

PRICE 15 CENTS.

5-5-92632



JUNE 2, 1894.

THE
AMERICAN ARCHITECT
AND BUILDING NEWS

VOL. XLIV.

* REGULAR EDITION *

NO. 962.



ARCHITECTURE

ENGINEERING

DECORATION

211 TREMONT ST.

CONSTRUCTION

BOSTON MASS.

CONTENTS.

EDITORIAL SUMMARY.

STYLE. — V.

A NOVEL HOT-WATER APPARATUS FOR RAIN OR DOUCHE BATHS.

THE ITALIAN RENAISSANCE. — IV.

LETTER FROM LONDON.

" " CHICAGO.

COMMUNICATIONS.

EXHIBITIONS.

NOTES AND CLIPPINGS.

ILLUSTRATIONS.

THE MANUFACTURES BUILDING, AND THE NORTH END OF THE ELECTRICITY BUILDING, WORLD'S COLUMBIAN EXHIBITION, CHICAGO, ILL.

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

THE SHEPARD MEMORIAL CHURCH, SCARBOROUGH HEIGHTS, N. Y.

THE TOWER OF CENTRAL COLLEGE, FAYETTE, IND.

THE MCKAY MAUSOLEUM, PITTSFIELD, MASS.[]

HOUSE AT PHILADELPHIA, PA.

SKETCH FOR HOUSE AT CHESTNUT HILL, PHILADELPHIA, PA.

ST. LOUIS WOMAN'S BUILDING, ST. LOUIS, MO.

Additional Illustrations in the International Edition.

THE IDAHO STATE BUILDING, WORLD'S COLUMBIAN EXHIBITION, CHICAGO, ILL.

[Gelatine Print.]

THE INDIANA STATE BUILDING, AND THE BUILDING OF PUBLIC COMFORT, WORLD'S COLUMBIAN EXHIBITION, CHICAGO, ILL.

[Gelatine Print.]

WAREHOUSE, BIRMINGHAM, ENG.

WEST-COOMB, SUSSEX, ENG.

THE SANITAS CLOSET

Is the quietest in action of any made, and is practically noiseless. The closet trap is exposed, and cannot become clogged or lose its water seal, while in form it is extremely simple, combined with attractiveness of design. Its form is also a protection against freezing.

The Sanitas Basin does away with the troublesome plug and chain by having a recessed outlet fitted with the Sanitas Waste and Lift. The discharge from this fills the pipes full bore, always keeping them clean.

The Sanitas Trap is the ideal protection against Syphonage, Back Pressure or Evaporation. This trap is used on Wash Basins, Sinks, Bath Tubs, etc. It requires no venting, and its certainty and safety have led to its adoption by the leading Sanitarians, Architects and Plumbers throughout the country.

The Sanitas Appliances embody Science, Simplicity and Safety, combined with the best material and workmanship, and are in accord with the most advanced professional opinions. SEND FOR SPECIAL SANITAS CATALOGUE.



SMITH & ANTHONY COMPANY,

Manufacturers and Proprietors of SANITAS Appliances,

48 to 54 Union St., BOSTON.

56 Beekman St., NEW YORK.

217 Lake St., CHICAGO.

The Best Galvanized Iron

ought not to require specification, for a first-rate job of difficult work can't be done without it, and a first-rate job costs less with it than an honest attempt at a first-rate job without it.

Every first-rate metal-worker probably knows that Apollo is true to gauge and flat and bendable.

It is of some little account that the top and bottom sheets of a bundle are cushioned against the bands; and so are delivered almost without blemish, just as the top and bottom sheets protect the inside sheets from the bands in other makes.

Apollo Best Bloom is the trade-mark. It costs a little more in large quantities. This is the only reason that other galvanized iron is sold at all.

APOLLO IRON AND STEEL CO.,

PITTSBURGH PENNSYLVANIA

WORKS AT APOLLO.

