

PRICE 15 CENTS.

AUGUST 10, 1895.

THE
AMERICAN ARCHITECT
AND BUILDING NEWS

VOL. XLIX.

* REGULAR EDITION *

NO. 1024.



ARCHITECTURE

ENGINEERING

DECORATION

211 TREMONT ST.

CONSTRUCTION

BOSTON MASS.

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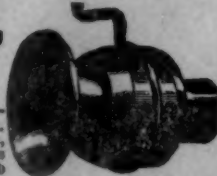
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THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XLIX.

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No. 1024.

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

AUGUST 10, 1895.



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WE were rather unguarded, perhaps even unfair, last week in speaking about the Massachusetts State-house, since readers at a distance might naturally suppose that the "north wall" of the old building was a solid and fairly continuous piece of masonry, whereas it is a most extraordinary compilation—the word fits. Originally it was probably as good as any wall in the building, but during its hundred years of existence windows and doors have been cut in it at every floor, built up later and then cut through again. Whole sections have been taken out and replaced with stud partitions, and the wall has been so many times unbuilt and rebuilt that it is difficult to find many lines of continuous untouched masonry where shores could be usefully and safely applied. To shore and underpin such a wall was not a simple task and we do not wonder that the contractors were at first unwilling to attempt it, but we do regret that their letter stating their feeling was made public, since it has been made the starting-point of much misunderstanding. If the structure of the wall now is non-homogeneous, that of the foundation work was unexpectedly peculiar. At the time the foundations were laid trenches of some depth were cut and into these were tumbled boulders of any size and shape and left dry. Upon them was laid a foundation-wall of good character but with nothing to speak of in the way of footings. The construction was good enough, as proved by the event, if the conditions had not been changed. But at some date the grade of the site was lowered several feet and the exposed foundation work was faced up with granite ashlar on the east and, apparently, with brick on the north. This, too, was not altogether unreasonable, but later the basement floor of the building seems to have been lowered to a point below the loose rubble in the original trench, and to keep the foundation in place it was underpinned on the inside with eight inches of brickwork, so that, in some parts, the superstructure of an exterior wall is carried upon a wall of dirt that has never been disturbed, this dirt being kept in place by thin walls of brickwork on either side of it. This appears to be the actual condition, though whether the various steps were as we surmise can not be now determined. As to the crack in the east wall, it is said to be an old one which has opened a little recently, owing partly to the shaking during the demolition of the "Bryant Addition," partly perhaps to the removal of the buttressing walls of that structure and partly probably to a small settlement that took place during the time when the contractors were uncertain how to proceed or whether to proceed at all. But the stage of probable peril is passed and there is little likelihood of catastrophe or any real damage arising during the remainder of the work. This expression of our own belief, however, does not meet the requirements of the

situation. By shrewd and selfish manipulation there has been created throughout the State a very positive and wide-spread sentiment of distrust as to the good faith with which the rights of the old building and the desires of the public are being treated. That any such suspicion should exist is a grave injustice to the honorable men who are in charge of the work. It is not possible for either the architect or the contractors to say anything with self-respect, for there are no distinct charges to which they can reply, there are only rumors and insinuations, and even should they make a statement, it would still be possible for those who are responsible for the promulgation of the rumors to point out that as both architect and contractor might reap a pecuniary benefit through the demolition of the old building their statement could only be looked on as a plea in avoidance. The only persons who can take effective action and can do so without loss of personal dignity are the Commissioners, who can act impersonally as public servants, and our whole purpose in forcing attention to the matter is to make it possible for them to act. As the *Boston Herald* very well puts it, "public sentiment is very sensitive in the matter."

A DISCUSSION is going on in the English professional journals about the exhibition of architectural drawings. Unfortunately, there is no doubt whatever of the fact that the public takes very little interest in the average collection of such drawings shown at the Royal Academy, and at the *Paris Salon*, but there is room for a good deal of difference of opinion as to the reasons for this apathy, and we find it ascribed in the profession to a great variety of causes. Mr. T. G. Jackson, who, as is well known, inclines to the artistic, perspective-sketch method of designing buildings, says, according to the *BUILDER*, that elevations "ought never to be seen at all by any one who is not an architect, because they are sure to mislead if presented as designs." In fact, he thinks that "It should be the object of an architect to have as little to do with elevations himself as possible," and his idea is that perspective sketches, accompanied by plans and sketches of detail, photographs, and, occasionally, models, are the proper means for exhibiting the progress of architecture. We imagine that very few architects on this side of the water will agree with Mr. Jackson that elevations are misleading representations of architectural works. Undoubtedly, a picturesque group, like those which Mr. Jackson likes to design, is best studied in perspective; but a Classical front can only be properly proportioned by careful study in elevation, making, of course, the allowance for foreshortening, and we believe that every unprejudiced architect will say that the elevation gives a truer idea of a flat Classical front than any perspective drawing can do, the eye instinctively translating such a front, as actually seen, into a symmetrical elevation.

MR. ALFRED WATERHOUSE, who, although also a devotee of the picturesque, is as noted for his common-sense as for his professional skill, says that "Part of the space might possibly be devoted with advantage to the exhibition of geometrical drawings, as, indeed, is the case at present with drawings showing the decoration of rooms; but such drawings hardly give the public so true a representation of buildings as perspective drawings do when faithfully prepared. Such perspective views might, however, be more frequently accompanied by floor-plans than is now the case." This is more reasonable than Mr. Jackson's view, although we think, bearing in mind the difference in appearance between, say Mr. Norman Shaw's perspective drawings and his executed work, that Mr. Waterhouse's reservation that perspectives are true representations only when "faithfully prepared," is a very important one. Mr. Waterhouse makes another suggestion, in which we fully concur, that no part of the space in such an exhibition as that of the Royal Academy "should be devoted to sketches of ancient work (however meritorious either the work or its delineation may be)," but all the space "should be reserved for illustrations of the architecture of the current year, or of the immediate past." In this way, and only in this way, as it seems to us, can an annual exhibition of architectural drawings be made interesting to the public. What is new, even if it is not very beautiful, interests all the world; and the assurance that the very latest development of architecture, and that alone, is to be seen at a given time and place, would

attract many people to whom architecture, as an art, is a total blank. Among the other correspondents of the *Builder*, Mr. Belcher thinks that architectural draughtsmanship has advanced so much of late years as to be utilized too easily to cast a false attraction over unworthy design, and that geometrical elevations should have at least some place; while Mr. Beresford Pite thinks that "the sketches, perspectives and isolated geometrical drawings of the current exhibitions" are "wretchedly unsatisfactory," and that an endeavor should be made to have buildings adequately represented by full sets of plans, elevations and details. Those who remember the extraordinary interest of the exhibition in New York of the working-drawings for the Chicago Fair buildings will agree with Mr. Pite in this suggestion, and in the corollary which he draws from it, that "A great stimulus will thus be given to sound architectural drawing and workmanship, and to fair and square draughtsmanship."

MR. REGINALD T. BLOMFIELD thinks that "any change would be welcome which would recall attention to the fact that architecture deals with design and has exceedingly little relation to mere draughtsmanship," and thinks that the architectural exhibits should be limited to photographs of executed buildings, and to geometrical drawings, or, if perspectives are admitted, that they should be made by the architect who is responsible for the design. Mr. Brydon thinks that, while decorative designs and drawings of old work should not be excluded, they should be in a separate room, and the actual architectural progress of the year shown by photographs, plans and elevations, as well as perspectives, in a room by itself. The latter point is enlarged upon by two or three others, one of whom, Mr. Percy G. Stone, considers that designs for stained-glass and surface decoration do not represent architecture, and that "Designs for Christmas Cards," one of which was shown with the architecture this year, are quite out of place in an architectural exhibition. Several others think that the present exhibitions are too much given up to "smart" perspective renderings, and that geometrical drawings and photographs should find a larger place.

WHILE we quite agree with this opinion, the opportunity seems to be a favorable one for introducing an idea which we have long had: that a field existed, in the annual architectural exhibitions, for encouraging and developing a purely æsthetic department of the art, which has hitherto been almost completely ignored, at least in this country. It will be remembered that Fergusson says, rather contemptuously, that the Celtic races are peculiarly successful in their designs for monuments to the dead; but, while accounting in this easy way for the beauty and poetry of French mortuary architecture, he forgets to notice how greatly and beneficially the habit of endeavoring to express feeling by architectural forms, which is particularly cultivated in designing tombs and monuments, has influenced French architecture. No one can compare the *Architecture Funéraire*, for instance, with such works as Labrousse's *Bibliothèque Sainte-Geneviève*, or the façade on the Boulevard Saint-Germain of Ginain's *École de Médecine*, or some of Vaudremer's buildings, without being struck with the idea that the labor of proportioning the projections of bands and cornices, of decorating piers and wall-surfaces to the best advantage, and of managing texture, has been greatly facilitated by the familiarity which all French architects possess with the designing of monuments on a small scale.

