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VOL. XXX.

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NOVEMBER 1, 1890.



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EVERY architect at the late convention must have been more than ever convinced of the unrivalled architectural magnificence of Washington in its present state, as well as of the seriousness of the danger which threatens its artistic splendor through the unhappy system which now controls the erection of public buildings. Even without the terraces now being completed, under the direction of Mr. Olmsted, on the west side, which add immensely to the effect of the building, the Capitol is, it seems to us, the noblest architectural object in the world. It is easy enough for architects to criticise small details, to wish that the dome had been of stone, instead of iron, or that the old wooden skylights were not quite so conspicuous; but they will themselves be the first to acknowledge that these trifles count for nothing in comparison with the perfect outline, the exquisitely studied proportions, both of mass and detail, and the force of artistic feeling which, by rejecting every sort of obtrusive device, which a feebler designer would consider "effective," has gained in return a spiritual loveliness, such as no other large building in the world possesses. Photographs, which distort the proportions, and misrepresent the color, never do justice to the Capitol; it must be seen in the delicate tints of its own marble before its expression of pure and tender dignity can be fully appreciated. We are often told that its situation lends most of the charm to the Capitol, and its situation is certainly favorable; but a situation precisely similar has not done much for the so-called "General Butler's house," near by, and it needs a very small effort of imagination to perceive that the New York Post-office, for example, on the Capitol Hill, would look ten times more ungainly than ever. Moreover, the critics who imagine that they are subtracting from the merit of the great artist who created the Capitol, by ascribing its beauty to its position, forget that Dr. Walter's appreciation of its advantages of position was probably quite as intelligent as theirs; and that his work, instead of being thrown together at random, and dropped by chance on the hill, was studied for the place which it occupies, so that the surroundings must be considered a part of his design, essential to the impression which he intended the whole to convey.

AT the other end of Pennsylvania Avenue we find, in the Treasury, a building little inferior to the Capitol in simplicity and beautiful proportion, and at least equal to anything else of the kind in the world. Somerset House, in London, with which the Treasury compares in size, is far inferior in design, being squat and broken; while the colonnade of the

Louvre, although longer than the east side of the Treasury, and much higher, is hardly more dignified, and not so well proportioned. The White House, next to the Treasury, agrees with it in scale and style, and is a building of which we have at least no reason to be ashamed; but here the architecture of the First Reservation ends; and as a pendant to the Treasury, of nearly the same size, and occupying a position exactly similar, on the other side of the White House, we find a huge, fussy, bulging carpenter's creation of little straddling porches, pavilions, dormers, domes, roofs, pediments, chimneys and trimmings of all shapes and sizes. Such a building would be offensive enough anywhere, but as a balance to the beautiful and quiet Treasury it is revolting. The building itself is evidence enough that its designer had no architectural feeling or training whatever; but it is amazing that so wanton an insult to the symmetry and stateliness of the front of the Reservation should have been carried out under the eyes of the principal officials of the Government without objection. Nothing is more characteristic of an artist of the highest talent than his respect for the work of other artists. Walter, in adding to the old Capitol the incomparable wings which make it what it is, followed the lines and details of the original with the most scrupulous care. There is no sudden break to advertise the beginning of the work of the new architect, but the forms, sizes and heights of the windows, the profiles and ornaments of the mouldings, and all the details of the colonnades and entablature, are carried around the wings, just as if it had been Bulfinch or Latrobe, instead of Walter, who was to have the credit of the work; the differences in detail consisting in refinements which few persons out of the profession would notice; while the enterprising head of the Government plan-factory, commissioned to design a building to balance one of the most stately and beautiful structures in existence, instead of repeating, as nearly as possible, the Treasury façade on the other side of the White House, which would have made a group unrivalled in the world, throws away this splendid artistic opportunity, and, to the irreparable loss of the country and of art, thrusts upon us a costly concoction of stone, sheet-iron and slate, ugly, inconvenient, and expensive to keep in repair, which, even in his eyes, could hardly have had any other merit than the fact that he invented it. Unfortunately, the mischief is done now, and cannot be undone, but it is not too late to stop the further course of the stream of grotesque architecture, military and otherwise, which, since the exclusion of professional architects from the public building work, bids fair to overwhelm the once beautiful city. It has been decided to erect a new post-office on Pennsylvania Avenue, between the Capitol and the Treasury, on one of the most conspicuous sites in Washington; and it does not seem as if it would be asking too much to beg, in the name of the community, not alone of architects and artists, but of all people of ordinary taste and education, that the intended structure may not be a "polychromatic" object, with red and yellow stripes; that, if adorned with familiar classical features, these may be designed by some person who has seen and studied good examples of them, and not by people who don't know how they ought to look, and don't care; that columns eight feet in diameter, and eighty feet high, may not be employed to hold up the skylights; and that tin, galvanized-iron, roofing-slate and other speedily perishable materials be excluded from its construction.

THE annual competition of the Architectural League of New York has just been announced, with, as usual, an interesting and suggestive programme. It is supposed that an American citizen has secured, from an excavation in progress in Greece, a colossal statue of Zeus, nine feet high, and has presented it to one of our large cities. The municipality, to show its appreciation of the gift, proposes to erect a pavilion to receive and protect it. The pavilion is to be placed at the junction of two wide streets. The structure must be of white marble, and in Classic style. All residents of the United States, under twenty-five years of age, are allowed to compete for the prizes, which are gold and silver medals, but with the condition that the designs and drawings submitted shall be solely the work of the competitor. Two sheets of drawings are required, and all designs are to be sent in under cipher. Further particulars of this interesting and important students' competition may be obtained from the Secretary of the Architectural League, New York.

AN instructive example of the disadvantages of setting engineers to do architectural work is reported from Liverpool. According to the *Builder*, the Corporation of Liverpool, after the completion of the splendid Vyrnwy water-works, by which water is brought to the city from the mountains of North Wales, conceived the idea of building a small hotel at the Vyrnwy lake, which serves as the reservoir. Supposing that they would do a smart stroke of business by saving the expense of employing an architect, the Council directed their engineer, Mr. Deacon, to make the plans for the hotel. Mr. Deacon, who planned the water-works, is a man of the highest ability in his own profession, but he is not the first person who has found out that there are "more things about a house than he supposed." The financial result was that the economical City Council, which intended to have its hotel cost twenty-five thousand dollars, had to pay nearly sixty thousand for it; while the prospective tenant, who had agreed to take a lease of the hotel, refused, after it was finished, to fulfil his agreement, or to have anything to do with the hotel, on account of its bad planning and arrangement. In justification of his course, he sent to the Council a list of the more important defects, from which it appeared that the huge hotel cesspool, which would require frequent opening and clearing out, had been placed in sight of the drawing-room windows, and close to the principal promenade; and that the heating apparatus had been placed between the wine-cellar and the beer-cellar, and its construction was such that, whenever it was fed, noxious fumes ascended through the house, and ashes escaped in such quantities as to cover the hall furniture, while the cottages attached to the hotel had no chambers except attics in the roof, and were therefore uninhabitable in summer.

OUR innocent little paragraph of a few weeks ago, about the probable effect of the new tariff on the cost of building has, much to our surprise, been rather extensively copied in the daily newspapers, by the Democratic and neutral ones without comment, and by the Republican ones, in some cases, with a reprobation which we feel to be undeserved. It is needless to say that the political aspect of the question, if it has any, never occurred to us, the only object of the inquiry being to ascertain, as nearly as possible, whether the cost of building next season is likely to be increased or diminished by the tariff, and in what proportion. This is a matter of the greatest importance to architects, who have every day to make approximate estimates for their clients, based on the cost of similar work recently executed, and need to know every circumstance which is likely to affect the prices of materials and labor. Concerning the cost of labor, a tolerably close estimate can usually be made, but to follow the prices of materials, and the influences to which they are subject, is a difficult matter. That the new tariff will, for a time, change some of them is obvious, and the amount of the immediate change can be deduced from comparing the old and the new tariff, a process as innocent as repeating the multiplication table. In fact, some of our critics do not seem to find so much fault with what we have done as the expressions we used in speaking of the result. To have said that the cost of cheap buildings "would probably be enhanced" conveys to them an unpleasant idea, which we think we shall in future be able to avoid. From one of our Republican papers we learn that since the Administrative Tariff bill went into effect, which virtually increases the duty on window-glass, by imposing a new duty on the boxes in which it is imported, the market-prices of such glass have, according to a manufacturer, assumed a "firmer and healthier" tone. We are glad, therefore, to assure our anxious friends that our sole desire is to ascertain, as accurately as we can, what other materials beside glass are going to be "firmer and healthier" in price within the next few months, and, if possible, to infer how much "healthier" the cost of building generally is likely to be. Although we do not think we were mistaken in our first impression, we hope to make a more accurate review of our figures, and would sincerely rejoice if it should turn out that the tendency of prices was the other way.

THE Government Building in Chicago is again giving trouble. Very serious settlements have occurred, a part of the building having sunk, it is thought, about ten inches, and the masonry is so cracked that pieces of stone are said to have actually fallen out. The Government expert, who has made a thorough examination of the structure, reports that it is not in

immediate danger of falling, but qualifies his opinion by the observation that there is no knowing when a further settlement may take place, which will bring the whole affair down in a heap. We should think that it might have occurred before this to some of the citizens of Chicago, if not to their representatives in Congress, that the policy of designing the public buildings in the Government plan-factory at Washington, carrying them out through the agency of a set of officials, and having them fall down soon after completion, with no one to hold responsible for the loss, is not an extremely economical one, whatever else may be said for it. It has been shown by ample evidence that the cost to the American public of doing, through irresponsible officials, the work in relation to its buildings which architects are elsewhere employed to do is greater than the customary fees paid for such work to architects of the highest skill, familiar with the ground on which the structure is to be built, and able and willing to make good at their own expense any damage which may result from their lack of due skill and care. If the Chicago building should fall down, the loss to the Government would probably be equal to its whole cost, since the stone and iron work would be so injured by the crash that it could not be used again, and the debris would have to be removed before anything could be done towards rebuilding. The Government, since a salaried official cannot be held for damages, would have to pay the whole amount, a perfectly useless and gratuitous sacrifice to a system which is generally believed to owe its existence to the whim of an unscrupulous politician, who thought that votes could be illegally controlled through it, but which, by the uprightness with which it has been administered, has long since been removed from all possibility of being utilized as a political machine.

THERE seems to be no doubt that the supply of natural gas, at least in Pennsylvania, is being rapidly exhausted, and certain manufacturers, who use the gas for fuel, are said to be already working on short time, on account of the scanty supply. Whether the more recent gas-wells, in Ohio and elsewhere, show the same signs of exhaustion, we do not know, but it seems likely that they will not last much longer than those in Pennsylvania. What the consumers of natural gas will do when it is gone remains to be seen. As their furnaces are adapted for this fuel, and it has many advantages over coal, an effort will probably be made to manufacture and distribute water-gas on a large scale. It is already made, and sold at a low rate, for domestic heating purposes, in several of our cities, and for factory use, in large quantities, it could possibly be sold much cheaper than for houses. Another source of cheap gas might possibly be found in the coke-burning establishments. The manufacture of coke, for use in iron-working, is now carried on in the neighborhood of Pittsburgh on an enormous scale, and, so far as we know, the gas which is expelled from the coal in the coke-forming process is generally allowed to go to waste. The supply of it must be very large, and it would be desirable to have so valuable a product utilized.

THE Illinois scheme for a navigable balloon, which we have before mentioned, appears to be based on scientific principles, and its inventor, Mr. Pennington, with the ample financial backing which he appears to have, ought to meet, sooner or later, with success. So far as can be judged from newspaper descriptions, the Pennington air-ship is a good deal like the Renard and Krebs military navigable balloon, with the difference that the spindle-shaped gas-holder is to be made of aluminium plates, instead of silk cloth, and aluminium is used for most of the framework of the machine. The propeller, also, is to be placed at the front of the gas-holder, instead of under or behind it, and the inventor proposes to use gas-engines for furnishing motive-power, instead of the heavy storage-batteries of other experimenters. A working model has, it appears, been successfully operated, and there seems to be no reason why the apparatus should not work well on a larger scale. The first practical essay is not to be a very ambitious one. A balloon is now in process of construction, something less than one hundred and eighty feet long, which, it is calculated, will be able to carry one ton of freight. Mr. Pennington estimates, on what basis is not stated, that the speed of his balloon will be two hundred miles an hour. This does not seem unreasonable, and, as he truly says, an air-ship making this speed will be independent of storms.

AUSTRIAN ARCHITECTURE.¹—IV.

GOTHIC ART IN AUSTRIA.

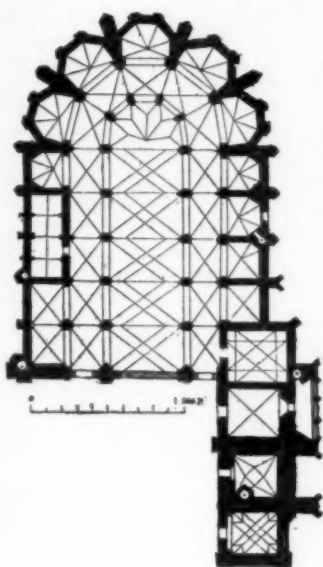


Fig. 1. Plan of Prague Cathedral.

The Romanesque art of Bohemia was inferior to that of any other of the divisions now included in the Austrian Empire; and yet this province made its way to the front in architectural development during the fourteenth century,—an achievement due mainly to the protection accorded to the arts by the princes of the House of Luxemburg, and notably by Charles IV. It must, however, be added that the large immigration of German and Flemish burghers in the thirteenth century, by which the prosperity of industry and the arts in the Bohemian towns was promoted, had prepared the way for this advancement in architecture.

Beside the transition churches already described, there are some others in Bohemia, belonging to the thirteenth century, which exhibit severe and simple forms of the Pointed style, mixed, as remarked above, with forms that are entirely Romanesque.

We cite the most important of these: St. Agnes at Prague and the Cistercian Church at Hradist may be classed with the church at Trebitsch, to which reference was made in the preceding chapter. The parish church and the Dominican and Minorite churches at Iglau are distinguished for the simplicity of their forms and the construction of their aisles, which are of equal height; the latter feature is a peculiarity of German, or rather Westphalian, architecture, which was widely copied in the Austrian structures from this period. The parish churches of Kolin and Kurim and the church of Polie form another group noted for the unusual length of their aisles and sanctuaries.

The thirteenth-century churches of Southern Bohemia, such as the Cistercian church at Goldenkron, the Dominican church at Budweis, and the churches of Hohenfurth and Pisek, are especially remarkable for the lofty and slender proportions of their aisles; they show also in their plans the influence of the Danubian cities, particularly of Regensburg.

On the northern and western frontiers of Bohemia, the predominating characteristics of the churches of the thirteenth century are derived from Lower Germany. The magnificent chapter-hall of the Osseg Convent, 48 feet long by 32 feet wide, divided by columns into six bays and covered with sumptuous vaulting, reproduces the Saxon style of the Cathedrals of Naumburg, Magdeburg and Erfurt. The Minorite Church at Eger, the collegiate church at Saaz, and the parish church at Aussig are disposed as rectangular halls, with three aisles of equal height; the sanctuary in each is as long and broad as the central aisle, and terminates in a wall forming three sides of an octagon; the plan of these edifices shows what influence the preaching monks had exerted on Westphalian art, while at the same time it carries the impress of the democratic character of the burgher element. This type is, moreover, frequently met with in all parts of Austria, especially in structures belonging to the later periods of the Pointed style.

¹ From the French of H. Semper, in Planat's "Encyclopédie de l'Architecture et de la Construction." Continued from page 48, No. 774.

Reaching the fourteenth century, when, under the patronage of the Luxemburg princes, Gothic art made such wonderful advancement in Bohemia, we find the Bohemian architects modelling their most important religious edifices after the cathedrals of France. King John employed a French architect, William of Avignon, to build the convent and church of Raudnitz; the forms, though somewhat stiff, are in a pure Pointed style. The churches of Nimburg and Koniggrätz and the Synagogue of Prague were also erected about the same time, and in a similar style.

