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MESSRS. WALKER & KIMBALL, of Boston, have made a valuable suggestion for a rapid-transit sub-way for that city. They have, perhaps first among those who have treated the subject, fully adopted the system of underground travel, and propose to excavate the whole width of Tremont Street, covering the excavation with concrete vaulting, decorated on the underside with white glazed tiles. In the middle of the space would be two tracks for express trains, sunk below the general level, and the tracks for accommodation trains would run on each side, while a wide platform would occupy the space between the accommodation tracks and the fronts of the buildings on each side, the basements of the stores being fitted up for retail trade, and opening on the platforms, these constituting a continuous sidewalk. The scheme resembles that of the Arcade Company for a Broadway road, but with several improvements, both in construction and arrangement. Messrs. Walker & Kimball provide access to their express tracks by tunnels under the accommodation tracks, and stairways up to the stations, bridges being thrown across the express tracks, to provide communication between the upward and downward accommodation tracks. Of course, the whole structure would be brilliantly lighted by electricity, and those who have seen a modern first-class underground establishment, such, for instance, as the subterranean café in the Equitable Building in New York, will not need to be told how attractive it may be made.

ONE of the Boston papers, after a rather extravagant eulogy of the Fair buildings and grounds at Chicago, asks why architects and landscape gardeners cannot be employed to lay out the new portions of growing cities, instead of leaving them to chance. It says, what is probably true, that it would be profitable for almost any American city to level all its buildings with the ground, stake out its streets afresh, under the direction of such experts as those who were enabled to display their skill at Chicago, and rebuild, under the same direction. Of course, there is no possibility of anything of the kind being done, but there is no reason why the principle should not be applied to the laying-out of new quarters of existing towns. In many Continental cities, within the past few years, competitions of architects have been held for designs for laying out new suburbs, the municipality furnishing plans of the district to be treated, appointing the jury, awarding the prizes and

carrying out the scheme, making its own terms with the private owners of the territory involved. In Germany, this manner of treating the subject is the rule, and the results are to be seen in the splendid new quarters of the more important towns, which present about the most complete contrast that could be imagined with the idiotic folly of our suburban street-planning. We are accustomed to speak, and with good reason, of the short-sightedness of our forefathers, who laid out the older American cities in such a way that, for example, Boston has had to spend forty million dollars, within the past twenty-five years or so, in straightening and widening the crooked thoroughfares which sufficed for the last generation; but the cows who are reputed to have laid out old Boston were intelligent and far-seeing engineers, in comparison with those who design the streets of new Boston. The Puritan cows, in their excursions to their distant pastures, left tracks radiating into the country at such distances apart as to give roomy farms and pastures between them. Later, the counties intervened to establish a few main roads in addition to the cow-tracks, and on this foundation the structure of suburban street-planning is built. The process of designing is something as follows: In the transmission of estates, the farms bounding on more than one street have mostly been divided, so as to make lots, of a greater or less number of acres, with frontage only on one street. The proprietor of one of these lots is seized with a desire to "improve" his property, and, while his neighbors stand around, deriding his "Folly," employs the local cellar-digger to construct one, two or more short pieces of road, extending, at right angles with the street, to the back line of his lot, where they bring up against a fence, placed there by the adjoining owner to prevent the "Folly" from infecting his own peaceful estate. A few years later, another proprietor in the neighborhood goes through the same process, and so on, until the district is filled with little slums, branching from a few principal streets. The effect of this planning on the beauty of the metropolitan region which comes subsequently to occupy the district may be imagined, and its effect upon the beauty is nothing in comparison with its results in depleting the city treasury when it becomes necessary to cut among these dismal alleys to get light, air and proper facilities for communication.

THE most interesting "Labor" news of the last few days is the story of the Paris riots. From the accounts, it appears that certain students in the Latin quarter got up a ball, to the management of which the police authorities felt themselves under the necessity of objecting. The students resented the interference of the police, and expressed their resentment by promenading the streets and yelling. Then the police attempted to stop the yelling, and a fight ensued, in the course of which several students, and several policemen, were bruised, and a bystander was killed in the scuffle. In token of mourning for this unfortunate, the students, assisted by volunteers from among the filthy ruffians who lurk about Paris, began to break the windows of the public buildings, and declared war against the little girls and boys who sell newspapers in the street kiosks, turning them out of their shelter, and burning their stock-in-trade, with the kiosks themselves, in heaps in the streets. The ruffians, finding this sort of sport greatly to their minds, gathered in increasing numbers, and added to their enjoyment by seizing and overturning all the cabs, horse-cars and omnibuses that they came across, piling them in the streets, and setting them on fire, beating the inoffensive people whom they found, plundering the shops, and so on. By this time the students found the flavor of the sport rather too strong for their stomachs, and began to fall out of the ranks of the rioters, and when the latter undertook to storm the Charity Hospital and the École des Beaux-Arts they retired entirely, some of them even volunteering to aid in the defence of public and private property. Meanwhile, the Government officials, who know by experience the attraction that robbery and bloodshed have for the apostles of the dignity of labor and universal brotherhood, sent orders to have the Labor Exchange building closed, so as to shut off the eloquence of the walking-delegates. The latter, however, had anticipated them, and filled the place with a mob of three thousand of their followers, who defied the police authorities, while fifteen hundred more paraded the streets, lending at least a moral support to the swarms of thieves who were ransacking the better

class of buildings in the quarter. At the last accounts, quiet had been restored, with the help of the military, but the robbers and ruffians have practically secured another important victory, in having had, for some days, a rich quarter of Paris at their disposal, with perfect liberty to steal and destroy at their pleasure.

SUCH performances as these set one to thinking seriously of the extremity to which eloquence and literature are bringing the decent part of mankind. In all great cities, half the population is told every day that the people who do as little work as they can, and do that ignorantly and dishonestly, are those whose example is most worthy to be followed, and whose imitators, by means of organized violence and oppression, will soon control the world. Of course, only a fraction of the people who now read this rubbish believe it, but the fraction grows larger every day; and so long as "labor-reformers," with the applause of cheap newspapers and fawning politicians, are allowed to teach that it is lawful to conspire to prevent honest men from working, the number of people who will see the logical consequence of this doctrine in the principle of Ravachol, who never did any work, but, when he saw anything he wanted, killed the owner and appropriated it, must continue to increase, and attempts at the practice of the arts by which this consummation of "labor reform" is to be reached must multiply.

ANOTHER thing which must act powerfully to incite the vicious to deeds of violence is the extravagant way in which such deeds are celebrated by the newspapers. To be known, to have one's name published all over the world, coupled with adjectives expressive of the noblest of human qualities, is something which many men desire above all things; yet this honor seems now to be reserved exclusively for criminals. Every newspaper teems now with accounts of "daring" burglaries, "bold" robberies, "well-planned" and "successful" swindles or "skilful" forgeries, and many an honest young hero would give ten years of his life to have such words publicly applied to him as can be readily earned by pounding an old woman on the head with a club from behind a fence. If the people who write these praises of cowardly violence think that they have no effect upon those disposed to crime they are very much mistaken. Any captain of a police station can testify to the eagerness with which criminals read the newspaper accounts of their "daring" deeds, and even the terrors of death are mitigated to the egotistical brutes of the anarchist type by the gratification which their vanity receives at the hands of the newspaper editors. If half as much credit for courage could be publicly given to the brave police of our great cities, who, day after day, put to flight ten times their number of armed and howling ruffians, as is attributed to the assassins whom they hold in check, we should see the authority of the law greatly strengthened. At present, it is the contemptible fashion among politicians, more, perhaps, in Paris than elsewhere, to slight and insult the faithful guardians of our homes for the sake of currying favor among those whose hatred of a policeman is proportionate to their fear of him. This habit of talking has borne fruit in blood, and it is quite time that some one should take courage to defend in public the unpretending old principles of morality and justice, which are as favorable to true liberty as those of violence and conspiracy are opposed to it.

DR. ALFRED STUBEL, a distinguished German geologist, made a visit, some sixteen years ago, to the western portion of South America, and, on his way, examined closely and carefully the ruins of what seems to have been once the great city of Tiahuanaco, on the shore of Lake Titicaca, in Bolivia. On his return to Germany, his notes and photographs were submitted to Dr. Uhle, a very high authority on South American archaeology, for examination, and a book has now been published, containing an account of the explorations, with Dr. Uhle's comments. According to this distinguished scholar, the constructions at Tiahuanaco must be ascribed to the Aimara, a race of Indians which still occupies a large part of Bolivia and Peru, and preserves something of its ancient barbaric civilization. Although nearly every antiquity of an architectural character in South America is ascribed to the Incas, Dr. Uhle is inclined to believe that the work at Tiahuanaco was done before the conquest of the

Aimara by the Incas, an event assigned by the Spanish chroniclers to the early part of the twelfth century. It is quite possible that the remains may date from the very time of the conquest, for there is internal evidence that the sculptured stones which are strewn over the soil were never placed together in a building, and on many of them the cutting is still unfinished, as if the work had been suddenly interrupted and never again resumed. However that may be, the intended buildings must have been laid out on a colossal scale. Some of the carved blocks measure thirty feet in length by fifteen feet in width and six feet in thickness, and would weigh about two hundred tons, while very few weigh less than one hundred and twenty-five to one hundred and seventy-five tons. These enormous stones are mostly of lava, brought, apparently, by water from a distant point on the shore of the lake, and dragged about twenty miles from the landing-place to the site of the building; but the columns and the colossal sculptured figures, of which there are many, are of red sandstone, from a quarry in the neighborhood of the ruins. Dr. Uhle thinks that the stones, although beautifully smooth and square, and deeply carved, were wrought without the help of metal tools, and suggests that the rough shape required was given to the block by heating, joined, probably, with sudden cooling, by which large fragments were detached, while the subsequent working and polishing was effected by hammering with a stone still harder than the lava. The photographs of the blocks, however, show drill-holes in adjoining blocks, with channels cut between them, exactly as such stones would be cut now to receive metal clamps, and the *Deutsche Bauzeitung* finds it difficult to believe that metal in some form was not used by the workmen.

A SUGGESTION has been made, which we hope will be carried out, that a statue or bust of the late John W. Root should be erected in the rotunda of the Administration Building at the Chicago Exposition. Few persons outside the profession know how much Mr. Root contributed to the artistic success of what is justly regarded as one of the greatest architectural achievements of the century, and, while it is thus peculiarly fitting that the part which the profession has taken in the Fair should be commemorated in the memorial to Mr. Root, it is a pleasure to think that such honors to him would be indirectly a compliment to his partner — a compliment, too, which would be particularly pleasing to Mr. Burnham, and which no one connected with the Fair has better deserved.

MR. JAMES ALEXANDER BLANKINGSHIP, one of our young sculptors whose work was promising, died recently in New York from the effects of a dangerous surgical operation. Mr. Blankingship was born in Virginia, thirty-four years ago, and from boyhood showed a strong inclination for sculpture. After a short period of successful study at home and in New York, he went to Paris, and entered the studio of Chapu. He remained in Paris, studying and practising, for thirteen years, returning in 1890 to New York, where he was engaged as Professor of Sculpture in the Institute of Artist-Artisans. His abilities soon found recognition in his native country, and he was engaged to model three groups for the Administration Building at the Chicago Fair, besides a statue for the Electricity Building.

WE do not pretend to understand the merits of the jury system at the World's Fair which has caused so much dispute and discussion, so we can but note without comment the latest phase of the difficulty. This appears in the report that the International Jury for the Fine Arts Department have, as a consequence of their first meeting, served notice on Mr. Thacher that any attempt on his part to enforce his one-man system will lead them to withdraw all their exhibits from examination. We cannot tell whether the American jurors join in this action: it is quite as likely they did as that they did not. The American jurors in this section are: Oil — John Lafarge, New York; Thomas Hovenden, Plymouth, Pa.; William M. Chase, New York; Worthington Whittredge, New York; George W. Maynard, New York; F. D. Millet, Water-colors — J. C. Nicoll, New York; R. Swain Gifford, Nonquit, Mass.; Walter S. Shirlaw, New York. Architecture — Russell Sturgis, New York; W. P. P. Longfellow, Boston. Sculpture — Olin L. Warner, New York; D. C. French. Etching — Frederick Dielman, New York.

