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CONSTRUCTION

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HOUSE OF ELBRIDGE T. GERRY, ESQ., NEW YORK, N. Y.
[Gelatin Print issued with the International and Imperial Editions only.]
THE ABBOT'S KITCHEN, GLASTONBURY, ENG.
THE ABBOT'S BARN, GLASTONBURY, ENG.
HOUSE AT OTTAWA, CANADA.

ACCEPTED DESIGN FOR THE HIGH SCHOOL-HOUSE, MALDEN, MASS.
HOUSE AT ELIZABETH, N. J.

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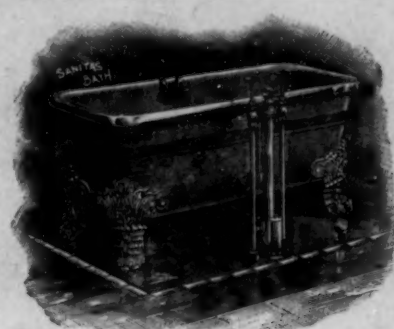
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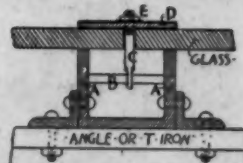
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VOL. XLV.

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AUGUST 25, 1894.



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AT the recent meeting of the American Association for the Advancement of Science, a paper was read by Prof. Thomas H. Norton, of Cincinnati, on "The Battle with Fire," in which he treated the great problem of lessening the annual destruction of American property through conflagrations from a rather new standpoint. Professor Norton, being a chemist, naturally resorted to chemistry for means for resisting fire, and his suggestions seem to be valuable, although, as we think, the reservation ought always to be made, in discussing new plans for preventing or putting out fires, that no chemical treatment can take the place of the good old system that the Romans taught,—the making of buildings out of materials that will not burn. Professor Norton called attention to the valuable properties of the silicates, of hydrate of alumina, and of borate of magnesia as applications for rendering woodwork unflammable, and observed, very sensibly, that if such applications cannot make wood fireproof, they, at least, delay its burning, and every minute that can thus be saved, while the engines are coming up, is precious. As to the alkaline silicates, our own experience with them does not encourage the belief that they will ever be used extensively for protecting interior woodwork. Their disposition, a few months after application, to effloresce, and throw off paint or varnish put over them, is too strong to suit architects, who must think of other things in addition to protection against fire; and equally good results in diminishing inflammability can be obtained by the application of certain kinds of paint. Professor Norton's suggestion, that such paints might with advantage contain hydrated alumina, should be kept in mind. Judging from the excellent quality of the lakes, which are made with precipitated alumina, the addition of this substance should have no injurious effect on the color of the paint, and if some medium less combustible than linseed oil could be found as a vehicle, such paint might serve an important purpose.

PROFESSOR NORTON makes two other suggestions, the value of which is not quite so clear. Speaking of the increasing production of aluminium, he says that it will probably "effect an important revolution in the use of structural materials." If this means that aluminium is likely to take the place of iron and steel, which are the only metals that can fairly be called "structural materials" at present, there are few persons now living, we imagine, who will see that "revolution" accomplished; and, so far as fire-protection is concerned, nothing would be gained by it. On the contrary, aluminium is

a metal rather easily combustible. Already, aluminium foil and powder are extensively used, in place of magnesium, for producing flash-lights for photography, and if it is true, as is claimed, that the zinc-roofing common abroad spreads conflagrations by catching fire and blazing up, aluminium metal-work would probably be little better. The other suggestion, that carbonic acid should be used instead of water for putting out fires, is not new, and can be commended only with reserve. The objection to it has always been that fires could not be put out by means of it without suffocating everybody in the burning building, and this would hardly compensate the undoubted advantage that the gas treatment has over water, of being harmless to goods stored in the building. Professor Norton suggests that carbonic acid should be laid on to buildings by a system of pipes, just as water now is, in such a way that the gas could be poured, either automatically or by hand, into any room in which a fire appeared. If people could breathe carbonic acid, or if it did not mix with air, this would be all very well; but the idea of having a factory-room, crowded with operatives, flooded with carbonic-acid gas from automatic sprinklers, through, perhaps, the burning of a basketful of waste, is by no means pleasant to contemplate; nor would the manipulation, by an unskilled watchman, of a three-inch hose, discharging a suffocating gas under pressure, be very safe, either for the watchman or the people in the neighborhood of his operations.

MR. STEPHEN D. HATCH, a well-known New York architect, died suddenly last week in Plainfield, N. J., where he was spending the summer. Mr. Hatch was born at Swanton, Vermont, February 16, 1839, but had spent nearly all his life in New York, where, for many years he was very prominent in the profession. The Boreel Building, on Broadway, and the Murray Hill Hotel are, perhaps, his most important works, but he designed a large number of costly mercantile and other structures.

MR. FREDERICK LAW OLMS TED calls attention to the destruction which is being wrought upon the Palisades, the beautiful range of vertical cliffs which lines the Hudson River opposite New York. The Palisades, as every one knows, form the face of a trap dyke, and, unfortunately, trap-rock forms excellent paving-stones. The consequence is that the precipices, which, twenty years ago, were haunted only by the eagles which built their nests in the inaccessible clefts, are now drilled and blasted in every direction, and the beautiful beach which once lined their base resounds with the ring of pene-hammers and the roar of explosives. Already, the appearance of the cliffs, even as seen from the New York shore, a mile away, is materially altered; and Mr. Olmsted gives warning that unless the blasting is stopped at once, the famous Palisades will soon be a thing of the past. The New York *Tribune* has taken up the matter, and urges that the western shore of the river should be taken by the State of New Jersey, to which it belongs, as a public park. This would be an excellent thing, and we earnestly hope that the proposition may be carried out.

THE German *Public Health Monthly* gives a report of a lecture on the "Hygiene of Stairs," which was delivered by Dr. von Kerschensteiner, of Munich, before a recent Convention of German Physicians, and contains a good deal of useful observation. We are so accustomed to planning stairs in the way in which we have always seen them planned that it is rather startling to have a physician call attention to the unquestioned fact that the staircase, which is, almost, the most frequented part of the house, is nearly always dark, unventilated, dirty and dangerous, in a most unnecessary and reprehensible degree. Old people and children are constantly meeting with serious injury from falls on staircases, which might be avoided with a little care; while an immense amount of unnecessary suffering is inflicted upon young, sickly and infirm persons through the same want of thought in planning the stairs which they are compelled to use. As to lighting and ventilation, it is obvious that a dimly lighted stairway is a source of constant danger, and, as Dr. von Kerschensteiner says, ought to be made the subject of police attention; but every one does not realize that a well-ventilated hall and staircase add immensely to the

freshness of the air in the rooms communicating with them; while a close, unventilated stairway makes itself known in all parts of the house.

IN regard to the details of staircase design, Dr. von Kerschensteiner says that no step should ever be more than six inches high, or less than eleven inches wide. Greater steepness than this makes the stairs not only dangerous to children, but so fatiguing for persons with heart or lung affections, or too old or too young to be in full command of their muscles, that serious results may follow from their constant use. Even with easy stairs, he says that no flight of more than twenty steps should ever be planned without a landing, and the landings should be furnished with permanent seats. Moreover, the staircase hall should always be warmed in winter, and the steps and landings, if of stone, covered with linoleum, or some other washable carpet. He, however, prefers wooden stairs to those of stone or iron, and says that, if the building-laws would only permit their construction, they would be found nearly as fireproof as stone; an idea in which he will hardly be supported by the building professions. Every corner, adapted for catching dust, should be avoided in or about staircases, and even the walls should, he thinks, be painted, as smoothly as possible, so as to allow frequent and effectual washing.

THE Protestant Church-Building Congress at Berlin, besides the interchange of views, which is always the principal advantage to be gained from such conferences, accomplished a certain advance in the development of its subject, by the appointment of a committee, consisting of six clergymen and the officers of the Society of Berlin Architects, to consider further the questions proposed to the Congress, and report at a subsequent Congress, which is to be held at some period not yet determined. As might have been expected, the discussions in the Congress itself were sometimes a little acrimonious, without resulting, probably, in the change of anybody's convictions. People who talk for the first time with other people on such subjects are apt to be too much shocked at the idea of any one's differing with them to be able to consider calmly the merits of the opposing theories; but it is something to have got over this preliminary difficulty, and a second Congress will be more disposed to consider dispassionately the views presented by the committee.

LATER accounts give some interesting details of the discussions. It is not surprising to hear that the conference developed radical differences of opinion among the members of the Congress, and differences of opinion on subjects even so remotely connected with religion as the position of church pulpits and organs are, as we all know, not easily reconciled. As architects who have had much church-building to do can readily believe, the most startling opinions in regard to church planning were propounded by ecclesiastics. One of these, during the discussion as to the proper relative position of the altar, the font and the pulpit, coolly observed that he considered, for a small church, a pulpit and font as equally useless. In his judgment, a communion-table, which would answer for baptisms, with room in front of it for the preacher to stand, was furniture enough. Most architects can imagine the subdued horror of the High-Church section of the Congress at this deliverance, but it was kept within due bounds; and, as the editor of the *Deutsche Bauzeitung* very sensibly says, both parties were, after all, better off for having listened patiently to each others' ideas.