Charles IV, who appreciated better than any other monarch of his time the important part played by the arts in the development and prosperity of a country, and who paid true homage to genius, summoned from Avignon, where he had himself lived for several years, the architect, Mathias d'Arras, to oversee the construction of the Cathedral of Prague (Figures 1, 2); the French artist directed the work from 1344 until his death in

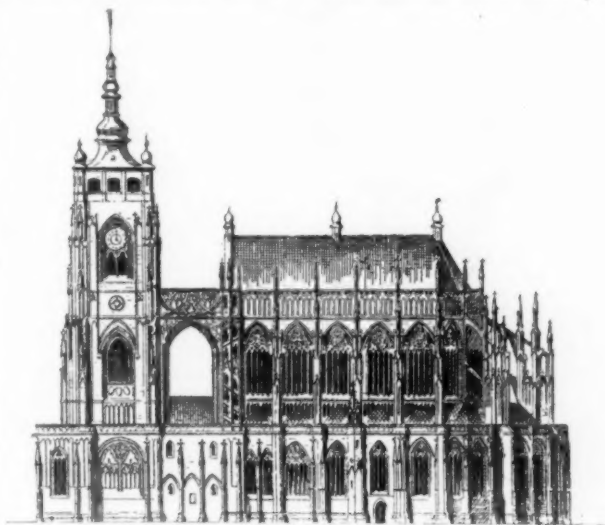


Fig. 2. Prague Cathedral.

1352. It was then carried forward until 1386 by Peter Arler, of Gmünd in Swabia, who had been schooled in the lodge of Cologne. The original plans, as well as the lower portions of the choir are due to Mathias d'Arras, who adopted the French system with the side-aisles running around the sanctuary and radiating choir-chapels. Owing to his training, Peter of Gmünd had no difficulty in following out the general design of the French master. However, his treatment of forms, proportions and details was in a vein quite unlike that of his predecessor.

The parts executed by Mathias d'Arras are of a sober, severe character, indicating simply the architect's desire to express the constructive idea clearly in the various forms; the upper portions of the choir, by Arler, show an effort toward light and soaring proportions, and these, combined with the extraordinary wealth of plastic details, produce picturesque and capricious effects hardly in harmony with the grave massiveness of the French master's design.

In St. Bartholomew's at Kolin, Arler added a choir to the aisles, which were already built in the early Pointed style. Here also he repeated the plan of the encircling aisle with radiating chapels, giving a singular and novel shape to the sanctuary, and so disposing the pillars that one of them should coincide with the longitudinal axis of the church; the radiating chapels were arranged so that there should be a central one, having its rear wall parallel to the transverse axis of the church. The choir buttresses were brought into the interior, and treated as triangular masses, which formed externally with the chapel walls the sides of a polygon. Arler did not respect the old aisles, but carried the middle one to an exaggerated height and connected his choir with them by short, ill-proportioned bays. He was engaged on the work from 1360 to 1378.

At his death in 1386, Arler was occupied on the church of S. Barbara at Kuttenberg, but his work here was confined to the choir. He employed nearly the same system at S. Barbara as at St. Bartholomew's, except that the pillar in the longitudinal axis of the latter was replaced in the former by one of the division walls of the radiating chapels. The mouldings and details, as well as the proportions, are exactly alike in both choirs.

The chevet of Teyn Church at Prague, also by Arler, has the same peculiar polygonal shape as the sanctuary of St. Bartholomew's. As for the general disposition of the edifice, Arler was probably obliged to follow the original plan, which included two towers on the west and three aisles without a transept, with apsidal terminations. The details are the same as in his other churches.

Arler built two other churches at Prague, in both of which the influence of the mystical views of Charles IV is traceable.

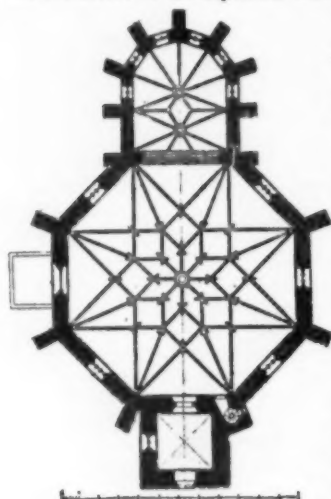


Fig. 3. Plan of Karlshof Church.

The Karlshof Church (Figure 3), octagonal and covered with star-shaped vaulting, with a chevet forming four sides of a decagon, as well as the square chapel of St. Wenceslaus, the walls of which are encrusted with jasper, chalcedony and amethyst, doubtless were intended to suggest by their central form the temple of the Holy Graal.

The civil constructions of this celebrated architect will be noticed later.

Most of the numerous churches erected in Bohemia in the fourteenth century bear in greater or less degree the imprint of Arler's school; we observe in the simplest of these a certain

sureness and technical boldness, together with a marked predilection for lithe proportions and elegant forms, though many of the conceptions are far odder than any of the master's. Among Arler's pupils were the Junkher brothers of Prague, who not only won renown as architects, but also wrote treatises expounding the constructive rules of the lodge of Prague. From 1404 to 1416 or 1418 they were engaged on the Cathedral of Strasburg, where the famous octagonal tower with the winding stairways, is their work.

As examples of the architecture of this school in Bohemia, we cite the church of the Holy Spirit at Koniggrätz, which combines grace with simplicity, and, as more ornate structures, the church of St. Elias at Wilewsk (or Mülhausen), near Tabor, and the choir of the archidiaconal church at Krumau, which are noted for their wholly artificial net-work vaults.

At the beginning of the fifteenth century, the Hussite War not only arrested this architectural activity in Bohemia, but also destroyed a great part of the edifices already erected.

It was under the dictatorial rule of George of Podiebrad, and more especially during the reign of his successor, King Ladislas, that such activity was energetically resumed. Podiebrad's work was mainly confined to restorations; at Eger alone, the monarch's favorite residence, were any important edifices constructed; a local school of architecture was founded at this time. Under Ladislas, Kuttenberg, which was rich in its mines, became the centre of a great constructive impetus, while the lodge of Prague lost completely its former prestige. Other local centres were formed at different points on the frontiers of Bohemia. The new and characteristic feature of the Pointed architecture of the fifteenth century in this country resulted from the attempt to adapt the disposition of the churches to Protestant forms of worship. To that end the three aisles were made to assume more and more the character of a single hall; they were not only carried up to an equal height, but were widened and shortened. Galleries were, moreover, constructed in the side-aisles, and the size of the choir was reduced. In its forms, the Bohemian art of this century often bears evidence of the influence of the English Pointed style; the details are generally paltry, although the vaults, supported on light, slender columns, exhibit extremely artificial rib-systems. Externally, these churches frequently wear the sober aspect of civil structures.

The great Bohemian architects of the fifteenth century were John, Matthew of Reisek, Benoit Riep, and Stanko and Krezchitz of Krumau. John carried forward the work on the church of S. Barbara at Kuttenberg, until his death in 1489. His successor was Matthew of Reisek, who executed both the interior and exterior of the upper parts of the choir in a highly ornate and finished style. His fame, in fact, rests largely on his skill in

sculptural decorations. He filled the Bohemian churches with his pulpits and carved tabernacles.

After the death of Reisek in 1505 Benoit Riep was employed to continue the construction of S. Barbara, the plans of which he radically modified. Riep has left his impress on the Bohemian style of the sixteenth century and the latter part of the fifteenth. He shortened the aisles and introduced galleries in S. Barbara, thus imparting to the church the Protestant character of which we have already spoken. Previous to this, in 1480, Riep had been engaged on the church of the Ascension at Kuttenberg, which he designed in the form of a square hall with three aisles of nearly equal height. The mouldings are of admirable delicacy and harmony. St. Nicholas at Laun, erected by the same master between 1520 and 1526, has nearly the same disposition as the last mentioned church, and is not inferior to it in the elegance of its architectural members, its mouldings, and especially of its vault-ribbing. The windows and the portal alone are of a less pure style in the details; Renaissance forms are already encountered here. The roofing is very odd, consisting of three pyramidal roofs; the central one is surmounted by a turret. The same peculiarity is remarked in the bell-tower, the spire of which is surrounded by small turrets and looks like a veritable tower of defence.

The church of the Ascension at Aussig (1480-1500), like the church of the Ascension at Kuttenberg, is a perfectly square hall divided into three aisles of equal height. But its choir, comprising three bays, and a niche, the wall of which forms three sides of an octagon, is deepened. The west side of the Aussig church is also occupied by a single tower.

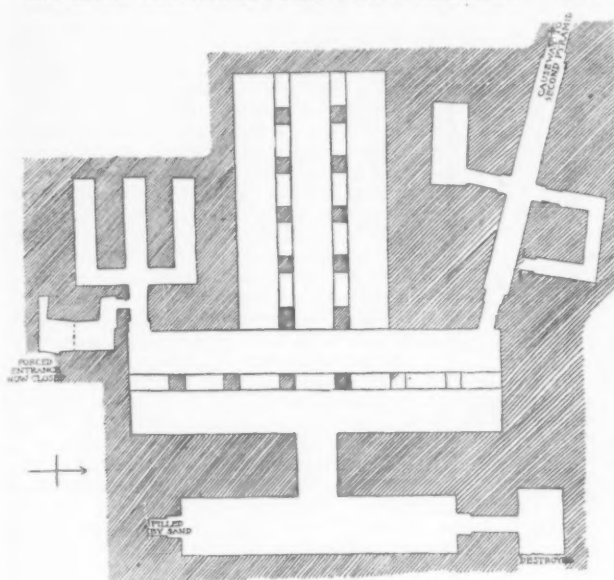
The most complete ecclesiastical structure by Benoit Riep is the church of the Ascension of Mary at Brüx. Here he adopted the basilican plan, with a length of 180 feet for a breadth of 38 feet. In the disposition of the choir he copied the type established by Peter Arler in the choir of S. Barbara at Kuttenberg, and brought the buttresses of the polygonal chevet into the interior, where they form the division walls of the radiating chapels. But the chapels are continued along the sides of the church to the west end, while the aisles unite in a collateral encompassing the choir, the last two columns of the nave being brought nearer together. All the chapels are low, with short, ogival windows and arched entrances in elliptical forms. A gallery above, adorned with open balustrades, extends around three sides of the nave. Above this gallery the side aisles rise to the same height as the nave; they are lighted by very long windows. The lofty vaults, supported on sixteen slender columns, display a wonderful variety in the ribbing. In the centre of the western side rises the tower. The disposition of the aisles is, moreover, exactly like that of the church of Our Lady at Munich (1468-1488) and the church of Our Lady at Ingolstadt (1425-1515). As we have remarked, its origin must be sought in France.

A few other Bohemian churches may be cited, which exemplify more perfectly the school of Benoit Riep; such are the churches of the Holy Cross and St. Magdalene at Leipa, the parish churches of Leitmeritz, Komotau, Rensen, Jung Bunzlau and others. Through the gradual introduction of Classical proportions, forms, and motives into the Pointed system, this school prepared the way for a new architectural era.

The Pointed style was only tardily adopted in Lower Austria, its oldest representative there being the chapel of St. Catherine at Imbach. This was built at the beginning of the fourteenth century, with an undivided nave; the elegance of its proportions, the purity of its forms and the wealth of its details rank it as a model of the early Gothic productions. The conventual church of Gaming (1332-1342), likewise with a single nave, offers a fine specimen of a later type. But far more important, as regards the general disposition, is the church of the Cistercians at Zwettl (of the beginning of the fourteenth century), where the dominating principle of the Pointed style, — that is to say, the principle of supporting the weight and thrust of the vaults on the slenderest possible piers and on buttresses, while reducing the walls to mere spandrels, — has been pushed to its farthest limits.

The choir with its thirteen radiating chapels and an encompassing aisle, recalls the plan of the Cistercian Church of Pontigny, while the equal height of the aisles is, as we have seen, a German feature. The proportions of the architectural members, as well as the mouldings of the Zwettl church are treated, in keeping with the boldness of the construction, with great delicacy.

[To be continued.]

ANCIENT ARCHITECTURE FOR STUDENTS.¹—III.

The Granite Temple.

THE original height of the second pyramid was 454 feet and it was a far less complicated building than the first. The chamber, instead of being in the body of the pyramid itself, has been hewn out of the rock below the base of the pyramid although the basement stones form the gable roof. The general construction is inferior to the other two pyramids, and it is cased partly with granite from Syene but principally with Mokattan limestone, but of a different quality to that of the great pyramid. The entrance passage 3 feet, 11½ inches high by 3 feet, 5½ inches wide, slopes downwards first and then runs horizontally in the native rock; it has a stone "portcullis" across it sliding in grooves. The chamber cut out of the rock has its roof of the tilted basement stones of the pyramid and the walls or sides are covered with plaster as if for decorating, while the floor was partly paved, and in it was sunk a coffer of the usual form. This coffer has a sliding lid now lying on the floor, unbroken, ready to slide into the grooves in the sides of the coffer, which stand above the granite floor by just the thickness of the lid. Bronze pins dropped through holes in the lid into the sides of the coffer, show the manner in which the lid was to have been held in place when once on. The size of the coffer in inches is 2103.68" long, 41.97" wide and 32.12" high. It was evidently put in place as the building proceeded, as it is too large to be passed along the passage. This pyramid contained bowls and vases engraved with the names and titles of Khafra.

The third pyramid is the least interesting of the three, as it is also the latest. The chamber is sunk in the rock like the chamber of the second pyramid and is connected with other rooms. A sarcophagus is said to have been found in one of these rooms. Externally this pyramid is cased like the second, partly with granite and partly with limestone but the polishing of the casing stones is only partly executed.

It is a curious fact that in almost every case, the door of the pyramid is destroyed or lost, and for a long time it has been a matter of considerable doubt as to how the doorway was formed or whether there was any door at all, the entrance being completely cased over so as to entirely conceal the mouth of the passage. It is evident that the entrance was concealed, because in the case of the Great Pyramid it was not discovered until an opening had been forced into the interior and the mouth was reached from the inside. Strabo says of the Great Pyramid "that a little way up one side there was a stone that may be taken out, which being raised there is a sloping passage to the foundations." Petrie discovered a trace of a stone flap-door, or turning block, in the mouth of the Dashur pyramid as well as of a wooden door behind it. Strabo's description applies to just such a door as this.

This pyramid of Dashur is one of another type, being in form, more correctly speaking, more like a pyramid raised on a base with battered sides or as expressed by Rawlinson as constructed with two distinct inclinations. This and other later pyramids were of brick and are without any further interest to us.

TEMPLES.

Of the early temples of Egypt the earliest is believed to be that called by Petrie the "Granite Temple," situated at some distance from the second pyramid, but connected with it by a grand causeway, 15 feet wide and a mile and a quarter long, of white limestone paving. This temple, whose dimensions in round figures are, 60 feet wide by 30 feet high, has a large recess at each end containing statues. There is a hall 81 feet by 22 feet by 19 feet high with columns supporting the roof, and this is entered by a doorway 8 feet wide and

14 feet high and dimly lighted by ventilators. Another hall, 55 feet by 33 feet by 18½ feet high, had its roof supported by ten pillars of Syenite granite. The temple is built of huge blocks of limestone and cased externally with fine limestone. On the roof of this temple was a court open to the sky about 100 feet by 80 feet, with walls all round 15 feet high. It was reached by an inclined passage cased with limestone and paved with alabaster, immediately in front of the second pyramid.

Colonel Howard Vyse speaks of "ridges" near the second pyramid, but made no attempt to explore them. Petrie discovered that these "ridges" were buried ruins of long galleries probably forming barracks for the workmen. These were no small work; there were in all 91 galleries, 90 feet long and 9 feet 5 inches wide, with entrances 7 feet 1 inch wide and 7 feet high. They were roughly constructed of limestone set in mud, the floors were of mud and the walls were plastered inside with mud and lime.²

OBELISKS.