G. BICKELHOUP, PATENT



METALLIC
SKY-LIGHT
WORKS.

242 and 245 West 47th Street, New York.
Telephone : 675 20th St. a few doors west of Broadway.
Send for Catalogue.

GOETZ BOX ANCHOR

SELF RELEASING AND PREVENTS DRY ROT IN TIMBER.



GOETZ POST CAP

STRONGEST OF ALL AND YET SELF RELEASING.



GOETZ JOIST HANGER

WROUGHT IRON MACHINE MADE. STRONGEST AND CHEAPEST. BORE TWO HOLES. NO NOTCHING.



GOETZ BOX ANCHOR CO., 72 STATE ST., NEW ALBANY, IND.

SEND FOR CATALOGUE.

VAILE & YOUNG'S Patent Metallic Skylights.



Without Putty.

Construction adapted to all forms and styles of Skylights. Thousands of feet in use have proved its superiority. Particularly adapted for Depots, Mills, Factories, etc., where large and continuous lights are required.

Send for Illustrated Catalogue.

216 N. Calvert St., Baltimore, Md.

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XLIV.

Copyright, 1894, by the AMERICAN ARCHITECT AND BUILDING NEWS COMPANY, Boston, Mass.

No. 962

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

JUNE 2, 1894.



SUMMARY:—

The Designing of Government Buildings: Shall the Tarsney Bill be superseded? — Dry Goods and Art. — Death of Captain Jablochhoff, Electrician. — Possible ill-effects of the English Coal-miners' Strike. — A Novelty in House Decoration. — Diamonds and their Formation. 93

STYLE.—V. 95
A NOVEL HOT-WATER APPARATUS FOR RAIN OR DOUCHE BATHS. 97
THE ITALIAN RENAISSANCE.—IV. 99
LETTER FROM LONDON. 100
LETTER FROM CHICAGO. 101

ILLUSTRATIONS:—

The Manufactures Building and the North End of the Electricity Building, World's Columbian Exhibition, Chicago, Ill. — The Shepard Memorial Church, Scarborough Heights, N. Y. — The McKay Mausoleum, Pittsfield, Mass. — Alternative Sketch for House at Chestnut Hill, Philadelphia, Pa. — The Tower of Central College, Fayette, Ind. — House at Philadelphia, Pa. — St. Louis Woman's Building, St. Louis, Mo.

Additional: The Idaho State Building, World's Columbian Exhibition, Chicago, Ill. — The Indiana State Building and the Building of Public Comfort, World's Columbian Exhibition, Chicago, Ill. — Warehouse, Birmingham, Eng. — West-Coomb, Sussex, Eng. 102

SOCIETIES 103

COMMUNICATIONS:—

Daly's Theatre, London. 103

EXHIBITIONS. 104

NOTES AND CLIPPINGS. 104

MOST of our professional readers have probably received a document from the Secretary of the Institute, calling their attention to the necessity for immediate and vigorous action in calling public attention effectively to the question of the design for Government buildings. It will be seen, from the report of the Acting Secretary to the House of Representatives on the subject, that the Treasury officials have been, to a certain extent, driven to the wall by the persistent representations of the Institute Committee, backed by the unanimous support of the public press. The Burnham-Carlisle incident appears to have been a desperate dodge on the part of the Government officials to escape from that position; and, so far as the Institute Committee is concerned, it was a successful one, for the Institute will hardly consider it proper to expose its earnest and hard-working officers a second time to such treatment. The matter must, therefore, be placed in the hands of the entire body of the profession, and it is for all architects, now, to put forth their individual efforts to place the matter before Congress and the public, and to bring as much aid to the cause as possible, and in the shortest practicable time, in order that the desired result may be accomplished while the matter is fresh in the public mind, and before measures are adopted which will increase the difficulty of bringing about the desired reform. There is no doubt that a strong and skilfully-directed effort is being made at Washington to secure the repeal of the Tarsney law, or the adoption of amendments which would render it practically inoperative. It must be remembered that the Supervising Architect's office is, in its way, a great power in Washington. Its hundreds of clerks, computers, draughtsmen, designers and so on, nearly all of whom are permanent residents of the city, and who are little subject to change or displacement, form an important factor in Washington society. They have the immense advantage of being on the ground, where they have at all times the ear of Congressmen, and can watch from day to day for a favorable opportunity for bringing up the measure that they advocate when an unusual number of members known to be opposed to it happen to be absent from their seats. Many a bill, favored only by a minority of both houses of Congress, has been forced to enactment in this way, and it may be presumed that the employés of the Supervising Architect's office, who feel that the question of retaining their comfortable positions depends upon what they can now accomplish by legis-