AMONG the less radical members, the discussion was devoted more to an exchange of views as to whether the altar should be at the end of the church, or brought forward; and whether the pulpit should be in front of it, or at one side, so as not to hide it from the congregation. Probably this question, which resolves itself into the subjective one of whether the person answering it receives religious impressions best through the intellect or the affections, will never be settled; but some valuable suggestions were made in the course of the discussion. One member remarked, very truly, that the placing of the altar at the end of the church, giving it a chancel to itself, was practically advantageous, in making a larger space for communicants, and for the participants in confirmation and marriage sacraments; and another answered, no less truly, that an altar at the end of a Protestant church always looks dark, and he preferred to see it brought forward

into a better light. This observation is certainly an important one. If there is a large east window, an altar under it, in an ordinary Protestant church, is almost invisible, and the contrast between this gloomy object and the soft sparkle of a Catholic altar is by no means satisfactory. Probably a Protestant, especially a Lutheran, would prefer even a dim daylight on an altar to any artificial illumination, but it is not at all beyond the power of architects to arrange an altar at the end of a chancel in such a way as to concentrate a bright daylight upon it, and, to our mind, the experiment would be well worth trying, for the sake of giving more unity and expression to the interior effect than is often seen in Protestant churches.

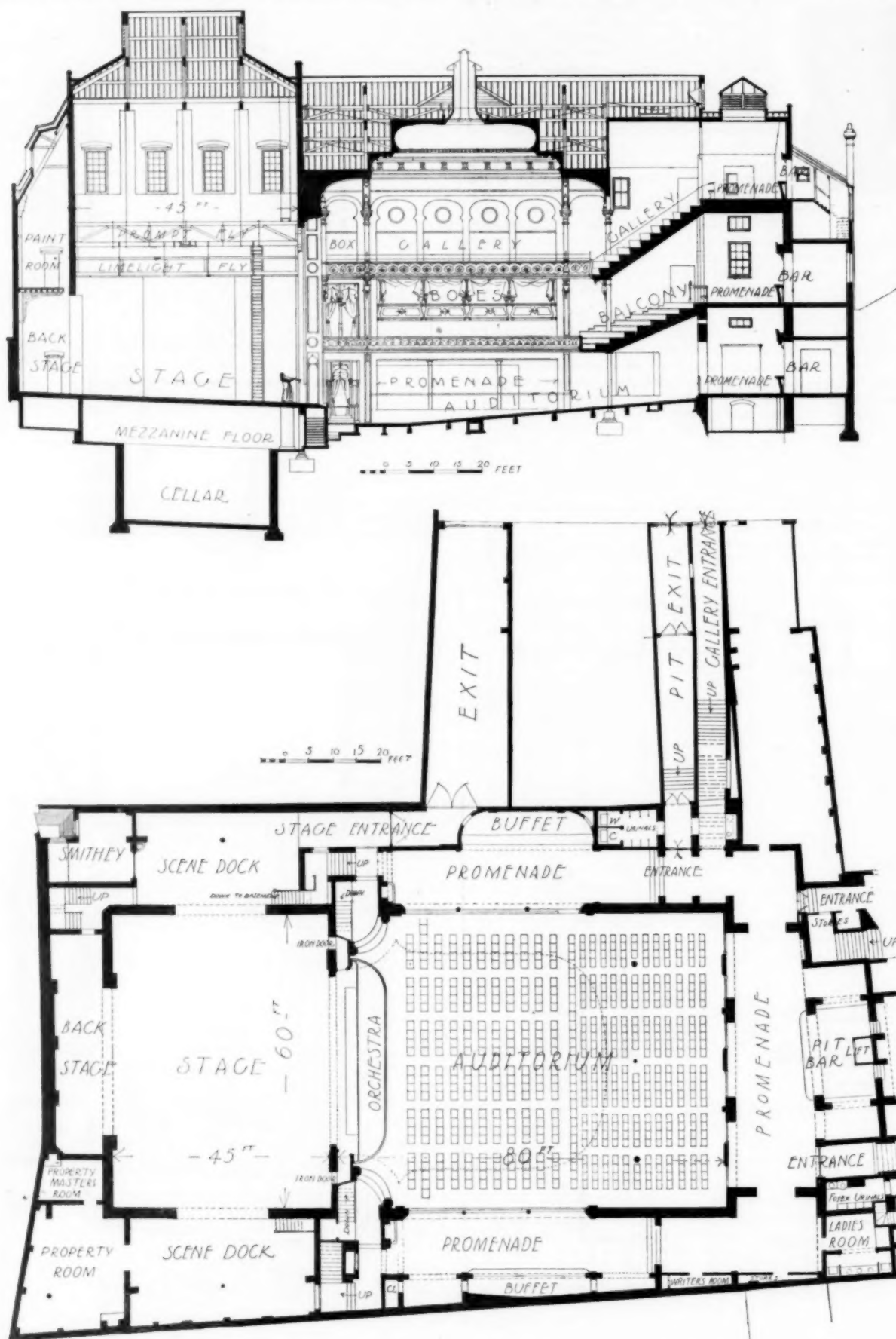
AN interesting tomb was recently opened in Egypt, by M. de Morgan. A group of pits, surrounding a royal tomb, was first examined, and one situated close to the royal tomb was cleared of its contents. After it was excavated, a door was found at the bottom, opening into a gallery. The portion of the gallery nearest the entrance seemed to form a sort of vestibule, and in this were found vases of clay, with traces of mud deposited from the Nile water with which they had once been filled; and dishes, some containing pieces of embalmed meat, and others the dried remnants of cakes and similar eatables. In a corner were two boxes, one containing a number of alabaster vases of perfumes, carefully labelled, while the other was filled with arrows, reeds, what seemed to be sceptres, and a mirror. Beyond was the sarcophagus, containing the body of the deceased to whom these presents had been offered. On opening this, the usual wooden mummy-case appeared, covered with plates of gold, with an inscription, also in gold, giving the name of the defunct—Princess Noub-Hotep-ta-Khroudil. The mummy itself had been injured by dampness, and nothing remained in the case but a mass of dust, bones and jewels. On the head was a coronet of silver and precious stones, with the sacred serpents, and a vulture's head in gold. Around the neck was a necklace, with fifty pendants, all of gold, terminated by two hawk's heads, of the natural size, in gold. By the side was a dagger, with a gold blade, and on the wrists and ankles were bracelets of gold, set with emeralds, pearls and carnelians.

WE ought to have noticed before the death of M. Edmond Guillaume, one of the most distinguished of the older French architects, who was, perhaps, better known here by his books, and by the professorship that he had long held in the School of Fine Arts, than by his buildings, although he had executed many important works. M. Guillaume was, above all, a scholar and man of learning. After taking the Grand Prize, in 1856, he was sent to Asia Minor, and carried on a series of investigations, the results of which he published in his book, "*Explorations Architecturales dans la Galatie et la Bithynie*"; and this was followed later, by his well-known "*History of Ornament*." During the last years of the Empire, he was made Inspector of the Palaces of St. Cloud and Malmaison, in recognition of his increasing reputation; and, later, was appointed architect to the Palaces of Versailles and Trianon, the Louvre and the Tuileries, and the Archives Nationales. In 1884 he was made Professor of the Theory of Architecture at the School of Fine-Arts. Among his executed works, the most important are the Hôtel-de-Ville at Cambrai, the Commemoration monument at Lima, Peru, and some very fine private residences in Paris and elsewhere.

BY the will of the late Mr. Arthur Rotch, a large sum has been given to the promotion of the study of architecture, for which he has already done so much. To the Massachusetts Institute of Technology he bequeathed, in all, forty thousand dollars, certain portions of the gift being reserved as funds to maintain annual prizes, both for regular and special students, in the Architectural Department; and in addition to this, he bequeathed to the Department all his books and photographs relating to architecture, except those in his business office. To Harvard University he left twenty-five thousand dollars, the income of which is to be applied toward the maintenance of the new Architectural Department; and, to the Boston Architectural Club, five thousand dollars, to be expended upon books and photographs for its library. This thoughtful gift, particularly, will be highly appreciated by the young architects and students of Boston, to whom a good working library will be of the greatest service.

enjoy the evening pipe has been given — thanks to Mr. Matcham's skill — to the poorer London, a theatre of equal merit to those which

The decoration of the hall is particularly happy, the monotonous cream-and-gold treatment of which one tires to death, with gilded



provide similar entertainment in the fashionable quarters of the town.

gingerbread appearance so familiar in theatres, so soon to tarnish and look heavy and dirty, has been wisely discarded by the architect.

The raised fibrous-plasterwork is carried out with a somewhat Eastern feeling in the design, and very pleasing tones of coloring are produced throughout the auditorium and its fittings in harmonies of green and terra-cotta.

One word about the sighting lines of this house. I would draw special attention to the form of the curve of the two gallery fronts: here the architect has overcome the difficult problem of placing the majority of his audience facing the stage so that they may see the performance in comfort without having to twist their heads round to obtain but an imperfect view of that on which they have paid to look. There is not a seat in this theatre from whence one cannot see the whole performance with ease; many more pretentious theatres are unable to boast of this luxury, and yet surely it should be one of the first objects of the architect to give his clients a house, where any one seat will sell as readily as any other; where no grumbling can be heard from the public, or dissatisfaction at having paid their money for what they are not able to obtain. Managers who have bad seats to fill, and take money from the public for them, are blamed by the public, and almost looked upon as obtaining money under false pretences, but the managers, after all, are only partly to blame; it is the designer of the building who has placed his seats where the occupants cannot see the performance in comfort, not the manager. If it is dishonest to sell short weight, short measure, or goods of an inferior quality to that which they are declared to have—it is surely as reprehensible to sell tickets for a show which the buyer can only see part of.

This reminds me of what I once heard about a well-known London actor, as well known in America as in England; when travelling with his company in the provinces, he used to examine the box, or seat plan of the theatre where he was going to play, and strike out the seats where he knew the performance could not be properly seen, and forbid the box-keeper to sell those tickets. This is an example one can scarcely hope many to follow, as when money can be obtained from the public the temptation is too great to refuse it.