The obelisk was the invention of the twelfth dynasty, 2571 B. C. Although often portrayed upon the walls of the earliest tombs, the first or earliest known example is the obelisk that stood before the great temple of Heliopolis erected by Usertasen III, and which was rather over 68 feet high. Obelisks are all monoliths of red granite truncated and they sometimes had bronze or gold discs affixed on edge to the summit as a representation of the sun. Several original obelisks have been brought from Egypt and set up in various places in Europe. Notably, the one before the church of St. John Lateran at Rome, which is the highest of all (105 feet), and was originally erected by Thothmes III (about 1700 B. C.). Herodotus mentions two obelisks, erected by Sesostris, but gives the fabulous dimensions of 175 feet high and 14 feet square at base. One taken from Luxor and set up in Paris is 76 feet high. "Cleopatra's needle," which was brought from Egypt and erected in London, is 68 feet high, while one still at Karnac and erected by Thothmes I (about 1800 B. C.) is 93 feet 6 inches.

The Obelisk of the Lateran.

About the end of the seventeenth dynasty (previous to 1819 B. C.) the column, which by that time had been thoroughly developed, was substituted for the obelisk and used for the same purpose.

The proper position of an obelisk was before the entrance to a tomb or temple, where it stood sometimes singly, sometimes accompanied by a corresponding obelisk, one on either side of the entrance. All obelisks are situated on the eastern shore of the Nile, that nearest the rising sun.

It was about this date (1819 B. C.), the commencement of the eighteenth dynasty, that temples were first planned with a number of courts opening one into the other, and here we may notice a singular departure from what we may call the direct line of progression.

TEMPLES.

The Egyptian temple of this period, instead of being a developed pyramid, a pyramid altered and made suitable for the purposes of religion—was totally unlike the pyramid, and in fact had nothing whatever to do with its form. The constructed temple had its origin in the excavated tombs, but the change was due to a decided modification in the beliefs and superstitions regarding the dead, and we find it is the temple and not the tomb that is henceforth the vehicle of Egyptian Art. The tomb, instead of being the chief object on which their talent was expended, was now removed from the temple proper, and given a separate existence. Neither were they at this time particular about the last resting-place for their dead. As they changed the seat of government from Gizeh to Thebes, they lost the rocky ground, and had instead a sandy soil, choosing the neighborhood of some cliff, in the face of which, in cavities excavated for the purpose, the mummy could be placed.

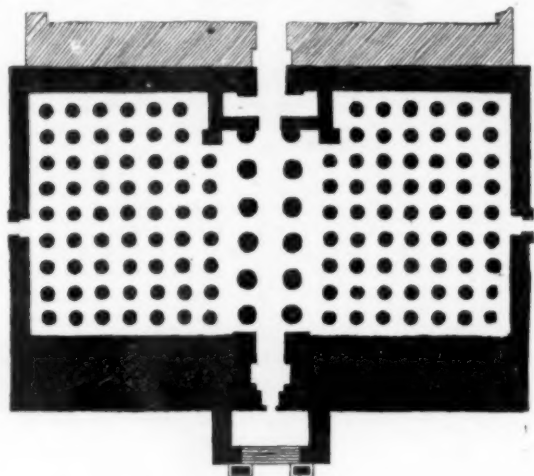
A very interesting discovery was made recently (1887) of the oldest temple of this kind known to exist in Egypt. The site was hardly identified and the temple was known only by tradition. Herodotus gives a graphic description of the site and surroundings, but until recently no trace of the temple had been discovered. He says, "The temple stands in the middle of the city (Bubastes) and is visible on all sides as one walks round it, for as the city has been raised up by embankment, while the temple has been left in its original position, you look down upon it wheresoever you are." The raising of the city was apparently for the purpose of keeping out the waters of the Nile, and Herodotus relates that this kind of work was begun just when the irrigation canals were dug, the soil being piled up as it was excavated, and that afterwards Egyptian convicts were employed in raising it higher. Bubastes was not the only place so raised. "A low wall runs round the enclosure (of the temple) having figures graven upon it, and inside there is a grove of beautiful tall trees growing round the shrine which contains the image of the goddess. The enclosure is a furlong in length and the same in breadth. The entrance to it is by a road paved with stone for a distance of about three furlongs, which passes straight through the market-place with an eastern direction, and is about 400 feet wide. Trees of an

¹ Continued from No. 772, page 26.² Petrie.³ Petrie.

extraordinary height grow on each side of the road which leads to the Temple of Mercury from the Temple of Bubastes."

With this description to guide them the explorers might expect to find something of this kind: a series of mounds raised considerably above the plain, with a square or long rectangular depression in the centre, and, probably on the eastern side, a gap in the mound corresponding to the position of the "approach."

The explorer, M. Naville, accompanied by other officers in connection with the British Museum exploration fund, having come upon a site exactly answering to this description, began operations early in 1887. They had hardly commenced when they began to turn up detail after detail of a most interesting character, and the deeper they dug, the earlier the date was of the remains they unearthed, until at last they came upon hieroglyphics and cartouches of Usertaseu III, the most powerful of the twelfth dynasty Kings (2571 B. C.) who reigned here. Upon one stone still earlier marks were found, being none other than cartouches of Pepi Mervia who reigned (according to Brugsch) 3300 B. C., but of his time no other memorials have been exhumed. So without further knowledge we can only assign this temple originally to Usertaseu III, though it is very probable some

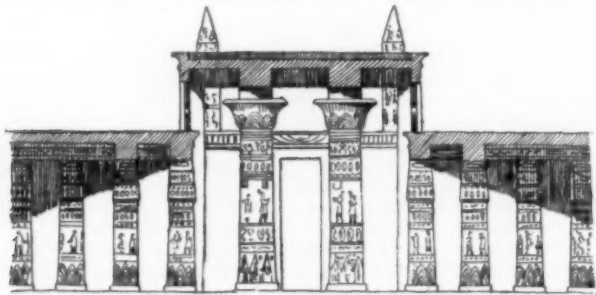


Plan of Hypostyle Hall at Karnac.

small shrine existed on the site before his time. Halls of the dates of Rameses II, 1436 B. C., and of Osorkon II, 977 B. C., were discovered, showing that a succession of monarchs had from time to time made this ancient building the place of their royal abode, adding to it such courts and chambers as best suited their convenience, and the display of regal dignity. From these halls were unearthed "columns of beautiful lotus pattern, with lotus bud capitals, architraves with the royal insignia, heads, trunks and limbs of colossal statues, some in groups of three and some in pairs, all belonging to the date of Usertaseu, rather more than one thousand years before the reign of Rameses II, but such was the overweening pride of this monarch (the children of Israel's oppressor), that he inscribed these ancient relics with his own name and seal."

The temple was found to be oriented from East to West, and the various courts were marked by sinkings or depressions in the surrounding heaps of sand and debris and through the gap in the eastern mound was the magnificent approach paved with limestone, like the approach to the granite temple erected some 400 or 500 years before.

The mass of sculptured blocks, inscribed stones, pieces of columns, all monoliths of Syenite granite, thrown down and broken, bases,

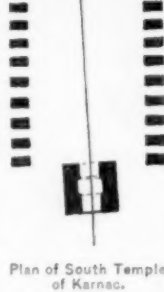
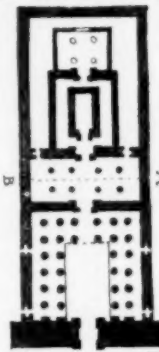


Section of Central Portion of Hypostyle Hall, Karnac.

shafts and caps often badly damaged, was something that exceeded the wildest hopes of the explorers.

The general plan seems to have been, first a great hypostyle hall, containing the magnificent columns, then a second great hall and beyond this, again, a third of much later date. The first is ascribed to Usertaseu III, the second to Rameses II, and the later to Osorkon, but the third hall also contained the name of Nectanebo, who reigned under the Persians, 364 B. C.

In the great hall of Osorkon where there were no columns, statues almost without number were found, single and in groups—some of these were of colossal dimensions. But of all the relics, blocks, sculptured in bas-relief, are far the most interesting, preserving accounts of events in Osorkon's reign and giving an insight into his career of which very little had hitherto been known, and proving that instead of being an insignificant king, he was one of the most powerful of his line.



Plan of South Temple of Karnac.

It is not necessary for our purpose that I should mention more than the principal examples of Egyptian architecture, my intention being to give a clear idea of the progress of the art, as exhibited in the best remains left to us.

The next temple to be described is that at Medinet Abou, built, not as Fergusson thinks, by the first king of the nineteenth dynasty, but during the early part of the eighteenth (about 1800 B. C.). Its total area is 520 feet x 107 feet at the widest part, which is the great propylon or guarded gateway. The temple consists of a hypostyle hall and two great courts, the inner of which is adorned with caryatide figures. But the whole temple cannot be

explored, as a considerable portion of the site is now occupied by a village which would first have to be removed.

Karnac is the greatest of all the temples of Egypt, and not only so, but it is greater than any building erected since the Great Pyramid, the world over. The area of the Great Pyramid is about 579,930 square feet, while the area of Karnac temple is 430,000 square feet. We can hardly compare these ancient temples, however, with the great churches of the Christian world, for the simple reason that though these temples covered so great an area they were composed of many courts and open spaces. This temple was the work of many generations; from beginning to end it occupied 500 years in building. It is believed that Usertaseu erected the original temple (2571 B. C.) on this site, which was probably destroyed during the domination of the Shepherd Kings, or at any rate, is likely, for want of care, to have fallen into complete ruins during the next 500 years. Amenophis, the first king of the eighteenth dynasty, (1819 B. C.) set about erecting a temple on the same spot, 120 feet square. His successor, Thothmes I., added to this a great hall surrounded with piers and colossal figures against them. To this Thothmes III, the sixth king, added a hall of very peculiar character, unlike any other found in Egypt. It measured internally 140 feet x 55 feet; it had two rows of square piers and two of circular columns supporting the roof, but the caps of the columns are like bells with the mouth downwards, and this is the only known instance where such caps exist. These three buildings formed the great temple until Manepthah I, the eleventh king, added the most wonderful hall of Egypt. It was an hypostyle hall, its dimensions being about 320 feet wide x 160 feet long, containing one hundred and thirty-two columns in rows of nine, the central two rows being of five larger columns, supporting the attic-roof, part of the length of the hall being here taken up by the small funerary chapel or tomb.

The walls surrounding this hall appear to have been unpierced except by small doorways in the centre of each side and end wall, so that unless we accept Fergusson's theory of the admittance of light by a clearstory or attic-story, or fall back upon the curious type of unroofed columnar courts of the Persians, which we shall discuss later, it is difficult to see how light was admitted. The total length of these united buildings is 1,200 feet and the width 360 feet. It was here that one of the obelisks previously mentioned was erected.

R. W. GAMBIER-BOUSFIELD.

[To be continued.]

ITALIAN ART AT THE FAIR.—The Roman committee appointed to arrange for a proper representation of Italian art and industry at the international exhibition in Chicago in 1893 has dissolved, having decided that any further efforts to accomplish the work for which it was formed would be useless. It is stated the committee found that in view of the new United States tariff law few manufacturers or others were willing to send exhibits to Chicago.—N. Y. Tribune.

TWENTY-FOURTH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.



Competitive Design for the Garrison Church at Strasbourg. Reuter & Fischer, Architects. From *Architektonische Rundschau*.

WEDNESDAY, OCTOBER 22, 1890.

SHORTLY after four o'clock on Wednesday, Oct. 22, the twenty-fourth convention of the American Institutes of Architects was called to order in a pleasant and commodious room of the "Arlington" at Washington. As Mr. Hunt was detained at Asheville, N. C., by illness, the first vice-president, Mr. Carlin, took the chair and kept the proceedings of the short afternoon session moving on in a rapid and business-like manner.

The roll-call showed that about seventy members were present, and as later trains arrived the number was increased to nearly ninety, so that, with the spectators, the room was fairly filled. Members had come from every section, but, as usual, the Eastern districts sent fewer members in proportion than the others. This, in spite of its seeming to indicate that whatever may be done by the assembled representatives of the profession will be accepted with approval by those now present, is really a regrettable state of affairs, and it needs no elaborate argument to show how narrow the margin is which secures to the profession the wisest treatment of subjects that come before these annual gatherings, whose membership is so absolutely left to chance. There will surely come a time when the actual majority in a convention, though a small minority of the Institute, will follow the lead of some wrong-headed but able debater and decide some important measure in a way to prejudice the best interests of the Institute and the profession at large. All chance gatherings are dangerous bodies to be entrusted with legislative powers, particularly in the early hours of conference, before the really able men present have had time to assert their right to leadership. An instance in point occurred at this meeting when it was proposed that the convention should attend certain ceremonies in a body. The manner in which men looked at one another in doubt showed that the general feeling was that to do this would be to do more than the circumstances required, yet the circumstances were so peculiarly delicate that no one liked to oppose the suggestion, and a *faux pas* would have been taken but for the good sense of a single man, who saw that here was a case when his own personal susceptibilities must be sacrificed for the sake of preventing the doing of a thing which practically no one wished to be done. He accordingly suggested that

although he felt the delicacy of opposing the proposed action, the Institute should be represented by a single member, and the sigh of relief with which the amendment was adopted showed that all felt that a blunder had been avoided. Now there will inevitably come a time when these chance gatherings will not contain a man who is sensible enough to perceive the error lying in the contemplated action, or quick-witted or self-sacrificing enough to oppose it.

After the roll-call the Hon. J. W. Douglas, of the Board of District Commissioners, was introduced, who addressed a few words of welcome to the visiting architects.

THE ADDRESS OF WELCOME BY MR. DOUGLASS.

Gentlemen of the American Institute of Architects:—I am here to greet you on behalf of the good people of this city and District, and if I could design an address of welcome as admirable in proportion and grace as any of you could do in your professional domain, I should hope to awake famous some morning and find this little speech a classic.

The men through whose genius and studious labors the race is safely and commodiously housed, and its taste for elegance and symmetry gratified, both in domestic and public architecture, can never fail to inspire the respect and engage the admiring attention of the civilized world.

The wonders of the past in stone and brick show how soon the necessities and higher aspirations of mankind were met and gratified by the early—possibly, the prehistoric—architect.

Just think, but for that primitive genius in wood or stone, who first designed a roof, how much of comfort we might have missed, how much of quiet happiness from the pattering rain-drop, not to mention the consequent myriad escapes from rheumatism and pneumonias!

Somebody has defined architecture as "frozen music," and the Western Genius who designed the Minnesota Ice Palace for the first time certainly on this continent put into the concrete what theretofore was merely an European ideal.

In our city and District your practiced eye will discover, I trust, much to admire in the various styles of public and private structures; and, if I am not mistaken there are before me now several of your distinguished body whose talent and taste have materially helped to adorn the city and make the nation proud of its capital.

A few weeks ago, on an occasion not unlike this, I gave a few statistics in regard to the material progress of our city. While I had them in my mind in a general way, my friend of the press has just handed them to me in printed form. This is another evidence of the inestimable value of the daily press. During the past ten years permits for 17,733 new buildings have been issued, representing a valuation of \$43,133,843. These buildings, if placed in contact, would solidly cover an area of nearly one and one-half square miles. During that period the average annual increase in the number of buildings erected has been over 20 per cent, and the average annual increase in the value of new houses about 33½ per cent. Another gratifying fact revealed by the records is that the average cost of buildings erected in 1890 was more than 40 per cent greater than the cost of buildings erected in 1881, which is conclusive evidence of the marked and constant improvement in the character of the houses erected.

Now, gentlemen, as Architecture is a derivative of the Latin and Greek words meaning master-workman, it becomes a layman to be modest and brief in the presence of so many masters. Suiting myself to the thought, I will simply say that we are very glad to have you here, individually, as well as an association.

