

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XXXVI.

Copyright, 1892, by TICKNOR & COMPANY, Boston, Mass.

No. 857.

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

MAY 28, 1892.



SUMMARY:—

The Philadelphia Bourse Competition.—Unanimous Protest against some of the Conditions.—The Granite-cutters Strike.—Builders' Hardware in Classic Times.—Prussian Theatre Regulations.—The Rickety Wooden Staircase.	125
FIREPLACES.—II.	127
BOSTON'S TRIBUTE TO COLUMBUS.	129
THE USE OF TIMBER IN ENGINEERING STRUCTURES.	130
THE PARIS SALONS.	131
LETTER FROM CHICAGO.	132
TALL CHIMNEYS.	135
SOCIETIES.	135

ILLUSTRATIONS:—

The Late James Ripley Osgood.—Monument to Christopher Columbus to be erected at Old Isabella, Santo Domingo, W. I.—Design for Additions to St. Mary's Church, Buffalo, N. Y.—House at Clifton, O.—Proposed Hotel, Lake George, N. Y.—House at Norfolk, Va.—Design for the Missouri State Building for the World's Fair, Chicago.	135
Additional: Tower of Agnes Sorel, Loches, France.—Competitive Design for the Glasgow Art-Gallery.—The Wooden Architecture of Brunswick, Germany: Two Plates.—Mural Tombs in the Church of Santa Maria dei Frari, Venice, Italy.—Wrought-iron Gates at Beziers and Vesinet.—Selected Design for the Art Galleries and Museum, Kelvin-grove Park, Glasgow, Scotland.—Llandaff Cathedral.—The Rialto, Venice, Italy.—The Royal Marina, Naples, Italy.—George Heriot's Hospital, Edinburgh, Scotland.	135
COMMUNICATIONS:—	
Romanesque Churches without Nave Columns.—The University of Pennsylvania Travelling-Scholarship.—Cleaning Old Brickwork.—Efflorescence on Brickwork.	139
NOTES AND CLIPPINGS.	140
TRADE SURVEYS.	140

IN speaking, the other day, of the terms of competition for the Philadelphia Bourse, we based our judgment on the latter portion of the programme, containing the conditions in regard to the drawings, which was the only portion sent us. These conditions were so admirable, that we took for granted that the others, as to the terms on which the successful architect was to be employed, were such as are generally offered. Since then, we have received information of our mistake from several quarters, and have just received a copy of the full programme, from which it appears that the architect is only to be paid two and one-half per cent on the cost of the building, for full services, including the direction of all work of sculpture and decoration. Instead, also, of the usual clerk-of-works, it is proposed that the Committee shall appoint a constructing engineer, who is expected to "work in harmony with the architect and under his direction," but who is to "revise and approve all structural details." While the intention of the Committee is obviously, by this provision, to secure the advantage of the skill of an engineer, as well as an architect, in the construction of its building, experience shows that the result would probably be disappointing. Engineers themselves will be ready to acknowledge that their skill does not show itself to shining advantage in the revision of the plans of a competent architect. Any architect worthy of the name is just as well able as any engineer to proportion his piers, columns and girders to their load, and, in laying out his structural system, he will, from long habit, keep in mind the courses of the gas, steam and water pipes, the necessary nailings for the floor-boards, and a hundred other things, which would never occur to an engineer, but which, in an engineer's building, often have to be provided for by subsequent cutting and alteration. For this reason, an architect's plan, as revised by an engineer, is rarely any better, structurally, than the original draft; but, as the engineer feels himself bound to show his hand in some way, he does so, in the architect's opinion, by knocking the carefully-studied proportions to the winds, transposing the solids and voids without regard to appearance or convenience, and contriving obstructions to all the subsequent work of fitting and finishing. As every architect is responsible for the proper design of the structure of his buildings, there is no advantage to an owner in dividing, or rather dissipating, this responsibility by giving the engineer and the architect coördinate authority over this part of the design; and it may be doubted

whether any way of securing perfect construction will ever be found, better than the old and well-proved one of putting the supervision of the details of execution in the hands of a clerk-of-works, skilled in just this sort of inspection, which is entirely outside the experience of most engineers, and to make him, so far as possible, the faithful instrument and interpreter of the architect's wishes. As every architect who has had anything to do with large buildings knows, a clerk-of-works who undertakes to be independent of the architect, and to air his own authority, is a most pernicious nuisance, both to the architect and the owners, and a "skilled engineer," holding his appointment from the Committee, without the approval of the architect, would be likely to be all that, with the additional objection of being probably ignorant of some of the things most necessary for him to know.

AS to the proposition to pay the architect only two and one-half per cent on the cost of the building, it is amazing that any committee should be found at this late day so ill-advised as to think of such a thing. Many years of bitter experience have taught most owners that the only architects who can afford to design and superintend important buildings for two and a half per cent commission are the ignorant or irresponsible members of the profession, who have no idea how to make complete and intelligent designs, specifications and contracts, and are well enough paid by half the usual fee for their clumsy and ungrammatical designs and details, their scanty apologies for working-drawings and specifications, and their contracts, through which a coach and four can be driven in all directions; and those others, who eke out the two and a half per cent from the owners by commissions of ten, fifteen and twenty per cent from the contractors. If the Bourse Committee thinks that the opportunities which certain architects enjoy for wasting their employers' money are overstated, they may find some useful suggestions in the statement which we quoted a week or two ago, from the Report of the Committee of the Boston City Government on the new City-Hall, of the comparative cost of public buildings. In that they will find that in a building erected jointly by the city and county authorities of Chicago, each portion forming half of a nearly symmetrical plan, the county half cost just twice as much per cubic foot as the city's portion; yet no one can prove that the extra million of dollars was dishonestly or illegally disposed of. A similar lesson may be derived from the history of many other buildings, and architects know well enough, although they do not often speak of such matters except among themselves, that there is no way in which an owner can be more sure of having to pay two hundred dollars for one hundred dollars' worth of result, in the way of building, than by saving two dollars and a half in the fee of the architect whom he employs to direct the operation. That, as we have said, no architect who serves his employer honestly and skilfully can afford to do such work as the Bourse Committee require for the compensation which they offer is shown by the unanimous opinion of architects, who, as a class, are hard-working and studious men, content with very modest incomes, in all civilized countries; and, from what we hear, it is likely to be still further shown by the individual refusal of every architect in Philadelphia, of recognized standing in the profession, to have anything to do with the competition on the terms proposed. It seems needless to add that Professor Ware protested unavailingly against the inclusion in the programme of the objectionable stipulations.

A STRIKE which seems to be rather more terrifying in aspect than formidable in reality, is in progress among the New England granite-cutters. As the result of some small quarrel about wages in one or two of the yards, sixty-five thousand men have been ordered by their tyrants, who love to exhibit their power by huge demonstrations, regardless of the immense suffering which they inflict, to drop their work and their wages. One journeyman granite-cutter in Boston killed himself in despair when the strike was ordered, and there are symptoms that the men will not endure it long. Very many of the New England stone-cutters know something of other trades, such as mason-work, brick-laying, or even carpentry, and it is said that at the Quincy and Milton granite-yards, where cutting is carried on at a most extensive scale,

the strikers gather in the evenings, and compare notes about the employment which they have found during the day. None of them dare to attempt granite-cutting, but, as one of them said to a newspaper reporter, it will not be long before their wives and children will be crying for bread, and they must be doing something to get it for them. It is needless to say that this display of manly American spirit does not at all suit the leaders, who have already begun concocting plans for forming a Federation of Building Trades, similar to that of New York, which will be able to prevent granite-cutters, ordered on strike by their tyrants, from finding any employment in any sort of building work. Meanwhile, however, the men are rapidly becoming dissatisfied even with the present state of things, and have, in several yards, rebelled in a body, and returned to their work, on such terms as they could arrange, and without paying any attention to the threats or adjurations of the union leaders. Examples of this kind are very contagious, and, unless some unforeseen trouble should occur, a few days more will probably see the last of the strike.

SOME time ago, the *Encyclopédie d'Architecture* published a series of articles on the use of metal for building work among the ancients, from which we have already made quotations. We will, however, permit ourselves one more, in regard to what we should call the builders' hardware of Classic times. It is well known that stone and brick construction was often ornamented with metal, as for instance, the dome of the Pantheon, which was originally completely lined with panelling of gilded bronze; but it appears that metal was very freely applied to wood also, and doors were frequently covered with plates of gold, silver, or bronze, and were hung in frames of similar metal. The thresholds were very frequently of bronze, and heavy doors were usually provided, in addition to the hinges, with castors, which rolled on a quadrant-shaped track of metal set into the floor. Bolts, locks, hinges and handles were of bronze or iron, and the door was often completed with a knocker or bell of bronze, iron, or silver. Windows are known to have been sometimes of bronze, but of the way in which they were made, and how the glass, or alabaster, or horn, or whatever else served to fill them, was set into them, we know little or nothing. There seems to be no doubt that glass, although well known to the Romans, was very costly. Some of the glass table-ware was prized as highly as amethyst or carnelian, and a Roman lady is said, if the passage is rightly understood, to have had eye-glasses made of emerald, which would hardly have been used for such a purpose if clear glass had been obtainable at any price; so that, although glass was certainly used for windows, it was probably no more transparent than horn, or oiled vellum, and much more expensive.

FOR pure ornament, metal was very freely used. The Pompeian frescos show what appear to be screens, made with metallic columns of startling slenderness, sustaining attenuated entablatures; and a pediment of zinc, found at Pompeii, shows that this metallic architecture was not wholly a creation of the fresco-painter's imagination. Even where stone shafts were used, it was common, as it is in France and Italy to this day, to make the capitals, and sometimes the bases, of gilded bronze, or sometimes of pure silver or gold. How far metal entered into actual structure is uncertain. It is said that one of the largest rooms in one of the great Roman baths was covered with a ceiling of masonry, supported by lattice-girders of iron, fragments of which still exist, and it is certain that iron and bronze were used for trussing wooden girders, and for chaining domes and vaults; but the Roman writers speak of entire houses of copper, and temples of bronze, the construction of which we cannot even guess at. For roofing, metallic tiles were very commonly employed. Sometimes the tiles were of bronze, gilded, but cretings, at least, of silver are mentioned by contemporary writers. That all this splendor of workmanship in precious metals has disappeared is to be attributed to the endless plundering which Rome and Italy have suffered for the past nineteen hundred years, at the hands both of Romans and barbarians. Cicero, in his oration against Verres, accuses him of having stolen the doors of gold and ivory from the Temple of Athena at Syracuse, during his proconsulship in Sicily, in order that he might appropriate the precious metal with which they were studded; and Stilicho, the general of Theodosius, in the fourth century, informs us in

his memoirs that he ordered the gold to be taken off the doors of the Roman Capitol, to recruit his finances, exhausted by the expenses of the war with Alaric. After the Romans had taken whatever they wanted, the barbarians, who had little knowledge of metal-working, came, and carried off most of what bronze and iron remained, to utilize it for making into axes and spear-heads; and, for all we know, some of it may be doing duty still in a modified form. Undoubtedly, a great deal of valuable metal-work was, at different times, thrown into the Tiber, either carelessly, or to keep it from being carried off by the barbarians; and, when the long-meditated scheme for turning the course of the river is carried into execution, we shall probably discover much in relation to Classic art which is as yet unknown.

THE Prussian Government has published police regulations for the construction of theatres, which closely resemble those incorporated in the building laws of most of our large cities. There are, however, a few provisions in regard to the number and spacing of seats, and the width of doors and corridors, which are worthy of imitation. For ordinary seats, the minimum space to be allowed is eighteen inches wide, by thirty-two inches from back to back. Where the seats fold back, the depth may be reduced from thirty-two to twenty-eight inches. The number of seats between two aisles may be fifteen on the floor and first balcony, but must not exceed twelve in other portions of the house. What seems to us very ample provision is made for exits, the rule being that one metre in width of clear opening must be allowed in all openings and passage-ways leading to the auditorium for every seventy persons to be accommodated. In exceptional cases only, by special permission, a somewhat smaller provision will be approved; and, where sufficient exits are arranged into a court or garden, the openings from this court or garden into the street need not afford greater width than one metre to three hundred persons. Work-rooms and store-rooms are permitted in or under any part of the building only on condition that they are of completely fireproof construction, and have no direct communication with either the stage or auditorium. It is interesting to find that the regulations apply to the audience as well as the proprietors. Smoking is absolutely forbidden, in any part of the theatre building, except that special permission may be given for smoking in certain rooms in restaurants, in private apartments, and in business offices. This restriction, which would put an end to cigarette-smoking in the vestibules and corridors, would be unpopular here, but to the Germans, who barely take their pipes out of their mouths to put a piece of sausage in, and who can absorb beer and nicotine together without difficulty, it must be very oppressive. However, when the Prussian police administration takes it into its head to prevent the citizens from getting burned up in theatres, it does not consult the opinion of those citizens as to the agreeable or disagreeable character of the measures which it thinks fit to adopt.

AMONG the myriad inventions which are put forth every year relating to building materials and methods, it is strange that no one thinks of making improvements in wooden stairs. As now ordinarily constructed, a wooden stairway is perhaps the least scientific and satisfactory piece of work in a house. Having been originally imitated from the marble steps of a Roman temple, all its forms are about as ill-suited to its material as could well be imagined, and the details of construction, being designed with a view to save all the wood possible, insure its speedy deterioration by shrinkage and wear. The way in which the risers and treads are put together, and the "return nosing" put on, leads infallibly to the splitting of the treads before many months of shrinkage, while the "return nosing" itself, being only nailed in place, soon drops down or falls away, loosening the balusters and rails. Moreover, the stringers settle by shrinkage, inducing the pitch of the stairs toward the well which is always to be observed in houses of mature years; and the posts, glued and nailed, soon lose their heads and feet, or come to pieces altogether. Rickety as they are, however, the modern staircases are complicated and expensive in construction, through the multiplicity of small pieces which enter into them; and it seems quite possible that, by a radical departure from the present system, mill-worked steps might be made, interlocking in some way, which would be far more solid than the ordinary boxes of inch boards and mouldings, and would cost less.

FIREPLACES.¹—II.

RENAISSANCE fireplaces are best known, as they have been very frequently reproduced by engraving and photography. But it is important for us to show the basis on which the study of them has been prosecuted, and also to point out

clad in garments picked from the cast-off clothes of the ancients. This is especially true of fireplaces; there were no ancient fireplaces, but the lords and burghers would scarcely consider that a sufficient reason for excluding fireplaces from their houses; therefore, when the revolution in architecture came, its effects were felt on the forms, but the foundation

Fig. 9. From a House in Rue Croix-de-Fer, Rouen.

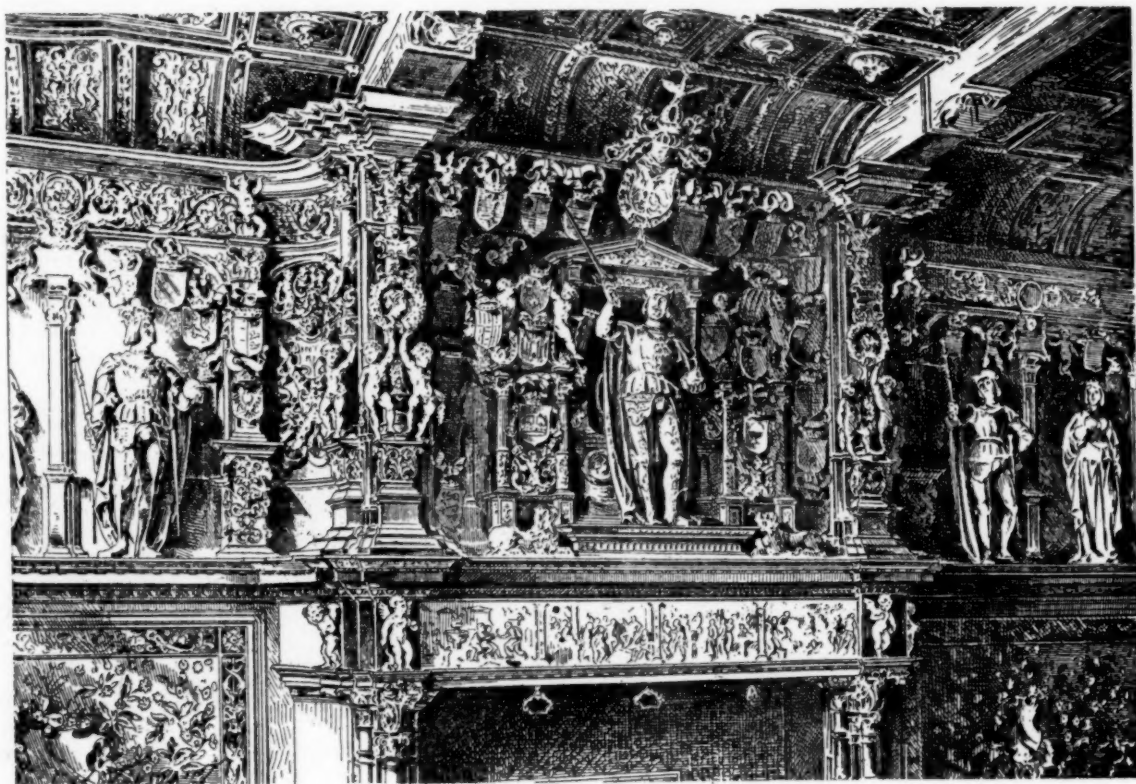
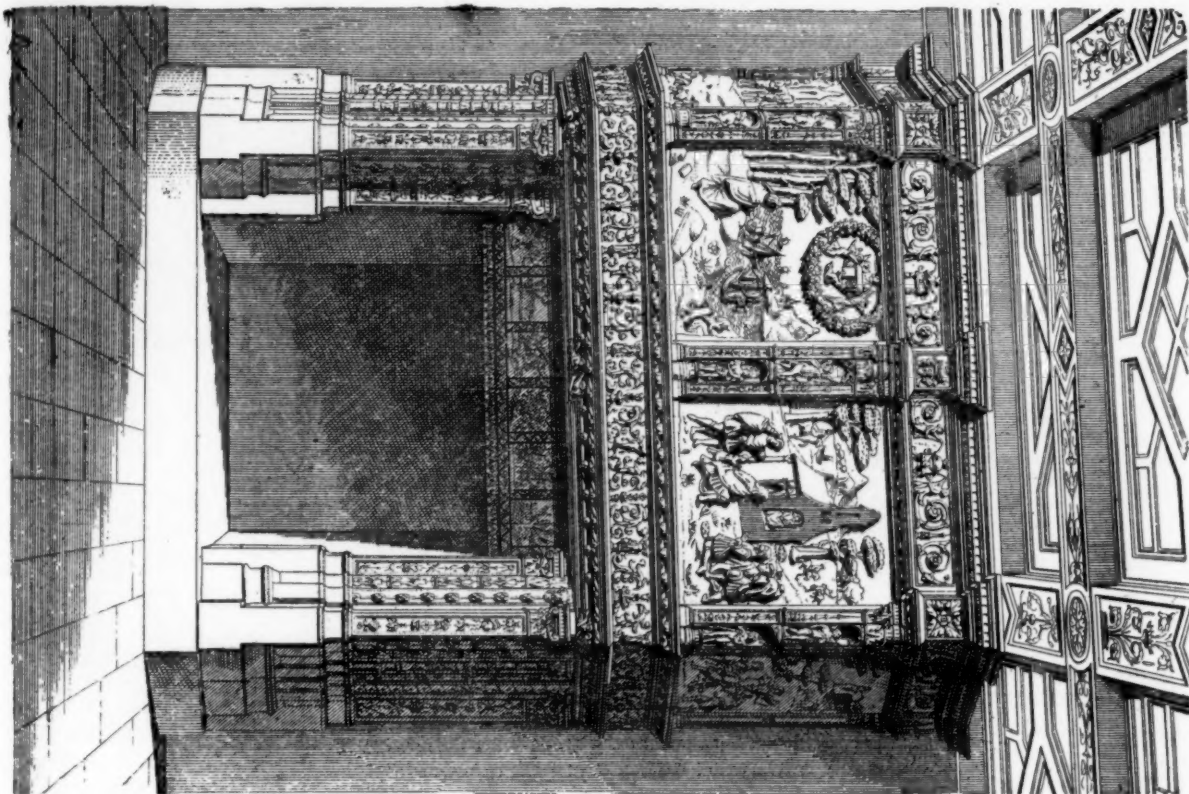