But what harm bad seats do a house! A man goes to a theatre, he has not a good location, he does not enjoy himself, his efforts to obtain a view of the stage stiffens his limbs, his neck is strained, his back aches, and he comes away in a bad temper; the consequence is that he tells all his friends not to go to that play, he did not enjoy it and he is sure they will not.

So I come back to the architect and his duties towards public and client. Old conventional forms and lines of gallery-fronts should not always be followed: the elongated horseshoe of the opera-house, where tier upon tier of private boxes fill the auditorium, in which the occupants can move their chairs to the front of the box to see the play or to be seen themselves as they may prefer, is not the sight line for the open gallery and balcony required in the house devoted to the drama or the theatre of variety. In the line given in the Paragon, Mr. Matcham has been ever mindful of this, and arranged his seats as shown on the accompanying plan, facing the stage.

Where there are long rows of seats in stalls or pit, it is very often difficult, when one is on one side of the house and wishes to pass to the other, to perform this exploit without disturbing a large number of the audience and receiving abuse, silent or otherwise, from the people by whom one has to thrust one's self. This has been foreseen by Mr. Matcham, and he has provided a subway under the orchestra from one side of his stalls to the other, so that any one wishing to cross over to the other side of the theatre can do so without being a public annoyance. It is observance of these minor details that distinguish between the success or failure of a modern theatre.

As an example of designing a plan to meet special requirements for the class of entertainment, and of the neighborhood in which the theatre is situated, I commend my readers to the study of the plans of the Paragon Theatre, Mile End, London.

In concluding the article, I give some of the leading dimensions of the building:

Curtain line back wall of pit.....	81 feet.
Width between main walls of pit.....	60 "
Width between main walls of building.....	100 "
Width of proscenium opening.....	34 "
Curtain line to back wall of stage.....	57 "
Width of stage.....	60 "
Curtain line to balcony front.....	57 "
Curtain line to gallery front.....	60 "
Height of proscenium opening.....	31 "
Height from stage to gridiron.....	61 "

E. A. E. WOODROW.

[To be continued.]

THE ABBOT'S BARN, GLASTONBURY, ENGLAND.

THE ramble among the Mendips, as he climbs their gently-swelling heights, turns to look out over the roofs and grey towers of the ancient cathedral city of Wells nestling below at the foot of the range and across the green fields southward to where there rises against the sky the bald cone of a hill sweeping steeply up from the plain and bearing upon its narrow summit the lonely ruin of a tower. It is the Tor of Glastonbury, the crown of that fabled Arthurian "Isle of Avalon," over the fertile meadows at whose base once rolled the salt waves of the yellow sea.

For many centuries, in the ancient chronicles of England's great past, through the rude ages before the Conquest and far away in the dim days of fable has the old Tor been known of men. Great and

lowly, old and young, pilgrims from many lands have toiled up the steep grassy slopes to the shrine, long since dismantled, yet lifting its sturdy old gray walls aloft upon the top.

Glastonbury was the site of one of the earliest Christian establishments in all England, and her name looms out of the mists which enfold the legendary days of Briton and Saxon. Mr. Freeman writes of a church there, of wattles and timber, built by the Britons, which survived the Conquest; of a monastery church founded by King Ina in the eighth; and of a stone church by the great Dunstan in the tenth century.

Glastonbury waxed rich in the days of Dunstan, who was a mighty maker of kings, and indeed the virtual ruler of England in his time. It was there that Dunstan was born and bred and it was in his little cell at the abbey, built, for penitential purposes, too short for him to lie down at full length, that he worked at his forge and became a noted smith. There also he gained great fame, and indeed laid the foundation of his subsequent power among the people, by a remarkable event which gave at once most certain proof of his saintliness and personal prowess. The devil, so the story runs, having one day stopped at Dunstan's little window, possibly incog, dropped in the course of conversation a very glowing hint or two of the delights of the world and the flesh; whereupon the monk, who was at the time engaged in fashioning a bit of ironwork, pulled his pincers out of the fire and with them nipped the nose of the insinuating fiend, and held on until his bellowing had aroused the monastery. From that day Dunstan was destined to eminence. His advancement to high position was rapid. He was a man of force, and they admired men of force in those rude old days. A renowned polemic, he generally had his own way in the councils of the Church, as he did in those of the State. Where his schemes were thwarted and his arguments failed to convince, he resorted to drastic measures. For instance, it was by means more forcible perhaps than pious, that he carried the day in the conference which determined the celibacy of priests, for when he had closed the protracted debate by boldly referring the whole contested question to "Christ Himself as Judge," the floor of that side of the room where he had seated the obstinate opponents of his own views suddenly fell in and silenced them forever.

It occurs to one who reads these events in Dunstan's life, that the devil, who really gave him a start, as has been told, must have watched his career with interest.

In the days of his greatness, Dunstan did much for his Abbey of Glastonbury in endowments of lands and revenues, and when he died the monks bestirred themselves to have him canonized, and so Dunstan became a saint. The might of the old scheming abbot lived after him in his very bones, which, treasured in the sanctuary of the Abbey Church of St. Joseph of Arimathea, where also slept St. Patrick, it was said, and even the legendary bones of the great King Arthur himself, and of Guinevere, his Queen, shortly became of miraculous repute among the faithful and were for many years one of the abbey's greatest sources of wealth.

After Dunstan, many another learned churchman gave Glastonbury to the service of England, and so with always one or more of her sons in high places, the abbey was great and glorious through the long years, until, upon a day, ruin came upon her and she was no more.

Upon the brow of the old Tor on that evil day was cruelly spilled the blood of a good old man, the last of Glastonbury's hundred abbots, when on the morning of the fifteenth of November, 1539, Abbot Richard Whiting was hanged, drawn and quartered on that sacred ground. He died for his duty, rather than betray his trust, and of the many thousand victims of the axe, the gibbet and the quartering-block, who fell in the reign of Henry the Eighth, perhaps none better deserved the crown of martyrdom. Mr. Froude tells the story and Mr. Craike in his "Last Abbot of Glastonbury" has woven the events of the abbot's last days into a readable romance. When the royal emissaries swooped down upon historic Glastonbury and took possession of the abbey with its churches, houses and lands in the King's name, the old abbot, who had been watching events and awaiting the blow, was found to have concealed the plate and most precious treasures of the church, thus despoiling the monarch of ever bluff memory of the most coveted bit of the royal plunder. Thomas Cromwell and the King, who had expected to find Glastonbury a very fat quarry, were naturally much incensed. They had the abbot seized at once, charged him with robbing his church of the sacred vessels, and also with high treason and conspiracy, and, as nothing would frighten him into giving up the secret of the vanished treasure, they caused him to be tried on these charges at Wells, on the fourteenth of November, 1539. "A most worshipped box of jurymen" promptly and loyally condemned him to death. The prior and sub-prior, who knew nothing about it and could not have told even if they would, were to die with him. He was taken from the court-room to Glastonbury in his own horse-litter, and passed his last night with his two fellow-sufferers in earnest prayer. They were closely guarded in the strong room over the great gate of the abbey, and their only request, to be allowed to take farewell of their brethren, was denied. In the early morning the old man was led below to the yard, where they bound him to a hurdle, upon which he was dragged at the horse's tail through the streets between the ranks of his sorrowing people, who looked helplessly on at the indignities done their beloved pastor and ever-generous friend. Up the grassy slopes of the old Tor they dragged him, and there he met his death very patiently under the sky.

Thomas Cromwell, the counsellor and abettor of the King in these persecutions, originated, or at least, matured and carried out the seizure of the monasteries and the plunder of their great properties. Abbots and priors were called upon to subscribe the Acts of Supremacy, by which the King's word was recognized as paramount in matters purely religious, as well as in questions concerning the property interests of the monasterial foundations of the kingdom. Were they able to evade this extraordinary demand, which many did by feigned compliance, they were yet entrapped by trumped-up charges of treason — confiscation being the real object of the king — and about sixty of them were condemned to death in this way. The monks who had not already run away were soon scattered abroad. Driven suddenly from their peaceful cloistered homes into an untried world, bearing the mark of the King's wrath upon them, they found scant mercy. A few sought asylums in the charitable piety of some distant manor-house, where in small groups they lived a life something akin to the old conventional life.

But for the mass of the one hundred thousand men thus turned adrift upon a population of three millions of people, there was only the lingering misery of hopeless struggle and cruel want. They, mostly, knew no craft but that gentle one of the scholar which had saved, through all those darker days of steel-clad strife the world had known, the links that joined it to the arts and letters of the past. "The English monks were bookish of themselves and much inclined to hoard up monuments of learning." Of what happened to the greater part of these "monuments" stored in the abbey libraries at the time of the suppression, a letter to Edward the Sixth reporting upon this matter tells somewhat:

"A number of them what purchased these superstitious mansions reserved of their library books some to scour the candlesticks, some to rub their boots, some they sold to the grocers and soap-sellers; and some they sent over seas to the book-binders, not in small numbers, but at times whole shipful. . . . I know a merchant, which shall at this time be nameless, that bought the contents of two noble libraries for forty shillings apiece. A shame it is to be spoken! This stuff hath he occupied instead of gray paper the space of more than these ten years, and yet he hath store enough for as many years to come."

It has been estimated that the royal coffers were replenished from the sale of the monasterial properties to the extent of about fifty millions of pounds sterling of the money of to-day. Royal Harry had spent it all and was turning a hungry eye upon the colleges and hospitals when he was opportunely taken off.

The abbey buildings, sold and bought in most cases for the materials in their construction, were already dismantled, and become mere stone quarries for the neighborhoods in which they stood, until of these great establishments we have only a few crumbling ruins left to-day.