WHILE we are far from urging that architects in this country should make a combined effort to take the business of designing funeral monuments out of the hands of the stone-cutters, we still think that the art of designing such things is one which it is very desirable to encourage in the profession; and, in default of opportunities to put such designs in execution, the annual exhibitions offer a means for cultivating this purely æsthetic department of architecture which should not be neglected. If the young architects who feel within them the capacity for beautiful and expressive monumental design would try their hand, sending the result for exhibition at the League rooms, the effort would be of immense benefit to them, and, as it seems to us, the results would be of interest to the public, particularly if a sufficient number were contributed to collect them by themselves; and it is by no means impossible that the people who saw them might be struck with the idea that it would be better to have

such things designed for themselves, than to contract for them with stone-cutters. A small grave-stone affords room enough for the genius of Michel Angelo to display itself; but, if any of our students aspire to dwarf Michel Angelo by the wealth of their talent, they can easily select a larger subject of the same class. In fact, if æsthetic design, pure and simple, could once be recognized as a portion of the mental training of our architects, there would be no lack of suitable problems to be resolved. Any one who wishes to understand better what we mean may turn to Chaucer's description of the coral temple of "Diane of Chastitee," or the Temple of Mars, "of yren stout and stronge," and see what he can make of a set of elevations of these structures. If he does not lay aside the task with a conviction that there is an artistic field in architecture which has been as yet hardly entered upon, we are much mistaken. It is, however, excursions into this field which, as it seems to us, would most interest the public which takes pleasure in pictures and sculpture, for the reason that they would appeal to the same perceptions. No doubt, there is a certain æsthetic satisfaction, to architects, in the contemplation of a masterly restoration, like those shown in the architectural department of the *Salon*, or a Norman Shaw perspective, or a fine set of details; but these things are lost on a public which would easily understand and appreciate the design for the Regnault monument, in the Paris School of Fine Arts, or the Madison Square fountain, or a dozen other things of the same kind, and if it is possible to promote the inclusion in architectural exhibitions of objects which it is desirable for architects to produce and interesting for the public to look at, an effort ought to be made to do so.

THE Society of Engineers and Architects of Westphalia and Lower Rhine recently made a tour in England. Notice was given to the members that the tickets would be ready on a certain date at the Domhotel, in Cologne, and that the start would be made thence the next morning. Fifty-two members made their appearance at the starting-place, and, travelling by the way of Flushing and Queenboro' reached London the same evening. The next day was devoted to South Kensington, Hyde Park and the Olympia Theatre; and, on the same day, eight of the visitors, representing the various societies taking part in the excursion, were entertained at dinner by a committee of the Royal Institute of British Architects, and afterwards invited to a meeting of the Council of the Institute, at which official compliments were exchanged, and two books, "*Köln und seine Bauten*," and the "*Kölner Thorburgen*," richly bound, were presented to the Institute in the name of the Cologne Society. The next day, at the request of the German Embassy, the Arsenal at Woolwich was opened to the visitors. Next came a visit to the Tower, and the Tower Bridge, and the British Museum. Wednesday, the third day, was left open. Some of the visitors improved it by a trip to Oxford and Winchester; some went to Hampton Court, Richmond and Kew, and a small group devoted the day to the London railway stations. On Thursday, the whole party were shown over Westminster Hall and the Parliament-House, and, in the afternoon, visited Westminster Abbey, where they were received by the Dean and his daughter, "Fraülein Georgina," whose "liebenawürdige und sprachkundige" efforts to entertain the visitors seem to have been gratefully remembered. The official heads of the excursion were thoughtful enough to bring with them five laurel-wreaths, tied with red, white and black ribbon, which were laid, after a short allocution by Herr Stubben, on the graves of Robert Stephenson, Sir Gilbert Scott, Charles Barry, George Edmund Street, and Sir Isaac Newton, in the crypt of the Abbey. Afterwards, some one discovered the monument of James Watt, and, as there were no more wreaths, the tourists laid flowers and visiting-cards at the foot of it, while Herr Thometzek, of Bonn, pronounced a short discourse on the inventor of the steam-engine. After viewing the Royal tombs, the visitors left the Abbey, first presenting to "Fraülein Georgina" another copy of "*Köln und seine Bauten*," which had been originally intended for the Institution of Civil Engineers. A visit to the Law Courts and St. Paul's, under the guidance of "Sir Penrose," filled the rest of the afternoon. The next two days were devoted to the Docks, Canterbury Cathedral and various other objects of interest, and on Sunday the party returned, with what the *Deutsche Bauzeitung* calls a feeling of assurance that they had spent a week among friends allied by blood as well as by profession.

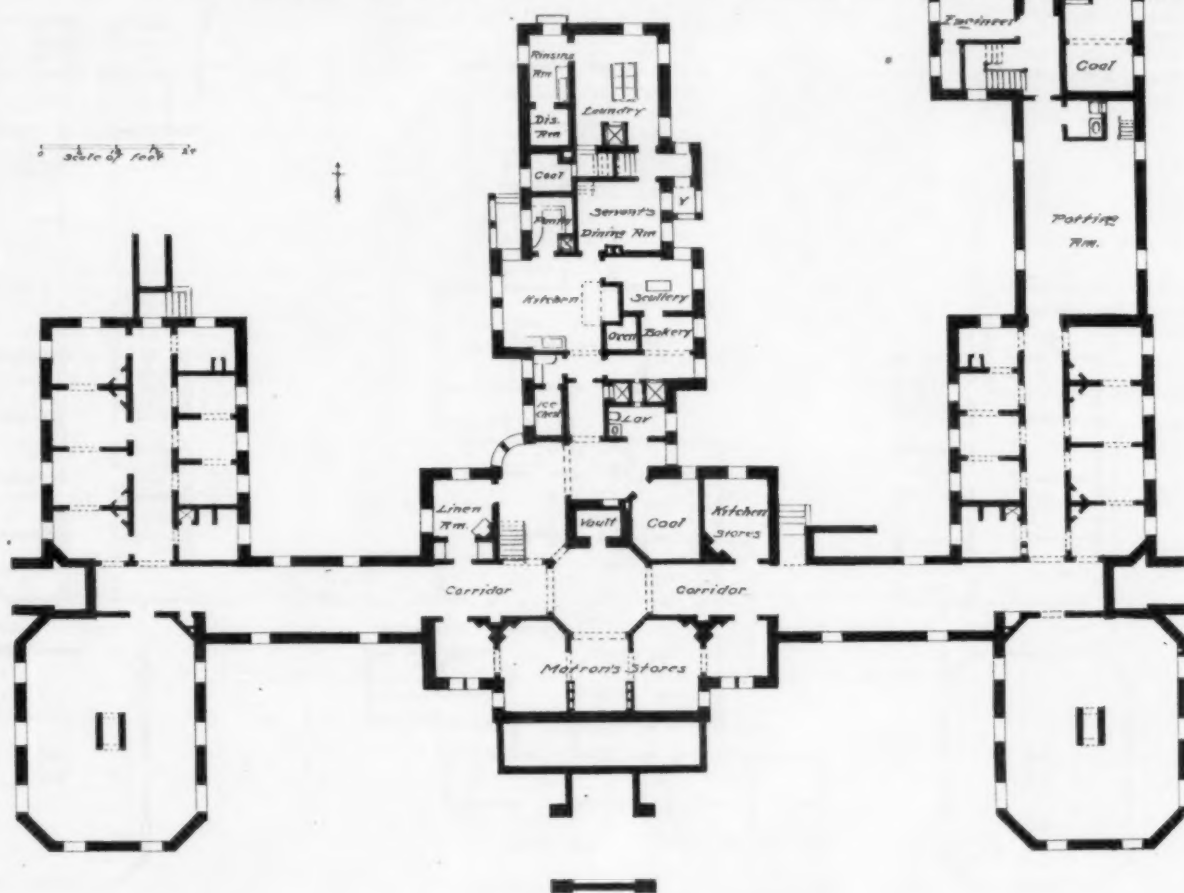
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THE MARY HITCHCOCK MEMORIAL HOSPITAL, HANOVER, N. H.

THIS hospital has been designed by its founder, Mr. Hiram Hitchcock of New York, who is also a resident of Hanover, and Trustee of Dartmouth College, as a memorial of his deceased wife. It is an adjunct to the medical school of the college, to which it is a munificent benefaction, as well as to the town and village in which it is placed. It will receive patients also from a considerable section of country in northern New England. The foundations were laid in 1889. The hospital consists of four distinct buildings: a central, or administration block, with an L of two stories and an attic, two one-story pavilions connected with the central building by open corridors, and a surgical building designed for the special purposes of the medical college. The capacity of the hospital is thirty-six beds. The material of the exterior of the buildings is Pompeian brick, mottled and yellow-grey in color, with a brownish tint, and the ornamentations are in terra-cotta of a light color. The roofs are of light-red Spanish tiles. The general architectural style is based upon early Italian Renaissance. The central building has a hipped roof with dormers; and the roofs of the pavilion wards and of the surgical building take a domed form as a natural expression of the fact that there are large rooms beneath them. These forms also grow out of the use, in the interior con-

or crack. The basement and foundation walls are of granite of the locality. This system of construction avoids the use of heavy iron beams, and brick or terra-cotta arches of great weight, and renders the whole structure substantially a fireproof monolith. It has been recently introduced in America by Mr. Guastavino, an educated Spanish architect, as an adaptation to modern use of the early Italian and Spanish dome-construction. It has been used in part in a number of important buildings, but this is the first one, and the first hospital, in America, which has been planned especially for the use of this method throughout. The architects, Messrs. Rand & Taylor of Boston, have done previous excellent work in the designing of hospitals and asylums. The new Worcester Hospital for the Insane, planned by them, is one of the best examples of the large asylums in America of the modified linear plan that has been so much in vogue in late years. A special pavilion at New Hampshire Asylum is unique and excellent in its design. In this planning



BASEMENT PLAN

struction throughout, of the "cohesive system," in which thin vitreous tiles are employed. The ceilings being formed by layers of these tiles as shallow arches, or as domes over the larger rooms, are built up above with like material to make level surfaces for the superimposed floors. All inner partition-walls are of brick, and there is a unity of fireproof construction throughout, largely of vitreous and non-absorptive material, including the outer walls and the supports of floors and roofs. The arched construction sustains all stairways, etc., so that no iron is used and there is no woodwork except the slight finishing around the windows and doors, and for base-boards. Where wood-flooring is used it is of hard-pine laid upon the fireproof material. The floors of the main halls, in the administration building and connecting corridors, are of marble mosaic; and marble and tiling are used in lavatories, water-closets, etc., for walls, partitions and floors. The general wood finish of the administration building is quartered-oak; yellow-pine is used in the rear extension. All the exterior walls are hollow, and the plastering is applied directly to the interior surface of the bricks and tiling, with a finish of King's Windsor cement, affording a fine, hard, non-absorptive surface, like cement, which does not check

of the Memorial Hospital now described, their instructions have been to spare no reasonable expense for whatever might be desirable to make the hospital a perfect one in all particulars. The cost of the three buildings constituting the hospital proper approximate \$90,000, and about \$20,000 more for the surgical annex. Deducting the extra cost of the special fireproof construction, about \$75,000 would remain, approximately, as a basis of comparison with the cost of a "slow burning" building of like capacity as commonly built. The administration building particularly has a special memorial character, and is liberally designed; and the materials have been generously chosen for the whole structure. The plan provides for the convenient enlargement of the hospital by additional buildings and extension of corridors.

