is the natural color of the best rosewood. Some persons may object to having the walnut stained, but they should bear in mind that rosewood has to be toned up with *red sanders* or *dragon's-blood*, mahogany darkened with linseed oil, oak with turmeric, and maple to be whitened in some cases with oxalic acid. As walnut is made more beautiful by judicious coloring, it is certainly a great advantage. Walnut worked in antique sculptured carvings and mouldings is best oiled with linseed oil, and is finished by this process to bring out the ornaments in bold relief. After applying several coats of boiled oil, and when nearly dry rubbing with a bristle brush, it becomes a good imitation of bronze. This character of furniture is very desirable for libraries and dining-rooms; it should be selected only for its grotesque beauty or allegorical representation. The reason for oiling this style of work is to bring out in relief the

carving; a bright polish destroys the fine lines, and consequently the effect is lost. Oiled finish should never be used on furniture with wide panels or surfaces of any kind, as it will not stand the changes of heat and cold in a house. At present, much chamber furniture is finished in oil to avoid the expense of varnishing. When walnut is well seasoned and well worked, and the grain filled with good copal varnish so as to show no pores, but is as perfect on the surface as glass, it will wear as well as any wood that is used; some of the old family pieces that were brought from Germany in the early settlement of our country and which are still preserved as curiosities, justify this assertion. Wood that is finished in oil will absorb the heat to a great extent and cause annoyance by shrinking, which will disfigure the furniture; too much care cannot be exercised on the part of the purchaser in the selection, and the cabinet-maker in the construction. You can test this comparison in a room where oiled and varnished work are subjected to the same heat: put one hand on a piece of each kind and you will find the oiled wood warm from the heat it has absorbed, and the varnished work comparatively cold, as the bright polish reflects the heat.

Maple is exclusively an American wood, and is found in greatest perfection in New York and in all the New England States. It is found in great variety, and although the outside appearance is very similar, the grain of trees growing contiguous is entirely different; the bird's eye, blister, curl, and a conglomeration of all kinds can be had from a rood of ground. Maple is in great demand in Europe, and has taken the place of satinwood for the interior finish of cabinets, wardrobes, bureaux, etc. In Europe it is dyed various colors, and the effect of the bird's eye in green or blue for chamber furniture is very beautiful; when dyed green or blue it is much improved by judicious introduction of gilt mouldings. No doubt in a few years maple will be foremost in the manufacture of all kinds of furniture; but it must bide its time until fashion demands it.

Mahogany has been the best wood that the world has produced for all purposes to which it has been applied, from ship building to the finest cabinet making. We say "has been," because the mahogany that is used now is not to be compared to that in use ten or fifteen years ago. It was first accidentally introduced into England from St. Domingo, and rose speedily and deservedly into

popular favor, so much so, that for many years it was almost exclusively used throughout the civilized world for the finest cabinetware. Like our native pine, and in fact like all other kinds of wood, the farther north the mahogany grows the softer the grain becomes and the less valuable. The forests of St. Domingo produced what was wanted until all the wood on the seaboard was cut off; then all accessible places in the mountains were denuded of it, until *St. Domingo mahogany* is a rarity, and is only procured by immense labor in transportation from the valleys, over the mountains to the seaboard. It grows to a large size in Cuba and Honduras, but it is of a common quality. A very hard and fine wood is in great quantity in Mexico; it is also found on the coast of Africa: this last is familiarly known as *nigger wood* by cabinet-makers. Thus the grain in beauty and the wood in quality graduates: very hard wood in Africa, south side of St. Domingo softer, north side of St. Domingo is still softer, south side of Cuba is next, north side of Cuba is very soft and with that found in Honduras is called "bay wood." This is the sickly, yellow wood that is now called mahogany; it is scarcely deserving of the name; we have frequently seen bureaus with the ends and front rails of a yellow color, not much different from varnished pine, and fine dark and rich colored wood on the drawer fronts. The dark rich wood is St. Domingo or south side of Cuba wood, the other is bay wood, which last is in fact but a degree removed from the Spanish cedar that is used all over the world for making cigar boxes; it is also a species of mahogany. The mutations of fashion are curious; mahogany, which was once the most favored of all woods for the finest cabinetware, is now in the United States used most exclusively by Eastern manufacturers of cheap furniture, for the Southern and West India markets. Occasionally we find a fine set of mahogany chamber furniture, but there being no demand for it, it grows old in the maker's hands.

Oak is a very difficult and treacherous wood to work into furniture, as it will warp, no matter how well seasoned. It wears dirty in the grain from use, and will probably never be in more demand than at present. The Canada oak is the best for furniture, as it is soft and open grained; oak furniture properly made is expensive, and unless it is well made is not of much service except for strength. It will grow dark with age if left unvarnished so that the atmosphere may operate on it; when dark and

old it is most valued in Europe. But what is the use of waiting for oak to grow dark when we can produce the same effect and better furniture with walnut? We hear of English oak furniture that has been in use for centuries and still looks as if it would resist the ravages of time for centuries to come. This is true, but we must not confound the English oak furniture with our native oak; the English style for furniture has always been massive, and we may say clumsy, and with the quantity of wood contained in an article in combination with its massive structure, it is no matter of surprise that it is durable. The old pieces contained in the ancient abbeys and other noted buildings are as black as walnut and are all emblematically carved; almost any wood treated in the same manner would endure equally well. Oak was used in olden times all through Europe for massive furniture; and great art and skill was evidently exercised in working out carved panels and mouldings; many of these panels and ornaments are still in existence in different form. In the destruction of some of the fine buildings and in the alteration of others that contained them, many were preserved, and by careful application some splendid pieces of furniture constructed from them. This originated the style now so much in favor called by some *Antique*, and by Frenchmen, *Renaissance*, or revival of old style. This term is applicable also to the revival of Elizabethan, Louis XIV., Louis XV., Louis XVI., and others. To make an imitation of the old wood, the new oak (which is yellow in color) is dyed with nut-galls and other composition. But walnut is even now preferred to oak for this purpose.

Ormolu Furniture.—This is a misnomer, but as it is best known by that name we will describe the wood and other materials used in making it. In Europe pear wood is used, in America cherry is substituted for pear wood, from the difficulty of procuring the latter; pear wood is of a light color, about the same as beech, and is very solid and close grained. After the furniture is put together, the wood is soaked with a solution of logwood chips, then diluted copperas and vinegar is applied on the logwood while wet. The chemical action while it is drying produces a brilliant black, equal to the best ebony. When relieved by fire-gilt ornaments and mouldings it is what is called *ormolu furniture*, and is the most effective and expensive style of furniture for drawing-rooms. An imitation of this beautiful article is

made with cherry wood and lacquered ornaments; but we might as well substitute paste for diamonds and sell them as genuine gems. Ormolu is a metallic composition of 58 per cent. copper and 42 per cent. brass; this composition is particularly required for fine fire-gilding, and when cast in chaste ornaments and well gilt does not tarnish any more than fine gold; it can be cleaned after fifty years' use and be equal to new. The imitation is made of the same material that is used for chandeliers and gas pipes, and is lacquered to imitate gilding: this, of course, is not near so expensive as fire-gilding, and is of questionable taste.

Boule work (or buhl) is very elegant furniture. An artist makes the design, for instance, for a table top, in scroll and flower work, the ground to be well covered with fine figure, so that the plain parts of the design shall be about equal to the amount of ornament, avoiding large figures and plain surfaces. The cabinet-maker then takes about six sheets of thin brass and six sheets of thin tortoise shell of the size of the table top, placing them together alternately, with sufficient adhesive substance to hold them firmly together. The design, after being lithographed and printed on thin paper, is pasted on both sides of the prepared brass and shell, being careful to have them exactly opposite. Two men with a saw made of half of a watch spring, and with very fine teeth, saw from each side so exactly to the pattern that when they have followed all of the lines and sawed the design loose from the ground work, they may produce twelve table tops, that is, the removed parts of shell will fit in the brass and the brass will fit in the tortoise shell, making six table tops with the design in tortoise shell and brass filling, and six with the design in brass with shell filling. The crevices left from the kerf of the saw are filled with composition which can scarcely be perceived; it then is glued on the under wood by the usual process: a very strong glue must be used to hold the brass to the under wood. The art of making boule work is not much known or practiced in this country, and it would not be of much benefit to the makers, as the demand for such expensive articles is so limited. It is mostly made in Paris, where they can duplicate designs or articles (which is the economy in its manufacture) to a great extent from having the whole world for customers. The boule furniture made for sale in Paris will not wear well in our Northern States, as the brass will not contract with the shrinking of the under wood, but bulges out and

defaces the furniture. It is readily repaired if put in the hands of competent workmen; French cabinet-makers who understand the nature of our climate can make boule work to wear perfectly satisfactory, even when hot air is used to warm rooms.

Having described the leading wood used by cabinet-makers, it will be pertinent to our subject to describe materials and processes of varnishing the various kinds of marble and mirrors, and the upholstering or stuffing.

Copal varnish is made of gum copal, spirits of turpentine, and linseed oil; gum copal is found in the deserts of Africa: the best is from Zanzibar. It is found by the natives in the sand, and naturalists differ about its origin, some saying that it exudes continually from the earth through the sand and becomes hard by exposure, others saying that it is a vegetable deposit of the nature of other gums, and that the trees which have produced it have disappeared, and the gum now found was formed centuries ago. It is a curious natural phenomenon, despite such explanations. It is the hardest gum known, and cannot be cut or dissolved with either alcohol or turpentine, but must be reduced to a fluid state by melting. The gum is put in large kettles over a slow fire, and, when melted, turpentine and linseed oil are added. When this varnish is put on furniture, the turpentine and the volatile part of the oil evaporate and leave a solid deposit of pure gum, and one which will resist the action of the atmosphere and to a great extent will resist water. Imitations of copal varnish are made of rosin instead of gum copal, and are used only on cheap cabinetware, and by those who manufacture wholesale, as the difference in price is of importance in finishing cheap goods, the common article being worth from 75 cents to \$1.50 per gallon, while the best copal brings from \$2.50 to \$3.50 per gallon. Spirits varnish is a quick drying but not a durable varnish, and is used for small surfaces, such as cane-seat chairs; it is made of gum shellac dissolved in spirits of wine. Gum sandrac is also used in this way. European cabinet-makers do not use copal varnish on furniture; they use but little of any kind of varnish, only enough to finish up fine carving when they cannot reach in the crevices to polish.

French polish is made of gum shellac and spirits of wine; it is put on with a linen rag moistened with sweet oil; it requires a great deal of labor, but when finished it is beautiful, and much pref-

erable to varnished work. Unfortunately for us the polish evaporates so soon in our climate that all attempts to introduce it have failed, excepting in the finishing of small fancy articles. Linseed oil is used for oiling mahogany to make it dark and rich in color before polishing; it is also much used for finishing sculptured walnut, as it leaves a resinous substance in the pores of the wood after the volatile part has evaporated. The resin becomes hard after a long time, and, after several applications of oil and brisk brushing with a moderately hard brush, (when it is almost dry,) it leaves a hard polished surface which is very serviceable and appropriate for fine sculptured ornaments.