lation, will make the most of the chances that fortune may afford them.

IN trying to secure the help of Congress to keep them in their places, they have powerful outside assistance. To say nothing of the attitude maintained by the present Supervising Architect, the office, as a whole, is intimately connected with a host of contractors, local superintendents and assistant superintendents, postmasters, collectors and other officials, in all parts of the Union, who have occasional favors to ask of the Government architectural office, and are not indisposed to do a favor in return. A hint from these officials, in the ear of a Congressman, will often have more effect upon his vote than the clamor of a hundred newspaper editors, and the hint is, in many cases, ready to be given whenever it is wanted. There is no question that a very large majority of the intelligent people of the country wish to see the Supervising Architect's functions reduced to the lowest practicable dimensions, and the design and construction of the Government buildings entrusted to those who have shown themselves, by their conduct of private building operations, best qualified to undertake such work with credit to the country and themselves; but this wish of the majority is not a very violent sentiment, or a very clearly defined one, and the people who support, with resolution and skill, precise and definite views of a contrary nature are likely, for a long time, to see their views prevail, unless the vague feeling opposed to them is given point and direction, and supplied with a definite object, and definite data, by the effort of those qualified to present these.

WE have received an invitation to give "the widest possible publication" to a prospectus of an "Art Exhibition," to be conducted next winter in Boston by an enterprising dry-goods house. Although we see no particular objection to acceding to the request, it seems to us that there will be time enough to say more about it when the project has advanced a little further. Several substantial prizes are offered, a good jury on admission has been secured, and the size of the pictures is restricted within moderate limits, no canvas covering more than fifteen square feet being admitted. Presumably, the affair is intended, above all, to make money for the enterprising house in question, but it is quite possible to make money honestly, and in such a way as to benefit other people; and, as New England artists do not find their path strewn with many pecuniary roses, it may be hoped that the exhibition, by introducing them to the public after this rather novel method, will prove a benefit to them as well as to the public. All the pictures must, by the conditions of the programme, be on New England subjects, and the artists must have resided in New England at least one year previous to the date of their schedule of entry. This stipulation has, at first, a rather theatrical effect; but, although it was probably intended to appeal to the *chauvinism* of the New England public, we are not sure that it will not bring unexpected advantages. It is quite time that the American lovers of pictures were treated to something else than scenes in Brittany or Normandy, or "Oriental" subjects. There is enough in the subjective and objective life of New England to furnish motives for a whole museum of pictures; and it will be good for the artists, and good for the public, to have criticisms of the New England scenes made by people who have lived all their lives among those scenes.

THE death of Captain Jablochhoff, once a conspicuous figure in electrical science, took place a few days ago in Saratov, Russia. Captain Jablochhoff was born in 1847, and educated at the military engineering school in St. Petersburg. After graduation, he was appointed to the corps of sappers and miners, but soon resigned, to enter the service of the Moscow-Kursk Railway Company. He was assigned to the direction of one of the telegraphic stations of the Company, and, in the course of his experiments, devised the well-known type of arc electric-light, called from him the Jablochhoff candle, which was for several years in extensive use, and has not yet been entirely superseded. The Jablochhoff candle consists of two carbon rods, side by side, separated by a thin stratum of non-conducting and nearly infusible substance. The lower ex-