Among the older streets of Glastonbury one finds in the walls, here and there, stones which are recognizable at a glance as having been despoiled from fane and cloister. Enough remains to tell us what we have lost, and to fill us with wonderment at the ignorance of the nation and disgust for the brutal rapacity of the tyrant who ruthlessly destroyed so much of England's noblest architecture.

Of the earlier portion of the Abbey Church, St. Joseph's Chapel, with its round arches and very beautiful Norman transition and Early English detail, there is still a good showing, the massive masonry and great wall-surfaces of that earlier period having surprisingly well withstood the wear and tear of frost and storm through the centuries since their splendor was dismantled.

"They built as they
Who hoped these stones should see the day
When Christ should come; and that these walls
Might stand o'er them till judgment calls."

Of the great buildings belonging to the domestic offices of the abbey, the dormitories, the refectory and the schools, in which last the Benedictines of Glastonbury were educating usually some two or three hundred boys, only the so-called "Abbot's Kitchen" remains. This interesting relic is supposed to date from the time of Abbot Chinnock, who was in power at Glastonbury from 1374 to 1420.

Its remarkably good state of preservation is due largely to the great stone roof which has defended it from the ravages of the weather. It has suffered greatly, however, with all the rest, from vandalism. The kitchen is of generous proportions, being thirty-three feet and six inches square inside the walls. Great arched doorways open through the north and south walls pierced above by square-headed mullioned openings. Large three-light tracery-headed-pointed windows break the east and west walls. The buttresses are very handsomely built, having finely-cut copings and rounded fronts. Other members are richly detailed, and there are interesting carved heads projecting in full relief from the cornice at intervals. The fireplace arches are thrown across the interior angles and swinging out above easily resolve the building into the octagonal form. There was a separate stack to each fireplace, rising from the corners of the kitchen to, perhaps, a little more than the height of the base of the lantern, but of these there is nothing left.

The battlements which formerly crowned the walls have also quite disappeared. The stone roof is a handsome piece of masonry. From the inside it is seen to be carried on eight arched ribs which spring gracefully from the angles of the octagon merging above into a stone ring, which forms the base of the cylindrical inner wall of

the lantern. The outer shell carries up the octagonal form in a vertical prolongation of the hips of the roof, the treatment being continued in the roof of the lantern itself and to the finials. There are eight openings into the inner cylinder, through the vaulting between the ribs, by means of which the room was well ventilated and the smoke of the great meat spits quickly carried off.

The whole structure was beautifully adapted to its purpose. It was built throughout of cut stone, and most thoroughly, combining lightness and grace of form with the requisite strength of construction in a manner which makes it a most interesting bit of architecture and altogether a very charming design. There is nothing to indicate what was the treatment of the corner chimney-shafts, which doubtless made a striking feature.

The generous size of the kitchen is explainable by the fact that the household of the abbot numbered three hundred persons, while his guests were numerous, of high rank, and often attended by great retinues.

Another striking relic of the abbey is the great tithe-barn which was also something more than a century old in the time of the "Last Abbot," being ascribed with the kitchen to Abbot Chinnock. One comes upon the old barn quite suddenly on the way out Chickwell Road to the Tor. The east gable as it presents itself to the road is most effective in mass, though the ground has been raised on that side some three feet or more and the base has therefore disappeared, the roof so gaining a greater apparent proportional height, and pleasingly picturesque effect.

The real elevation is best seen in the west end, or would be were it not so crowded upon by the hideous sheds of the dairy-farm, of which, unfortunately, this grand old mediæval granary is now a belonging. The whole north side is unapproachable except through the muck of a vast cow-yard, the boundary wall of which appears in the drawing of the east end, abutting against the barn itself — battlemented, fortunately, and, therefore, not quite so obnoxious as it might have been, but still to be wished away.

It seems a great pity that this remarkable old structure should not have fallen into hands which will lovingly and reverently preserve it as a rare architectural monument of great beauty and interest. It is yet in a surprisingly good state of preservation and, such is the solidity of its construction, will probably survive many centuries more if cared for; as it is, many slight dilapidations and changes are occurring and the old barn is suffering irremediable damage.

The building is cruciform, having its major axis east and west. The great doors, by which laden wagons are driven into and through the barn, are in the north and south ends of the transepts, or porches. The height of these doorways to the point of the arch is nearly fourteen feet and the width of the opening is ten and a half feet. Smaller doors in the side walls of the transepts have been walled up. The threshing-floor was in the middle of the barn, between the great doors. Enough light comes in through the narrow slits which are centered between the buttresses in the side and end walls. These slits have a very widely-splayed jamb inside and a small splay outside.

The gables have each two beautiful cross-loops, and above, in the peak, a small and striking window of a trine form of tracery, which Pugin likens to the roof-windows of the aisles of Westminster and the clerestory windows of Lichfield, "formed, like these, of segments of three circles arranged in a triangle." The detail of these little windows is quite rich and beautiful. The cross-loops suggest a purpose of defense, for they are identical in form with those found in the walls and towers of great castles of the period. The side slits also seem designed for a like use, and the massive masonry of the whole structure would have rendered it impregnable in case of siege. The walls are four feet thick, the buttresses are two feet five inches wide, projecting three feet beyond the wall line.

Inside the barn there is only the great roof to see. This is a remarkable example of the massive braced and framed carpentry of Gothic England, "put together without a nail" the dairy folk proudly inform visitors, sound in every timber and good for a long time to come. The roof construction is, indeed, more elaborate and ornate than many churches afford. Double tiers of stout tie-beams swing across between the main rafters. These with their great braces, and the heavy braces filling the panels between the purlins, are gracefully arched and chamfered. By carrying the timbers well down into the wall the thrust of the great roof was brought against the massive buttresses. The latter are irregularly placed, the distances between them varying from twelve to eight feet, and as the main beams coincide with the buttresses, the bays of the roof are also of unequal length.

The exterior of the old barn astonishes the modern observer by the finished and costly character of its masonry, and by the amount of good skilful work given to the mere ornamentation of its well-designed features. The most important sculptures are the half life-sized statues above the east and west gables, which represent clerics of high rank in ancient ecclesiastical vestments. These figures have now, unfortunately, lost their heads. High up on each of the four gables is a well-carved relievo, the symbol of one of the four Evangelists, St. Matthew in the east end, the winged cow of St. Luke on the north, the eagle of St. John on the west and the lion of St. Mark on the south, and within an obtusely cusped quarterfoil in an outer circular frame.

The square-headed mullioned windows over the doors of the transepts are handsomely membered; the label-moulding brought down

almost to the sill, has a good effect. The window over the north door has been entirely blocked-up, the mullion is gone and a single stone is left to suggest the form of head tracery. The south window is still entire, but is sadly in need of repair and will soon, doubtless, disappear.

The transept gables terminate in crocketed finials and the flanking buttresses are finished with a handsome coping, from the ridge of which are carved out mediaevalized figures of crop-eared mastiff dogs. The effective lines of the coping-stones of the several gables are to be noted; and the corbels springing from the top stone of the end buttresses are carved into heads of interesting character and good workmanship.

With its massive walls, dignity of outline, beauty of detail and elaboration of ornament, the old barn of Glastonbury Abbey has scarcely an equal among the few surviving examples of the great tithe-barns of the old monkish days.

The bishop's barn, on the the Recreation Ground west of the palace moat at Wells, is an older building and of greater length, I think, but not so handsome in finish. It is seen to great advantage as it stands free of incongruous surroundings, and, happily, it is well-cared for by the authorities of the church and town and not likely to suffer neglect.

Douling barn differs somewhat from the other two in having two transepts and at Pilton is a splendid old pile which still enjoys the crowning beauty of a mossy, time-stained thatch.

The last two have suffered much from vandalism and lack of care, and it is greatly to be deplored that they, as well as our old Abbot's Barn, should not be saved from ruin.

A. B. BIBB.

BOOKS PAPERS

Small hospitals¹ are being built so often nowadays that the book before us is of value to all who have to do with such institutions, though it deals more with the methods of the establishment and maintenance, and with the, perhaps, more purely business questions which confront the promoters of hospital movement than it does with the purely technical side of the subject. The book is of value to the architect by reason of a very clear and practical supplement which, after a brief summary of the general architectural requirements, takes up and thoroughly illustrates and analyzes a typical hospital-building. The subject is by no means exhausted thereby, but the analysis has a distinct value in that it thoroughly illustrates one hospital-building rather than merely touching upon a number of different types. The volume is small and handy for reference purposes, and while thoroughly up to date in the main principles of hospital establishment and maintenance is not incumbered with technical data.

THE bibliography of architectural biography is very limited, even though the literature of England, France, Germany and Italy be searched, and in order to make up a list of three dozen works the latest students of the subject, M. Alexandre Du Bois and his successor, M. Elie Brault, have had to include in it the names of several architectural journals which, naturally, furnish the only available records of the lives and works of modern architects. Most architects are and have been such nameless quantities in the world's history, so far as contemporaneous notoriety or reputation goes, that it is rather odd that more pains have not been taken by some of them to make printed records on behalf of their fellows, so that a tardy justice may be done by posterity to those men whose real merit shall be attested by the approbation of a later day.

The proper way to make a biographical dictionary that shall have a popular value would be to arrange it topographically as a history of created buildings, rather than as a biography of their creators. The public is much more apt to wonder who did such a building that pleases them than to seek information as to what work a given architect, whose name they chance upon, has done. Even for specialists, for architects themselves, this arrangement would be most useful, for their interest is usually localized and not distributed; and while they would eagerly read the account of the interesting buildings in a given district and relish keenly the incidental biographies of the men whose work had excited their attention, they would give but listless attention to page after page of brief biographical notes arranged only alphabetically, where a master of the Renaissance period would be found sandwiched between two nonentities of the eighteenth century, who had secured a record simply because they had lived.