Mr. Kendall, of New York, then read the annual address which Mr. Hunt had forwarded to him, and by way of acknowledgment a message of sympathy and condolence was dispatched to Mr. Hunt.

THE ANNUAL ADDRESS OF THE PRESIDENT, MR. HUNT.

Gentlemen and Colleagues:—This, our first convention since the consolidation of the Western Association of Architects and the American Institute of Architects, could not be held in a more appropriate place than in this capital city of the nation, representatives, as we are, from all parts of the country. Our satisfaction in meeting here is increased by finding about us many of the most important works of the late President of the Institute, Thomas U. Walter. They show careful study, and are characterized by dignity and repose, strikingly in contrast with much of their surroundings. After running the gauntlet of every conceivable style of building to be found in this metropolis, one enjoys a certain feeling of rest while contemplating his work. We must regret that while the nation has thus just reason to be proud of it, Congress remains indifferent to the appeal of Mr. Walter's family for just remuneration for the faithful services his work represents.

When speaking of our national buildings, I cannot avoid referring once more to the method employed by our Government in their erection. Millions are appropriated every year for new court-houses, post-offices and custom-houses, to be constructed in various parts of this great country, besides which large amounts are voted annually for repairs, alterations and additions to those already existing. With few exceptions, for the design and superintendence of all these vast

and multifarious works, a single office, that of a Bureau of the Treasury Department at Washington, is made responsible. When this Bureau was established, its organization sufficed for all the needs of the time, but the work now thrown upon it is far greater than it was then expected to be, or than it was adapted to undertake. It is to be considered, also, that the nation was then but little interested in architectural art, whereas to-day the numerous followers of our profession furnish proof of higher attainment, and are the natural consequence of the rising demand and more advanced standard which the American public has since reached. While we should, perhaps, be thankful that the work of the Architectural Office of the Treasury is generally as well done as it is, we must hold it preposterous to assume that any one person can do justice to the present requirements upon that office. The present arrangement being by no means an economical one, it is natural to attribute the perpetuation of it to political jobbery or to an indifference towards matters of art. But probably it is, in fact, more due to ignorance of the labor and acquired skill necessary to the production of creditable results in architecture.

Were the national buildings put in charge of well-selected men, and the duties of the supervising architect restricted to a general supervision of them, it is but reasonable to assume that the Government would be better and more economically served, as then the architect could personally give more thought to his design and more efficient superintendence to the working out of it. Incidentally to the result of a much better class of buildings, the advantage would also be gained that, through a proper spirit of emulation in the profession, architectural art for all other purposes would be cultivated. It may be observed, also, that certain features of monumental art can be properly introduced only in public structures, and every opportunity should be availed of both by the public and the profession to encourage and to train members of the profession in this direction.

I am fully aware that I am treading on delicate ground, and that the difficulties that beset any change in this direction are very great; but I cannot refrain from again alluding to this matter as one of vital importance to our profession. The situation has often been discussed, and I would respectfully refer any who may wish to give it further consideration to the able report upon it submitted to our last convention.

The governments of most of the nations of Europe select an architect, either in competition or by appointment, for each and every public building, and in France every individual structure belonging to the nation, be it a building or a monument of whatever kind, has its appointed architect, who has charge of, and is held responsible for, all repairs, alterations, etc., that may be required, this architect acting under the general supervision of a superior bureau. These positions are eagerly sought after, highly prized, and are held by architects of prominence, whose assistants thus gain useful training and valuable information, fitting them in their turn to fill corresponding positions with credit to the nation. This arrangement has been in existence upwards of two centuries, and has been persisted in under every change, not only of administration, but of dynasty, as it surely would not have been if its results had not proved satisfactory.

The attention of our Government has been called more than once to this important matter by the supervising architects in their reports, and you will be glad to learn that the unofficial suggestion of the present worthy incumbent, Mr. J. H. Windrim, viz: that the designs for new Government buildings be open to competition to the Fellows of the American Institute of Architects, has been approved by your Executive Committee, who confidently trust that at no distant day the proper authorities will favorably consider this suggestion.

It is to be regretted that the "Bill to Establish a National Art Commission," to report on plans of public buildings, monuments and works of art, has not yet been passed by both houses of Congress and been made a law. Let us not despair, however, but rather be moved to use all means in our power to bring about the desired result, and to insure legislation of a similar character in our State and municipal governments.

It is my painful duty to record the loss, by death, since our last meeting, of John McArthur, of Philadelphia, Pa.; Edouard Sidel, of Birmingham, Ala.; D. A. Bohlen, of Indianapolis, Ind.; Henry O. Avery, of New York; B. G. Chisolm, of Anniston, Ala.; E. Townsend Mix, of Milwaukee, Wis., all men of ability, for whom the Institute mourns.

In the death of Mr. McArthur the Institute loses one of its oldest friends and staunchest supporters, who during nearly a quarter of a century showed untiring zeal in promoting its interests. A clever man of genial disposition who was endeared to us all; his numerous structures testify to his ability, and in his crowning work, the City-hall of Philadelphia, he has left a monument of his genius.

The Institute has sustained a great loss in the death of Henry Ogden Avery. Mr. Avery was thoroughly trained in his profession, commencing his studies at the Cooper Institute in New York and finishing them at the Ecole des Beaux-Arts, Paris. He was a zealous worker in various Art Societies, and one of the founders of the "Architectural League of New York"; which is doing so much to interest and educate the public in architectural taste. Modest and unassuming, he was earnest in his endeavors to advance the cause of architecture and art in general. During his short professional career

he gave proof of great ability, and much was rightly expected of him. Such men the profession can ill afford to lose.

Those of us who consider it a privilege, as well as a duty to attend these conventions, will appreciate how much is gained to us in fellowship. It is personal acquaintance with each other, out of which has grown the mutual respect, and esteem within the profession, without which we cannot expect its due appreciation from the general public. Besides our individual gains in various professional ways growing out of the varied practice of the profession in different parts of the country, we are gainers as a body, in that our earnest endeavors to lift the standing of the profession tends toward a higher recognition of it by the public. Much has already been accomplished in this direction, but let us not cease our efforts until our art holds that high position to which it is entitled. Let us ever bear in mind, each one of us, that individual success in our calling lifts the position of the profession generally, and that the elevation of the profession is a gain to each one of us individually. Every conscientious practitioner must feel that to attain any degree of success necessitates a life-long struggle; the requirements of the profession, both scientific and artistic, being so numerous, so varied, and so subtle, that they can only be appreciated by those engaged in them. For my part, and I venture to say that I express the sentiments of those who have been so fortunate as to stand in admiration before the chefs-d'œuvres of the old world, I confess to a sense of despondency at my own efforts, and it is only when I reflect how comparatively few really admirable structures there are in the world, that a faint spark of hope gives me courage to try once more.

It may be interesting here to note some of the artistic difficulties the profession has to contend with.

Unlike any other of the fine arts, architecture has a practical side which renders it doubly difficult and complex. Painting and sculpture are, so to speak, direct imitators of nature; while architecture, likewise music, are indirect imitators of nature, in that without copying it, they both aim to produce certain impressions on the mind that nature does.

Again, the architect does not select either his time or his subject, he must be ready at a moment's notice to carry out the schemes of others; nor in designing is he in reality ever before his work, as are the painter and the sculptor. The interpretation, too, of his geometrical drawings, which are a necessity, requires a special training far more thorough, though few are able to realize the fact, than is required to understand music from reading musical notes. In fact, it is only after long practice and considerable experience that any one learns to realize the true effect that architectural designs as represented by drawings will produce when executed.

Again, from first to last the architect's work is carried out by other hands than his own. He must, therefore, be conversant with the many branches of art and industry necessarily employed before his intentions can be realized, and after all, in spite of detailed drawings, reiterated minute instructions and the most careful supervision, it is rare, as you all know, that the ultimate result is entirely satisfactory to himself.

Looking constantly to the continued improvement of our art, both in design and construction; we note with pleasure that quite a new impetus is being given to the use of terra-cotta, but, as in this material, ornamentation can be produced at comparatively small cost, caution must be urged to guard against the too profuse introduction of ornament, so detrimental to any work of art.

During the past year great additions have been made to the Wil-lard collection of architectural casts and models, in the Metropolitan Museum of Art in New York—a great boon to the professional man, the student, and to the general public.

Continued praise is due to the management of our architectural and technological schools, which now compare favorably with those in Europe. The architectural student is not now obliged, as heretofore, to go abroad for his technical education, and thanks to the generosity of Mr. Arthur Rotch of Boston, and Mr. Charles F. McKim of New York, two travelling fellowships have been founded, the fortunate possessors of which are enabled to perfect themselves in their artistic training through study of the best work in the old world. It is perhaps desirable that I should here state that unless the student be conversant with office work, a couple of years can be spent to advantage in an architect's office after graduating from technological and art schools before going abroad.

The great success of the training-schools established and supported by our old associate Colonel R. T. Auchmuty, of New York, for the education of American citizens in useful arts connected with building affairs, is a matter of much congratulation to our profession.

The architectural department of Columbia College has been enriched by the generous gifts of Mr. F. A. Schermerhorn, which provides for an income of \$1,300 each alternate year, and by the munificent gift of Mr. S. P. Avery of the valuable library of his son, H. O. Avery, together with a fund of \$30,000 for its maintenance and the purchase of new books, while an architectural department has been added to the curriculum of the University of Pennsylvania, under the auspices of the Philadelphia Chapter, which has been made the administrator of a fund of about \$20,000 to be used in behalf of our art.

In this country, for every dollar that is expended on all the sister arts tens of thousands are spent on architecture and building. In order that architects may be more generally employed, we need to have always a serious sense of our great responsibilities. We should

be most conscientious in our endeavors to faithfully serve the interests of our clients to the best of our ability; to do so even should it at times be necessary to sacrifice some of our artistic preferences. As trustees we should carefully avoid incurring any useless expense, and we should do all in our power to rightfully gain confidence and well-deserved esteem from our clients. We should satisfy them that any structure in experienced hands can be given an architectural excellence without necessarily increasing its cost.

Petty jealousies among us should be studiously avoided as injurious to the profession. We should be careful to avoid speaking slightly of one another's work and be just in our criticisms; never forgetting to give full, unstinted praise for good work, wherever found, bearing in mind that meritorious work benefits the whole profession. The gratuitous offering of professional service should be avoided, for, like gratuitous advice, it is valued at its cost, and can only lower the standing of our profession.

A happy coincidence (worthy of note) is the incorporation of the Institute of Architects of New South Wales, Australia, in 1890, the year of our consolidation. You will be pleased to know that the President, Mr. J. Hornbury Hunt, a Canadian by birth, was brought up in the office of Mr. E. C. Cabot of Boston, Massachusetts.

Mr. Hunt, in a private letter to me, expresses the hope that a strong bond of fellowship will unite the two societies, in which we must heartily concur.

During the past year thirteen Fellows have been elected.

Your Board of Directors have held two meetings, and four have been held by your Executive Committee.

The most important matter before the Executive Committee was that of the relation of the members of the Chapters to the Institute. The amendments agreed upon were as follows:

1. That the utmost encouragement should be given to the formation and the continuance of the Chapters.
2. That the precise geographical limits to be included under each Chapter were impossible to define.
3. That every regular member of a Chapter should be a Fellow of the Institute; but that the Executive Committee were of the opinion that no objection could be made to the Chapters including two classes of members—Regular and Associate.
4. That any five Fellows of the Institute might organize a Chapter under the Constitution and By-laws and Charter of the Institution.

The San Francisco Chapter has applied for a charter with a membership of thirty-six, but only four of these are members of the Institute.

Pittsburgh applies with a membership of nineteen, and only three are members of the Institute.

Therefore a number of Chapters have been unable to reorganize before this convention.

The Executive Committee has received a communication from C. A. Cummings, requesting the coöperation of the profession in aid of the Delphi Excavations, and I announce with pleasure that Mr. Cummings has been asked to address the convention on this subject, of much interest to us all, and I doubt not that the convention will respond liberally to his appeal.

Other subjects of varied interest will be now submitted for your deliberations, to which I ask your earnest attention.

The treasurer read his report, which showed an unexpended balance of \$1,605, which proved that the forebodings expressed at the last convention, that the rate of assessment had been placed too low, were foundationless.

REPORT OF THE TREASURER.

OFFICE OF TREASURER, A. I. A., CHICAGO, October 18, 1890.

S. A. Treat, Treasurer, in account with the American Institute of Architects.

Dr.	
1889 To balance in hands of Treasurer (Western Association).....	\$404.49
1890 To balance from Treasurer A. I. A.....	88.92
To royalty from sale of contract blanks.....	42.95
From initiation fees, dues, fines, etc.....	4,096.81
	\$4,633.17
Cr.	
By cash as per accompanying vouchers.....	\$3,028.13
By balance in treasury.....	1,605.04
	\$4,633.17

S. A. TREAT, Treasurer.

At the consolidation convention at Cincinnati a year ago there was considerable discussion as to the amount of dues necessary to meet the current expenses of the association. The year having been somewhat experimental, the treasurer has thought best to give a general statement of the receipts and disbursements during the year.

The principal expenditures are as follows:—

Salary of Secretary.....	\$1,500.00
Stationery and printing for both Secretary and Treasurer..	586.46
Travelling expenses of Executive Board.....	432.00
Rent of office in Wells Building, New York.....	125.00

The remaining \$384.67 is for minor items, as can be seen in detailed statement of the treasurer.

The receipts from dues and royalty during the year amount to \$4,128.26, so that the excess of receipts is about \$1,000.

Respectfully submitted, S. A. TREAT, Treasurer, A. I. A.

The reports of the several Chapters were referred to a committee to consider and present such parts as were desirable at a later session.

The secretary then read reports from several committees—upon Ethics; upon the Employment of a Clerk-of-the-Works; upon Railroad Transportation; upon the Uniform Contract and the report of the Directors. These reports were all laid upon the table, without acceptance, for future action.

REPORT OF COMMITTEE ON CODE OF ETHICS.

Your committee begs to say that its report is, in the main, negative. Three years ago, at a convention of the Western Association of Architects, the suggestion of a code was discussed at some length, and the notion of formulating such a code seemed reasonable and timely. Conditions, since then, are much changed, and your committee no longer clearly sees its way. The uniting of the Western Association of Architects and the American Institute adds a serious complication, for the membership of this new association is coextensive with the area of the country, and thus includes modes of practice so diverse that the possibility of harmonizing them seems remote. Furthermore, methods of practice in the meantime in some localities have changed, the tendency alluded to inclining towards a business rather than a professional conduct of architecture. Whether this tendency is or is not a growing one, is not yet clear, nor is it certain that such a policy is either sound or wholesome.

A third element of difficulty is furnished by the large number of young men who have in the interval entered the "business"—particularly in the West. These beginners feel they must make headway, and adapt the means to the end. We then have three elements: 1st. Those who follow time-honored methods, look askance at the new, and who are irritated and ruffled by any departure from what they regard as the strictly legitimate. 2d. Those who are in architecture as a business, for whom business methods therefore suffice, and who look with contempt upon the older methods as lacking decision, promptness and versatility. 3d. Those who are much more concerned in filling their bellies than in splitting hairs with nicety, and who look with cynicism on all methods, including their own. These three elements have representation in this Institute. The geographical area covered is immense, and each locality differs in its social characteristics and in the views and standards of its business community. Between him of social equivoque and professional dignity at the upper end of the scale and the hustling guerrilla at the lower, are to be found all the transitional gradations.

It is not at all clear that one of these elements dominates the others; if one did dominate, the way to a code of some sort would be open. Of what utility, then, will be a code so general in its terms as to lack in application? Or, granted that one may be devised that satisfies in definition, what power has this Institute to enforce it and yet retain more than half of its members?