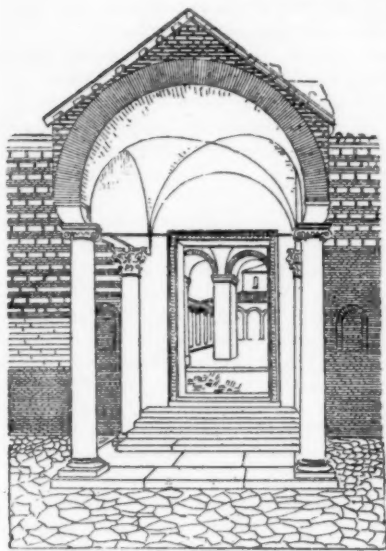
PORCHES.¹

Fig. 1. San Clemente, Rome.

Figure 2, *American Architect* for September 10, 1892]; there was a similar one in the fifth century at St. Martin's of Tours; but often after that only the disposition of a gallery attached to the façade of the church was maintained, as is seen in many Italian churches down to the eighteenth century and in a few



Fig. 2. Porch at Tournay (Eure-et-Loire.)

French structures, especially in those belonging to the French and Champagne schools of the eleventh to the fourteenth century (Urcel, Cauroy-les-Hermonville, Tournay [Fig. 2], etc.; approaching it, the porch of the Cathedral of Noyon, see "*Cathédrale*," Figure 33, and in Normandy that of Sézéz, see "*Cathédrale*," Figure 38).

When national traditions began to take definite shape in France, in the first half of the eleventh century, church porches assumed a very great variety of forms. The galleries referred to above, which were at first built to project from the

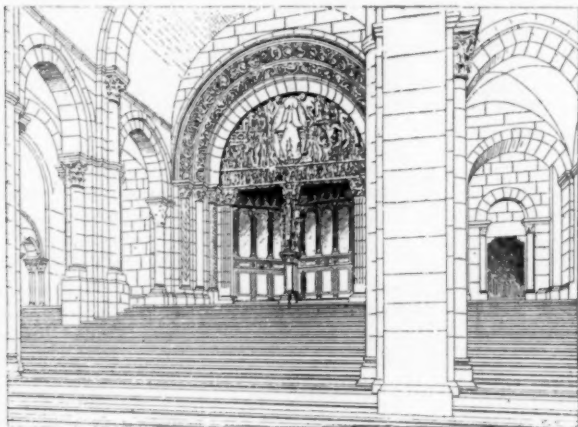


Fig. 3. Porch of the Cathedral of Autun.

façade, were incorporated into the mass of the nave and constituted its first bay. However, this logical change was not effected until quite late; we note it in certain Rhenish houses of worship of the twelfth century, as at Guebwiller in Alsace,

¹From the French of A. Saint-Paul and H. Nodet, in Planat's *Encyclopédie de l'Architecture et de la Construction*.

and in the principal Burgundian churches of the thirteenth and fourteenth centuries, as at Notre Dame at Dijon [See "*Bour-*

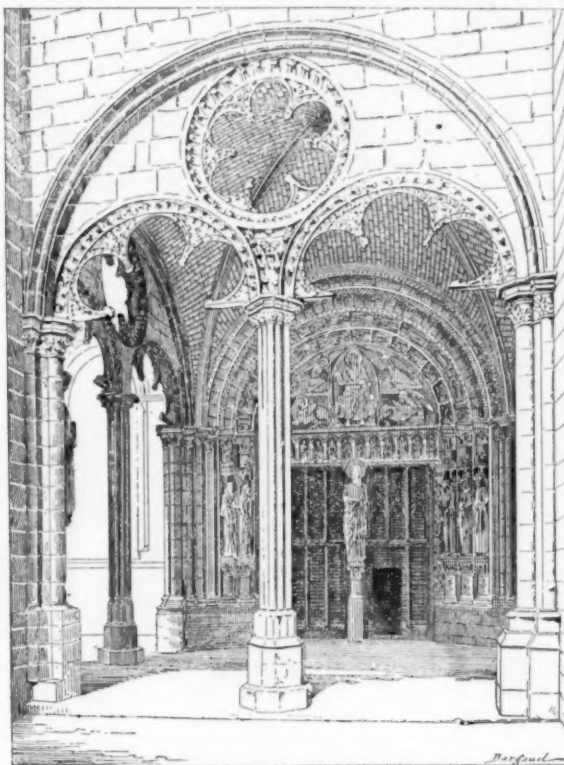


Fig. 5. Side Porch of the Cathedral of Bourges.

gogne," Figure 4], at Beaune, Auxonne and Semur-en-Auxois. The lateral arches of the porch open under the façade towers.

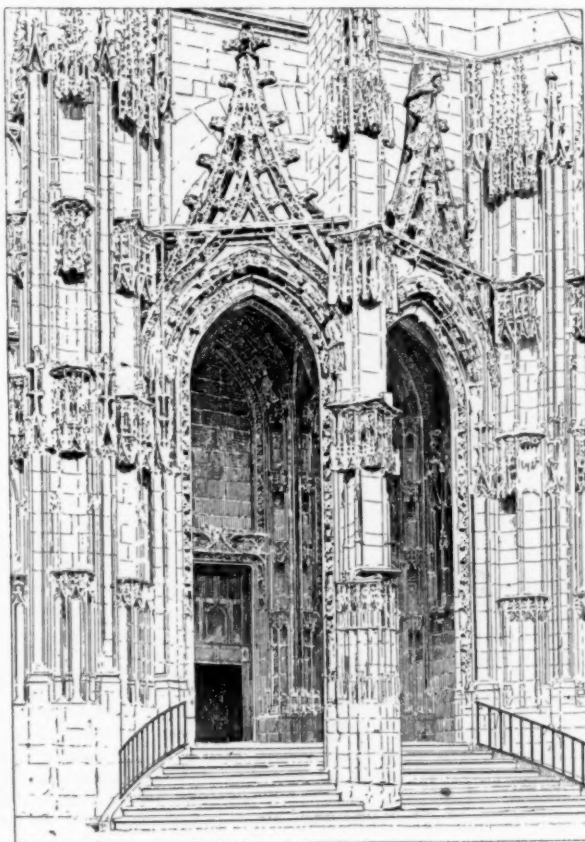


Fig. 6. Porch of Saint-Germain, Argentan.

This disposition was adopted, in the eighteenth century, for the Gothic cathedral of Orleans, and in 1846 for Sainte-Clotilde

at Paris. The porches of the Paris churches of La Trinité and Saint-Augustin are allied to this type, though the former has but one tower, which is at the centre of the edifice, and the latter has none.

In the eleventh and twelfth centuries, church towers often formed a porch before the façades; as for example in Saint-Germain-des-Prés at Paris, at Créteil (Seine), Poissy (Seine-et-Oise), Chécy (Loiret), Saint-Savin (Vienne), Saint-Maixent (Deux-Sèvres), etc.; from the thirteenth century, these porches were open at the sides as well as in front, so that only two pillars remained as a support for the tower; an instance of this disposition is seen in the Cathedral of Tulle. The system was much in vogue during the fourteenth and fifteenth centuries in Languedocian churches with a single broad nave.

In case of a marked development of the façade tower, the porch sometimes opens by three arches on each of the three free faces; interior pillars correspond to these arches, the whole giving nine vaulting compartments. The most beautiful, as well as the most famous, example of such porches, which

Architecture," Figure 23, *American Architect* for July 26, 1890, and "*Bourgogne*," Figures 2, 3], and also of the much smaller narthexes of Paray-le-Monial and Tournus. The altars reared in all these porches, and the imposing dimensions of some, show that liturgical services were held here; they were mainly for the strangers who were welcomed to the monasteries and who were thus enabled, except on grand ceremonial occasions, to attend mass and other services, without disturbing the meditations of the monks; the narthex, in fact, opened into the guest hall.

The Romanesque narthex at Déols had a tower at each of the four angles; a similar disposition was adopted in the fourteenth and fifteenth centuries in St. Pierre of Montpellier.

The porch of St. Lazare at Autun, although entirely open on the exterior (Fig. 3), and that of Chatlieu, justly renowned for the richness and grandeur of its sculpture, belong also to the narthex family, as well as the Cistercian porches, the depth of which often does not exceed one bay. The slight importance of the Cistercian narthex seems to be due to the

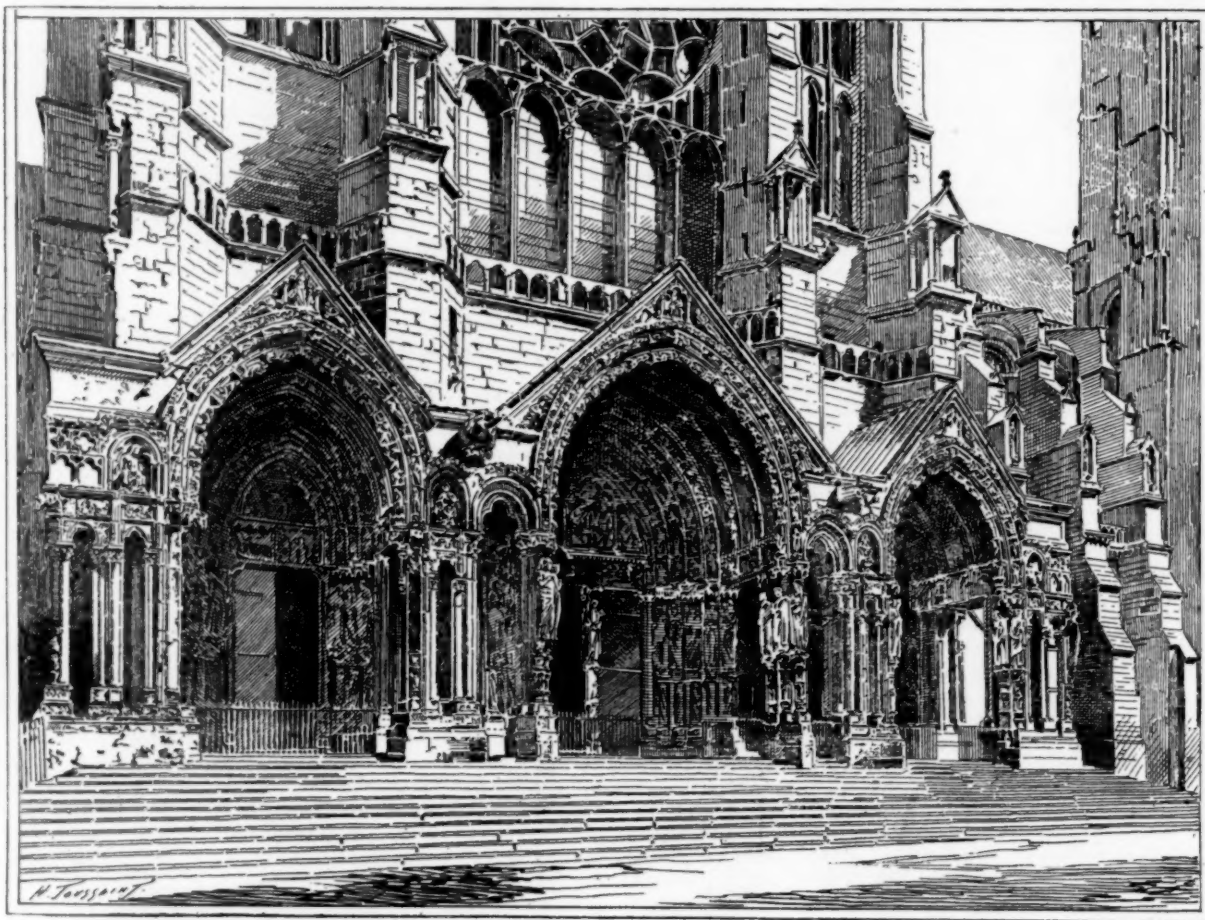


Fig. 4. North Porch of the Cathedral of Chartres.

are frequently surmounted by a story of the same character, is at Saint-Benoit-sur-Loire [See "*Eglise*," Figure 10]; the porch of Lesterps belongs in the same class; there was a similar one in Saint-Martial at Limoges; the porch of Moissac is a derivative of this type, but the intermediary pillars on the ground-floor and the inner pillars of both the ground-story and the story above are suppressed.