Marbles of various kinds are extensively used on furniture, both for utility and ornament. The finest quality of marble is from the quarries on the Straits of Gibraltar; some few, such as Tennessee (which has been used extensively on the new Capitol extension in Washington, D. C.,) and white imitation statuary which is found in Vermont, and some small figured mottled marble from Virginia, are used by cabinet-makers. Occasionally a large boulder of calcareous spar is found in limestone veins in Virginia, but not in sufficient quantity to become an article of prominence, although it is very beautiful. The marbles principally in use are white Italian, black and gold Italian, pink and yellow Lisbon, Brocadilla, Sienna, white Italian statuary, and mosaic. Brocadilla and Sienna are the most fashionable and are also the most expensive, as the supply is limited and the demand great. The quarries belong mostly to fraternities of monks, who only have sufficient quarried to produce the amount of revenue required for their support. These marbles are used for center-table tops, etageres, cabinets, and other articles of drawing-room furniture. For bureaus and washstands, white marble, either statuary or white Italian, is in general use. In selecting chamber furniture it is well to get the best white hard marble, as it will not absorb grease nor soil so easily as the soft chalky stone will, and it is also much stronger. The difference is easily ascertained, as hard marble will ring like sound china, and the soft or common marble will sound like cracked china. All kinds of marble are imported in large blocks, and sold by the cubic foot. The blocks are placed on trestles and from ten to thirty steel bands, which are placed in a frame at such distance apart as the marble is required in thickness when cut. This frame is propelled backward and for-

ward by steam power, and by friction with coarse, hard sand (with which they are fed) and plenty of water, separates the block into slabs. The slab is then worked to the form required with chisel and mallet; it is then ground level with fine sand on a circular wheel, and afterward polished with a paste composition and with hones. There are some very beautiful figured marbles which will not take a polish and are of no value; this is particularly the case with a fine green and white spotted stone, some of which is very much like verd-antique, which in the slab looks very valuable, but all attempts to polish it have failed. There are some rare marbles which we never see in America and which are fabulously valuable. We have heard of an English nobleman who paid six thousand pounds sterling for one center-table top of malachite. Small specimens of this stone worked in ornaments are in the possession of some gentlemen here who have brought them from Russia as curiosities. The Italians make center-table tops very beautiful in mosaic, and veneering in small pieces in imitation of mosaic. These are made extensively at Palermo, and visitors to Europe very frequently bring home the marble tops and have them handsomely fitted up as souvenirs of their travels.

Mirrors are of various qualities; the best is the warm colored, white, French plate, which is very thick and is made of the best materials. This glass will not decompose or become frosted. The other qualities are a bluish-white French plate, (which is also very thick,) half-white Belgian, and several qualities of green German. It is very easy to distinguish quality by comparison; the best French mirrors reflect a warm and natural color, while other kinds shade on blue or green, according to quality.

Curled hair enters largely into the aggregate of material used in making furniture; the best is brought from South America, where wild cattle and horses abound, and where the principal value of the slaughtered animal is its hide and hair. Hair is imported in bales, and consists of the tails and manes. The long horse hair is selected for hair-cloth, and the next in length for brush making. The balance is twisted very tightly into ropes to give it the necessary curl; it is then boiled for a time, and, after being dried in kilns, it is unraveled: this fixes the curl or twist permanently. In this form it is used for stuffing furniture and mattresses. An inferior quality of domestic cattle hair is used in cheap upholstery, but it always retains the odor of the barn-

yard, and in damp weather it is offensive when used to stuff sofas, chairs, or mattresses. In the West, where hogs are slaughtered in such great numbers, they save the bristles; by mixing these with cattle hair a cheap substitute for South American hair is afforded. It is, however, a dangerous article for house-keepers, as it generates moths, and is the prolific cause of great increase of this domestic pest. Tow is also used in connection with hair in medium class goods, and is used alone in stuffing what is called Eastern or Yankee furniture. The consumption of hair in the different branches of business is enormous, and when we reflect that it requires the hair from thirty horses or bullocks to make one good mattress, or the hair from ten to stuff one sofa, we can form some idea of the number that is slaughtered to supply the demand of the world. The hair from all of the domestic cattle which are slaughtered each year in the Union would scarcely supply the City of Philadelphia with the quantity required for her various manufactories of cabinetware, mattresses, carriages, railroad cars, and other branches of industry which, for the promotion of comfort and utility, demand this material.

Furniture covering and curtain material comprise an immense variety of both silk and woolen manufactures, separate or in combination. The articles most in use are tapestry, brocades, brocatelle, plush, reps, and hair-cloth. French tapestry is now made of beautiful patterns, and is so neat an imitation of Gobelin that it looks almost as well. Tapestry is made of woolen groundwork, and silk medallion figures ingeniously woven in. The effect is superb, and it will retain its colors longer than any class of exclusively silk goods. The fashion at present for the finest furniture is medallion tapestry. Brocade, lampas, brocatelle, and lampisade are all rich silk goods, and much of the same character. The price is regulated by the number of colors introduced and the quantity of silk in it—brocades having the most silk and the most colors, and brocatelle the least. These goods will be used so long as the human eye delights to dwell on the beautiful. For elegance there is nothing to compare with silk as drapery, and, although a prudish taste or a desire for change may banish silk for a time, it will be again revived, to fill a more prominent part than ever.

Plush is made of goats' hair, woven with the pile to stand erect, like velvet, and is very durable. Common plush, for cheap furni-

ture and coaches, is made of wool; but time and little service show its worthlessness.

Wool reps is much used, particularly for dining-room and library furniture and drapery. Silk reps, plain, ribbed, or striped, of different colors, is much used for dining-rooms and parlors. A new style of reps, called cotelaine, is very pretty, and no doubt will be a great favorite, as it has all of the beauty of brocatelle, with the advantage of novelty and greater durability.

Hair-cloth is so familiar to every one, that a description is almost superfluous. However, it will be information to many to know that the length of the hair in a horse's tail is the width of the hair-cloth. It is made from fourteen to thirty-six inches wide, and hair is required thirty-nine inches long to weave cloth thirty-six inches wide, and proportionately long for the other widths. The hair in the tails of wild horses is much longer than that of the domestic. The hair for making cloth is dyed black, and is then woven with cotton or linen chain, each separate hair being drawn through by hand in the weaving. Hair-cloth is now being introduced made of different colored hair, worked into stripes or diamond figures. This is very pretty for country parlors, but is expensive.

In hanging drapery, the colors should be in harmony with the furniture covering, carpet, and the color of the walls. It is not necessary that the same materials, or even the same colors, should be used for the curtains and furniture, as a good contrast is more pleasing than sameness, even though the material be rich. The cornice for window or bed curtains should be either gilt or made to suit the architecture of the room. Pressed brass cornices are not in such good taste as are wooden ones corresponding with the furniture. Gilt and black, or wood painted to match the woodwork of the room, are considered much more appropriate. It is well to consult the judgment of the cabinet-maker or upholsterer in this, as furnishing properly is their business, and they know best what should be used to produce good effect. There are many trades and professions concentrated in the furnishing of cabinet-ware that need no description, as they are not important to our purpose of giving information how to furnish well.

We will continue this matter by giving here some general information, and perhaps throw out some original ideas and suggestions that may be of use.

We were shown by Mr. Henkels some specimens of marquetry work, which he had imported from France. It is very ornamental. It consists of wood of different colors, inlaid in the forms of birds, animals, and flowers. It is used much for allegorical or emblematic pieces of furniture. The woods used are bois-de-rose, which is of a red color, for the groundwork, and maple, dyed, of different colors, and artistically shaded, for the ornaments and figures. The wood is inlaid by the same process as described in the manufacture of boule, and everything depends on the nice arrangement of the colors and execution of the shading. Some marquetry work is as perfect as a fine painting, and shows great skill and ingenuity in the design and execution. A great improvement to marquetry is a judicious introduction of fine gilt and porcelain ornaments—in fact, all of the finest class goods are ornamented in this manner. It is almost exclusively made in Paris and Germany, and is in great demand there by wealthy persons and the nobility; but a small quantity is either imported or made in this country, as the demand is limited and the expense great. The porcelain used by the French for ornamenting furniture is very elegant in design, and much of it is equal to the best Sevres china. It is very costly, which prevents its more general use. The artistic arrangement of the different woods in contrast, on the same article, is novel and beautiful, and will no doubt be extensively encouraged, so soon as the public have it properly placed before them. We have seen several suits of furniture of this kind, in which the effect is very pleasing, and suggestive of other combinations. There was one suit of chamber furniture, with all the articles of the same character, and made of bird's-eye maple, with rosewood moulding. The maple was of very fine quality, almost gold color, and the rosewood being almost black, made a striking contrast.

There is, no doubt, room for much improvement in the manufacture of furniture, and much of the improvement depends on the independent taste of those who wish to furnish. The fashion of furniture has been stereotyped of late years, and everybody has been trying the same patterns and kind, without reference to appropriateness.

Antique furniture is a style not exclusively its own, but is borrowed from most of the other distinctive styles. The French, besides the use of old panels and mouldings from ancient build-

ings, have borrowed the grotesque from panels in the Vatican at Rome, and from other works of great artists. They have also ransacked mythology, and, we may say, demonology, for allegorical subjects. It is the most appropriate for library and dining-rooms.

We have seen book-cases that were superb works of art. The mouldings carved in fine leaf ornaments; the pilasters were knights in full armor; the panels, hunting scenes; and the cornice surmounting the whole, a perfect confusion of guns, pistols, swords, spears, and arms,—the whole carved in solid oak and dyed a dark color, without polish, so as to resemble time-worn wood. The effect is grand. A dining-room, where the panels of the sideboard are of game or fish, and the top is a fine elk or boar's head, and other parts ornamented in same style, is unique and stylish. Poor imitations of this furniture should be avoided, as the only thing that reconciles correct taste to this *outré* character of furniture is the artistic execution of the sculpture. It must be a work of art, (although the figures may not represent anything on the earth,) and all imitations are but buffoonery. The dragon's head is a favorite ornament for the arm of a chair or sofa, a lion's claw for the foot, and a serpent coiled fantastically for the back. In the hands of good designers this style is prolific in subjects for the pencil, and a room furnished correctly in this manner is very grand and imposing, and will endure the ravages of time.

The world has seen so many mutations in style of furniture that it is almost impossible to construct a new character without combining a number of those in use before. The only distinct styles of architecture that have been applied to furniture are Gothic, Corinthian, and Grecian. The celebrated Elizabethan style is an imitation of Gothic, and is very stately, and suits the English to this day; in fact, the English have never excelled in graceful design for furniture, but have aimed more for solidity and durability. The styles of Louis XIV., Louis XV., and Louis XVI. are similar to the Elizabethan in general effect, but of much more graceful shape, substituting the curve lines for the angular. The three last-named styles are so similar that it is difficult to say where one left off and where the other began. Almost all first-class cabinet warehouses have each of these styles of goods, and the buyer can procure them, if he know what they are without asking for them—otherwise he may be shown either style, under each name, just as he happens to wish to purchase; in fact, neither

purchasers nor cabinet-makers in this country know what is the distinctive feature of either style; and even the French themselves admit that the form was the same in each style, and the difference was only in the character of ornament—gilt, bronze, fancifully painted and wood decorations, or a combination of all, being used as a purchaser desired; but the general forms of sofas, chairs, tables, were nearly the same, and varied about the same as at the present time. The greatest extravagance prevailed in France at that time, and ornaments of copper, ormolu, porcelain, silver, and even of gold, were not uncommon on the furniture of the nobility. The most extravagant was the reign of Louis XIV.