tremities are connected with the wires carrying an alternating current, and the upper ones are at first connected by a bit of graphite. When the current is turned on, the graphite carries it across from one candle to another. The graphite is quickly burned away, but the current, once established, forms an arc, which slowly consumes the carbons, at the same time dissipating the insulating material in its way, so that the whole burns, like a candle, downward from the top until it is consumed. By using an alternating current, the carbon burns equally, and the Jablochhoff candle was, at the time of its invention, perhaps the only device by which alternating currents could be advantageously used in producing and regulating the arc light. Now, many devices are in use for the same purpose, and the Jablochhoff candle, which gives an unsteady light, owing to the variations in volatility between different portions of the non-conducting septum, is less in favor. Nevertheless, the invention was a very clever one, and Captain Jablochhoff well deserved the great reputation that it gave him.

PERHAPS the most lamentable calamity that has befallen mankind within the last quarter-century is the successful strike of the coal-miners' organization last year in England. Of course, there is nothing to regret in the fact that a large body of men should have been able to get more pay for their work than was offered them before the strike, for, within certain limits, it is desirable that every one should be able to enjoy the comfortable and healthy life for which a liberal income is requisite; but it is to be lamented that a comparatively small body of men, only, should have been able to secure this blessing, and that they should have secured it by the forcible oppression of people poorer and more needy than themselves. This triumph of skilful organization over unorganized poverty has been hailed with pæans of joy by those persons whose vast intellect can concern itself only with Organizations, and Governments, and Communes, and Nationalism, and Collectivism, and so on, but fails to grasp the details of the individual, the hungry children and the bread and butter; and it is needless to say that the lesson has not been lost on the practical "organizers" of this country. A coal strike, in imitation of the English one, soon occurred, accompanied by assaults on non-union miners of a particularly violent and wanton character. Miners' strikes in the West, also with dynamite and shot-gun accompaniment, followed; and it is now reported that "trusted organizers" are prowling around the Eastern States, with the object of securing a general strike of iron-workers throughout the country in the course of the summer. Judging from the methods which are coming into fashion among the labor organizations, it looks as if the time were approaching when sixty-five millions of people would have to choose whether they will have their lives and property kept in constant peril by a few hundred thousand union workingmen, led by a score or so of malignant schemers, or will resolve upon a decisive struggle to determine whether American citizens, of full age, shall have the right to work for whom they choose, and on such terms as they see fit to accept, without asking the consent of an Irish or German demagogue, and without incurring the risk of being shot, or blown up with dynamite, if they venture to dispense with that consent.

A NOVELTY in house decoration has been introduced in France, under the suggestive name of "*peinture express*." Judging from the sample before us, the "express painting" is a form of paper-hanging. A paper, covered with a smooth ground, apparently made of some sort of gum, is printed with designs, after the manner of wall-papers, but in oil-colors, instead of the ordinary size-color. To apply the decoration, the back of the paper is moistened, and the rolls are then glued, back upward, on the wall to be decorated, with strong glue. The back of the paper is well worked over with a rubber "squeegee," to press out the superfluous glue, and insure adherence, and the whole left to itself to dry. After it is thoroughly dry, ordinary paste is spread over the paper, which, of course, has the back outward, and the work again left for an hour. At the end of this time, the paper will be softened, and nothing remains but to strip it off, beginning at one corner, and pulling gradually, when the oil-painted pattern will be found firmly adhering to the wall or ceiling. The marks of glue can then be washed away from the decoration, and the whole varnished if desired.