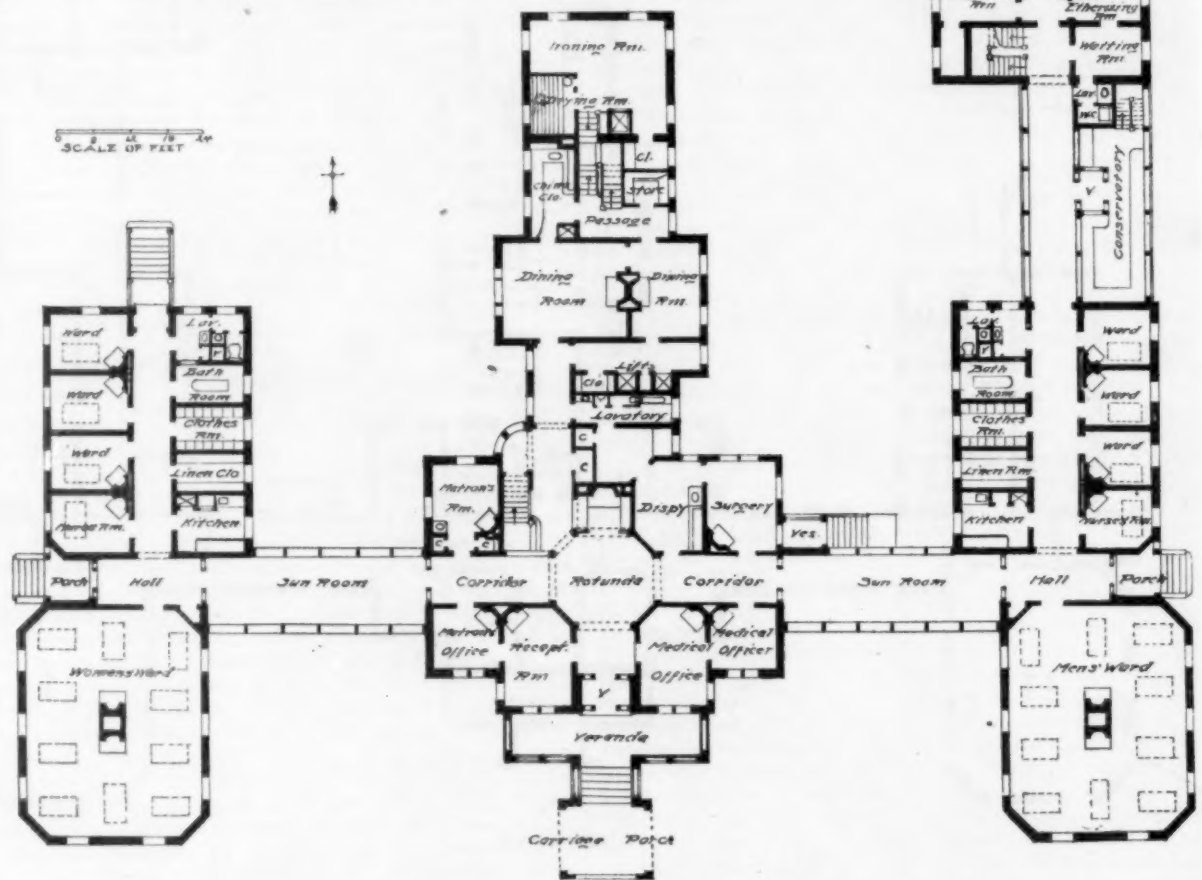
Site and Aspect.—The buildings are situated upon a large open area, including over one hundred acres of land, of which all that is desirable is devoted to the hospital. The aspect is nearly south, with streets at a generous distance on the front and west; and the ground slopes downward from near the building to the east and north. Beyond the street to the west it descends irregularly to the banks of the Connecticut River, one-sixth of a mile away; and there

are pleasing views of more distant hills and mountains in this and other directions.

Sub-soil Drainage and Water-supply.—The foundations of the structure rest upon the top of a bed of clay, under a thin surface-layer of sandy loam; next to the group of buildings, on the front and sides, the surface grade is raised to within 4 feet of the first or ground-floor, and slopes gently to the natural level of the surrounding grounds. In the rear, and in the spaces between the buildings, the surface is near the level of the basement floors. The natural drainage is excellent, and the main sewer leads through a settling-tank to a filtration-tank near the river at a distance of half a mile. The sewer is of earthenware drain-tiles, and at a distance from the buildings a flushing-tank is placed. The water-supply is at present furnished in small part by an aqueduct, for drinking purposes and the like; and by collecting the rain-water from the roofs, in cisterns, for common uses.

General Arrangement.—The general arrangement of the buildings, with detail of the ground-floor throughout, is shown by the plans. The administration building is in general dimensions, 42 feet by 58 feet. Passing by way of the *porte cochère* and a broad porch, and as one enters the vestibule and the main hall, the entrance offices are upon either side. A cross hall leads, on the right and left, to the wide open corridors forming the connections with the pavilion wings. These main halls are 8 feet wide. The central rotunda is 16 feet across each way, and forms a handsome feature of the building. In the rotunda are placed the

are the wash-room, a separate rinsing-room, and a disinfecting chamber. The basement of the administration building is unused, excepting a matron's linen-room, and room for other stores. The basement of the extension contains a cold room, a kitchen, and a bakery with an especially capacious vent-chimney, a servants' dining-room, etc. The second floor of the main building contains eight rooms for patients. Two of these rooms may contain two beds each for children. All but two of the rooms on the two main floors of this building have each a fire-place. In the second story of the extension behind the cross corridors are placed a nurses' chamber, and a service-room with a lift connected with the kitchen. Between these rooms a passage leads to the linen and bath rooms, and separate closets for patients and nurses; these rooms are connected with the large vent-flues in the kitchen chimney-stack. Behind these are servants' rooms on the second floor and in the attic; and in the latter, in front, are three large rooms well lighted and ventilated, with a space for dormitories for ten nurses.



FIRST FLOOR PLAN

special adornments: in an alcove on its farther side there is a fire-place, and in the Siena marble mantel a bronze memorial tablet. There are seats in the alcove and a low railing at one side. An arched passageway leads to the hall, running backward to the rear extension of the building. The dispensary is next to the surgery, and a work-room in the rear of the former serves as an adjunct for both of them. The matron's living-room and office are on this floor. The rear extension is cut off from the front building on the second floor by a cross corridor with a window at each end; this is at the upper landing of the main stairway; on the first or ground floor the private bath-room and closets are for the male officers, and have independent provision for effective ventilation. Farther back, beyond the trunk-lift, food-lift to second floor, and ventilation and pipe-shaft, the officers and nurses have their dining-rooms, and beyond these, again, are service-rooms and the back stairway which leads from basement to attic. Last of all, and outside of the northern main wall, an annex, consisting of one story and basement, contains the laundry with its special vent-chimney; in the basement

Connecting Corridors.—The wings are 35 feet distant from the main building, and their height is 13 feet from the floor of the ward to the eaves. The corridors, with a closed basement passageway, are 12 feet wide, and are so arranged that, when glazed panels are placed between the pairs of terra-cotta columns, sun-rooms are formed. A large room, with glass sides and roof, is formed alongside the corridor between the east pavilion and the surgical building. This will serve as a conservatory.