Much of the best and richest furniture sold in Paris is made in Brussels, Vienna, and other parts of Europe, and is sent in sections, or complete, to Paris, where the congregated taste and wealth of the world expect to find everything that human nature requires or fancy can conceive. In Paris, a Frenchman cannot go to a cabinet-maker and buy all the articles to furnish a room or house, like we do in the United States, where our stores are always displaying all kinds of goods ready finished, as the trade is divided into separate and distinct branches of cabinet-makers, upholsterers for stuffing furniture, and putting up drapery, and fitting carpets, and gilders. The cabinet-makers are again divided into those who make parlor chairs and sofas, others who make chamber furniture, others whose business is entirely the antique furniture; then, again, into the manufacturers of boule, marquetric, and ormolu work.

The *garret bosses*, as they are called, occupy the upper stories of large buildings in retired streets, and there (almost without the knowledge of their existence on the part of the fashionable world) are made those beautiful articles that have given Paris the world-wide renown which induces the tradesman in this country to call his abortive creations "*the latest French patterns*," when neither the designer nor the design is worthy of any name, except botch.

The storekeepers of Paris, who are located in desirable situations, purchase this work from the garret bosses, but do not keep each one a variety sufficient to furnish a house, but a purchaser must buy his sofa and chair-frames from one person; get his upholstering done by another; purchase the chamber furniture from another; his ornamental boule and marquetric cabinets and pedestals from another; and his curtains and carpets from still another,—thus making it a troublesome task for one who wishes to select

each article wanted. The nobility and other wealthy persons rarely see the articles they purchase, but rely on designs shown them, and upon the upholsterer, who takes charge of every department.

Many Americans, who had expected to purchase their whole furnishing in Paris, have returned home with only a few *fancy articles* and with plenty of experience, which it is hoped will have a good effect in causing them to appreciate the enterprise of our own countrymen, who keep assortments of everything required in house furnishing, and who offer such facilities as cannot be obtained in Paris in their line.

Immense quantities of furniture are made in Paris for Brazil, St. Domingo, Cuba, and Mexico. The United States do not import much, as our workmen only require the sample for patterns, and can then produce the article, as well made, and much cheaper, excepting such work as we have before mentioned, where the demand is so small, and where the manufacturer would not be justified in the expense required in producing it. The consumption of furniture is surprisingly on the increase, and there is not a branch of domestic manufactures that has increased more rapidly than it has. The principal places for the manufacture of first-class goods are Philadelphia and New York. Baltimore produces but a small quantity of good furniture—about the same as Boston does. Philadelphia and New York are the markets where purchasers can be best accommodated. Philadelphia has always been celebrated for superior construction and designs, and can boast of a great number of the largest first-class stores in this business in the Union. The journeymen cabinet-makers in this city are of a most respectable class, and are mostly married men, who either work in the regular factories, or else work at home, and sell their furniture, unfinished, to *dealers*. The introduction of the latter system from Europe has, in a great measure, depreciated the quality of goods in general, as it is impossible to produce good furniture when the lumber is purchased from the yards in small quantities, as wanted for immediate use. The workman who labors at home in his garret will work from twelve to fifteen hours a day, and cannot then make as much wages as one who works for a cabinet house ten hours per day; but the fact of being independent reconciles the home workman to the extra labor required to earn the same amount as the other does. There are a great

many dealers who buy their furniture from them, and finish it for sale. The dealers, not being under expense for a factory, and not being obliged to keep large amounts of wood on hand to have it perfectly seasoned, can undersell (nominally) the regular manufacturers, but experience has proved to many persons that such goods are only fit for temporary use, and that furniture made by a regular cabinet-maker is the cheapest in the end.

An immense trade has sprung up the last few years with the Southern and Western States in a cheap and showy class of furniture, of mongrel design and superficial construction. The location of so many dealers in the different cities and towns South and West has increased the demand for this class of goods to so great an extent that a great number of large steam factories are engaged in this trade exclusively. They make furniture of showy style, with but little labor on it, and most of that done with the scroll-saw and turning-lathe. The dealers, both South and West, find this work very profitable, as the showy appearance gives an erroneous idea of value, and purchasers pay more profitable prices for it than they do for good but less pretentious goods. This furniture is easily detected by examination, as it consists mostly of broad, flat surfaces, cut with scroll-saws into all imaginable and unimaginable shapes, and then by a moulding machine the edges are taken off uniformly; this gives it a showy finish. The principal articles thus made are etageres, or what-nots, fancy tables, hat-racks, book-shelves, music stands, bedsteads, cribs, and fancy reception-chairs. There is not much of this class of goods that will exist as long as the manufacturer, but will no doubt outlive his reputation as a cabinet-maker. This is not said to depreciate the value of the goods of any person, but is truthful matter, properly belonging to a work of this kind.

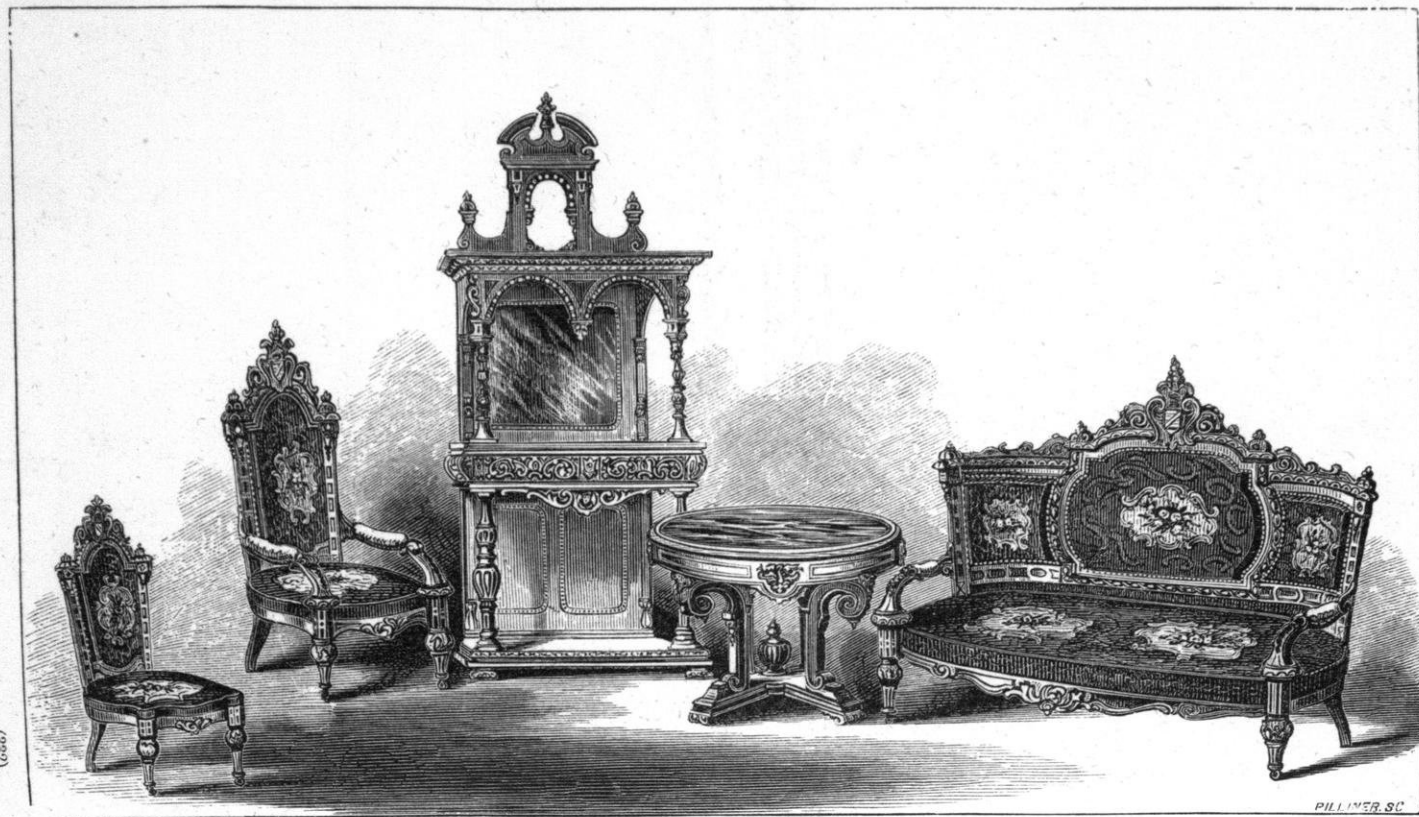
The increased facilities of communication with Europe has enabled Americans to travel more, and an improved taste is already apparent in the demand for works of art, and we trust, before many years, that the present age of ostentatious display will be succeeded by an era of cultivated taste, when the amount of labor and skill in any article of manufacture will constitute its principal value.

Much complaint is made by housekeepers about furniture shrinking and splitting, and the cabinet-maker has to bear it patiently, to

preserve the favor of his customers. He is also compelled to bear the blame when it is attacked by moth-worms; but we think a little reflection will exonerate the cabinet-maker from much of the responsibility under which he suffers. Where houses are warmed with hot-air furnaces, too much care cannot be taken to supply the necessary quantity of moisture to the heated air, as no wood-work can stand the hot, dry air. Even a house that has been built for twenty years will give way in the wood-work if furnaces are substituted for the previous manner of heating. How, then, can furniture stand without shrinking if the wood-work of an old house will shrink after twenty years' seasoning? So with moth-worms; keeping a constant fire in the furnace for the winter months, having the rooms at a temperature of from seventy-five to ninety degrees, gives the moth-worm a genial climate, and affords it every facility for increase; curtains and carpets are shaded from the sun's rays, to protect their colors from fading; sofas and chairs have outside covers to protect the satin covering from fading and soiling; gilt mirror frames are fortified with bobinet, to protect them from damage—but cabinetware is left unprotected, and subject to all the influence that can tend to injure it. If sofas are stuffed with hog-hair, the fatty substance in the hair will generate moths, and afford them food to propagate enormously. If stuffed with the best curled, and one moth-fly can make a lodgment inside, it will increase its progeny so fast that in one year the work must be reupholstered with new materials. There is also a small worm called "hair-worm," that will cut the best curled hair as fine as sand, and the best material is of no protection, unless the house-keeper will use constant vigilance. The evils complained of can be remedied by putting out the furnace fire once a week during cold weather, and opening the doors, so that the freezing air may assist to exterminate the moth, and give the wood-work time to recover from the strain on it caused by the continued heat. The furnace should also be supplied with water, the evaporation of which mingling with the heated air tends to protect cabinetware, and is of importance to the preservation of health. When the moths have attacked furniture they can be dislodged by removing the sofas and chairs out in the air and sunlight for three or four hours each day for several days, and beating them well. New furniture should be removed from the walls of a room once a week, and

the carpet under it well swept and the furniture well dusted and whisked under the seats and around the backs; this will prevent the moth-flies from getting inside the furniture, where they are most destructive, and the constant disturbance will prevent their cutting the covering on the outside. By taking these precautions (after having bought good furniture) much inconvenience and expense is avoided.

