

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. LI

Copyright, 1896, by the AMERICAN ARCHITECT AND BUILDING NEWS COMPANY, Boston, Mass.

No. 1053.

Entered at the Post-Office at Boston as second-class matter.

FEBRUARY 29, 1896.



SUMMARY:—

Public Baths in Boston and in Europe.—The displeasing Methods employed in Marking the Burial-place of Gilbert Stuart.—“The Richard Smith, Type-founder” Monument for Fairmount Park, Philadelphia.—Proposed National Monument to Lincoln at Washington.—Proposed Completion of the Brumidi Frescos at Washington.—The Commission paid an English Engineer.—Competitions responsible for the poor Pay of Architects.—X-Ray Photography.—An Algebraical Computing Machine.	93
THE GARDEN IN RELATION TO THE HOUSE.	95
LETTER FROM CHICAGO.	99
PROFESSOR HERKOMER'S NEW BLACK-AND-WHITE ART.	101
SOCIETIES.	101

ILLUSTRATIONS:—

House of Charles B. Appleton, Esq., Aspinwall Ave., Brookline, Mass.—Plans and Interior View of the Same.—Chapel for the Rhododendron Estate, near Biltmore, N. C.—Carved and Inlaid Lavabo, XV Century, in the South Kensington Museum.—Proposed Fiske Memorial Library.—Forty-third Street M. E. Church, Philadelphia, Pa.	
Accessories of Landscape Architecture, No. V: Casino and Terrace, Monte Carlo.—Accessories of Landscape Architecture, No. VI: The Terrace, Monte Carlo.—The Sanchi Tope, Bhopal, India.—Sketches at Baalbek, Etc.	
Additional: XVI Century Wells in the Old Town, Nancy, France.—Guglia della Concezione, Naples, Italy.—The Staircase Hall: Gosford House, Longniddry, Scotland.—Town-hall, Clerkenwell, Eng.—Entrance Detail of the Same Building.	103
EXHIBITIONS.	103
NOTES AND CLIPPINGS.	104

BOSTON, in a quiet way, has already made an experiment which has been much discussed, but not actually duplicated, in New York, in the establishment of public baths, for use in winter as well as summer. In the warm season, the floating-baths, for which Boston affords excellent facilities, are very much used, and, undoubtedly, contribute a great deal to the health of the city, but baths for winter are a comparatively expensive luxury. However, the city maintains, in its Charlesbank Park, a gymnasium, which is open all the year round, and this winter the facilities which it affords have been utilized to furnish regular baths. The public of the region in the neighborhood of the park, which is occupied by a very modest class of citizens, have gladly availed themselves of the new opportunity for winter bathing, and it is intended to repeat the experiment another year, probably on a more extensive scale.

IN connection with public bath-houses, the utility of which no one will question, it is common to speak of public laundries, or wash-houses, as if they were in some way dependent on one another. To our mind, although the fact that water is used in both gives them an apparent relationship, the cause of improving the condition of the poor will be, in this country, best served by keeping them apart. In London or Paris, where poor people have to live in houses without a public water-supply beyond that afforded by a hydrant in the back-yard, the provision of places where women can have tubs and hot water, at a small charge, is almost necessary, but with us it is so common to provide tenements with tubs, that, as it seems to us, an effort to make such provision more general is better directed than if expended in urging the erection of public laundries. In London, the charge for the use of a tub for three hours, which would be a very moderate week's wash, is nine cents; and, after the third hour, the price is raised to twelve cents an hour. It would be interesting to know how many women get their washing finished within the three hours; but even at nine cents a week, the cost of using the public tubs would do a good deal toward paying the rent of wash-tubs at home; and washing at home, for three hours in the week, is, in many respects, preferable to going to the public laundries. To say nothing of the facilities which the latter offer for the idle gossiping which does so much to undermine the thrift and

self-respect of poor women, the trip to the public laundry involves several hours' absence from home, and from the care of the children of the family, who suffer accordingly. Whatever may be good for Latins, or Germans, or Englishmen, the cardinal principle to be kept in mind in guiding the development of American life is to promote the comfort and attractiveness of home. In many ways the home life of the poor is more affectionate and intimate than that of the rich. The members of a poor family are more dependent upon one another, and more accustomed to make sacrifices for one another, than their wealthier neighbors. The poor mother is amply compensated for her loss of fashionable enjoyments by being always with her little children; and poor children, as they grow older, find a happiness in working, in their childish ways, for the comfort of the household, such as richer ones seldom know. Every one who has been much among our poor can testify to the unselfishness and affection of their family life, and the importance of guarding against anything that tends to disturb it. The part that beer and whiskey play among the men in breaking up family ties, and fostering neglect of family duties, gossip plays among the women; and schemes for ameliorating the condition of the poor should be scrutinized as carefully with regard to their moral as their material tendency.

MANY people, probably, were rather indignant at reading in the daily papers, a few days ago, that the tomb in Boston, in which lie the remains of the painter, Gilbert Stuart, had been opened, and that the body was found, considering the circumstances, in good preservation. One lady, whose ancestors owned the tomb, and gave permission for Stuart's interment there, and were afterwards themselves buried beside him, wrote to the *Tribune* on the subject, complaining of the discourtesy with which the tomb had been opened, without any notice to its present owners; and Mr. Robinson, the Secretary of the Stuart Memorial Association, which had authorized the proceeding, replies to the letter of Miss Howland, explaining that a handsome bronze tablet was to be placed upon the tomb by the Association, and it was necessary to ascertain, before designating the place in this way, whether Stuart was actually buried there. If Mr. Robinson, or any of the officers of the Association, had known that there were living persons interested in the tomb or its occupants, they would have asked their permission to open it; but, not knowing of the existence of any such persons, they had simply obtained the consent of the Board of Health, as the law requires, and had conducted their investigation with the reverential spirit becoming to those who disturb the resting-places of the dead.

IT will be remembered that, some time ago, Richard Smith, a wealthy type-founder of Philadelphia, bequeathed to the city the enormous sum of five hundred thousand dollars, to be expended upon a gigantic monument to himself, to be erected in Fairmount Park. After a good deal of consideration, the Park Commissioners decided to accept the bequest, and the memorial is to be erected as the donor wished. What it is to look like we do not yet know, but it seems to consist mainly of a central tower, or hollow shaft, surrounded by pedestals, on which are to be set statues of distinguished persons, mostly Pennsylvanians. Among these are to be commemorated Generals McClellan, Hancock, Meade and Reynolds; and bronze busts of Governor Curtin, Generals Hartranft, Beaver and Crawford, Admirals Porter and Dahlgren, Mr. John B. Gest, the executor of the estate, and Mr. James H. Windrim, the architect of the memorial, are to be provided. Near the entrance-door is to be a statue of the donor, and the shaft is to bear the inscription “Richard Smith, Type-Founder, of Philadelphia.”

MR. EVANS, a member of Congress from Kentucky, has introduced a bill to provide for the erection at Washington of a monument to Abraham Lincoln. As Mr. Evans says, the people of the whole country now cherish for the character of Lincoln an admiration which has no adequate expression anywhere, and perhaps least of all at Washington, the city most closely connected with his great career. It is curious that, so far as we know, the only memorial in existence

to Lincoln which can really be called impressive is to be found in London, where the beautiful "Lincoln Tower" of Dr. Newman Hall's church, conspicuous from the railway trains entering the city from the south, appeals with singular force to the mind of the American traveller. What sort of monument should be erected, Mr. Evans does not say, but he thinks that half a million dollars would not be too much to spend on it, and in this we think that the whole people, from Maine to Texas, will agree with him.

WE are sorry to hear that there is a prospect that more work may be done on the Brumidi frescos in the Rotunda of the Capitol at Washington. It is now some ten years since the execution of this huge architectural joke was suspended, as we hoped, forever. It appears, however, that some one has had the brilliant idea of making the last panel but one portray "The Driving of the Last Spike," that is, the last spike in the track connecting the Union Pacific and the Central Pacific Railroads. Unsympathetic financiers would probably like to see this work of art accompanied by a pendant, representing the Getting-Back of the Last Dollar that the people of the United States invested in these enterprises; but it appears that only one panel will be left, after the spike picture is completed, and it is desired to reserve this for a "condensed representation of the principal buildings of the Centennial Exposition." The particular attention of the lovers of scale in architecture is invited to this last scheme. To represent two railroads, each about a thousand miles long, on a panel two feet square, would be an achievement worthy of Brumidi's genius, but this feat is insignificant in comparison with that of condensing the Philadelphia Exposition into the same compass; and the effect of this miniature, placed beside the groups of struggling figures which bump their heads against the upper border of the "frieze," will be something indescribable.

IT will make architects feel poor, we imagine, to hear that Mr. Mansergh, the engineer of the new water-works for the City of Birmingham, England, has already been paid one hundred and two thousand pounds, or more than half a million dollars, as his commission on the cost of the work carried out under his charge. It is true that Mr. Mansergh earned his money by a good deal of hard work, some four thousand drawings having been made in the office for various details of the plan; but architects have to do, in proportion, much more than this for their pay. However, no one will envy Mr. Mansergh, who is well known by reputation among architects as a thoroughly sound and skilful engineer; and the principal reflection which the matter will arouse in the minds of our readers will probably be that engineers are, somehow, much better paid than architects, for work requiring no more time, no more skill and no more experience, than architects bestow on their undertakings.

WHY this should be so, we will not attempt to explain. Our own idea is that the most important factor in the financial degradation, so to call it, of architects as compared with the members of other professions of similar requirements in the way of learning, fidelity and skill, is the prodigality with which they offer their services in competition with one another, or as a matter of pure speculation. Matters are, in this respect, not so bad as they were twenty years ago, when, as a man said, he could not walk down Broadway without being besieged by a crowd of architects, begging the privilege of "submitting sketches" for a new store that he intended to build; but they are bad enough still; and those who have the good of the profession at heart should not fail to call attention from time to time to what yet remains of the evil. Architects old enough to remember the professional life of twenty years ago will probably agree with us that, as the humiliating rivalry in the profession has diminished, the lot of architects in general has improved. The average professional income has certainly increased, clients have become more considerate, and pay more respect to their architect's opinions, and the latter is slowly, but surely, gaining ground as a person who possesses knowledge and taste which are worth purchasing at a fair price. More than this, the growth of friendly feeling among architects, fostered by the professional associations, has done a great deal to destroy the efficacy of the system of playing off one architect against another which used

to be so effective in reducing the cost, to owners, of professional service; but much still remains to be done; and, if the present standing of the profession is to be maintained, or improved, this must be done by observing, with increasing strictness, the rules of professional honor and fraternal loyalty, which have already done so much to improve the practice of architecture.

LE GÉNIE CIVIL gives some interesting information in regard to the X-rays, discovered by Professor Roentgen, which have been the subject of some further experiments in Paris. As most of the "cathode" photographs published bear evident traces of having been touched up, to say the least, by human agency, *Le Génie Civil* gives three half-tone cuts from actual plates, which have undergone no retouching whatever. One of these is of a frog, lying on his back. This shows the skeleton very plainly, together with what appear to be traces of the circulatory system. Another shows the same frog lying on his stomach. In this the skeleton is fainter, the bones being removed farther from the sensitive plate. The same cut shows a pair of eye-glasses, and some scissors, the glass appearing to have nearly the same opacity as the scissors, while the tortoise-shell rim of the eye-glasses is nearly transparent. It seems that M. Perrin, instructor in Physics at the Paris Normal School, had for some time been studying the cathode rays, and on the announcement of Professor Roentgen's recovery, was in a position to repeat his experiments at once, adding others. Through these experiments he discovered, by placing two screens between the vacuum-tube and the sensitive plate, one with a very narrow slit in it, and the other with a larger one, that the X-rays suffer no diffraction under such circumstances. They are also incapable of reflection, although the cathode rays, by which the X-rays are produced, are said to be reflected by metal plates; and no substance yet tried refracts them sensibly, although Professor Roentgen, by using prisms of ebonite and aluminium, thought that he obtained a slight deviation. M. Perrin, however, made a prism of yellow wax, and placed it in the path of a beam of X-rays, so as to intercept one-half the beam. The beam, which was obtained by a screen with a narrow slit in it, was then allowed to fall on a fluorescent surface. The fluorescence showed the image of the entire beam, without the slightest deviation at the boundary between the portion coming through the wax prism, and that passing without interruption, showing that no refraction took place.

HIGH-SCHOOL boys and girls will be glad to hear that a Spanish engineer, M. Torres, has invented a machine for solving algebraic and arithmetical equations of all sorts, including equations of any degree, containing any number of unknown quantities, provided, of course, in the latter case, that a sufficient number of equations is given to enable the necessary substitutions to be made. The principle of the machine, as stated by M. Maurice d'Ocagne in *Le Génie Civil*, consists in representing the variables by certain displacements, which may have any possible value, and connecting these displacements by geometrical movements, in such a way that there shall exist between the displacements, at each moment, the same relation that the equation establishes between the variables represented by the displacements. This sounds simple, but the carrying-out of the principle is not so simple. It would take too long to describe the machine, even if the description would be intelligible without diagrams; but the most striking feature of it is a gearing in which a toothed wheel runs between two cones, around each of which is wound spirally a toothed rib, gearing with the spur-wheel between them. Evidently, by the revolution of the cones in opposite directions, the middle wheel is displaced in two directions, its axis of rotation remaining constantly parallel with those of the cones, and in the same plane with them, and the speed of rotation of one cone must diminish as that of the other increases. Ingenious people of a mathematical turn of mind will see how far this device, or rather, combination of such wheels and cones, may be utilized to represent relations of variables. Until now, M. Torres has constructed only one machine, which he has used for studying out his system; but he has engaged M. Carpentier, of Paris, a noted mechanic, to build others, in a somewhat simpler form, which will undoubtedly become objects of great curiosity in the scientific world.

THE GARDEN IN RELATION TO THE HOUSE.¹

I THINK, as a nation, we are beginning once more to realize the charm of a formal garden. For the last few decades we have been passing through a period of architectural taste, called the Gothic revival, and, sated with the dry bones of antiquarianism, we are beginning at last to infuse a breath of life into some few of our buildings. And it is natural that the growth of interest in this direction should be accompanied by a wish to give them some proper and dignified setting. Now this is a part of architectural design that has, for rather more than a century, been practically overlooked. In England, up to the time of the Georges, there was still some survival of it, as is evident from the plans of country seats to be found in Campbell's "*Vitruvius Britannicus*"; but some, if not most, of these schemes were only carried into execution in so far as the main building was concerned. And I think it is not over-stating the case to say that, up to the middle of the last century, no architect thought his design complete until the available ground in the immediate vicinity had been considered with relation to the building itself.

For a brief sketch of the history of the subject—in England, at any rate—it is not necessary to go back farther than the time of Henry VIII. Up till then the monasteries had been the chief homes of cultured retirement, and of the art-loving world; but, at their suppression, the scene changed, and it was in the houses of a nobility, suddenly enriched with monastic plunder, that the arts took refuge. New ideas from Italy and the East found a ready welcome in England, and the seed fell on a good soil for architecture, the courts of Henry VIII and Elizabeth dearly loving lavish display in that direction. No sooner had the monastic buildings become untenanted, than there began to rise palaces of pleasure all over the land; and their gardens, too, were stately, as befitted the jewels of which they formed the setting. Moreover, with peaceable times, there was no longer the feeling of insecurity that had necessitated a semi-fortified seclusion. The wind was now the only foe to be kept at bay, so enclosures expanded to more liberal dimensions, and delicate grilles of hand-wrought iron made the exits and the entries into courts of green or parterres gay with flowers.

It is one of the drawbacks of this subject that we cannot study the fine old examples under the same conditions as buildings, and I cannot think of a single instance of an Elizabethan garden that has not undergone so much alteration in later times as to be almost unrecognizable. Even where the architecture remains fairly intact, nature has been at work, obliterating the original design by slow degrees.