We touch here the Cluniac style of narthex, or "ante church," a real building preceding the nave and in no way dependent upon the position of the towers. At Saint-Benoit-sur-Loire there were three altars in the upper story; in the Cluniac narthex, which at Cluny and Vézelay had exactly the disposition of a nave with side-aisles, there were also altars, either in the first story or in the tribunes taking its place (See "*Cathédrale*," Figure 9). Although in reality an appendage, or accessory, the narthex was so thoroughly incorporated in the basilica, which it served as an entrance, that its façade was often the one which received the twin towers of the nave; this was true at Cluny and Vézelay [See "Religious

fact that the monasteries of the order, occupying isolated sites and poor in relics, were comparatively little visited by strangers.

In the thirteenth century, such a considerable depth was given to the embrasures of the principal doorways—as at Laon, Amiens, Rheims and Bourges—that additional porches on the main façades were dispensed with, and the doors themselves, in fact, received the name of porches; but variety and luxury appear in these structures at the side entrances. The lateral porches of Chartres (Fig. 4), entirely open on the exterior and developed along the whole width of the transept with its side-aisles, are, by their amplexity, their masterly conception, their sumptuousness, and by the fine execution and iconographic interest of their statues, quite unique works, which, according to Viollet-le-Duc, "would have sufficed to immortalize several generations of artists." It was usually the case, especially for entrances disposed along the naves, that the architect was content with a square hall, the breadth of which was determined by that of the bay to which it was contiguous.

When the porch was introduced between two chapels, it was naturally open in front; but, when it was disengaged on three sides, often one of the lateral faces, and more often both, were open (see "Gable," Fig. 3, porch of Bernières). In the Cathedral of Bourges (Fig. 5) two charming porches of this kind are to be seen;

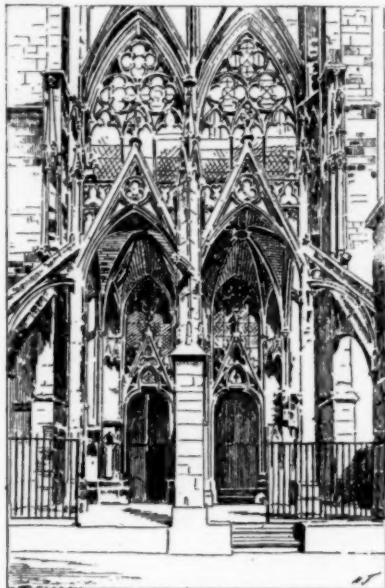


Fig. 7. Saint-Urbain at Troyes.

they shelter two magnificent Romanesque doors from the church demolished at the beginning of the thirteenth century (Fig. 5). Normandy is one of the French provinces in which porches have been most commonly a feature of church architecture. In the fifteenth and seventeenth centuries they sometimes have the form of triangles open on both of the exposed sides (Fig. 6). In Calvados and Seine-Inférieure there are a certain number of wooden Renaissance porches, which are very graceful and quite well sculptured.

In Picardy, light constructions, oblong in the direction of the axis of the church, are often found in front of façades of the twelfth to the fifteenth century. In Brittany, there are Renaissance porches disposed in the same way, but larger, substantially constructed and embellished on the inside with statues; they are veritable monuments, sometimes surpassing the body of the church itself in luxury. We have indicated only the principal combinations of French porches; there are many others, more or less faithfully copied from the commonest types. We must mention, for its elegance, at least, the side porch of the church of Candes (Indre-et-Loire), a thirteenth-century work with central pillar receiving the springing of the vaults, and the porches of Saint-Urbain of Troyes (Fig. 7), which are a little too cold in their perfect rest and balance, and, for its originality, that of Notre-Dame of Le-Puy-en-Velay, a sort of lower church over the steps that formerly led to the choir, as from a crypt.

Abroad, porches are less common than in France; at least, no types have been created. The most remarkable examples of these constructions are individual productions. We may cite: in England, the porch of Exeter Cathedral, of the fourteenth century [see "Gothique Anglais," Fig. 35], projecting from the western façade and running across the entire breadth; in Germany, that of the Cathedral of Ratisbon [see "Gothique Allemand," Fig. 6], which is triangular, and belongs to the fifteenth century; those of St. Stephen's at Vienna [see "Austrian Architecture," Figs. 4, 5, *American Architect* for November 8, 1890], of two different dispositions; of Santiago de Com-

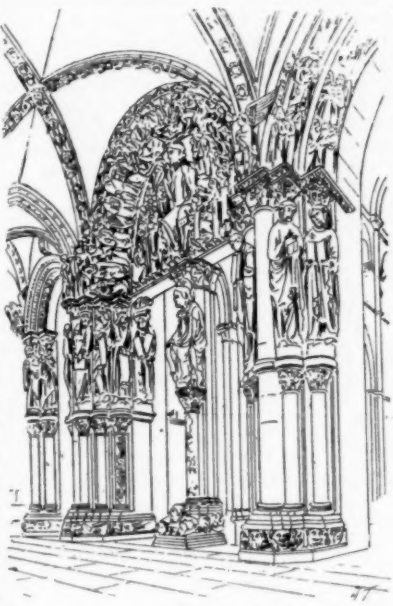


Fig. 8. Porch at Santiago de Compostela.

postela (Fig. 8) and of San Vicente, at Avila in Spain, of the end of the twelfth century, etc. In Italy, either porches with galleries were maintained, to which type we must refer the famous porch of the Pazzi chapel at Florence, by Brunelleschi [see "Italian Architecture," Fig. 2, *American Architect* for December 12, 1891], or they were content with a strongly projecting arch borne on two isolated columns, a disposition which was introduced into Provence and Dauphiné, and which is well represented in the old Cathedral of Embrun.

Porches were of real importance in olden times. People gathered in them before or after service to discuss their affairs; they took refuge in them from the rain, or to await the opening of the doors; genuine courts were sometimes held there, a custom which was suppressed only under François I. In modern edifices, porches are almost wholly abolished, especially in country places, where, however, they would be of the most service, for the peasant likes to linger here with a friend on his way out of church, and the passer-by takes refuge here in stormy weather; then, too, the facilities which they offer for conversation prevent gossiping during service. Architects omit them from their plans for fear of masking the façades, which, however, could not be damaged by a well-concealed porch.

A. SAINT-PAUL and H. NODET.

CONCERNING THE AMERICAN STYLE.



Type I.

DURING the last ten years, discussions have occasionally arisen and articles have been written concerning the "American" style of architecture. Sometimes it exists only prophetically or conjecturally; sometimes it is full-grown and in the flower of its strength; sometimes it is in a state of peaceful decay; sometimes it is non-existent and from the nature of things can never be.

In endeavoring to describe as briefly as possible what seems to me the "American" style, there are one or two preliminary remarks concerning architectural styles in general, which, while neither specially striking nor at all original, are yet, like a great deal else of the same sort, rather necessary.

The architectural style of an age or nation must draw its inspiration from certain conditions, civil, political, religious, which dominate the time or the people. We turn to the country that has ever fought for and championed the Church, that has led in her crusades, that has furnished her with a temporary home, — we turn to France, and who shall say that the greatest architectural glory of France lies in aught but her cathedrals? And as Italy has from the beginning of the Christian era been the school of all things political, so we find there pre-eminent architecture political, be it that of oligarchy, of stern republic or of ducal tyranny. "By Roman architecture I do not mean that spurious condition of temple which has nothing more than a luscious imitation of the Greek. I mean that architecture in which the Roman spirit truly manifests itself, the magnificent vaultings of the aqueduct and the bath, and the colossal heaping of the rough stones in the arches of the amphitheatre; an architecture full of expression of gigantic power and strength of will." Thus Ruskin upon Roman "style," and a thousand years found the same conditions still present and under those conditions we find still that the true expression of architectural style is in the works of the body politic.

Walk up and down the narrow and crooked streets of Siena, streets walled with iron-bound palaces of brick and stone, battered by four hundred years of war and weather; stop in her Piazza del Campo, where the palace tower shoots heavenward and seems with the hurrying white clouds behind to be sweeping onward through space; look up at the city from the road just outside the Fontebranda gate, at the city wall as it climbs and dips and clings to the rugged slopes, to the grim tower-houses rising above their neighbors, to the cathedral and its tower and the palaces clustered about it — to the huge bulk of San Domenico and the ruined Fontebranda just below, where crowds of women soak and beat (I do not say clean) and dry their basketsful of clothes; all this as you see it, be it Siena, or be it any one of a score of other Italian cities, this is the Italian style of the fourteenth century.

And in England, that architectural expression which is most truly English is found, not in the castles, nor in St. Paul's, nor in the Houses of Parliament, nor in York, nor in Canterbury, nor Lincoln Cathedral, but in the smaller churches and in the homes of that

class which England claims as her bulwark of safety; in the dwellings, rural and suburban, of a middle class which lives and has lived since the time of the Magna Charta in a state of security of life, limb and property such as no other nation has enjoyed for the same length of time. In the dwellings of this class and in the churches built to

a great degree by their efforts, we recognize a style of architecture which is surely characteristic.

There is no need to generalize further. Let us get to America and look for her architectural style. And to know where to look, we have, of course, simply to pick out the American Idea, reduce it to its Material terms and see what the said Material Term, for his present shelter and abode and his future



Type II.

glory and exaltation, does devise, construct and adorn. The search for the Idea need not be a long one. We can throw aside at once the religious, the ecclesiastical idea. It would be a sad waste of the most worthless time to conjecture the possibilities of a style based upon the different beliefs held by the sixty millions of people, more or less, that we dwell among. We cannot find it among the very rich nor among the very poor—in every civilized and Christian land they are now much alike, and the slums of New York are but little dirtier than those of Naples, the miles of her brownstone fronts are as uninteresting as those of the corresponding quarters of London or Paris.

Can we find it in our Government works? Do our post-offices and our custom-houses express it?

In short, the American Idea seems to be personified in that class of citizens which America and America alone has brought forth; the class which is now in America universal and which is unknown outside the United States. The nearest approach to it is perhaps in the "lower middle class" and perhaps the "laboring class" in England; and it is, as in England, the class which contributes most to our strength and prosperity. A class analogous to this exists, of course, in every country, but nowhere under the social and political conditions that prevail here. Its possibilities are boundless, its ties with the very wealthy are often strong through church association or blood relationship, our facilities for cheap and rapid travel make it a most unsettled class (this point is a most important one), and it is without doubt relatively the most extravagant class which we have.

Here then we have an American type, original and universal. Manifestly, from what has gone before, the American style of architecture is to be found, if found at all, expressed by this class in the homes which shelter it, and so we will proceed, if you please, to glance at these homes.

There are two ways to do this: one, to take from two or three cities of each state in the Union a few sketches of the house of this type; the other to take an "average" city and thoroughly examine the architecture in that. The latter course is rather more practicable and I have taken that course, first assuring myself that the city may with fairness be called an "average" one from personal observation of cities of the same size from Maine to Louisiana southward, and by photographic acquaintance with many Western cities.

So I have chosen a city somewhat over one hundred miles from New York and about the same distance from Boston—for it should be far enough from them to have a character of its own; of between forty and fifty thousand inhabitants; a city of varied manufacturing interests, but so situated as to have large trading interests as well; a city with the "modern improvements" of course; a city without a boom, but with "just a steady, healthful growth." Taking this city, then, there are obviously certain buildings which are to be thrown aside at once, and first of all those that are over twenty years old, for they were built before this class became a class universal and national.



Type III.

It was simply local then and even in its local range had not a tenth part of the attributes that distinguish it now. The very rich or the very poor, we shall find here in such small number that their work may be at once dismissed. So it is to the houses built within twenty years costing from one to ten thousand dollars, that we must turn, and turning, what do we find?

We find, that the buildings executed under the aforesaid conditions are, for all practical purposes, alike in "style," that is, that ninety per cent of them can at once be grouped together (I am prepared to substantiate this assertion by figures if need be), and that they show an originality of design and arrangement of plan thoroughly in keeping with the necessities of their inhabitants.