Biographical dictionaries unquestionably have their uses and they ought to be in every public library, if not in most private ones, though, outside of a man's immediate family, the records they contain are of no special interest and of no great value to the general public. Still, as creators of enduring and visible results, it would seem that the biographies of architects should form a more valuable and interesting contribution to literature than the biographies, say, of

lawyers, doctors and merchants. The projector of the work² before us, M. Du Bois, intended his work should be cast in the usual form of an alphabetical dictionary, a form which would have made it as useful as others of its kind, but no more so. Fortunately for the ultimate usefulness of the work, death prevented him from publishing it in this stereotyped form. The unfinished material, a vast quantity, fell into the hands of his son-in-law, M. Elie Brault, who was not himself an architect like the projector of the work, but, we believe, an advocate. Seemingly, when M. Brault began to estimate the amount of work before him, he thought it worth while to consider whether its intended form was really the most useful one into which it could be cast, and wisely decided that, although to change it meant added labor and delay, there was a better method that could be followed, as useful, practically, as the alphabetical method, while adding to it elements which greatly enhanced its value and increased its chance of securing a larger circulation and sale than a mere dictionary could have. The arrangement adopted by M. Brault lies between the topographical form we have suggested and the alphabetical form, and at once gives the work a place in the wide field of the general literature of architecture. Rearranging his material by historical epochs and schools of art, he introduces each chapter with a brief historical account of the various movements that characterized the time or the school, and then weaves into a fairly connected story the accounts of the lives of those architects who labored and achieved at that time. Of course, this method involves a sort of forward-and-back movement, and constant cross-reference, so that it takes one a little time to make sure that he has discovered all that the work contains relating to the single architect whose career one chances to be looking up. But this is a very immaterial drawback, when compared with the advantage of having the records made in such a way that the work can be read with enjoyment and profit, as ordinary books are, from cover to cover. It is thus a work that we can advise architects to procure, not as one to which they may now and then have occasion to refer, but one that can be read with pleasure and profit.

The work is divided into three small-quarto volumes of some four or five hundred pages each, and is illustrated with many full-page portraits of the most noted architects, derived from sources as authentic as circumstances admit, ranging from an imaginary sketch of Demetrius, through sundry Mediaeval architects depicted in sculpture on certain Gothic buildings, to enlargements of daguerreotypes of architects of the early part of this century.

No civilized country has been neglected, and the records of some semi-civilized countries, as well, have been examined, so that the work is very complete, so much so, in fact, that one of the faults most likely to be found with it is that some architect or some building somewhere has been overlooked.

The first volume treats of Antiquity, the Middle Ages, and the Italian Renaissance; the second deals with French Renaissance, the seventeenth century, and with the Rococo; while the third begins with the Romantic school, and follows up modern eclecticism in all its ramifications.

Any work of so wide a scope, seeking to give a vast amount of particulars, must contain many errors, and it would be easy to point out many, especially in those portions where English and American architects and their works are concerned. But they are mainly merely typographical errors caused by inability to decipher a correspondent's chirographic efforts, and the several correspondents will probably draw attention to them before a second edition is sent out. Confusion of another kind is caused by translating into a supposed French equivalent the title of some building which could only be positively identified by giving its title in the vernacular, foreign though it might be. Errors of this kind are easily recognized and can often be corrected by any reader, as well as those other errors which are due to every Frenchman's scorn for geography and orthography, except so far as these concern his own country. Against these errors, every foreigner who uses a French book is habitually on his guard. The work is made complete and serviceable as a mere biographical dictionary by a very good alphabetical index arranged in tabular form. Here are given the names of the architects, the country of their birth, and the dates of their birth and death, or in default of these dates the approximate date of their known work, while a final column refers to the pagination of these volumes where details may be found.

A too profuse use of the ditto mark by the printer has impaired the value of this tabulation in one particular, for in place of leaving the date of death blank, as M. Brault, of course, intended in the case of living architects, he has insisted in filling in the space with inverted commas, one consequence of which is that Mr. Van Brunt is represented as having died in 1839, though he was born in 1831, thus implying, when one looks at his record, a rather precocious architectural activity on the part of a child of eight years.

Every architectural school should have this work, and the librarian in charge should be obliged to make use of it in preparing that topographical index for his own collections which we began by saying would be so useful.

Here are records in detail of the work of some three thousand architects of various countries, specified by name and their works fairly identified by description. If we allow only five works to each

¹ *Small Hospitals.* Establishment and Maintenance, by A. Worcester, A. M., M. D. And Suggestions for Hospital Architecture with plans for a small hospital, by William Atkinson, architect. 12 mo. cloth, \$1.25. New York: John Wiley & Sons, 53 East Tenth Street, 1894.

² *Les Architectes par leurs Oeuvres.* Ouvrage rédigé sur les manuscrits de feu A. Du Bois (de l'Ecole Polytechnique), Architecte du Gouvernement. Par Elie Brault. Paris: 1894.

man, here are means of identifying some fifteen thousand buildings, a considerable portion of which must be represented by photographs or engravings in the collections of the various architectural libraries, but which neither librarian nor student has yet been able to identify. This information is here and accessible, but it is so voluminous that it would be a costly undertaking to print it, and, though we do not doubt that M. Brault perceived the desirability of such a tabulation as clearly as we do, we can easily understand why he abstained from its preparation.

If any of our readers care to add this work to their libraries, we should be well pleased to procure it for them, the cost being, in unbound form, ten dollars.



[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 ELBRIDGE T. GERRY, ESQ., FIFTH AVE., NEW YORK, N. Y. MR. R. M. HUNT, ARCHITECT, NEW YORK, N. Y.

[Gelatin Print, issued with the International and Imperial Editions only.]

HOUSE OF MR. CLINTON MACKENZIE, ARCHITECT, ELIZABETH, N. J.

THIS house is to be built of brick to plate, then framed to peak of gable with heavy timbers, pegged, the panels made by timbers to be filled-in with brick and the whole to be plastered very roughly on the outside with cement. The interior also to be rough plastered throughout and tinted. Trim and doors to be from detail, natural finish and painted. The entire house is 32' deep and 37' 4" frontage. All the contracts have been let and amount to \$4,400, which covers everything except gas-fixtures, mantels and grading.

THE ABBOT'S BARN, GLASTONBURY, ENG. SKETCHED BY MR. A. B. BIBB, ARCHITECT.

For description, see article elsewhere in this issue.

THE ABBOT'S KITCHEN, GLASTONBURY, ENG. SKETCHED BY MR. A. B. BIBB, ARCHITECT.

HOUSE FOR HAYTER REED, ESQ., OTTAWA, CANADA. MESSRS. HOPPIN & KOEN, ARCHITECTS, NEW YORK, N. Y.

ACCEPTED DESIGN FOR THE HIGH SCHOOL-HOUSE, MALDEN, MASS. MR. F. I. COOPER, ARCHITECT, TAUNTON, MASS.

[Additional Illustrations in the International Edition.]

INTERIOR OF BANQUET HALL, NEW YORK STATE BUILDING, WORLD'S COLUMBIAN EXHIBITION, CHICAGO, ILL. MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS, NEW YORK, N. Y.

[Gelatin Print.]

SKETCHES AND DETAILS AT RAGUSA, ITALY.

This plate is copied from the *Zeitschrift für Bauwesen*.

INTERIOR OF THE ABBOT'S BARN, GLASTONBURY, ENG. SKETCHED BY MR. A. B. BIBB, ARCHITECT.

DOOR OF THE ABBOT'S BARN, GLASTONBURY, ENG. SKETCHED BY MR. A. B. BIBB, ARCHITECT.

THE TITHE BARN, DOULTING, SOMERSETSHIRE, ENG.

THE BISHOP'S BARN, WELLS, ENG. SKETCHED BY MR. A. B. BIBB, ARCHITECT.

SHIREOAK, HEADINGLEY, ENG. MR. F. W. BEDFORD, ARCHITECT, LEEDS, ENG.

THIS house, for Mr. J. E. Bedford, is now named Arncliffe, and has recently been built at Headingley, near Leeds. It was planned at an angle so as to obtain the best view, as shown on the plan. It is built of specially-made small red bricks and the roof is covered with Yorkshire stone slates of a most beautiful color, in varying tones of gray, yellow, red and blue. The surroundings of the house have been carried out rather differently since this drawing was made. A higher terrace wall of pierced brickwork runs along the front with three steps up into the forecourt. A curved exedra-shaped wall with stone seat is built on the right instead of the straight one, with steps leading to the garden on a higher level. This garden is laid-out in a formal manner with box-edging, and a garden-house with

curved lead roof terminating the wall before mentioned opens on to it. The hall is wainscoted to a height of seven feet six inches, above which is a beautiful plaster frieze of wild rose. The dining-room has a beam ceiling which the architect intends painting with a sprinkling of flowers.

THE OLD GARDENS, HEADINGLEY, ENG. MR. F. W. BEDFORD, ARCHITECT, LEEDS, ENG.

THESE houses are built on the site of the old Botanical Gardens at Headingley, near Leeds. The old bear-pit belonging to the Gardens still remains close by. In planning these houses it was endeavored to get a decent hall to each house instead of the narrow passage generally found in houses of this size near Leeds. These halls are panelled to a height of about seven feet six inches, and one has a little ingle-nook. They are built of specially-made small red bricks, and the upper walls are tile hung.



[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

A CORRECTION.

MINNEAPOLIS, MINN., August 14, 1894.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—In your effort to advise the world as to the present status of the Minnesota Capitol Competition, you permitted your hired men to print on the third line from the top of the second column of the 55th page of your current volume, "with a knowledge of the capacity of architects" in place of "with a knowledge of the rapacity, etc," as in the "copy." If you could but assure the world that the only "intelligent compositor" is now located in Boston, you might to a certain extent comfort

MR. PINCH.