Here² is a view of the terrace steps at Haddon, which all of you will recognize. Perhaps there are few places that have been so fortunate in escaping the hand of the destroyer. And that is why I have chosen it, for there is just sufficient left to help us in picturing the garden as it was. Any one who has been there will remember the mysterious gloom under the great yews on the terrace, and will have pictured to himself perhaps, the elopement of Dorothy Vernon under the selfsame boughs. But in her day we must remember these knotted trunks were young, and the stones that now lie in disorder about their roots once bordered well-kept paths. In fact this natural wilderness, so near to the house, was no part of the original intention, and in those days would have been kept farther afield. Here is another view as it probably was. The grove that nowadays covers the terrace has given place to a garden, and the great yew-trees are shown—as, perhaps, they were—clipped into heraldic devices taken from the family coat. Against the terrace wall there is a rich border of flowers, and the hedge that skirts the path is trimmed to its original proportions.

A house of the time of Elizabeth was approached through an avenue and one or more courts in quiet tones of green and gray. Out of this arose a stately mass of buildings—two wings and a centre-piece—with broad, retreating shadows between, sparkling with myriads of small panes set among softly-moulded mullions. Through the walls on either hand festooned with a wealth of climbing roses, there would be splashes of sunlight and color from garden courts beyond, while at the back the brewhouse, offices, etc., would be screened off from garden courts and orchards by walls of ample height. This view of the forecourt at Canons Ashby will serve as an example, but the type was infinitely varied.

If there is one thing that was more characteristic than another of the pleasure-grounds of the past, it was this system of enclosure and subdivision, and to my mind when that was abandoned the main charm of the old English garden vanished. Sir Walter Scott once raised his voice in lamentation over the destruction of an old garden he had known as a boy, and perhaps you can each remember some Old World pleasure falling into the hands of the modern landscape-gardener. I have vivid recollections of just such a garden as Sir Walter describes. It lay on the hillside by an old house in Yorkshire. In the first court as you entered from the shrubbery were beds of brilliant flowers cut out in patterns like a ceiling in the house, and against the south wall were vineries of black Hamburghs and dark mysterious potting-sheds. Then there was the bowling-green, a wide expanse of velvet turf with banks and terraced walks all trim and neat, where apricots and nectarines ripened on the

walls. And one side was fringed with scarlet lychnis and sweet-williams, where the red admirals and tortoise-shells would spread their wings in the sun all day. Then there was the summer-house with a racing fox for a vane, and bowls in a corner cupboard; an apple-house, where the old gardener was always at his best; and last, but not least, Peter the Great's arbor, for there, in defiance of history, tradition had fixed the spot of the Czar's proposal. But an evil day came when the quiet retirement of this unoffending paradise was invaded by the "landscape-gardener." The walls were thrown down, the terraces destroyed and the whole converted into a wilderness of specimen shrubs, for this was the new ideal that had taken the place of the old.

But to return to the time of Elizabeth. It was foreign to the idea of a garden to allow forest trees within the walls. The grove had its place, and that was outside the garden enclosure, where a lofty cliff of green would be more than welcome as a background to fruit and flowers. This view of the garden at Montacute serves to explain my meaning, although the original treatment was rather different from what is shown in the drawing. And it was probably from a wish to obtain a background of even tone that hedges first came to be trimmed. This trimming, or "pleaching," as it was called, which seems reasonable enough on these grounds, was eventually carried to absurd lengths. They had felt the need of single yews to mark the salient points in complicated patterns of flower-beds, and these they cut into a variety of forms; first, into cubes and obelisks, and then by degrees into every shape that fancy might suggest, until at last the repose of the garden was as much hampered by verdant sculpture as Westminster Abbey is with its monuments. The garden at Levens, though beautiful in color, is perhaps the most striking example of this vagary. And since, of course, to keep the yews in shape requires considerable labor, it is hardly surprising that there should be few of the kind remaining. There are one or two rude bits of pleaching at Barncluith, in Scotland, and a touch of quaint humor in the gardener has caused him to fashion a whiskey-still under the prominent nose of a Scotchman in a Tam-o'-Shanter hat. The French influence, that was always more evident north of the Tweed, is traceable in the garden-house, and its curious spiral staircase is an arrangement that I have not seen elsewhere. Green vaults or tunnels of yew are sometimes to be found, and that at Melbourne now forms a rich tangle of intertwining branches, as may be seen from the illustration.

As I have said above, old gardens were divided into several departments, and each of these bore a character distinctly its own: There was the parterre, or flower-garden, with its fountains, and flower-beds in geometrical designs of box; the bowling-green with its garden-house and shaded seats; the fruit orchards, wilderness, etc. Now some one has described personal charm as an open secret, and that is precisely the character of an old garden. There is more left to the imagination where the whole cannot be seen at a glance. Change of level was another means of gaining effect. The eye is so used to the appearance of things from the ordinary point-of-view that even a slight elevation presents the scene in quite a new light. In this view of Kingston House, though the arrangement of the terraces is sufficiently interesting in itself, still the novelty of the position is mainly due to the point-of-view that has been chosen for illustration. So conscious of this fact was Turner, the landscape-painter, that he habitually raised the point-of-vision in his pictures to a higher level than was really possible. Any one can test this for himself by standing before an object that Turner has painted, and an instance, within reach of any Londoner, that occurs to me at the moment is the old house at Mortlake, of which there was such a subtle rendering in the exhibition of old masters last winter. This house and garden still remain pretty much as they were when the great painter drew his poem from them.

There is always a charm in length of vista that could not have failed to appeal to garden designers. And to give point to the long perspectives that were planned to pass through house and grounds alike, they were adorned at intervals with fountains, statues or other objects of interest. Each of these would form the centre of a network of cross vistas so that sunlight or shadow, front view or profile, should offer the scene afresh as often as it was approached from a new direction. As a simple instance of this we may take the somewhat mutilated fountain at Bolsover Castle. This stands at the intersection of two alleys with hornbeam hedges on either side. Seen from here, it appears a bright object against the curtain of trees and ruined gables of the banqueting-hall. The next alley to the left would give it in a harmony of soft grays, with the grim walls of the castle keep in the background. And here is a view in the grove at Melbourne. This belongs to a later date, when more attention was being given to groves and bosquets, and the architectural principles that had formerly been confined to the garden proper were creeping farther afield, as will be seen by the fountains and hedges farther down the glade. This vase, I may mention, is one of the finest examples of leadwork in England. There is one at Drayton that may be nearly as fine, but I have never had an opportunity of making a drawing from it.

When large sheets of water came to be included in the dressed grounds they, too, were treated in the same formal manner. The most ambitious efforts in this direction were probably of Dutch origin and due to the same energy and skill that made the canals and huge drains of the Fen country. Here are two instances from Wrest, in Bedfordshire. A T-shaped piece of water, some four

¹ A paper read by F. Inigo Thomas at the Society of Arts, and printed in the *Journal of the Society*.

² The references in the paper are to the views thrown on the screen by the lantern.

hundred paces long with broad turf, verges next to the groves — and the fish-pond in a secluded spot in the wood among yew hedges that are now some twenty feet in height.

The development of garden-design may be said to have been the elaboration of these few principles, for the object of the old-time designer was to make a stage on which to play the drama of everyday life, but unlike the stage the scenery was real and the acting an unaffected pleasure in existence, and in the sights and sounds and scents of nature. Difference in locality has, of course, necessitated difference in material, and according as brick or stone was more ready to hand, so the character of the work was restrained or free in its treatment.

Perhaps the period of greatest activity may be placed in the reign of William and Mary, for to that time belongs the English classic on the subject, a fine folio of views drawn by Knyffe and engraved by a fellow-countryman of the name of Kyp. Then we have the diary of Celia Fiennes, a lady who spent some years riding about England and taking a lively interest in the improvements that her many friends and relatives were making to their country places. And to this time, too, belong the great schemes of Wren's devising for the beautification of Hampton Court. But with the progress of the eighteenth century interest seems to have declined. People, perhaps, began to tire of spending the sums that their great schemes must have needed to keep up. Pope struck a note of ridicule, and the stupidity of a decadent age was ripe to hoot them out of fashion. Then came the opportunity of the landscape-gardener. Kent and "Capability" Brown stepped on to the scene, and though they mowed down avenues and destroyed every vestige of dignity under the pretext of "helping nature," they seem to have forgotten how to make a garden. They, again, were followed by Repton, Sir Uvedale Price and a host of minor imitators, who were glad enough, no doubt, to have found a profession for which no previous training appeared to be necessary. To my mind the finest corrective for insanity in design is a knowledge of what great architects have done in the past, and that is what the landscape-gardener always seems to have lacked. Nothing can be more childish than their attempts in this direction, as we all must admit on turning over the leaves of any book on the subject, from Humphrey Repton down to the present day.

On looking back, one cannot help thinking that the change in popular feeling had more to do with expense in the maintenance of an overgrown formality than with the temperate verdict of thoughtful men, for by far the greater number of old English gardens that have come down unaltered to the present day lie before the cottage doors of the laboring classes. Now there is a remark that one often hears, and which always betrays a certain apathy on the subject, namely, that a formal garden is well enough for a formal house, but a natural garden is more in keeping with houses of the present day. This implies, first, that nature has no place in a formal garden — an illusion that a visit to any old garden would soon dispel; and, secondly, that buildings are not essentially formal when it would appear that squaring the first stone or moulding the first brick was the outset of a formal principle that must necessarily continue throughout. With few exceptions, the reign of Victoria has seen wildernesses — more or less neatly kept — pass for gardens. Sir Charles Barry made one or two formal arrangements to the houses he built, but they were a good deal borrowed from Italian instances, and not at all in harmony with English traditions, so much better understood by Nesfield and Devey a little later. There is a popular superstition that all formal gardens in England were either Italian or Dutch; very much on the same principle, perhaps, that all pen-drawing is called "etching" by the casual observer. Now Italy, no doubt, supplied us with many ideas on this subject, as also she did in architecture, but the buildings that arose under Italian influence in Tudor times were so English in feeling, that we have had to call them "Elizabethan." And so it was with gardens, the English tradition coming out so strongly as to render them markedly different from Italian examples. Here is a view of the back of a terrace with two pavilions, in which there is no trace whatever of Italian influence. The octagon form, the battlemented parapet and the shape and mouldings of the windows, are all true Gothic work, from which it would seem that English gardens were formal in design before the arrival of ideas from Italy.

But since Italy is generally accepted as having been the main source from which we drew our inspirations, it may be of interest to look for a moment at what was being done in that country at the time of which we are speaking. A year or two ago I attempted to make surveys of some of the Renaissance villas in the neighborhood of Rome. But from the very dilapidated condition in which I found them, it has been no easy task to piece together the various remains; so I hope you will excuse their incompleteness on this account. I do not propose to give them in any chronological order, but merely to draw attention to points in the design that may seem to bear on the subject of this paper.

Generally speaking, the sites chosen by the wealthy cardinals who erected these villas were on rapidly falling ground well above the fens of the plain. And the boldness with which they modelled and carved a mountain spur to suit the whims of their architect was truly heroic. This is well brought out in the Villa Mondragone, at Frascati. You can see by this survey that the whole scheme of buildings and surroundings was planned so as to fall on four successive levels. A centre line can be imagined running through from end to end, on which fall the principal features, and a certain sym-

metry is observed on either side of it, for in architectural design symmetry has always been the rule and irregularity the exception. It is noticeable, too, what pains were sometimes taken to preserve this balance even in the most difficult situations. The approach from the road to Colonna, some 600 paces long and bordered with lofty cypresses, parts opposite a fountain in the foot of a great cliff of masonry, and climbs by means of *pentes douces* to the first terrace. This in itself is a rise of 55 feet, and since the original fall of the ground was in a diagonal direction a great deal of masonry was required to bring one end of the terrace to the necessary height. At four points in the parapet there are massive banded columns, each bearing on its summit a slender iron cross. These four huge sentries stand out against the sky and the olive-clad hills with magnificent effect, but their *raison d'être* was not quite so evident until it was found that the great vaults, on which the terrace is supported, were once the palace kitchens, and two at least of the columns were nothing more than ornamental shafts to carry the smoke clear of the windows. This terrace was probably paved throughout with *palombino*, and used for the reception of magnates with their retinues from Rome. But there seems to have been a garden under the palace windows on ground that rises gently to the level of the main court-yard. Here the buildings lie on three sides of a court planted round with rows of elms, the fourth side being divided by a high niched wall from the privy garden. This was laid out with plots of turf in borders of flowers, and two circular fountains in the centre. A fine arcaded loggia by Pausio fills one end, and raised on a terrace opposite is an amphitheatre of inlaid marble fountains. From here a door and flight of steps lead back to the main court entrance, and opposite this a wealth of flowers borders the foot of a great bastion wall that supports the bosquets and vineyards at a higher level still, that is to say, about 150 feet above the level of the avenue. There is one curious thing about this plan that I am omitting to mention, and that is the small garden that lies on the roof of part of the building at about the same level as the great court of the palace. You can judge its position better, perhaps, in this view of the fountain, where a portion of the balustrade appears to the left of the picture. And here is a view of the great terrace, with the fountain and two of the columns mentioned above. The tops of the cypresses in the avenue are just visible over the parapet to the left.

This survey is of a very anomalous scheme at the Villa Torlonia, where no two of the principle objects fall in a line. There are all the features that one is accustomed to find in designs of this kind, but no two are related. The house and forecourt are placed in a corner of the ground, and at right angles to the terrace. There is an elaborate arrangement of travertine stairways, among rose gardens, leading to the terrace, but here a fresh centre is caught up and carried through the groves of ilex to a wide range of fountain-niches supporting a second terrace. Thence, by winding stairs and basin upon basin of gushing water, one reaches the heart of the wood; and here, a circular clearing, with seats at intervals, and a fine fountain pool in the centre that supplies the cascade below. The Italian designer always seems to have made the most of this reservoir, in which the water was collected from the hills before passing on to the various fountains; and since they are often at some distance from the rest of the work, one comes upon them as an unexpected pleasure.

This is a view in the grove at the foot of the cascade I have just mentioned. The cascade itself is hidden among the trees to the left; but here is the front view of a somewhat similar arrangement at the Villa Aldobrandini.

This is a very incomplete survey of the Villa d'Este at Tivoli. It was the work of Pirro Ligorio, about the year 1550, and it is so elaborate in its many details that, to do more than to touch it tonight would exceed the limits of this paper. The garden is bounded on three sides by the town of Tivoli and the d'Este palace; and the fourth looks out over a network of vineyards to the distant campagna. From the palace, which lies along the terrace to the right of the survey, the ground falls with great rapidity for about a third of the distance, and then more gradually to the centre of the garden. At about this point it reaches the level, and is crossed from end to end by three oblong pools, which divide the garden proper from the grove. Here is a view down the length of the pools. The building over the cascade at the far end is the case of a water-organ — which, by the way, was not an unusual adjunct to the garden in old days. This is a nearer view of the organ-case, and what I want you specially to notice in these views of the Villa d'Este is the determination of the designer not to be cheated of his effects for want of sound and durable material. All the structural parts of this garden are built up of rough bricks, mortar or concrete, and covered with plaster of various textures, and in the more finished parts with delicate modelling in *gesso*, or a rough mosaic of colored marbles. Now nothing could well be more at variance with the methods of the English workman at the time of the English Renaissance. He would have far rather sacrificed his effect than gain it in a mean material, and the frank dissimulation of the Italian character was something altogether beyond his understanding.

Here is part of a crescent-shaped flight of stairs encircling a fountain, and this is a row of ninety jets that spans the width of the garden, with ninety panels of modelled figure-subjects from Ovid's metamorphoses, under canopies and heraldic devices. An equal number of masks pour water into two long channels, one above the

other, as seen in the photograph; but all this is now so much covered with soil and moss, that of course it is rather difficult to judge of its original effect.

So much for the Villa d'Este. And now let us visit a spot some forty miles from Rome, where perhaps the most perfect example of a regular type exists in the Villa Lante. Here the gentler fall of the ground has necessitated no great departure from symmetry in design. There are five separate levels, and each of these is marked by some quaint conceit in arrangement. All the main objects of interest lie on the centre line; or if, as in the case of the Casini, they are duplicated, they are plotted at equal distances from the centre.