Number 1 is the simplest and least expensive type—the germ. The houses of this degree resemble the sample so closely, that it may stand as a drawing of any or all of them. And yet, in detail and in color, you will hardly find two which are precisely the same. Then comes the next grade, which shows the same likeness (2), with a little more variation



Type IV.

in plan as one, two or perhaps four families are sheltered under the same roof. It becomes a trifle more lavish in its allowance of front-porch and "art-glass" front door, but it is built with the same logical reasoning as regards the greatest amount of display with the least possible expense. A step beyond this and we reach (3). Here the latitude in plan broadens and here the variation in exterior treatment struggles to free itself from the bonds of its humble neighbor and grasps after the infinite, so to speak—struggles, but does not quite succeed. The porches are multiplied, the "art-glass" deepens its hues, dormers of varied shape break forth; towers—round, polygonal and square attract the eye; but the style is still sharply defined.

From this point upward (in point of cost) the examples rise, limited only by the imagination of man and the plenitude of his wealth.

In the accompanying sketches, no pains have been taken to select examples particularly pronounced; all of them are genuine and existing buildings, chosen from different sections of the city. Indeed so great is the multitude that to search for the most elaborate, the most imposing, the most tasteful or the one with the most "pleasing proportions," would be a long and exhausting task.

It only remains to determine if these examples express as they should the character of those who dwell within them, if they exhibit in their design the attributes of the typical American.

Look once more at the sketches, the simplest first. There is little if any, variation in the arrangement of the plans, for the necessities of life are to a great degree met in the same way. There is, if the house holds two families, a two-story porch, for each family must have one. They must be on the front that they may command a view of the "doings." That for the first story is generally the larger, but this is offset by the fact that it must be used as a thoroughfare by the dwellers upon the second floor. This porch is one of the universal characteristics of the style. It is varied in form, in (apparent) substance and in color, to an evidently unlimited degree. The tastes, the aspirations and the possibilities of those whom it shelters are as varied and unlimited.

As the house increases in size, the rooms—nearly always the same—entrance-hall, living-room, dining-room, china-closet, kitchen and pantry, with sometimes a parlor, upon the first floor, increase slightly in size. The sitting-room has a "bay"; the neighbor extends his upward—he has a two-story bay (2). His neighbor continues the progression; he has a tower (3). The towers multiply; they must not be alike; "progress" is the American watchword—and the towers progress. This tower is perhaps the most "imposing" means to the end sought—that of acquiring a room of irregular shape; and is consequently in the greatest demand; but frequently the corners of the first and second story rooms are cut off at an angle of forty-five degrees, while the third story and its gable finish over the void thus left.

These are some of the points which give to the house its main



Type III.

character, and these are the points which are determined by the social conditions of those that dwell in them. But the purely decorative portion of the house has as surely a character all its own. The scroll and the band saws, the turning-lathe and the ready-mixed paint catalogue have created new possibilities. I have counted four patterns of cut shingles, three patterns of turned baluster, three of turned post, various patterns of scroll-work and five colors of paint upon one house—a modest house too, so far as cost was concerned.

Now do not these houses, each with its bit of individuality expressed outwardly by some detail of tower, of bay, or of porch; of moulding, of shingles, or of varying colors—and yet in their *tout ensemble* as like as two dozen victims of the Geary law—do they not typify my personified American Idea? Are they not fitted to house the occupant's quartered-oak carved mantels, his plush furniture, the decorative painting of his offspring, his elaborate baby-carriage, his upright piano and his oxidized-silver piano-lamp?

My reasons for choosing the dwelling-house in illustrating the "American" style, have already been given; but it is inevitable that if this is truly a style it will affect to a greater or less degree buildings of all classes. And this it has done. The great mass of late work, except where some historic form or detail has been more or less directly followed, shows at once the mark of this American feeling.

The architectural history of our country is but a record of attempts to foist upon the free citizens of the most glorious nation on earth, copies of Old World architecture. For thirty years after our independence politically, we lived architecturally enslaved—bound to the chariot-wheels of Great Britain. Then came a short Greek revival; then a relapse to British Gothic; then a spasm of France, then a worse spasm of England once more, and since then, the nations of the earth have been ransacked to furnish matter of which to make, indiscriminately, our churches, our theatres, our houses, our depots, our stores and our schools.

But these attempts to dictate fashion to a free people have all proved futile. Why should we turn to the antiquated ideas of an effete aristocracy or an atheistic republic, and seek to adapt them to the unbounded needs and unfettered desires of this most glorious of all lands?

For the architectural style of our country, I repeat, we must trust to its people. Can we not trust them with it safely? What if certain individuals find fault with their architectural expressions, is the fault with the people or with the individuals? Surely with the latter.

For are we not the most cultivated, the most enlightened, the most highly civilized people on earth, in all that these words can imply? We are. Do we not teach the arts in all our public schools? Do not University-extensions swarm, and Chatauquas abound, and summer-schools multiply, and lecturers hasten to and fro over the land, instructing us in these things? And are not these for all and every one in this glorious land? They are.

And why then, should not our style, our American style, be the best in all respects of any yet evolved?

I rest the case here.

G. C. G.



PRESENTATION OF THE ROYAL GOLD MEDAL.—THE SPIRE OF ST. MARY'S, OXFORD.—PROPOSED MUNICIPAL BUILDING FOR LONDON.—THE FIRST WORK ACCOMPLISHED BY THE LONDON COUNTY COUNCIL AS ITS OWN CONTRACTOR.—THE EXAMINATIONS.—ST. BARTHOLOMEW'S, SMITHFIELD.

THE presentation of the Royal Gold Medal to Mr. R. M. Hunt by Her Majesty the Queen acting under the advice of the Royal Institute of British Architects, was made the occasion of an interesting ceremony. The meeting for presentation was preceded by a reception by the President of the Institute who subsequently delivered an address worthy of the occasion.

Mr. Macvicar Anderson opened his remarks by a reference to the fact that this was the third time he had had the privilege of presenting the Royal Gold Medal to distinguished architects. On the first occasion he presented the medal to an eminent English architect, Sir Arthur Blomfield. Last year he had been honored with the privilege of conferring the honor upon M. César Daly, the venerable Frenchman, who, at the age of eighty was still engaged in the study of his art. He had thus experienced the happiness of presenting this Royal gift to an Englishman and to a foreigner, but he felt some difficulty in determining the nationality of the present recipient of the honor. As an American he would scarcely be considered either an Englishman or a foreigner. And, whatever interest might have been associated with the forty-five eminent men on whom the Medal had been conferred, the present occasion had no parallel and was unique; for they were about to do honor to a citizen of the great

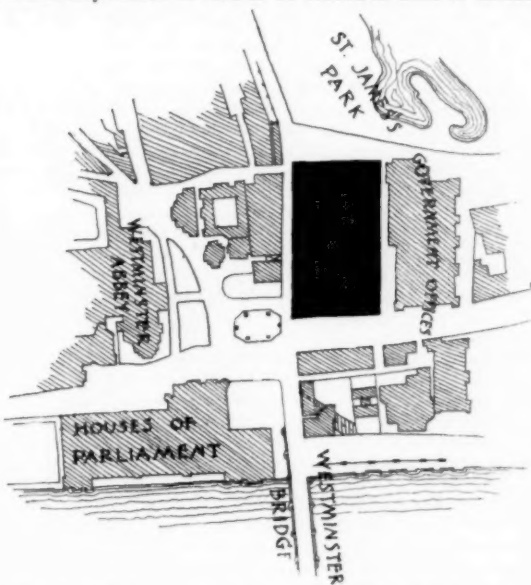
Western Republic, one whose name they were proud to enroll as one of their Royal Gold Medallists, not only on account of high personal and professional merit, but also because he was the first American whose name would appear in that roll-call of illustrious artists.

He felt that the selection of one who had designed the principal building in the great Columbian Exhibition at the present moment was a singularly happy circumstance, and in honoring Mr. Hunt in recognition of his eminence, he rejoiced to be able to pay a graceful tribute to the United States in the person of one of her most distinguished sons. The President then gave a brief account of Mr. Hunt's career, referring especially to Mr. Hunt's establishment of an *atelier* in New York. He then read letters highly complimentary to Mr. Hunt from the American Ambassador and from the President of the Société Centrale des Architectes Français and concluded by presenting the Medal in the following words: "Mr. Hunt, in presenting to you this Gold Medal, the gift of Her Most Gracious Majesty, Queen Victoria, I hand you what is the typical embodiment of the recognition by British architects of your distinguished and honorable career, and of the high architectural merit of your works. The fact that you have travelled some thousands of miles in order that you might personally receive this medal may be accepted as sufficient evidence of the high estimation in which you rightly regard the honor. It is indeed the highest which we are graciously permitted to offer to the most illustrious architects of the world, and we indulge the hope that our American brethren will recognize in this Royal gift which we are privileged to present to their most eminent representative the embodiment of the hearty good-will, the sincere respect, the ardent admiration with which they are regarded by the architects of the Old World."

Mr. Hunt in accepting the medal made most courteous recognition of the honor and gave the meeting some very interesting reminiscences of the work he did on the Louvre and the Tuileries and also to the Administration Building at Chicago. The meeting concluded after some interesting remarks by Baron H. von Geymüller and M. Paul Sédille eulogizing Mr. Hunt and his works and claiming a certain amount of honor for France, having regard to the fact that Mr. Hunt received a great part of his professional education at the École des Beaux-Arts.

The dispute about the restoration of the spire of St. Mary's church, Oxford, to which I referred last month was settled by referring the whole matter to a committee who have definitely placed the matter in the hands of Mr. T. G. Jackson. The effect of the various proposals for restoring the pinnacles is to be estimated by wooden models which are to be set up on the spire, and there is no doubt that this will enable the academic world of Oxford to decide which scheme they prefer.

An important proposal involving the erection of a municipal palace for London will come before the London County Council on Tuesday next. Since the administration work of London was taken over from the Metropolitan Board of Works by the County Council, it has almost doubled in extent and consequently the demand for office accommodation has become very pressing. Several fresh houses have been taken by the authorities for the housing of the Council's officers, but this was held to be very inconvenient and consequently the Establishment Committee were instructed to consider whether a site could not be obtained for the erection of municipal offices on an adequately extensive scale. Several propositions for sites were made, but the Establishment Committee rejected them all in favor of a position which may almost be said to be second to none in London for



magnificence. It is proposed to take the whole block of property between Parliament Street, Great George Street and the Government Offices. Whitehall would be continued at its existing width down to Great George Street, and the Hôtel de Ville would thus be erected

at the intersection of two magnificently wide streets almost opposite the Houses of Parliament and Westminster Abbey.

From an architectural point of view the project is to be in every way commended. The erection of a magnificent pile of buildings and the opening up of Whitehall in the manner suggested would be an achievement of which the County Council might justly be proud, but there are many other reasons, mainly of a political character, which seem to render it improbable that the proposal of the Establishment Committee will be carried out. In the first place a Royal Commission is engaged in considering how the City Corporation and the County Council can be united into one municipal body and it scarcely seems desirable to definitely settle the site of London's Government House until it is decided exactly what London is to consist of. In the second place the present Council has over and over again declined to carry out any improvements until the incidence of taxation has been altered from the occupiers of property to the owners. It scarcely seems consistent for a Council holding these views to spend three quarters of a million of pounds on a site for a palace for itself. Another unfortunate characteristic of the site, in one way, is its proximity to the House of Commons. There is a considerable jealousy of the Council in London and you will easily see that the idea of erecting a palace immediately opposite the Houses of Parliament is open to misrepresentation.

The comments of the daily press are interesting. The *Daily News*, our chief Liberal paper, writes: "It must be a matter of profound regret to every friend of the London County Council that the Establishment Committee have repeated their preposterous recommendation of the purchase of a site in Parliament Street for £750,000. If the Council wish to make shipwreck of the Progressist cause they will follow the lead of this unwise committee. The proposal has nothing to recommend it but that vaulting ambition which o'erleaps itself and falls on the other side." The Conservative press may be exemplified by the *Daily Telegraph*: "There is no doubt a party in the Council who are anxious, not so much to secure merely an eligible site for an Hôtel de Ville as to insure the fixing of the headquarters in a particular spot. They are bent on putting their Council House in a line with the Government Offices and under the shadow of the Houses of Parliament. Doubtless they imagine that by so doing they would be able to bring more pressure to bear upon or even, perhaps, to overawe Parliament in dealing with Metropolitan matters. . . . The people of London would resent in the most unmistakable fashion a wanton, wasteful and arrogant expenditure upon no other object than merely swelling the importance of the County Council of the day." These brief extracts will serve to show how the proposal for an Hôtel de Ville is being met in London and from what I hear there seems to be little chance of the Council adopting the proposal of the Committee.