BOSTON, MASS.—Annual Summer Loan Exhibition of Paintings; also, New Accessions to the Print Department: at the Museum of Fine Arts. NEW YORK, N. Y.—Twenty-sixth Annual Spring Exhibition: at the Metropolitan Museum of Art, opened May 8. Group Exhibition by American Painters—William M. Chase, J. Alden Weir, Childe Hassam and others: at the Galleries of the American Fine Arts Society, 215 West 57th Street.



EXCEEDING THE ESTIMATES.—Complaints are numerous of the great excess of the cost of buildings as compared with the architect's original estimates. In public buildings especially has this been noticeable. The Philadelphia City Building, estimated to be erected at a cost of \$10,000,000, has already cost \$17,000,000 and is now expected to require a final outlay of \$3,000,000 additional before completion. It is fortunate for American architects that the old law of the Ephesians does not prevail here, for Vitruvius records the fact that when an architect was employed upon a public work he was required to declare the amount it would cost, and his goods were made over to the State. If the work cost one-fourth more than his estimate, it was allowed; if it were less, he was loaded with honors. But if the expenditure exceeded the prescribed limits, his property was sacrificed to make good the deficiency. It is said that Vanvitelli, having exceeded his estimate in a public work connected with the execution of one of the fountains of Rome, was mulcted in the sum of 5,000 crowns.—*Fire and Water*.

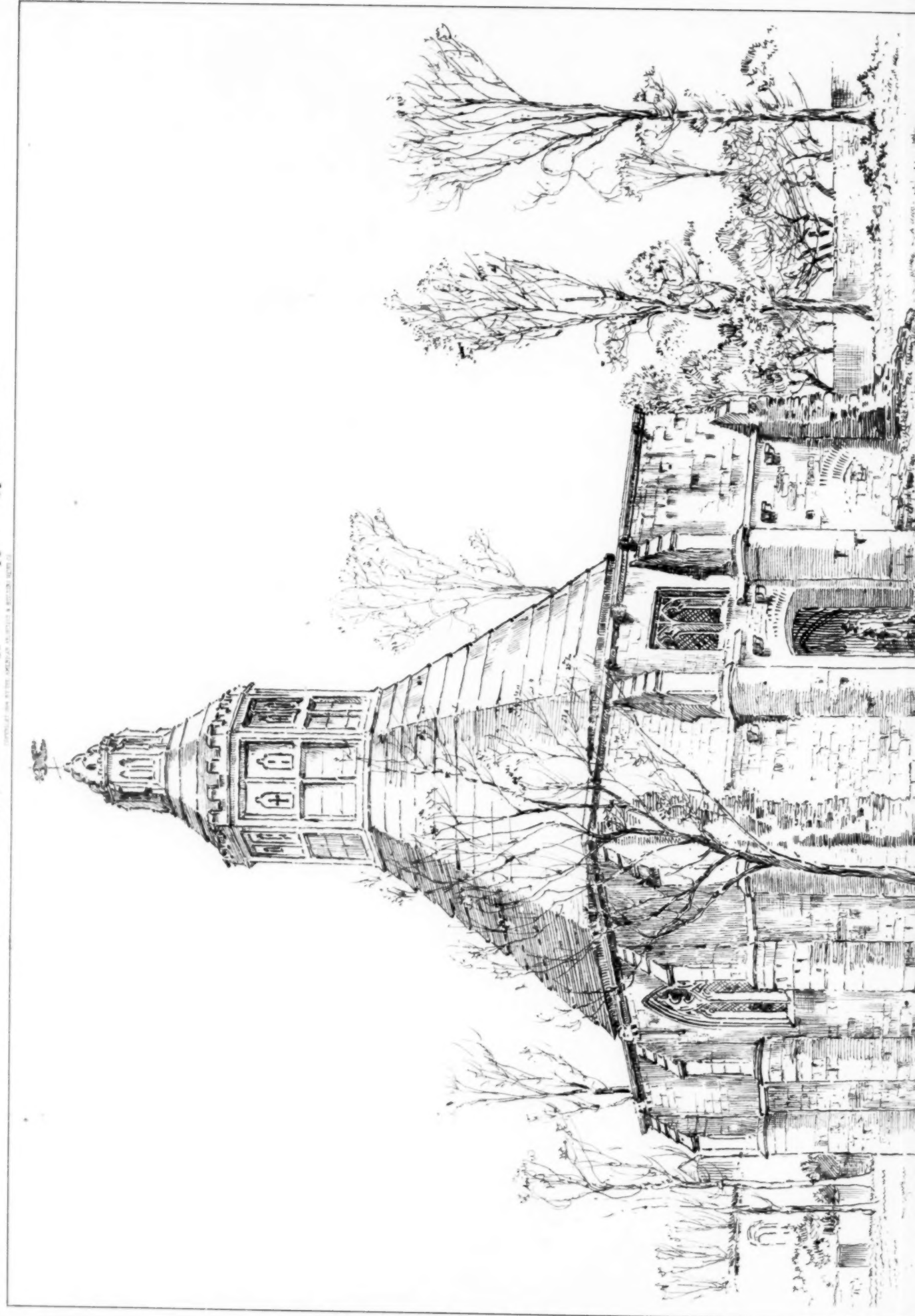
MAMMOTH STATUE OF BARBAROSSA.—The sculptor Nikolaus Geiger is putting the last touches to his statue of Barbarossa, which is to symbolize the ancient kingdom in the Kyffhäuser monument, to be unveiled in 1896. The Barbarossa appears at the end of a vestibule in the style of an ancient castle, on the steps of the throne upon which he is sitting like the sleeping figures of the courtiers, with fabulous animals of the old mythic world. Barbarossa is represented at the moment of waking from his long sleep. In his right hand is his sword, his left hand strokes his long, waving beard. Contrary to all other figures of the old hero, he is here represented as an actual emperor, with the features of a noble man. The whole monument, hewn from the rock, will be about eighty feet high. The figure of the seated monarch is about thirty feet high.—*London Daily News*.

A WORD APROPOS OF COMPULSORY ARBITRATION.—"When men are ready to discuss the feasibility of imprisoning artisans and laborers for refusing to work on unsatisfactory terms, then it will be time to seriously consider compulsory arbitration."—*Cleveland Leader* (Rep.).

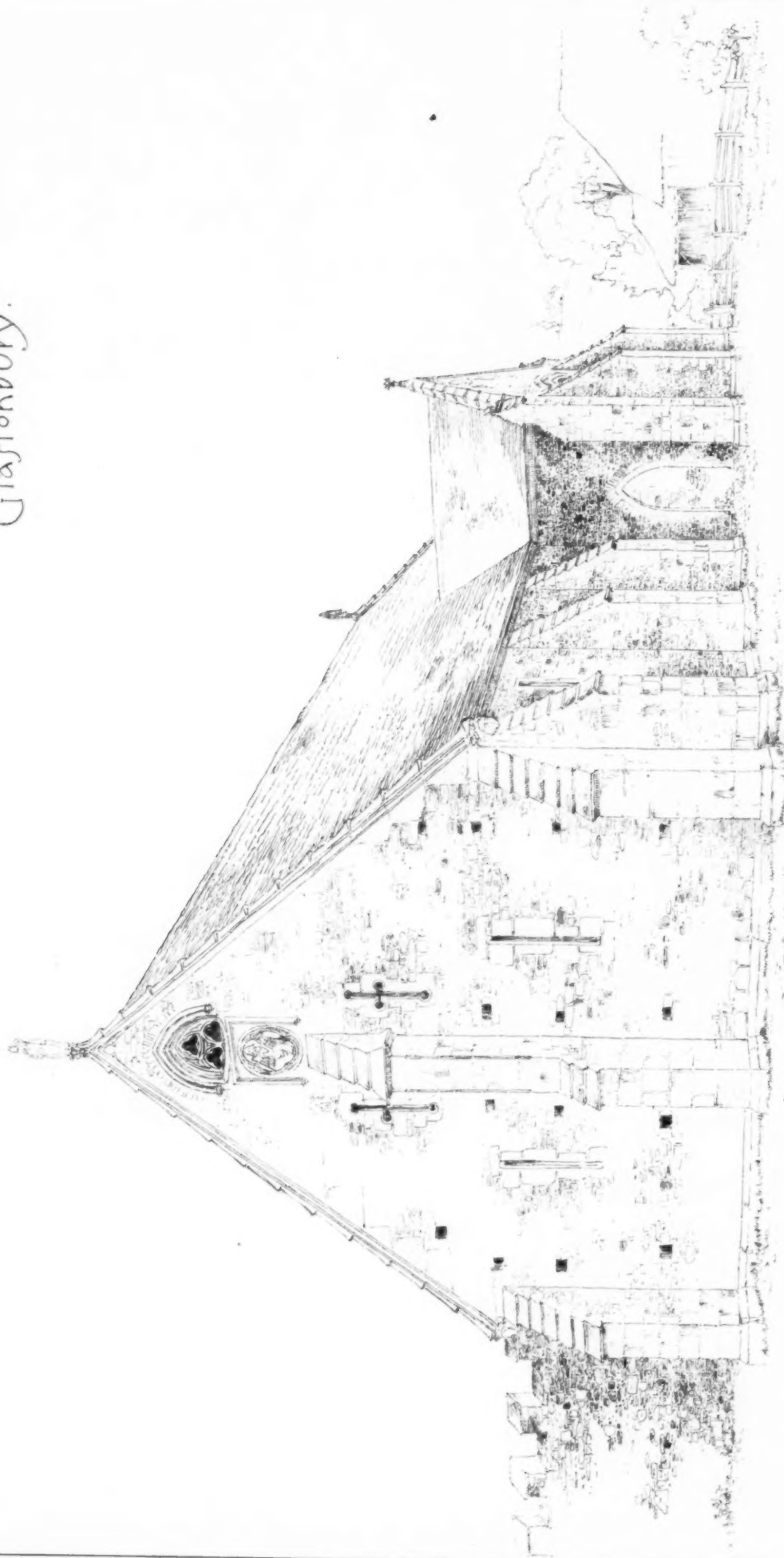


No. 974.