Drawing-room Furniture.



(382)

FIG. 191.

PILLNER, SC.

Drawing-room Furniture.

(FIG. 191.)

This PLATE is designed to show one of the grandest Drawing-room Suits that can be made. It is very finely and elaborately carved in solid rosewood. Much of the very fine work could not be introduced by the engraver, and the design is only to show the general character. It is covered with Gobelin tapestry of crimson ground, with bouquets in the center of the gold medallion. This suit, when finished, has truly a regal appearance. The articles are all very large and massive, as it is intended for the largest drawing-rooms. The style is now called the "*Napoleon*," and is a near approach to the "*Elizabethan*." The upholstery is all square stitching, which stands out boldly from the wood-work. It requires to be seen to appreciate its fine artistic carving.

The Center-table has a marble top, inlaid in the wood edge which surrounds it. This wood edge is a great comfort to ladies with thinly-covered arms, as the wood, where the arm rests upon it, is many degrees warmer than the marble.

The Etagere is an entirely new pattern, and requires (to be well finished) a pair of vases underneath, a time-piece in the center, and statuettes, busts, or bronzes on the top.

Parlor or Drawing-room Furniture.

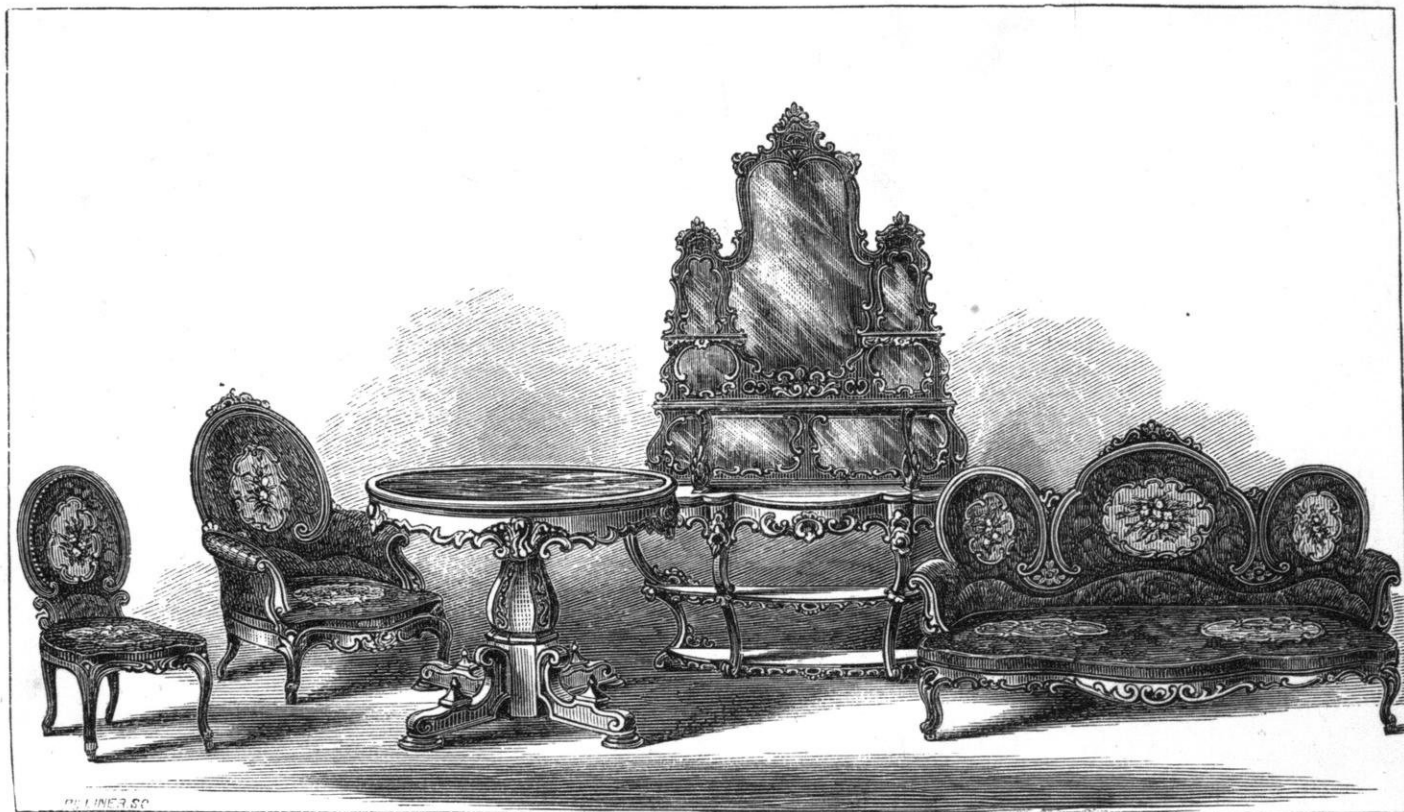
(FIG. 192.)

This PLATE is a fair representation of a new style of Parlor or Drawing-room Furniture. It will be observed that the wood-work on the sofas and chairs is continued in scrolls on the back of each. The upholstery around these scrolls is stitched up square about one and a quarter inches, which gives the scrolls that much depression from the surface of the covering. Around the lower part of the back there is a roll thrown in, which adds much to the style, and enables the workman to draw the covering very tight without setting in gores. This roll projects over on the seats, (which are very wide,) and makes the furniture very comfortable. This suit is finished in medallion Gobelin tapestry of green ground, with gold center-pieces, and bouquets of rich colors in the center of the gold.

The Center-table is much the same as on Figure 193, only this one is round and the other is oval.

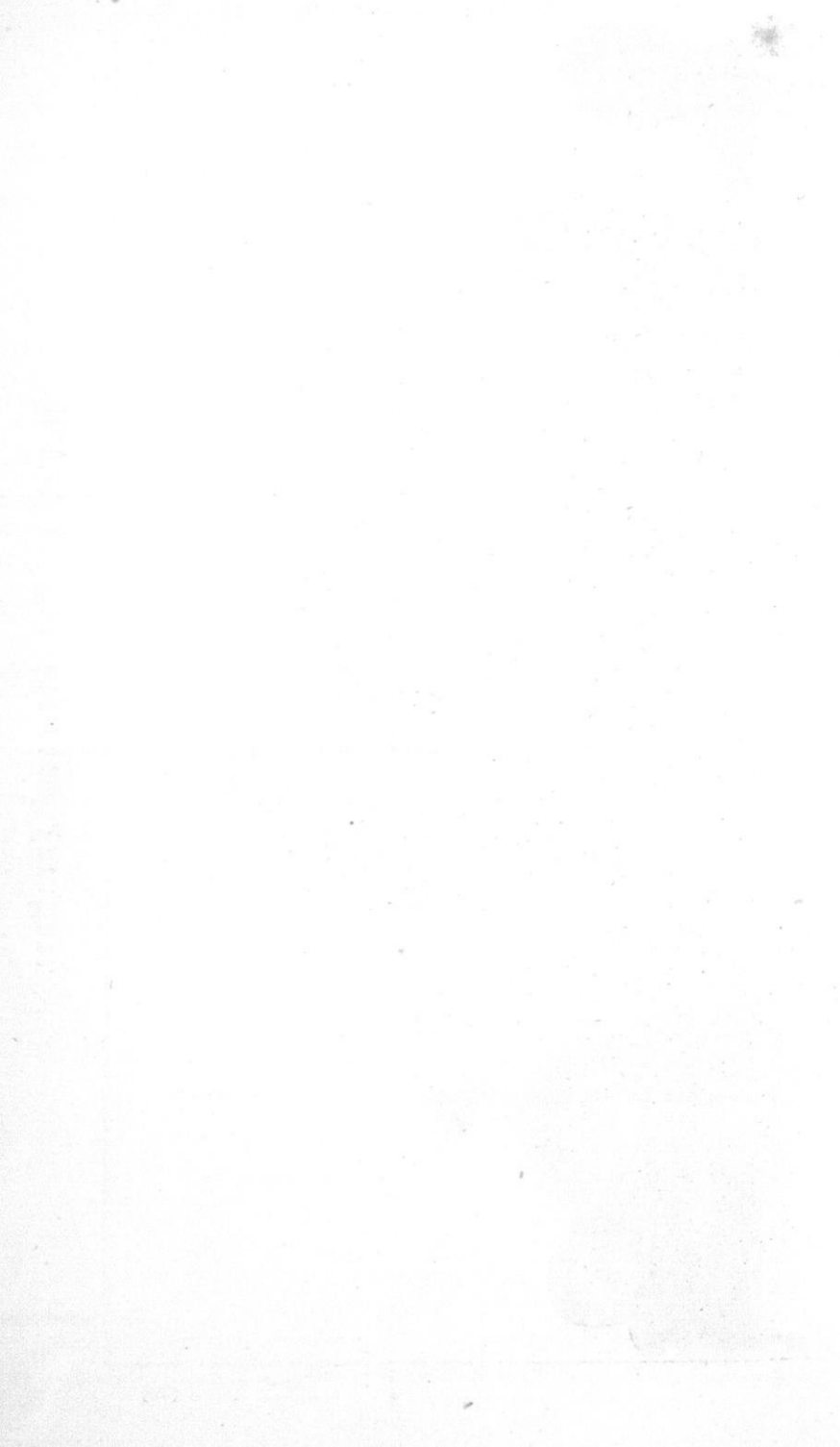
The Etagere is very ornamental, but is difficult to transfer properly on paper. It has a marble slab in the center, and has seven mirrors in the frames in the back. It is in harmony with the other articles on the plate.

Parlor or Drawing-room Furniture.



(335)

FIG. 112.





Parlor Furniture.



(938)

PILLINER

FIG. 193.

Parlor Furniture.

(FIG. 193.)

This PLATE contains the prominent articles for a Parlor, and can be made either in rosewood or walnut. This style of heavy mouldings (with just sufficient carved ornament to relieve the joints of the sections) is now very fashionable for persons not wishing very expensive furniture. The sofas, arm-chairs, and small chairs are of the same shape and finish. The seats are plainly upholstered and the backs are tufted. The style of upholstery can be changed to suit the character of the covering to be used. If satin or brocatelle, it is well to tuft the backs and do the seats plainly; if plush, it makes the best finish to do it all plainly and have all of the edges square stitched, (see Figure 192;) if moquette or tapestry covering in medallions is to be used, it must be plain, with elastic edges, so that the cover, when drawn on tight at first, will pull hard on the elastic edge, and, as the cover stretches, the elasticity of the edge will draw it tight, and keep it from wrinkling.