Your committee holds that a code of ethics lacks stability unless it have sure foundation in the individual—that his views coincide heartily and in good faith with its terms. Your committee is not devoid of optimism and believes that in due time the varied interests and views now held in the profession will have coalesced and unified through a gradual series of modifications; but that these modifications must come about by actual experience, tending to demonstrate and bring home the truth, that the honorable way is the best way.

To this end the example of those most eminent in the profession, and most circumspect regarding the moral effect of their methods, will surely assist.

Your committee assumes that a code to which nominal or perfunctory assent is given would prove in reality worthless. It assumes also that the Institute having been liberal and kindly in the initial comprehensiveness of its numbers, shall not be harsh in its policy of government, but shall rather foster all that is good, however little or obscure, and nurture it through the years, by wise and sympathetic encouragement, an encouragement devoid alike of patronage, of cant and of nonsense.

Your committee believes that this Institute, a body as yet crude in its substance and vague in its aims, should not, at its second convention, undertake a problem demanding for its solution so much of tact, of skill, and such unity of sentiment as does this one. Your committee is convinced that such a code should be, like a written contract, merely a permanent and legible record of that which has been thoroughly examined, well understood, and completely agreed upon.

Your committee therefore respectfully declines to submit a definite code of ethics, but yet emphatically recommends that the topic be kept well and constantly in mind, to the end that when the proper moment shall have come, a code of ethics may appear and take such shape as to fully express what the individuals of this Institute believe rather than what they may choose to assume.

Respectfully submitted,

LOUIS C. SULLIVAN, Committee.

THE CHAIRMAN:—If there is no objection, this report will be laid on the table.

There was no objection.

THE CHAIRMAN:—The next business is the report from the Committee on Clerks-of-Works.

The report was read, as follows:—

REPORTS OF THE COMMITTEE ON THE EMPLOYMENT OF CLERKS-OF-WORKS AND SUPERINTENDENCE.

Gentlemen,—Your committee have the honor to report as follows:—

This committee was appointed at the convention of 1888 to consider the possibility of encouraging the employment of Clerks-of-the-Works. At the convention of 1889, owing to the pressure of other matters, the committee simply reported progress and was continued and enlarged by

the consolidated Institute, and its scope extended to include the subject of superintendence generally.

In examining these questions your committee has, at the outset, recognized two points of view: one dealing with those things desirable in the abstract, and the other with so much as is immediately practicable and which can be made to claim public recognition and acceptance.

It is almost superfluous to say that the latter is the one placed foremost. Beside this the fact is to be remembered, that the Institute rules must be catholic and general; must be broad enough to include under the same regulations the architects of metropolitan cities and those of country towns. In large cities, especially in the East, there is a growing inclination to recognize that an architect is not paid for constant and continuous superintendence, yet it will be many years before the same feeling is general, and before the Institute can attempt to demand the employment of assistant superintendents throughout the country.

It is encouraging to learn that in England, where this movement commenced much earlier than here, it has prospered; it has developed a new occupation. Men specially trained for the duties at regularly recognized salaries have become so numerous that they have in successful operation a society of their own, the Clerk-of-Works Association of Great Britain.

Not long ago a clerk-of-works was often a builder's foreman or an architectural assistant looking for more practical experience; either of which class might furnish very good men, in whom, however, there would necessarily be weaknesses.

Your committee is informed, too, that the employment of clerks-of-works in England is becoming quite customary, very few buildings of any importance being erected without one. There is every reason to believe that it will be so in America, and your committee are of the opinion that the Institute can materially assist in hastening this result.

The first essential is a correct understanding of the situation by employers and clients.

Many employers think that they are really paying an architect enough to demand almost his constant attention. Most of them think that he should have, at least, a representative constantly at the work; and perhaps all of them believe, and in this they are supported to a surprising extent by legal opinion, that an architect is in the position of chief builder in the commercial and responsible sense, as well as the technical, and they put him in the position of contracting party, with the real contractor as his employé or subordinate.

If this relationship were logically established and paid for at such rates of commission as it would demand — probably fourteen or seventeen per cent — it might have some advantages, but it would destroy the disinterested attitude of modern architects; and in any case it is not the real state of affairs with which we have to deal.

Your committee feel the desirability, therefore, of bringing to the notice of the public, and of their legal advisers, the existing facts:

1. That an architect offers and is paid for only a certain limited kind of superintendence.
2. That it is to the interest of the employer in many cases to pay for constant detailed superintendence.
3. That the architect is in no sense a contractor, nor is he responsible for the contractor's misdoings; and that the commissions usually paid would be utterly insufficient for any such services or responsibilities even if they were desirable.

Your committee are further of the opinion that the best means of bringing these facts to the notice of employers are, for the present, the addition to the schedule of authorized charges of a clause stating the rates at which clerks-of-works will be supplied.

In other words, it is advised that the employment of clerks-of-works should be assisted and encouraged by the announcement of regular rates as an extra to the schedule. The present clauses headed "Supervision of Works" and "Clerks-of-Works" might be amended in order to define the superintendence of the architect substantially as follows:

SUPERVISION OF WORKS.

"The architect will furnish general superintendence by himself or his deputy, of such frequency or duration as in his judgment will suffice or may be necessary to fully instruct the contractors, pass upon the merits of material and workmanship, and to maintain the effective working organization of the several contractors engaged upon the structure; and to enable him to decide when the successive instalments, or payments, provided for in the contract are due.

"He is to determine in any constructive emergencies and order necessary changes, and define the true intent and meaning of the specifications; and he has authority to stop the progress of the work and order its removal when not in accordance with them.

"The architect will demand of the contractors the proper correction or remedying of all defects discovered in their work, and will assist the owner in enforcing the terms of the contract. But the architect's superintendence shall not include liability or responsibility for any breach of contract by the contractor."

CLERK-OF-WORKS.

"On buildings where it is deemed necessary to have constant supervision, the architect will, if authorized, by the employer, appoint a clerk-of-the-works for that purpose at the extra rates quoted in the schedule or as agreed.

"The selection or dismissal of the clerk-of-the-works is to be subject to the approval of the architect."

The schedule of charges should be amended by the addition of the following, immediately after the 5th clause.

"The charge for clerk-of-the-works, when constant supervision is required, will be at the rate of \$30 per week for buildings costing more than \$20,000 and less than \$200,000, and at special rates, as agreed, for other buildings."

Your committee further recommend that, in order to assist architects individually to define their relationship with clients in regard to superintendence, the Institute approve and print a form of contract between owner and architect.

A draft suggested for the said form of contract is submitted, as follows:

From Architect
To Owner
For a compensation of the architect proposes to furnish preliminary sketches, contract working-drawings and specifications, detail drawings and general superintendence of building operations and also to audit all accounts for a to be erected for

Terms of payment to be as follows:
One-fifth when the preliminary sketches are completed; three-tenths when the drawings and specifications are ready for letting contracts; one-fifth

The balance upon the completion of the buildings; Or, terms of payment to be as follows:
One-fifth when the preliminary sketches are completed; three-tenths when

the drawings and specifications are ready for letting contracts; one-fifth
Thereafter at the rate of cent upon each certificate due to the contractor

If work upon the building is postponed or abandoned, the compensation for the work done by the architect is to bear such relation to the compensation for the entire work as determined by the published schedule of fees of the American Institute of Architects.

In all transactions between the owner and contractor, the architect is to act as the owner's agent, and his duties and liabilities in this connection are to be those of agent only.

A representative of the architect will make visits to the building for the purpose of general superintendence, of such frequency and duration as in the architect's judgment will suffice or may be necessary to fully instruct contractors, pass upon the merits of material and workmanship, and maintain an effective working organization of the several contractors engaged upon the structure.

The architect will demand of the contractors proper correction and remedy of all defects discovered in their work, and will assist the owner in enforcing the terms of the contracts; but the architect's superintendence shall not include liability or responsibility for any breach of contract by the contractors.

The amount of the architect's compensation is to be reckoned upon the total cost of the building, including all stationary fixtures.

Drawings and specifications are instruments of service, and as such, are to remain the property of the architect.

Approved and accepted 1890.

..... Architect.
..... Owner.

It will be readily understood that such a contract is not universally applicable, and that often there are cases where no contract can be obtained in writing. But this is the case in many other occupations where a printed form of proposal and acceptance is customary, and your committee are of opinion that it would in very many instances be of great service.

Many prominent architects have already used something of the kind for many years, and it is suggested that much greater force would be given it in the publishing of some such form by the Institute. Not only would such a contract define the position of the architect, and afford him protection in a special case where it was used, but its provisions, if in frequent use, would have great weight in any argument upon cases where no written contract existed.

It seems strange in these days of carefully written agreements there should be such frequent misunderstandings of the common relationship of architect and client.

In conclusion, your committee beg respectfully to point out that the proposed amendment of the schedule of charges is very slight, and in no sense revolutionary. The wording of the present clauses has been retained in the most conservative way. The suggested contract is an entirely distinct matter and may be considered separately.

No doubt many architects would follow this model, even if not printed by the Institute.

Your committee beg to acknowledge with thanks the receipt of valuable information from several members, and others, including H. D. Appleton, Esq., F. R. I. B. A., President of the Architectural Association of London, and Henry Jarvis, Jr., Esq., F. R. I. B. A. of London, and Mr. F. Dashwood, Secretary of the Clerk-of-Works Association of Great Britain.

The form of agreement suggested is a revision of one which is in use by Messrs. Adler & Sullivan of Chicago. Respectfully submitted,
(Signed) R. W. GIBSON, Chairman.

REPORT OF THE COMMITTEE ON UNIFORM CONTRACTS.

TO THE AMERICAN INSTITUTE OF ARCHITECTS: —

Gentlemen, — During the past year no action has been taken by this committee looking to the alteration of the present form of the Standard Uniform Contract, adopted by the Institute and by the National Association of Builders, as it was thought best to give the present form a fair trial, by extending its use throughout the country, and thus subjecting it to the experienced judgment of architects and builders generally. It is evident that to make a standard form of value, it is necessary for it to have a certain element of permanence, and that as few changes as possible should be made in its provisions. In a number of cases heard from, the use of the form by architects has been said to be satisfactory and very few complaints have been made as to its working in general practice.

The only complaint of importance that has reached the committee, is embraced in the following correspondence, which is here given at length in order that those using the form may be induced to assume all the powers fairly given to them by its provisions, and thus be able to fully defend the interests of the owner as against the unlawful encroachments of the builder.

CHICAGO, ILL., June 23, 1890.

MR. O. P. HATFIELD, Chairman Committee on Uniform Contracts:

Dear Sirs, — The enclosed remarks on the "Standard Contract" have been sent to us by an architect, with the request that "we would call the attention of the Contract Committee to same." We herewith forward them to you.

Yours truly, INLAND PUBLISHING CO.

CHICAGO, ILL., June 20, 1890.

Gentlemen, — As one who is very much interested in everything that will in any way better our condition, and further the architectural interests of all, I note my experience with the uniform contract adopted by the Institute and National Builders' Association. I have experienced trouble in the following instances:

1st. There are no provisions made for an architect's representative certifying to and taking action upon defective work during the absence of the architect, so that the matter cannot be referred to him. I am aware that where the duties of an architect are understood fully by the client or the public this trouble may never happen.

2d. There are no provisions made empowering the representative of the architect, in the absence of the owner and architect, to stop the contractors when the work is unsatisfactory. He, or the architect himself, for that matter, can only issue a certificate to that effect to the owners, who alone can stop the contractor, thereby often causing a great deal of delay and the introduction of much defective work should the contractor desire to.

This clause cost one of my clients something like \$5,000 on a contract.

Respectfully,

NEW YORK, N. Y., June 25, 1890.

THE INLAND PUBLISHING CO., Chicago, Ill.:

Gentlemen, — Your letter of the 23d instant, having reference to certain criticisms of the "Standard Contract" is received, with a copy of the letter to you

from an architect making said criticisms. When a meeting of the committee is held, I will submit these, with others, to them for their consideration. In the meantime, I would say as an answer to the points made:

1st, That the architect referred to has not claimed all the power given to him by the contract. Article 1st of said contract distinctly states that the architect acts as agent of the owner, and Article 5th provides that the architect "and all persons appointed by the architect" is to be permitted to visit the work and due facilities shall be provided to inspect the work. These articles give to the architect all the power that the owner is supposed to possess in the premises, and recognize the employment by the architect of deputies to perform the duties of the architect in his absence.

By Article 4th the architect is given the power to force the contractor to remove improper material and to take down defective work, virtually at once, but in any case within twenty-four hours after receiving a written notice to do so. This provision is absolute, and gives the architect full power to stop the work at any time.

The contingency contemplated in Article 12th is that of a general delinquency on the part of the contractor and gives the architect and owner a chance to get rid of an incompetent contractor altogether, and to substitute for him one that can carry out the contract in the manner provided by the plans and specifications.

The owner should not make a contract with an irresponsible man; if the contractor is responsible he can always get redress for any damages suffered by him through the infraction of any provision of the contract by the builder. It is evident that this 12th Article also operates to the advantage of the honest contractor, by disabling and disgracing the irresponsible under-bidders in estimating competition.

Very truly yours,
O. F. HATFIELD, Chairman Committee on Uniform Contracts.

The committee are desirous of receiving suggestions for the improvement of the form of contract adopted by the Institute, so that when the proper time comes it may be amended when it may be deemed wise to do so, after a careful consideration of the subject. The demand for the blank form continues to be liberal.

Respectfully submitted,
(Signed) O. F. HATFIELD, }
ALFRED STONE, } Committee.
D. ADLER, }

NEW YORK, October 10, 1890.

REPORT OF THE BOARD OF DIRECTORS, AMERICAN INSTITUTE OF ARCHITECTS.

OCTOBER 22, 1890.

The first meeting of the Board of Directors was held in Cincinnati, November 21, 1889. The following gentlemen were elected as the Executive Committee: Messrs. E. H. Kendall, D. Adler, R. W. Gibson, W. W. Carlin; the officers of the Institute, namely: R. M. Hunt, President; John W. Root, Secretary; and S. A. Treat, Treasurer, being ex-officio members.

One of the first questions propounded to the board was the important one touching the relations of Chapters to the Institute, a subject which has been frequently discussed at subsequent meetings of the Executive Committee, and which will come before you for final solution.

At this meeting it was decided that a number of names be proposed as substitutes for those of the Board of Directors already elected, in case, for any reason, there should occur a declination of the position by any one who had already been elected, and that the appointment of these substitutes should take place in the order of nomination.

The following were the gentlemen nominated: Alfred Stone, Levi T. Scofield, W. M. Poindexter, J. W. Yost, E. C. Cabot, G. W. Rapp, W. S. Wicks, N. S. Patton, W. G. Preston, A. J. Bloor and E. I. Nickerson.

The schedule of charges before affirmed by the Institute and indorsed by the Western Association of Architects, was reaffirmed, with instruction that across the face of some of the schedules the words "Issued to non-members of the Institute" be printed: these to be used by architects who were not Fellows in regular standing in the Institute. The word "minimum" was also ordered prefixed to the word "charges."

The Committee on Education not having been elected by the convention or appointed by the President, was appointed as follows: Russell Sturgis, Chairman; W. R. Ware, Prof. N. Clifford Ricker, T. M. Clark. It was decided that the Executive Committee should hold quarterly meetings and such other meetings as might be necessary; and that if any member of the Executive Committee were unable to attend, and that such failure to attend would make it probable that a quorum would not be present, the Secretary should notify a member of the Board of Directors to be present in his stead.

A form of ballot was adopted in conformity with that previously used by the Western Association of Architects; and instructions were given as to the method of its issuance.

During the year there have been four meetings of the Executive Committee held in New York, quorums being present at each meeting.