AMERICAN ARCHITECT AND BUILDING NEWS, Aug. 25, 1894.



Abbott's Kitchen: Glastonbury.

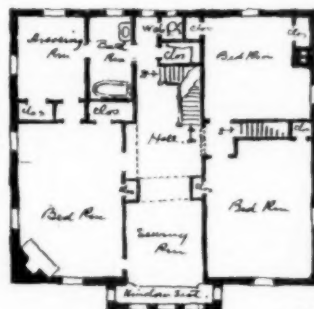


The Abbott's Barn, Glastonbury.
from the East.

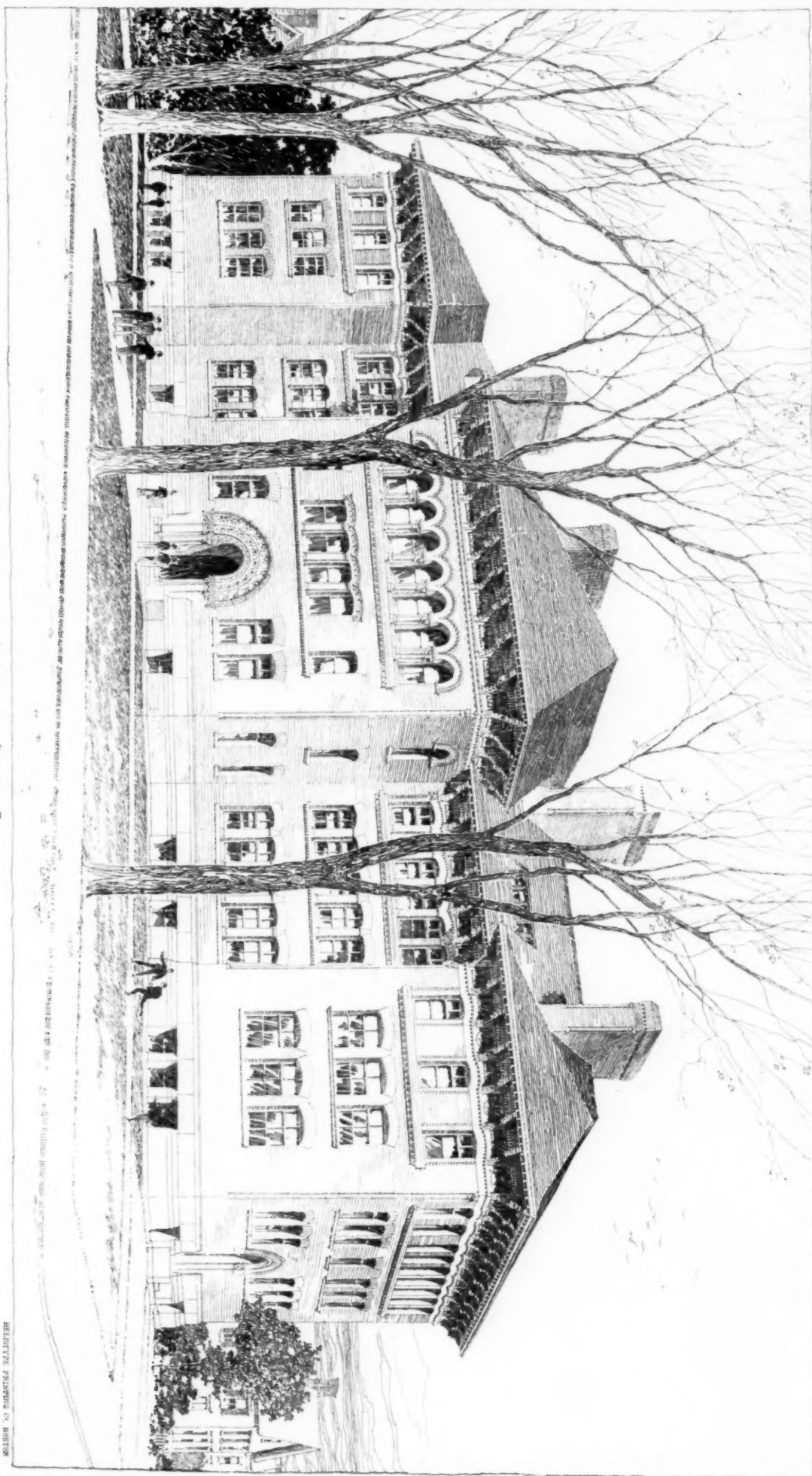
Samuel Bibb



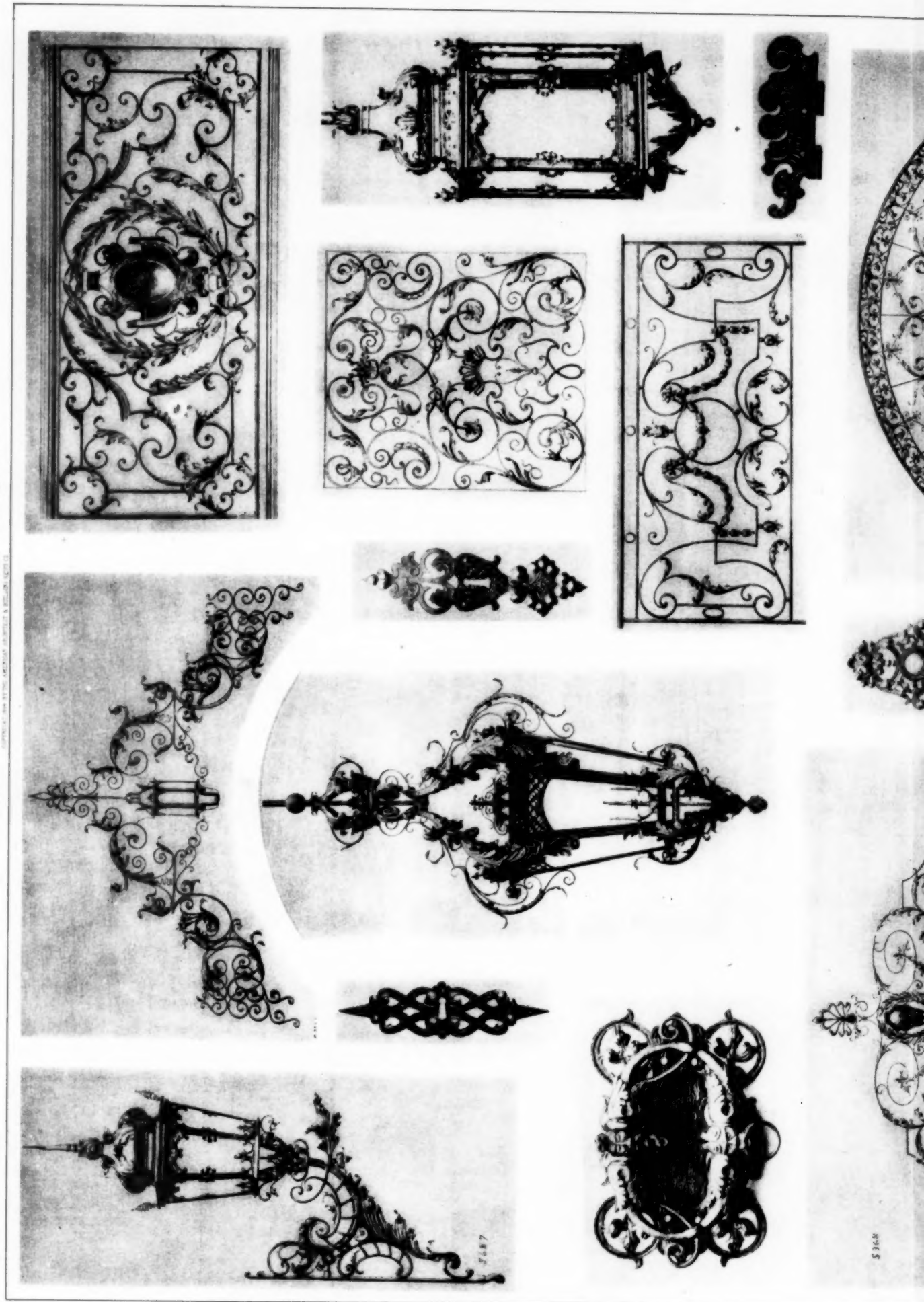
Residence of G. Clinton Mackenzie, Architect
Elizabeth N. J.