The Center-table has a marble top, ordinarily; but a beautiful way of finishing it is with plate-glass top in a frame, and the inside of the table lined with velvet, leaving a box four inches deep. The lid can be removed at pleasure, and articles placed inside are protected from the dust and from handling. The effect is very good.

The Etagere matches the other articles.

Chamber Furniture.

(FIG. 194.)

This is a Suit of superb Rosewood Furniture. The Bedstead has circular foot and head posts, ornamented with cord and tassels, carved in solid rosewood; the mouldings are massive, and being placed around sunken panels, add greatly to the general effect; the panel in the headboard is a very large plain surface, and is veneered four ways, which will keep it always level, and also serves to show fine figured wood to advantage; the top of the headboard ornament contains a fine medallion head.

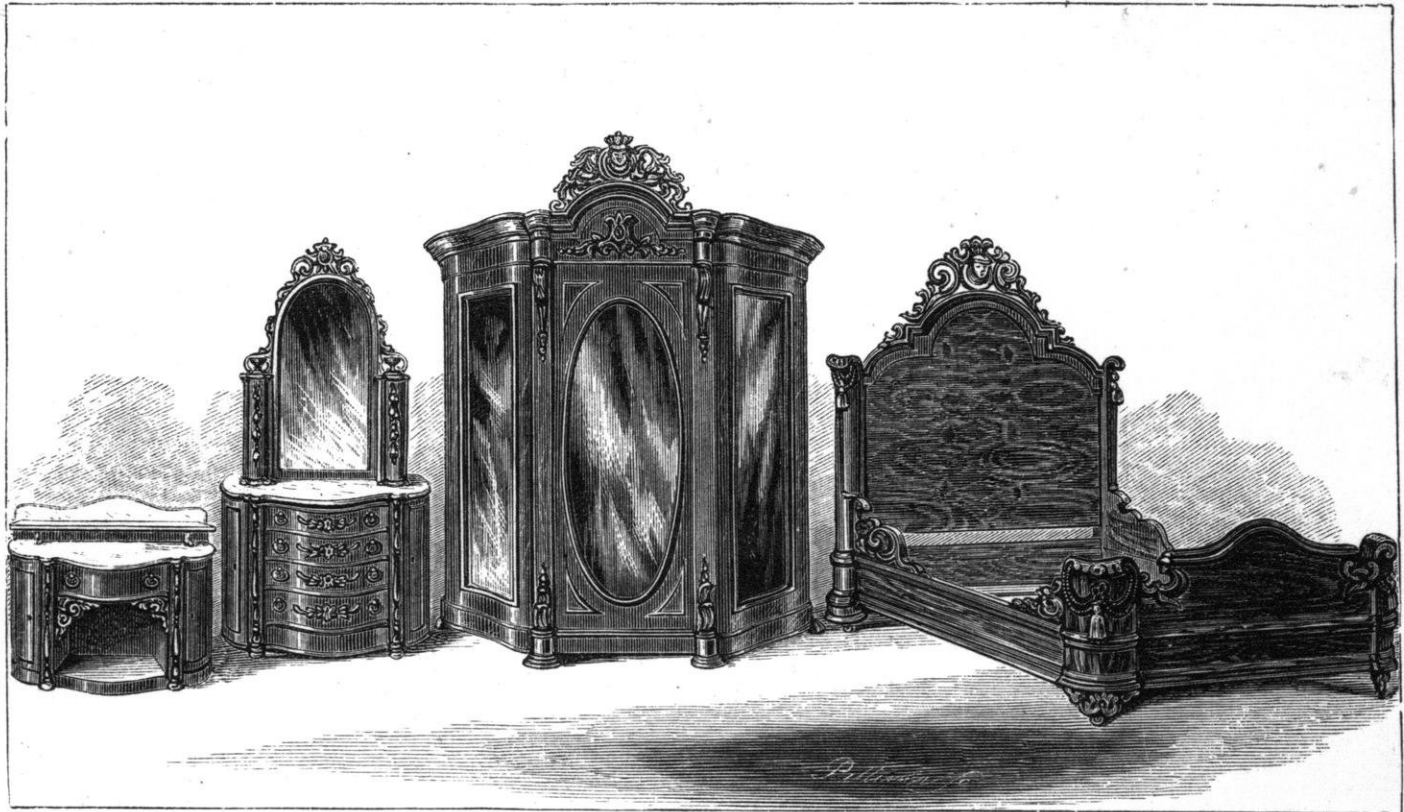
The Wardrobe is very large, with three mirrors in the doors; the end doors are serpentine in form, to suit the shape of the cornice; the carving matches the bedstead.

The Bureau is of serpentine form, with four drawers in the center part and with a closet in each end; the glass frame has a closet on each side with shelves for toilette articles; it corresponds in style with the other articles, which are all of extra large size.

The Washstand has closets in the end, and is open in the center to receive foot-bath, with marble in the under part and marble top and shelves.

These articles match beautifully in the general character. The serpentine and curve lines prevail throughout and greatly conduce to the artistic beauty of the pattern. The furniture is much more elegant than can be shown in a wood-cut.

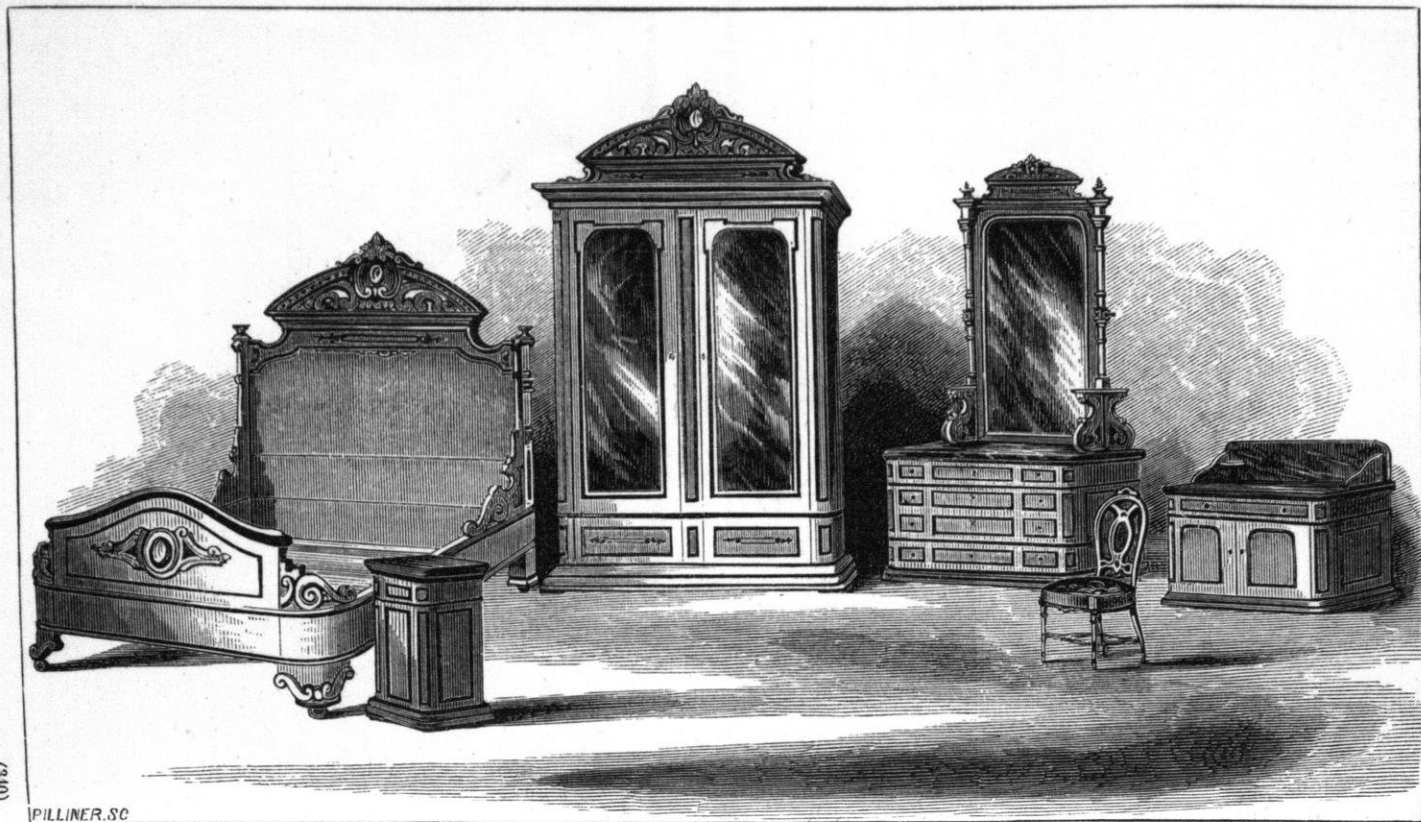
Chamber Furniture.



(388)

FIG. 194.

Chamber Furniture.



(340)

PILLINER.S.C

FIG. 195.

Chamber Furniture.

(FIG. 195.)

This PLATE represents a Suit of the new style of Chamber Furniture, of two distinct characters. In one the ground is walnut finished with wax polish, and the mouldings (as shown by the black lines on the drawing) of polished ebony. This is very unique and chaste. In the other the ground is bird's-eye maple, with the mouldings of rosewood. With the walnut suit, it is beautiful and effective, if the inside doors of the room and the window-panes and cornices are finished in the same style of work. A mantle, and mirror for the mantle, made in the same way, enhance the beauty and style of the chamber, and are not much more expensive than marble mantles and gilt frames. The maple suit is beautifully polished, and the contrast of the rosewood moulding with the gold color of the maple is very good. It is particularly appropriate for warm climates, from its cool appearance, and, when in contrast with blue and gold paper-hangings, and blue carpets and drapery, is well adapted for a lady's chamber.

The Wardrobe has two mirror-doors, and the other articles have marble tops of appropriate color.

The furniture is all of large size.

The Chairs have spring-seats, and are covered with materials to suit carpets and drapery.

This suit must be seen to be properly appreciated.

Chamber Furniture.

(FIG. 196.)

This PLATE consists of a Suit of Chamber Furniture. The Bedstead is rounded at the foot, and the headboard is one large panel, veneered four different ways, with the grain crossed, to prevent its shrinking; the carving is just sufficient to carry out the design, and is well executed; the mouldings are all massive and well arranged.