Fig. 10. Fireplace of the Franc de Bruges.

clearly their characteristics. It may be said, in homely phrase, that the early Renaissance works had a Gothic body, but were

was in no way altered. The Renaissance fireplaces have the supports defining the hearth, the mantel and the hood of the Gothic, but the base of the colonnette is inspired from the antique base, the capital is derived from the Corinthian,

¹ From the French of G. Aubry, in Planat's *Encyclopédie de l'Architecture et de la Construction* Continued from No. 856, page 114.

the mantel is adorned with an ancient frieze; the hood — now invariably vertical — is crowned by a complete entablature, architrave, frieze and cornice. It would require many pages to describe all the marvels of ornamental sculpture which the Renaissance masters spread over the mantels and friezes and over the pilasters, which were covered with the most delicate

their ornamentation of the hoods. Among their numerous and varied solutions, few poor ones are found; when in the service of kings or nobles, armorial bearings furnished almost inexhaustible resources, from which their creative fancy drew with nearly always happy results. Sometimes, as in the fireplace of a house in Rue Croix-de-fer at Rouen (Fig. 9), real

Fig. 11. Henry II Fireplace in the Château de Blois.

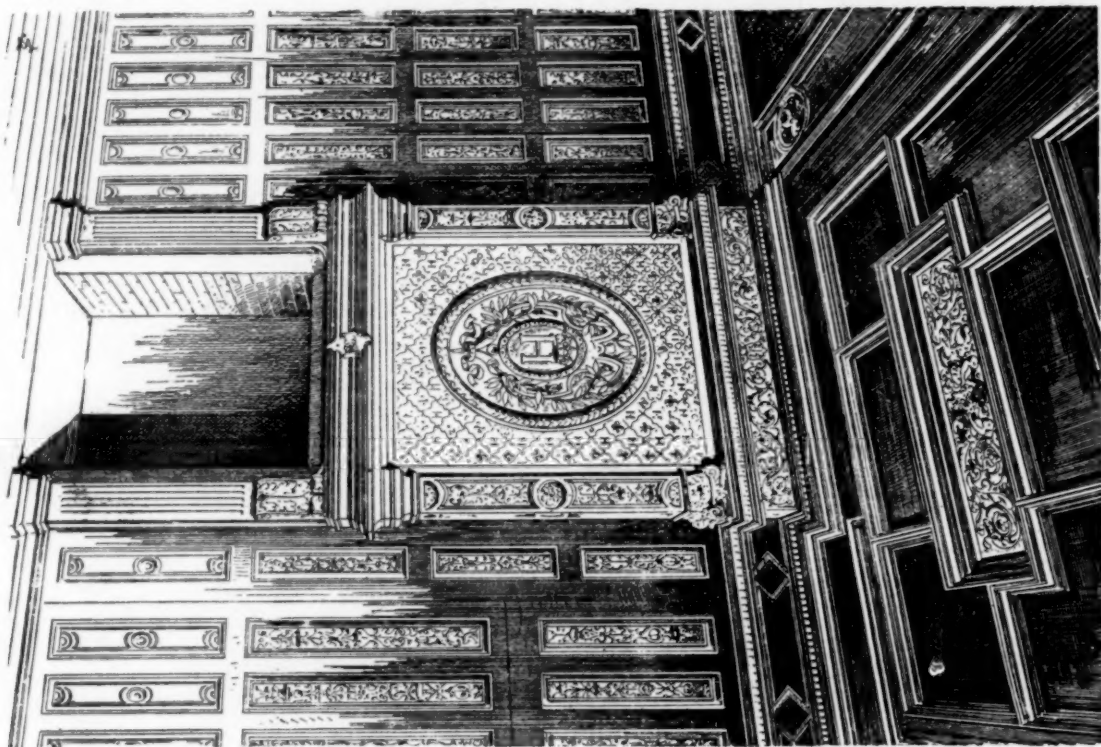
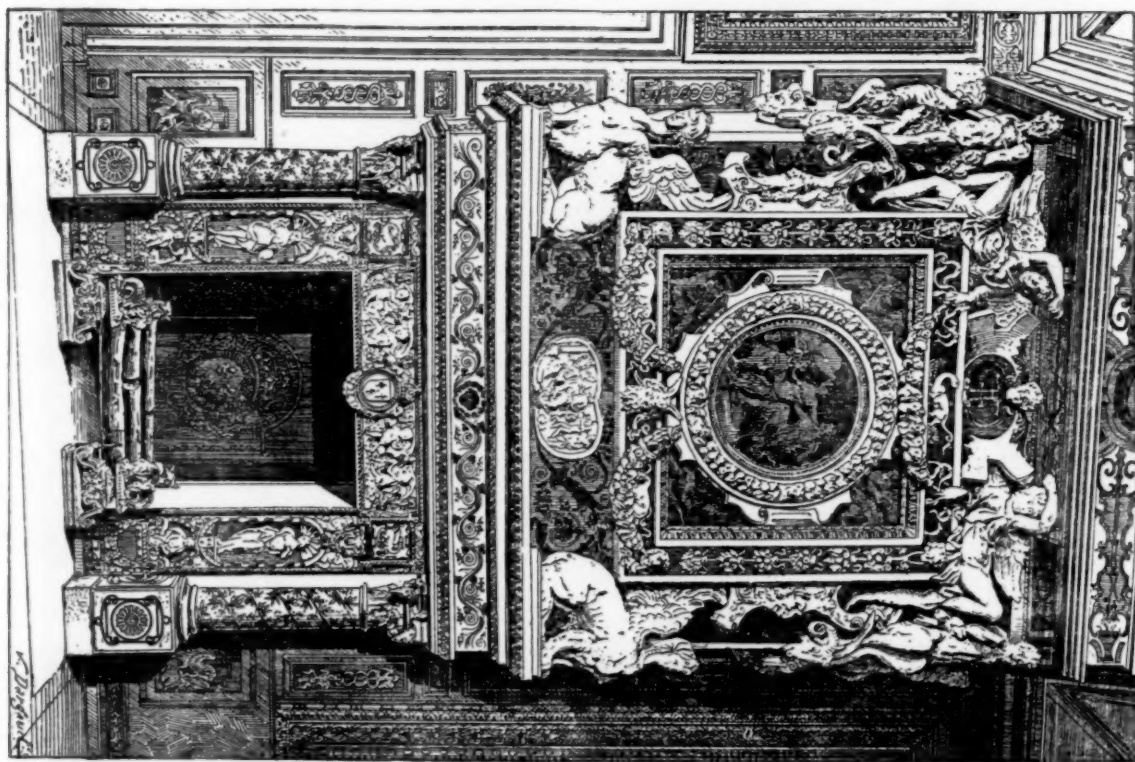


Fig. 12. From the Palace of Fontainebleau.



arabesques; it would take as many more to enumerate the ingenious arrangements adopted for the capitals crowning the mantel supports. There are a thousand charming conceits for adapting the Corinthian capital to the necessities of a corbel. In addition to the carving and the rich mouldings, most of these fireplaces possess painted and gilded decorations of the noblest effect.

Renaissance artists were, moreover, peculiarly successful in

pictures were sculptured on the hood. Sometimes niches were carved out for the reception of graceful statues.

In Figure 10 we give the upper part of the fireplace of the Franc de Bruges. The decoration of the hood forms with that of the hall itself a complete *ensemble*; loud, perhaps, rather than beautiful, it is nevertheless interesting in its wealth.

Besides the fireplaces of the Château de Blois, that of the Hôtel d'Alluye is of note; there are some very beautiful ones

THE 100 BEST BOOKS EVER WRITTEN



e
e
at
er
e
es



HELIOTYPE PRINTING CO. BOSTON

• MONUMENT TO CHRISTOPHER COLUMBUS •
FOR OLD ISABELLA, SANTA DOMINGO, W.I. ALOIS BUYENS, SCULPTOR.

at Orleans; those of the Château d'Arnay-le-Duc are also full of interest. There is a curious large fireplace in the castle of Oyron.

In reviewing Gothic solutions we noted the fact that the mantel was sometimes formed of a stick of timber. We find in the Francis I portion of the Château de Blois a fireplace made entirely of wood, except, of course, the interior, which is of brick (Fig. 11). It is in a wainscotted apartment, and the desire to preserve unity in the decoration accounts in a measure for the incongruous use of wood so near the fire. In later constructions wood has often been employed to face the rough masonry constituting the practical part of the fireplace, where the decoration had to be done at a comparatively small outlay of money. When the great Sully had the castle of Sully-sur-Loire fitted up for himself he ordered one room, in which there was a fine fourteenth-century stone fireplace, to be wainscotted throughout. A wooden fireplace was built in front of the other. The projection of the latter was concealed by leaving a space between the wainscoting and the wall; all this is still preserved and may be examined by passing back of the woodwork. A wooden ceiling with slightly prominent mouldings was nailed to the exposed timbers overhead. As

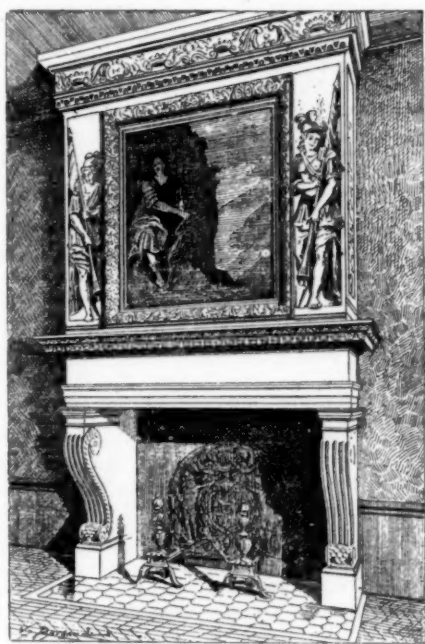


Fig. 13. From the Château de Lésigny.

early as 1600 architects had begun to revolt against allowing any of the constructive framework to be seen.

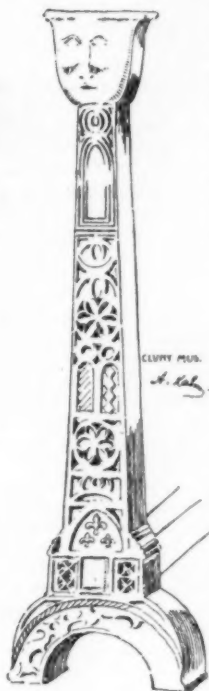
Before turning to the final consideration of that period in which the decoration is made to hide the construction completely, instead of ornamenting it and rendering it attractive to the eye at the same time that it satisfies the demands of reason, we will reproduce a fireplace (Fig. 12) from the Palace of Fontainebleau, which exhibits a mantel made up of the same elements as an entablature, with a rectangular hood above; but the carving of the latter stands out in bold relief and conceals its form. The disposition for reducing the size of the hearth seen here is very common at the present day; we shall return to it later.

Figure 13 represents the fireplace in the great hall of the Château de Lésigny; it is not without some analogy to one in the Cluny Museum, and is of interest to us because of its simplicity, which makes it of practical importance. The mantel is borne on two large consoles. These possess an advantage over the pillars, since they leave free access to the lower part, and at the same time carry the hood forward sufficiently for it to receive all the products of combustion; the mantel comprises an architrave, a frieze and a cornice; it would, perhaps, be more in keeping with its surroundings on the columns of a portico, but it is on the same scale as the consoles and harmonizes with them in character. A painted subject appears on the hood for the first time. Hitherto only sculptural decorations have been seen.

[To be continued.]

BOSTON'S TRIBUTE TO COLUMBUS.

MONUMENT TO BE ERECTED AT OLD ISABELLA, THE FIRST SETTLEMENT IN THE NEW WORLD.



THERE is a bit of sarcasm in the words of the old Spanish chronicler Herrera, when at the close of a long eulogy of Columbus, he says, "had he lived in ancient times, statues and temples would have been erected to him without number, and his name would have been inscribed among the stars." For, since the coming of Christ, no greater event has transpired in the world's history, than that with which the name of Columbus is inseparably associated. And yet, as a matter of fact, until comparatively recent times, no statues or temples have been raised to his memory. Genoa built him a monument in 1862, and Barcelona another in 1888, while quite recently was unveiled at Madrid, a handsome memorial in his honor. In the New World, Mexico, Nassau, New Providence, Lima, Cardena and Santo Domingo, all have Columbus monuments, and New York and Chicago will build enduring memorials during the present year. But, among them all, none is of greater importance, more appropriate in design or grander in the event to be specially commemorated than the monument about to be erected this year at Old Isabella, by the Boston Columbus Memorial Committee. This monument is Boston's tribute to the great discoverer and is a veritable work of art. It is taken largely from designs drawn by

Richard Andrew, a young student of rare promise at the State Normal Art School, Boston. Much credit is also due Prof. George Jepson of the same school, under whose supervision the work has been done and who has taken an active interest in the enterprise from the start. The sculptor is Alois Buyens of Ghent, a distinguished artist, whose name is well known throughout France and Belgium for works of art of a high order of excellence. After winning the highest honors at the Academies of Ghent, Liège and Brussels he went to Paris where he spent several years at the École des Beaux-Arts. His latest work, and one which has attracted much attention in Europe, is a colossal statue in bronze, of President Brand of the Orange River Free State, the Washington of the South African Republic. About a year ago, Mr. Buyens came to this country, and though now commissioned upon a work which will attract universal attention, he is extremely unassuming as to his art. Competent critics who have seen his work pronounce it far above the average.

The monument, as shown in the illustration, will be erected on the Island of Santo Domingo, where Columbus planted his first settlement and on the spot where he built the first church from which the Christian religion took its rise in the New World. Two events therefore are to be commemorated by it, the establishment of Christianity and the rise of civilization in the Western Hemisphere. Two fine bas-reliefs, one on either side of the base, set forth these facts, in a figurative way—the ideal groupings representing the genius of Christianity and the genius of civilization respectively. The former is a female figure representing Mother Church fostering a little Indian child and pointing to a suspended cross in the distance, the emblem of man's salvation. The latter is an ideal figure, perhaps the goddess Ceres drawn in a chariot by prancing horses: her arms are filled to overflowing with gifts and flowers; she is bringing the gifts of civilization, and Columbus, at the horses' heads, is pointing the way for her to follow. It is a beautiful grouping, artistic and noble in its conception and well symbolizing the rise and progress of civilization first planted there by Columbus. A third tablet carries the inscription in terse rhythmical Latin sentences, from the pen of Mgr. Schroeder and interprets the meaning of the monument very closely. It follows the Roman lapidary style, all the letters being capital's, the U's like V's and the J's like I's, with a period after every word except the last of each line, and runs as follows:

ANNO. CLAUDENTE. SAECULUM. XV
EX. QUO. COLONI. CHRISTIANI. COLUMBO. DUCE
HIC. POST. OPIDUM. CONSTITUTUM
PRIMUM. IN. MUNDO. NOVO. TEMPLUM
CHRISTO. DEO. DICARUNT
CIVES. BOSTONIE. SUB. AUSPICE
EPHMERIS. BOSTONIENSIS
CUL. A. SACRO. CORDE. EST. NOMEN
NE. REL. TANTÆ. MEMORIA. UNQUAM. DELABATUR
HAEC. MARMORI. COMMENDAVIT
A. D. MDCCCLXXXII

Thus, so long as the bronze endures will the world know that the

citizens of Boston, have built this monument to Columbus, that the spot where Christian civilization took its first rise in the New World, might not be forgotten.