Pavilions.—The principal sick-wards are in the pavilions. The unique shape of the wards is designed to combine the merits of the round and the rectangular forms. They have the advantage of the latter in the arrangement of the furniture, etc., and the cutting off of the angles at the four corners with the arching of the ceiling gives the practical value of the round ward. The small size of the wards, each containing ten beds, aids in gaining this effect. Each pavilion ward is so placed that all of its walls are exposed to light and air, except a few feet at one corner. The southern aspect permits the entrance of the sunlight all day in each

ward alike. The principal ward is 28 feet by 36 feet in the clear; this allows an average of 100 square feet of floor-area for each of the ten beds. The height of the ceiling is 11 feet at the sides of the room, rising by a short curve to near its maximum height, which

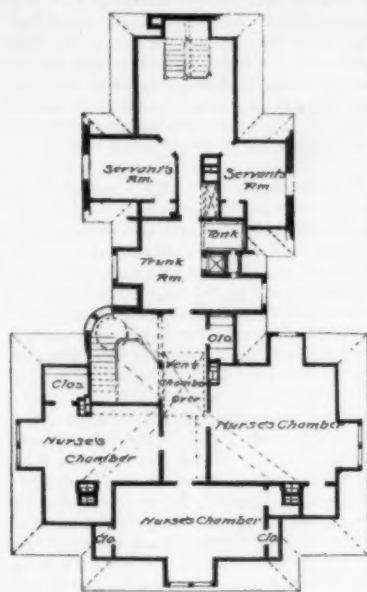
is 14 feet at the centre, where it is pierced by the central chimney. This allows about 1,300 cubic feet of air-space per bed. The floors of this building are of hard-pine, except in the lavatories, water-closets, ward-kitchen, linen-room and clothing-room, where tiles or marble mosaic are used, and the wood finish is simple and of varnished cypress. All corners are rounded, and grooves for the lodgment of dust are thus avoided. All the corners of the rooms are rounded also, including the joining of the base-boards with the floor, and the corners of the chimney in the large ward. The windows are 3 feet by 7 $\frac{3}{4}$ feet in the clear; giving an average of 19 $\frac{3}{4}$ square feet per bed of effective glazed surface. There are double runs of sash in the windows of all wards and rooms for patients and all living-rooms, as the climate is cold in winter, when a temperature of -25° Fahrenheit is not infrequent. Each pavilion extends backwards and has a low and moderately sloping roof, affording a series of four rooms, 9 feet by 13 feet, looking to the east and west, in each pavilion respectively. The room nearest the large ward is a sitting-room for the nurse, and the others are for single patients requiring some

closed by a fixed screen. Within this room there is thus formed a small inner room containing water-closet, slop-sink, and their special vent-shaft; this apartment is thus cut off from the common corridor by a practical lobby. The coldness of the winter climate demands some concession in these arrangements and elsewhere, in order to avoid too much exposure of rooms containing water-service. Care has been taken to provide effective and independent ventilation in such places. The basements of the pavilions are open unused spaces with concreted and cemented floors.

Surgical Building.—This is a domed structure mainly occupied by an audience-room, 34 feet by 34 feet, with an amphitheatre capable of seating 125 persons. The accessory rooms include the waiting and etherizing rooms, surgeons' rooms, and, under the seats, a workroom. There is an outside entrance giving access for students. This operating-theatre has a large skylight in the northern aspect of the dome, and at the east end of the floor-space is a broad bay-window affording the side-light sometimes needed. The basement here, with its floor lower than elsewhere, contains the main boiler-room and heating-apparatus of the hospital. There is also a boiler for high-pressure steam for heating water, etc., for baths, kitchens, laundry, etc., and to heat the disinfecting chamber. Outside of this building the surface grade descends enough to afford convenient entrance to the basement. Against the northern main wall of the building is placed a low building, basement-high, with entrance from the ground-level, for the mortuary and autopsy rooms.

Warming.—The rooms are freely provided with fireplaces as indicated in the plans. The heating is mainly effected by a low-pressure steam-apparatus, convertible for use with hot water. The indirect system is employed throughout, with encased coils of pipes well distributed through the basements, and arranged with switch-valves, etc., for mixing cold and warm air. An average of 3,000 to 5,000 cubic feet of fresh air per hour can be easily furnished for each patient. There are four inlet registers in each of the larger pavilion wards.

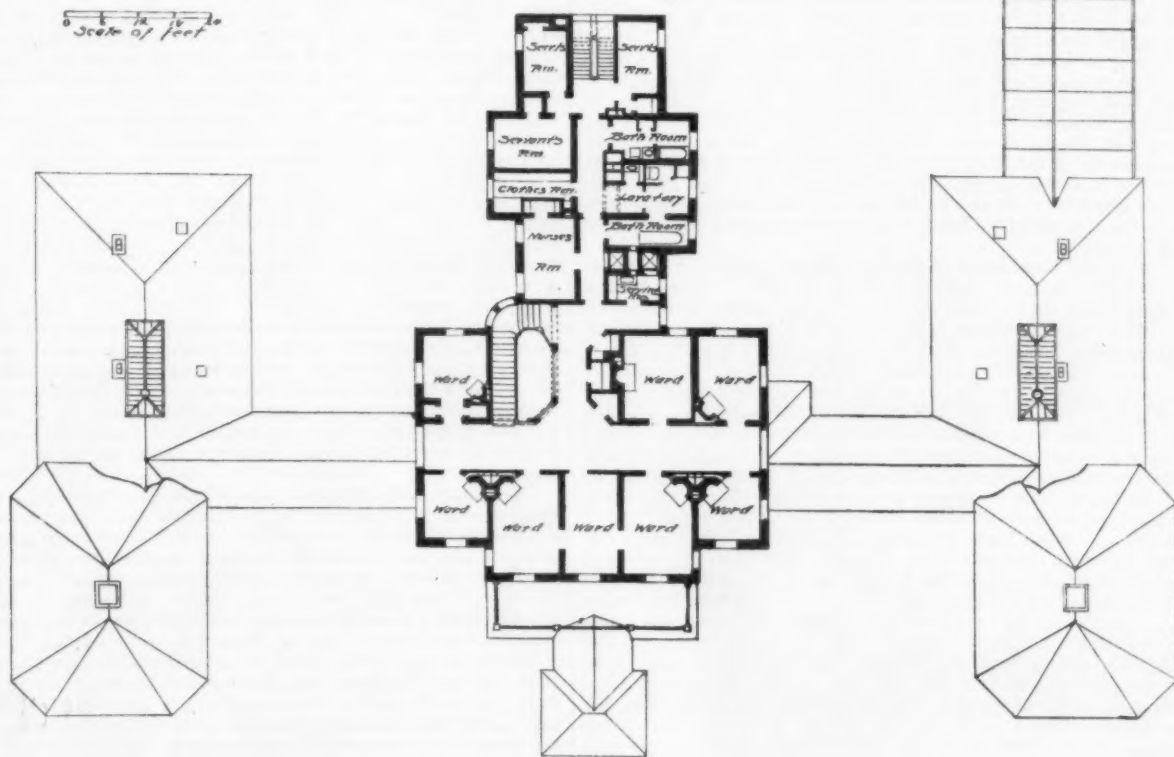
Ventilation.—The extraction system is employed in the simplest



THIRD FLOOR PLAN

as the climate is cold in winter, when a temperature of -25° Fahrenheit is not infrequent. Each pavilion extends backwards and has a low and moderately sloping roof, affording a series of four rooms, 9 feet by 13 feet, looking to the east and west, in each pavilion respectively. The room nearest the large ward is a sitting-room for the nurse, and the others are for single patients requiring some

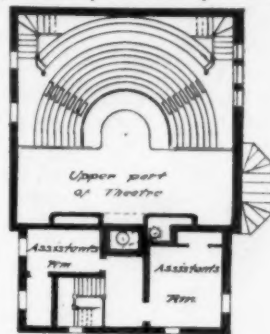
Scale of feet



SECOND FLOOR PLAN

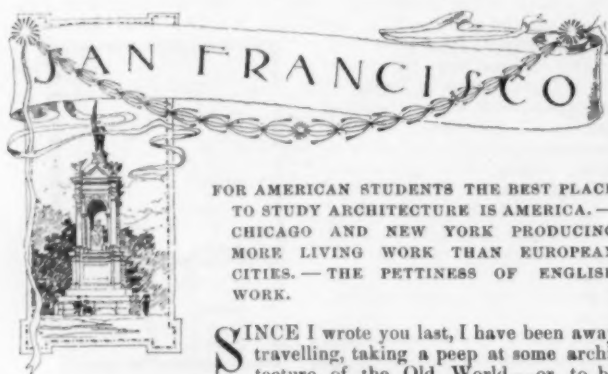
degree of seclusion, etc. Each room has a fireplace. There is a skylight in the corridor. On the opposite side of the building are the service-rooms: first, one for serving food, etc., having a lift from the basement through which is the way to the kitchen; next, the rooms for ward linen and patients' clothing; next, the bath-room, which virtually has two windows, the opening between it and the lavatory extending from floor to ceiling and being only partly

form, by providing chiefly for a natural upward outflow of the escaping foul air. In each of the large wards two ventilating openings with registers are placed in the chimney close to the ceiling, one over each fireplace. The clear outlet area per bed equals the inlet area, and is 72 square inches. The chimney is occupied mainly by a vent-shaft. The smoke-flue of each fireplace is a round earthen pipe worked into the corners of the chimney.



The clear area of the shaft is 32 inches by 36 inches, and steam-pipes are placed in it above the ventilating openings. The space under the domed roof of the building is ventilated by a small opening into the chimney to secure some change of air; and the roof-space is also supplied with a small amount of air through small flues rising in the walls of the building from the basement. Ventilating flues 9 inches in diameter are placed under the floor of the ward, each leading to the base of the chimney from a register under the foot of each bed. For each of the single rooms in the pavilions there is a vent-flue, with top and bottom registers alongside the chimney, leading to a warmed vent-chamber in the roof. There is a like arrangement for all rooms in the administration building, where a capacious vent-chamber under the roof has its outlet in the top of the tower over the main stairway. The special provisions for independent ventilation of all apartments, for water-closets, kitchens and service-rooms, have been noted.

The plumbing and fittings of water-closets, kitchen-sinks, and the like, are all left open to view, or carried in accessible pipe-shafts. All soil-pipes have foot ventilation and extend upwards to the outer air, and they also lead through traps to the sewer system. The water-closets are of the "hopper" form, holding a large amount of water in the bowl, and simple in construction, working upon the syphon principle. — *Edw. Cowles, M. D., in "Hospitals and Asylums of the World."*



FOR AMERICAN STUDENTS THE BEST PLACE TO STUDY ARCHITECTURE IS AMERICA. — CHICAGO AND NEW YORK PRODUCING MORE LIVING WORK THAN EUROPEAN CITIES. — THE PETTINESS OF ENGLISH WORK.