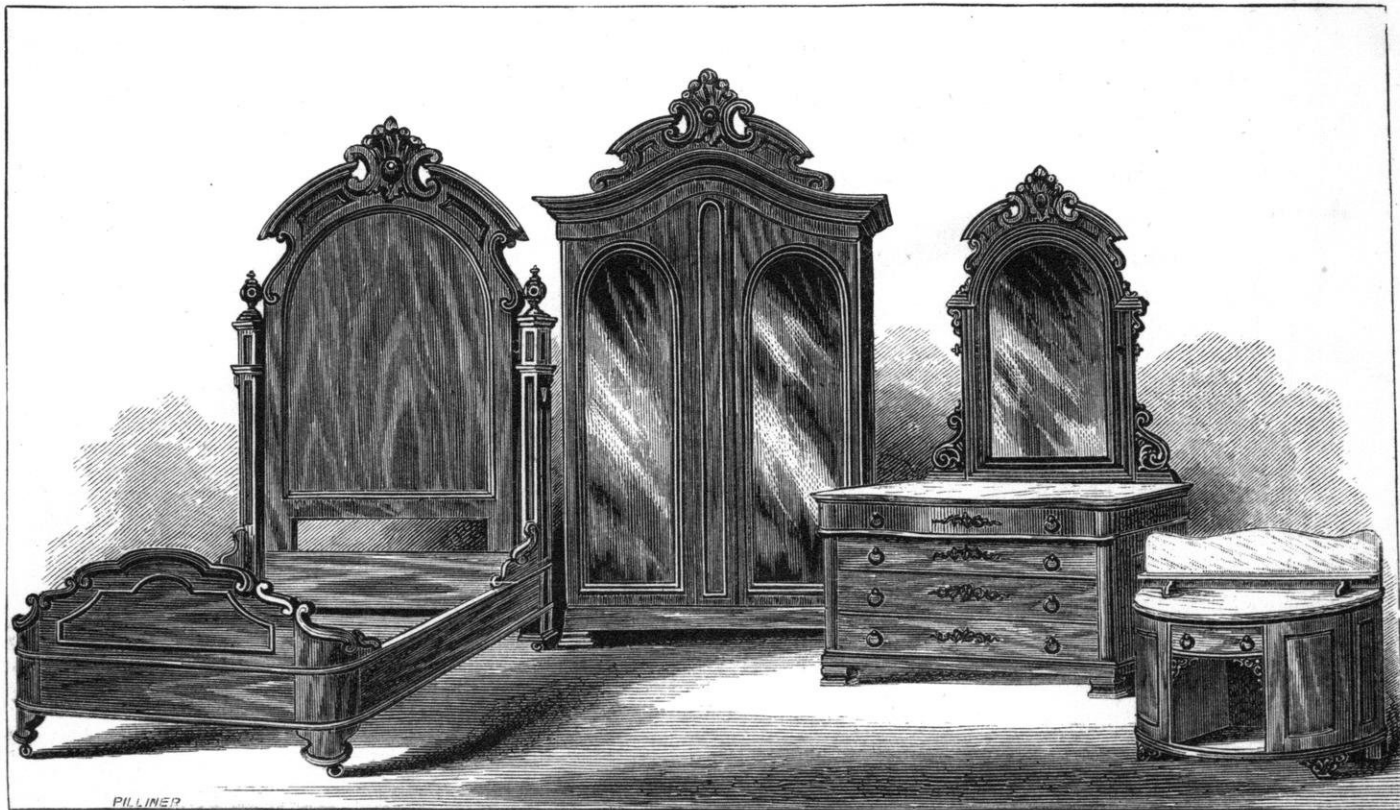
The Wardrobe is in style to harmonize with the bedstead. It has mirror-doors, and a separate lock on each door, leaving the door to close one inch on the center-piece; by this arrangement the door can shrink without leaving a crevice for dust to enter. The inside of the whole is grained to imitate maple, which makes a neat and clean finish.

The Dressing Bureau is of large size, with a marble top, and large mirror to swing in the standard. It is finished to match the other articles in the suit.

The Washstand is elliptical in front, with closets in the ends and drawer in the middle; it is open in the center, with marble top, and has marble in the opening, where there is sufficient room for the foot-urn.

The other articles required for a full suit are a lounge, a comfortable arm-chair, four or six chairs, a towel-stand, and most generally a small table. The space on the plate would not admit of them.

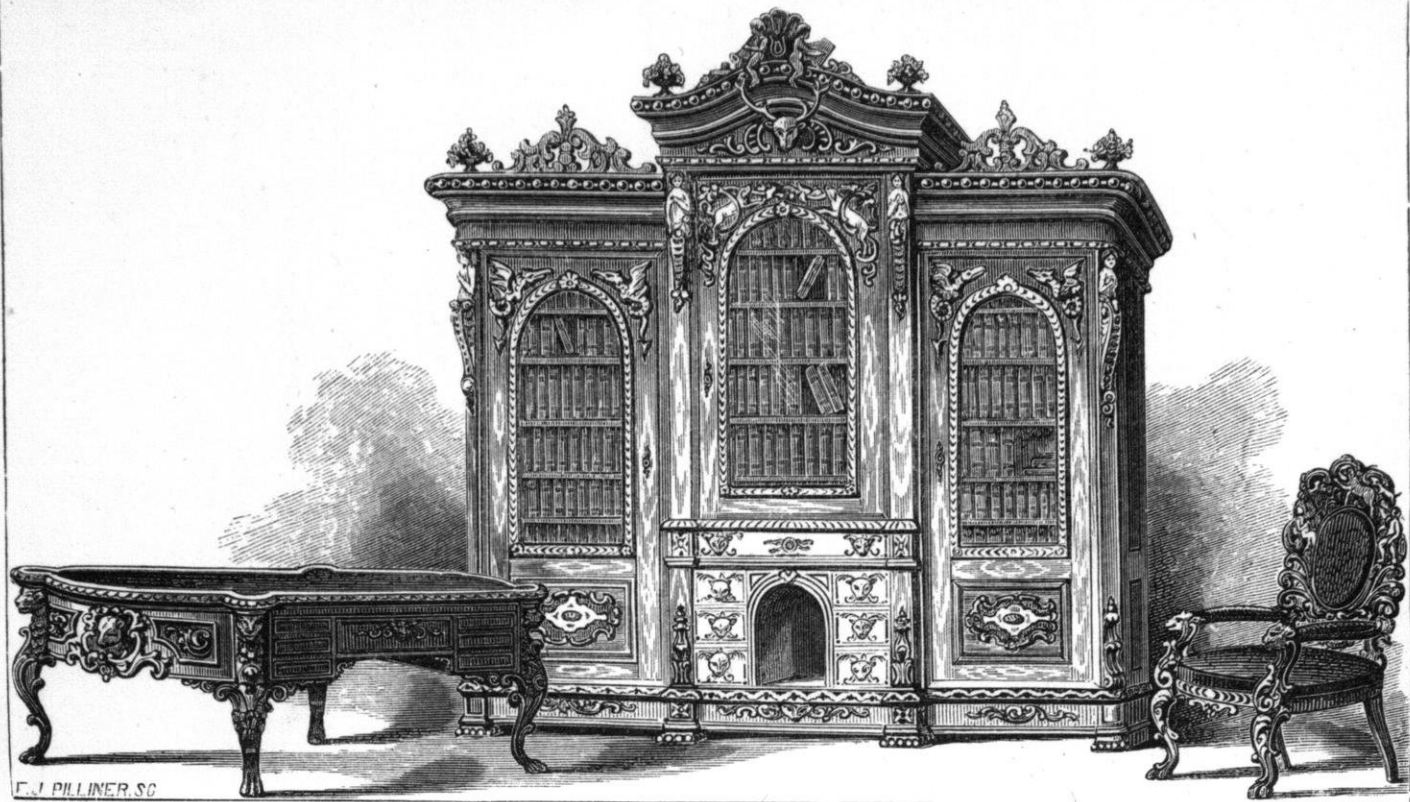
Chamber Furniture.



(343)

FIG. 196.

Library Furniture.



(344)

F. J. PILLINER, SC.

FIG. 197.

Library Furniture.

(FIG. 197.)

This PLATE represents Library Furniture of the most elaborate character, upon which the carving is very fine.

The Bookcase is eleven feet long and twelve feet high, with a secretary and desk under the center door; a drawer pulls out, and by leaving the front down, we have the desk, with all of the ordinary interior arrangement for papers, etc. Observe that on each end and on the two center pilasters there are figures in sculpture; around the top of the doors are also fine sculptured pieces, and the cornice is handsomely ornamented with stag's head, etc.; the drawers have grotesque heads for handles; the mouldings are all appropriately carved.

The Library Table is carved to suit the bookcase, with grotesque heads; it has twelve small and two large drawers, half on each side; the cut should have two heads on each drawer for handles; this improvement has been made since the artist sketched it for this book.

The Arm-chair is also carved to match the other pieces; the back is carved to represent a hunting scene, with deer, dogs, and hunters, with hunting apparatus; the front legs and arms are dragon's head and claws; this chair is covered with morocco, and finished with gilt nails. The succeeding plate, Figure 198, is a continuation of this suit.

Antique Furniture.

(FIG. 198.)

This PLATE and the preceding are of the same character, and the style is what is called "*Renaissance*" in France, and "*Antique*" in this country.

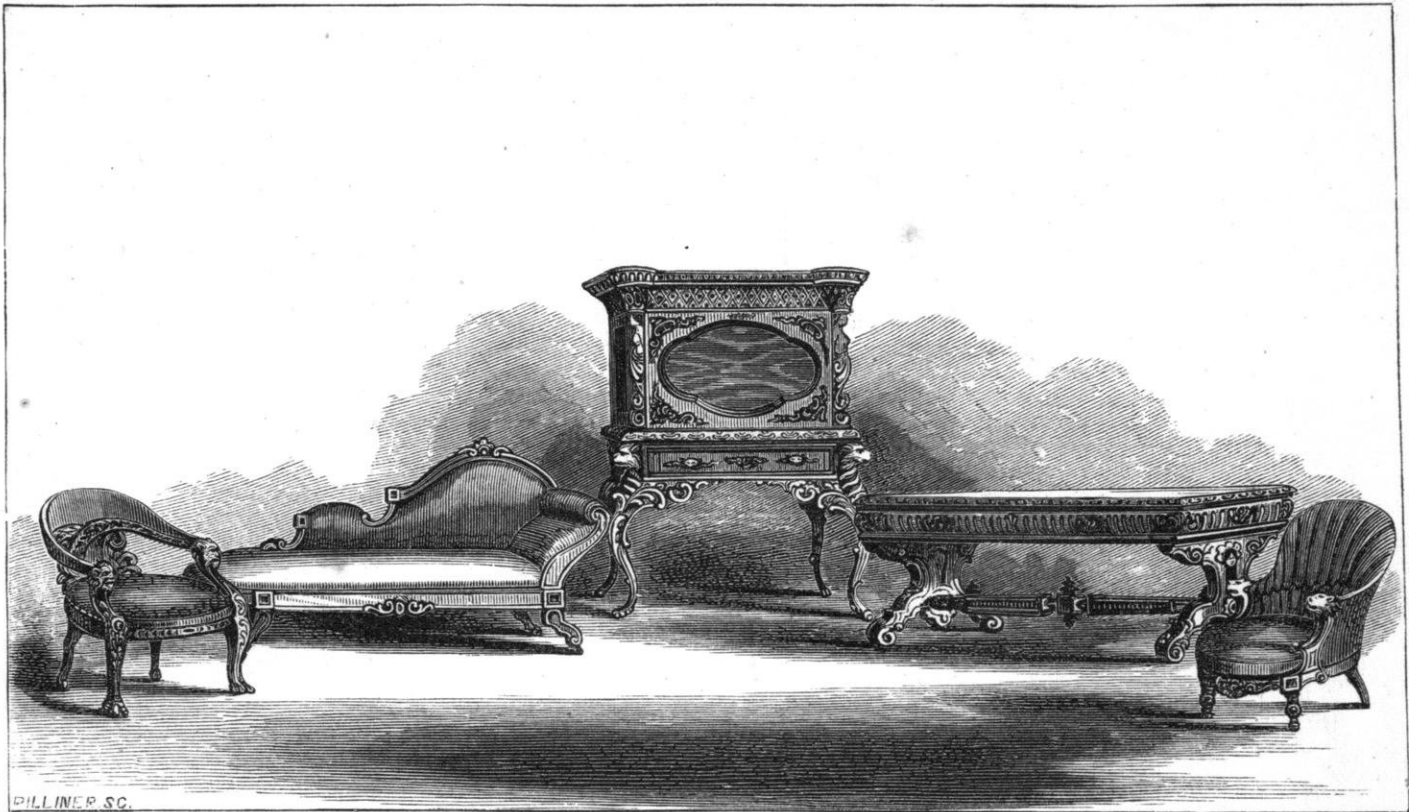
The Secretary is a very elegant piece of furniture, with artistic sculpture. The writing-fall is balanced by an ingenious contrivance, by which it rises and falls without jar. It must be seen to be appreciated.