The first building erected by the Council with their own men and without the intervention of a contractor has been brought to a successful issue. The new school building at Crossness was advertised in the usual way and the lowest tender obtained from a contractor was £2,188. The estimate of the Council's architect was £1,688 and the work was actually executed for the sum of £1,662. The example, however, is on too small a scale to prove anything very much at present.

The programme for the new Final Examination to qualify for Associateship of the R. I. B. A. has now been published and has met with a very favorable reception. The examination has been extended in length and now occupies from Friday morning of one week till Saturday of the next. One important change has been the increased attention given to "Design." This is now made the first subject of examination and extends over two days instead of one, the subject being communicated to the student in general terms at the same time as his admission to the examination. The "History of Architecture" paper has been extended in scope and the student is now required to be present a longer period for examination than has hitherto been the custom. The other subjects of examination remain generally the same, though of a more difficult nature. The completion of the programme for the triple examination has established in England a course of training for young architects which can hardly fail to have good results. However we look at examinations in the abstract there can be little doubt that it stimulates closer attention to work and, therefore, if it is not administered in a too academic way it is likely to considerably benefit the English student of architecture.

The Prince of Wales has been very busy lately in laying foundation-stones and opening public buildings. One interesting ceremony consisted in the opening of a new north transept to the church of St. Bartholomew, Smithfield. This church was once a priory church of great importance, but after the Reformation it fell into a state of neglect, the nave was demolished and other portions were used for various secular purposes, until a fringe factory was erected right over the altar itself, borne by an iron girder. Some few years ago an attempt was made to remove these incursions and to restore the church to something of its ancient grandeur. Under the hands of Mr. Aston Webb the restoration has progressed until the choir and the transept are completed. The fine Norman proportions of the building are now disclosed and one can form some idea of the magnificent character the church must have had in mediæval times. Another building opened by the Prince of Wales has been the restored gate of St. John, Clerkenwell. There are not many gates remaining in London and it was a pity that this fine example should have been permitted

to fall into disrepair. It now forms the headquarters of the Order of the Hospital of St. John of Jerusalem. The gatehouse was built in 1504 and has had a varied career. The restoration has been carried out in memory of the late Duke of Clarence.

It is not often that we get a Royal Princess for a sculptor, but this has been the case with regard to a statue of the Queen, that was unveiled by Her Majesty on Wednesday last, its sculptor being the Princess Louise. I have not seen the statue itself but all accounts seem to agree that it is an excellent piece of work and not at all of an amateurish character. The Queen is represented as she was at the time of her accession and the work has been erected near Kensington Palace where Her Majesty resided at that time.

Another building that has been opened during the past week has been the new Lunatic Asylum at Claybury. This is the largest lunatic asylum that has yet been erected in England and the appointments are most complete. It seems almost like a small town in itself. I gather from architect friends of mine who are more learned than I am in the details of lunatic-asylum planning, that this building is considered to fail on the side of over-development and that after a certain limit is passed, the aggregation of a number of lunatics in one building is liable to become cumbrous and expensive in working. This is said to be the case with Claybury.

A STUDENTS' COMPETITION FOR A MARKET-HOUSE.



Doorway in the Maximilianplatz, Munich, Bavaria. From *Architektonische Rundschau*.

IN general, the sketches seem to me an extremely nice lot, and drawn with cleverness. I would urge as a general matter, a closer study of old monuments rather than attempts at being modern, or original, or American. If you set out to adapt ancient work in your designs, you will wind up by changing it somewhat and making it more or less your own; therefore, by all means start from masterpieces as models and do not follow the passing fashions of the day as if they were the ultimate authority in architecture.

"Oaha," (M. P. McArdle) placed first. Excellent plan, good arrangements for light and air. This scheme of open outside courts has many advantages over any scheme covered by one big train-house roof. As there was no requirement that the entire lot should be closed in, this plan, though for this reason somewhat extravagant, seemed to me to give the better result. The sketch for the outside offers plenty of chance for simple architecture, and gives a simple and interesting composition. The tower is the only one of the whole collection that seems to me to have suitable and appropriate character. It is rather a pity that this tower does not come in the centre of the long front, but there is no statement that the blocks of the city are regularly divided, and it is conceivable that this tower comes opposite the end of a cross street, which would make it all right.

"Mercury," (J. C. Green) placed second. In the matter of symmetry this plan is better than the one placed first in the competition. It suggests that the blocks of the city are divided evenly, and the tower would then come in the axis of another street. The plan is sensible and well arranged. The position of the stable is good and the communications excellent. The exterior is certainly very satisfactory. It seems perhaps a pity to make so vast a building in a romantic and rather "picked-up" sort of style, but it has been cleverly done. The perspective is very well drawn. One would like to see the foot of such an immense tower; it does not look quite right springing from the flat roof of a low building. The tower itself seems well proportioned in elevation. It probably would have looked a great deal too big if shown in perspective otherwise than in parallel perspective. A square tower has to be studied both from the front view and the corner view if it is going to result successfully, and some sort of average has to be struck between what is best from these respective views.

"A Designing Villian," (Oscar Enders) placed third. This seems a sensible sort of plan. It avails of all the ground, and would give a good and useful building. The walls that surround the building are designed in a way that seems very appropriate for the purpose, and besides this the motif would give an excellent opportunity for scholarly architectural detail. Probably not many people will care about the waving line of the big roof. The perspective is very well drawn and is one that should reproduce nicely. It is, however, a useful sort of perspective rather than a poetic or artistic drawing.

"Festoon," (E. A. Crane). The aisles in front of the stalls in this plan seem narrow, and there is something lame in the change from the lower walls of the corner pavilions to the spring of their domes. The arcades surrounding the building, although expressed in a very few lines, have a good and simple Spanish air. When there are so many good Spanish Renaissance towers, both in Spain and in Mexico, it seems a pity not to have followed one of these more closely rather than to have attempted originality. A really thorough study and adaptation of one of those masterpieces would, it seems to me, have been more instructive and useful to this designer, and would have resulted perhaps in a better design. While the proportions of the tower are good, the detail is not particularly interesting.

"Stoffe Italiano," (E. A. Manny). It is a pity with a plan so nearly symmetrical that the author could not have made it entirely symmetrical. As a picture, it would have looked better, and the requirements given for the plan are so elastic that he certainly could have made a plan fulfilling them all and yet arriving at symmetry. The scheme consists of five buildings separated by arcades. I should not think this scheme a very good one, for every one of the buildings will be full of walks between the stalls; and for the purposes of a market it would seem better to have people walk through these and among the stalls rather than through these outside covered walks. Each of the five detached buildings, however, are very good. They are nicely designed, and simple, refined and appropriate.

As a whole, however, the thing seems to lack coherence. In the front elevation the tower has a good scheme. A competition committee might be led to believe that a tower seen cornerwise will appear more slim than it does in the front elevation. Some birds, however, are too old to be thus caught. It would seem that this tower might have looked much better in the perspective if it had been drawn to really represent the one shown in the elevation.

"Fleur-de-Lis," (G. Stone). When a clock-tower is called for, it seems rather extravagant to build two simply for the sake of symmetry. There seems to be really no call whatever for the second tower. Nor is there any real occasion for the long galleries that lead to these towers. The plan does not avail of the land as would be the case in any real enterprise, nor does it gain by this omission enough monumental effect to compensate for this defect. There seems a little uncertainty as to the style in which the exterior is designed. There are flat, segmental arches, and very steep, pointed gables, and round-arched Italian-looking arcades. These are such varied motifs that it might be very hard to make them unite in working up the design. One cannot too often remember that, although it is harder, it is always safer and surer to tie-up to some established and authentic style rather than to try to harmonize the details of various different schools.

"Market House," (Louis Mullgardt). This plan is rather puzzling in spite of the big circular central motif. It does not seem very well arranged for the bringing in of goods from out of doors; also it is difficult to see how the central portion under the big tower is to be effectively lighted. Small domes are shown over the entrances on each side of the big tower, and in the plan it is difficult to see where these go. Four clock towers for one building seem a good many, and one wonders what the big tower is for. The sketch is rather bright and sparkling, but if one had a market of this size really to do, we doubt if he would start with any such great monumental central motif as the one that forms the main feature of this design.

"Palladio," (W. B. Ittner). Before signing his scheme with any such august name, the author of this sketch ought to look over a collection of Palladio's works, or study photographs of his buildings at Vicenza. Palladio doubtless had faults of coldness or formality, but what he did was polished and studied. Everything about his work was scholarly and just right of its kind. He might feel at home at seeing his name attached to an octastyle portico, but it is sad to think what his feelings might be if he found such a pediment stopped short and crowned by a large trainhouse-shed window without any

intervening interval or break, and flanked by a tower having the proportions and the machicolations of the Palazzo Pubblico at Siena. The Palladian window in the top of the tower is a little tribute to his genius, but he certainly would not call it architecture to mix up many styles and motifs in this free-and-easy manner. It would seem to him trifling with serious things. I suggest as a prescription for this case a careful and thorough study of some fine Renaissance monument — a careful rendering, for instance, from a photograph of one of the tombs at the Badia in Florence, or of the Fra Giocondo building at Verona, that has arcades in the first story, or of the Palazzo Pubblico (I think it is) in Brescia, I mean the one with the arcades in the first story and the rich windows in the second, with the splendid ornamental frieze above them and the unfinished dome above that.

ROBERT S. PRABODY, Judge.

CONSTRUCTION OF WROUGHT-IRON CHIMNEYS.



SEVERAL specimens of this particular application of wrought-iron to the purposes of construction have been erected in England, of which we shall give a short account. For reasons to be subsequently stated, they are not viewed here with any very great favor by the authorities having the control of the building of such structures, although they are frequently used in France, Russia and America, to the exclusion of the older brick type. It would

not be expected that the wrought-iron competitor would at once spring up to the full height, or anything even approaching to it, of its predecessors, assuming the height to be the standard dimension by which the magnitude and importance of chimney-stacks are gauged. In order to show the relative merits of brick and wrought-iron chimneys so far as their relative heights are concerned, we must briefly advert to a few of the highest brick chimneys as yet erected. The Townsend chimney-shaft at Port Dundas, Glasgow, is usually credited as the highest chimney in the world. It has a total height of 468 feet, a diameter at the base of 32 feet and at the top of 13½ feet, and weighs about 8,000 tons. Next in size comes the St. Rollox shaft, also situated at Glasgow, with a height of 456 feet, a diameter at the base of 50 feet and at the top of 13 feet. A shaft at Mecher-nich, near Cologne, runs these two examples pretty closely, being 440 feet in height. The base of this structure is square, with sides 39 feet in length, and the shaft circular, with a diameter at top of 11½ feet. It weighs about 5,500 tons. At the base, the Townsend chimney has a thickness of seven bricks and of one and a half at the top. For the St. Rollox chimney, the corresponding dimensions are 2 feet 7½ inches and 1 foot 2 inches. In both instances the batter is straight.

France claims to have the highest wrought-iron chimney yet built, and puts its height at 284 feet, acceding 276 feet to one in England at Darwen, in Lancaster, and 214 feet to another in America. Creusot is the site of the French *sans-pareil*, which can also boast of a couple more of the same class of erections. One of these is 196 feet in height, with a diameter at base of 10 feet, and 4 feet 4 inches at top. Like all structures of this lofty type, it is composed of a series of rings of wrought-iron plates, breaking-joint in a vertical direction and strongly and closely riveted together with lap-joints, very much like ordinary boiler-work. The thickness of the ring-plates varies from 0.094 to 0.438 of an inch. Its neighbor rises 276 feet into the air, and is similarly constructed, the thickness of the wrought-iron plates varying from a quarter to half an inch.

If we assume, in accordance with the usual rule, that the diameter of a circular brick shaft at its base should range from $\frac{1}{10}$ to $\frac{1}{12}$ of its height, it will be evident from the examples quoted that the rule does not apply to shafts of wrought-iron, the proportions being nearly double these ratios. In both descriptions of chimneys the fire-brick lining is not supposed to add any extra strength to the building, and is not included in the thickness of the brickwork necessary for the stability of the structure. At the same time, it probably does augment the *vis inertiae* of the chimney, of whichever material it may be built, and would thus assist in maintaining it in some degree against the wind-pressure.