A HOAX, of a kind very unusual abroad, was perpetrated recently by one of the French newspapers, which announced, with circumstances apparently furnished by some person with a tolerable knowledge of geology, the discovery of a diamond-bearing stratum in the coal-regions of the Channel coast of France. The story was investigated, and proved to be without foundation. *Le Génie Civil*, in mentioning the affair, with merited disapprobation, gives an interesting account of the real nature of the formation of diamonds, which, since the opening of the South African mines, is much better understood than it once was. The account is borrowed from a paper communicated to the Academy of Sciences by M. J. Worth. Contrary to the usual opinion of chemists, M. Worth considers it proved that the diamond is formed at a high temperature. The fact that diamonds are easily burned, and that, although carbon is readily modified in character at the highest known temperatures, no form of it has ever been obtained at such temperatures except amorphous coke or charcoal, graphite, or, very recently, the hard powder known as "carbonundum," has seemed to indicate that the transparent, regular crystals of diamond could only have been deposited, like most other large, transparent crystals, from a solution, untroubled by the perturbations incident to a high temperature. M. Worth, however, says that diamond crystals never show any remains of the "footstalk" around which crystals deposited quietly from solutions like to arrange themselves; that there is no trace of increase of size by successive accretions around a small crystal; and that nearly all diamonds show scratches on the surface, or curvatures of the edges or faces, or interior cavities. These would hardly occur in crystals deposited from a solution, and indicate that, like crystals of iron, or ice, diamonds have been formed, not only at a high temperature, and under violent perturbations of the mass surrounding them, but that, before hardening, they were in a pasty condition, so that they received the impression of objects about them.

THE conditions under which carbon can exist in a transparent, pasty state must be very different from any known to modern chemical practice, but M. Worth makes some curious suggestions as to what those conditions may be. It seems to be evident, for one thing, that the diamond has been formed under very great pressure. In examining the crystals by polarized light, brilliant bands of interference colors have been observed, which seem to be due to the formation of layers of varying density around the enclosed cavities in the stone. These layers might be produced by the long-continued pressure of the liquid or gaseous contents of the cavities, supposing them to exist there in a state of intense compression. That this is, in at least some cases, still their condition is indicated by the fact that diamonds from the African mines frequently burst on being freed from their matrix. If diamonds contain gases under extreme compression, it is evidently important, in studying their formation, to know the nature of such gases. Naturally, the analysis of the tiny mass of gas contained in the minute cavities of a diamond is a matter of difficulty; but many circumstances indicate that it consists of hydrogen, perhaps combined with carbon. The African diamond mines show many traces of hydrocarbon, in the form of deposits of petroleum and accumulations of explosive gas. Moreover, the black diamond, which is merely an uncrystallized form, and is always associated with the transparent sort, gives out a quantity of small bubbles, when heated in water, and shows, by analysis, about one-half of one per cent of hydrogen. These circumstances lead, perhaps, to a suspicion that the diamond may have been formed from hydrocarbon gas, subjected at the same time to great pressure and intense heat. It is well known that diamonds exist in meteoric stones, and the curious pits, called by the miners "chimneys," which contain the diamond-bearing earth in the South African mines, have been conjectured to be the traces of the fall of a number of huge meteorites, which have buried themselves in the earth, leaving fragments of their substance behind them. M. Worth, however, considers it more probable that the "chimneys" were formed, or at least enlarged, by the eruption of matter from below. This would equally explain the development of an enormous pressure, accompanied with corresponding heat, and if we suppose masses of hydrocarbon gas, liquefied by pressure, to have been decomposed at the same time by heat, in such a way as to have deposited their carbon in the form of a soft paste, and this paste to have been then suddenly cooled, we shall have the conditions which seem likely to have resulted in the formation of the diamond.

STYLE.¹—V.

IN Greece, a different sentiment from that felt before the palace of Sargon, or at the sight of the temple of Khonsu, awaits us. Here, the mystery of the divinity is to be unveiled from afar to the eyes of the multitude; the temple is not shut-in all sides; on the contrary, it is surrounded with external porticos and the glory of the god that is worshipped within shines round about in sculptures set off by paintings, which prepare the mind of the visitor for the majesty of the divine image.