SINCE I wrote you last, I have been away travelling, taking a peep at some architecture of the Old World—or, to be more strictly accurate, at that world that lies between the Old World and the New, that intermediate civilization that was as nothing in the days of the Cæsars.

Among students of architecture in this country, there is a tradition that only in Paris can one learn to compose a building; or, at least, that they can there learn how best to do so. And for the benefit of those who are still uninformed in this manner, I should like to say that the belief ought to be out of date; although, as we all know, beliefs do not always die the moment that their reason for existence has been cut off. So also with this fetishism as regards the architecture that can be learned only in Paris. Twenty-five years ago this belief probably was quite reasonable; but to-day it no longer holds.

In my travel eastward, I stopped at Chicago, and gazed in wonder at its "cliff dwellings" which, say what you will in regard to lack of design, flatness, etc., are among the unique things of the world, and are, although unknown to many, a poem in themselves. Ruskin, in his "Seven Lamps," I think it is, has tried to tell us that size is one of the elements that go to make a great building. And in these houses of Chicago we have it without stint, almost to excess in its abundance. Yes, Chicago is one of the unique cities of the world. Edinburgh may be a romance of the feudal times; London, a vast mystery of smoke and people; Paris, a gay and thoughtless assemblage of masqueraders; but in Chicago, which is an ode to labor, we find something more *en rapport* with the main feeling of the times, in these huge factories of human industry, these hives of toil.

Every age must have its controlling influence; that, above all others, on which the heart is set. In mediæval times, in those grand old days of religion, when they builded the Gothic cathedrals, other buildings were scarcely heard of. It was the Cathedral, the Cathedral. All the art and sculpture and prayer and praise, the spare coppers of the poor and the gold pieces of the rich, went to the Cathedral, because thereon the hearts of the people were set, and, as has been said of old, where the heart is, there is the treasure also. So in those times now remote. But to-day there is no force in our civilization so strong as the love of trading. And so in this city of Chicago, it has builded itself from out the hearts of the people into a great ode to labor. A dream of greatness, this city of cliff-dwellers. Now many will be doubtless ready to take exception to this way of putting it. Still I hesitate not in saying that the City of Chicago is a poetic dream and one long to be remembered. If, in the years that are to come, the habitations of men shall again descend to lower levels, these majestic walls of this city of labor shall be spoken of as a tale of wonder; a city whose walls reached almost to the heavens, and whose roofs and turrets were so far from earth that only the purple shadow of their outlines could be traced against the sky. Of course, we all understand that as yet there is scarcely a building in Chicago that is in itself exquisite or monumental; I

speak only of the general impression that this city of immense buildings produces on one.

From Chicago I travelled to New York, and from there to Liverpool, London, several English and Scotch towns, and then to Paris and Rouen.

Now what I want to tell students of architecture that have had Paris drummed into their ears until they have begun to think that all they have to do is to go to Paris for a few years and they will be able to do something, or perhaps more correctly, a great thing in architecture, is this: that as regards composition, Paris is not a good school to learn in. That is to say, there are better cities, and one of them is our own City of New York, which I believe is the best.

If one can judge by anything, one can judge by results. Now although they have built a great deal in Paris in the last half century, there is nothing, or almost nothing that I saw, of modern work that is really good; nothing to inspire an architectural student of any ambition or high perceptions. Almost without exception the modern buildings in Paris are uninteresting; nothing heroic, nothing poetic. About all that can be said of them is that they are correct, academical. Just as if in criticising a poet one would say, well, I don't find any poetic thoughts in his work, no idealism; but, then, he spells correctly. Of course, in America we don't even spell correctly in a great deal we do.

Now, what the French can do is to design fabrics, brasses, decorate their rooms, fresco their ceilings, and a great many pretty and delightful things which the student of art or architecture will love to contemplate, and which he will find very useful to him in designing and decorating interiors. But if he wants to learn how to design the exterior of a building better than they are doing in the eastern cities of his own country, he must not go to Paris. That I may not be misunderstood, let me say that of all the modern work that I saw in Paris, the only thing that really pleased me was the foyer of the Opera House, the Arc de Triomphe, the Hôtel de Ville and a few other monumental structures. But along her streets and boulevards, there was nothing. It is only in the old work that one can learn anything. And this is the real value of going to Paris, or more broadly Europe, to study. The people there have just as much need to study the old work as we have. And as far as putting it into practice in modern times is concerned—well, the short and long of it is that we of this country are doing better than they. Many of us may not realize this, for it may be an accomplishment of recent growth. But if, after having travelled in France and England, one steps over to New York, it takes but a few minutes to decide, and to decide in favor of the latter.

In England I spent the evening with a friend whom I had known in this country and one of strong predilection in favor of his mother-country and all that belongs to it, and, being an architect, predilection in favor of English architecture. Well, as the conversation continued, and the evening wore on, it naturally pointed to a climax, and I could observe my friend getting nervous for a decision, a judgment, for all conversations eventually stand for judgment. What do you think of our architecture? "Well, sir, it is too small." That was all I had to say. My friend said the rest, which exactly expressed my thoughts and saved me the trouble. Yes, in England and in France too, there is nothing heroic, no breadth nor mass. In short, no strength. It is all finicky, cut, chopped and otherwise minced up, so that in the end there is nothing left of what, if they had let it alone, would have, at all events, been a very passable wall. It is domestic architecture applied to large buildings. But while the enclosed space has been increased, the mind of the architect does not seem to have expanded in like proportion. In London there is quite a marked improvement in the design of buildings now being erected over that of even ten years ago. And, indeed, although this city is dirty and dingy compared to the French capital, there is far more individuality in its modern buildings, although it may not be able to boast of as many fine monuments as the city by the Seine.

The most beautiful thing I saw in Paris was, I think, the Sainte Chapelle. It is a song of joy, a triumph of delight and unconstrained gladness. Every color a voice, and every voice a song, as of a thousand angels and ten thousand seraphs together rejoicing, singing in rich wild melody a song to Creation. To be inside this building reminds one of that childish delight with which for the first time one looked into a kaleidoscope with its beautiful and multitudinous combinations of colors. Then there is the Hôtel de Ville, the grim old interior of Notre Dame, and the far-away, beautiful dome of the Invalides; sacred when far away, but profaned daily by a scuffling crowd who come with a spirit of familiarity to gaze on the tomb of a departed hero. I do not know who suggested the idea, foolish though it was, of thus monopolizing a sacred building, a house of prayer and praise, to give burial to a warrior. The idea is preposterous. No, there is less than nothing in the idea. For a warrior, the battlefield; for a law-giver, the house of assembly; and for a ruler of men, a place among men; and all things in due proportion and in proper place, but not unto man shall be given those things that belong unto God. "To Cæsar, the things that are Cæsar's," and these only. Wherefore, then, this church of the Invalides to Napoleon?

Well, I must not digress farther from my subject, which is essentially to institute a comparison between the advantages of studying architecture in Paris over those of studying in New York or Boston.

It seems to me that if one could follow out an ideal course of study, the best way to reach perfection would be to study in this country in one of the two cities mentioned until such time as one had acquired a general knowledge of architecture and the character of the buildings required for our civilization, and a knowledge of what to look for in travel, and then after, say, the age of twenty-five, journey to the Old World, prepared by previous study to observe and adapt the best of what the Old World has to teach us. And that is nearly everything in architecture. And by that I mean her past and not her present practice of it.

In Rouen I enjoyed immensely its beautiful Gothic churches and cathedral, as well as many minor bits of architecture. Rouen's Gothic cathedral and churches impress me in something the same manner as Chicago's business blocks. Why? Because there is nothing frivolous about them. They are earnest, consistent, strong. The one strong with the sense of Religion, and the other great, and strong, and earnest with a sense of Labor. Each the expression, the strongest expression, of two distinct ages, two distinct unfoldments of the human heart; the one dominated by a feeling of religion, the other crowned and controlled by an insatiable love of labor and the many useful and beautiful things accruing therefrom.

To the student of architecture I should say, go to New York. They are doing finer work there than in any city in the world. And by the world, I mean that world in which the tradition of our architecture holds; of older countries we will not speak. But in our western world of Europe and America, New York is doing the best work. They are coming very close to the best examples of the Old World, and as a place to practice and study architecture, it cannot, I think, be equalled. And to those many students to whom this may be a question, I should say, learn all you can in our own City of New York first, and then, if you have time and resources, travel to the Old World, and there learn how in many and diverse manners to clothe the requirements of your own new land in those beautiful garments with which in times past the master-builders in many ages and in many lands tried even as you do, and not without success, to give to the necessary things of life not only use, but also beauty.

Much more I might say about comparative architecture, and remind you likewise that it is largely in his own country that a prophet is without honor. But if I have succeeded in telling you that you can learn architecture as well at home as in Paris, and that this admiration of the French school of architecture is a mistake; that the compositions taught and admired by the professors of the School of Fine Arts in Paris are not as good as your own, and that you ought only to go there to study the old work, or to learn painting, decorations and the other arts of design, and not architecture, I shall have arrived at the impression that it was my intention to make. Without question, there is a breadth and strength developing in our own architecture which it would be a pity to see crushed out or constrained by a slavish adherence to academical lines, which is one of the quite probable results of a young student's learning his fundamental principles in the Old World.



NEW YORK CHAPTER, A. I. A.