The statue itself is of colossal size and represents Columbus in an attitude of giving thanks to God, and pointing to the site of the first settlement on the globe at his feet. It is both confident and easy in pose. The face has the look of one inspired, while the outstretched arm gives an appearance of movement and grateful gladness to the entire figure. As the picture shows, the statue will be mounted on a pedestal ten feet high which stands on an elevated knoll, the site of the ancient town, about eight miles in from Cape Isabella, overlooking the sea. The situation is very picturesque, according to Mr. Frederick Ober who has recently visited it in the interests of the World's Fair. Upon a rock ten to twenty feet in height facing the west, he writes, with a splendid beach to the north, there extends in a gradual ascent towards the mountains a beautiful plain of 500 or 600 feet in width, rising suddenly from the beach. This was the site of Old Isabella. On this beach, Columbus landed with the cavaliers whom he had brought for his first colony in the New World. Here they encamped while they proceeded to build the town, and history says, they built a fort, a church, a king's storehouse and a residence for Columbus, all of hewn stone, the ruins of which existed up to a short time ago.

It is the purpose of the Monument Committee to build the pedestal from these ruins, thus incorporating into the very walls of the memorial an enduring memento of the early Spanish Conquerors. The Dominican government has granted the site of the town to the committee and the United States Consul at Puerto Plata has recently visited Isabella in the interest of the enterprise. He has made clearings and succeeded in locating exactly the site of the ancient church, and preparations will be made at once to begin the foundation.

The plaster cast of the monument, now on exhibition at the Museum of Fine Arts, Copley Square, Boston, will be taken to Chicopee, in a few days, for casting in bronze. It is expected that the committee will be ready to sail about the middle of July or August, and Boston will thus have the honor of inaugurating the Columbus celebrations in 1892. Among those who have contributed and constitute the Committee are Most Rev. John J. Williams, Rev. John O'Brien, Captain Nathan Appleton, Dr. Chas. H. Hall, Hon. A. Shuman, Gen. Chas. H. Taylor, Hon. Chas. F. Donnelly, Hon. W. E. Curtis, Hon. S. M. Allen, Thomas B. Noonan, Esq., Hon. Stephen O'Meara, Hon. Thomas N. Hart, W. R. Richards, Esq. and many others, clergymen and prominent gentlemen of Boston and vicinity.

No monument in the world commemorates an event so fruitful of good and so pregnant with blessings to mankind, as does this proposed monument of Columbus at Old Isabella. It marks a distinct epoch in the progress of humanity. The landing of the Pilgrims, the Declaration of Independence, the Founding of the Constitution, were all events of the greatest importance, but were made possible only by the still greater achievement of the discovery and civilization of America, which Columbus so heroically began. And this perhaps is the best of all monuments to his memory. For, grander than sculptured marble or engraved stone and more lasting than tablet of bronze or granite is his memorial in the hearts of the millions of people in the new world to whom he has given a refuge and a home.

T. H. CUMMINGS.

THE USE OF TIMBER IN ENGINEERING STRUCTURES.



Wrought-iron Standard for a Pascal Candle.

however, naturally float with about one-third of its height out of water, and it is, therefore, the practice to load such a crib with stone built up inside it to reduce this amount of freeboard, and when floated to its resting-place the crib is finally sunk by filling up cells left in it for the purpose. In this way no expensive plant is required, the material can often be obtained near the site of the

ONE of the distinctive features of foundations in America, as opposed to present European practice, is the readiness with which timber is used, though this statement would also apply to other pieces of construction. The main reason for this has no doubt been the facility with which it could be procured and its comparative cheapness, but also because this material has the advantage of being readily put into place, particularly in sub-aqueous work. A very common plan has been to construct a crib of squared timbers drift-bolted together; this forms almost the entire under-water foundation, as it extends from the river bed up to within two feet or three feet of the low-water mark, at which level the masonry is started. Such a crib is easily floated into place. It would,

works, and freight is saved. It is not even necessary that the timber should be seasoned, and though the practice is now to build the crib of squared sticks, yet this is not essential, as round logs have been successfully used. Of course in salt water such foundations would be liable to be destroyed by marine worms, but when constantly submerged in fresh water, timber, even of the softest kind, will apparently last for ever.

It is, of course, necessary that a level foundation shall be prepared for the crib to rest on, either by dredging, piling, or raising a rubble mound. As regards the second alternative, the American engineers have probably had more experience in the use of piles than those of any other nation, as the long wooden trestles so frequent on American lines are frequently thus supported, and many important bridges have been erected on this type of foundation. Probably no question has been more disputed than that of the allowable load on piles, for determining which formulas of the most complex character have been proposed. Such formulas, though they do great credit to the ingenuity of their authors, are of a kind to disgust practical men, who have, as a rule, preferred to rely on the results of their experience.

The old so-called rational formula led to the result that the supporting power of a pile on hard rock, in which the penetration would be nil, was infinite, an obviously absurd result. Attempts have been made to modify the formula by taking account of the elasticity of the pile, but they all lead to complicated forms. A simple formula was, however, proposed some years since by *Engineering News*, which gives good results in practice, and though not altogether rational, it is, at least, as much so as Gordon's formula, which has been used for so many years past for ascertaining the practical strength of iron and steel columns. Like that formula it agrees very well with the rational formula for a wide range, but where the latter leads to results at variance with practice, the semi-rational formula gives reliable results. The formula in question is:

$$\text{Bearing power of pile} = \frac{2 \times \text{weight of monkey} \times \text{height of fall in feet.}}{\text{Last penetration in inches} + 1}$$

Ordinary common-sense must, of course, be used in employing this formula. The penetration of the pile should be fairly uniform for a number of blows, and there should be no brooming of the head. The fall of the monkey should not be excessive, say not more than twenty-five feet. The final penetration permitted is often as much as two inches or more, with a one-ton hammer and a twenty-foot fall. The cost of piles in place is often remarkably low, as little as 8¢ per foot in favorable cases. In a recent contract in which piles sixty feet long were to be driven under water, the price was only 21.12¢ per pile.

Even when the foundations are put in by the pneumatic method, the caisson is almost invariably built of wood, twelve-inch or fourteen-inch squared timbers drift-bolted together, forming both the curb and the roof of the working-chamber, the necessary strength for the latter being obtained by constructing it of several layers, crossing each other at right angles. Caissons built in this way cost about 1s. 6d. to 2s. per cubic foot of timber in place.

In the case of the Poughkeepsie Bridge, in which the foundations were put in by the Indian well-method, wood was again used for the cribs, the largest of which was 100 feet by sixty feet in plan, having fourteen dredging pockets, giving a clear opening of ten feet by twelve feet each. The top of these cribs was surmounted by the bottom of a timber caisson six feet thick. At a distance of but a few feet below the water line the masonry was commenced, so that up to this level, a distance of upwards of 100 feet from the bottom of the foundation, the pier is mainly wood. In using cribwork in this fashion it is necessary to guard against the destruction of the crib by the buoyancy of the upper parts pulling out the spikes which hold it together. An accident of this nature occurred with one of the piers at Poughkeepsie and led to experiments on the holding power of spikes in the timber used. These spikes, one inch in diameter, and driven into thirteen-sixteenths-inch holes in hemlock, were found to have a holding power of 422 pounds per linear inch. Even before this the United States Government had made experiments on the subject and established the important fact that the holding power of such bolts increased with age, that smooth bolts held very much better than ragged ones, and also that it required forty per cent less power to draw a bolt through a hole than to draw it out. These experiments also showed that round bolts held better than square. Bolts driven with the grain have only one-half the holding power of those driven across it.

In the case of foundations the dimensions are usually so ample that the question of the strength of the timber used hardly enters into consideration, but in other structures this is not so. No doubt in most cases experience of previous structures is a sufficient guide to the proportioning of a new one, but in connection with the proposed Chicago Exhibition this question of the proper working unit stresses for wooden structures has been brought into prominence, and the subject was discussed at some length before the Western Society of Engineers. The stresses proposed by Mr. Gottlieb, who had charge of the designs for the buildings, were 600 pounds per square inch, in posts and pillars, and 1,500 pounds per square inch extreme fibre tension in caps and joists. Both these figures are exceeded in ordinary every-day practice without accident, and there was a consensus of opinion at the meeting that the scare raised in the Chicago daily papers, which led to Mr. Gottlieb's resignation was unwarranted. The enterprising reporter of the

latter-day press has, however, always considered himself competent to instruct experts in all the details of their business. Provided only that he can make a sensational article out of it, he appears to care but little for the accuracy of his information. In the discussion already referred to, Mr. Bates, bridge-engineer of the Chicago, Milwaukee and St. Paul Railroad, stated that the calculated working stress in the extreme fibre of the trestle bridges, so commonly used on American lines, under the engines which ran over them daily, varied from 1,083 pounds per square inch up to 1,743 pounds per square inch. When it is considered that these stresses are used in daily practice in structures carrying heavy passenger and goods trains, and that the true stress, owing to surface cracks due to seasoning, is probably considerably more, it appears that Mr. Gottlieb's stress of 1,500 pounds per square inch in a building which will exist during less than two years is a very moderate one. The bearing pressure of 600 pounds in the columns, is the same as that commonly used in New England mills, where wood is extensively used for both columns and floors. Quite recently Mr. J. H. Stanwood has proposed a straight line formula for the unit stress in wooden columns based on an analysis of the results of a large number of experiments on full-sized columns. His rule is working stress in pounds per square inch $= 1,000 - 10 \frac{l}{d}$, where l = length and d = diameter of the column.

The following Table shows some of the results obtained by various experimenters:

—	Size of Hole.	Size of Bolt.	Kind of Wood.	Holding Power in Pounds per Linear Inch.
United States Government experiments.	in.	1 inch round	White pine	lb.
United States Government experiments.	1	"	Norway pine	750
Brooklyn Bridge ..	1	"	Georgia pine	1,000
" ..	1	"	"	1,400
J. B. Tschanner ..	1	"	"	500
" ..	1	"	Oak	1,300
Powell and Harvey ..	1	1 inch square	Pine	662
" ..	1	"	"	710
" ..	1	"	"	777
" ..	1	"	"	675

As regards the bearing pressure of the post on its cap, experiments made at the Watertown Arsenal showed that a pressure on pine perpendicular to the fibre of

846 pounds per square inch caused an indentation of .01 inch.

1,000	"	"	.02	"
1,077	"	"	.03	"
1,121	"	"	.04	"
1,153	"	"	.05	"

It is instructive to note how rapidly the compression increases as the load goes up, but certainly a compression of less than one-hundredth inch is perfectly safe even for a permanent structure. In the direction of the grain, timber will, of course, stand a much higher pressure ranging in amount from two and a half to three tons per square inch for short specimens. — *Engineering.*

THE PARIS SALONS.



so in matters artistic? Can gaps, made by the death of such a poet as Victor Hugo, or a painter of the power of Delaunay, be easily filled? I think this is very doubtful, and so it comes about that the *Salon* in the Champs-Élysées is not nearly as good a collection this year as it was wont to be a few years ago. Death has carried off a good many — Delaunay, Pelouse, and several others; but desertion has still further weakened its ranks. A picture-show which is no longer

the exhibition ground of Dagnan-Bouveret, Carolus-Duran, Cazin, Lerolle, Béraud, Rixens, Besnard and Gervex must of necessity be much weakened. Younger men may take their places, but they do not fill the gaps artistically; and so it happens, that in spite of much talent and originality, the *Salon* has not that *cachet* of excellence, which, formerly, was its distinguishing feature.

There is no prevailing subject this year — neither pigs, nor doctorings, nor drunken boozers. Naturally a few Prodigals and Good Samaritans, some battles (not nearly so many as formerly), many portraits of more or less (more than less, perhaps) plain and vulgar personages of both sexes, dozens of noble landscapes, and the usual *et ceteras* of marriages, burials, baptisms, first communions, schools, unpriestly priests, and wonderfully grouped flowers, fish, pickles and pottery, forming "still-lives." There is the usual sub-stratum of bad work, rubbish and twaddery subjects; not seldom by Monsieur Hors Concours, who, as a little American once remarked, "has a great many pictures, and not always the best." The Society of Artists has done many good things and reformed certain abuses; it has covered the dirty floors with cocoanut matting, and so induced peace and quiet, and made one large room with easy chairs and greeneries into a pleasant resting-place; but one thing it has not done — to revise the translations of its catalogue. In a town swarming with Americans and English such titles as the following are not a little droll: "A Foot-bridge on Rollers," "At the Nurse's, the manège," "Susan and the Elders," "Blooded Mares," "Fishing Boats in Anchorage whilst Preparing Souper," "Eastern Time," "Foogach is the Kingdom of Heaven," "The Rhone from the Top of the Justice," "Road of St. Louis" (a sea piece), "Parley under a Flag of Truce," "Champagne in Autumn," and so on. And is it not odd that the person who could render "Gros Bonnets," "big-wigs," should add "High Alasia" for "Haute Alsace"?

On entering the galleries one passes two semicircular decorations for the Hôpital de la Charité, one of which is a subject which should never have been painted — an example of vivisection. Here is a representation of "Charity" with a vengeance! and a fine example of "love to the lower animals," in this case a rabbit! Mr. Van Aken's "Misère Humaine" is one of the few pictures of this class in this *Salon*. Squalor, dirt, sadness unspeakable, but forcibly painted, and not repulsive. Two landscapes in the great room are fine, M. Carlos-Lefebvre's "Les Chênes de l'étang de Châles," and M. Balouzet's "Le Matin dans les prés de Riorges," albeit somewhat metallic in its greens. M. Benjamin-Constant has a magnificent portrait (M. Auguste L——) which recalls, in the brisk touch, Frank Holl; and a ceiling for the Hôtel de Ville, of which it is impossible to judge in its present position. A fine bit of still-life is M. Thomas's, made up of pickles, pots and onions, not a pleasant sounding company, but so well painted that one can but lament the decease of the artist which is notified to us by the bow of crêpe on the frame.

M. Pelouse too, is gone from us; one of the grandest of France's landscapists.

M. Bonnat is not happy this year in his sitters. A lady of not too refined an appearance wearing the hard blue velvet gown so much affected by this painter, a mantle, yellowish and fur trimmed, and the conventional Bonnatian background, is as painting, fine, but as a picture unprepossessing. But what of M. Renan? A stout old gentleman with a cynical expression, an unpleasant mouth, and clad in the countryman's best Sunday-go-to-meeting black clothes. Were it not for the little red button, he might be the retired publican of the village. Is there anything philosophic, anything *spirituel*, refined or fascinating about the portrait? I have never seen M. Renan, and I confess I am disappointed with the physiognomy of the author of much that has given me pleasure to read. And yet the face is familiar to me; and after racking my brains, I discover the original in Mr. Jawle of "The Crusaders." I congratulate the actor upon his philosophic make up!

M. Allègre's "Villefranche" and "Marseille" are equal to all their sunny forerunners; and as a distinct contrast, equally true in coloring, is Mr. Brangwyn's "All hands shorten sail." M. Bouguereau repeats his charming "Amours," his middle-aged, blue-draped model, and his usual softy-softy, pretty-pretty manner. Over the way is a piece of realism — M. Vauthier's "Tyne at Newcastle" — murky, dirty, smoky, and yet sunny behind the gloom; with smooth, oily water and long reflections. One of the most realistic works in the galleries is M. Buland's "Ou a souvent besoin d'un plus petit que soi: — buveurs." Three men, two front face; the central one in a striped jersey pouring out some brandy with which to treat the others. At his side, an older man in a fur cap; a hard face with pale blue eyes. On the left, an *habitué* of a wine-shop. Behind the heads, a row of copper and tin saucepans; in front, a deal table. Not much that is interesting in subject, but a picture no artist can pass; especially as hands and arms are all seen *en face*, neither a beautiful pose nor an easy one to draw. M. Jules Breton has a bit of country life, not in his usual sunset tones; all but mid-day. M. Bordes's "Acierie," men pouring molten steel into troughs, is a subject treated, apparently, only in Paris; workshops are not beloved across the Channel, where the sentimental and pretty reign supreme. Another wonderful piece of still-life, by M. Tessier, is made up of some Japanese draperies, dolls, fans and chrysanthemums; it is worth a journey to Paris to see. M. Chevallier's "Fâcheux contretemps" is a charming little note: an old priest, having made his purchases in town — a loaf of sugar and a carpet-bag full of *et ceteras*, finds his key unable to open the gate. The

rain pours down, while the old man tries to scoop out the hole in his key.

An "Annunciation" by Mr. Pearce is the only instance I know of where the painter has represented the Blessed Virgin as a really young girl. There is a great deal of pure sentiment and exquisite feeling in the figure as she modestly leaves her spinning awhile to listen to the angel, who floats down from a background of trees. The color is good and pleasing; the handling broad; but exception might be taken to the ugliness of the angel. It is by one of the modern religious painters, of whom more anon.

There is a group of pictures which show forth human misery at its worst: the "Exécution de C. Gombald à Ingolstadt—janvier 1871," by M. Moreau de Tours; Mr. MacEwen's "Sorcières" and M. Richer's "Misère." The first is the preventable misery of war; the second, a group of Puritan fathers subjecting some women to imprisonment for pretended sorcery; the third, a sad-faced young fellow in a dimly-lighted ante-room, his fingers just playing with the keys of the piano, while the dancers in the brilliantly-lighted drawing-room are arranging themselves—a misery of modern times, when too many are obliged to pipe while others sing and dance. In M. Richemont's "Sacrifice" there is some excellent work: two women on the floor are tearing up old letters, a lamp and the fire throwing a glowing light upon them; in a box is a packet tied up with white satin ribbon, which we may interpret as we like.

What a pity it is that an artist should repeat himself as M. Maignan has. Having scored a success by his "Les voix du Tocsin" (now in the Amiens Museum), he repeats the idea in "Carpeaux." The dancers of the Opéra group and others are whispering into the sculptor's ear, but neither in painting nor in sentiment is this picture equal to the "Tocsin." On the other hand, M. Dawant, whose "Sauvetage" is also at Amiens, is as good, or better, in his Alsatian church picture, which is excellently studied.