This latter force is one which a chimney-shaft has a great deal to

fear from. It is usually considered, for all practical purposes, to exercise a uniform pressure at all degrees of elevation, and to act in a horizontal direction. The maximum pressure of the wind has been variously stated, and engineers and architects are by no means agreed upon the amount which should be allowed for, not only in the case of chimney-shafts, but of other constructions, such as roofs, bridges and large exposed walls or surfaces generally. The American engineers in many instances consider fifty pounds per square foot sufficient; but fifty-six pounds is about the maximum adopted by English engineers, although some maintain that as much as eighty pounds should be provided for. To estimate the amount of actual wind-pressure against a chimney-shaft we have Rankine's rule, which is to the effect that the total pressure of the wind against a circular or ordinary factory-chimney is equal to half the total pressure against a diametral plane of the chimney. One advantage, and a very important one also, of the substitution of wrought-iron for the older material is in the great diminution of pressure upon the unit of the foundation area, owing to the comparatively small weight of the iron superstructure. Most iron shafts are erected upon stone or brick bases or pedestals, although there are instances in which these latter have been dispensed with. A mean of six examples of large brick chimneys gives a pressure of six tons per square foot of foundation area, the maximum amounting to eight and one-half, and the minimum to three and three-fourths tons. Where the ground is bad or yielding, a wrought-iron chimney might be safely erected, when it would be very dangerous, or involve an excessive expenditure, to construct one of brick. It must at the same time be borne in mind that the base of an iron shaft is, relatively to its weight, not in the same proportion as the base of a brick shaft would be to its. In other words, if the weight is diminished, so also is the surface of the foundation, and it would be, theoretically, quite possible to design an iron shaft, which would exercise the same pressure per unit of foundation area as a brick one of the same height. Practical considerations, however, prevent this equalization of the two bearing-pressures.

In the State of Ohio there is an iron chimney 195 feet in height, which was riveted up *in situ* by successive plates, and has stood remarkably well ever since it was built. One of 160 feet high, among others, was put up in Russia, and after being riveted together on the spot, was raised by legs and pulleys to the perpendicular, and successfully planted on its pedestal. At the base the diameter was 9 feet 7 inches and 7 feet at the top, and the thickness of the plates 0.375 to 0.187 of an inch. A damp climate like our own is said to be not so favorable to the durability of a wrought-iron chimney-shaft as a drier one, such as prevails in some of the other countries where they have been employed. If, however, they are properly protected either by painting or other means, there is no reason why they should not be as durable as other examples of large iron constructions. It is possible that the heat traversing the interior may be a factor against which paint would fail to act as a protector to the material. We mentioned at the commencement of our article that the local authorities do not look favorably upon the erection of wrought-iron chimney-shafts. This follows from the fact that there are few rules or regulations to guide them, and that consequently they know very little about their design and construction. We are acquainted with a case in which the plans and drawings were carefully prepared for a wrought-iron chimney in London; but the consent of the local authorities could not be obtained, and the scheme had to be abandoned, as the promoters were unwilling to commence the erection of the structure, and so force the matter to an issue one way or the other. With the example of the Eiffel Tower before us, there is not the slightest doubt but that iron chimneys can be securely built of a much greater height than those to which we have drawn attention. The rapidity with which an iron shaft can be built, as well as the constancy of the work, compared with one of brick, is another advantage on the side of the metallic edifice. No stoppage is necessary in frosty weather, and while the foundations are being got in, and the pedestal constructed, if there should be one, the shaft itself can be riveted up at the same time. Iron shafts, moreover, are not affected by the numerous contingencies continually occurring to the brick specimens. There are few of the latter class which have not been "cut," in order to bring them back to the plumb, or as nearly as possible, for it is doubtful if there is a single brick chimney in the world the axis of which does not deviate in many instances very much from the perpendicular. It is said an ordinary stock brick will stand a temperature of 620° F. Wrought-iron will stand this and a great deal more. — *Building News*.

BOOKS AND PAPERS

IN looking through the pages of the recent work on Ventilation and Heating,¹ by Dr. Billings, and recollecting that the subjects treated in the bulky five-hundred-paged volume relate to what is after all only a single department of architectural practice, and recollecting also that the architect is supposed to be well posted about the subject even if not a past-master, one cannot but feel the immen-

sity of the professional matters which nowadays are added to the requirements of that busiest of professional men, the architect; but after reading the volume attentively and considering the vast amount of detail which enters into it, the extent of exact scientific knowledge which it implies, one appreciates that however ardently an architect might wish to know it all, in these days of complicated life he can hope at best to be only a leader among specialists in so far as relates to the so-called practical details of his profession. It is hopeless to expect that in the rush of business life a single man could master fully and hold available for daily practice the amount of knowledge involved in the mastery of ventilation and heating, and it is still more vain to hope that, having once mastered such a subject, an architect would have the time to keep abreast with the changing views, the fresh data and the more recent researches which are constantly being put forward in these special lines. Certain portions of Dr. Billings's work have appeared in a previous work the "*Principles of Heating and Ventilation*," issued in 1889; but the present volume is substantially new, with numerous illustrations of recent practice, many of them drawn from the pages of the "*Engineering Record*" in which the descriptions first appeared. As to Dr. Billings's ability to speak on the subject there is no question. He has made it a long study and is one of the best authorities in every sense, and while it is perhaps to be regretted that the volume is not more condensed, it is very difficult to draw the line and say what could be omitted without sacrificing the perfect illustration of the subject.

The works of Peclet and others which formed the basis for a large portion of the theories upon the subject of ventilation and heating have ceased to possess the absolute value which was once assigned them. Indeed, it may now be said that within the last few years the whole subject has lost a great deal of its mathematical exactitude in theory, while gaining wonderfully in practical efficiency and in common-sense methods which are appreciated without reference to mere theories of the flow of invisible gases. The problem of ventilation resolves itself into the very simple one of supplying a definite portion of air to each individual under certain circumstances. Formerly it was considered sufficient to change the air in a room a certain number of times per hour. While in practice this may result in the same thing, Dr. Billings finds it better and more thorough to estimate upon the quantity of fresh air which each person under normal conditions will require, fresh air being understood to mean that which is supplied at a temperature of about 63°, with vapor and humidity 4.7 grains per cubic foot and the carbonic impurities due to respiration about 1.943 parts in 10,000 volumes. When the organic matter begins to be vitiated and the air is said to be "rather close," the vapor and humidity average 7.6 and the carbonic respiratory impurity 4.132 per 10,000. When the smell begins to be decidedly disagreeable and the air is called "close," the vapor and humidity average 4.9 and the carbonic impurities from 6.5 to 10, and when the carbonic impurity is 12 or over, it is "very close" and the air becomes oppressive and offensive. The conclusion is that under no circumstances should the carbonic impurities exceed 2 parts in 10,000, and this is the standard adopted by the most recent writers on the subject.

Having fixed upon a standard of permissible carbonic impurity due to respiration, it is a simple matter to calculate the amount of air required for each person in a large room. The amount of carbonic acid which is exhaled by a person during an hour varies both with the age and sex, as well as with the physical condition, men exhaling more than women and adults more than children, but a fair average of the amount of carbonic acid excreted per hour is for adult males from 0.6 to 0.7 cubic feet per hour, and for females 0.4 to 0.5 cubic feet per hour. Adopting 0.6 per cubic foot as a fair average for a mixed assembly and dividing this by .0002 or the amount of permissible carbonic impurity we have 3,000, which is the average of cubic feet per hour required for a person. This is an approximation which is for all practical purposes sufficiently close, but it is one which is probably never reached in ordinary practice as it is usual to estimate that a room is not to be occupied continuously, especially in cases of halls of audience. It is doubtful if there is a theatre in the world which has what might be called absolutely perfect ventilation. This would be impracticable and ruinously expensive, both in money and space. It is sometimes difficult to obtain perfect ventilation in a crowd, even in the open air, and the problem is much more complicated as applied to large halls of audience, in which it is almost impossible to fully ventilate every corner.

Perhaps the most practically available portions of the work are the very numerous and complete illustrations, including nearly all the best examples of heating and ventilation throughout the world. The plans and other cuts are specially to be commended for their clearness, and the thorough manner in which particular systems are illustrated so as to be made perfectly manifest. The illustrations are by no means confined to the stock examples which are found in so many of the older works on ventilation and heating. The new Sorbonne at Paris, the Music-Hall and the Metropolitan Opera-House at New York, the Pueblo Opera-House, Empire Theatre, Philadelphia, as well as a number of very thorough instances of domestic work, are fully illustrated.

Dr. Billings states in the preface that his object has been to produce a book which should be useful to students of architecture and engineering, as well as of interest to non-professional men who may be interested in the more important subjects which he treats. While his volume perfectly elucidates the points which he discusses, and is

¹ "*Ventilation and Heating*." By John S. Billings, A. M., M. D., New York: The Engineering Record.

thoroughly admirable in every respect as a work on heating and ventilation, we fancy that any one except a heating-engineer who would attempt to peruse the volume would feel so overpowered with the vastness of the subject that the first effect of the book would be to send the architect or the non-professional person immediately into the arms of the specialist, rather than to lead him to avail himself of the very complete information which the book affords. This can hardly be considered a defect; indeed, if the book should produce no other result than to convince the average architect that he should leave the matters of heating and ventilation as a rule entirely to specialists, it will certainly have accomplished a very important mission.

This volume,¹ as its title indicates, is a thoroughly practical hand-book of the construction and management of steam and power pumping-machines. Avoiding as it does any attempt to enter into the mere theory and mathematics of pump construction, it has a decided value for engineers, architects, contractors, plumbers, etc., who often are called upon to select pumping-machinery and are supposed to be informed on the subject of pump construction. It contains descriptions of all the standard pumps of every sort with very clear illustrations of pumping-machinery actually constructed and in use; and the entire absence of analytical investigation, while leaving the book less complete for the purposes of the hydraulic-engineer, greatly enhances its practical value to others. It would be manifestly unfair, therefore, to criticise a work which is itself so free from criticism and which confines itself so closely to tested and approved methods and constructions. It is thoroughly a hand-book, showing the reflex of the knowledge gained by the author's long experience, the good and the bad points of the various pumps being made manifest only by references to the broadest and most easily understood principles. It is a book which deserves a place in every architect's library.

There are probably few names connected with books that are better known to American architects than that of B. T. Batsford, who has sold thousands of pounds worth of old, new and second-hand architectural and art books to customers in this country. After carrying on his business for nearly forty years at 52 High Holborn, London, Mr. Batsford has just uprooted himself and his treasures and taken root again at No. 94 in the same well-known highway.



AMERICAN INSTITUTE OF ARCHITECTS.

THE annual convention of the American Institute of Architects is to be held on Monday, July 31st, and Tuesday, August 1st, 1893, to be followed by the International Congress of Architects on the subsequent days of the same week.

In addition to the papers already announced, one has been promised by W. W. Carlin of Buffalo, N. Y., on "Statutory Regulations," and one by R. Guastavino, on "Cohesive Construction in the past, the present, the future."

The order and time of reading the papers, as well as the other details of the convention, will be announced, after consultation with the committee of the International Congress, in the programme which will be issued for distribution some time during the week preceding the Congress, and can be procured at the Grand Pacific Hotel, the headquarters of the Institute during the convention; at the rooms of the Institute of Building Arts, 63 and 65 Washington Street, and at the office of the Director of Works, Jackson Park, as well as at the convention.

The Secretary expects to be in Chicago from the 24th of July, to the close of the convention, and all letters intended for him which are mailed after July 20th, should be sent to his address, Unity Building, 65th Terrace, Chicago, Illinois.

I must again urge upon each member of the Institute his duty to attend the convention, if it be possible for him to do so.

ALFRED STONE, Secretary A. I. A.



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

INTERIOR OF THE CROCKER-WALWORTH BANKING-ROOM, CROCKER BUILDING, SAN FRANCISCO, CAL. MR. A. PAGE BROWN, ARCHITECT, SAN FRANCISCO, CAL.

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

THE general finish of this room is in light Eschailon marble, the pilasters and wall arcades are in black and gold while the ceiling is decorated in blue and gold. The counter is built of Numidian marble.

¹"Pumping Machinery." A practical hand-book relating to the construction and management of Steam and Power-Pumping Machines. By William M. Barr. Philadelphia: J. B. Lippincott Company.