Second floor Plan

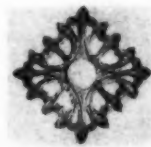
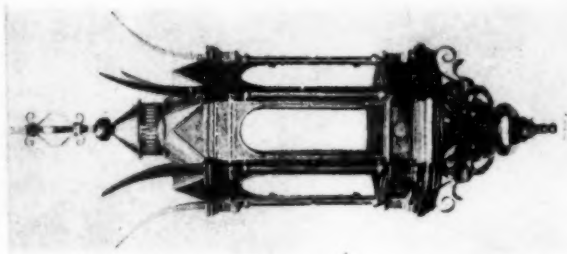
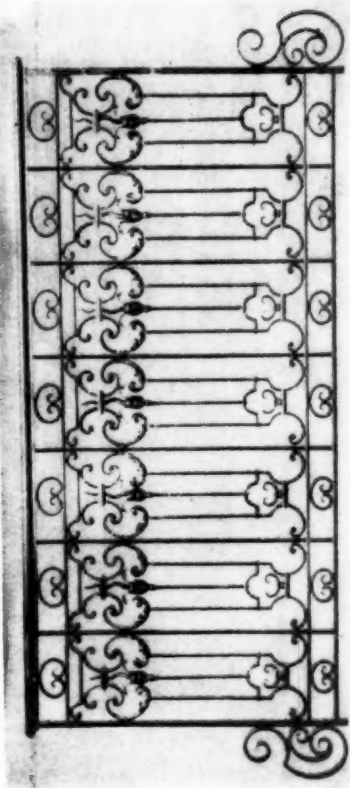
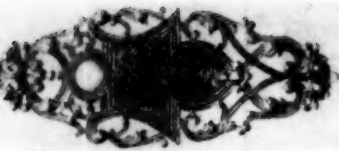


ACCEPTED DESIGN FOR
MALDEN HIGH SCHOOL
FRANK IRVING COOPER, ARCHITECT.





\$ 36.00



ART + IN + IRON

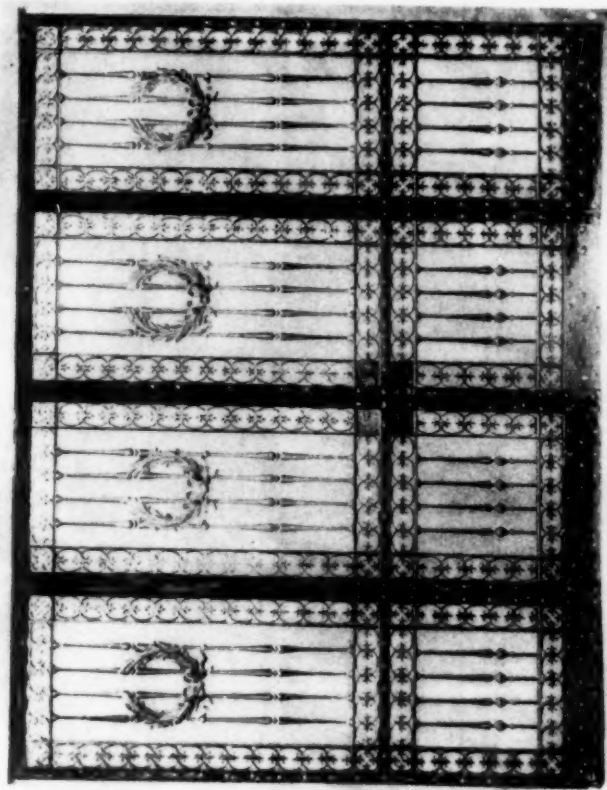
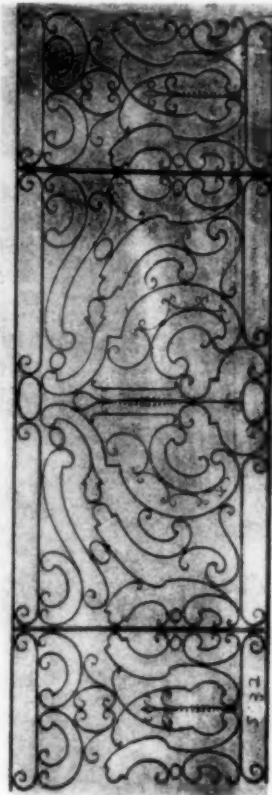
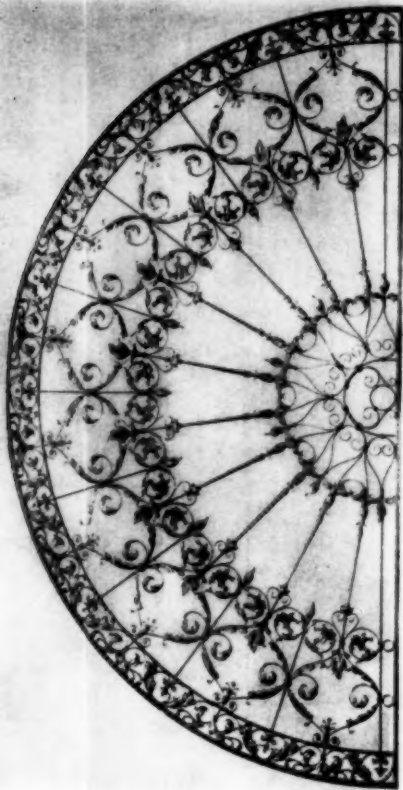
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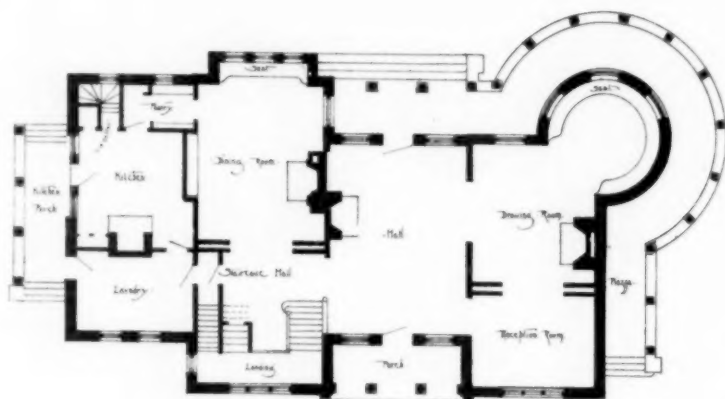
JNO. WILLIAMS

544 W. 27TH ST.

NEW YORK

H. B. STILLMAN

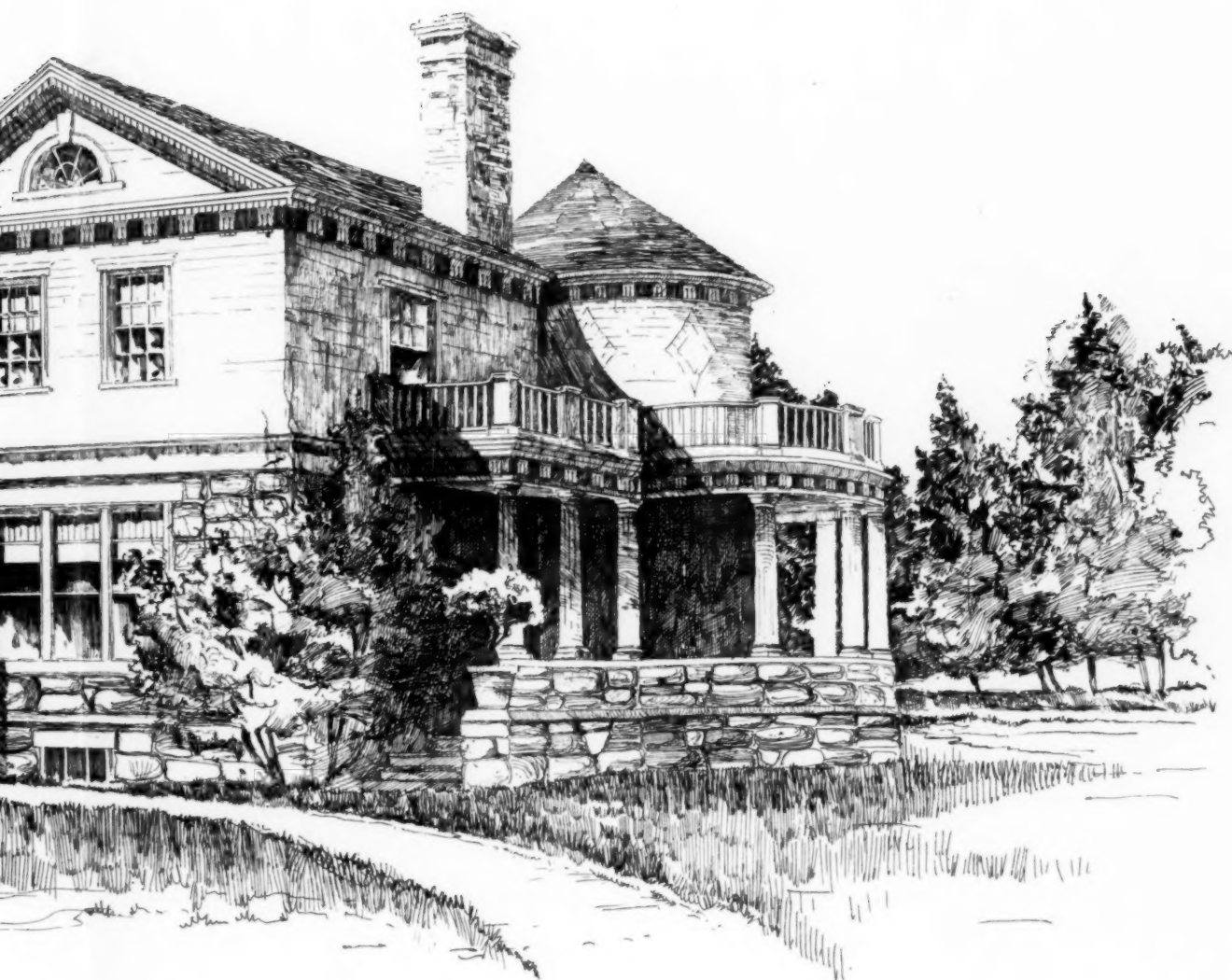




First Floor Plan

W.C. Gillette





HOUSE FOR HAYTER REED ESQ.

OTTAWA - CANADA.

HOPPIN AND KOEN - ARCHITECTS.

NEW YORK - 160 FIFTH AVENUE.