The lowest level is given to the parterre, a court of 100 paces square enclosed in high walls and tall box hedges. The flower borders are re-arranged in elaborate patterns of clipped box as shown in the upper half of the plan. In the centre is a square pool of about 50 paces, with stone parapet and obelisks at intervals. From the middle of this rises a grand fountain of several stories, crowned by a group of lions and youths supporting the crest of the Montalti. A number of jets play from various points in the fountain, and what with the brilliant colors reflected in the surface, the gentle plashing of the water, and the delicate scent of flowers, no more delightful spot could well be imagined. The house—or "casino," as it is called—is divided into two parts with loggias opening on to this court, and state rooms level with the next above. Here stands the candle-fountain, a circular structure of rather curious design, but of which I have no view to show you. There are rows of fine stone vases to right and left, under the shade of the plane trees, and handsome flights of steps lead up to the next level. Here the centre of a plot of turf, with groves on either side, is taken up with a massive stone table. We are looking down the length of it in this view, and you will notice there is a watercourse all down the centre. In the heat of an Italian summer, one can well imagine the luxury of such a table for dining in the open air. At the end of this court is the giant fountain, so-called from the colossal stone figures on either side of the basin.

Leaning over the balustrade in the centre, you can see what will be clearer in the next view, namely, the claws of a large stone crayfish. Now the Villa Lante was begun under Cardinal Gambara, and in punning allusion to his name, Vignola, the architect, introduced a watercourse in the next court, composed of a chain of the vertebrae of this animal. It is all in stone, of course many times the size of life; and this idea shows a playfulness in Vignola's character that, judging from other works, one would hardly have suspected.

This is a nearer view of the giant fountain. Rather faint, perhaps, as it was taken at sunset. And the next is looking back at the stone table. Over the balustrade, at the far corner of the court, you can catch a glimpse through the trees of the roof of one of the casini.

This is the upper end of Vignola's chain, where the water issuing from a flight of steps begins its course down the body of the crayfish.

The next view is taken across the uppermost court, and shows part of an octagon fountain that fills the centre, and is surrounded by stone seats against a hedge of box. Yew, by the way, is hardly ever used in Italy, as far as I could discover. The sides of this court towards the grove are lined with balustrades and graceful stone columns, that have lost their original purpose, but still look extremely well against the deep green of the ilex.

This, and a similar pavilion, flank the central recess that terminates the garden, and forms a reservoir for supplying the various fountains.

Of all the Italian gardens I have visited, none can compare with the Villa Lante for so much beauty in so small a compass, and I could have wished to show you a view of the lowest court, which is by far the finest, but minor regrets are useless when we remember that photography denies us the charm of color, on which, after all, a garden mainly depends for its beauty.

The chief points to be noticed in these Italian examples are the boldness of the terracing, the quantity and elaboration of the stone-work, the ingenious arrangement of fountains, and lastly, the absence of wide lawns, that give the distinctive character to English gardens. At the Villa d'Este the materials employed are hardly worthy of so great a work; but at the other three villas I have mentioned, stone is used. At Frascati we find the Travertine that is quarried in the neighborhood—a tawny yellow stone something like Ham Hill, and at the Villa Lante the whole of the stone-work is a dark gray-green speckled with black scoria. This is called "peperino," and is quarried in the hills round Viterbo. It takes a soft white lichen when dry, but under the spray of fountains or in any damp situation it is hardly to be distinguished from bronze.

Before leaving Italy, where perhaps of all countries the treatment of stone or marble in connection with water has received most attention, I should like to show you an instance from the Boboli gardens at Florence. This is an oval lake with an island in the centre. It is rather late in design and is surrounded with balustrades and white marble figures of considerable beauty, but there is a certain want of background or depth of color in the trees that surround it, so that to see it at its best it should be visited towards evening when the shadows are lengthening. Except for this piece of water the Boboli gardens are to my mind much overrated.

For unpretending charm this small stone *barca* in the flower-

garden of the Villa Aldobrandini is difficult to equal. Some of you may remember the exquisite drawing that Mr. Elgood had made of this in his exhibition of "Gardens in many Lands" last spring.

There is something inexpressibly sad in the ruin that has stolen over some of these villas. The stately buildings are tenanted by a few contadini, and vines usurp the paths that once were swept with the robes of cardinals. On the terrace at the Villa Falconieri this solitary figure rises from the parapet, a silent witness of the gradual decay that is going on around him. In the far distance the gray dome of St. Peter's seems to smile defiance at time, and crowds throng the Corso as densely as ever—but here among the scattered fragments at his feet the lizards that climb and blink in the sunshine are all that is left of the gay assembly that once gave life and color to the garden.

With this we may bid adieu to Italy and return once more to England. So far we have been dealing with the history of the past, and now let us pause for a moment to consider what prospect there is of this branch of art taking root again to flourish amongst us in the future. There are, no doubt, many discouraging influences at work to paralyze the efforts of those who would have fine gardens. The general inclination is to procrastinate, awaiting the settlement of social problems that never seem to come nearer solution. And the comparatively recent development of the railroad system has brought dreary villadom in its wake, as well as a fever for travel, that sadly interferes with the contented enjoyment of home life. Perhaps, as time wears on, people will begin to realize that, of their country neighbors, the most contented and happy are not by any means those who spend a large portion of every summer toiling, guide-book in hand, through Continental towns. I have a suspicion that the characters we know in the works of Jane Austen or of Charlotte Brontë drew far more of the real essence from existence than we do, and yet they were stay-at-home people; and perhaps it is only in a country community where people are at home, and at home with one another, sharing their joys and sorrows, and exchanging small kindnesses, that the reality of life is to be found. Here, in our huge metropolis, the half or more of each man's life must almost also of necessity be a closed book to his neighbor; but, on the face of every old garden or building is written the story of lives knit up with each other in a way that is hardly possible in the hurry of modern existence. And behind all this lies the decay of honest sentiment that is, to my mind, one of the saddest features of the age.

However, there is another and a brighter side to the picture. For my own part I have been made conscious of a tendency towards revival among a certain class in the country, by their having allowed such gardens to be added to the buildings I have designed for them. Here is a drawing of one in Dorsetshire, that has been finished and growing into shape some three years or more. The house was of various dates, mainly from Edward VI to Elizabeth, but with other additions down to the present century. The wing to the left, and that containing the dining-hall, it was decided to leave untouched, but the comparatively modern work in the south and right wings is shown in the drawing, rebuilt on the same lines as the older portions. The site of the present gardens was a grass field, falling somewhat from left to right. There were a few trees here and there, and a larch plantation across the windows of the south front. The high road bounded the ground on the left, and a back drive skirted the near side of the field, and continued behind the grove to the back of the house. When the ground was cleared of trees and the roots grubbed up, the soil from the south garden and pool was excavated and removed, to form the terraces round the sunk garden. Lines were laid down to make vistas through the centres of the courts, and sun-dial, fountain or wrought-iron grille placed where most they seemed to be needed. There are three main lines on which the work is planned. One from the south garden gate in the foreground, catches the reflection of the house in the long pool, passes through the doorway in the south front, and out into the court beyond; thence between the piers that are just visible above the roof, and so down the centre of the tennis lawn, and across the pool at the end to the sculptured figure in the yew hedge by the river. Another line, centering with a window in the left wing, passes down the rose garden and through the circular coronet to a niche fountain between the two arches in the foreground. The third is taken from a summer-house in the grove to the right, across the south garden, through the coronet and up a flight of steps, with a wrought-iron gate, to the sunk garden. Here it catches the fountain and continues up another flight of steps to end in a stone seat that projects from the back of the terrace. The water for the fountains is forced up by a ram in the river to a couple of tanks in the roofs of the pavilions, which gives it a fall of about twenty feet to the long pool in the south garden. All the stone-work, with the exception of a little Douling, came from the Ham Hill quarries. It is a warm rust-colored stone, taking a gray lichen, and I have tried to embody some of that variety in the walling that makes such a marked contrast between the old work and that done at the present day.

This is a plan to scale of the general arrangement. It does not take in quite all the work shown in the bird's-eye view, but it may serve to explain some of the points that were not quite clear in the last—for instance, the planning of the grove to the right and the central vistas, which are laid down here with dotted lines.

This is a view of Barrow Court, in Somerset. The place belongs to Mr. Martin Gibbs, who has been plucky enough to carry out the work on a scale almost approaching the boldness of older examples.

Nearly all of what is seen in this drawing is now *in situ*. That is to say, the large stone vases that complete an architectural arrangement at the far end of the central alley were hoisted into position last week. A semicircular balustrade with twelve figure terminals is to take the place of the plain walled bastion in the foreground, but with that exception it may be said to be pretty much as drawn here. I do not mean to say that every feature has been built exactly as shown, for in all such undertakings many drawings are made for every part, and here, for instance, the copper-roofed pavilions at either end of the park wall have been built on the square with stone roofs and finials according to a later design. And the gateway at the far end of the grove has since given way to a circular recess for a figure with flanking piers and ornaments. You will notice two walled sun-traps, one at each end of the terrace. That at the farther end is furnished with hooded seats and a stone table for *al fresco* teas, and set round with shrubs at intervals. The nearer one has an oak arceding on two sides supporting a lead roof, and I hope it will be a tempting spot for an easy-chair and a novel. I should explain that the church and the house—of which a few gables appear on the right—are not my work. The house was originally Elizabethan, but they have both undergone a drastic restoration at the hands of Mr. Woodyear, that has on the whole made them as good as new. I should have much liked to show you a fine scheme of gardens that was prepared some years ago for Lord Eldon, by Mr. Belcher, the architect, and capitally drawn in bird's-eye view by Mr. Beresford Pite. How much of this was actually made I have never heard, but there is, I am told, a garden to one of the houses in the Regent's Park which has been carried out on formal principles from designs by Robert Weir Schultz.

All this is very hopeful and refreshing. And now I will show you a sheet of drawings for a small place in Yorkshire which will give, I hope, as clear an idea of the method of procedure as anything I can instance. There is a rule of exhibition at the Academy that forbids more than one drawing being mounted together in the same frame. But in order to explain a building on paper, an architect will be anxious to show it in every aspect, both to scale and in perspective. Accordingly, I attempted in this case to fuse the various drawings into one whole, and thereby avoid the Academy rule. It was allowed to pass, but this explanation must be my apology for the confusion of ideas that it exhibits. Here is a ground-floor plan of the house. The front entrance is on this side, and there is a straight view down the passage and through glass doors onto the terrace. Here is a plan to a smaller scale of the gardens and general arrangement of the grounds. Two rows of poplars line the carriage-drive to a circular walled forecourt and central fountain. Here is the house in block—the stables to the left and walled portion to the right. On the south side of the house a terrace stretches right and left, and returns with crescent-shaped ends to a pair of garden-houses that overhang the river. A central flight of steps leads down to a level lawn some ten feet below this terrace. It is ornamented with a sculptured figure at either end, and railed off from the river between the two pavilions.

It is well, of course, in choosing a site, to depend more upon the masses of foliage that already exist than on what is proposed to be planted, for then the greater part of the effect will not require the lapse of years for attainment. But there is a difficulty at the outset that stands in the way of all such undertakings, for the age of the landscape-gardener, from which we are only just emerging, has left an impression that promises to die hard in the mind of the employer; and that is, that a different hand is required for the grounds to that which designs the house, and, furthermore, that it is time enough to consider the grounds when the house itself is finished. Now what I contend is this—that if an architect has such a limited experience of country-life that he cannot be entrusted with the grounds, he certainly will not be competent to design a livable home in the country. Also, that to place the whole of the designing in the hands of one individual is the only means likely to result in a harmony.

Now, some of you may have expected, in a paper on gardens, to hear more than a passing allusion to flowers and their culture, for surely that is the end for which a garden is made. I can quite sympathize with this feeling, but, at the same time, I think it arises from the common confusion of horticulture with design. The one is the business of the gardener, and the other of the architect. Similarly, it is the business of the latter to design the structure of a building, but excepting, perhaps, within wide limits, he cannot enter into details of furnishing; that must be left to the occupant.

In our towns, and especially in London, where the value of land is prohibitive to most private individuals, the question is mainly one of public pleasure-grounds, and the arrangement of streets and squares so as to set off important buildings to the best advantage. In this the London County Council has done something, and, from what we hear of the proposed boulevard in Marylebone, it appears to be anxious to do more. If this scheme is to be carried out, it will be at the sacrifice of whatever individuality is displayed in the gardens that now border the Marylebone Road. But since many of these have long ago degenerated into mere advertising warehouses, perhaps that is not much to be regretted. By the new arrangement we should gain a fine avenue of trees, and perhaps some color in borders of flowers between them. But there is a regrettable tendency, in municipal gardening, to multiply plots of flowers of uniform color and size, such as we see in Hyde Park. They are, no doubt, a capital lesson in botanical Latin, and very often their

fragrance is delightful, but they would seem to be there not so much for simple enjoyment as for scientific study. To discuss what might have been done in this direction, and what it is still possible to do in London alone, would form ample subject-matter for another paper. It has engaged the attention of Evelyn and Wren in the past, and let us hope that those to whose care the future dignity of our capital is entrusted, will be imbued with something of the same spirit that guided those master minds.

DISCUSSION.

MR. H. H. STATHAM thought the fact of such a paper being read was an indication of the revival of interest in formal gardening which had recently occurred. Mr. Thomas had not treated the old school of landscape-gardeners as severely as he might; he might have referred to their proclivities for inventing winding walks and then putting shrubs for them to wind round; and one of the most delightful things he had met with in books on landscape-gardening was the direction to plan the entrance near a corner of the high road with a straight elbow from it, so as to look as if the high road led straight up to it. Since reading that, he had been amused, in going about the country, to observe how often the advice was followed. He quite agreed with the general position that the house and garden were inter-dependent, and that the portion of the latter which was closely connected with the house should be formally laid out in direct relation to the architectural features. Still, he would ask whether there was not a little too much antiquarianism in the line which this revival of formal gardening had taken. Clipped trees, for instance, had been brought up again, not, indeed, in such fantastic shapes as those in the Levens gardens, but he understood Mr. Thomas to recommend the use of trees cut into pyramids and obelisks. He did not say he positively disliked this kind of thing, but it was a question whether that was quite the right way to treat trees, and whether they looked as well in winter in an inclement climate as they did in Italian gardens in the summer. A photograph had been shown of the terrace at Haddon Hall in its present condition, and then a representation of what it was originally, and he must say he liked it better in its present state, where you had the balustrade marking the architectural line, but the trees gave a charm and a nice shade. He thought you might carry out a formal design in the whole garden and yet leave the individual trees untouched. He shared Mr. Thomas's contempt for "Capability" Brown and others, but thought he had been rather too hard on Repton. He was a man who ought to be treated separately; his faults were those of his time, and he came very near being a genius; at all events he was very clever, and his book contained many hints, which if you got rid of the bad taste of his time, showed him to have been a very observant and thoughtful man. He was free from bigotry for his day, and when every one was going in for what was called English gardening, all irregularity, he positively refused to take away an old symmetrical terrace; he acknowledged it was not in the taste of the day, but he refused to admit that gardening was a thing which ought to change with the taste of each generation. He believed it was an error to suppose that a pleached hedge meant a clipped hedge, though he understood Mr. Blomfield was responsible for the literary portion of the book published jointly. He had discussed the matter with him, and thought he had convinced him, by quotations from Shakespeare and other old authors, that it meant "thickly woven," and that it was used in that sense by Tennyson.

MR. EVERARD GREEN said there was one very fine old garden which seemed to have escaped notice, at Ascovy Hall, near Spalding. It was a regular Dutch garden, and an old house and lake, and everything remained *in situ*, almost untouched. It was laid out in the reign of Queen Anne, and had been kept up in the most perfect manner. There was also an ancient garden at Sutton Place, near Guildford, which had still the most wonderful remains. It was very fully described in Mr. Harrison's book on Sutton Place.