Some portraits call for special notice: M. Henner's masterly "General de K—," one of the finest works I have seen of this artist, and quite equal to the portrait of his father; M. Lefebvre's "M. L. Guy" and M. J. P. Lauren's "Colonel Brunet"—as different in technique as could well be, but all excessively fine in their several manners. M. Schommer's "Mme. D—" has a magnificently painted gray brocaded gown, but the face is somewhat waxy. To cite half the portraits or the landscapes which are noticeable would require the space of an entire number of the *American Architect*, but I cannot conclude without speaking of a wondrous stone quarry by Rigolot, the landscapes of Allègre, Quignon, Gagliardini, Olive, Petitjean and the late L. G. Pelouse. Of excellently painted still-life there is abundance, as of good miniatures, notably those of Mlle. C. Baily, which are specially good, inasmuch as they are not at all labored. Looking at the miniatures at the *Salon*, one feels it to be a great pity that the pretty affectations of Sir W. Ross and his admirers should have sent this charming art out of fashion. No photographs can take its place either in grace or durability, but for the present it seems hopeless to desire the revival of it in any country which is not essentially artistic, such as France.

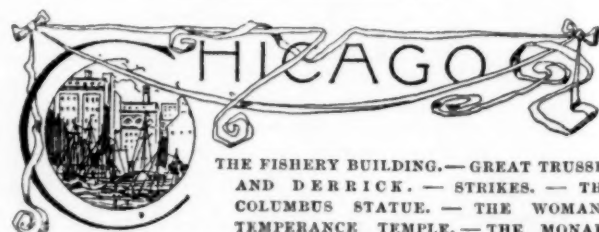
The New *Salon* in the '89 exhibition building on the Champ de Mars is in many ways more interesting than the old one, and, although not so rich in landscapes and still-life, it is far richer in portraits and subject pictures. In the former category, M. Carolus-Duran stands out splendidly in his painted and bedizened old "Comtesse de C—," one of those terrible old women who do not know how to grow old. Having a good pair of shoulders, she must needs be décolleté, but, to hide a probably scraggy neck, she swathes some white stuff tightly round it. Hair-dye, rouge, powder and all the *et cetera* for dressing mutton as lamb are there. So, also, is a magnificent red velvet gown and fur-trimmed train, the whole a most marvellous piece of work, such as M. Carolus-Duran loves to paint. Better subjects are the Comte C. de B. and M. Challemeil-Lacour. Mr. Sargent's "Carmencita" looks as fine as it did last year; but what in the world does Mr. Dannat mean by painting such monstrosities as his "Femmes Espagnoles?" This is more outrageous and audacious than Mr. Whistler's most astounding canvases. One might almost call this exhibition the *Salon* of purple horrors, were it not for such work as MM. Courant's, Damoye's, Monténard's and a group of men who really paint what they see without any affectations.

M. Béraud sends a "Descent from the Cross," which, although it may not make so great a sensation as his last year's picture, will turn many good souls to wrath. Upon a hill overlooking a modern city are the crosses—Montmartre, it may be, personifying Calvary. The grouping of the roods and the people is that of the old masters, but the men who receive the Lord's body are ordinary French workmen in the familiar blue blouses. The Magdalen is also of the modern type, and upon the edge of the hill is a workman with outstretched hand denouncing the ingratitude of the great city. "Oh Paris, Paris, thou that killest the Prophet!" he seems to be crying. The picture is certainly original, well-composed and effectively painted: what people will think of it depends very much upon the taste of the person. For my part, I see no more irreverence in depicting such a scene with Parisian or London surroundings than I find in placing a "Last Supper" in an Italian palace with marble pillars and tapestries. One is no more objectionable or absurd than the other. What one wants in such pictures is the true religious sentiment, which Gérôme years ago obtained by leaving the crosses out of his picture altogether, depending upon the shadows to convey

the truth to men's minds. All the same, such subjects seem delicate ground for a painter who has hitherto exercised his talents upon the opera-house and theatres, *cafés chantants*, ballet-girls and the like; but there is nothing objectionable in the feeling in this picture, whatever its forerunners may have been. Another painter who is bitten with this modern religious art movement is M. Lhermitte. His "Ami des Humbles" is simply a poor cottage, a couple of men sitting, and a woman taking a dish of roast beef from a small boy. On the table are common glasses, black-handled knives and a *litre* of wine. At the head of the table is Christ blessing and breaking bread, the ordinary flat loaf of Paris. Here, again, the treatment is as reverent as any of the works by the old masters. M. Firmin-Girard's study of peasants is an excellent piece of sunshine, almost equal to Gagliardini's.

One charm of the Champ de Mars exhibition is that all the works of one artist are hung together; a plan which saves much fatigue to the visitor, and makes the pictures look much better than when they are all jumbled up together, "swearing" at and mortally injuring one another. M. Rixen's portraits of Maître Benoist and a "Président G." are exceedingly fine, as also the small ones of a child in a red hat and frock, and a girl in a bonnet and veil. And what can be said of M. Boldini, whose one idea of composition is legginess on the slope. His child in a large white bonnet and lanky black legs is decidedly clever; but the mother savors too much of old Mabile, except that the floor of that famous dancing booth lay flat, which M. Boldini's never do. People objecting to Béraud's and Lhermitte's pictures should ask themselves whether they prefer such stuff as M. Dubufe's. M. Kuehl's interiors, with effects of light streaming through windows, are always charming. That he may not be quite a de Hooghe is no reason why he should not be admired for what he is. The sunniness of M. Eliot's pictures is wondrous, and obtained without any exaggeration of shadows; but surely M. Hellen must be out of his mind, or else posing for notoriety. He evidently thinks the public eye is capable of having a good deal more dust thrown into it; and what in the world are M. Hodler's emaciated, archaic old Greeks doing on these walls? "Las de vivre"; truly I should get very tired of looking at them, and the sooner they commit suicide or, at all events, depart from these walls, the better. They may be morally good, but they are certainly neither artistically true nor beautiful. M. Dagnan-Bouveret is somewhat ill of the Impressionist fever. Looking at his "Breton" close one sees a mass of violet, yellow and red upon the sunny side of the face; but step away, and see how grandly the figure stands out. His portrait of Coquelin cadet is also very fine. Neither M. Besnard, nor M. Cazin, nor M. Latouche, nor M. Gervex are as good as formerly—possibly the "89" exhibition spoilt one for all others. When one sees the pick of ten years placed together, it takes the shine out of succeeding exhibitions.

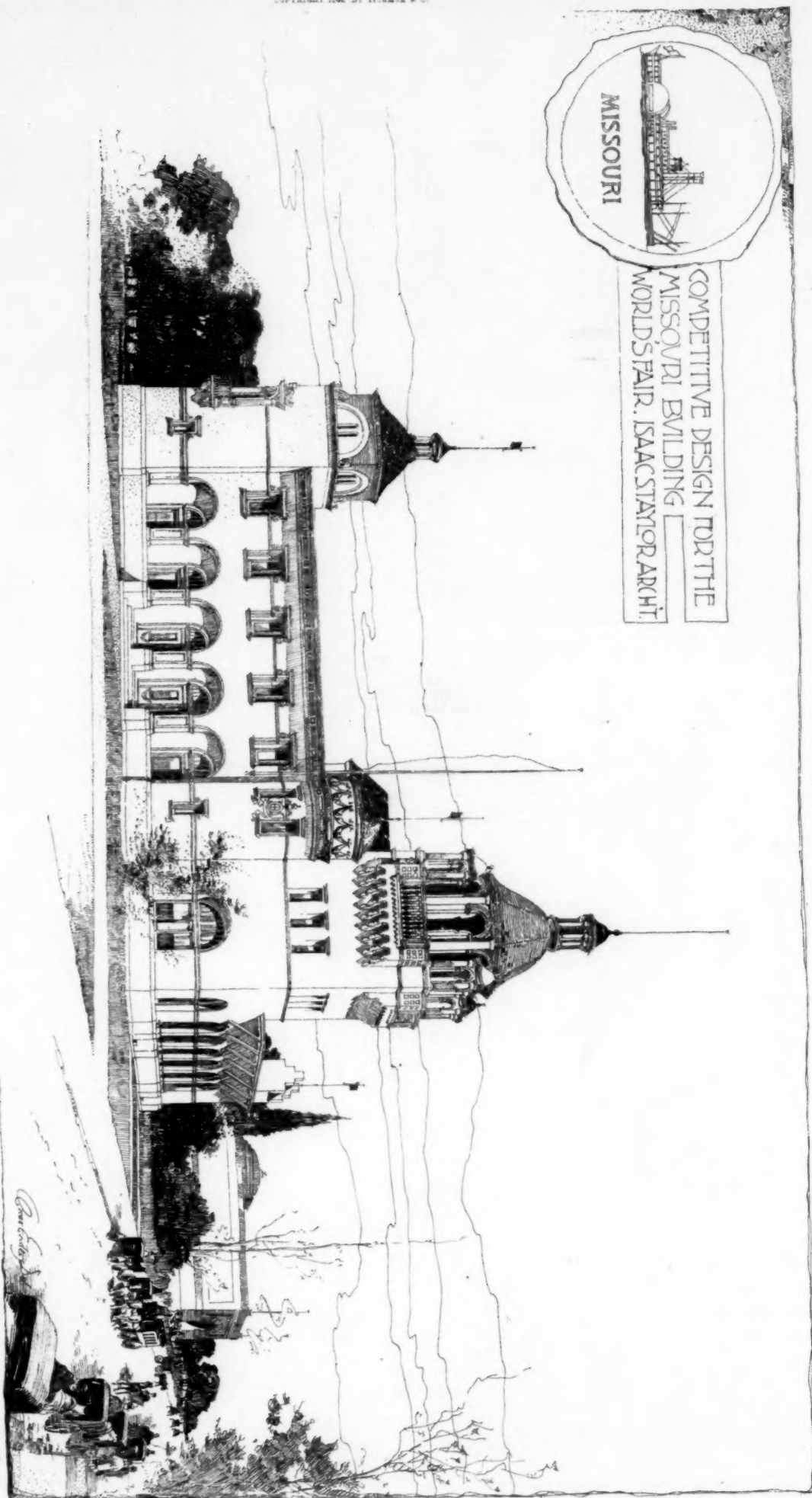
M. Damoye's "Inondation à Saint-Ouen" is one of the finest landscapes in the galleries; fresh and full of atmosphere; in this respect, perhaps, superior to M. Monténard's. M. Alfred Stevens sends sixteen pictures, most of them old works, and M. Raffaelli nine, more or less black, from the peculiar manner in which this artist works; it is as if he drew in black chalk, and then tinted over the drawing in thin color. Nevertheless his old horses are very charming. A word of praise, too, must be given to Mr. Rolshoven's "Pêcheurs de Chioggia; lecture du Tasso," a group of sturdy fishers, rather blue in tone, but very powerfully painted. S. BEALE.



THE FISHERY BUILDING.—GREAT TRUSSES AND DERRICK.—STRIKES.—THE COLUMBUS STATUE.—THE WOMAN'S TEMPERANCE TEMPLE.—THE MONAD-NOCK.—DUPLICATES OF THE TROCADERO COLLECTION OF CASTS.

WORK at the World's Fair grounds is progressing in a manner that can well make the Chicagoan proud of the result. That the Exhibition as far as grounds and buildings are concerned is destined to excel any World's Fair heretofore given is now a doubly assured fact. The site is admirable and now that work on the grounds themselves is being accomplished, we can begin to see what it will be next year. The part bordering Lake Michigan with the warship, the pier and casino is now far enough along towards completeness to show that it is going to be altogether charming, while the way the buildings are grouped around the artificial lakes and lagoons offers the most picturesque vistas at every new turn. The staff work is proceeding with great vigor and the result in many instances is very satisfactory. The grand entrance to the Transportation Building is one mass of "sculpture," and many of the bas-reliefs for this same structure, as yet unplaced are exceptionally fine. The details of the Transportation Building with those of the Fishery Building so far are the most successful, though many of the buildings have not arrived at the stage when details are visible to the visitor. The details of the Fishery Building are exceptionally clever, being formed of all sorts of conventionalized aquatic

COPYRIGHT 1892 BY TICKNOR & CO.



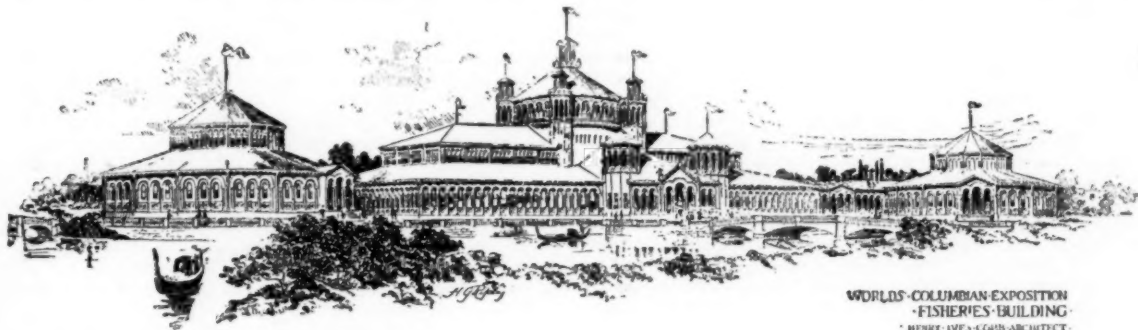
HEALING PRINTING CO. BOSTON.

animals, so used that the general outline and character of the decoration appear at a very little distance to be quite in keeping with the decidedly Romanesque character of the whole building. Small sea-horses, star-fishes, little turtles and several other of their moist and watery companions meandering up the shafts of the columns bring to one's mind, previous to an intimate acquaintance with them, the sculptured shafts of some old Romanesque structure. Lobsters protruding from a net, frogs hopping or scrambling through bulrushes one is surprised to find, on closer inspection, composing a capital which viewed from a longer distance seemed to have a character sufficiently in keeping with the rest of the building, which is decidedly Romanesque. This style causes this structure to stand out quite apart from the other buildings which are chiefly French Renaissance. The Fishery Building is located on a long, narrow island, to the peculiar shape of which the building conforms. It comprises a rectangular main building to which two polygonal smaller buildings are attached at either end by curving arcades. As said before the exterior of the building is Spanish Romanesque, the main building being surmounted with a dome-like roof. The entire length of the building is over a thousand feet and the width two hundred. In the central portion will be the general fishery exhibit, while in one of the polygonal buildings will be the angling exhibition and in the other the aquaria. In the centre of the building destined for this latter exhibit is a rotunda sixty feet in diameter, in which part of the space is occupied by a pool for aquatic plants and certain fishes like golden tench, gold fishes, etc. Around this pool a corridor leads, from which may be inspected the large aquaria which surround it on the other side. These are ten in number, having a capacity of from seven thousand to twenty-seven thousand gallons each. The total water-capacity of the aquaria, exclusive of reservoirs is one hundred and forty thousand gallons. Of this amount about forty thousand gallons are devoted to the Marine Exhibit. In the entire salt-water circulation, including reservoirs, there are about eighty thousand gallons. The pumping and distributing plant for the marine aquaria is constructed of vulcanite. The pumps are in duplicate and each has a capacity of three thousand gallons per

which to lay a track that the derrick could be moved on. The track is made by putting caps of timber twelve inches square on the piling and then laying steel rails weighing one hundred pounds to the yard on the caps. Heavy wheels, flanged on both sides are placed under the derrick, so that it can be moved backward or forward by its stationary engine provided for that purpose. On the top of the derrick are immense cranes with the heaviest of blocks and tackles, and these cranes operated by steam-power can easily lift a truss, in fact more than one if need be. Altogether, the construction of this roof is the greatest engineering feat on the whole grounds, and a feat which when accomplished will be passed by unheeded by the majority of those visiting the place, though it will never fail to interest both the engineering and architectural professions. Outlined against the sky with no roof covering them, there is at present a certain grandeur about the enormous spring of the trusses.

Mr. Daniel French is here hard at work on his colossal figure of Columbia, which is to stand in front of the Administration Building, and in fact quite a group of well-known artists from time to time are seen in the Forestry Building, which is now given over to the use of the modellers and "staff" workers. Later this work will have reached a more interesting stage and will especially be taken up in the letter from Chicago.

The proceedings on the grounds have been made interesting the past two weeks by a strike, accompanied by the usual attempt to import non-union men from the East and the consequent rows that usually attend such an action. Both sides loudly asserted their ability to run affairs without the aid of the other and as usual one party found itself mistaken, and the contractors seem to have given in with as good a grace as possible. At one time it looked very much as if a general strike of all the trades would be precipitated, and apropos of this, one of the leaders made the following statement: "The World's Fair people have observed to a certain extent their eight-hour agreement with us, but they have hired labor at any price. They have broken the local labor-market schedule of prices. They advertised in Eastern papers for mechanics. When those men came here in response to the advertisements and found they were unable



hour. A supply of sea-water will be secured by evaporating the necessary quantity at the Woods Holl Station of the United States Fish Commission to about one-fifth its bulk, thus reducing both quantity and weight for the transportation about eighty per cent. The fresh water required to restore it to its proper density will be supplied from Lake Michigan.

As above stated the other buildings on the grounds are French Renaissance. Had each of the large buildings represented a different style the *tout-ensemble* would most assuredly have been less dignified and pleasing than it is now, but this one divergence from the general style in the Fishery Building which would of necessity from its use have been of a rather different character from the rest, is far from unpleasant and, situated a little apart as it is from the others, it seems individual without being aggressively so.