Our description of the Acropolis of Athens as well as of the neighboring ruins and the analysis of the sentiment that one experiences, alike before the ruins of this city and in the presence of analogous works in the different centres of Hellenic civilization—for instance, Olympia—will reveal the fact that a nation of freemen formerly inhabited this country, and the character of the monuments that were reared for its manifold needs will show that the social state was already very far advanced, and that the care that was exercised in the education of the youth was especially characteristic of it. The Greek town was not a collection of serfs in a vast enclosure under the eye of the master, it was a voluntary gathering of men around a venerated sanctuary. At Athens, this sanctuary, the Parthenon, dedicated to Wisdom, the protecting goddess of the city, overlooks the surrounding country and, thus favorably situated, may be seen from a distance in all its imposing beauty; when complete, uniting the three arts, architecture, sculpture and painting, it must have been magnificent. Other sanctuaries occupy the same platform, which was approached on the west by a winding path terminating at the Propylæa. The gods and goddesses of the Greeks were made in their own image and, however powerful they might be represented, there was always something human about them; they shared with man his virtues and his vices. It is the constant study of nature with man as the point of departure that has enabled men of all times to comprehend the productions of Greek art; it is possible that sensual enjoyments responded somewhat too much to their future aspirations; however this may be, they recognized in their gods a superiority that urged human beings to imitate them, so much so that the relations of the two, the tradition of which has been preserved for us in fable, evoked respect for the memory of ancestors judged worthy of such an honor in heroic times. The treasures of the city were under the protection of the divinity, and over them also watched the persons dedicated to the duties of worship, whose dwelling was near the sanctuary; different altars, statues and stations filled the enclosure of the platform. But a particularly noteworthy fact about the cities of Greece is the importance given to public edifices; the private houses were of very modest size, because the Greeks lived in them but little, while nowhere among contemporary nations do we encounter educational establishments as considerable as those of the Greeks: gymnasia, theatres and music-halls joined by porches, an example of which is offered us by the slopes of the hill dominated by the Parthenon. Why? Because the Greeks, who were the greatest educators of peoples in their day, passed their lives there. At the sight of these establishments, and on studying their purposes, one feels the *sentiment* of the physical and intellectual superiority of the men who erected them.

The characteristic of this superiority we find in the expression at once *robust* and *graceful*, simple and yet complete, in the truly natural perfection of the forms adopted by the artists in order to respond in a just fashion to the requirements of the new programmes that they were called upon to fulfil. In fact,

it must be noted that the Greek constructors were the first to find the complete rational disposition, such as it appears in their monuments. This disposition required that the entablature be divided into three parts: architrave, frieze and cornice, indicating clearly the construction peculiar to each element. The Egyptians, even in the Ptolemaic epoch, composed their entablature of architraved cornices, the frieze being masked behind the cornice and blended with it, because the ceiling was so combined with the roofing as to form a single element. Later, the Romans copied the temples of the Greek colonies in Italy, the wise arrangement of which is wholly Hellenic; but, in their private architecture, architecture without columns, the Roman constructors admirably comprehended that the crowning of their edifices was naturally the cornice, surmounting or not an ornamented frieze with no architrave, the only true disposition. One of the most ancient of Doric temples was the temple of Hercules at Olympia; it apparently dates back to the eighth century B. C. The façade presents six columns and the lateral face sixteen; the shafts are adorned with sixteen channellings and the curve of the capitals differs for each one of them.