MR. HARRISON TOWNSEND said it was quite a pleasure to hear an expert and professor of any of our arts and crafts who was not pessimistic, and who did not regard his art as being absolutely without a future. It might be of some little help to the cheery view Mr. Thomas took to mention that even on the Continent an appreciation of English gardening, and, also, of English architecture and decorative art was beginning to find place. It was within his own knowledge that in two or three cases of houses which were being built in Germany, the whole of the interior treatment as well as the general design, were in English hands; and the German proprietor felt that it would not be doing justice to it unless he followed the line indicated in the paper, and entrusted the exterior treatment of the residence and its environment to the same hands; and though there were certain German characteristics, the whole laying-out of the formal garden, the natural garden and the kitchen garden were mostly on English lines.

THE CHAIRMAN, in proposing a vote of thanks to Mr. Thomas, said he might be congratulated on having been able in his own practice to realize some of his own ideas, a good fortune which did not fall to the lot of every architect. It occurred to him during the reading of the paper, whether the formal garden should not be on rather a small scale. One saw every day, in the laying-out of new streets, etc., the mistake people made by drawing things which looked well on paper, but which, owing to the scale on which they were carried out, lost a great deal of the intended effect. Regent Street was a familiar instance. It consisted of a succession of

palaces with long extended fronts, with centres and wings; but not one in a hundred who walked down it ever noticed these. With regard to formal gardens, there was a tendency to design geometrical forms, alleys and vistas, without due reference to the effect of the scale. It seemed to him that they should not be too big, or you would lose sight of that symmetrical arrangement which it was intended to express. With regard to the extravagant designs seen in some old gardens—clipping of hedges and so on, though they were sometimes quaint and picturesque, they did not want to revive these; but every one must admit the beauty of a well-clipped hedge of yew, holly, or box. Those who remembered the beautiful exhibition of Mr. Elgood's, last summer, would recall the lovely gardens, chiefly in Northamptonshire, at Rockingham, Bewick and some other houses, where everything was enclosed in hedges of yew or box, clipped into walls and alleys with the most charming effect. Probably Mr. Statham would not object to that. It seemed to him somewhat parallel to the case of the treatment of foliage in decoration and architecture, as they had to train foliage in capitals and friezes into conventional forms, and stiffen them to suit them to the place they were to occupy, so in a garden they might fairly cut and trim nature into something of a formal shape very different from that which pleased one in the wildness of the wood.

The vote of thanks having been carried unanimously,

MR. THOMAS, in reply, said he had referred to single trees rather as a necessity for marking the points in a complicated design, and the reason why they should be clipped was simply that the architecture did not grow, and the tree did; and unless clipped, it would grow out of scale with the architecture. For instance, take the two fine cedars seen over the top of the wall in the forecourt in one of the illustrations; they were planted quite small, one on either side of the central steps, but now they were grown to huge trees, so that from the bottom of the garden you could not see the house at all. They ought to have been cut down and replanted after about forty years. He had been a little loath to include Mr. Repton in the list he gave, but he thought the late Mr. Sedding, in his book, said rather too much about him; and a fashion had been set of overlauding Repton. He had his folio book, and there was a great deal in it which anybody of taste and knowledge at the present day would be ashamed to publish. He did not think it was altogether an excuse to say that his faults were the fault of his time; at any rate, it was no excuse for the time if it was for the man. As to pleaching and its meaning, he could not altogether agree with Mr. Statham, and he should be very much surprised to find that Mr. Blomfield was convinced that pleaching was not clipping, but interweaving of boughs. The book was the result of a series of talks between Mr. Blomfield and himself, and they went to some trouble to look up the actual derivation of the word. They found that to "plash" was to interweave, and plashing and pleaching were not to be confused. Any gardener, if you asked him for a pair of pleachers, would not give something to intertwine boughs but something to clip with. Ascovy Hall was mentioned in a book by Miss Tyssen-Amherst, which had recently come out published by Quaritch, and contained views of it. Sutton Place was described by Harrison, and the garden was illustrated. With regard to scale, he believed the only thing was to measure the old work, which, unfortunately, did not exist in these matters as it did in architecture, because they were dealing with things which grew up and disappeared. Failing that, the only way was to design and experiment. It was a thing in which they had vast experience in the old days; and he long ago came to the conclusion that out of doors all measurements were paced, and never measured by rule. It was his experience that, if you paced an old avenue, the widths would fall into fives or tens of paces. At Windsor, for instance, they fell into tens. This rule held equally on the Continent.



INCREASING THE LIMIT OF HEIGHT.—ASSISTANT ARCHITECT FOR THE GOVERNMENT BUILDING.—ADJUSTING SETTLEMENT IN A CASE OF ALTERATION.—THE MOSAIC WORK AT THE PUBLIC LIBRARY.—AN EXHIBITION OF TAPESTRIES.—THE DORÉ PICTURES.—THE Ladies Home Journal Drawings.—THE CUT-STONE STRIKE.

LAST month, in the letter from the Garden City, mention was made of the strong feeling against the building ordinance which limited the height of our high structures to one hundred and thirty feet. While the letter was still in the hands of the publishers, the wished-for amendment came. It was pushed through before the faces of our city fathers with more quickness and dispatch than is usual in such matters; the Mayor, approving of the amendment, disregarded a motion to place it in the hands of a committee, which would have given the affair the usual slow gait common to such matters. Fortunately, no such delay was experienced, and by a vote of fifty-six to eleven the ordinance was amended, by changing the limit of the height from a hundred and thirty to one hundred

and fifty-five feet. However, a clause of the old ordinance which is still in force has surprised some, since it, in some cases, puts a limitation to the new amendment. It is that the height shall not exceed three times the width of the building. Of course, in the case of narrow lots this necessitates a comparatively low building, irrespective of any new building ordinance.

As a good many buildings are being erected substantially enough for twelve stories, while it was only possible for them to carry ten of ordinary height under their roof, the hoped-for change in the law was most pleasing to many architects as well as owners, and that the change not only came but came quickly made it doubly welcome.

A matter which has been more or less discussed in the papers away from here, probably less, but which is of especial interest to Chicago and Chicago architects, is the passing in both Houses of the special appropriation of \$25,000 for an assistant Chicago architect for the Post-office Building. How much of this \$25,000 it would be necessary for this assistant of the Supervising Architect to spend in draughtsmen's wages, etc., is not mentioned, and most decidedly if it is expected that much expense shall be borne by the assistant architect, this is a most inadequate appropriation for so large a building and one which would prove but small temptation to a first-class architect. This idea would seem to be borne out exactly by the rumor which reports that Mr. Coolidge, of Shepley, Rutan & Coolidge, who has been offered the appointment, is at present in Washington discussing this very point with Secretary Carlisle. According to these reports, the position would not be unwelcome if it did not necessitate doing almost five-per-cent worth of work for about one-half of one per cent.

A rather curious building feat is being performed in a structure which is being remodelled on Quincy Street, just east of the Great Northern Hotel. The change in the moral character of the building, if one may so express one's self, will be quite as curious as the change in construction. Heretofore the place has borne the reputation of being one of the worst gambling resorts of the city, but after its transformation it will appear as a large bath-house where all dirt can be washed away. Ten years ago the building, which in height is a five-story-and-a-half basement, was constructed. Through two of the stories a bay-window extends, which, after the changes, will be carried through the entire five. After the Great Northern Theatre annex was decided upon, there seemed to be an opportunity to change the character of the place. It was accordingly leased as a bath-house and although it will not be directly connected with the Great Northern, there will be communication between the buildings in the basement. An agreement was made between the owners of the smaller building and the theatre-building company that the west wall of the old building should be incorporated into the party-wall. Here, of course, at once arose the question of the settlement of the new building. Here, on a soil such as we have in Chicago, an allowance of nine inches is made for settlement. This allowance has already been made between the hotel proper and its new annex, as is shown in the variation of the ornamental sill-courses. A similar case was to be seen in the two portions of the Monadnock Building, where the stories of the new and old sections seemed to be quite on different levels at first, but have since settled down to the same grade. In the hotel and its annex the settlement would be effected without any trouble, as the two structures are on different foundations and the old wall would stay stationary while the new one was settling itself.

At the east of the new building, however, where the smaller, older building was to be incorporated into the large new one, matters were not so simple. On one side of the bath-house, the joists would remain in the old wall at their accustomed level, while on the other, which had been incorporated into the party-wall, there would be a settlement of nine inches. This unequal settlement for the smaller building, with the added weight of marble lining and wainscoting, would quickly reduce the place to a wreck. Consequently, the only way out of the difficulty seemed to be, to build up a temporary supplementary wall for the smaller structure, known as the Lehman Building, which can be removed after the Theatre Building has entirely settled. This is, consequently, being done, the floors being held up on timbers and jack-screws during the process.

Things continue quiet in the architects' offices, and some of the plans which at the beginning of the year seemed about to materialize have not yet shown themselves up as absolute certainties.

One of the most important down-town buildings just designed is now known as the Silversmith Building, for Benjamin Allen, and the Gorham Manufacturing Company. One of our papers in speaking of it says, "The front will be of terra-cotta and pressed-brick, broken by many windows and representative of a plain but stately architectural style." This certainly is as kind a criticism as could be made on it, judging from the drawing, for certainly no building of its size could be erected which would have less architectural features or pretensions. An oblong box pierced by so many holes of equal size would seem to be the *beau ideal* of its architect, if this structure in any way realizes his ideal. The entrances are absolutely without any impressive architectural features, the windows without grouping and the two lower stories, where some well-studied characteristics usually appear, if they are found anywhere on the building, in this case only equal the eight accompanying stories in their commonplace character, and yet from the office of this architect and his former partner some of the best work found in our large down-town buildings has been produced.

The private view recently given in New York of the glass-mosaics and inlays destined for the Public Library in Chicago, brings out the fact that this is the most extensive work in glass-mosaics undertaken since the Cathedral of Monreale in Sicily, in the twelfth century. The actual mosaics and inlays, judging from the exhibition of the models given in Chicago last fall, will be a most beautiful feature of the new building, and until we see the actual decoration of the other rooms, we will hope that the idea received from the models is an exaggerated one of its tawdriness and flashiness.

In the early part of this month a very interesting exhibition was given at the Art Institute of the collection of tapestries owned by Mr. Charles F. Foulke, of Washington. This exhibition was made possible through the efforts of the Society of Antiquarians, an association of ladies who have organized for the purpose of making rare collections in textiles, jewelry, laces and kindred applied arts, and who, having associated themselves with the Art Institute, do much to bring to its galleries at least one very interesting loan collection annually, while a large suite of rooms is given over as a permanent thing to their fast-growing collection. This recent Exhibition of Tapestries included the Barberini tapestries made under the direction of Pope Urban—brother of the well-known "King Robert of Sicily." This set, from the hands of Jacques de la Riviere and Jean François Romanelli, have for their subjects six scenes from the "Life of Constantine the Great." Five bear the signature of Riviere, while the Constantinian monogram in gold rests in the top border. The subjects are, "Constantine in a Gladiatorial Contest," "Constantine contemplating the Flaming Cross in the Sky," "Constantine destroying Idols," "Constantine burning the Creed of the Aryans at Nicæa" and "The Construction of Constantinople."

A series of five with "Judith and Holofernes" for their subject come from the Brabant School and date from the latter part of the seventeenth century. They are signed by E. Leyniers and H. Rymans, the two most celebrated names among the Flemish master-weavers. To many the most beautiful series of the collection was that known as the "Diana" series. These, though coming from the Brussels looms, date back almost a century earlier than the "Judith" series, and bear the monograms of Jacques Seubles and Jean Raes.

The present drawing card of the Institute is the great Doré pictures. It has been most curious and interesting to see what does most appeal in art to the average man and woman and there can be no question that these huge creations mean more to them than anything heretofore exhibited at the Institute. The place has been packed on free days, one Wednesday the number mounting up to seven thousand five hundred, while on Sunday it was over six thousand. People of education and refinement, along with the German mechanic and Italian laborer, have flocked to see these paintings, and one is in doubt whether it is the huge dimensions or the scriptural subjects of most of them which produces the charm. One can understand how "Christ leaving the Pretorium" or the "Death of the First-born" might attract many, and—well, yes, we can understand too how the Baden Baden gambling table with its crowd of badly drawn figures and lurid atmosphere would not be without charm for many. Be it as it may, it's a good thing to get a community interested in art of any kind, and to get the public in general in the habit of going to the Art Institute and growing to feel a certain ownership.

Chicago goes into things with a rush. Who knows that we may not be on the verge of a great art revival, when children and adults, rich and poor, the educated and the ignorant will look upon art as something to be wished for, and also obtainable. A curious example of a rush at an art exhibition was that seen at the exhibit made by the *Ladies Home Journal* of the original studies for its illustrations. Certainly, this especial display was entirely different from the one being made several blocks north at the Institute. It was held in the banquet-hall of the Auditorium Hotel, and was accompanied by a Hungarian band playing like mad and was very prettily set in floral surroundings, and—was free. Hardly any one is proof against the temptation of getting something for nothing, and as a result of this, or perhaps, we might give the community the benefit of the doubt, of a sudden and heaven-born desire to take in everything artistic that there is to be taken in, everybody went to the exhibition some time, waiting in line from the Congress Street entrance on to Wabash Avenue. And such a motly visitation never jostled against one another in the cars of the elevators before.

Enthusiastic young art students crowded side by side with an old farmer and his wife, in for the day from the Illinois farm, or the "smart" up-to-date woman against the little behind-the-times dame fresh from her nursery and household cares. The exhibition itself was not at all unusual, for there is constantly coming to Chicago much of a similar character, but the way it was received was indeed a surprise. As is usual in work for reproduction, no special medium was used, the range being from pen-and-ink to oil. The exhibition was made up of drawings by Reginald B. Birch, B. West Clinedinst, Wilson de Meza, Arthur B. Frost, Charles Dana Gibson, W. Hamilton Gibson, Kate Greenaway, W. St. John Harper, E. W. Kemble, Albert Lynch, Eric Pape, Howard Pyle, W. A. Rogers, W. T. Smedley, Alice Barber Stephens, Frank O. Small, Henry Sandham, W. Granville Smith, W. L. Taylor, Thure de Thulstrup, Abby E. Underwood, Irving R. Wiles, the compositions being over two hundred in number. W. L. Taylor's strong, artistic work was well worth braving the crowd to see, Charles Dana Gibson's familiar short-limbed females are always pleasant to meet, William Hamilton Gib-

son had some of his usual charming things, and Alice Barber Stephens had much that was excellent in her later work.

In view of what looks like unprecedented enthusiasm and interest in matters artistic, the managers of the Art Institute have decided to have the galleries open every Thursday and Friday evenings, until the latter part of March. The present attraction in the galleries is the collection of paintings of the modern Swedish School. Mr. Anders L. Zorn, the Swedish artist who first won popularity in this part of the world during the World's Fair season, has charge of the bringing together of the collection. The Chicago Art Institute, the St. Louis Museum of Fine Arts, the Cincinnati Museum, the Philadelphia Academy of Fine Arts, the Boston Art Club and the Pratt Institute of Brooklyn are the institutions which have been instrumental in bringing the collection to America. The artists represented are Acke Anderson, Richard Bergh, Oscar Björck, Eva Bonnier, Baron Gustaf Cederström, Per Ekström, Wilhelm de Gegefelt, August Hagborg, Eugene Jansson, John Kindborg, Nils Kreuger, Carl Larsson, Bruno Liljefors, Karl Nordström, Hanna Pauli, Charles F. von Saltza, Robert Thegerström, Alf. Wallander and Anders L. Zorn.