One of the most unfinished, though by no means the most uninteresting building on the Fair Grounds is that of the Manufacturers or Liberal Arts, the main exhibition building. Few people realize its tremendous proportions even when told that when completed it will cover forty acres, until they have walked through it, and seen the wonderful trusses of its roof springing up against the blue sky, and have seen men looking like birds perched on the the topmost branches of a tree, as they creep over the perilously frail-looking supports. Twelve millions of pounds of iron and steel have to be lifted two hundred feet, and preparations to do so are extremely interesting to those familiar with such undertakings, as well as to the visitor whom curiosity alone leads to the scene of the work. These enormous trusses, said to be the largest in the world, have a clear span from pillar to pillar of three hundred and eighty-six feet. Twenty-six of them, each weighing two hundred tons, constitute the roof support. To raise these into place it was necessary to construct a derrick over two hundred and fifty feet high. To construct this derrick has been in itself no small matter. Four uprights at the corners, joined at intervals of forty feet by heavy cross-beams, make the frame. Steel ropes running diagonally are used for stays and V-trusses mortised and bolted to the supporting cross-beams insure the stability of the whole machine. That this structure might be sustained with its two-hundred-ton weight of truss a strip of the floor of the building was torn up the entire length and three rows of piles driven down on

to do the work, they became stranded. They are in town, dead-broke. They work for anything to keep themselves from starving, but they are not sufficiently skilled to work on the big business blocks here, so the union cannot use them. Should this strike be ordered the organized railway employes will stand by us, so that not a car will be handled to convey material, exhibits or passengers into the World's Fair Grounds. The other day when men were being imported to take the places of the striking construction-men, switch-men, conductors and engineers refused to do their work when they learned that they were hauling non-union men into the grounds to take the place of striking unionists. We have the assurance of the railroad boys that they will stand with us in a strike to the extent of tying up all railway traffic into the grounds."

In the way of strikes we are now being treated to a small one among the granite-cutters, it being a slight echo of the great granite strike East. It is reported that until the demands of their brethren in the East are acceded to the stone-cutters of Chicago will refuse to handle stone from the New England quarries. The Newberry Library here is the scene of the principal trouble as a few days ago the cutters received a telegram from their national executive body informing them of the strike inaugurated throughout the Eastern cities. The despatch was not explicit, but after the exchange of several despatches it was understood that union men here should not handle stone supplied by Eastern quarry owners. Consequently, the twenty or thirty carvers employed on the Library struck work and will not resume it again presumably until matters are settled at the fountain-head of the trouble. The stone used in the Newberry Library is from the Norcross quarries. Four car-loads of the material are now on the way, and what makes the case especially aggravating is that work has been materially delayed on the building because of the delay in getting the stone, it being only recently that stone has been accumulating on the grounds waiting for the carving.

Chicago is to have on its Lake Front a statue of Columbus that is to be a memorial of the World's Fair. This statue will be erected under the direction of the World's Fair Board of Directors, but will be an enterprise which will call upon this body for no funds. It seems inappropriate to speak of the erection of a statue as an enterprise, but that is what this scheme could properly be called.

It was desired to have a permanent monument of Columbus in Chicago, in memory of him and of the World's Fair which celebrates his triumph. For over six months one of our prominent and most public-spirited business men now on the Board of Directors has been considering the project. In fact, he agitated the matter at the time of the preliminary organization, and later was made chairman of a committee to attend to the proper adornment of the Lake Front. He succeeded in getting a resolution passed for an expenditure of fifty thousand dollars for this purpose, but as, later, the Directory voted two hundred thousand to be used for the Art Institute to be located in this place he did not care to press it for further funds. The chairman of the committee is reported to have said: "It was my idea that the monument should be designed by a Chicago sculptor. Other members of the committee thought differently, but finally acquiesced. It is to be a memorial of the World's Fair, and I thought the design should be representative both of Columbus and of Chicago, as this city has so largely contributed money for the undertaking. I did not press the matter until I had found a way of raising funds. The cost will be fifty thousand dollars, and the monument will be used as a design for the souvenir of the Exhibition. The party or parties who secure the concession of selling the souvenirs must guarantee to pay the Board of Directors the cost of the monument; that is, fifty thousand dollars."

He further thought that every World's Fair had had its souvenir, and that if the Board of Directors accepted the design for the monument of Columbus, a great many bidders would come forward for the exclusive right of using the figure, either to be incorporated in a medal, watch-charm, photograph, or in fact used in any shape that would seem to them most desirable, as there would be no restriction made in this direction. The chairman thinks as there have already been sixty-five bids, that a party will yet be found who will pay the money down instead of accepting an advance of fifty thousand. Mr. Ketchmeier has been the sculptor chosen, and it has been decided that the figure should be of bronze on a granite pedestal.

Many of the Chicago sky-scrapers have been opened this month. The Woman's Temple, the Masonic Temple, the Unity, Ashland Title and Trust, Venetian and Monadnock buildings and Northern Hotel are all trying to keep their appointments with their future tenants, and most of them failing to do so in this month of May, when most of the world out in this section "moves on." Clients of business men can, however, visit them if they will take their lives in their hands, and climb to high stories over stairs without banisters, or be crowded into one elevator that is trying to do the work of ten. These first-of-May contracts are getting to be a farce, and worse than one. No matter what season of the year a building is commenced, the contracts always agree to have it finished by the first of this month in time for the great renting excitement. To reach the state of many of these new buildings above mentioned, all sorts of crowding and hurrying has been necessary, to bring them to their present even unfinished state. Night-work has to be carried on on them; all sorts of poor work accepted because both contractor and workmen know there is not time to do any other kind. In this way work not up to grade is constantly found on them, simply because of this foolish custom of not allowing sufficient time for their decent completion.

One of the most, if not, in fact, the most successful office-building, is the Woman's Temperance Temple. This structure stands on a southwest corner, and is fifteenth-century in style, the style being admirably carried out through the entire building. The central portion of the structure is built with a deep recess, giving abundant light in this way for most of the rooms, rather than poor light from an interior court. The red tiled roof has a very pleasing outline, and the details of the building are so arranged that, even when ornamentation appears on the upper stories, it is not lost to the eye of the pedestrian on the sidewalk below. The two lower stories are of granite, affording material for the carving, which, in places, is rich and profuse, while the upper ones are of red brick and terra-cotta. The entrance, which is heavily arched and sculptured, leads into the semicircular rotunda, from which rise the eight elevators. The interior finish on the first two floors is entirely of white marble, giving an extremely light effect to what is already a light hall. An entrance on the other, Monroe Street, façade leads to the hall especially devoted to the Temperance Association. This entrance bears the impress of the association that originally conceived the idea of rearing this pile, the vousoirs being carved with the names of the special States that have contributed money towards its erection. This entrance has a small pediment, in which rests the seal of the society in bronze, a medallion of a mother and child, the motto of the Association being on the outer edge, encircling the figures. This hall, which will be rented by what is known as the Central Union, will bear the name of Willard Hall, as a compliment to Miss Frances Willard. It will be located on the ground-floor, on the south side of the building, though its entrance is on the north. It will not be finished till July. The entrance leading to it, it is said, will be a sort of Westminster Abbey for temperance women, where rolls of honor and commemorative inscriptions will be placed. The hall, which will seat six hundred, is to be rather ecclesiastical in character. Its chief interest, from an artistic point-of-view, will, no doubt, be the decorations by Mr. Walter Crane. His contributions will be the designs for thirteen stained-glass windows and two paintings. These paintings will consist of two female figures, slightly above life-size. One is to be called "Temperance and Purity,"

Temperance being portrayed as a beautiful woman holding back a struggling mastiff, as an emblem of the restraint of brutal passion by a loftier nature. Purity will be portrayed as a young girl holding in her hand a crystal globe, the conventional emblem of purity. The other painting will be called "Justice and Mercy." Justice will be a tall and sedate woman holding the scales of justice in her hands; while Mercy, a younger woman, touches them with her finger, gazing up intently, as if appealing for mercy.

Although this building is called Woman's Temperance Temple, yet, according to the best information, they have actually done extremely little in the way of contributing to the cost of the building, and will, as an association, never be allowed to hold a controlling interest in the stock.

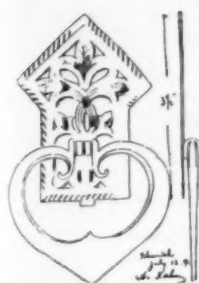
In striking contrast to this really beautiful building is the "Monadnock." Chicago has the reputation in some portions of the country of wanting most—not to be beautiful, not to be graceful, not to be appropriate, but to be big. If such is her ideal then in all perfection and completeness has she seen it realized in the "Monadnock." Not a moulding or morsel of ornamentation breaks the monotony of the two lower stories, and from these it shoots upward through fourteen more stories with not so much as a sill, band-course, arch or cornice to distract one's thought from the idea that this is a huge and impressive monument erected as a lasting evidence of the usefulness of one of our best grades of pressed brick. The one unusual feature is the treatment of the angles. They start on the lower stories with a slightly rounded edge which grows wider as it ascends till it finally spreads out to considerably wider proportions, giving the shape of a large chimney to the entire building. A rather unusual construction is seen in this edifice, an exception to the steel structural work so generally used for exterior walls. Here the steel construction is replaced by solid brick piers, which give unusual thickness to the wall and deep reveals to the windows. In the case of such an extremely narrow and high building as this it may be advantageous to give a certain amount of stability to the construction, but it can hardly be a desirable practice for any other reason.

One of the noticeable features in these new and model office-buildings is the frantic desire on the part of the owners and, consequently, architects, to give two lower stories. All the basements are now made on a level with the sidewalks, while to reach the first story you take a short shoot in an elevator, or climb one flight of stairs. It is a peculiar case of childish "make believe," apparently employed to reduce the spirits of those who actually rent the first floor, by letting them understand they are only leasing a basement, and to correspondingly raise the spirits on the second floor by allowing them to believe that they inhabit the first. By this system the actual sixteenth story becomes the fifteenth, and so on to whatever dizzy height the building may reach, the stories are numbered one less than they actually are. It reminds one of the harmless deceit often practised in large families of girls where the youngest child before reaching an age where her years become a matter of interest is induced to drop one or two of her innocent twelvemonths.

A matter of importance to those interested in art matters and specially to architects and architectural students is an announcement that has recently been made public, though known to the friends of the Art Institute for some time. This is the fact that a magnificent collection of casts is soon to be added to the already good collection of that institution. France as part of her exhibit to the World's Fair sends a collection of casts from the Trocadéro at Paris. As every one knows the objects in this museum are chiefly architectural and consist principally of works done in the Middle Ages, but all have at one time or another graced some part of France, whether they were old landmarks at the time of our friend Dagobert, of "*culotte à travers*" fame, or belonged to the times which more nearly touched our own century. Few originals are found in the collection except occasionally when some old building has been demolished and its fine point preserved there. Through the instrumentality of Mr. Ives Chief of the Department of Fine Arts and the exertions of Charles L. Hutchinson, one of the Directors of the Art Institute, the French Government has permitted casts to be taken of the works in the Trocadéro, a privilege which has never been granted before. To secure these models, however, it was necessary that an appropriation be made by the Board of Directors to defray expenses, and it has been unanimously resolved to call for an appropriation of twenty-five thousand dollars. This display at the Fair will occupy a large section in the Fine Art Palace where space has already been assigned for it. This allotment was credited some time ago to France, but the exhibition while coming from this country will belong to the Chicago Board of Directors of the Art Institute. So large is the collection that the actual cost to the French Government is fifty thousand dollars and this superb display is to be presented to the Art Institute on condition of its paying one-half of the original expense, transportation and other items being entirely gratuitous. It will constitute a collection unrivalled in this country and will do much to promote the interest in the Architectural Department of the Art Institute that for three years has been steadily growing.

Besides this acquisition to the Art Museum now first publicly announced, it is rumored that after the close of the World's Fair there will be other gifts of less importance, and Mr. Ives is reported as saying that should the Institute live up to its possibilities it would have a collection that would far surpass any in the United States, and excel in fact many European collections.

TALL CHIMNEYS.



IN every manufacturing town the tall mill chimney is a notable circumstance in the aspect of the place. Though not generally an architectural feature in the smoky landscape, it is one that may become so by breaking the horizontal lines of house and factory roofs, and by an additional care being bestowed on its design. When these chimneys or stacks of brickwork become dangerous as well as ugly, they are objects of painful apprehension. In the neighborhood of Birmingham, Bradford, Manchester, Newcastle and other great centres of industry their number and height are almost distracting, and destructive to all ideas of repose; but if, in addition to this feeling, we entertained a sense of their instability as well, we should regard lofty constructions of this kind with much concern.

The inquiry into the cause of the fatal disaster at Cleckheaton has at length been brought to a close, and the jury returned a verdict that those who were killed by the fall of the mill chimney accidentally came by their death whilst the chimney was under repair; they also blamed the owners for having failed to attend to the repairs of the structure earlier. A very unsatisfactory verdict, it will be said, for the friends of those who have been sacrificed, and such a one as will be repeated if some active measures are not taken to treat as dangerous structures all chimneys that show any signs of weakness or any declension from the vertical. We are informed by the expert instructed to examine this chimney by the Home Office that, apart from the attempted repairs, one of the causes assigned for the fall, "the chimney would have fallen sooner or later," as it was a "doomed structure before the builder or his man saw it." How many other chimneys are in a like condition it would be difficult to say till after a careful examination of them. We may, indeed, ask how many there are equally doomed to fall which no repairs could avert, but rather hasten. The history of the Cleckheaton chimney, as given by Mr. John Waugh in his report on behalf of the Crown, shows that no regular architect was employed by the firm when the structure was built, about 1859, but that Mr. Brook, "a joiner and architect," was consulted; but whether plans or specifications were made does not appear. When it was forty yards in height, it was found that the chimney was out of the perpendicular some seven inches in a southeasterly direction; the work was suspended some months, when an operation of straightening was performed, and the chimney was completed by twenty yards' addition to its height. In February last signs of weakness appeared, and the owners applied to Messrs. Moulson & Sons, builders, who examined the chimney. Their man gave his opinion, and advised certain measures to be taken, such as bricking up of holes found in the inner shell, the renewal of brickwork about several diagonal cracks on the northerly side, and a bulge on the eastern side of the outer shell. In carrying out these suggestions, it was found that in the chimney a run of water existed near the main flue, that the bricks of the flue were decayed by damp, that the inner shell was only 14 inches thick, the outer shell the same, with a cavity between of 2 feet 2 inches, and that the cavity was partly filled with fide dust. Messrs. Moulson's representative condemned the chimney, and said that a new foundation and chimney were necessary. The repairs of the outer shell were commenced, though in what manner and to what extent the old brickwork was removed and made good with new is not very clear. Witnesses were called who said that large openings were made, but not through to the cavity. It was whilst the loose brickwork was being propped the chimney settled down, and fell in an easterly direction, killing fifteen persons.

Mr. Waugh, in his report, says the bricks were unfit for the purpose of chimney-building. They were of various sizes, materials and degree of burning, and they suffered deterioration from the moisture, also the lime. He says he had never seen such a crushing to powder of the materials as in this case. The stone cap was of good ashlar, but the clamping with lead was not used. All that remained of the stump was little more than that below the ground, the solid brickwork base resting upon a good rag foundation. There was a cast-iron water-tank next the chimney, supported on an iron beam inserted into the chimney just above the bulge; the chimney was crushed down for sixty feet or seventy feet before falling on the mill, which would show a giving-way of the base. Its total weight was about 500 tons, that of the outer shell alone being 325 tons, and the distressed area, including bulge and cracks on the east and north sides, was equal to half the circumference. Therefore the report says; "If the chimney had been vertical, the weight above the half-circumference would equal 162 tons, or 6.33 tons per square foot; but the chimney leaned over on this side, and it is impossible to say how much the weight was increased by this fact without a knowledge of the amount of departure from the vertical." The structure fell on the calmest day of the month, and it is, therefore, assumed that a combination of causes operated—bad bricks, weak construction, deterioration by moisture and attempted repairs. The plan of the chimney consisted of an outer circular shell, battered, 15 feet diameter at the base outside, and 14 inches thick, with an inside shell of six feet internal diameter and of the same thick-

ness, united across the cavity to the outer shell by six mid-feathers or radiating cross-walls of nine-inch brickwork, and this inside shell was vertical, and was lined for about twelve feet high with 4½ inches of good fire-brick; it reached a height within the outer shell till the walls met the latter, which was battered. Practically, the shells were distinct structures, one within the other, the mid-feathers giving little strength, but the weakness of the structure was mainly, we should say, attributable to the inferior nature of the materials used. The result ought to be a sufficient incentive to the Government authorities to make periodical inspections of all factory chimneys, both inside and out, as we have before recommended, and to certify any dangerous condition, so that precautions may be at once taken, and we hope Mr. Waugh's recommendations on this point will receive attention.—*The Building News.*



PROGRAMME FOR THE ROBERT CLARK TESTIMONIAL ANNUAL ARCHITECTURAL COMPETITION, 1892. UNDER THE AUSPICES OF THE CHICAGO ARCHITECTURAL SKETCH-CLUB.

THE Committee on Competition for the Clark Medal places the following problem before competitors:

Required a design, Egyptian in character, for the entrance to a large cemetery, with which shall be combined a waiting-room, a crematory and chapel.

The scale of drawings, and character of rendering, to be left to the option of the competitors. The drawings to comprise two sheets, mounted upon stretchers, each measuring 18" x 24". There must be a ground plan and perspective. The furnishing of details and geometrical elevations is left optional with competitors.

Drawings shall be addressed to DANKMAR ADLER, 1600 Auditorium Tower, and delivered on or before September 15, 1892.

DANKMAR ADLER, N. CLIFFORD RICKER,
HENRY IVES COBB, S. A. TREAT, LORADO TAFT,

Committee.

TESTIMONIALS.

First Robert Clark Gold Medal.
Second Robert Clark Silver Medal.
Third Robert Clark Bronze Medal.
Honorable Mention Bronze Medal.
C. A. S. C. Complimentary Bronze Medal.

Competition is open to all architectural draughtsmen under thirty years, excepting practising architects.

Premeated drawings to become the property of the Chicago Architectural Sketch-Club. All other drawings returnable after the annual exhibition and banquet, November 28, 1892.

JOHN E. YOUNGBURG, Secretary.



[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

THE LATE JAMES RIPLEY OSGOOD.