The gymnasia, theatres and music-halls occupied the most prominent place in the Greek city after the temple. Here literature, gymnastics and music were cultivated. Previous to his seventh year the child belonged to his mother, who prepared him for boyhood by recitals and games; from seven years on, he belonged to the Republic which made less account of his personal tastes than of the service that it intended one day to exact from the man. For that, the child was put into the hands of masters: the grammarist, the teacher of music and the trainer. The grammarist taught him to read, to write and to compute, and formed his intellect by moral education, while the teacher of music instructed him in singing and playing the flute and lyre, and the trainer developed his body by exercise in running, jumping, dancing, wrestling, throwing the discus and dart, boxing and the pancratium. Having passed the age of boyhood, at eighteen he was made a "man of age." He was trained to the handling of heavy arms, and in marching and horsemanship; finally, at the age of twenty, he was a citizen and carried on his education, when he had the leisure for it, in literature, philosophy, the sciences and drawing. Traces of this Greek education, which constituted the basis of society and prepared the nation for its high artistic attainments, are found in all the ancient cities; especially does it account for the respect that surrounded the sanctuary of Jupiter at Olympia and the popularity of the games celebrated there. The Greeks did not come together here merely to contend for the prizes awarded for muscular force, chariot-racing and horse-racing; tragedies, comedies, poetry, history, literature and music, all received here the honors of triumph.

Greek sculpture, which was somewhat too archaic, that is to say, artless, until the sixth century B. C., had acquired a wonderful degree of perfection in the time of Pericles; simple, broadly treated and of a finished naturalness, it is still the most perfect prototype of which an example has been preserved. Painting was greatly developed in Greek art; this is accounted for in architecture by the custom that prevailed of painting the early structures when built of wood, and then the later ones, in order to soften down the glowing whiteness of the marble, which was painful to the eyes in the bright sunlight and prevented one from judging of the delicacy of the forms.

Their familiarity with the nude had developed among the Greeks such a knowledge of the relationship of the organs to each other and of the functions that they fulfilled, that they naturally recognized and loved beauty and that they gave to their creations in the same line, the most correct proportions required by the laws of aesthetics. This same habit of observing nature, of searching into cause and effect, end and means, had likewise led artists to apply rational laws to their constructions, in which power lay rather in the judicious use of the material than in its mass. In that, Greek art differed much from the arts of the other nations of antiquity. Their earliest monuments were of wood, as may readily be inferred from the forms of the Doric Greek, in which the channellings of the shaft imitated the bark and blea around the trunk of a tree, and in which the butt-ends of tie-beams were represented by triglyphs, the metopes resulting from filling-in the spaces between the pieces of wood; and finally, the cornice, by its odd ornamentation, recalled the disposition of the main rafters and rafters resting on sleepers, with accompanying plates and pegs; the

¹ From the French of Léon Labrousse, in Planat's *Encyclopédie de l'Architecture et de la Construction*. Continued from No. 961, page 85.

whole was covered with painting. But the really artistic genius of the Greeks appears in the fact that when they began to build with marble they did not slavishly imitate the ornamentation of the wood; they simply drew inspiration from it for the creation of a new decoration, an interpretation which retained only such of the original forms as might contribute to the power of the expression. Thus the shaft of the columns continued to be channelled, the cluster formed by the channelings expressing at the same time greater strength and elegance of form, and the horizontal lines of the architrave appeared to bind the points of support together; then the lines of the triglyphs prolonged the columns and gave them added height by sharing with them the supporting functions; the metopes, independent, ornamented parts, indicated well their filling-in rôle and so on.

With methods as logical as those enumerated in this synthesis, in which the decoration was furnished by the construction, how could the constructors have failed to secure to their monuments the general qualities necessary to style? Evidently, as an examination will easily prove, they possess to a high degree *purity of origin, propriety* corresponding to the aspirations of Hellenic sentiment, *precision* of the means of execution in fulfilling the requirements of the programme, the *clearness* of expression peculiar to the edifice, the *naturalness* deduced from the logic of facts and perfect *appropriateness*. These are the qualities which so strongly commend the monuments of which we have just spoken to the attention of artists and which make them works of *STYLE*. Judging from their special characteristics and the statements of historians, those of Athens date back to the fifth century B. C.

In order to analyze the Roman style, our task should be enlarged to take in the full development of an advanced civilization, the characteristic of which would represent the resultant of the manifold needs of this civilization; but space fails us for this and we must confine ourselves to the most general indications.