From time to time mention has been made in these letters of the activity seen in marine architecture in this part of the world: now the various yacht clubs of this section have become filled with a desire for international races on the Great Lakes, and as a result, a ship-building firm at Racine, Wis., has taken up the matter of yacht-building, and if reports are true will make the Eastern firms look well to their laurels. A new boat is being designed, destined, it is hoped among yachtsmen, to win the cup next summer in the approaching contest. Unlike most of the racing yachts built for this lake district, the crew and owners can be accommodated on board for longer than the usual afternoon and day. The plan is, of course, compact, but convenient. The length of the water-line is about forty-five feet, length of deck sixty-five, and beam twelve feet. The saloon is seven feet by twelve wide and is furnished with lounges which can serve as beds at night. Above each of these is a berth, which will make the sleeping accommodations of the cabin number up to four. Forward of the saloon will be the owner's stateroom, while access from it on the port side will be to the toilet-room. The passage between these two will lead to the galley, equipped with range, ice-box and cooling-room. Here, also, will be store-room for provisions. Immediately forward of the galley will be the crew's quarters, with accommodations for five men. The cost of the yacht will be about ten thousand dollars, and the designs are made by one of the best designers in this section of the country. It is somewhat of a shock to those of us who have seen crafts on the ways of the good old-fashioned "down East" ship-yards to learn that the yacht will not only be built under cover, but also that the frames will be placed upside down on the floor of the shop, the keel being in the air, while the tops of the frames will be fastened by angle-irons to the floor of the building. In this position the planking is easily adjusted, and after it has been planked and braced it is turned over into the ordinary position and the rest of the work proceeds in the usual manner.

In the latter part of January a strike was inaugurated among the stone cutters. A little printed card was sent out by the Union, demanding of the cut-stone contractors "that only members of their Union shall be allowed to operate the stone-planing machines, that these machines must not be operated more than eight hours per day, that the operators of such machines must receive four dollars per day (eight hours)." Following up this the Cut-stone Contractors Association sent a communication to the different architects for their careful consideration—a statement of their side of the question. The statement was substantially as follows:

"That the general public may thoroughly understand the principle involved in the unwarranted strike inaugurated by the leaders of the Journeymen Stone-Cutters' Association, of Chicago, against their employers, Monday, January 6, 1896, the Stone-Cutters' Contractors Association operating machinery hereby make the following statement.

"We claim the undeniable right to operate our machinery, saws, rubbing-beds, planers and lathes as many hours per day as we can secure work for them to do and employ men to operate them without dictation from or under direction of the Journeymen's Association, but operate them on the same business principles as all other manufacturing establishments in this city.

"This is an inherent right which all men are bound to respect. . . .

"The cut-stone contractors are not the cause of the great business depression that has settled upon the country since 1893, nor are they the cause of the present unsettled and deplorable financial conditions which make profits impossible in nearly all industrial undertakings and have cut down the amounts expended for the construction of buildings to almost one-half of what it was in prosperous years before 1893.

"These causes have forced down standard values from 20 to 30 per cent, but the wage scale of the building trades stands just the same as in prosperous years, and consequently the contractors are the only ones who have suffered.

"The planing of stone has been a vocation in Chicago since 1868, when planers were first introduced here, the output being chiefly large flags and sidewalk stone.

"During the years 1874 to 1880 several large buildings were almost entirely cut by planers.

"The development of the Bedford quarries at Bedford, Ind., in 1877, established an immense production of raw material yearly, which added a large force of planers to cut-stone production and in all the largest Eastern cities planers adapted to cut-stone work were introduced, and since 1890 they have been gradually introduced in most of the stone-yards in Chicago.

"The planing machines have always been operated by men from ordinary ranks of labor and only a short time is required by an ingenious man to become an expert operative, as the machines and tools do the work and no great skill is necessary.

"The large output of planed stone since the depression of 1893 has necessarily reduced the demand for men in proportion, but this has been counterbalanced by the larger volume of work secured in competition against terra-cotta, pressed brick, artificial stone and metal work, which could not have been done without the aid of planers. The same result in the old plan could only have been secured by a corresponding reduction in the price of skilled labor of from 30 to 40 per cent.

"The Journeymen's Union now proposes to reverse this condition of production of planed work by forcing contractors by threats, insinuations and future persecution, the nature of which we fully understand, to raise the price of cut-stone work by placing planers at their command and decrease the volume of work, the alternative of which would be less pay.

"In thus putting our case before the general public and building community, we can assure them that we are cognizant of the best interests of the cut-stone business, have kept pace with the march of time in industrial progress, and have introduced labor-saving machinery as universally done all over the world, and thereby reduced the cost of production, which enables us to furnish cut-stone fronts as cheap as terra-cotta, pressed brick, artificial stone and metal.

THE CUT-STONE CONTRACTORS' ASSOCIATION."

Then follow the names of over twenty of the chief contractors. After this, at a second meeting of the Union, a second communication was sent out confirming the principles of the strike as first laid down and ending with the resolution that

"... any person, whether a member of a firm or of this body, who acts as foreman in giving out lines of work, breaking up, or in any way aids in running machinery against the rules of this body, shall be brought before this body and held subject to its decision, to be enforced at any time in the future, when such person shall be within the jurisdiction of the Association or come under its control."

Thus was the merry war begun, with apparently no immediate prospect of either side conceding much.

A personal item of interest is the severing by Mr. D. Adler of his connection with a commercial house where he has been engaged for the past few months, as referred to in these letters. Rumor has it that he will, henceforth, act largely as consulting architect and expert adviser (just as he is now doing in the case of the great building to be erected at St. Louis for the Republican Convention next June). But either as a practising or a consulting architect, certain it is that his return to the fold will be heartily welcomed by the profession of this city.

PROFESSOR HERKOMER'S NEW BLACK-AND-WHITE ART.

AT the Fine-Art Society in New Bond Street, Professor Herkomer, R. A., lately gave a demonstration and explanation of his "New Black-and-White Art."

The Professor said:—"The black-and-white art, which I now present to painter and public, is new from nearly all points-of-view. It is patented under the definition of 'an improvement in artistic printing-surfaces,' and not the least part of the novelty lies in the fact that this 'printing-surface' is the result of a peculiar treatment of an artist's painted handiwork. Thus, probably for the first time, the painter has it in his power to do black-and-white work, diffusible by the printing-press, without departing from his accustomed methods of work, for I give him 'paint' to manipulate with the 'brush.' He has no new technicalities to acquire, such as are needed for the production of various forms of engraving—technicalities that have hindered many an artist from taking to 'plate work.'

"First, on the polished surface of a copper plate, which is coated with silver, the artist paints his picture with a thick black pigment resembling printer's ink. In the production of this painting he uses brushes, stumps, his finger-tip, or anything, in fact, that will enable him to get the desired effect. So far, it is a positive process, requiring therefore, no reversion of the subject on the plate—an inestimable boon to the artist. Although the further development of the process requires that the ink shall remain wet, the artist need in no way hurry himself, as the ink I have invented for this method of work practically never dries. On examination of the painted plate it will be seen that the ink is on the surface in different degrees of thickness. In this variety of depth in the ink lies the first vital point of the invention. The artist need in no way think of this necessary condition; it comes without conscious effort in the making of his tones and gradations. This painted surface, with the ink still wet, or soft, is now dusted thickly over with a particular powder, until neither the black paint nor the brighter parts

of the plate are visible. A soft, broad camel's-hair brush has to be used to brush the surface gently and in all directions, until the superfluous powder comes off. We have now, at this stage, a painted picture dusted with a powder, which granulates the painted touches into perfect proportion to their depth of tone, without, however, in any way altering their autographic character. The ink used is composed of German black and a mineral oil, and the powder is composed of an inert and an active ingredient—the one to give granulation and the other conductivity. We now enter the third stage and take of this granulated surface a 'metallic mould,' or, in other words, an electrotpe. Such is the conductivity of this surface that (all things being right) in ten minutes a bluish of copper spreads over the whole surface when subjected to the electric bath. This settles in and repeats the most minute crevices and interstices. The plate is left in the bath until the copper deposit is as thick as an ordinary printing plate, which may mean anything from six to ten days, according to the thickness required. By filing the edges we are enabled to separate the deposited from the original painted plate, and in the deposited plate we get an exact negative or mould of the painted and powdered surface, from which, by the ordinary methods of copper-plate printing, a perfect reproduction of the original painting is obtained.

"My method is indisputably more suited to the artist and the painter, than any laborious and difficult form of engraving, which he would have to learn as a separate and totally distinct branch of art. And in result nobody will deny that my method in its printed result looks like a form of engraving. If we touch the matter of speed, every form of engraving must be withdrawn from competition. I can do in my method as much in one day as occupied me six weeks in mezzotint work. I am, on the other hand, prepared to own that, although every gradation of tone and texture can be given, my method is not so suited to the interpretation of other men's work as mezzotint would be. Its very freedom seems to set itself against close imitation. It is this 'freedom' that points to original work as the mission of this new black-and-white art. To compare my method with any other tone art than mezzotint, such as aquatint, would hardly bring out any new facts. The result must be seen, examined, and judged on its own merits, as the method neither seeks to rival nor to supersede any form of engraving."

The lecture was listened to with much interest, and great admiration for the examples hung round the room was expressed by several of the artists and critics present.



AMERICAN INSTITUTE OF ARCHITECTS: DIRECTORS' MEETING.

AN adjourned meeting of the Board of Directors of the American Institute of Architects was held in New York, February 14, 1896, the President, Mr. George B. Post in the chair.

There were present, in addition to the President and Secretary, Messrs. Kendall, O'Rourke, Frederick, Stead, Briggs, Mason, Link, Day, Schweinfurth and Andrews of the Board, and Mr. Gibson, a former member of the Board.

The Secretary reported that Mr. Adler had returned to professional practice after a slight interval, and it was decided that his name should be continued on the rolls and that his membership be considered as not lapsed.

The Institute having received a request to appoint a member to a joint committee on Standard Rules for Electrical Construction and Operation, the President requested the Secretary to act in that capacity.

Since the last meeting of the Board, notice has been received of the deaths of Mr. A. Page Brown, of San Francisco, who died January 21st, from injuries received last October; of Mr. A. P. Cutting, of Worcester, Mass., who died February 6th from extreme nervous exhaustion at Los Angeles, Cal., where he had gone for his health, and of Rev. Wm. H. Furness, D. D., the oldest of the Honorary Members of the Institute.

The President reported that there had been no meeting of the committee appointed to prepare a bill for securing plans for the erection of the public buildings of the United States, and no active work done, except to ascertain the state of public opinion as to what can be done. A good deal of favorable opinion has been developed in Chicago and Philadelphia, and the present Committee on Public Buildings and Grounds is more favorable to a bill taking the work of designing public buildings out of the office of the Supervising Architect than was the committee of the last Congress. The Senate Committee is also considered to be more favorable to such a bill. A former self-constituted committee had raised some \$250 to meet necessary expenses of their enquiries, and the present committee wished instructions. It was found that there were two committees in existence, the committee appointed January 9, 1894, apropos of the Buffalo Federal Building, and that appointed January 4, 1895, to draft a bill to regulate the designing of Government buildings. After a full debate, Mr. Day offered the following resolutions, which were unanimously adopted:

Resolved, That the Chair appoint a committee of five, of which the President, Mr. George B. Post, shall be Chairman, with five alternates, to secure the passage of the Aldrich Bill, or such bill of similar import as shall commend itself to the committee.

Resolved, That the said committee be empowered to raise by voluntary subscriptions funds for the said purpose.

Resolved, That all previous committees appointed for similar purposes be discharged.

The Chair appointed as members of the committee, in addition to himself as Chairman, Messrs. Bruce Price, John M. Carrère, J. G. Hill, Alfred Stone, with E. H. Kendall, H. J. Hardenbergh, Robert Stead and R. S. Peabody as alternates.

The President reported the efforts of the Chapters in the State of New York to procure the passage of a law licensing architects, and the Secretary was requested to communicate with Mr. J. H. Pierce, of Elmira, and procure data on the subject and communicate it to the architectural journals.

The Secretary read a letter from the St. Louis Chapter, acknowledging the receipt of the vote of thanks passed by the St. Louis Chapter.

The Secretary read the following report from the Washington Chapter, with a request that action be taken thereon:

"The committee, appointed by the Washington Chapter of the American Institute of Architects to report on the advantage of Washington as a place for the headquarters of the American Institute of Architects, submit the following:

1. Washington City as the seat of the Government is the proper place for the headquarters of all National Associations.

2. The broadest field the American Institute of Architects has for producing good results lies in obtaining National Legislation in relation to art and construction.

The question of Government testing-stations, which was advocated some years ago by the Washington Chapter and endorsed by the Convention of the Institute at Buffalo, as well as the Tarsney, McKaig and Aldrich Bills in reference to the Supervising Architect's office, can be more efficiently advocated with the home office of the Institute located in the National Capitol.

3. Washington City is rapidly taking a prominent part among the cities of the country as an educational centre, here the Government has already collected a large number of valuable documents, books and material relating to history and the arts, as well as statuary in memory of the country's great men.

It seems that here should be collected and displayed for use, the material belonging to the Institute. Here should be placed paintings, monuments or tablets in memory of architects who have accomplished enough to be worthy of having their names honored.

It is in this city that the people of this and foreign countries expect to see and study such subjects.

4. The Government could give aid in the establishment of an Architectural Museum in this city when it would not in any other city of the country. Through Consuls and gifts from foreign governments, as well as appropriations, a museum could be started here under the auspices of the Institute that would soon surpass any similar collection in the country.

5. If the Institute desire to erect its own building, a site centrally located could be bought in this city at less cost than in any other city of the same magnitude. A location opposite one of the Government reservations would allow for more artistic treatment than would probably be available on sites that could be obtained at reasonable cost in other cities.

6. If it is not considered desirable to erect a building at the present time, two institutions in this city will assign rooms to the Institute.

The Corcoran Gallery of Art will, upon formal application, give the Institute quarters in their new building on 17th Street and New York Avenue, one of a group consisting of the President's House, Treasury, War, State and Navy Department Buildings—a building overlooking the mall, centrally located and in every way suitable for the purpose.

7. The Smithsonian Institution will form an association with the American Institute of Architects similar to the one they now have with the American Historical Association.

The Charter of the Institute in this case must be modified on the lines indicated in the Charter of the American Historical Association, a copy of which is attached to this report.

The Institute in this case would obtain rooms for the display of books, photographs and other matter pertaining to the Society and have their *Proceedings* printed by the Government free of expense.

In this way the *Proceedings* of the Institute could be more fully illustrated, and in them could be published measured drawings of some of the older buildings and drawings of merit as they are presented.

This would open a wide field of usefulness for the American Institute of Architects.

We submit this report with the request that the Institute be urged by the Chapter to make Washington City its permanent headquarters, and accept the offer of either the Corcoran Gallery of Art or the Smithsonian Institution.

(Signed) ROBERT STEAD, }
GLENN BROWN, } Committee.

"Approved by the Washington Chapter with the request that the Institute act upon the report of the Committee.

(Signed) ROBERT STEAD, President W. C. A. I. A.
GLENN BROWN, Secretary W. C. A. I. A."

The President thought that the Institute did not realize its strength, and expressed the opinion that money could be raised to provide suitable quarters.

After a full discussion it was *Voted*, That the report be referred to

the committee appointed at the St. Louis Convention, which committee shall have power to add to its membership, and that said committee be requested to report to the next meeting of the Board of Directors.

The Washington Chapter also presented a printed copy of a resolution passed at a meeting of the Chapter held on Friday evening, February 7th, in reference to the prominence given in the newspapers to Mr. Edward P. Casey, as architect of the Congressional Library Building. The report was received and ordered to be put on file, and Mr. R. D. Andrews and Mr. Frank Miles Day were appointed a committee to confer with Mr. Casey, and report to the Washington Chapter their findings in the matter.

Mr. A. H. Thorp's communication in regard to alterations in the schedule of charges was laid on the table, as the Board was not prepared to take the action asked for.

The proposal of I. Haas & Co., to publish a history of the Institute, together with photographs and biographical sketches of the officers and Fellows of the same, and "write-ups" and photographs of prominent builders, to be paid for by said builders, was declined.

Communication of Mr. E. L. Corthell, in regard to an International Congress of Engineers and Architects, was placed on file.

Communication of Mr. E. H. Bell, in regard to a Memorial to Mr. Hunt, was referred to the New York Chapter, with full power to represent the Institute in the matter.