[Gelatine Print.]

THE death of Mr. Osgood, says *Harper's Weekly*, which occurred in London on Wednesday, May 18th, came not wholly unexpected. It was due to a bronchial affection, resulting from an attack of the gripe a year ago, from which he never completely recovered. During his last visit to this country, which ended with his sailing for Europe on March 23d, his friends were pained to observe that a comparative lassitude and apathy had succeeded the alertness and vigor so eminently characteristic of him in health, and they have scarcely been surprised to learn of the fatal termination of his malady.

Mr. Osgood was born in Fryeburg, Me., fifty-six years ago, of an old and influential Maine family. His father, Louis Osgood, was a lawyer, and his maternal grandfather, Judge Dana, was one of the most prominent men in the State. He begun the study of Latin when he was three years old, under the instruction of his mother, who is still living. He was prepared to enter college at twelve, but could not be admitted until he was fourteen, when he entered Bowdoin. During the two years that intervened he read law in Fryeburg, in the office of Judge Howard, an uncle, and at the age of eighteen he was graduated. He was intended by his parents for the law, but decided to go into a publishing house. A letter he wrote to Messrs. Ticknor & Fields so much impressed Mr. Fields that he asked the writer to come to Boston, and gave him a position at once. Here he began what was to be the work of his life as a clerk with the famous publishing house, which at that time had upon its list of authors the most illustrious names of New England. As

Mr. Osgood added experience of the business to his native quickness and tact, he became a confidential and trusted subordinate of the house, and his counsels bore fruit in a widening of its scope. On the death of the elder Mr. Ticknor in 1864, the firm was reorganized, with Mr. Howard M. Ticknor and Mr. Osgood as partners, retaining the old firm name and "The Old Corner Book-store"—the latter until 1866, when the exigencies of an increasing business forced a removal to Tremont Street—the name until 1868, when another reorganization followed the retirement of Mr. Howard M. Ticknor, and the firm became Fields, Osgood & Co. During this period, two periodicals, in addition to the *Atlantic Monthly*, were projected and established by the house—*Our Young Folks*, in 1864, edited by Howard M. Ticknor, and *Every Saturday*, an illustrated weekly, in 1866, edited by Thomas Bailey Aldrich. After serving as the editor of the *Atlantic* as well as the head of the firm from 1862 to 1870, Mr. Fields retired from both positions, Mr. Benjamin H. Ticknor became a partner, and in 1870 the style of the firm became James R. Osgood & Co. Besides continuing the publishing business on the old lines, the new firm became interested in new ventures connected with the heliotype process of illustration, which was introduced in the *American Architect*, which they established in 1876. Two years later, Mr. Osgood formed a partnership with Mr. H. O. Houghton, proprietor of the famous Riverside Press at Cambridge. The new firm was Houghton, Osgood & Co. After two years it was dissolved, and in May, 1880, Mr. Osgood re-established the firm of James R. Osgood & Co., which continued until 1885.

For nearly the whole of his career as a publisher in Boston, Mr. Osgood had maintained close literary and social relations in New York, having become a member of the Century Club in 1866. When his retirement from his firm was announced, an offer was at once made to him by Messrs. Harper & Brothers, which he promptly accepted, and to which he referred, in a letter published at the time, in terms which showed how he was touched by it. Within a short time he became the London agent of the firm, and continued to act in that capacity until his death, having associated with himself within the past two years Mr. Clarence W. McIlvaine, who had served his apprenticeship to publishing in Franklin Square. The firm of Osgood, McIlvaine & Co., has not only acted as the English agents of Harper & Brothers, but has made the innovation of an American publishing house in London, an experiment which may become of importance by reason of the establishment of international copyright, the workings of which are as yet so imperfectly developed, and so dimly foreseen. As the pioneer in such a movement, Mr. Osgood had singular advantages, not merely in the talents for business that had been disciplined by long experience, but also, and not less, by the winning social qualities that made him so eminently a *persona grata* wherever he went, and that fitted him so peculiarly for the work of a commercial ambassador. It was his unaffected kindness, his humanity, that interested him in all things human, his ready sympathy and appreciation, that endeared him to all who knew him, and that will cause him to be remembered with affection and regret by those who have enjoyed the privilege of being associated with him.

By his large circle of personal friends, Mr. Osgood was held in such affectionate regard that the news of his death in what was the prime of an active life brought a sudden and most painful shock. His warm heart and quick social sympathies, his delight in clever and cultivated society and his large and intelligent familiarity with literary life, made him an instructive and delightful companion. His simple, upright and hearty character was expressed in a frank and cordial manner which at once invited and rewarded the fullest confidence.

His temperament had a certain fascinating blending of gayety and indolence, and the refined taste and sympathy of a studious college boy, as in many of his American fellow-craftsmen, were always apparent through the generous business activities of his life.

Mr. Osgood was a bachelor, and leaves surviving him his mother, a brother and two sisters, of whom one, Kate Putnam Osgood, is a well-known contributor of prose and verse to the magazines.

MONUMENT TO CHRISTOPHER COLUMBUS TO BE ERECTED AT OLD ISABELLA, SANTO DOMINGO, W. I.

For description see article elsewhere in this issue.

DESIGN FOR ADDITIONS TO ST. MARY'S CHURCH, BUFFALO, N. Y. MR. J. H. MARLING, ARCHITECT, BUFFALO, N. Y.

The alterations here shown were not carried out.

HOUSE FOR C. H. DUHME, ESQ., CLIFTON, O. MR. H. E. SITER, ARCHITECT, CINCINNATI, O.

The materials used in the house are Milwaukee buff brick with salmon-colored terra-cotta trimmings, as far as the sills and quoins are concerned. The cornice, pilasters and porches are to be of wood, painted white. Several different kinds of hardwood are to be used for the finish of the interior. The house will cost in the neighborhood of \$30,000.

PROPOSED HOTEL, LAKE GEORGE, N. Y. MR. FRANK T. CORNELL, ARCHITECT, BROOKLYN, N. Y.

HOUSE OF FERGUS REID, ESQ., NORFOLK, VA. MR. J. APPLETON WILSON, ARCHITECT, BALTIMORE, MD.

The house is of rough white limestone, in lower story and for tower, with stained shingles for roofs, gables and second story. The chimneys are of brick.

DESIGN FOR THE MISSOURI STATE BUILDING FOR THE WORLD'S FAIR, CHICAGO. MR. ISAAC S. TAYLOR, ARCHITECT, ST. LOUIS, MO.

[Additional illustrations in the International Edition.]

TOWER OF AGNES SOREL, LOCHES, FRANCE. SKETCHED BY MR. A. W. BRUNNER, ARCHITECT, NEW YORK, N. Y.

[Aquarelotype issued with International and Imperial Editions only.]

COMPETITIVE DESIGN FOR THE GLASGOW ART-GALLERY. MR. T. MANLEY DEANE, ARCHITECT, DUBLIN, IRELAND.

This plate is copied from the *British Architect*.

THE WOODEN ARCHITECTURE OF BRUNSWICK, GERMANY:—TWO PLATES.

These plates are copied from *Zeitschrift für Bauwesen*.

MURAL TOMBS IN THE CHURCH OF SANTA MARIA DEI FRARI, VENICE, ITALY.

This plate is copied from *Architektonische Rundschau*.

WROUGHT-IRON GATES, AT BEZIERS: M. CARLIER, ARCHITECT; AND AT VESINET, M. POMMAY, ARCHITECT.

SELECTED DESIGN FOR THE ART GALLERIES AND MUSEUM, KELVINGROVE PARK, GLASGOW. MESSRS. J. W. SIMPSON AND E. J. MILNER ALLEN, ARCHITECTS, LONDON.

We copy from *Building News* the selected design for this great work. The following are some of the conditions observed in the final competition: The original sketches, description and calculations must be returned with the additional drawings, statements and calculations now required, and sent in or before the 31st day of March, 1892, and addressed, as before, to Mr. Alfred Waterhouse, R. A., City Chambers, Glasgow. Each competitor must make a declaration in writing that all the drawings sent in in this final competition have been made by himself, or by his ordinary office staff, and not with the aid of assistants specially retained for this service, except in the case of the perspective view. Competitors must understand that, though their completed design is not necessarily restricted to an expenditure of £120,000, they must clearly show what part of their design can be executed for that sum, and this part of their design should embrace (1) the music-hall, (2) the picture-gallery, administrative offices and as much of the museum as is practicable, so as to be in itself a properly-organized whole, though not, of course, complete externally on all sides. They are further required to show what portion of the structure can be completed for £150,000, and also to state for what sum the remainder of the design, if any, can be executed. The central hall is not intended so much for vocal concerts as for instrumental music, and the better music is heard in the courts of the museum and the picture-galleries, corridors and staircases surrounding the hall, the more nearly will the building meet the object of the promoters. The commission of the accepted architect shall be calculated on his own estimates; that is to say, if that portion of the complete design only is built which he estimates, as shown on his plans by red lines, to cost £120,000, then he shall be paid on said sum of £120,000 at the rate of five per cent, and that whether the actual cost is more or less than £120,000, and whether or not that portion of the design is or is not modified by the executive previous to giving out schedules or taking in offers. If that portion of the design estimated to cost £150,000 is built, then the commission shall be calculated on that sum, or on such proportion of that sum as is expended, and that whether or not that portion of the design is or is not modified by the executive previous to giving out schedules or taking in offers. If the whole design is built, then the architect shall be paid five per cent on the sum he estimates it to cost, whether the actual cost is more or less, or whether the executive modify the plans or not before giving out schedules and taking offers. The commission shall cover all claims and charges of whatever kind competent to him unless, after the offers are accepted, and during the course of construction, the executive materially add to the cost of construction, and, by a writing under their hand, authorize the architect to execute those alterations. No commissions shall be charged on mural decorations, painting, stained-glass, lighting or fittings, including organ. The executive will consult the architect, and his services shall be at their disposal; but in regard to these matters they reserve a free hand. The executive anticipate that the structure will ultimately be completed as designed, and they will use their best endeavors to provide funds to erect at once as large a portion as possible; but if, at the termination of their labors, any portion of the design remains unbuilt, then the plans, including the sketch of the unbuilt portion, shall become their property, and, when they transfer the structure to the corporation, they shall be at liberty to transfer the plans also, and it shall be lawful for the corporation to complete at any future time, under the hands of the city architect

or otherwise, the building according to the sketch transferred to them, and the accepted architect shall not be entitled to object or to claim any additional remuneration. If, during the progress of the work, any dispute in regard to the remuneration, rights or duties of the architect, or to any other matter in which he is interested, shall arise betwixt the executive committee and the architect, then such dispute shall be referred to Mr. Waterhouse, or, failing him, to Mr. Aston Webb, Fellow of the Royal Institute of British Architects, whose decision shall be final and binding on both parties. The promoters, acting as the Association for the Promotion of Art and Music in the City of Glasgow, were constituted by the International Exhibition Association of Industry, Science and Art to raise the exhibition surplus of £46,000 to at least £100,000, to erect art-galleries, concert-hall, museum and school of art. Sir Archibald Campbell, Bart., is the President. We believe the work is to be put in hand without delay.

LLANDAFF CATHEDRAL.

THE illustrations and the following description are copied from the *Builder*.

On the difference in the sites of English and Welsh cathedrals, Professor Freeman says: "Founders of Welsh cathedrals, unlike their English contemporaries, seemed to seek their dwellings in remote places rather for retired contemplation than for any active government of the church, in sites suited rather for Cistercian abbeys than for cathedral churches." The English sees in several instances were removed to cities of greater importance, whilst the Welsh to this day remain where they were originally founded. There is no reason to believe that the cities of St. David's and Llandaff were at any time of greater importance than at present in a military or commercial sense, though the ecclesiastical population both in proportion and in actual numbers has no doubt declined. Some remains of the original clergy-houses can still be seen, either in foundations or in walls, or built into modern work.

The situation of the Cathedral is one of great beauty, and in a way unique. It is surrounded on the south and west sides by wooded hills, and elsewhere by pleasant fields and meadows, which give to the Cathedral a character more distinctly rural than any other in the country. In this respect it differs from most of its English fellows, for whilst they, as a rule, are the centre and nucleus around which a busy city has grown, here at Llandaff, the "city" is little more than a village, consisting mainly of the ruined bishop's palace, the deanery and the clergy-houses, and a few untidy, deserted-looking streets, all of which are to the south and west of the Cathedral, and high on a hill above it. From this hill a steep and picturesque lane, shaded with trees, leads down to the west front, and past it to meadows bounded by the river Taff, from which the city takes its name.

Taking Llandaff as a whole, there is little in its external appearance, except its beautiful west front, that is suggestive of a cathedral. In the absence of any central feature, such as a tower or lantern, or of transepts, or of collegiate buildings (for the ruined bishop's palace has no connection with the Cathedral, and might, indeed, be the ruins of a castle, so little is there to mark its original purpose), the whole fabric might well be taken at first sight, externally at least, for an enormous parish church.

The feature which is immediately noticed by a student of architecture, and which gives this Cathedral its unique character, is the long and, except at one point, unbroken plan, comprising the nave, choir and presbytery under one roof. The lady-chapel projects at the east end at a lower level. The aisles extend the whole length of the church, and include one bay of the lady-chapel. The one break in this line is the chapter-house, which projects on the south side from the second bay westward of the presbytery aisle; on the plan it is a little suggestive of a transept. Another most strongly-marked characteristic is the absence, before mentioned, of any transepts or central tower. "In this respect," Professor Freeman says, "it is unique amongst cathedrals of South Britain, and has but few parallels amongst churches of equal size, even when not designed as episcopal sees, as the present Cathedral of Manchester, Dorchester Abbey, and the churches of Boston, in Lincolnshire, and of S. Michael's, at Coventry."

In Llandaff, again, there is but the difference between the nave and choir, viz: in the plan of the piers, in the arch mouldings, and in the treatment of the shafts dividing the bays; and the only difference externally between the latter and the presbytery is in the arrangement of the clerestory. Hence the external appearance loses a great deal in effect, the long line of roof unbroken, except where the chapter-house occurs, and the general plainness and flatness of the treatment is very unsatisfactory, and must have been still more so in its original state, for the addition of the buttresses in the recent restoration helps to a great extent to relieve what would otherwise be the general monotony.

The ecclesiastical foundation of the see is said to be the oldest now existing in Great Britain still remaining upon its original site; but, although there is plenty of evidence to show what the original building was like (for a minute description of it appears in "*Liber Landavensis*"), no stone of an earlier building than that founded by Bishop Urban in 1120 now remains. The original Saxon church was most likely entirely destroyed to make room for its Norman successor, the principal remains of which are the large Early Norman arch behind the high altar, and which is one of the most effective

features of the interior, and a portion of a window and wall on the south side of the presbytery, part of which has been cut away in a very curious manner by the decorated arcade.

The large Norman arch was, doubtless, the chancel arch of Bishop Urban's church, and his nave stood where the presbytery now is, whilst the site of his choir is now occupied by the present lady-chapel. Judging from this, the original Norman church must have been a very small one, although, as the remains indicate, of a somewhat elaborate character. There is a theory that these remains are but a portion of a much larger church extending as far as the present west front, but the later work in the porches at the western end is much too advanced in detail to admit of the idea that they formed any portion of Urban's work; the latter is more likely to have consisted of only nave and choir without central tower or transepts, as no signs of these having existed eastward of the present presbytery remain. Some foundations have, indeed, been found on the north side near the presbytery aisle, but what they originally formed is only very conjectural. There are more definite indications, however, on the south wall of the present presbytery, which seem to point to the fact that a Norman tower of an irregular polygon shape existed over the present Early English vaulted bay into the chapter-house; the core of the walls of this bay is evidently Norman, although the facing is Transitional. The walls here are very thick, and seem by their strength to have been built for a tower. The extent of Urban's church may have been one bay westward of this part.

Bishop Urban died in 1133, and there seems to have been an interval of about fifty or sixty years before building operations were again commenced. The external walls of the nave and choir, including the two Norman doorways, are attributed to Bishop Henry, of Abergavenny, who held the See from 1193 to 1218, the nave and choir and the vaulted bay to the chapter-house being built during the latter years of his rule, and that of his successor, William Prior, of Gouldcliff, whose death is recorded in 1229. The work carried out by these prelates is by far the most beautiful and interesting in the whole building, and well repays careful study. The detail is especially good and pure of its date, and is marked everywhere with great individuality, notably in the arch-moulds and the manner in which these die upon the piers at the springing.

As already observed, the chief beauty and the most attractive portion of the Cathedral is to be found in the west front. It was built at a time when the Early English style was at its best, and is entirely free (with the exception, perhaps, of the porch) from the slight Romanesque feeling which still lingers in the details of the nave and choir.

It is interesting to compare this front with that of Saint Remi at Rheims; the similarity of the treatment is very evident, the proportion and grouping of the windows in the middle stage is almost identical, and appears to suggest that the architect at Llandaff and Saint Remi was one and the same man.

The interior design of this portion, both in detail, arrangement and proportion, is admirable; it gains a great deal in dignity by the difference in height between the level of the nave floor and of the ground outside, there being a fall of several feet at this point. The additional height thus gained is given to the stage occupied by the three great central lights, whose internal sill reaches nearly to the tympanum of the semicircular doorway outside, the loss of proportion to the lower internal stage being made up by the depth below the external ground line. The manner in which the different proportions of the exterior and interior, necessitated by the two levels, are managed so as to give effect of dignity and good proportion to each, is very ingenious, and deserves close attention.

From the fact that traces of the springing of arches exist in the eastern bay of the aisle on each side of the choir, Professor Freeman believes that they were originally the western arches of a pair of towers, the position of which would have been similar to those at Exeter, except that at the latter they are separated by the aisles from the church itself, whilst here they would have been built over them. If these towers ever existed, the Early English church would have consisted of two steeples flanking the choir, with two larger ones at the west front. This would have contributed a great deal to break up the general monotony of the design. Soon after the nave and choir were completed the chapter-house was added by Bishop William de Burgh, chaplain to Henry III (consecrated 1244, and died 1253), and probably completed by William de Radnor, 1256-1265. It is transitional from Early English to Decorated in style, clearly later than the nave and choir, having deeply-recessed lancet windows, with foliated heads. The plan is very unusual—if not unique—amongst chapter-houses, for where they are usually either rectangular or polygonal in plan, here it is square and vaulted, in four compartments, with a plain central pillar. It has an octagonal upper story, finished with a high pyramidal roof.