A SPECIAL meeting of the New York Chapter of the American Institute of Architects was held on Friday, the 2d inst., at 12 o'clock, to take action in reference to the death of Mr. R. M. Hunt, on the call of the Executive Committee, the following members being present: Mr. Upjohn in the chair; Mr. Joseph Wolf, Secretary, *pro tem.*; Mr. Edward H. Kendall, J. W. Moulton, J. Stewart Barney, Bruce Price, S. E. Gage, Napoleon LeBrun, H. J. Hardenburgh, R. W. Gibson and Walter Cook.

Mr. Schickel sent his regrets at not being present.

It was moved and seconded by Mr. Kendall, that the following telegram be sent to Mrs. Hunt at Newport: "The New York Chapter of the American Institute of Architects, now assembled, sends its profound sympathy to Mrs. Hunt in her great bereavement. R. M. Upjohn, President."

It was moved and seconded that a committee be appointed by the Chair to draught resolutions and have them engrossed and transmitted to Mrs. Hunt. The following committee was appointed by the Chair: Mr. Post, Mr. LeBrun, Mr. Kendall, Mr. Bruce Price and Mr. Gibson.

Mr. Bruce Price offered the resolution, which was adopted, that it was the sense of this meeting that the members be requested to attend the funeral in a body.

JOSEPH WOLF, Secretary, *pro tem.*

CHARLES OF BRUNSWICK'S CLOCK.—St. Petersburg has now the wonderful clock bequeathed by Duke Charles of Brunswick to the Swiss republic. The clock has ninety-five faces, and shows the time of day at thirty different places, the movement of the earth round the sun, the phases of the moon, the signs of the zodiac, the passage over the meridian of fifty stars of the northern hemisphere and the date according to the Gregorian, Greek, Mussulman and Hebrew calendars. It took two years to put the pieces together when it was transported to Russia. —Churchman.



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

FIREPLACE IN ENTRANCE-HALL: CATHOLIC CLUB-HOUSE, WEST FIFTY-NINTH STREET, NEW YORK, N. Y. MESSRS. WM. SCHICKEL & CO., ARCHITECTS, NEW YORK, N. Y.

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

By accident this plate was overlooked at the time this club-house was illustrated in June last.

MAHOGANY FURNITURE FOR "HOMECROFT," CHESTNUT HILL, PHILADELPHIA, PA. MR. GEORGE T. PEARSON, ARCHITECT, PHILADELPHIA, PA.

[Issued with the International and Imperial Editions only.]

FURNITURE DESIGNED BY MR. ROBERT BROWN, JR., ARCHITECT, BOSTON, MASS.

[Issued with the International and Imperial Editions only.]

CHURCH CHAIRS DESIGNED BY MR. ROBERT BROWN, JR., ARCHITECT, BOSTON, MASS.

[Issued with the International and Imperial Editions only.]

TOWER OF THE EGLISE DE LA TRINITE, VENDÔME, FRANCE. SKETCHED BY MR. W. T. PARTRIDGE, LATE ROTCH TRAVELLING-SCHOLAR.

[Issued with the International and Imperial Editions only.]

This tower, work of the twelfth century, is justly considered the most beautiful example of Transition. It is isolated from the church and is about 250 feet high (Joanne gives 80 metres). The restorations made 1871-1882, are by Godineau.

THE MARY HITCHCOCK HOSPITAL, HANOVER, N. H. MESSRS. RAND & TAYLOR, ARCHITECTS, BOSTON, MASS.

For description see article elsewhere in this issue.

OPERATING-THEATRE AND CORRIDOR OF THE SAME.

ST. MARGARET'S HOUSE, ST. LUKE'S PARISH, GERMANTOWN, PA. MR. GEORGE T. PEARSON, ARCHITECT, PHILADELPHIA, PA.

A BIT OF OLD BARMOUTH, WALES.

HOUSE AT LAKEWOOD, N. J. MR. E. G. W. DIETRICH, ARCHITECT, NEW YORK, N. Y.

STAIRCASE-HALL OF THE SAME.

[Additional Illustrations in the International Edition.]

THE LIBRARY: KELLOGG TERRACE, GREAT BARRINGTON, MASS. [Copper-plate Etching.]

WIMPOLE HOUSE, WIMPOLE STREET, LONDON, ENG. MR. CHARLES HENRY WORLEY, ARCHITECT.

A CORNER DOORWAY OF THE SAME.

WEST FRONT: ABBEY OF THE HOLY TRINITY, CAEN, FRANCE.



[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.]

THE GRAVE OF CHARLES BULFINCH.

BOSTON, MASS., August 5, 1895.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—The interest now taken in Bulfinch makes it worth while, perhaps, to point out that the inscription on the tablet attached to the gate of King's Chapel burying-ground, Boston, stating

that he was buried there, while literally correct, is misleading, as its readers naturally suppose that the celebrated architect's remains are still within.

The fact is that they were afterwards removed by the family to a lot in Mount Auburn Cemetery, where they now rest within a few yards of the grave of Agassiz, and beneath the urn which Bulfinch himself had placed, in memory of Franklin, on the old Franklin Street grass plot, in Boston.

DELVER.



BOSTON, MASS.—*Summer Loan Exhibition; Gobelin Tapestries; Japanese Paintings; Line Engravings, Mezzotints, and Etchings by Rembrandt; at the Museum of Fine Arts.*

NEW YORK, N. Y.—*Twenty-eighth Semi-annual Exhibition: at the Metropolitan Museum of Art.*

Summer Charities Loan Exhibition: at the American Art Association Galleries.



A WATCHMAKER'S EPITAPH.—The following curious inscription, to the memory of George Routleigh, a watchmaker by trade, occurs in the churchyard of Lydford, Devon:

Here lies in horizontal position
The outside case
of
George Routleigh,
whose abiding in that line
was an honour
To His Profession
Integrity was his mainspring and prudence the
regulator of all the actions of his life.
Humane, generous, and liberal,
His hand never stopped till he had relieved
distress.
Sincerely regular were his motions
He never went wrong
Except when set a-going
By People
who did not know his key
Even then he was easily set right again
He had the art of disposing of his time
so well
That his hours glided in one continual round of
pleasure and delight
Till an unlucky minute put an end to his ex-
istence.
He departed this life
Nov. 1802,
Wound up
In hope of being taken in hand
By his Maker
And of being thorough cleaned repaired and
set a-going
In the world to come.

— Notes and Queries.

PLACES OF ROYAL SEPULTURE.—Under the circumstances, it is only natural that royal personages who are, after all, constructed of the same clay as we are ourselves, should prefer to feel their bodies safe from being desecrated, dispersed and even eaten; the only way of assuring themselves of that safety being by having their bodies consigned to the bosom of Mother Earth. Must it not, for instance, have been painful in the extreme for that admirable woman, Queen Regent Christina, of Spain, to know that for the first six years of her widowhood her husband's body lay, not in hallowed earth, nor even in his present tomb under the great dome of the Escorial, but remained uncoffined on a stone slab in a cave hollowed out of the rock on which this gloomy palace is built, undergoing a gradual if slow process of mummification? Nor was it until the body had become completely desiccated that it was placed in the sarcophagus that constitutes the last resting place of poor Don Alphonso XII. The Escorial, if sombre, is certainly the most imposing and regal of all the mausoleums of the Old-World royalties. Less stately, but more beautiful as regards site and structure, is the superb Church of the Superga, near Turin, in the vaults of which repose the princes and princesses of the ancient house of Savoy. It is, indeed, a striking monument erected on the very brow of a lofty hill which dominates not only the city of Turin, but the entire valley of the Piedmont. Of Russia's dead emperors, all those who lived and reigned prior to Peter the Great lie in the Cathedral of the Archangel Michael, within the precincts of the Kremlin at Moscow. Since the foundation of St. Petersburg, in the seventeenth century, the Czars and their consorts, as well as the princes and the princesses of their dynasty, have been laid at rest in the church inside the fortress of SS. Peter and Paul on the right bank of the Neva, facing the Winter Palace. The sarcophagi are all empty, merely destined to mark the site of the imperial tombs beneath the marble floor; while far down below the dead bodies of the Russian autocrats are the dungeons in which are imprisoned the Nihilists who are consigned to a fate that can be described only as a living death. San Vincente de Force, the black-and-white marble church just outside the walls of Lisbon, may be regarded as the superga or mausoleum of the reigning House of Portugal. Most of Denmark's monarchs are buried in the Cathedral of Roskilde, the ancient capital of the kingdom, some twenty miles from Copenhagen. Most of these illustrious dead lie in sarcophagi, but the remains of

King Harold "Blue-Tooth," who reigned in A. D. 985; of Queen Margaret, who died in 1730, as well as of several other kings and queens, are built into the centre of the columns that support the roof of the basilica. The members of the House of Orange sleep their last sleep in the vaults of the so-called New Church at Delft, and alone, perhaps, of all royal mausoleums that edifice contains the remains of a dog! It was a pet of William I and had on two separate occasions saved his royal master's life by warning him of the approach of the Spanish assassins, who eventually murdered him in 1584. Another peculiarity in connection with this royal mausoleum is the fact that one of the princes, Alexander by name, half-brother of the present young Queen Wilhelmine, lies there embalmed and buried, wearing an orange silk quilted petticoat! He was crippled from his birth and completely crazy during the closing years of his life, his dementia taking the form, among others, of an invincible objection to that particular branch of masculine attire which has now been usurped by the new woman. In petticoats he lived and in petticoats, according to his express entreaty and command, he was laid in his tomb, where he awaits the Day of Judgment. Unlike the dead of the imperial house of Hapsburg, who all lie in the vaults of the very ancient Capucine Church at Vienna, those of the Hohenzollern are sadly scattered, some of them being entombed in the unlovely and mean-looking Dom or Cathedral of Berlin; others at Potsdam; while the last two emperors repose in a mausoleum at Charlottenburg. The same may be said of England's royal dead, some of whom repose in Westminster Abbey, others in the vaults beneath St. George's Chapel, at Windsor, while some, again, are to be found in the various cathedrals of the provincial towns. Queen Victoria has commanded that when her long and busy life has been brought to a close, her body shall be laid beside that of her husband in the \$1,000,000 mausoleum which she has erected over his tomb at Frogmore, Windsor; but if the Prince of Wales has his way, and if the views to which he has recently given expression and which are known to be those of his consort, are permitted to prevail, he will, when his hour comes, be laid to rest, not in a marble or granite sarcophagus, but in an ordinary grave beside the body of his little boy in the rurally picturesque and shady churchyard of Sandringham. — *Ex-Attaché in N. Y. Tribune.*