Communication from Mr. A. E. Borie, in regard to a memorial to Mr. John Stewardson, was referred to the Philadelphia Chapter, with full power to represent the Institute in the matter.

The Board of Directors, in accordance with the powers vested in them, voted to elect Leopold Eidlitz, of New York, and George Keller, of Hartford, Fellows of the American Institute of Architects.

The applications of the following gentlemen were received, their drawings examined, and their names approved for submission to the Fellows of the Institute for election by letter-ballot: George Henry Clemence, Worcester, Mass.; Leon E. Dessez and Louis E. Stutz, Washington, D. C.; Will Sterling Hebbard, San Diego, Cal.

The Chair appointed Messrs. William C. Smith, of Nashville, George C. Mason, of Philadelphia, and Alfred Stone, a Committee of Arrangements for the Nashville Convention to be held in October, 1896.

Adjourned.

Attest: ALFRED STONE, Secretary.

NEW YORK CHAPTER A. I. A.

A REGULAR meeting was held in the Chapter quarters on Wednesday, February 12, 1896, at 3.30 p. m., Mr. Upjohn in the chair.

The minutes of the last meeting were read and approved.

The Secretary read a letter of January 13, 1896, from Mr. Dielman, Secretary of the Fine Arts Federation, giving the information that the matters under its consideration were: "The still doubtful site of the E. & S. Memorial." "The Preservation of the Palisades, now before the Executives of two States," "The Limiting of the Height of Buildings" and "The Exhibition at Berlin next Summer"; all subjects, the right direction of which would be creditable to the Federation and its component art bodies, and very important in regard to the hygienic and æsthetic conditions of the public.

The election of members being in order, Mr. H. F. Kilburn was, by ballot, unanimously elected a Practising Member.

News having been received of the death, on January 21st, of A. Page Brown, of San Francisco, Cal., the following resolutions, moved by the Secretary, were unanimously passed:

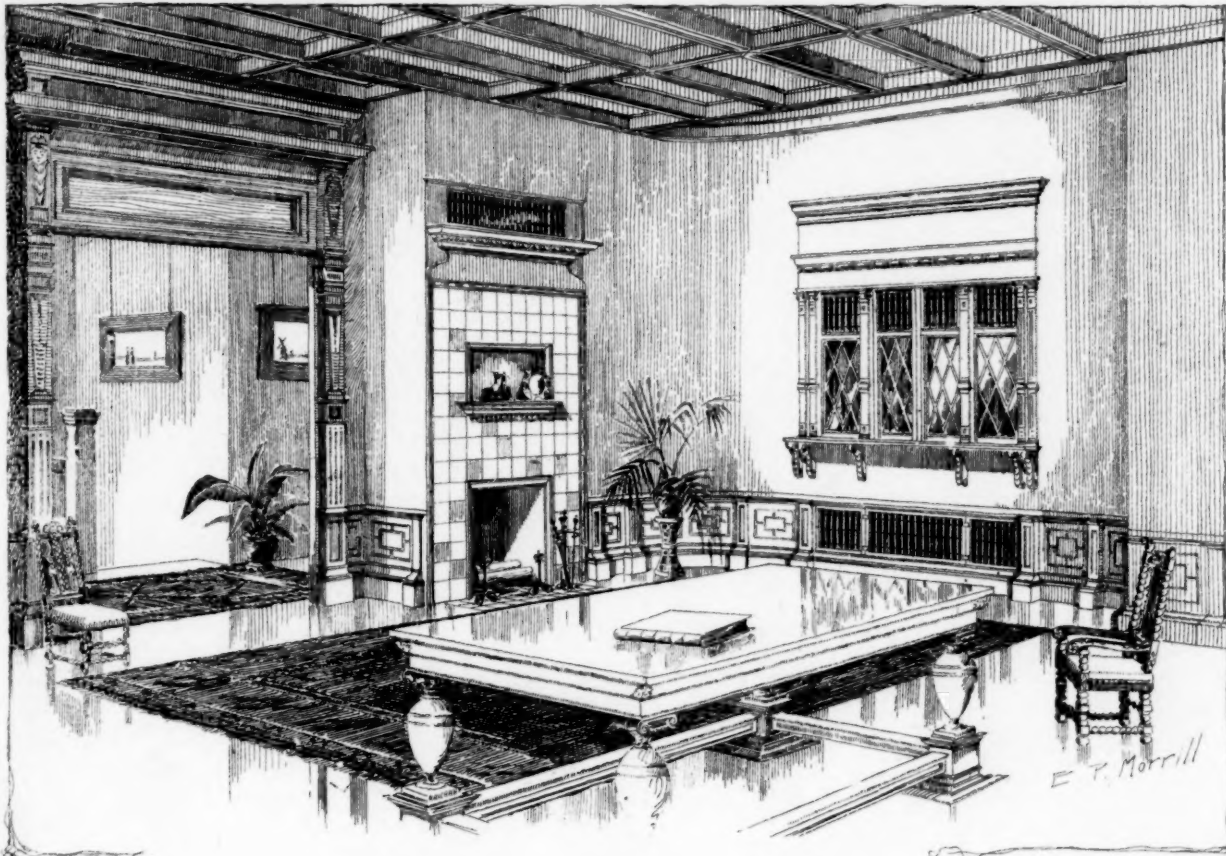
Resolved, That this Chapter greatly regrets to be informed of the untimely passing away of one of its members, A. Page Brown, for a number of years past a Practising Member of this Chapter, though a resident of San Francisco, and its loss is felt the more inasmuch as the length of time that has elapsed since his terrible accident, induced the hope that his good constitution and his comparative youth might, in the end, conquer in his struggle for life. Mr. Brown's highly artistic and successful adaptations to current work of the picturesque Spanish-Colonial architecture of the Pacific coast are well known, and the elaborate renderings of some of them have conspicuously served to enhance the brilliance of the various architectural exhibitions of late years in America, while one example of them, embodied in execution at the Columbian Exposition, excited general interest. He has left to the younger members of the profession an exceptional example of industry and devotion to his art, and a distinguished name on the roll of American practitioners and their representative Institute.

Resolved, That this resolution be transmitted to his family with the expression of the Institute's sympathy in their loss.

The Secretary said that Mr. Kendall and himself had received a visit from Mr. Slavomir Monkovsky, of Khabarovsk, Siberia, Chief Civil Engineer of the Amour Country, Russia, who was desirous of enlightenment as to the current methods employed in the erection of high buildings. He had given him a list of Chapter architects who had had the most practice in that kind of structure.

A vote of cordial thanks was passed to Mr. and Mrs. S. P. Avery and the Trustees of Columbia College for a copy, presented to the Chapter, as per Librarian George H. Baker's letter of January 11, 1896, of the very fine catalogue of the Avery Architectural Library, and the Secretary read an affirmative letter (of January 10, 1896,) from Mr. Baker in answer to a note from himself as to whether the Avery collection is not the most complete and valuable in this country and, perhaps, as a compact collection in one specialty, in Europe.

The Secretary presented a printed sheet covering the annual report of Mr. E. J. Lewis, Jr., Secretary of the Boston Chapter, for

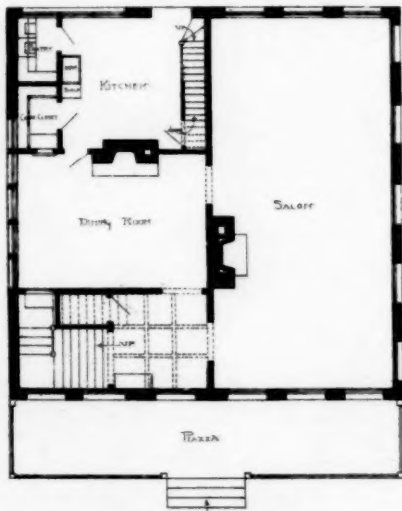


HOUSE OF
CHARLES B. APPLETON, ESQ.,
BROOKLINE, MASS.



Remodelled by
KINGSBURY & RICHARDSON,
Architects.

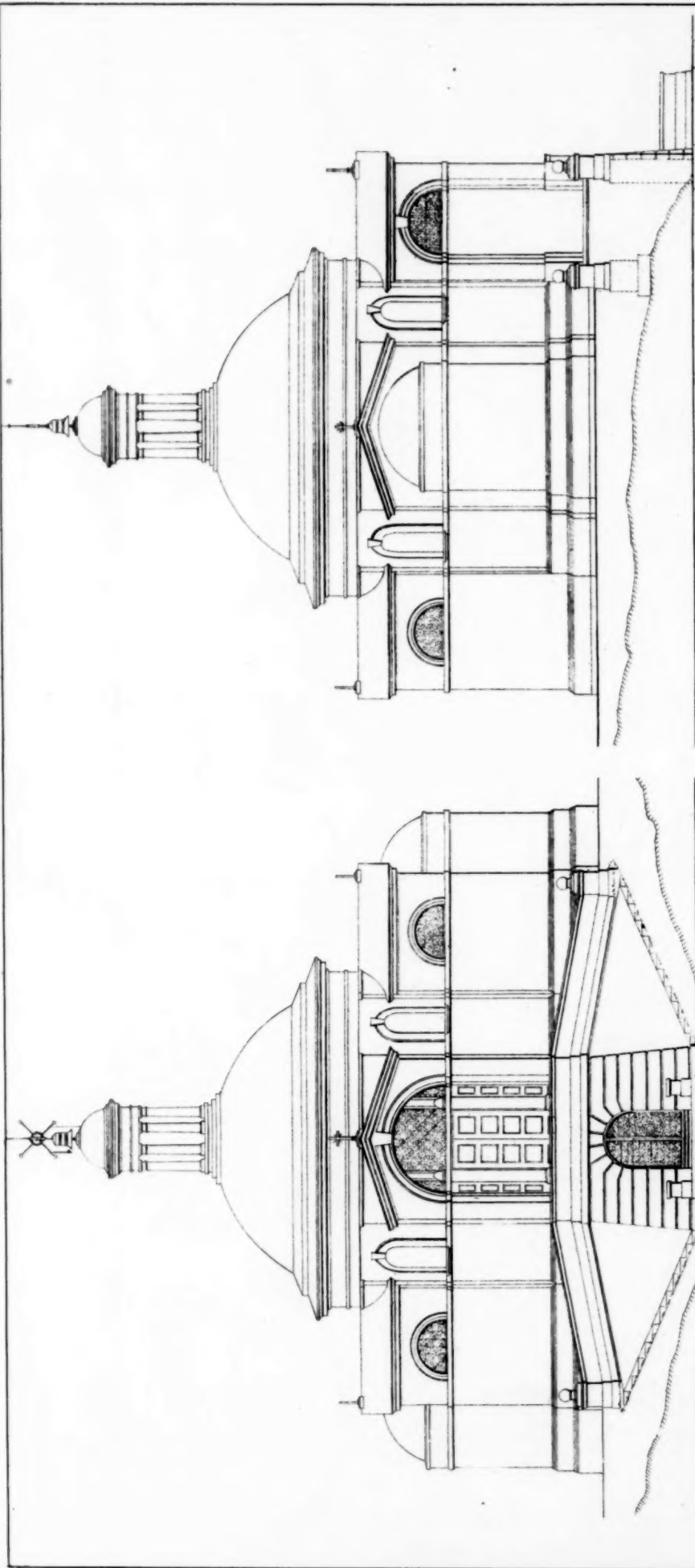
SECOND FLOOR PLAN



FIRST FLOOR PLAN.

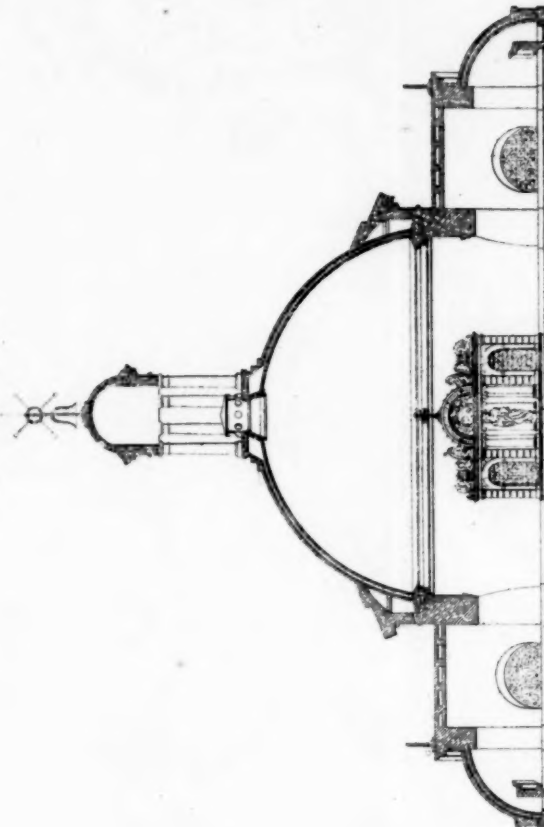
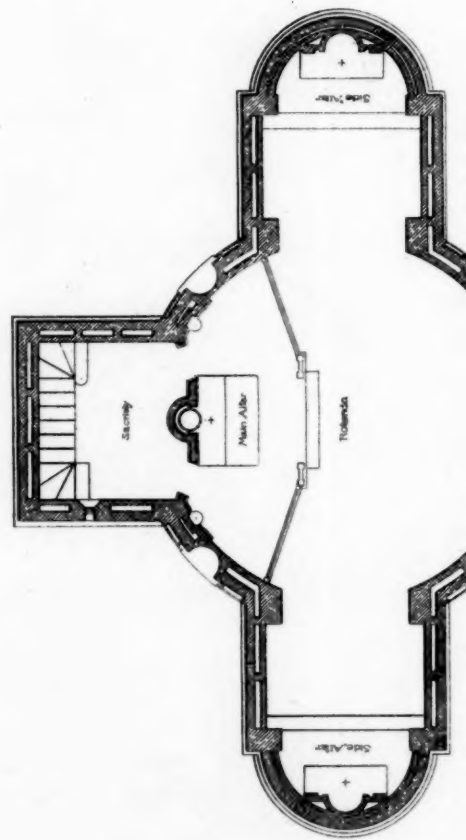