At the first meeting of the Executive Committee the question of the relations of Chapters to the Institute was at once raised for discussion. It was resolved: First, that the utmost encouragement should be given to the formation and continuance of Chapters; second, that the precise geographical limits to be included under each Chapter were impossible to define; third, that every regular member of a Chapter should be a Fellow of the Institute, and that the Executive Committee were of the opinion that no objection could be made to a Chapter's including two classes of members, regular and associate; fourth, that any five Fellows of the Institute might organize a Chapter under the Constitution, By-laws and Charter of the Institute. Following these resolutions, it was decided to obtain from the Fellows an informal ballot on a proposed amendment covering this point, to obtain a sense of the feeling before the convention of the Institute. This ballot resulted in a vote, nine-tenths of which was in favor of the amendments. The confirmation of these amendments or their rejection will occur at this convention. A committee of three was at this meeting appointed to act with a similar committee of the Association of Builders in the matter of uniform contracts. The names of the committee are: Mr. Hatfield of New York, Mr. Stone of Providence, Mr. Adler of Chicago.

At the second meeting, discussion was resumed on the question of Chapters, and it was decided that in the nature of the case, no resolutions touching Chapters could be retroactive, except with the consent of the Chapters. At this meeting an amendment was suggested by Mr.

Hunt to the schedule of charges, suggesting that in the fourth clause the words "surveys and measurements," being misleading, should be omitted. This will be a subject to be raised before you at this convention. An important matter discussed at this meeting was the excavations at Delphi, a subject of great interest to all scholars throughout the world, and at the time of special interest to American architects. It is hoped that the matter will be presented at this convention by an address from Mr. C. A. Cummings, who is especially interested, and is especially well informed on this subject. The Secretary has been instructed to make the subject a cause of special investigation among the Fellows, and has already issued circulars calling attention to the matter. Mr. Langford Warren of Boston appeared after the adjournment of the meeting, that is, on the following Monday, and presented the subject of the excavations in a very impressive manner.

Communications have been received from Mr. Barwick of the University of Toronto, calling attention to the disastrous fire which destroyed their library; and it is hoped that contributions of money and books may be received from this Institute. The Secretary will, in a circular, address each of you in Mr. Barwick's behalf. A committee of seven has been requested from us to meet similar committees from the National Association of Fire Engineers and the National Association of Builders, to determine upon uniform building laws to operate throughout the country. And a communication was received, impressing upon us, on the part of the National Association of Builders, the importance of using a uniform contract. There have been elected during the year the following Fellows: A. B. Jennings, Milton See, C. W. Clark, T. C. Young, W. S. Eames, Kivas Tully, F. A. Wright, James Wahrenberger, Bruce Price, W. C. Winney, Elbridge Boyden, J. B. Woodworth and E. B. Green.

The Association has been called on to mourn the death of Messrs. John McArthur, E. Townsend Mix, Edouard Sidel, D. A. Bohlen, Henry O. Avery, B. G. Chisolm.

In the last report of Mr. Windrim, Supervising Architect of the Treasury Department, a suggestion was made that the Government buildings be open for competition to Fellows of this Institute. This suggestion is most heartily indorsed by the Board of Directors, who refer it to you in the earnest hope that you will give it your cordial indorsement as well.

The Board of Directors desire to call your attention to the following matters of importance:

1st. The proposed amendment to the Constitution touching the subject of local Chapters in their relationship to the Institute.

2d. The proposed amendment to the schedule of charges.

3d. The addition to the schedule of charges of a clause determining a percentage fee for the making of measurements and surveys of materials, etc.

4th. An amendment creating a new officer of the Institute, in the person of an assistant secretary and treasurer.

A letter from Mr. Russell Sturgis in relation to the standing Committee on Education, containing suggestions which, if they can be carried out, will have a valuable and lasting effect upon the Institute itself. Suggestions from so high a source as Mr. Sturgis cannot fail to command attention from you.

The report of the Committee on Ethics was about as extraordinary a production as was ever presented to a presumably respectable body of men. Beginning with the assertion that the late amalgamation of the two societies had placed insuperable difficulties in the way of the committee—a statement which seems to imply an insult to one or the other of the till lately separate bodies—it goes on to say that methods and practices in the professional conduct of architectural work have changed very much since the appointment of the committee, the inference being that the change is one of retrogression; and finally asserts that as the Institute is now composed there exists such a wide range of morality between those who believe in observing the higher ethical rules of professional practice, and the "hustling guerillas" as this singular report expresses it, that an attempt to enforce these higher rules of practice, and to discipline those who did not observe them would enforce the dismissal of one-half of the present members.

If this statement is true it strikes us that one-half of the Institute, and we will not say which half, would do well to withdraw from the Institute at once. If the statement is untrue the report is an insult to the Institute as a body, and the rejection of the report would be but a mild rebuke. The chances are, however, that it will be thoughtlessly "accepted" and will emphasize what has just been said as to the action of chance and non-representative bodies.

In the report of the Directors is wisely incorporated a rehearsal of the points raised in the several reports presented by the committees, with a statement that these points are to be specially brought up for discussion.

The session was adjourned about six o'clock.

In the evening the Trustees of the Corcoran Gallery of Art kindly opened the gallery to the visiting architects who found in it some things of special interest, such as the collection of bronzes by Barye. At the same time the members of the Cosmos Club opened their doors to those who wished to partake of the Club's hospitalities.

THURSDAY MORNING.

On assembling in the morning, it was found that several members had reached the city during the night, so that a roll-call would have shown upwards of a hundred in attendance.

The first business was the reading of the report of the Committee on the indemnification of Mr. Bloor for his many years of unpaid service as Secretary of the Institute. It appeared that the committee had hoped to gather a fund of \$10,000, if possible, or, at least, a

minimum amount of \$5,000, but as yet they had only received subscriptions amounting to a little over three thousand dollars. The report was accepted, and the committee instructed to continue their efforts.

The chair then appointed Messrs. Hannaford, Bloor and Scofield a committee to represent the Institute at the funeral ceremonies of the late Mr. Mullett, and later, in the same connection, certain verbal changes were made in the resolution adopted at the previous session.

The Secretary then read several letters, which were in the main invitations of one kind or another extended by those Washingtonians who felt that they had things to show that the architects would be interested in seeing. One of these communications was of rather a reproachful nature, reciting that whereas architects did not make a practice of specifying the sizes of glass they desired to be used, the Master House-Painters' and Decorators' Association of the United States prayerfully requested them to amend their careless ways in this respect. The general smile which greeted this request showed that the hearers did not perceive why they should add to the minutiae already included in their specifications a duplication of the requirements which is usually found expressed upon the working-drawings, or, when not so expressed, is as easily "scaled off" as any other quantity—say the square yards of surface to be painted. The letter was referred to the Directors for action. The same course was taken at the evening session with the letter received from the National Association of Fire-Engineers, asking that the Institute should appoint a committee of seven to confer on October 28 with similar committees appointed by the Fire-Engineers and the National Association of Master-Builders, with the object of trying to formulate a code of building laws that should have general application in all parts of the country. Although this was a subject which seemed to offer food for a useful though probably unproductive discussion, the matter was not debated at all, but left to the discretionary action of the Executive Committee of the Directors. A letter from Mr. Cummings upon the matter of the proposed excavations at Delphi stated that beyond the appropriation of \$500 by the Boston Society of Architects, little had been accomplished in raising the sum needed by the American Archaeological Institute for this exploration, but that delay was not likely to prejudice the undertaking, as the Greek Government had kindly extended the date of the concession.

Mr. E. T. Carr, of Leavenworth, Kas., wrote to suggest that the Institute should do something to harmonize the different measures of quantity in use in different parts of the country, mentioning the desirability of abolishing the use of the perch and yard, and the substitution of the foot as a common measure. In this connection, he urged the application of the decimal division to the foot as a unit, so as to bring architectural practice into accord with that of engineers, but deprecated any further attempt to introduce the French metric system.

The last communication was one from the National Association of Master-Builders, asking the Institute to enforce on its members the use of the standard uniform contract. When, at a later stage, this letter came up for discussion, a resolution to the effect that it was inadvisable to take any such action was lost, on the ground that as the recommendations of the Institute were ordinarily of an advisory, and not of a mandatory nature, there was no need of taking any action upon the letter.

The suggestion of Mr. Upjohn, of New York, that the Institute should actively concern itself in preventing the destruction of those municipal or governmental buildings, the loss of which would in effect wipe out the visible record of one or another epoch of the architectural history of this country, was put in the form of a resolution and carried. The special buildings which Mr. Upjohn had in mind are the Custom-house and Sub-treasury Building on Wall Street, New York. That so young a country as this should already stand in need of the services of a "Commission for the Preservation of Ancient Monuments" is rather amusing, but there is certainly reason in the suggestion from a sentimental, if not from a practical point-of-view. How far such a commission can hope to receive the support of local architects in such case is open to doubt, as many might feel that in checking the American mania for changing and "improving" they were possibly preventing themselves from earning fame and gain through creating the new buildings which the owners of the estate desired to substitute for the old ones.

The Committee on the Reports of Chapters then read a synopsis of these reports, from which it appeared that none of these bodies had any suggestion or recommendation to make. Some of them were unprovided with charters, but this, the Secretary explained, was only owing to the absence of the President, whose signature was still lacking to the documents, which otherwise were ready for delivery.

The reports laid upon the table at the last session were then taken up. First, the Report of the Committee on Education, which was in the form of an informal letter from Mr. Sturgis, of New York, which recommended that the members of the Committee should not be professors and so on, but practising architects; that it should no longer concern itself with the establishment of schools of architecture, but should turn its attention to devising ways to aid the less well-instructed members of the profession, the assistants and the draughtsmen. This report was referred to the Directors, with instructions to make it a special subject for consideration at the next convention.

The report of the Committee on Ethics was then taken up and, as was to be expected, a motion was made and seconded that it should be accepted. Fortunately, Mr. Smith of Nashville had noted its objectionable character and said he should regret very much that such a document as that should go before the public in its present form. Mr. Gibson, of New York, hoped the report would be accepted and printed as it stood. Mr. Hannaford, of Cincinnati, thought it was "astounding" that any committee, particularly a committee dealing with the subject of ethics, should use such language. Mr. Upjohn of New York, for his part, could not see what there was objectionable. Mr. Smith said he could quickly point out what he disliked, and getting the instrument read the objectionable parts and explained his reasons for thinking they should not be allowed to stand. But, alas and alas! it was not the tone of the report nor its substance that he objected to, it was merely one or two very undignified and improper words that had crept in. Mr. Clay, of Chicago, objected to any course but the adoption of the report as it stood. He knew and admired the writer of the report and on personal grounds desired it should be accepted unchanged. Other members expressed opinions for or against the report but having their attention drawn to the matter the general feeling of the convention at length seemed to incline toward a disbelief in the wisdom of accepting such a document. It was, however, accepted and ordered to be printed with the other reports, on the understanding that it should be returned to the writer for revision and correction.

This action is better than the acceptance of the report in its first form, but it is bad enough, for the plain fact is that the convention has stultified itself by accepting a report which declares with inferential plainness that one-half the members of the Institute are unfitted to associate with the other half. Such a statement as this, with an inference even better disguised, found in a report upon the ethical position of architects adopted at a convention of any other professional body, would awake a storm of indignant protest.

The last subject considered at this session was the report of the Committee on the Employment of a Clerk-of-the-Works, the consideration of which was expected to result in some definite action; but, unfortunately, the committee had added to their report a draft of a suggested form of contract between architect and owner, so that though the report provoked plenty of discussion, it drifted backwards and forwards from one subject to the other without any real progress being the result. Incidentally, too, the relation of architect and contractor, and the responsibility of the architect in the case of a contractor who persists in doing jerry-work came up, so that the discussion had a wide range and to a certain degree was interesting and perhaps instructive; but definite action is not usually brought about by such discursive discussion, and when the matter was finally disposed of, it merely left a sense of emptiness by way of compensation for the time and effort expended.

The suggested form of contract was first disposed of by discovering that, broadly speaking, it was the sense of the meeting that the relation between architect and owner were already sufficiently defined in the contract and specification ordinarily used; that to attempt to disavow responsibility would not affect the real question in the presence of the court, and that the disclaiming of responsibility even when it was imposed with obvious injustice, was a thing which architects should be particularly chary of attempting, as it should be the mark of a thorough architect that he was competent to assume all responsibilities in the assurance that those which could properly be placed upon him his own capacity could support, and that the courts would hold him blameless for those which it was sought to place upon him unjustly.

As to the clerk-of-the-works, it was thought that the fact that when such a person was employed he was to be paid by the owner, was already made clear in the present schedule of charges, and that it was not desirable to state what such a person should be paid, as circumstances would be so variable. But it was agreed that it was very desirable that clerks-of-the-work should be employed on all important buildings and that architects should do all in their power to induce their clients to employ them on proper occasions. With this negative result a long and general discussion ended.

One thing was quite easy to note, that is, that the amalgamation of the two societies is not quite complete, or, rather, that the several members seem to forget that there has been an amalgamation. The reports were curiously inconsistent, some speaking of this as the Second Convention and others as the Twenty-third. Committees who had in charge subjects that had been under investigation by the Western Association, or possibly by both societies, reported in such a way as to take up matters at the point where the writer's own previous reports had left them, without rehearsing what had gone before, as should have been done for the information of members of the original Institute who had no knowledge of past occurrences.

EVENING SESSION, THURSDAY, OCTOBER 23.

THE evening session began with the re-reading of the report of the Directors, and the suggestions therein made were taken up and discussed *seriatim*.

The first of the suggested amendments to the By-laws, viz: "No person shall be elected a Fellow of the Institute unless he shall have been elected an associate of a Chapter," was adopted. The second amendment, which might be called the reciprocal of the first, and read: "Every Fellow of the Institute shall be a member of a Chapter," as well as the one amending Article X by adding the

words: "Associate members of Chapters, when elected as Fellows of the Institute, shall become regular members of the Institute," was lost, the ground being taken that the relations between Chapters and Institute were at present too ill-defined for it to be advisable for the Institute to attempt to impose conditions upon the Chapters as to the status of their membership. This was a most prudent decision, for it was understood that the operation of these amendments was expected to have the effect that the members of the upper degree in Chapters — who were called "Regular" members by the Western Association and Fellows by the Institute — must become members of the Institute. The effect of this would be that, if a present upper member of a Chapter did not choose to become a member of the Institute, he must be degraded to the lower class. As in many of the Chapters the majority of the members are not members of the Institute, and probably do not care to be for one reason or another, it would obviously be impossible to enforce such a behest, since the balance of power would be opposed to it. The inevitable result would be conflict between Chapter and Institute, with all the attendant ills. The suggestion that the Schedule of Charges needed amendment in the clause relating to additions and alterations was given effect by a slight change, which makes it clearer that, besides the charge for additions and alterations, "an additional charge is to be made for the surveys and measurements incident thereto."

An attempt to change the schedule by adding an item which should practically cover the preparations of bills of quantities was quashed. The Directors' request that an assistant secretary should be appointed was objected to by Mr Adler, who made it plain that as an assistant secretary would be a permanent functionary, it would inevitably arise that as time went on he would usurp, whether by intent or by force of circumstances, the functions which he felt it was desirable should be discharged only by the Secretary himself; that is, by a man whom the members of the Institute knew, and in whom they felt confidence. Mr. Adler's advice prevailing, the request was laid on the table.

Attention was called to the death of Canon Liddon, an Honorary Member, and the customary resolution of respect was adopted.

A few unimportant matters received attention, and then Mr. Fassett, of Kansas City, read an interesting and illustrated paper by Mr. S. E. Chamberlin, which gave an account of the method of preparing the foundation for the new city-hall in that city. Mr. Frederick Baumann, of Chicago, followed with an abstruse paper styled "Some Thoughts on Architecture," and then the session adjourned.

FRIDAY MORNING, OCTOBER 24.

On assembling, the nominating committees reported two tickets, and when the ballots had been cast and counted the following were declared to be elected:

President, R. M. Hunt, New York; First Vice-president, W. W. Carlin, Buffalo, N. Y.; Second Vice-president, J. W. McLaughlin, Cincinnati, O.; Secretary, Jno. W. Root, Chicago, Ill.; Treasurer, S. A. Treat, Chicago, Ill.; Directors: L. T. Scofield, Cleveland, O.; W. M. Poindexter, Washington, D. C.; G. B. Ferry, Milwaukee, Wis.; G. C. Mason, Jr., Philadelphia, Pa.; C. J. Clark, Louisville, Ky.; M. J. Dimmock, Richmond, Va.; Alfred Stone, Providence, R. I.; E. F. Fassett, Kansas City, Mo.