GEORGE III. AND ELECTRIC CONDUCTORS.—About the year 1778 a dispute arose among the members of the Royal Society relative to the form which should be given to electrical conductors so as to render them most efficacious in protecting buildings from the destructive effects of lightning. Franklin had previously recommended the use of points, and the propriety of this recommendation had been acknowledged and sanctioned by the Society at large. But after the breaking out of the American Revolution, Franklin was no longer regarded by many of the members in any other light than an enemy of England, and as such it appears to have been repugnant to their feelings to act otherwise than in disparagement of his scientific discoveries. Among this number was their patron George III, who, on its being proposed to substitute knobs instead of points, requested that Sir John Pringle would likewise advocate their introduction. The latter hinted that the laws of nature were unalterable at royal pleasure, whereupon it was intimated to him that a president of the Royal Society entertaining such an opinion ought to resign, and he resigned accordingly. This story, though it does not appear to be in print, having been suppressed in deference to royalty, was current at the time among the members of the Society, and there is no doubt of its truth. Dr. Hutton alludes to it in the following extract from his "Mathematical Dictionary":—"Considering the great attention that was paid by Sir John Pringle to the various and important duties of his office, and the great pains he took in the preparation of his discourses, it was natural to expect that the burthen of his honourable station should grow heavy upon him in a course of time. This burthen, though not increased by any great addition to his life, for he was only six years president, was somewhat augmented by a fall from which he received some hurt. From these circumstances some persons have affected to account for his resigning the chair. But Sir John Pringle was naturally of a strong and robust frame and constitution, and had a fair prospect of being well able to discharge the duties of his situation for many years to come, had not his spirits been broken by the most cruel harassings and baitings in his office. His resolution to quit the chair originated from the disputes introduced into the Society concerning the question whether pointed or blunt electrical conductors were the most efficacious, and from the cruel circumstances attending those disputes. These drove him from the chair. Such of those circumstances as were open and manifest to every one were even of themselves perhaps quite sufficient to drive him to that resolution. But there were yet others of more private nature which operated still more powerfully and directly to produce that event, which may probably be hereafter laid before the public." — *The Architect.*

A BIG FLY-WHEEL OF WIRE.—Among the most recent and novel applications of wire, perhaps none has greater interest to the mechanical world than that presented by the wire fly-wheel lately erected at the Mannesmann Tube Company's Works, Germany. Heavy fly-wheels, driven at high velocities, obviously present dangers of breaking asunder from the great centrifugal force developed. The wheel at the factory mentioned consists of a cast-iron hub or boss, to which two steel-plate discs or cheeks, about twenty feet in diameter, are bolted. The peripheral space between the discs is filled-in with some seventy tons of No. 5 steel wire, completely wound round the hub, and the tensile resistance thus obtained is far superior to any casting. This huge fly-wheel is driven at a good speed of 240 revolutions per minute, or a peripheral velocity of about 2.8 miles per minute (250 feet per second, approximately), which is nearly three times the average speed of any express train in the world. The length of wire upon such a constructed fly-wheel would be about 250 miles. The use of paper is also regarded with favor as a face for large fly-wheels, the tensile strength of paper being enormous, and it is quite possible that some of the new big fly-wheels will be built up with a paper rim. — *Hardware.*