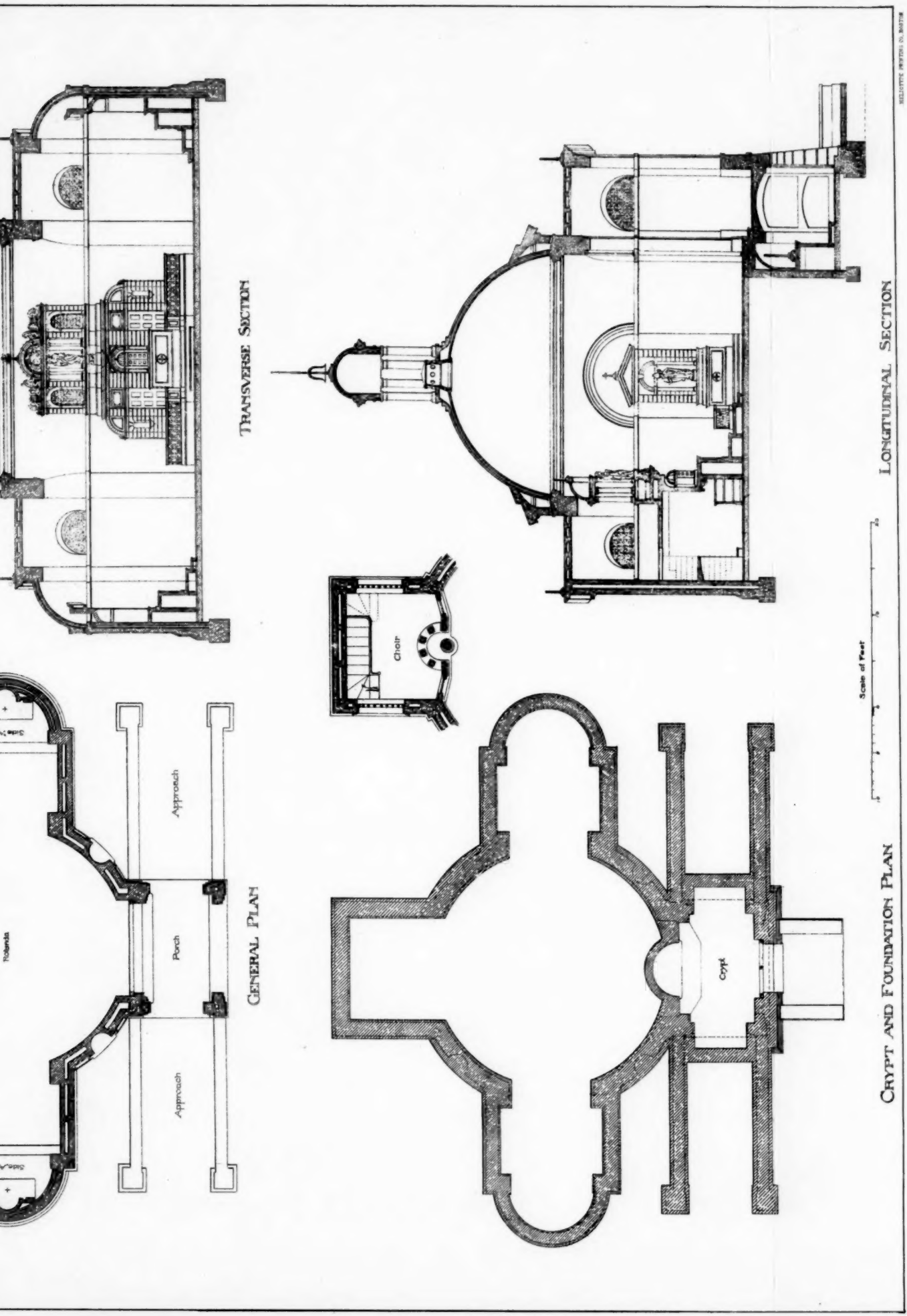
ATTIC FLOOR PLAN



FRONT ELEVATION

SIDE ELEVATION





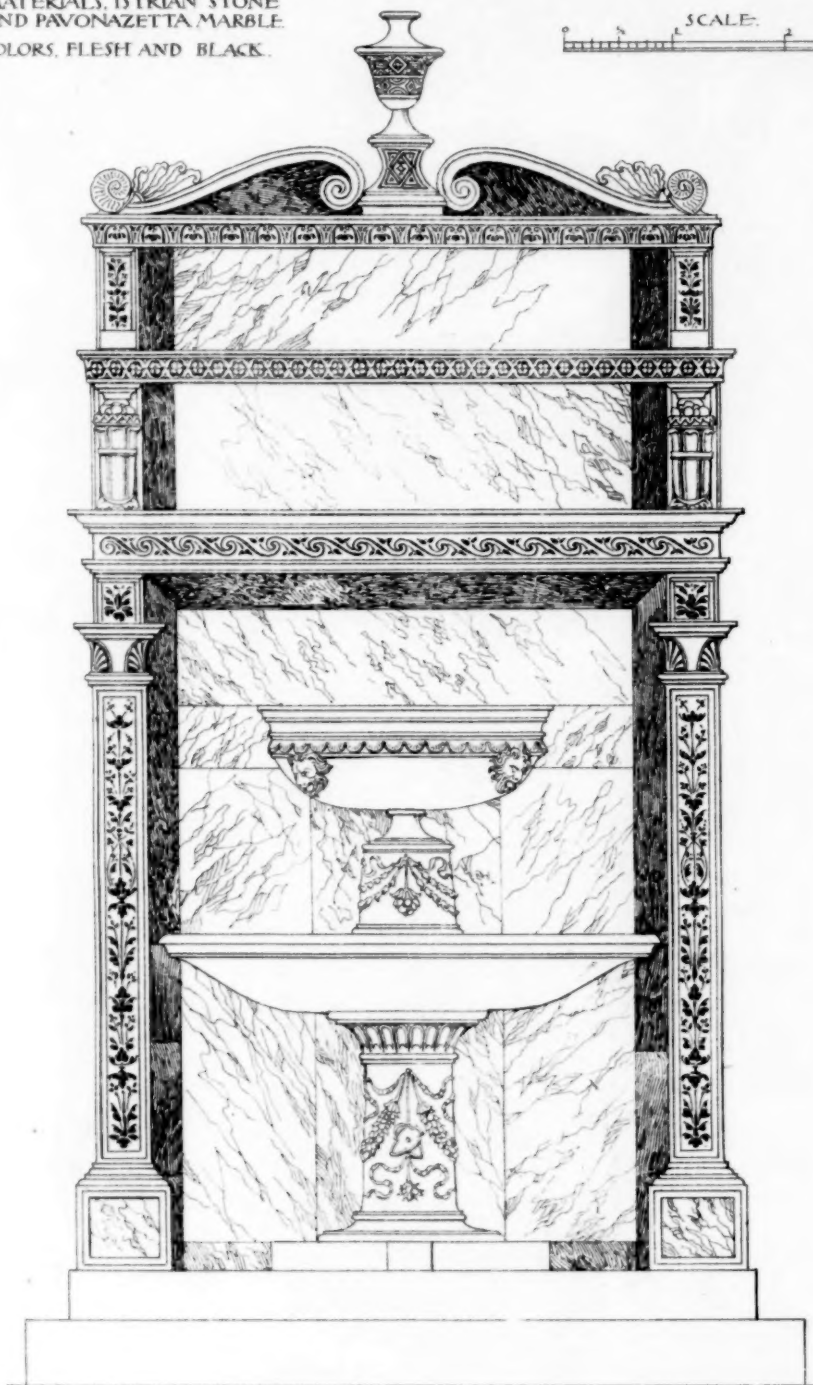
CHAPEL FOR THE RHODODENDRON ESTATE, NEAR BILTMORE, N. C.

R. GUASTAVINO, ARCHITECT.

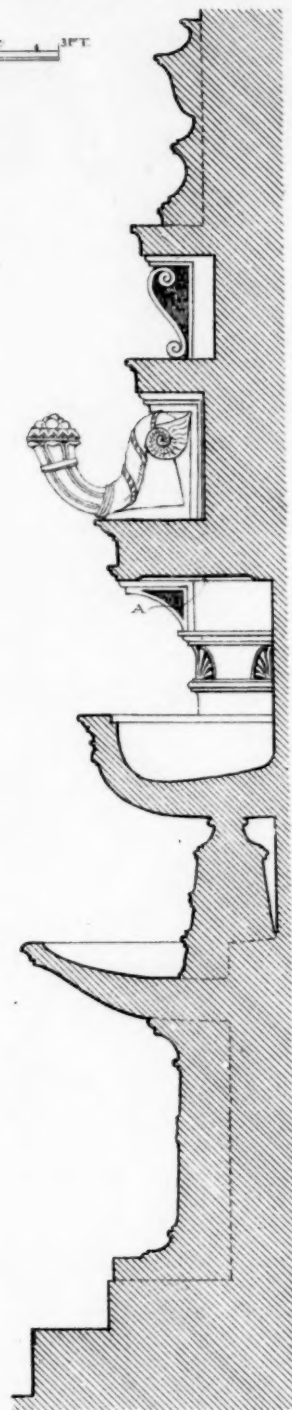
CARVED AND INLAID LAVABO—ITALIAN 15TH CENT—SOUTH KENSINGTON

MATERIALS, ISTRIAN STONE
AND PAVONAZETTA MARBLE.
COLORS, FLESH AND BLACK.

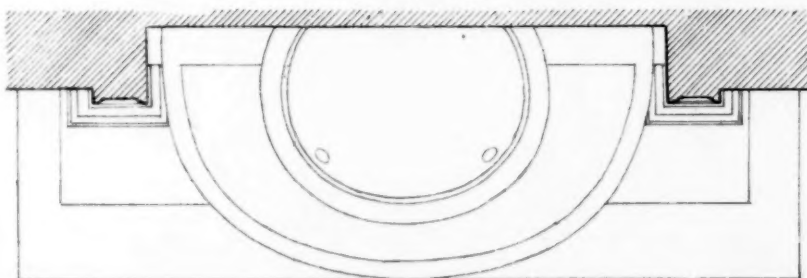
SCALE: 0 1 2 3 FT



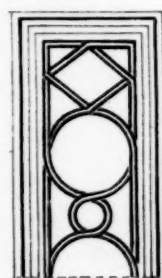
ELEVATION



SECTION



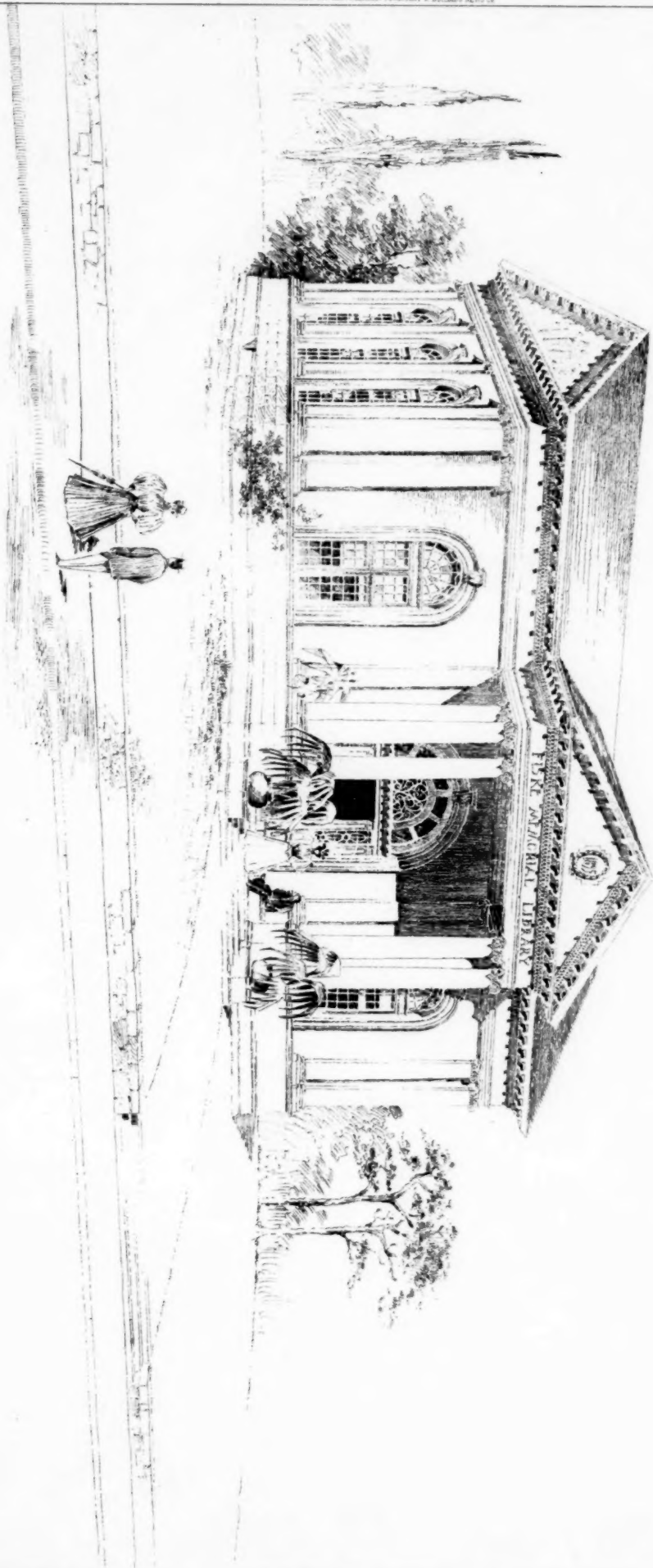
PLAN



SOFFIT 'A'

MEASURED & DRAWN BY CLAUDE F. BRADON

COPYRIGHT 1896 BY THE AMERICAN ARCHITECT & BUILDING NEWS CO.



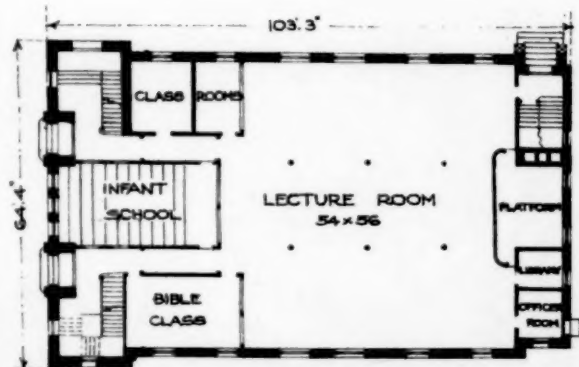
PROPOSED "FISKE MEMORIAL LIBRARY"
DANIEL HOWARD WOODBURY ARCHT. BOSTON MASS.

REPRODUCED BY THE AMERICAN ARCHITECT & BUILDING NEWS CO.

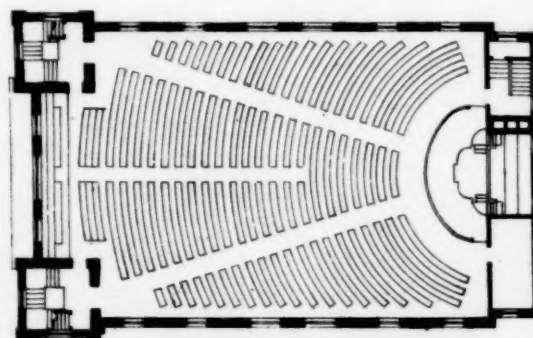
COPYRIGHT 1896 BY THE AMERICAN ARCHITECT & BUILDING NEWS CO.

FORTY-THIRD STREET.
M. E. CHURCH.
PHILADELPHIA

JACOB & WEISHAMPEL
ARCHITECTS
ALLENTOWN, PA.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

RELIQUARY PHOTOGRAPH CO. BOSTON.

the year 1895, and said he had asked him for some of the papers and discussions it mentioned. Other members said they had received and read it, and the Secretary was desired to thank Mr. Lewis and say it had been received with interest.

Among other communications presented were a letter (January 30, 1896,) from Secretary Dielman, of the Fine Arts Federation, calling attention to the fact that American painters and sculptors were invited through the American Consul-General, at Berlin, to participate in the International Exhibition to be held in that city during the current year; also a slip from the *New York Times* (of January 24, 1896,) showing that architects were included in the invitation.

Among other papers produced were: circulars (January 30, 1896,) from the Chicago Architectural Club in reference to its Ninth Annual Exhibition, and a letter from the Minnesota Chapter.

A. J. BLOOR, Secretary.

BEAUX-ARTS SOCIETY.

THE February meeting of the Society was held Monday evening, the 17th. Twenty-three members were present. After the dinner, and when a small amount of business had been disposed of, an elaborate ceremony of initiation was held for three new members, Messrs. Raymond F. Almirall, Geo. A. Ballantine and Henry F. Donnell. Preliminary models for the medal of the Society were on exhibition at the meeting.



[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

HOUSE OF CHARLES B. APPLETON, ESQ., ASPINWALL AVE., BROOKLINE, MASS. M. GUILLAUME GYNEN, ARCHITECT; REBUILT BY MESSRS. KINGSBURY & RICHARDSON, ARCHITECTS, BOSTON, MASS.

[Heliochrome issued with the International and Imperial Editions only.]

THIS structure, which was designed for and occupied by the exhibit of the Van Houten & Zoon Cocoa Company, was at the close of the World's Fair removed piecemeal from Chicago and reerected in its present position. A certain amount of remodeling of the interior arrangements was needed to adapt the building for use as a dwelling, but the exterior treatment is essentially unchanged.

PLANS AND INTERIOR VIEW OF THE SAME.

CHAPEL FOR THE RHODODENDRON ESTATE, NEAR BILTMORE, N. C. MR. RAFAEL GUASTAVINO, ARCHITECT, NEW YORK, N. Y.

THIS structure, built throughout of brick and tile cohesive masonry, is to be faced, roof as well as walls, with white brick and enamelled tile.