As to the place for holding the next convention, which was balloted for at the same time, with one productive result, the Secretary explained, when some one suggested that Chicago should be the place, that it was to be assumed that the convention would be held in that city in 1893, and he added that he would give this early announcement that an attempt would be made, and, he believed, a successful one at that, to hold an international convention of architects. Although New York stood at the head of the polls, and Boston had not been named, as soon as Mr. Clay, of Chicago, proposed that Boston should be the place, the applause and unanimous acceptance the proposition received seemed to indicate that that was the place that each had had in his mind, but had been bashful about uttering the name.

The convention took a short recess to attend the President's reception at the White House, and to have its collective photograph taken in front of the Treasury Department Building.

On reassembling, the matter of Honorary Members, which had been left in abeyance for a year, was taken up, and the former list of the American Institute of Architects was reaffirmed, and to it was added a few names, which will be found in the proceedings when published. On motion of Mr. Adler, a vote of thanks to Mrs. Schuyler Van Rensselaer was passed for her able paper on the "Relations of Architect and Client," and the publishers of the *North American Review* were requested to grant permission that the paper might be reprinted in pamphlet form, so that members of the Institute might use the document as a tract for distribution.

On motion of Mr. Stone, of Providence, the Directors were instructed to present Mrs. Van Rensselaer's name to the next convention for election to an Honorary Membership. Never was a gracious suggestion more deservedly made or more warmly received.

Mr. Stone then asked that action might be had on the amendment to the By-laws proposed by him last year, to the effect that members who had reached the age of seventy should be exempt from further payment of dues, provided they had been members in good

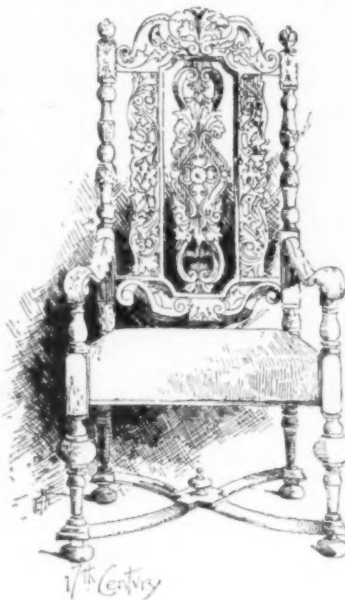
standing for ten consecutive years. The desired action was had and the amendment was adopted.

After a few unimportant routine motions the convention was declared adjourned.

In the afternoon detached parties under the escort of members of the Washington Chapter visited buildings and places of interest in the city, and it should also be recorded that the trip up the Potomac to Mt. Vernon on the previous afternoon was found very enjoyable in spite of the violent rain which kept people between decks and interfered with their inspection of the grounds and buildings.

The general feeling seemed to be that the convention had been both pleasant and successful. Unquestionably it was pleasant, but let us see in what the success consists: (1) Officers have been elected who might just as well have held over without this formality. (2) A commission has been authorized to aid in the preservation of "ancient monuments," and they will in all probability find their efforts — if they agree to make any — quite futile. (3) Almost without exception the things that the Directors reported as worth doing have been "laid on the table," as in the opinion of the convention not proper to do. (4) Indefinite action has been taken on the important matter of the clerk-of-the-works. (5) The matter of education has been wisely left in *statu quo*, for it has been indicated that the established schools need no attention in this respect, and after all, grown men are fairly able to educate themselves. (6) An outrage has been quietly accepted in the shape of a report on Ethics, when all the ethics architects need is the observance of the Golden Rule and the conduct proper to honest gentlemen. (7) Resolutions of respect that no one personally had a good reason for framing have been adopted. (8) Votes of thanks have been passed purely as matters of form. (9) Sundry papers have been listened to, which every one would rather read in print than listen to, since in the one case he can "skip the dry parts" and in the other he cannot. All else than this has consisted in tinkering with various parts of the machinery which such bodies seem to find necessary for their existence. And to accomplish this a hundred men have spent hundreds of dollars and have travelled thousands of miles! It would be with a sorry sense of unsatisfied expectation that members would leave these conventions — for this was merely a typical occasion and left undone neither more nor less than usual — if it were not for the great compensation that the social side of these gatherings affords. It is in this that their real value and usefulness lies. Old acquaintanceships are renewed and new friendships formed in the interludes of official proceedings. Men recount their experiences, detail their troubles and gather from their fellows advice and support. From this point-of-view these gatherings are of incalculable benefit, and worth all they cost, but it is rather a pity that most of the routine proceedings cannot be dispensed with, for really it seems as if their usual form was this: A makes a recommendation, and at once the whole alphabet from B to Z exert all their powers to prove that it cannot and ought not to be carried into effect. This is not peculiar to conventions of architects, but to all bodies similarly constituted, and therefore is a thing not to be cured but endured.

COMPRESSED AIR FOR POWER DISTRIBUTION.



WITHIN the limits of the city of Dresden the erection of steam boilers is prohibited, and with a view of developing small industries and also supplying electric light, the question of distribution of power has recently attracted considerable attention. Electric distribution naturally suggested itself, but the objections to high-tension currents led to a consideration of compressed air as a means of power distribution. Dr. R. Proell, well known in this country as the designer of the Proell governor, has worked out an elaborate scheme, and in a pamphlet published by himself and Messrs. O. L. Kummer & Co. of Dresden, gives very complete details, both in calculations and drawings, of a project for supplying 7,500 indicated horse-power, and he expresses the opinion that a well-designed and carefully arranged installation of this kind, would compete in economy with an electric installation involving distribution by cables over long distances. A careful perusal of the pamphlet itself will probably enable the initiated to form a better opinion on this question, and we will confine ourselves to stating the general

features of the scheme. Provision is made for the erection of ten triple-expansion condensing engines, working with an initial pressure of 150 pounds and twenty-fold expansion of steam, each engine to indicate 750 horse-power. The cylinders are to be 18.9 inches, 30.7 inches, and 49.2 inches in diameter and 49.2 inches stroke, working at 60 revolutions per minute, which gives a piston speed of 490 feet per minute. The illustration shows the engines arranged horizontally; the flywheel shaft has two cranks, to one of which are connected the intermediate and high-pressure pistons, tandem fashion, and to the other the low-pressure piston and air-pump, the latter placed vertically below the foundations. Coupled to the extended piston-rods, in each case, is an air compressor. The steam consumption is estimated at from 12.1 pounds to 12.5 pounds per indicated horse-power per hour. The air compressors have cylinders 27.5 inches in diameter and 49.2 inches stroke, same as the engines, and while the latter are, of course, controlled by the Proell valve gear of the latest pattern, the air compressors are fitted with mechanically controlled double-beat valves of the Riedler type. The cooling is effected by an external water jacket round the cylinder covers and valve chests, injection being objected to by the designer. The twenty compressor cylinders are calculated to produce 2,200,000 cubic feet of air of 120-pound pressure per day, crediting the compressors with a coefficient of efficiency of 90 per cent. Steam is to be generated by fifteen water-tube boilers of the "Durr" type, each having 2,200 square feet of heating surface, the fuel is to be lignite, fired into regenerators of the Schneider type, and with this arrangement the author expects to obtain an evaporation of five pounds of water per pound of lignite. An interesting automatic regulation is next described and illustrated, which has the object to adapt the air compression to the consumption. It consists of a pressure regulator operated upon by the air in the main, and altering the point of cut-off in the steam cylinder, thus either increasing or decreasing the speed of the engine until equilibrium is again established.

Probably the most novel features of the scheme consist in the motors, which it is intended to erect for the utilization of the compressed air. Heating the air during expansion and at the same time injecting a water spray, are the leading points. For medium powers of four horse-power and upwards, the author proposes to use the "Doerfel-Proell" engine, of which a considerable number are already in regular use with steam, giving very economical results at from 200 to 300 revolutions. This motor is combined with a coil boiler, in which latter the compressed air is heated before it enters the motor, and during the heating process a small amount of water enters the coil from an overhead reservoir, while the exhaust air is used for accelerating the draught, thus establishing a self-regulating arrangement. For small powers of from $\frac{1}{4}$ horse-power, a new compound single-acting engine has been designed, somewhat of the pattern of the numerous box engines, the two cylinders being arranged on one centre line vertically above each other, and the pistons attached to the same crank passing between the two. In these little motors a gas-burner is provided under the bottom of the low-pressure cylinder to heat the air as it expands in the latter. This heating is of considerable importance, and when completely carried out the author asserts that air motors can be worked as economically as any other method of power transmission, or producing steam-power on a moderate scale. In large engines, however, such as would be necessary to supply electric light for a district, the air-heating appliance would require considerable heating surface, and to obviate this, combined gas and air engines on the plan of Mr. Fischinger have been designed by the author, in which the heat of the gas explosion is immediately utilized to warm the compressed air used as motive power in the air cylinder. The two cylinders are arranged horizontally, tandem fashion, the air cylinder nearest the crankshaft. The compressed air enters the jacket of the gas cylinder, which latter is of the two cycle Benz type, cools this and enters the working cylinder ready heated. That all this has been most elaborately worked out in calculations will be expected by all who know Dr. Proell, and any one sufficiently interested in this scheme will do well to study the pamphlet in question, which moreover contains detailed calculations on the capital to be expended as well as working expenses.—*Engineering.*



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

ENTRANCE TO THE AURELIA APARTMENT-HOUSE, FIFTH AVENUE, NEW YORK, N. Y. MESSRS. D. & J. JARDINE, ARCHITECTS, NEW YORK, N. Y.

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

THE BERKELEY SCHOOL, FORTY-FOURTH STREET, NEW YORK, N. Y. MESSRS. LAMB & RICH, ARCHITECTS, NEW YORK, N. Y.

THE building is of Indiana limestone and yellow Roman brick and terra-cotta. An interesting feature is the wide frieze supported by the central columns. It is a section of the Parthenon frieze and was modelled from the casts in the Metropolitan Museum of Art through the courtesy of General di Cesnola. It shows a portion of

the procession of warriors on horseback, where three or four horsemen ride abreast of each other. The building is heated by hot water and is fitted with the latest improvements in ventilation which change the air of every room three times an hour. In the rear is an armory, two stories high and measuring 85 x 100 feet.

UNION METHODIST CHURCH, ST. LOUIS, MO. MR. T. C. LINK, ARCHITECT, ST. LOUIS, MO.

PARSONAGE FOR THE CENTRAL PRESBYTERIAN CHURCH, DENVER, COL. MESSRS. KIDDER & HUMPHREYS, ARCHITECTS, DENVER, COL.

This house is on Sherman Avenue and cost \$21,000.

THE GREAT STAIRCASE, FYVIE CASTLE, SCOTLAND.¹

"FEW parts of Scotland are less known to the traveller than the gently sloping vale of the Ythan, in the centre of the Lowlands of Aberdeenshire. It is not near any great highway of communication, nor does it boast of the striking scenery which tourists hunt for. Its rich alluvial acres are well prized by sagacious farmers, but farther its fame does not spread. The river Ythan, little broader than a large brook, which curls around the pleasure-grounds of Fyvie Castle, is still and sedgy. Along with this feature, the grounds, so park-like and carefully laid out—the meadows and broad trees, and the swans sailing in wide lake-like ponds, remind one of English park-scenery. The good preservation of the castle itself would harmonize with the association, but there is no such edifice in England. It is indeed one of the noblest and most beautiful specimens of that rich architecture which the Scottish barons of the days of King James VI, obtained from France. Its three princely towers, with their luxuriant coronet of coned turrets, sharp gables, tall roofs and chimneys, canopied dormer windows, and rude statuary, present a sky outline at once graceful, rich, and massive, and in these qualities exceeding even the far-famed Glamis. The form of the central tower is peculiar and striking. It consists in appearance of two semi-round towers, with a deep curtain between them, retired within a round-arched recess of peculiar height and depth. The minor departments of the building are profusely decorated with mouldings, crockets, canopies, and statuary. The interior is in the same fine keeping with the exterior. One may question the goodness of the taste which has inlaid both ends of the hall with looking-glasses, that, multiplying its reflection, give it the appearance of almost indefinite length. But the great stair represented in the accompanying engraving is an architectural triumph such as few Scottish mansions can exhibit; and it is so broad and so gently graduated as to justify a traditional boast that the laird's horse used to ascend it.

"It is probable that, though the ornamental portions of the edifice are not very old, they have been raised on works in the common Scottish square form, of great antiquity. A charter of the year 1397 mentions the Castle of Fyvie, which, along with the lands, it transfers from Thomas Colvil, son of the lord of Oxinhame, to Henry de Preston, in return for a hundred pounds sterling, which he had advanced to Colvil in his need.² The estate passed from the family of Preston into that of Meldrum, and was purchased in 1596 by Alexander Seton, sixth son of George Lord Seton, who was created Lord Fyvie two years afterwards, made Lord Chancellor in 1604 and created Earl of Dunfermline in 1606.³ He was a legal statesman of great influence and practical ability. A member of a strictly Roman Catholic family, he was educated in Italy, where, according to some of his contemporaries, he took orders. He was the godson of the unfortunate Queen Mary, and early in life became a favorite at her son's court. The family biographer says, 'Shortly after that he came to Scotland he made his public lesson of the law before King James the VI, the senators of the College of Justice and advocates present, in the chapel royal of Holyrood-house, in his lower gown and four-nooked cape, as lawyers use to pass their tryalls in the universities abroad, to the great applause of the king and all present.'⁴ He passed up to the chancellorship through several grades of legal office. He was among the unpopular councillors with whom James, to satisfy the fears of the Presbyterian party, obliged himself not to meet in council, 'at least when the cause of religion and matters of the church are treated.' But those historians who had least sympathy with his Catholic religion praise his impartiality. He was made preceptor to Prince Charles, before the death of his elder brother made him apparent heir to the throne—a circumstance which does not appear to have been noticed by those who have attacked the Catholic tendencies of King Charles I.

"The powerful statesman, whose foreign education induced him to make his first appearance in the French square-topped cap, probably employed an architect from France to adorn the rude towers of his new domain. Though a taste for the fine arts was then deemed far beneath the true dignity of a statesman, he seems not to have been ashamed to acknowledge such a weakness. 'Chancellor Seton,'

¹ It should always be kept in mind that these illustrations from the "*Baronial and Ecclesiastical Antiquities of Scotland*," [1845] by R. W. Billings, are republished very largely for the sake of giving instruction in one manner of the rendering of architectural drawings.

² Collections on the Shires of Aberdeen and Banff, 501.

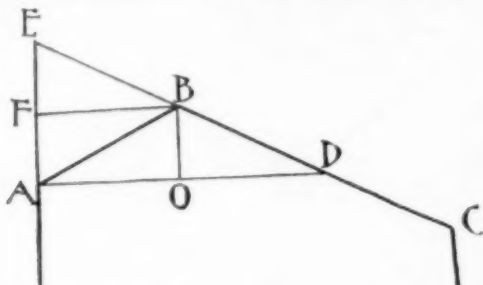
³ New Statistical Account of Scotland (Aberdeen), 323-4.

⁴ Kingston's Continuation of Maitland's House of Seyton, 68.

Therefore angle CAH equals angle HBD , and the two sides are of equal pitch.
Yours respectfully, Q. E. D.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—All of your respondents give right answers to my problem—you would not have published them else. Mr. Cramer gives the graphical solution that I had in mind, and that is perhaps



most serviceable, but without a demonstration, which I here append.