SIX DESIGNS FOR A MARKET-HOUSE SUBMITTED IN A COMPETITION OF THE ST. LOUIS ARCHITECTURAL SKETCH-CLUB BY MESSRS. M. P. MCARDLE, J. C. GREEN, O. ENDERS, E. A. CRANE, E. A. MANNY, G. H. STONE, L. MULLGARDT AND W. B. ITTNER.

[Issued with the International and Imperial Editions only.]

For the judge's criticism, see elsewhere in this issue.

LIBRARY BUILDING OF THE NORTHWESTERN UNIVERSITY, EVANSTON, ILL. MR. W. A. OTIS, ARCHITECT, CHICAGO.

This building has a frontage of 160 feet, an extreme depth of 72 feet and when completed will have cost \$100,000. The exterior is entirely of dressed buff Bedford stone with roof of red tiles. The frieze of porch bears the inscription "Orrington Lunt Library," since the building is due to the generosity of that gentleman. Mill-construction is used throughout and particular attention has been given to possible future additions, so that while the library capacity is at present only 125,000 volumes, the building may hereafter be expanded to meet the requirements of a library of 1,000,000 volumes. There is no book-stack, as all books are to be in cases seven feet in height, set directly on the floor, thus allowing attendants to reach every volume without the fatigue of climbing stairs. Under the windows, around the reading-room, are cases containing all the principal encyclopedias, lexicons and reference-books, directly accessible to all students.

FREEMASONS' HALL, ALLEGHENY CITY, PA. MESSRS. BARTBEGER AND EAST, ARCHITECTS, PITTSBURGH, PA.

THE "Freemasons' Hall" is now in course of erection. The first story will be faced with Cleveland stone, trimmings of the same quality of stone, and the second and third stories will be faced with a vitrified brick of a buff color.

DESIGN FOR A MEMORIAL ARCH, NORFOLK, VA. MESSRS. CARPENTER & PEEBLES, ARCHITECTS, NORFOLK, VA.

MANUAL TRAINING-SCHOOL, BROOKLINE, MASS. MR. A. H. BOWDITCH, ARCHITECT, BOSTON, MASS.

HOUSE OF H. W. BURGETT, ESQ., BROOKLINE, MASS. MR. O. F. SMITH, ARCHITECT, BOSTON, MASS.

[Additional Illustrations in the International Edition.]

STAIRCASE IN THE CROCKER BUILDING, SAN FRANCISCO, CAL. MR. A. PAGE BROWN, ARCHITECT, SAN FRANCISCO, CAL.

[Heliochrome Print.]

THE Crocker Building was erected by the Crocker Estate Co. at a cost of one and a quarter millions of dollars. It is thoroughly fire-proof and earthquake-proof. The building is finished in marble and mahogany throughout; it covers an area of about 12,000 square feet; eleven stories in height; and is situated at the junction of Market, Montgomery and Post Streets. Almost the entire first floor is executed in marble. The corridor is of light veined Tennessee; the columns and ceiling, panels of Pavonezza; all this marble work was executed by Messrs. R. C. Fisher of New York, and shipped around the Horn and set in place as prepared. For its size, the building is, possibly, the most expensive and best finished of any building outside of Boston or New York. The exterior of the building is of Roman brick and terra-cotta, — the first two stories are of light granite.

STAIRCASE FROM FIRST TO SECOND STORY OF THE CROCKER BUILDING, SAN FRANCISCO, CAL. MR. A. PAGE BROWN, ARCHITECT, SAN FRANCISCO, CAL.

[Gelatin Print.]

THE QUEEN'S HOTEL, OLD COLWYN, DENBIGHSHIRE, ENG. MESSRS. J. W. & R. F. BEAUMONT, ARCHITECTS, MANCHESTER, ENG.

THE Queen's Hotel, Old Colwyn, was built by Mr. George Napier on the estate belonging to the Old Colwyn Land and Building Company. The hotel contains large dining-room, drawing-room, smoke-room and billiard-room on the ground floor, and a large number of bedrooms and sitting-rooms on upper floors. The site is on the side of the hill, and commands excellent views over the sea and along the coast towards Llandudno and Penmaenmawr. The work is carried out on the street base to level of ground-floor and above with Ruabon facing-bricks; the upper stories are constructed with timber-facing filled-in with cement panels, and the roof is covered with red tiles.

CHURCH OF ENGLAND SOLDIERS' INSTITUTE, WOOLWICH, ENG. MESSRS. NEWMAN & NEWMAN, ARCHITECTS, LONDON, ENG.

THE illustration we publish this week is of the new Church of England Soldiers' Institute, now being erected at Woolwich. The principal entrance opens into the staircase hall, on the right of which is situated the bar, 44' x 15', with a separate entrance from the road, and kitchen and servery in the rear; and on the left are two private

rooms and a large billiard-room. In the basement the accommodation comprises a large room, 30' x 16', to be used for devotional purposes, the secretary's office and the scullery, with lift, larders, stores, etc., together with heating-chamber and coal-cellar. On the first floor is placed the large concert-hall 54' x 26', with retiring-rooms and separate staircase to same at back of stage, and the library, 30' 9" x 16' 6", with music and writing rooms, are in the eastern end of the building. Eight bedrooms are planned in the attics. The hot baths, lavatories, etc., have been placed in the western portion of building with a separate entrance to the road. The exterior of the building is faced with red bricks, with red Dumfries stone sills and dressings, and the roof is covered with green Westmoreland slates. The total cost of the building will be 5,083l.

WURZBURG.



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

INFORMATION WANTED.

PHENIXVILLE, PA., July 13, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I have been questioned several times from Europe, concerning a building-material already used for some time in the United States and England, and is to be introduced in different other countries. They stated, the iron framework erected, they fill the walls up with the new material, which is said to be fifty per cent cheaper than bricks, is worked quickly, fireproof and water-tight and by its extreme dryness gives the healthiest rooms.

As I don't know anything about such a material you would much oblige me answering in your valuable columns.

Yours truly, DR. THOMAS DELMAR, C. E.

[PERHAPS SOME OF OUR READERS MAY RECOGNIZE THE MATERIAL TO WHICH THIS IMPERFECT DESCRIPTION RELATES. WE DO NOT.—EDS. AMERICAN ARCHITECT.]



INSURANCE AND THE ELECTRIC HAZARD.—Commenting upon the present situation in fire underwriting, the manager of a large company said a few days since, that the business had been so unprofitable thus far this year that but few of the companies could, even under normal conditions, hope to make good their losses during the remainder of the year. He said that the managers were unable to devise any means for remedying the conditions, as the fire-losses seem to be unpreventable, and what are regarded as good risks are burning on all sides. There have been many improvements in the methods of conducting the business, he said, and better practices prevail now than in several years, but the increase in losses more than counterbalances the premium receipts even under the better practices. The gentleman referred to attributed the large increase in the number of fires to that insidious incendiary, electricity, that is now coming into such general use for power and lighting purposes. The wires conveying this dangerous element are found everywhere, crossing the roofs of buildings and permeating their interiors, where they are strung about without regard to the fire-hazards thus introduced. A safe and economical method of insulating the wires, if discovered, has not yet come into general use, and underwriters are well satisfied that a large number of fires originate from broken insulation or imperfect wiring. Inspectors of electric installations are apt to do their work in a perfunctory way, so that imperfect workmanship frequently receives their official approval, and the companies in consequence assume risks of which they have no knowledge. Indeed, so little is known regarding electricity that it is doubtful if even the best electrical experts can fully provide against its dangers or if they even know them. It has been suggested that there should be organized a National Bureau of Inspections, under the supervision of underwriters, and that experts in all classes of fire-hazards should be employed to inspect risks in all parts of the country. This would necessitate the employment of a large army of inspectors, and how to direct and handle them would be a difficult problem to solve. But there is no reason why fire-underwriters should bear the cost and burden of such a bureau; every community should have one of its own, supported at public cost. Every citizen is interested in the protection of property, and whatever conduces to that end should be provided, the same as police and fire protection are provided, at public expense. In New York City there is a building-department that might be clothed with sufficient additional powers to enable it to make inspections at least of all electrical installations under the directions of an expert. It might be worth while for the underwriters to secure legislation to this end at the next session of the legislature. In several cities a fire-marshal has been empowered to make house-to-house visitations at intervals in search of fire-hazards, and the results have been most satisfactory. But underwriters have found it less trouble to assume for themselves burdens that should be carried by the general public than to unite to

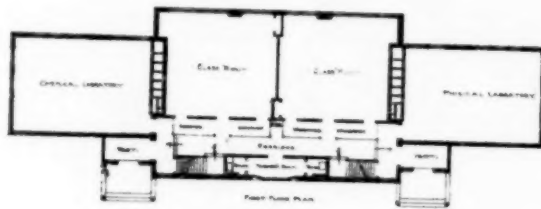
secure proper legislation in regard to them, especially in the protection of property, as, for instance, the maintenance of fire-patrols. We venture to say that if all the fire-patrols were at once discontinued they would be immediately taken up by the different municipalities and added to the fire-departments. So, combined effort to secure the authorization of public fire-inspection departments would undoubtedly secure the desired end.—*The Spectator*.

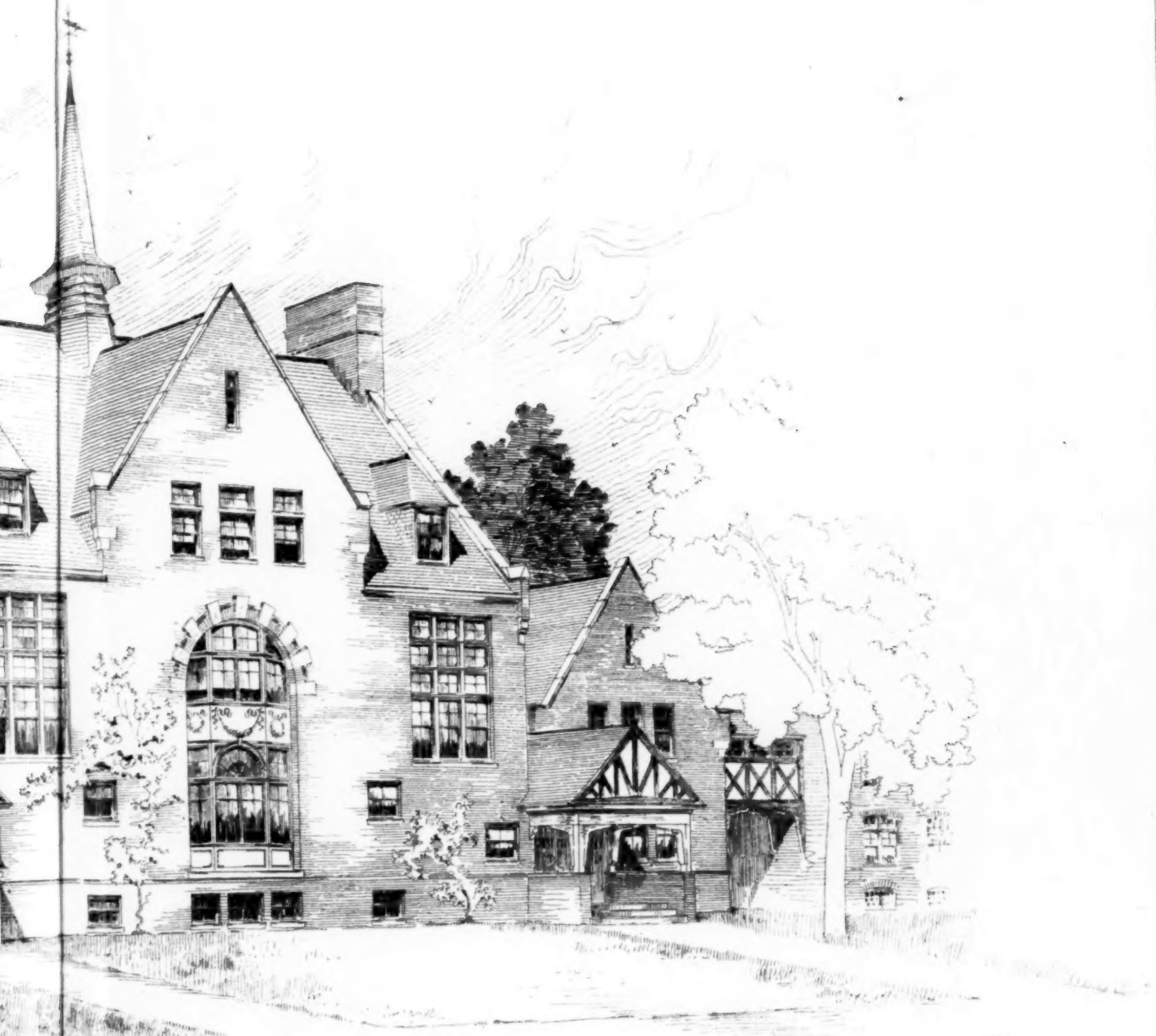
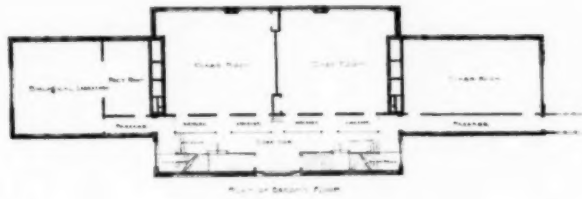
COPPER-PLATING FOR BUILDING PURPOSES.—Builders and others have lately been interesting themselves in the copper-plating of sheet zinc for building purposes. This has recently been tried, according to a German contemporary, with considerable success, and the process is especially recommended where mechanical wear takes place, the zinc combining very well with the copper. The zinc may be coated with copper by ordinary means, but the electrolytic method of copper-plating is found more advantageous.—*Invention*.