CARVED AND INLAID LAVABO, XV CENTURY, IN THE SOUTH KENSINGTON MUSEUM. MEASURED AND DRAWN BY MR. C. F. BRAGDON, ARCHITECT, ROCHESTER, N. Y.

PROPOSED FISKE MEMORIAL LIBRARY. MR. D. H. WOODBURY, ARCHITECT, BOSTON, MASS.

FORTY-THIRD STREET M. E. CHURCH, PHILADELPHIA, PA. MESSRS. JACOBY & WEISHAMPF, ARCHITECTS, ALLENTOWN, PA.

[The following named illustrations may be found by reference to our advertising pages.]

ACCESSORIES OF LANDSCAPE ARCHITECTURE, NO. V: CASINO AND TERRACE, MONTE CARLO. M. CHARLES GARNIER, ARCHITECT.

ACCESSORIES OF LANDSCAPE ARCHITECTURE, NO. VI: THE TERRACE, MONTE CARLO. M. CHARLES GARNIER, ARCHITECT.

THE SANCHI TOPE, BHOPAL, INDIA.

SKETCHES AT BAALBEK, ETC.

[Additional Illustrations in the International Edition.]

XVI CENTURY WELLS IN THE OLD TOWN, NANCY, FRANCE.
[Copper-plate Etching.]

GUGLIA DELLA CONCEZIONE, NAPLES, ITALY.

THE Guglia della Concezione in the Piazza del Gesu Nuovo was erected in the year 1748. In 1734, the Spanish Infant, Charles of Bourbon, had entered Naples, taking advantage of the complications which involved Austria and France on account of the succession to the throne of Poland, and as Charles III was crowned King of the two Sicilies on July 5th of the following year. While he interested himself in the excavation at Herculaneum, and later at Pompeii, he also gave attention to the enlarging and beautifying of the City of Naples. In 1747, he personally selected from many designs for the Column of the Virgin, that of the architect Giuseppe Genuino (born in Naples, 1710, died 1760), which was later carried into effect. In completing his work Genuino had the assistance of two able sculptors, pupils of Vaccari, Francesco Pagano and Matteo Bottiglieri, the last-named famous on account of his numerous statues in the churches of Naples and in the Cathedral of Salerno.

This column, like those of Fansaga, has in general appearance the form of an obelisk and is built upon a circular base with four buttresses at right angles. The shaft, perhaps, narrows too rapidly toward the apex, but this is compensated for by its original treatment. In place of a purely architectural embellishment of the surface are found many figures in relief which refer to the worship of the Virgin. There may be seen, also, in the volutes and other architectural features, figures of peculiar nature hitherto foreign to Italian baroque. The material is white marble inlaid with a darker shade; the figure of the Virgin, gilded bronze. The cost of erection was defrayed by contributions from the pious people and must have been a considerable sum, as the shaft is thirty metres in height. Carlo Celano, a contemporary of Genuino, describes it as "many miles."

This plate is copied from *Zeitschrift für Bauwesen*.

THE STAIRCASE HALL: GOSFORD HOUSE, LONGNIDDRY, SCOTLAND. MR. WILLIAM YOUNG, ARCHITECT.

THIS plate, copied from the *Builder*, reproduces a drawing hung at last year's Royal Academy exhibition. The pilasters, cornices and arches are carried out in Caen stone, while the columns, panels and balusters are of alabaster. Other views of the hall itself, photographically reproduced, was published in the *American Architect* for May 11 and June 1, '95.

TOWN-HALL, CLERKENWELL, ENG. MR. C. EVANS-VAUGHAN, ARCHITECT.

ENTRANCE DETAIL OF THE SAME BUILDING.



BALTIMORE, MD.—The Walters Art Gallery will be open to the public on all Wednesdays till May 1, on all Saturdays in April, and on Easter Monday.

BOSTON, MASS.—*Paintings recently purchased; Japanese Paintings; Line Engravings, Mezzotints and Etchings by Rembrandt*: at the Museum of Fine Arts.

Paintings from the Paris Salons of 1895: at the Jordan Art Gallery, 450 Washington St.

Paintings and Pastel Portraits by Jacob Wagner: at Chase's Gallery, 346 Boylston St., until March 5.

Loan Collection of Portraits: at Copley Hall, Clarendon St., March 2 to 23.

Original Designs for Posters: at the Pope Mfg. Co., 221 Columbus Ave., until February 29.

BRIDGEPORT, CONN.—*Second Annual Exhibition of Pictures*: at the Public Library, January 25 to March 15.

CHICAGO, ILL.—*Works by Gustave Doré*: January 21 to March 21, *Swedish Paintings*: February 4 to March 1, at the Art Institute.

NEW YORK, N. Y.—*Twenty-ninth Semi-annual Exhibition, including Loan Exhibition of Early American Paintings, Old English Paintings, and the Cullum Collection of Classic Sculptures*: at the Metropolitan Museum of Art.

Twenty-ninth Annual Exhibition of the American Water-color Society: at the National Academy of Design, February 3 to 29.

Eleventh Annual Exhibition of the Architectural League: at 215 West 57th St., February 15 to March 9.

Paintings by Philip Zolken: at the Macbeth Gallery, 237 Fifth Ave., February 17 to 29.

Paintings by Henry Mosler: at the Avery Galleries, 368 Fifth Ave., until March 7.

PROVIDENCE, R. I.—*Water-colors by Ross Turner*: at the Rhode Island School of Design, February 15 to 29.

Exhibition of the Providence Art Club: opens March 4.

SPRINGFIELD, MASS.—*Nineteenth Annual Exhibition of Paintings*: at James D. Gill's Gallery, until February 29.

WASHINGTON, D. C.—The Art Gallery of Thomas E. Waggaman will be open to the public on Thursdays during March and April.

NOTES AND CLIPPINGS

CASTS FROM THE COLUMN OF MARCUS AURELIUS.—Upon one of the busiest squares in the heart of Rome, the Piazza Colonna, stands one of the world's most famous monuments. It is the Column of Marcus Aurelius, a high pillar, built of twenty-eight immense blocks of white marble toward the end of the second century in honor of that Emperor's victorious return from the war with the Marcomanni. Just at present much interest is aroused by the investigation by German and Italian archaeologists of the reliefs running up around the column. These, with the reliefs on the column of Trajan, form the best source of information as to the culture of our Teutonic forefathers, their arms, garb, etc. There has never before been a complete picture of the reliefs on the column taken, and in order to do it thoroughly, a scaffold has been raised alongside the column to the height of the crown, one hundred Roman feet above the ground. A square frame is suspended from the top, and supports a platform upon which all the work is done. Professor Petersen, Secretary of the Archaeologic Institute of Rome, superintends the making of the papier-mâché cast of the reliefs, and the photographic reproduction is carried out by A. Bruckmann & Co., of Munich. The scenes of the relief describe in continuous pictures the long and difficult campaign against the tribes along the Danube. Episodes like the saving of the Roman Army through a rain-storm after a hot spell, which refreshed the legions almost worn out by fighting and a sultry heat; the establishment of a perfect military outpost at Vindobona (the Vienna of to-day), etc., are very vividly portrayed. Romans and barbarians appear as they did in life, with all their military trappings, in costume and armament true to history, allowing us a glimpse of the life in a Roman camp seventeen hundred years ago. — *Philadelphia Record*.

LORD LEIGHTON'S HOUSE.—Lord Leighton's house, which it is reported he has bequeathed for the use of his successors in the Presidency of the Royal Academy, is situated at 2 Holland Park Road. It was built for him by George Aitchison, A. R. A., some twenty or thirty years ago. Beautiful pictures, pieces of statuary and valuable *objets d'art* are everywhere visible. The large hall has its walls covered with brilliant blue-and-white tiles. On the staircase is a picture of the late President himself, done some years ago by his friend, Mr. G. F. Watts, R. A. Near it hangs an unfinished painting by Sir Joshua Reynolds of Lord Rockingham, seated at a table with his Secretary, Edmund Burke. Lord Leighton's larger studio is a lofty and well-lighted apartment, upon the walls of which may be seen, in addition to a cast of the frieze of the Parthenon, an immense number of sketches in oil and water-colors—mementos of many tours in Ireland, Italy, Spain, Palestine, Greece and Egypt. The works which fill the numerous bookcases bear evidence to the owner's cultivated literary taste and catholicity of mind. Beyond the large studio is a smaller one built entirely of glass. But the chief glory of Lord Leighton's residence is the far-famed Arab Hall. The roof rises into a dome, with eight small arched windows, each of which is filled with colored glass from the East, while on three sides of the hall are arched recesses. Each arch is supported by white marble columns standing on bases of green. The capitals of these columns consist of various sorts of birds from the chisel of the late Sir Edgar Boehm. In the hall of the house is a fountain, of which Lord Leighton used to tell an amusing anecdote. Not long after the beautiful house and its decorations were finished, certain more or less distinguished members of a "worshipful society" were entertained there, and, of course, made an admiring tour of inspection. They were in the Arab Hall, and the foremost gentleman (there were six in all) gazing delightedly at some object on an opposite wall, walked toward it, and so into the fountain. He was followed inadvertently by every one of his unlucky companions before they could be warned or had observed the sheet of water sunk below the level of the tiled floor, and they had to be fished out astonished and dripping. — *The Westminster Gazette*.

THE "BALL-NOZZLE," AN HYDRAULIC PARADOX.—*Engineering* lately gave a short account of the ball-nozzle, now being introduced into this country by the Anglo-American Ball-Nozzle Company, of 52 Oxford Street, London. As there described, this nozzle consists of a narrow tube, terminating in a bell mouth. A ball filling the bell is sucked up towards the issuing stream when the water is turned on, instead of being expelled, as would not unnaturally be expected by most of those who are unacquainted with hydro-dynamics. As a matter of fact, the explanation is very simple. If a gauge is attached to the nozzle of a fire-hose while at work, in such a way that it measures the pressure at right angles to the stream lines, it will be found that this pressure is practically equal to that of the atmosphere. It is true that if the stream is allowed to impinge directly on to a plate, a high pressure may be recorded, but the same thing would happen if a plate were put in front of a stream of bullets from a Maxim gun. The pressure transverse to the path of the bullets is simply that due to the atmosphere, and the same thing is true of a jet of water flowing freely through the air. Hence, in the ball-nozzle, when the water escapes between the edge of the bell and the ball, its pressure there is simply that due to the atmosphere. It remains to be seen what the pressure is at the point where the jet enters the bell. We shall find that this is less than that of the atmosphere. Neglecting the small amount lost in friction, it has to be noted that the same amount of energy is stored in one pound of the water, both where it enters and where it leaves the bell. Work may be stored in water, either in the shape of "velocity head," or "pressure head." That is to say, the energy of a moving body of water is dependent on its velocity and on its pressure. The work stored in one pound of such water is equal to $\left(\frac{v^2}{2g} + h\right)$ foot-pound, where v is the velocity of the one pound of water at any part of its path and

h is the corresponding pressure measured in feet of head. Suppose the water flows through a tapering frictionless pipe. Then, as the pipe contracts, the velocity must increase, as equal quantities of water pass each cross-section in a given time. Therefore, the velocity head is increased. Hence, as no work has been added to the water in the meantime, its pressure head must be correspondingly reduced. Thus, generally, when water flows through a tapering pipe, the pressure is least where the velocity is greatest, and *vice versa*. Now, in the case of the ball-nozzle, the velocity is least at the edge of the bell and greatest at the bottom of the bell. Hence the pressure at the bottom of the bell is less than it is at the point of escape. But at the point of escape the pressure is equal to that of the atmosphere. Therefore, at the bottom of the bell it is less than that of the atmosphere, and gradually increases from there until the point of escape is reached. Under these conditions it is easy to see that, if not too heavy, the ball will be pressed up against the issuing jet by the action of the external air. The action in question can be illustrated very simply in the following way: The left hand is opened flat, but with the fingers in contact with one another, and held palm downwards. There is then a crevice between the roots of the second and third fingers. A piece of paper, about one and one-quarter inches square, is then placed centrally under this crevice. On blowing through the crevice down on to the paper it will be found that it clings against the fingers, instead of being blown away. — *Engineering*.

THE NELSON SARCOPHAGUS.—How many of our readers are aware, we wonder, that the sarcophagus surmounting the tomb of Lord Nelson in the crypt of St. Paul's cathedral, is actually that which Cardinal Wolsey had prepared for the reception of his own body, and the handiwork of a Florentine sculptor of the early sixteenth century, Benedetto da Rovizzano? The statement has sometimes been made, but it is for the first time proved to be absolutely accurate in a very learned brochure on the work of Florentine sculptors in England, prepared by Mr. Alfred Higgins for the Archaeological Institute. Between the great churchman and the great sailor the tomb has had most remarkable vicissitudes. The cardinal, who was great on monuments, had it prepared for himself in his lifetime, and obtained from Henry VIII the grant of the small building adjoining the east end of St. George's chapel, Windsor (now the Prince Consort's Memorial Chapel), for its reception. But Wolsey's fall interfered with these ambitious schemes, and when he died he was buried "before day" in the Abbey church, at Leicester. Moreover, while preparing his own tomb on a magnificent scale, he had left his promise to prepare another tomb for his royal master unfulfilled, so Henry, to repair that omission, took possession of the cardinal's tomb, used "so much as he found fit, and called it his." That tomb, which was finally adorned with a profusion of metal work and statuary, and in its total effect Mr. Higgins thinks, comparable only to the tomb of the Emperor Maximilian at Innsbruck, was dismantled during the civil wars under the ordinance "for the removal of scandalous monuments and pictures," and it was found impossible to restore it at any later date. But the sarcophagus and base remained *in situ* until some time between 1808 and 1810, when they were brought from Windsor to St. Paul's to make part of the Nelson monument. Their identity is absolutely established by Mr. Higgins's investigations. He has made careful measurements of the Nelson sarcophagus, and found it to correspond in its dimensions with the particulars given by Benedetto da Rovizzano in his inventories, which are still extant. Nelson's body does not, of course, lie in the sarcophagus, but in a vault underneath, but we have the curious fact that the tomb which was prepared by the cardinal for his own body, grabbed by Henry VIII for the royal tomb, defaced by a Puritan parliament as a "scandalous monument," now forms part of the national monument to the great captain. In other words, Nelson has the sarcophagus which Wolsey intended for himself. — *Exchange*.

DECREASE OF NATURAL GAS IN INDIANA.—Indiana is told by the State Gas Inspector that it must be economical with its natural gas. The rock pressure, which originally was 325 pounds to the square inch, is now 230 pounds, and the inspector has no doubt that the pressure will decrease more rapidly hereafter. "It is certain," he says, "that we have entered on a period of decline and that the supply will finally become exhausted." The report is of deep significance to Indiana, the cheap fuel having been the means of bringing to the State hundreds of factories, representing many millions of capital and employing more than 20,000 people. There is an encouraging feature in the situation, however: in the Indiana gas field, the inspector reports, there yet remain many thousand acres of fertile territory untouched by the drill, except an occasional well to test the productiveness of the field, hold the leases or supply the farmers with fuel. A large part of this territory is owned by pipe-line companies, who are holding it in reserve for future use. — *N. Y. Evening Post*.

MOUNTAIN MAHOGANY.—One of the most remarkable products of Nevada is a species of wood known as "mountain mahogany," which, when dry, is as hard as boxwood, very fine grained, of a rich red color, and in weight very heavy. It has been used for boxes for shafting, and in some instances for slides and dies in quartz batteries. It burns with a blaze as long lasting as ordinary wood, and it is then found, almost unchanged in form, converted to a charcoal that lasts twice as long as ordinary wood, giving an intense heat, greater than coal gives. Another notable species of wood, having extraordinary durability is said to be the quebarcho wood of Argentina. Posts that have been in the ground for one hundred and fifty years in soil alternately sodden by tropical rains or parched by intense heat, are found to be in sound condition. The wood is also described as free from attacks of insects, does not decay and is not compressible, and weighs nearly eighty pounds per cubic foot. — *The Churchman*.