Let ABC be the roof, of equal slopes. Draw AF and BO vertical; BF and AD horizontal. $BF = AO = OD$, and $AF = BO$, which is the rise of the roof above A . Produce AF and CB , meeting in E . Then triangles EBF and BDO are equal, having their bases and two adjacent angles equal. Therefore $EF = BO = AF$. Hence, to construct the roof, lay off successively AF and FE equal to the required rise. Join EC . Then draw FB horizontal, cutting EC in B , which is the vertex of the roof.

W. P. P. L.

ICE-HOUSES.

BALTIMORE, MD., October 14, 1899.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I want to build an ice-house. Opinions are divided somewhat as to whether above ground or below (partially), keeps ice best.

Will you kindly favor with your experience in your next issue.

My impression is, that there is no non-conductor better than the earth, and that where underground houses have been unsuccessful it was because of improper drainage or ventilation.

A stone-walled underground house does not appear to be successful unless it is lined with logs and sheathing or studding, but if you do this and drain and vent properly, I do not think any above-ground ice-house can be superior.

Respectfully, "FRIGID."

[The advantage of burying an ice-house in the earth is that the surrounding temperature in summer will be fifteen and twenty degrees below that of the air above ground, and a given amount of insulation is proportionally more effective; but insulation is necessary either above or below ground, and drainage must be perfect.—Eds. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS

COLD WATER WITHOUT ICE.—The following method of obtaining a constant supply of cool water at all times is described by the *Railroad and Engineering Journal* as being in general use in Hanover, York County, Pa. The town, says the *Journal*, is closely built up and without any system of drainage, so that the water from the wells is unfit to drink. Some years ago these reasons led to the introduction into the town of a supply of very excellent water from a large spring about three miles distant. This water is brought through iron pipes, and when it reaches the consumer in summer is warm, while the water in the wells is cool. For this reason many of the inhabitants drink the well-water, and, as a consequence, typhoid fever is a prevalent disease in that community. In order to obtain pure cool water, not impregnated with lime, some of the inhabitants of the place have adopted a plan which is so simple and gives such excellent results that it is worthy of general adoption wherever there is a water-supply other than wells or springs. The plan is as follows: A cylindrical galvanized-sheet-iron tank twelve inches in diameter and four or five feet long, is placed in the bottom of a well. This tank is then connected by a galvanized-iron pipe with the water-supply pipes, and another pipe is carried from the tank to the surface of the ground, or to any convenient point for drawing water, and has a cock at the upper end. The tank is consequently always filled with water from the water-supply, and being in the bottom of the well, the water is cooled off and acquires the temperature of the well; so that that which is drawn from the tank is as cool as well-water, and is without any of the impurities with which the latter is contaminated. The water drawn from the tank in one of the wells in the place named had a temperature of fifty-six degrees when the thermometer in the atmosphere above stood at seventy-six degrees. This method gives an abundant supply of cool water during the whole summer, and can be adopted in all cities, towns, or in the country. If a well is available, it can be used; if not, by simply digging a hole in the ground deep enough so as not to be affected by the surface temperature, and burying the tank, it will answer equally well. This hole might be dug in a cellar or outside the building. If the water has any impurities in

suspension, such as mud, the tank should be made accessible, so that it can be cleaned separately.—*Invention.*

COMPRESSED WOOD FOR BUILDING.—If we may believe German journals, brick and terra-cotta are no longer to stand alone as the best fire-resisting building materials. A new hotel, which has just been put up at Hamburg, is described as being built entirely of blocks of compressed wood as hard as iron and by subjection to certain chemical processes rendered absolutely proof against both fire and the attacks of insects. If the claims of the inventor are well founded, he is clearly wasting time in the Fatherland and should come over to us with his invention without delay and reap the reward of his labors. A process of making wood fireproof is just one of those things which American builders have been hankering after for some decades past.—*Fire and Water.*

THE DIMINISHING OF NATURAL GAS.—The pressure of natural gas wells in Indiana and Ohio is steadily diminishing, the diminution having already amounted to between 30 and 40 per cent. Professor Orton urges the imperative necessity of cities and States taking action to restrict wasteful use of gas; but even the strictest regulations, he says, cannot prevent the exhaustion of the supply in a few years. In this connection, says the *Engineering and Mining Journal*, it is interesting to note that the Pennsylvania Company has taken the step of refusing to sell natural gas in Erie, Penn., except by meter, charging 22½ cents per 1,000 cubic feet, in order to prevent waste of the gas. No factories are to be furnished at any point on its line, as all the gas will be used for domestic purposes.—*Science.*

TRADE SURVEYS

THE most satisfactory feature of the present business situation is that, after ten months of almost uninterrupted galloping activity in all branches of manufacturing and trade, there are no weak spots, no accumulations of goods, no congestions or inflammations to suddenly develop into virulence in the body politic. There seems to be no restriction of opportunities, no abnormal growth of general indebtedness, no expansion of producing-capacity beyond probable needs. Speculators, it is true, are disappointed, railroad builders and promoters are discontented, but outside of these there are no complaints. Farmers and cotton-planters have made money, and are better off this year than last; laborers are generally employed at living wages; manufacturing interests are mostly overcrowded with orders; money-lenders have every available dollar at work flying from hand to hand. There are very few evidences of weakness. Even the political agitators, who are quick to discover terrible evils brought about by their political enemies, have not been able to make a brush-fire out of people's woes. There is a growth and activity in the smaller towns throughout the country, and especially west of the Alleghenies, which exceeds all experience. The peculiarity of this activity is that it is establishing a multitude of little market-producing centres in localities heretofore mainly devoted to agriculture. The census has shown this in a strong light. Besides this, a spirit has been infused into agricultural activity far greater than before these new little centres were started. Ten to twenty years ago, but little manufacturing, comparatively speaking, was carried on in twenty States of the Union. Within a few years all this has been changed, and centres of industrial activity and commercial life have sprung up, creating a radically different condition of things, developing new interests and diversifying them, and creating innumerable new opportunities for creative and constructive talent. This movement has received an impetus which may, and probably will, last for years. The alleged evil of excessive railroad construction prepared the way for this progress. The commercial world in both Europe and America is on a stable basis as respects ability, present and prospective, to effect balances without inconvenience. Each country is discovering what it is best fitted for, and in the steps to this discovery a development and an enlargement is going on, surprising as it is beneficial to the energies and spirit of the people. New industrial habits and capacities are being formed, and point is being given to latent energies that have never yet been aroused among the people. In short, national character is being developed with a power behind it and an objective point in the front such as never stimulated people in the past. In Europe, the effect of this wonderful industrial development is to weaken the military props in time. There is a slow increase of wealth among the toilers of Europe, as there is a rapid increase of wealth among the toilers of America. The effect of such improving conditions here we all see and know. The effect on European industrial society is not so evident, but it will crop out with a mighty upheaval some time, and that not as far off as people imagine who measure progress now by the foot-rules in use during the last century. In trade and manufacturing affairs there is greater activity than twelve months ago. The iron-makers are making giant strides towards the ten-million-ton basis. Scores of projects to develop and extend that industry are taking shape. Textile manufacturers are gaining ground, especially in the direction of inventions and labor-saving devices and machinery. That our dependence on foreign markets for even the finer grades and makes of textile goods will steadily decline is asserted by textile goods manufacturers whose opinions demand respect. Our industrial system of the time is exact enough, is being rounded out and extended. New forces are at work which are not the product of any man's brain. New industrial and commercial organizations are multiplying, and their increase is an assurance that fluctuations in values and depressions in trade will decline. The coal-producers far in the interior are expanding mine capacity as the result of the building-up of so many new little trade-producing centres. Shops are springing up, also, to serve their purposes. The next point gained will be the establishment of new and independent Western financial centres recently referred to. These considerations are intended to emphasize the importance of the new movement now at work to lift economic and financial policies out of the domain of mere political discussion. This grand result will be accomplished soon, and the attempt to lift these vital questions out of the rut they are in onto a plane of national interest will develop American statesmanship as it is to be, and will show to the masses what they have never yet clearly perceived, viz: that economic and fiscal policies are not to be determined by men, prejudice or opinion, or by votes, even, but by the basic, irresistible necessities of the people and the country.

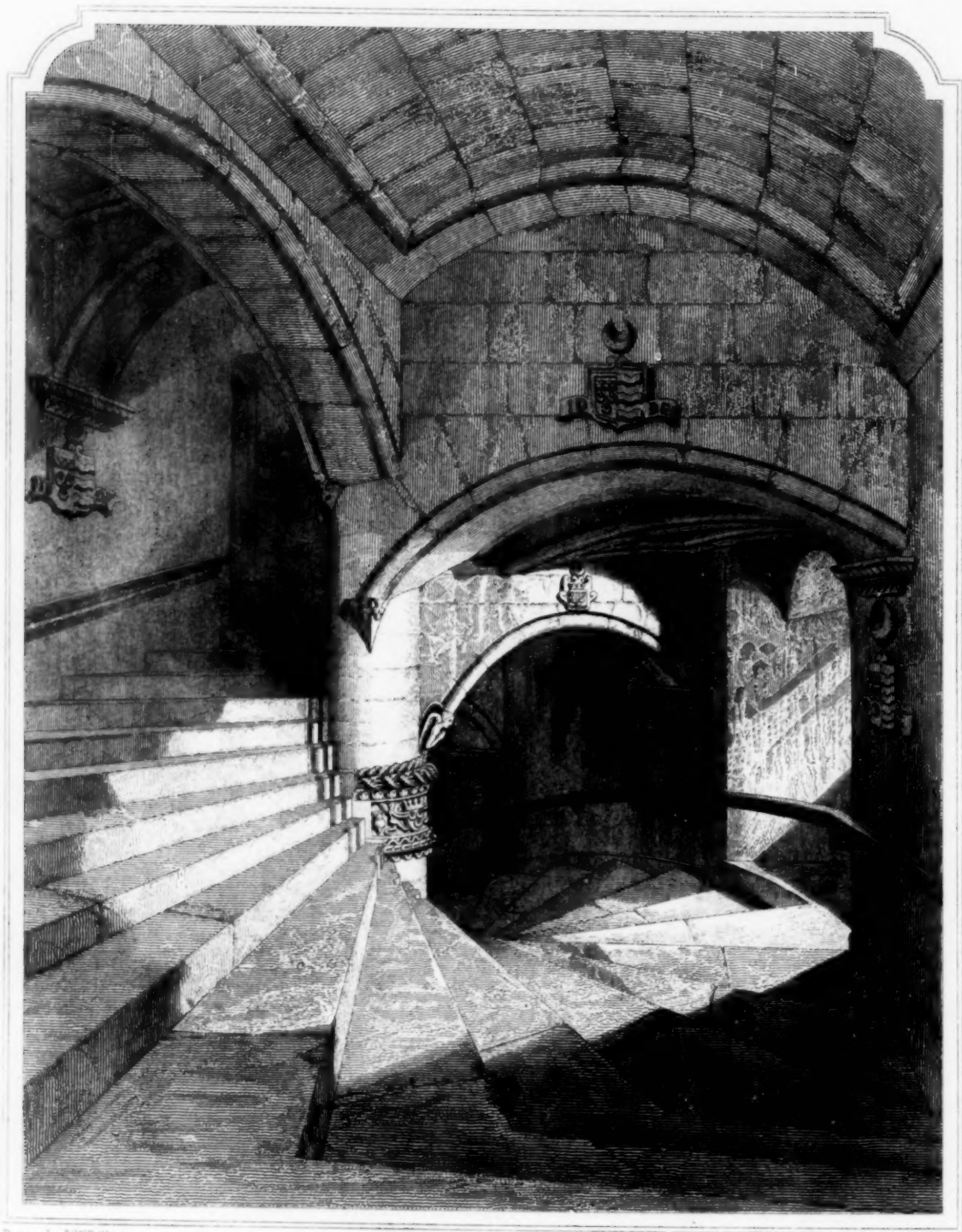
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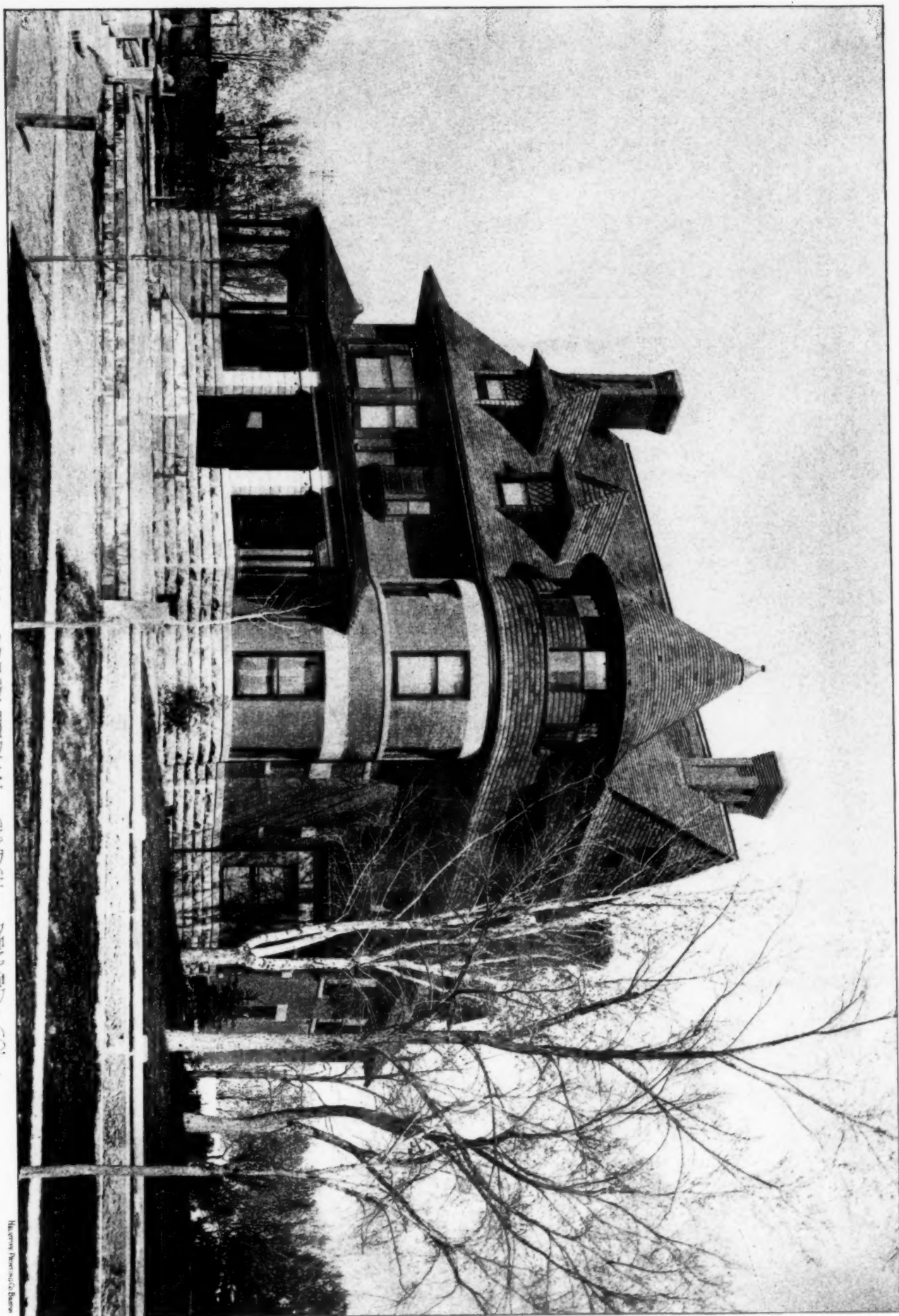




Drawn by R.W. Ellinger

Engraved by J. Sadler

THE STAIRCASE FIVE CASTLE.



PARSONAGE FOR THE CENTRAL PRESBYTERIAN CHURCH, DENVER, COL.
KIDDER & HAMPREYS, ARCHITECTS.

Union Methodist Church.
T.C. Link Architect.
St. Louis Mo.