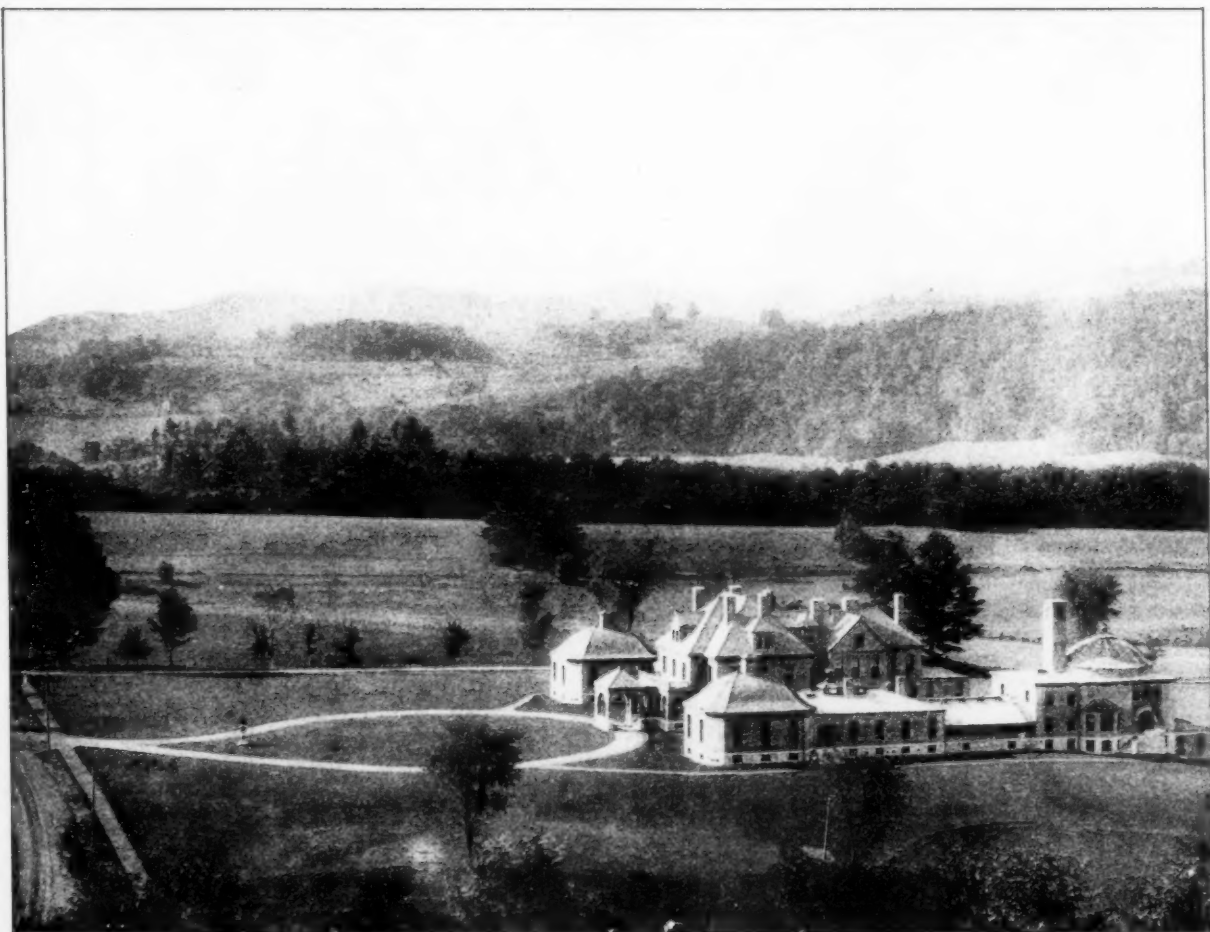
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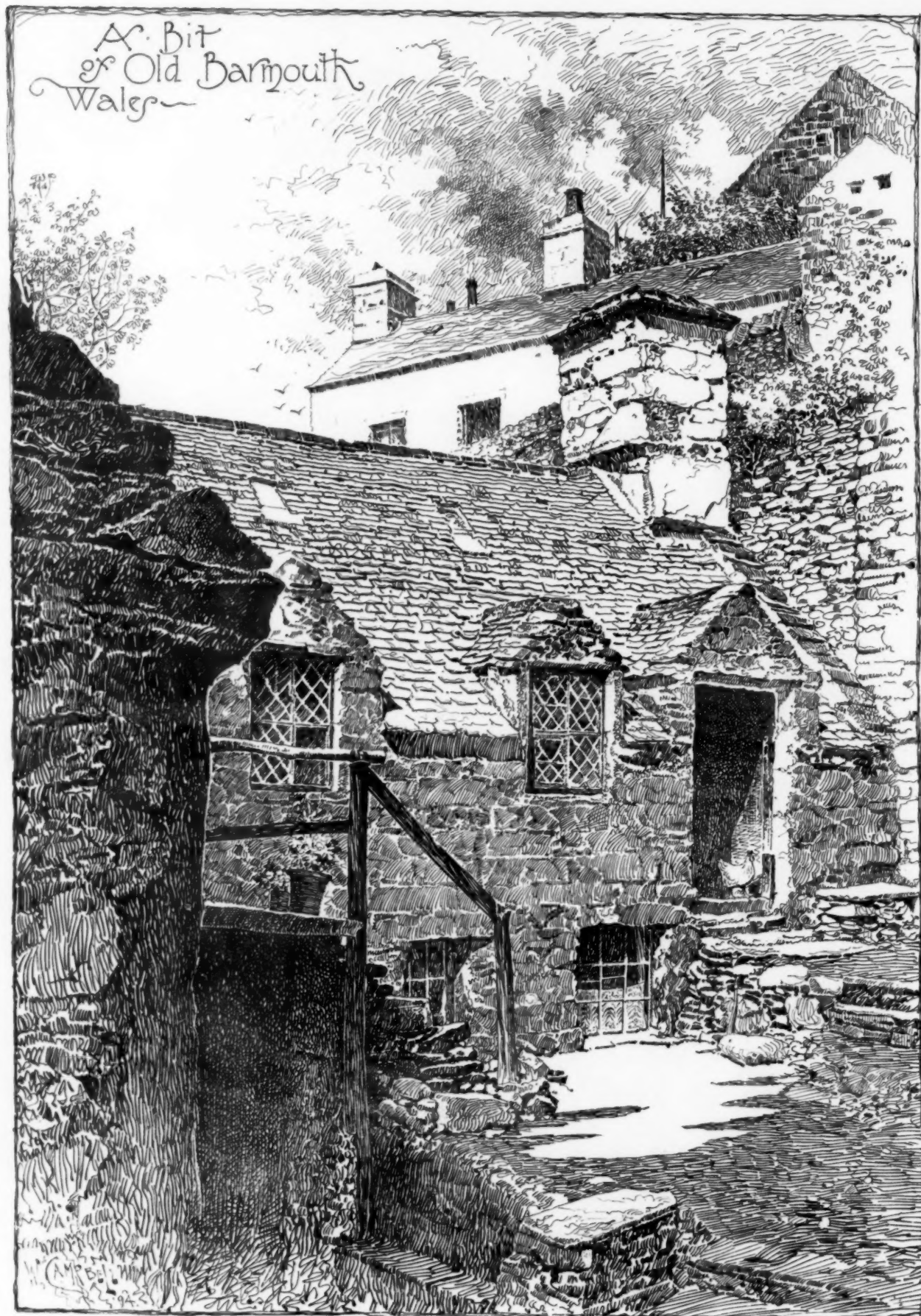
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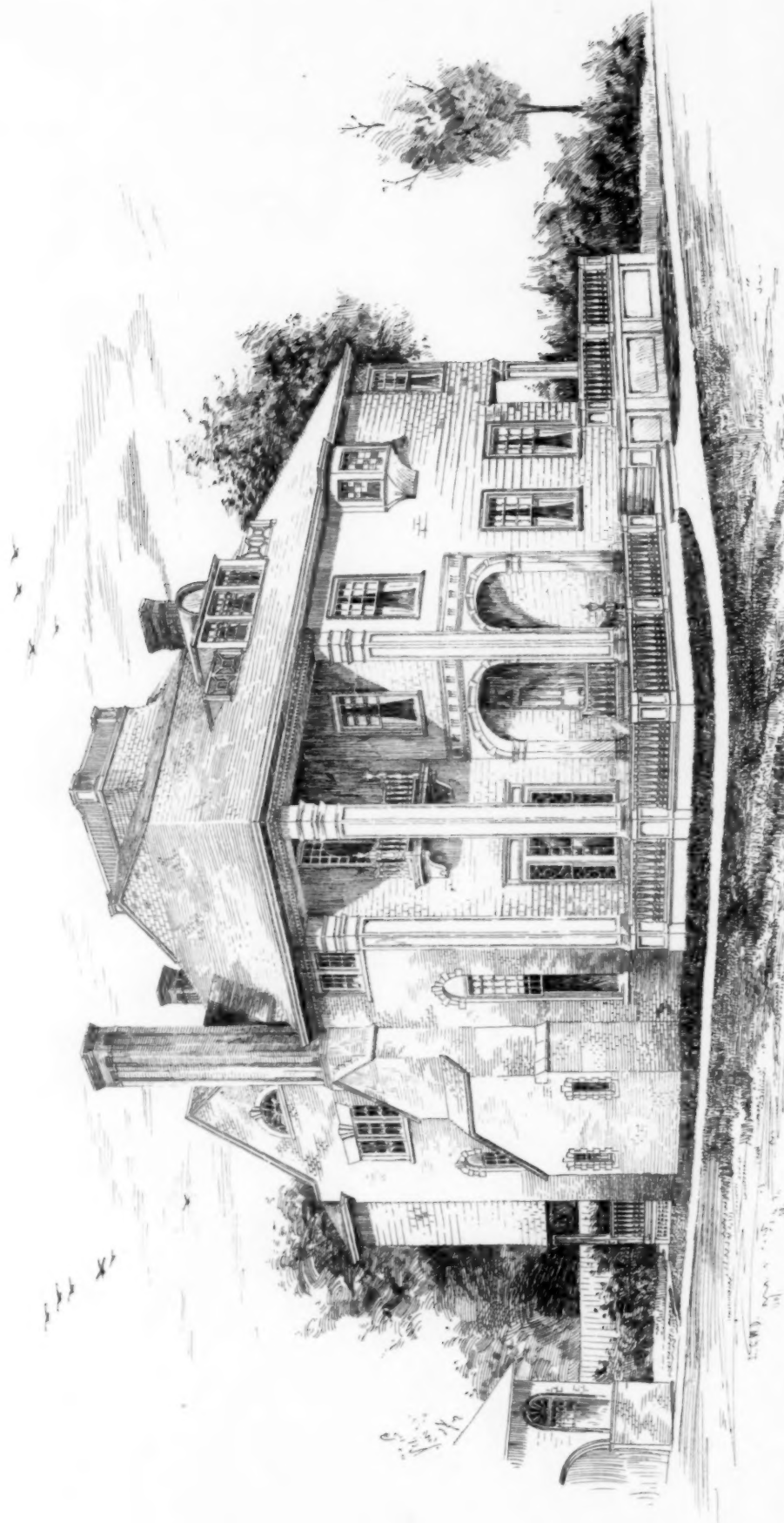
St. Margaret's House, St. Luke's Church,
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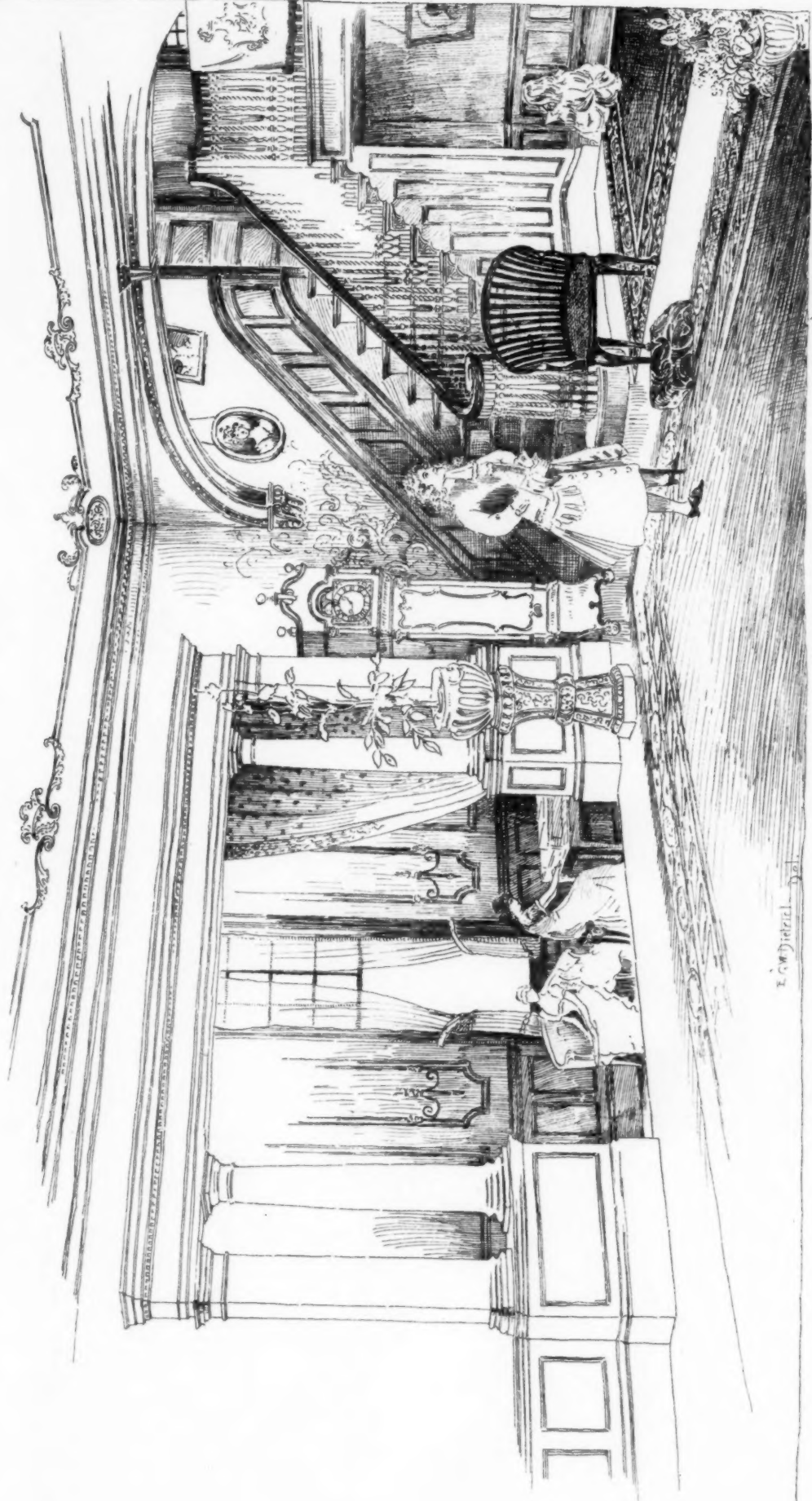
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