The Lounge is of the proper shape for comfort, with springs in the arm and roll at the top of the arm; the seat is of extra width, and very elastic.

The Arm-chair on the right is a grand chair, with carved heads for the arms and with very elastic springs in both seat and back, and is covered with French morocco, studded around the edges with gilt nails; the fluting style of upholstery in the back is new, and both beautiful and comfortable.

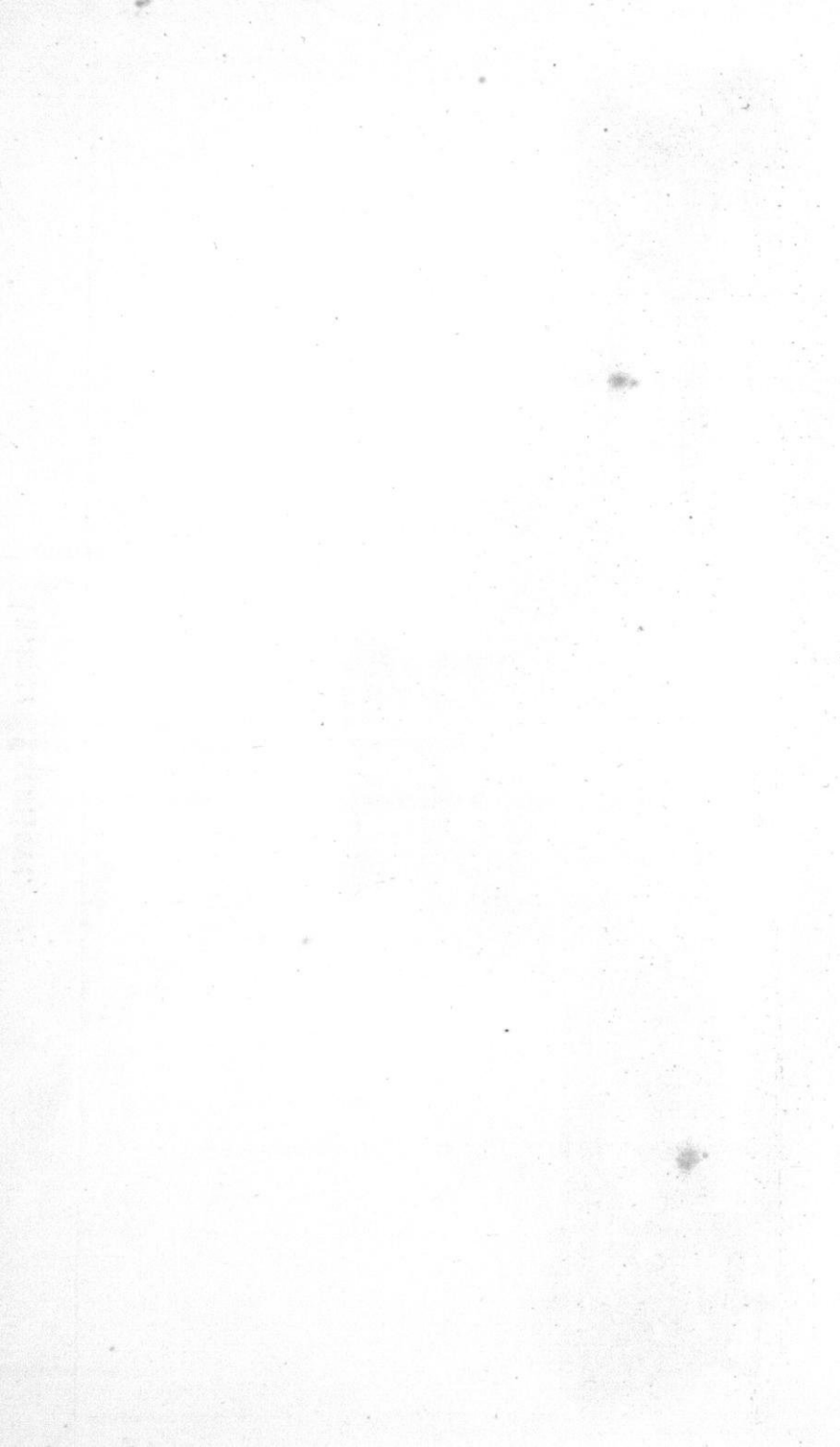
The Arm-chair on the left is of same character, with dragon's head and claws for the front, and coiled serpents for the back; the seat and top of the back are covered with morocco and finished with gilt nails. Both of these chairs are of late importation from one of the best establishments in Paris.

Antique Furniture.



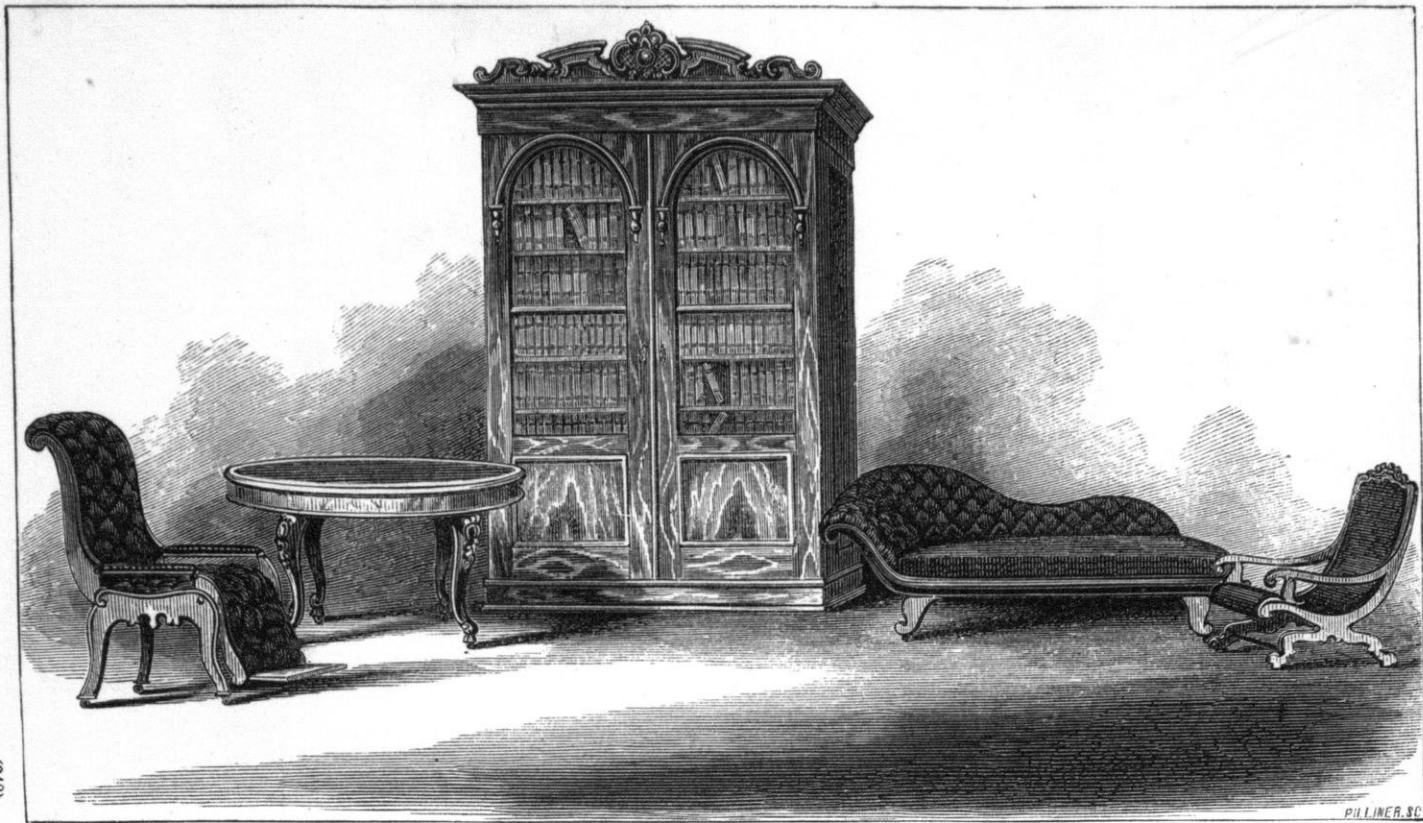
(147)

FIG. 19C.





Library Furniture.



(348)

FIG. 199.

P. L. L. I. N. E. R. S. C.

Library Furniture.

(FIG. 199.)

This PLATE shows a neat, plain set of Library Furniture, such as is in general use. Other articles than those exhibited in the cut are required, according to a purchaser's taste or the size of the room.

The Bookcase is five feet two inches wide over the cornice, and nine feet six inches high, with panels of wood at the bottom of the doors and plate-glasses above. The cut represents the article very well indeed.

The Library Table is of oval form, with a drawer for paper; the top is cloth, inlaid with a heavy moulded wood edge.

The Lounge is spring-seat, and with or without spring-arm, as may be wanted; the arm can be had either right or left.

The Spanish Reading Chair is of unique style, and is very comfortable, being half recumbent.

The Reclining Chair is a pattern that is in much favor, and is the most comfortable chair in use; it graduates its position to the will of the person, and enjoys the merit of utility, without complication of machinery; it is also very substantial in construction.

Dining-room Furniture.

(FIG. 200.)