During this time Urban's nave and choir existed, but on the completion of the chapter-house his choir was removed, to make room for the next and last edition—the lady-chapel—which was built about the latter half of the thirteenth century, and consequently is Early Geometrical in date. It was founded by Bishop de Breos, who was Bishop of Llandaff from 1265 to 1287, and whose tomb is in the lady-chapel on the north side of the altar. This part of the Cathedral is fortunate in being to-day in practically the same condition as that in which its founder left it. It is a very good example of the period to which it belongs; but, by reason of its tall and narrow proportions, is in strong contrast to the rest of the work,

and somewhat out of harmony with it. It is vaulted in stone of five bays, with Purbeck-marble vaulting-shafts, and has some good carved bosses at the intersections of the groins. The whole detail is of a very simple and refined character. The external treatment is somewhat plainer, with long and narrow two-light windows between the buttresses, these latter having three stages; the lower one has a gablet or pediment at the height of the window-sill, and the upper one carried up to and terminating in the deep stone parapet which finishes the sides. The whole is covered with a low-pitched modern roof, considerably spoiling the external appearance. But, taken generally, the effect of this delightful building is quiet and dignified.

On the completion of the lady-chapel, a complete repair and remodelling of the aisles was undertaken. It was apparently from one uniform design throughout, and originated at the east end of the aisles, the work there being contemporary with that of the lady-chapel. In some parts the original walls were left standing, in others completely reconstructed from the ground. This work was so slowly carried out that it extended through the remaining portion of the thirteenth century, and probably through the whole of the fourteenth, when the present aisle windows, with their oggee heads and reticulated tracery, were inserted. It was at this time that all indications were destroyed, so far as the aisles are concerned, of the bases of the supposed towers. The earliest portion of Decorated date is that comprising the two bays of the aisle on the north side of the presbytery, and the work commenced but never completed in the rebuilding of Bishop Urban's nave.

Two arches were finished on the north side, but on the south the eastern one only; the next arch on this side was just started, leaving the head of a Norman arch and the commencement of the next one above, the latter cutting into the head of a Norman window just above the springing, and leaving the western jamb and the greater portion of the arch intact. This peculiar stopping of the Decorated work, and the mixture of the Norman with it, forms one of the most interesting points in the Cathedral.

The northwest or "Jasper Tudor" tower and some tracery in the eastern windows of the aisles were the only additions of the Perpendicular period. The former was erected by Jasper Tudor, Earl of Pembroke, afterwards Duke of Bedford, and uncle of Henry VII. The Early English tower, contemporary with the west front, was probably destroyed at this time, but much of the old work in the lower portion was used in the reconstruction of the new Perpendicular tower, and the latter still rests upon the original walls on the east and south sides.

The building of this tower was the last event in the architectural history of the Cathedral, until the first of those changes occurred which ended in the shameful state of neglect and decay in which Deans Bruce Knight and Conybeare found it, and from which they were the means of bringing it to the present — on the whole — satisfactory condition.

Few cathedrals have suffered more since Reformation days than Llandaff, for its history from that time until about thirty years ago is one of gradual ruin, spoliation and decay. It was in such a dilapidated and unsafe condition in the year 1718 that the removal of the See to Cardiff was for some time seriously entertained. Storms, literal and figurative, have waged around its walls, playing havoc with its beauty, terminating in that of November 27, 1703, which destroyed the upper part of the northwest tower and a large portion of the nave. It was then left practically to the mercy of the weather for years, and in a pitiable state of decay, the walls of the nave and aisles were ivy-grown, and grass grew on the nave floor, whilst the aisles themselves were roofless.

A worse misfortune, however, awaited the Cathedral when it fell into the hands of Wood, the well-known Bath architect, about the middle of last century. A sum of about £7,000 was spent in converting the presbytery and the four eastern bays of the nave into what has been aptly compared to a Bath pump-room, but what was said by the architect to be a reproduction of an Italian temple. This incongruity existed for nearly one hundred years, until the movement for the complete restoration of the Cathedral commenced, as just mentioned, under Dean Bruce Knight in 1843; this restoration included the rebuilding of the presbytery, choir and nave, and the external completion of the chapter-house.

One or two other points of interest remain to be noticed; of these, the principal is the ruined Bishop's Palace, which stands on the top of the hill on the southeast side of the Cathedral. It was, apparently, mainly of the Decorated style, and very strongly fortified, and, as the remains indicate, had more the character of a castle than a palace — indeed it is commonly mistaken for the former. The greater portion — nearly the whole — was destroyed by fire in his wars against Henry IV by Owen Glendower, who is responsible for the loss of many of the architectural beauties of Llandaff and elsewhere in the county. The old gateway, which forms such a picturesque adjunct to the Cathedral, and some ruined walls, are all he left standing of this, at one time, stately palace.

At no period in the history of the Cathedral does there appear to have been any cloisters, and there are but few stones left of its collegiate buildings. The principal of the latter class was the Archidiaconal Castle, said to have been of great magnificence. This was also destroyed at the same time as the Bishop's Palace, and by Owen Glendower. This castle formerly stood on the northwest side of the church opposite Jasper Tudor's tower. In Browne Willis's time (the first half of last century), there was also standing to the north-

east of the castle a prebendary and a treasury house, but both in very bad repair, and soon to be pulled down; and exactly east of the Cathedral, outside the graveyard, there was formerly standing a small college for the Vicar's choral.

Llandaff once possessed a famous campanile, which stood about 120 yards southwest of the west front. There were but few such towers in the country, others being at Evesham, Chichester and Salisbury; the latter, however, was destroyed by Wyatt in the beginning of this century.

Judging from an old description of the tower at Llandaff, which appears in "*Liber Landanensis*," it was evidently of considerable size and fine design. The ground-plan measured forty-two feet square, and the doorway — that is, the wooden door itself — was thirteen feet high and seven feet broad. The famous "Great Peter" bell of Exeter formerly hung here, but was taken down in the fifteenth century by Jasper Tudor, and exchanged to Bishop Courtenay, of Exeter, for five smaller bells.

Another interesting relic of the Cathedral as it existed before the visitation of Wood is the painting on wood from the back of the Bishop's throne, which formed part of the Decorated choir-stalls, these latter, according to Browne Willis, were very refined in detail, and of an elaborate character. The painting represents the assumption of the Virgin Mary with seven attendant angels.

At the top of the picture on either side is an angel playing on an instrument of music, probably intended to mark her welcome into heaven. At the foot, on the left side, is an angel holding an escutcheon, on which are painted the arms of the Bishop and See, and on the right a full length portrait of the Bishop himself, having a scroll coming from his mouth, on which is written the hexameter line:

O Virgo scandens sis
Marshall collis pandens.

The history of this painting is very curious; during the Rebellion it narrowly escaped destruction, and was partly defaced by being covered with lampblack. It was taken from its position during the alterations of last century, and built in the wall over Wood's Classic portico, where it was discovered by some workmen during subsequent alterations. It was then carefully cleaned and repaired, and is now on the staircase of the palace of the present Bishop. The Decorated altar-screen, which was removed to make way for the present modern one, is an excellent example of the work of that date; it was erected by Bishop Marshall, and is contemporary with the choir-stalls just mentioned. It now stands in the east end of the north presbytery aisle.

Llandaff Cathedral does not possess many monuments or tombs, although there are some deserving notice. Of these one is Decorated in style, and is on the north side of the lady-chapel, and in the second bay from the west end. It is of alabaster, and has nine canopied niches on each side, each containing a small figure of a saint; the whole tomb is in an unusually complete state of preservation. The tomb of Saint Teilo (whose statue is in the vesica of the tympanum of the west doorway) is interesting locally as being the tomb before which it was formerly the custom for people making purchases of land, etc., to swear to their bargains. Two curious tombs are those of Lady Audley, who is in a long robe and close muffler, with two monks bearing escutcheons at her feet, and of an emaciated figure in a winding sheet, who fell a victim to disappointed love in the fifteenth century.

THE RIALTO, VENICE.

THE Ponte de Rialto, which in one span crosses the Grand Canal where the water-way is narrowest, was constructed under the direction of Da Ponte towards the close of the sixteenth century. The site was so favorable, it was selected at an early age, when only a wooden bridge was within the means of the settlers. Palladio designed a bridge for the Rialto, but the money to construct it could not be spared by the Council. Another design was prepared by Scamozzi. Da Ponte, in his design, contemplated a less expensive work, and it was approved. Yet so strong was the prejudice against cheap work, the operations were delayed, as it was supposed the masonry was not of adequate strength. The span is about 66 feet, and the width of the bridge is also 66 feet, in order to allow space for two rows of shops. There are reliefs in the spandrels, and it is supposed that it was intended to introduce other sculptures, but, through economy, that had to be abandoned. With all its plainness, it is the most important bridge in Venice. It is believed that the architect of the bridge, who also designed the Bridge of Sighs, was not entrusted with many works, for in his old age he lived in great poverty until the Council bestowed a pension on him.

Shylock's reference to the rating he received from Antonio about his moneys and his usances "in the Rialto" has given rise to the supposition that the poet would have us believe that the Jew occupied one of the booths on the bridge. As the bridge was completed in 1591, it would be available for the use of a dramatist when the "Merchant of Venice" was produced. But any one who had crossed the bridge would not make it a scene for an altercation. Shylock says that Antonio used to rail against him "even there where merchants most do congregate," and the place indicated was probably in the neighborhood of the bridge. That was the *rieto alto*, or high shore, which was one of the first places where the wayfarers settled, and in the early days Rialto and Venice were almost synonymous.

On both sides of the bridge the Grand Canal is most picturesque, and the combination of old architecture, which time has enriched with such lovely hues, a symbol of endurance, with the transient life on the water, forms a picture unequalled in Europe. In Prout's days, too, there were no steamers to suggest the uselessness of colored sails, vigorous rowing and skilful steering. It was of such a living multi-colored scene that Charles Dickens wrote in one of his letters: "I never saw the thing before that I should be afraid to describe. But to tell what Venice is I feel to be an impossibility. I swear (uncooled by any humbug I have seen) that Venice is the wonder and the new sensation of the world. If you could be set down on it, never having heard of it, it would still be so."

THE ROYAL MARINA, ITALY.

We give an illustration in this number of one of the new bathing establishments projected by an Anglo-Italian company.

The city of Naples is so well-known to English tourists in these days of almost universal travel that we need say but little of the charms of the place as a Continental seaside resort. The estimation in which it has always been held by the Italian nation is stereotyped in the well-known *bon-mot*, "See Naples and die" ("*Vedi Napoli e poi mori*"); but it may be assumed that this trite saying originated more in its natural charms than in any excellence of its architectural buildings. The latter are undoubtedly outvalued by the high order of erections that may be seen at Rome, Florence and other Italian cities. A casual observer who has not visited Naples for ten years would, however, discover that during that period important and almost palatial buildings have sprung up as with a magician's wand, and streets, tortuous and unsightly, have disappeared, giving place to broad and well-constructed roads and boulevards. Notwithstanding these marked reforms, there have been several incidents connected with the city that have seriously militated against its more rapid development as a health resort. The Neapolitans would appear to have been so satisfied with the picturesque physical features of their city, with its majestic bay, the bold outline of its adjacent islands and the imposing background of Vesuvius, that the prosaic questions of sanitation, until the last few years, did not have the attention that modern science demands. Hence foreigners, not without cause, have been afraid to prolong their visit beyond the month of May. A spirited and judicious scheme of main drainage was, however, adopted a year or two back, and these important works are now almost completed, whereby the whole of the city's sewage will be conveyed fifteen miles to the westward, leaving the bay perfectly pure, and giving Naples an immunity from any possible exhalations or impurities that in the past have been prejudicial.

Following closely upon this needed reform, a further important project has occupied the attention of the Municipal Council during the past two years, viz, the desirability of securing for the public benefit the most perfect system obtainable for baths of all kinds, supplied direct from the pure water of the Mediterranean, together with every convenience for bathing in the open sea.

The result of much debate in the local parliament and the valuable suggestions of practical and experienced men have led to the adoption of a comprehensive scheme, submitted by Messrs. Cozzolino and Prestipino, eminent Italian engineers and contractors. The Council are so satisfied with the feasibility and certain success of the undertaking that they have granted to the above well-known gentlemen the exclusive right in perpetuity of the whole of the foreshore of the bay, extending from the Marinella to Posilippo, for bathing purposes, making it, however, a condition that all the present proprietors shall be fairly compensated their imperfect bathing establishments disused, substituting three large erections of a most comprehensive character, particulars of which we subsume. The Italian Government had to be consulted before this important concession was ratified, and the project, after full consideration, has now been formally sanctioned by the authorities, and is enthusiastically approved by leading members of His Majesty's Government, whose support will be most valuable.

It has been deemed desirable by the Neapolitan Council and by those who are specially charged with the responsibility of carrying out these works, that as the proposed *établissements* will be as much for the convenience of English and American as for Italian and Continental visitors, counsel should be taken with experienced men other than the Neapolitan engineers. With this object in view the services of Mr. Augustus Figge, C. E., of Hamelin and Smyrna, and Mr. Noel Ridley, C. E., of Westminster, were requisitioned to consider and report on all the desiderata to make these buildings the *summa bona* of all that can possibly be provided for the comfort, health and enjoyment of the English, Americans and Continentalists.

Further, it has been decided by those interested in the project that to secure the hearty interest of those named, and with a view to the maintenance of the *établissements*, the requisite capital shall not only be obtained in London, but also at New York and at the leading Continental cities. Before any definite arrangements were made, at the suggestion of Mr. E. Bianchi, who represents the concessionaires, the opinion of one or two leading financiers and successful promoters of such undertakings was obtained, and their reports being favorable, Mr. T. Freeman, F. G. S., F. S. S., of 28 Victoria Street, Westminster, received instructions to take the necessary steps to form a syndicate or company on sound commercial lines. During the

past year he empowered his agents at Naples to have an authentic account taken of the bathers using the existing establishments, so as to obtain a basis for reliable calculations. These figures have been attested and sealed by the Municipal Government, and the outside cost of the buildings, furnishing and expenses of working have also been most rigidly challenged by experienced engineers and contractors.

The sketch represents the grand or central establishment, which will be erected at the Piazza Vittoria, opposite the public gardens, and will extend about 1,000 feet from the shore, with convenient landing-stages; it will comprise 1,300 dressing-rooms, forty rooms for hydropathic-baths (some medicated), six large swimming-baths, ball and concert rooms, restaurants, cafés, reading-rooms and library, besides billiard-rooms, yacht-club rooms and other recreative attractions. The two other establishments will be erected at the Marinella and Posilippo. We are promised fuller details and plans of this Vittoria Building in the course of a week or two. Enough has been said to indicate the importance and comprehensiveness of this project.

GEORGE HERIOT'S HOSPITAL, EDINBURGH, SCOTLAND. MEASURED AND DRAWN BY MR. R. S. BALFOUR, R. I. B. A.



[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.]

ROMANESQUE CHURCHES WITHOUT NAVE COLUMNS.

DETROIT, MICH., May 17, 1892.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I have an order to build a large church in the form of a Latin cross, in the Romanesque style of architecture, with ceiling same as in the old basilicas, *but without any columns*. I think I remember having seen an article about the fallacy of such a thing in your valuable journal. Can you, perhaps, point this out to me, or anywhere else, and oblige, Yours truly, ARCHITECT.

[PERHAPS some reader with a more retentive memory than ours can point out correspondent to the desired article.—EDS. AMERICAN ARCHITECT.]

THE UNIVERSITY OF PENNSYLVANIA TRAVELLING-SCHOLARSHIP.

PHILADELPHIA, PA., May 17, 1892.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Kindly note that the proposed Travelling-Scholarship in Architecture, referred to in my letter of even date, is open to all draughtsmen in Pennsylvania as well as students in the School of Architecture. Yours truly, WARREN P. LAIRD.

CLEANING OLD BRICKWORK.

MERIDEN, CONN., May 19, 1892.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—We are answering your kind favor of the 17th, regarding the cleaning of brickwork. The wall we wish to clean has had vines growing on it for some years and has so become discolored. Birds have also soiled it. The vines are now to come down and we wish to have the wall look something like the rest of the building. Yours truly,

THE H. WALES LINES CO.

[We are inclined to think that the only remedy will be found in a scrubbing with wire brushes and a washing with a hose stream. There used to be a concern which made a specialty of such work, but as we have not seen their advertisement anywhere of late it may have failed or gone out of business.—EDS. AMERICAN ARCHITECT.]

EFFLORESCENCE ON BRICKWORK.

PHILADELPHIA, PENN., May 24, 1892.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—We notice in your issue of May 21, that you reprint from the *London Builder* an article by Henry C. Standage, "Efflorescence on Brickwork." Mr. Standage submitted to us about a year ago, manuscript substantially identical with the article as now printed in the *American Architect*, and as a matter of precaution we submitted the article to a chemist, who stated that it was altogether incorrect, we, of course, did not, therefore, accept the article. The consulting chemist above referred to when asked to point out the misstatements in the article, as it appears in your issue of the 21st inst., marked in blue pencil on the copy we send herewith.

We think that some of your readers may be misled by the article and we mention these facts and would suggest that you might have the article criticised by an expert. Our first idea was to criticise the article by the aid of a chemist through *Painting and Decorating*

but as we have great respect for the *American Architect*, we prefer to call your attention to the matter which will probably effect the same end in a better way.

Yours very truly,
HOUSE PAINTING & DECORATING PUBLISHING CO.