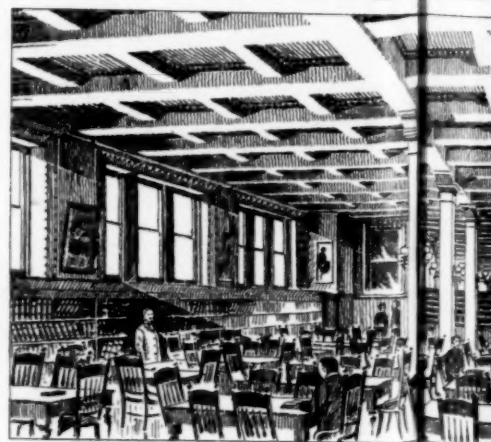
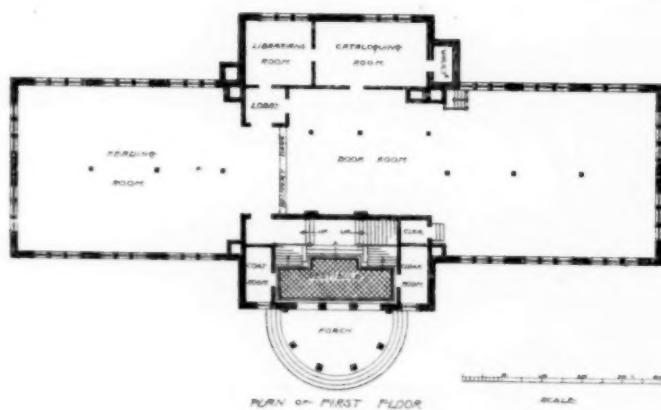
THE situation has not improved, despite the universal whistling of the newspaper press that a general improvement is in progress—a fact disagreeably familiar to every business man. Nor is any immediate improvement probable, and for these reasons: the public doubts, first, the early repeal of obnoxious legislation, and also have doubts, even if a repeal is effected, that the promised good will come. The papers are full of statistics of banking, railroad-traffic and general business, all of which are as favorable as could be expected; but the fundamental conditions are wrong, and the common-sense of the business public recognizes that something else than mere legislative acts are necessary. In all the commotion of the past few months, no practical suggestion has ever emanated from business men, except to re-echo the demand of the banks. The editorial treatment of the issue before the people is monotonous and superficial. The fact is overlooked that the country is passing out of one growth into another, and that a new set of conditions is being built up around all nations. It is these conditions that demand something different, and the fact and force of these demands is becoming more apparent every day. The momentum which the industries have acquired has carried them, so far, successfully over and through a serious monetary stringency. Even now, the gathered energy is greater than at the outset. The volume of industrial capital was never larger, the volume of debt with relation to the capital invested in our industries never as light, the opportunities for future investment never better, and this, too, in the face of smaller profits than were ever experienced. This is no rash statement, but, flattering as it is, it possesses some elements of weakness as well as of strength which are not always recognized in the counting-rooms of bankers, merchants and manufacturers. One element of strength not recognized is that the consumptive capacity of a people—ours, for instance—can, under wise management, be greatly increased. The weakest spot in our domestic economy is that labor and enterprise is forced to ask permission of men who stay in glass cages or behind wire screens for permission to develop wealth in more bounteous measure. The solution of this new problem will probably engage the best talent and greatest energies of the people for the next decade. The masses have had a taste of luxury, and they will not permit the instruments whereby they believe it has been gained to be wrested from them. Herein will lie the strength of the popular movement for different conditions and methods in our future domestic economy. The volume of business for the past week shows a slight expansion. Buyers, especially the great body of small country buyers, have taken cognizance of existing abnormal conditions to the extent of carefully limiting their purchases to the assured demands of customers for the next thirty or sixty days. Jobbers speak of this custom of small purchasing, and rather favor it, because it is a step in the direction of a cash basis. This class of people are heartily in favor of a currency of small notes and of silver, as they know by experience that payments to cross-road stores are then more prompt. The manufacturing industries, generally speaking, are in a healthy condition. The production of crude iron has declined 20,000 tons, and there is promise of a still further curtailment. Steel production has been temporarily reduced. Textile production is less than in the earlier months, but, at the great textile centres, confidence in a heavy demand, based on an actual knowledge of market requirements, is deep and general. Late advices from many Southern cotton-mills are very favorable indeed, and more factories are to be built. Cotton and woollen goods, according to good authorities, cannot decline in price, except at the cost of restricted output, which would immediately react. This statement covers the case. The hosiery and knit-goods situation is about the same. Serious labor troubles are threatened in English textile mills. English exporters of textile goods expect a full trade this year. Advices concur in the statement that there will be an average cotton crop. Stocks of all kinds of textile goods at home are of moderate proportions. In the building-trades, advices this week are contradictory. In some cities less work is now being done; in others, the undisputed statement of good authorities is that, so far, there is an increase over last year. The financial depression has not reached the class of people who rent and buy average-sized dwellings. The construction of lines of quick locomotion to suburban districts will offset other restraining causes, and give an impetus to suburban building. This tendency is quite evident in larger towns. The lumber trade is quite active; so is the demand for building material, including iron, that enters into most kinds of construction. While the industries are well organized and a good many trusts exist, their cohesiveness is not of such a character to do much harm to the public or much good to the stockholders. Industrial conditions in Great Britain cause manufacturers a good deal of concern. Demands for shorter hours and higher wages, in the face of European competition for the outlying markets of the world, occasion much apprehension, but the work-people are relentless and obdurate as to the arguments used by their employers against these demands. On the Continent, there are lights and shadows, but, measuring this year with last, there is no cause of complaint. Much new engineering work is promised in Egypt, Asia and elsewhere. In fact, the newer countries of the world are now depended upon for a very considerable share of the work which keeps the wheels turning in Central Europe and Great Britain. The controlling spirits are making great efforts to correct the mistakes of rash investments throughout the world, so that avenues of investment may be again opened under conditions that will command popular confidence. In this new movement, the missionaries have to stand aside to make room for the drummers for trade.





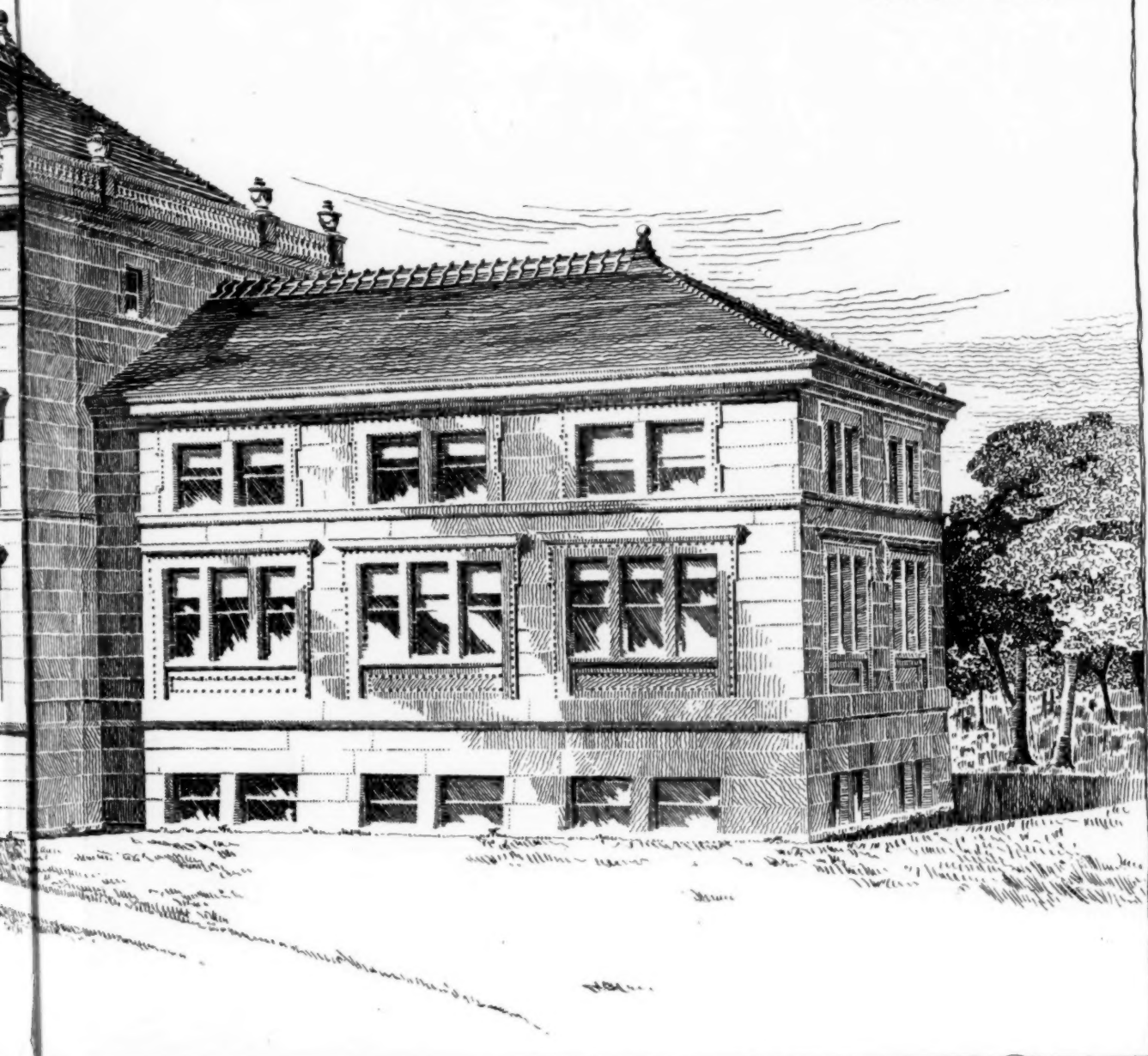


MANUAL · TRAINING · SCHOOL
BROOKLINE · MASS. · 1893
A. H. BOWDITCH · ARCHT. · BOSTON



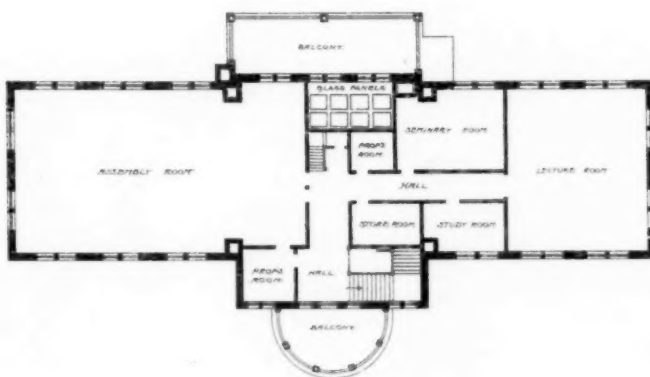
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