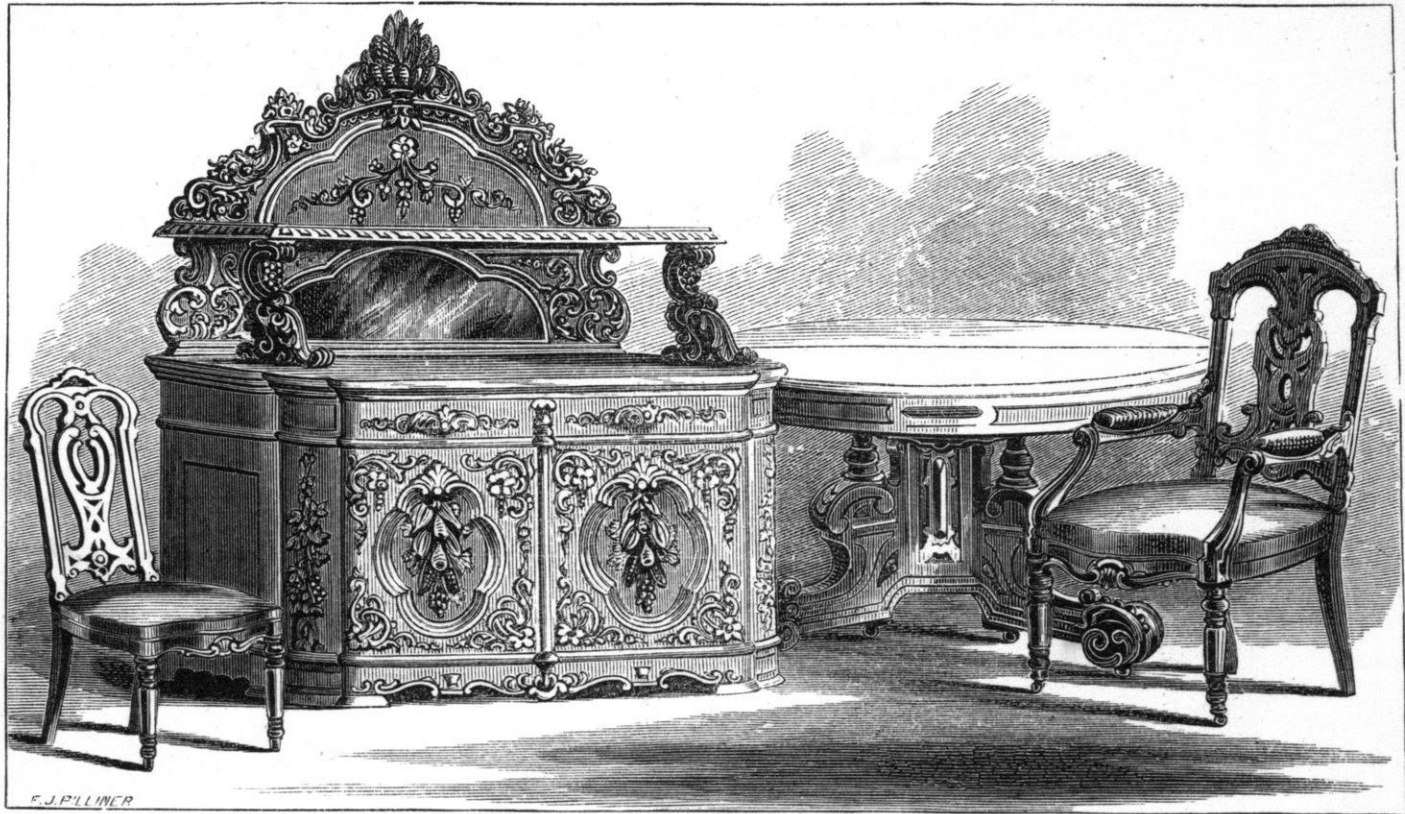
This PLATE is a faithful delineation of the articles intended to be represented.

The Sideboard is very elaborate in the carving, and has a French plate mirror in the back of the top part, and a very thick marble slab; it is an appropriate style for oiling in walnut, as the oil brings the fine carving out better than varnish does; it is five feet four inches long outside.

The Dining-table is sixteen feet long, and four feet six inches wide, and is a splendid article—in fact one of the richest tables we have ever seen; the mouldings are all more massive than the cut represents; there is also a neat case for the leaves, which is on castors, for convenience in moving. Sometimes a Lounge is made with an arrangement in the seat for holding the table leaves; but this is a mere matter of convenience to the purchaser, and its utility depends on the size of the dining-room.

The Arm-chair and the small chair are in perfect unison of style with the other articles; they have spring-seats, and are most generally covered with French morocco and studded with gilt nails; reps for the covering and window-curtains is a very pretty finish, but is too warm for a Southern climate, and is likely to be attacked by moths; the morocco generally used is only *split horse-skin*; the French morocco or goat-skin is easily distinguished, as after dressing there is a dark streak left, caused by the goat's mane.

Dining-room Furniture.



F. J. PILLNER

FIG. 200.

Dining-room Furniture.



(352)

FILLINER

FIG. 211.

Dining-room Furniture.

(FIG. 201.)

This PLATE represents a fine Suit of Dining-room Furniture. This is a favorite style, and the effect of the furniture in a room is much better than the plate represents.

The Buffet or Sideboard is the new style circular end, with closets in the ends and center part; the back has mirrors in it; the marble is of extra thickness, and of either white Italian, Brocadilla, Tennessee, or black and gold; white looks best on walnut, and Brocadilla or Tennessee on oak; the carving is merely sufficient to carry out the design; the rest is relieved with bold and effective mouldings; the size is five feet four inches long by two feet wide.

The Dining-table is of the center-table pattern, that is, with pillars and plinth; it is either four feet, four feet six inches, or five feet wide, and twelve, fourteen, or sixteen feet long, according to the width. The general character of the table corresponds with the sideboard, but a table similar to that on Figure 202 would also be appropriate.

The Service Table, as shown, has three shelves, but by touching a spring the top leaf lowers and the under one rises to meet the center leaf, when it is not all in use; it is a very convenient article for side-dishes and dessert.

The Chair is either cane-seat and back, or stuffed, without springs, in any material required; the pattern can be varied to suit a purchaser.

The sofa on Figure 202, with very little alteration, would be appropriate for this suit.

Plain Dining-room Furniture.

(FIG. 202.)

This PLATE represents a Suit of Plain Dining-room Furniture. The style is plain and economical. The Sideboard is four feet six inches long, and is finished with a white marble top. The Etagere top has two mirrors in the back, which give a good finish to it; the under part is divided into closets, with shelves; it has two drawers under the marble.

The Dining-table extends eight, ten, or twelve feet, according to the wants of a purchaser; it has a very neat appearance, and is a favorite for plain furnishing. A Case containing the loose leaves accompanies the table; the leaves are solid walnut or oak, as the wood happens to be wanted.

The Sofa is a comfortable lounging place, with spring-seat, and pillow-springs in the arms; it is covered with hair-cloth, morocco, worsted reps, or enameled oil-cloth.

The Chair is made either with stuffed or cane seat, and is a very substantial, plain article, which suits with the rest of the furniture.

Additional pieces can be ordered to match. A complete suit would also include a butler's tray, a side-table, and a pair of arm-chairs.

Plain Dining-room Furniture.

(365)



F. J. PILLNER. SC.

FIG. 202.

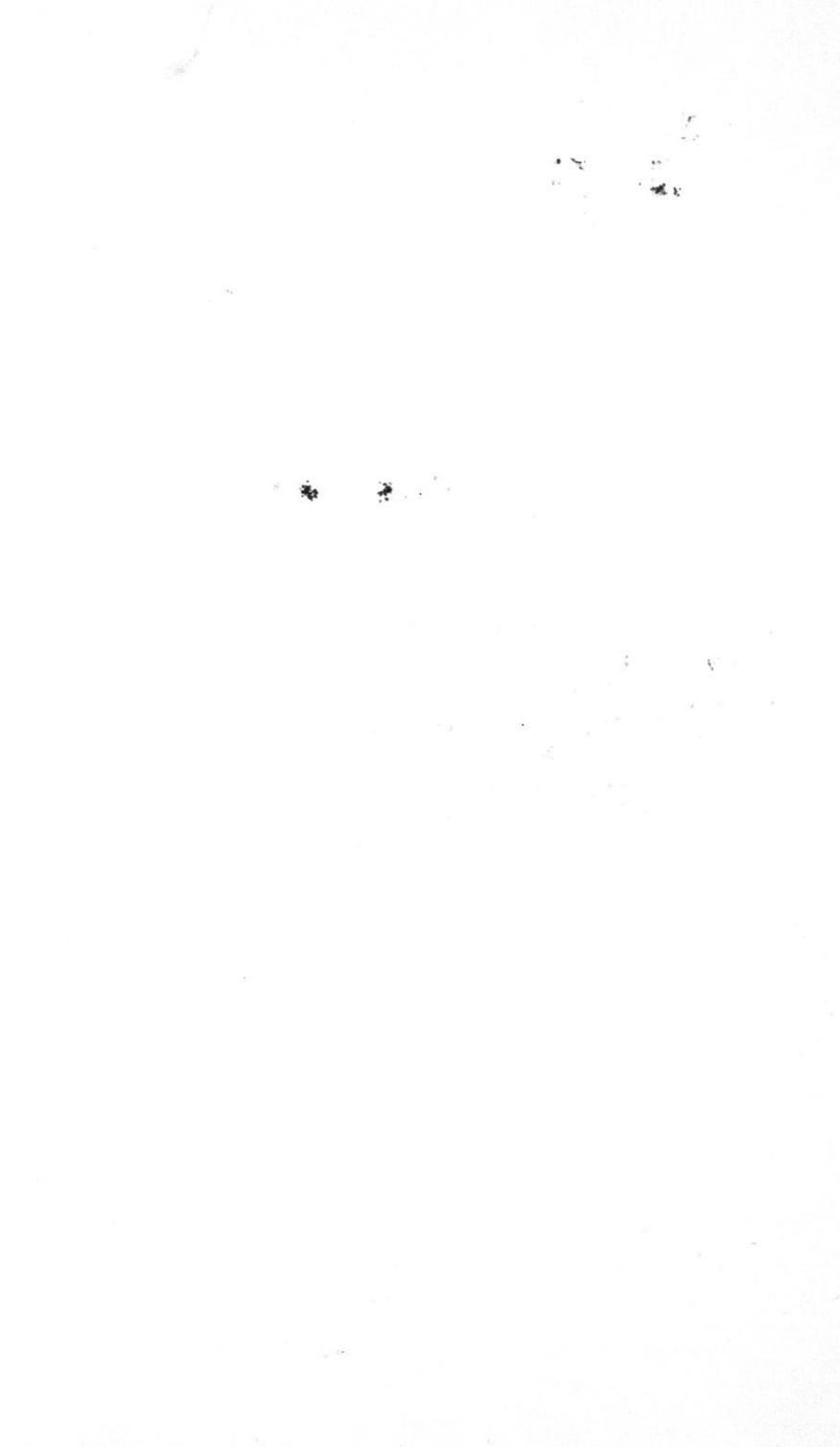


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