[Mr. STANDAGE's propositions, which have elicited from our correspondent's chemist a series of blue-pencilled "boshes" and "nonsenses," were, it seems to us, stated distinctly as mere hypotheses so far as the chemical reactions are concerned. So far as historical statement goes and the observation of final results obtained from the means employed, we see no reason why they should not be accepted as made. There is ample possibility on every side to apply the simple remedy suggested, and if any of our readers will take the trouble to make the experiment, it will give us pleasure to publish their accounts — into which chemical formulas need not be dragged. — EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS

THE ARCHITECTURE OF ARABIA FELIX.—The city of Sanaa, the capital of Yemen, contains, it is said, about 150,000 inhabitants. It is a town of extreme antiquity, and was, before the time of the prophet Mohammed and before even the Christian Era, one of the strongholds of the ancient Himyar race, who have left in the surrounding hills, and within a few hundred yards of the city itself, abundant proofs of their presence in the form of ruins and cave tombs. In the early annals of Mohammedan history we read of it as a city of great importance, even in the time of Abu Bekr, the immediate successor of the Prophet. The town is situated on the great Yemen plateau at an elevation of 7,600 feet above the sea-level. It is surrounded by walls of stone and mud, which, although they would offer but slight resistance to any organized force, are sufficient to withstand the attacks of the Arabs, who do not, or did not at the time of the siege, possess any cannon. To the east of the city is Gibel Negum, rising to a considerable elevation, a bare rocky mountain completely overlooking the town below. On a spur of this mountain, at a slight elevation above the plain on which the city stands, is the Turkish fortress, strongly built of stone. From this fortress the city extends to the west in the shape of a fan, the whole forming a triangle of which the kasr, or castle, forms the vortex. The Jew's town is divided from the Arab quarter by a deserted strip of ground, and, although they are allowed to pass freely in the city and to own shops, they are confined to their own quarter at night. The architecture of Sanaa is peculiar to Yemen, and exhibits probably one of the purest forms of early Arabic style. The houses are high, often four stories, the lower part built principally of stone, the upper stories being composed of brick. The stone is often arranged in lines of different colors running parallel with the ground, and no doubt this exhibits the origin of the painted, striped houses of Egypt and elsewhere. The brickwork, too, is arranged so as to form geometric designs. The windows are long and narrow, the lower portions made to open with "musharabiyeh," or trellis-work, the upper filled in with slabs of alabaster or arabesques in plaster and colored glass. The use of alabaster is very ancient, and the light admitted through the opaque stone gives a very pleasing effect. The streets, with the exception of one or two, are narrow and dirty, but there are frequent open spaces about the town. There are several mosques — one, the largest, a plain square court, partly roofed and enclosed with a high stone wall, and possessing two rather dilapidated minarets. The Turkish Government erected some years ago, during the Governorship of Ismail Pasha, a mosque in the style of those of Constantinople in front of the Government buildings. The bazaars consist of a great semicircle of low buildings, divided and subdivided by small intricate streets, onto which look the shops, for the most part small booths. The principal manufactures of Sanaa are woven silks and arms, the silverwork of the latter being exceptionally good. The town, spread out like all Oriental cities, covers a great acreage, but, with the exception of the suburb of Bir-el-Azab, in which are many gardens and country houses, the whole is surrounded by the stone and mud wall mentioned above, while, to render the defences still more strong, towers are erected every two or three hundred yards at a distance of about a quarter of a mile without the city. On these towers, since the relief of the place, the Turks have erected guns. Such then, briefly, is Sanaa, a city in a plain, triangular in form, overlooked by Gibel Negum. It was on this mountain that the Arabs massed their forces, and continued day and night to pour into the city the contents of their guns and rifles. — *London Times*.

THE PHILADELPHIA CHAMBER OF COMMERCE OVERCOMES A WAMPUM-BELT TITLE.—In Philadelphia under the shadow of the Chamber of Commerce is a lot of land fifteen by forty-seven feet that would seem to belong rightfully to one of the Six Nations. It appears that in the period of the French and Indian War, when John Penn, the grandson of William, was acting as Proprietary Governor, he lived in a little house at the corner of Second and Walnut Streets, leasing the Governor's slate-roof house, the state of which he was too poor to keep up, to John Claypole, a wealthy merchant. On the occasion of a reception Governor Penn granted to a delegation of the Six Nations, otherwise known as the Iroquois, he made a wampum-belt deed of a small lot of land on the State-house lawn to the Indians, so that they might erect a lodge on the spot in which to make treaties with the whites and smoke the calumet with their great men. The Indians faithfully preserved the wampum-belt deed all through the war referred to, but in the war of the Revolution they divided their loyalty between the British and the colonists. The Oneidas, who sided with the Americans, were afterwards confirmed in the possession of all their lands by the treaty of Fort Stanwix. The late Charles Knecht, who negotiated for the purchase of the land on which the Chamber of Commerce now stands, discovered that the title to a part of the ground which he wanted was

vested in the Oneidas, who in evidence of it exhibited the famous wampum-belt deed. Nothing could induce them to surrender it, and the lot on which the Chamber was built did not embrace the little section claimed by the Oneidas. To-day tenements and the rear windows of the Chamber look upon the wampum lot in which a huckster's cart or a stray cur may often be seen. An alley leads up to the little court, and this alley, owned by the Chamber, has been kept closed to the public for more than twenty years. Having thus asserted a prescriptive right to the land, the Chamber now claims it. Whether the title could be confirmed is a question which only the Indian claim makes at all doubtful. — *New York Evening Post*.

ANCIENT AMERICA IN PARIS.—Christopher Columbus, if one is to believe the local press, is not to be forgotten in Paris on the occasion of the celebration in Spain of the fourth centenary of the discovery of America. There is now being constructed on the ground at Neuilly, once occupied by Buffalo Bill and his Indian tribes, a collection of houses and an imitation cathedral intended to represent a part of North America as it was known to "the Spaniards and also to the Dutch and English." The so-called cathedral will be a presentment of that built at Saint Augustine, Florida, in 1592, on the occasion of the first centenary of the voyage across the Atlantic made by the celebrated Genoese mariner. There will also be a large-sized model of the vessel in which the immortal navigator set sail, while the mock ecclesiastical edifice will contain many relics and souvenirs of the great discoverer. Paris will thus outdo Chicago in commemorating the important event, and those who for some time past have been contemplating a visit to the United States in 1893 may alter their decision and be content with the apologetic show provided on that side of the water. — *The Collector*.

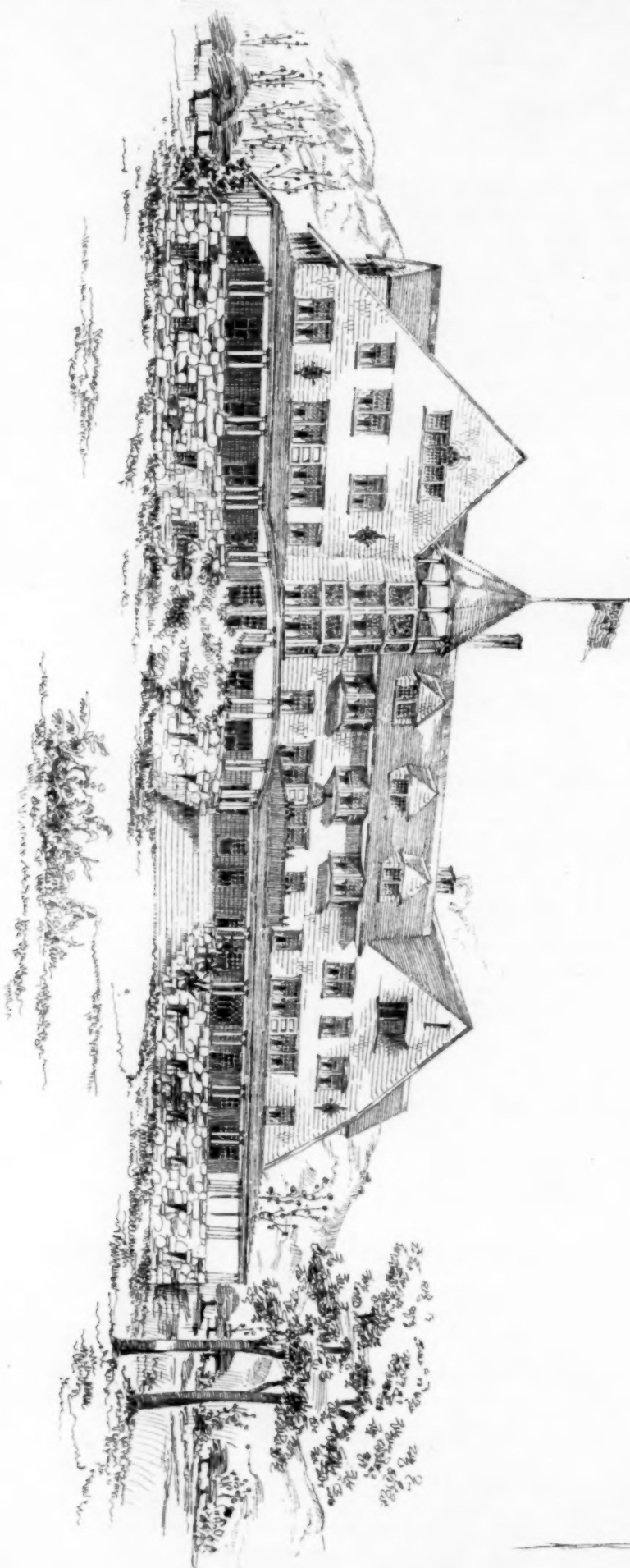
GRANITE BRICKS.—A scheme is now being developed in Scotland by which a high grade of brick is being made from chipped granite and clay. The experiments have been successful, and when perfection is reached it is likely that the method will be introduced in this country. — *Brickmaker*.

TRADE SURVEYS

SUBSTANTIAL progress is being made from week to week in manufacturing, agricultural and general trade conditions. The recovery from the depression of a year or two ago is more gradual than was thought probable. One reason, and, perhaps, the chief one, is that producers of all kinds have been putting themselves in shape to make more and do more than before, and that in the face of a market of falling prices and restricted demand. It is, therefore, not any wonder that the recuperation has been very slow and disappointing to those who do not keep in mind the retarding influences that have been kept at work, as indicated above. It is assumed by economists, financiers and business men of all kinds that all depressing influences have been passed, and that greater activity is only a question of time. This may be accepted as practically the correct conclusion, with certain provisos, but these provisos are sometimes lost sight of. Incidents and developments which have had the appearance of accidents have done more to obstruct and thwart and interfere with the orderly development of business than anything else. There are such a multitude of influences at work, many of them new, and more of them not understood, that it is almost impossible, and at all times dangerous, to attempt to prognosticate the future of business in an arbitrary way. A further depression is certainly within the limits of possibilities, but it is not probable that this depression will occur. There are certain powerful agencies at work in the contrary direction, and the strongest opinion is the accumulating requirements of the masses of the people. While the margins in business have been light, the wages of labor have been large, and the accumulations of savings have scarcely been interfered with. The depression which set in two years ago certainly checked a speculative movement and general rise in values then threatened. It kept money in banks and idle, where it was safest. It checked enterprise when it was dangerous for enterprise to be prowling around; it kept production of all kinds within safer limits, but, with all the conservatism that circumstances have developed within the last year or two, the tide has been kept at the very highest notch compatible with safety. The producing and manufacturing interests generally are now studying future probabilities with fresh interest, believing that they paid sufficient penalty for past misjudgment. There is, of course, an anxiety to run mills, furnaces, factories and shops to the very utmost, to plant more acres in wheat, to increase the mineral product, and to expand business in every possible direction. The time has not yet come for it. Conditions are certainly improving. Ease in the money market continues. Railroad companies show favorable earnings. The reports of savings banks in various States show a large and growing volume of money on deposit. Building and loan associations are well patronized and well managed. The point is that the people at large, the wage-workers, and the small business men are doing well, and keeping themselves safe from danger. The larger business interests are safer than they were two or three years ago, particularly with reference to the extension of credits and the carrying of large stocks of goods. More conservative methods have been gradually adopted and established. The element of risk is not as great as in recent years. It is true, profits are smaller, but they may be regarded as more secure. Fluctuations, while they are likely to continue, are less violent and less frequent. The masses of the people are able to live at a reduced cost, with the exception, perhaps, of rent. Building material has declined in value within a year, taking an average of all kinds. A reaction is now anticipated on all sides, and a slight one will do no harm. A violent one is impossible. The mighty reserve force which will check money or great fluctuations in the future is the extraordinary producing-capacity in every industry. This is something of a new departure in the industries, the building of more machinery than is likely to be wanted at one time. It is partially the result of improvements that have been made and the lower cost of machinery. Be the cause what it may, manufacturers everywhere are found with more machinery than they expect to need. All indications point to good crops, low prices, a large export trade and an avoidance of serious disasters, industrial and commercial.

COPYRIGHT 1892 BY TUCKER & CO.

A PROPOSED HOTEL.
AT LAKE GEORGE, N.Y.
FRANK T. CORNELL, ARCHT.
154 NOBLE ST., BROOKLYN, ED.



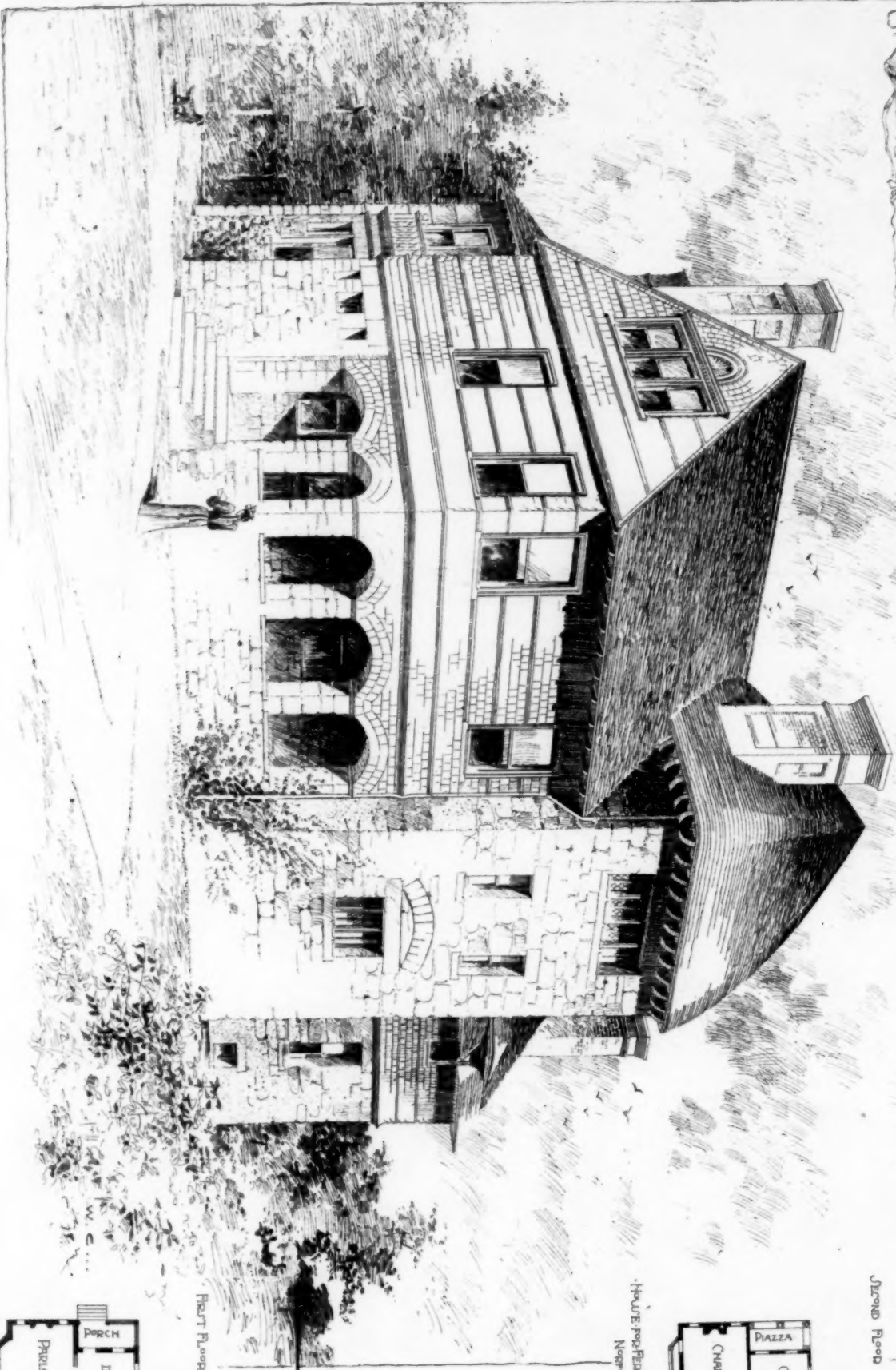
HELDYER PUBLISHING CO. DESIGN

Handwritten text in the bottom left corner, possibly a signature or date.

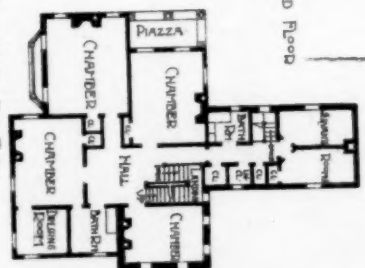
Handwritten text in the bottom right corner, possibly a signature or date.

HOUSE AT NORFOLK, VA. FOR FERDUS REID ESQ.
J. APPLETON WILSON. ARCHITECT.

HELIX PRINTER CO. BOSTON.



SECOND FLOOR



HOUSE FOR FERDUS REID ESQ.
NORFOLK, VA.

FIRST FLOOR





RESIDENCE FOR C. H. DUNN, ESQ.
CLIFTON, O.
HESTER, ARCHITECT, CINCINNATI, O.

DESIGN FOR ADDITIONS TO
CHURCH OF ST. MARY'S.
BUFFALO, N.Y. J. H. MORLING ARCHT.