Artists coming in contact with the different neighboring peoples borrowed from the Etruscans and Greeks processes that had been derived in part from the East, upon which they stamped the character peculiar to the Roman genius. This character forced them to aim at massiveness much more than at delicacy of details.

A conquering nation like the Assyrians, the Romans sought a style of architecture that could be introduced into every climate and that would admit of the use of all sorts of building material by any workman whatsoever. It is especially in this sort of architecture, that is to say, utilitarian architecture, that their artists exhibited the wonderfully fruitful resources of their knowledge; no other nation can vie with Rome in the building of roads, aqueducts and sewers; no other people has constructed a like number of public edifices in different countries for the purpose of asserting its possession and, at the same time, enabling the vanquished to participate in the activity of the conquerors; but, aside from the conduct of public matters, Italy, after prolonged barbarian invasions, had preserved few memories of the home-life of its inhabitants when, fortunately, the discovery of Pompeii, which had been buried for several centuries, delivered up to us the secrets of Roman customs as they existed when the nation was full of vital force. We turn, therefore, to Pompeii to ascertain the *general qualities* of the Roman style.

We will study the basilica as it has come down to us, not because, compared with the circus and the baths, it is the most important of monuments, but merely because it gives a good idea of Roman life. It covers a broad area; it was a vast market, where business was transacted with the entire world. The outer enclosure of the edifice is a wall 0.66m. in thickness, of coarse rubble-work and mortar, with engaged columns to receive the bearing of the roof timbers. The façade is closed by six pilasters with door-casings, the rebates of which mark the position of the boundaries; we enter then a sort of prostyle about 5 metres in depth by 20 metres in width, from which we have access, by ascending four steps, to a portico about 5 metres broad, forming an inner enclosure. The space between the two porticos is nearly 12 metres wide and more than 45 metres long; an altar 0.80m. by 1.76m. stands at the extremity opposite the entrance, in front of the rear portico, and faces a sort of tribune, raised on a platform and adorned with small channelled columns. Below the tribune are vaults reached by two small staircases, one on the right, the other on the left, opening on either side into what once served as a guard-house;

the proceeds of fines were deposited in these vaults. In case disputes arose regarding their business relations, the Romans then had judges to whom they could appeal. The brick columns, 1.06m. in diameter, are channelled and of very curious disposition; there is an entrance on either side, in the axis of the lateral façades. As to the construction, it offers an example of the most common building processes adopted by the Romans; the materials differing in character, the whole was covered with stucco and painted, which, in the circumstances, was the most rational arrangement possible. The basilica of Pompeii was at the same time an exchange, a market, a bourse and a law-court. When we view its ruins and consider its size for a small town like Pompeii, we see how great the commercial importance of Roman cities must have been. In fact, behind the army of conquerors followed an army of merchants, and, if the barbarians received the benefits of an incomparable administration, in return, they handed over all their wealth to the victors.

The Romans characterized their predominant defect in their buildings, by frequently clothing ordinary materials with imitations of precious materials; this grew out of a very deplorable taste for false luxury; but, aside from this caprice, we cannot but marvel at the skill displayed by the Roman constructors—when they were not foreigners—for they succeeded in stamping their works with an appearance of strength in harmony with their wide supremacy and their crushing power; above all, as we have remarked, because this supremacy was based on *force* tempered by *reason*.

The basilica of Pompeii exhibits *purity* in the elements employed; as soon as the constructive system had been adopted that should respond to the peculiarity or *propriety* of the national character, which was colonizing and administrative, in the ruling class, and it was with extreme *precision* that the programme proposed was carried out. We read *clearly*, in the plan and the elevations, the will that served as the point of departure for the construction, corresponding so accurately and in such a *natural* manner to the needs of an entire people, and with none of the parts wanting in *appropriateness* in the exactions of any of the services of a business establishment.

The disposition and proportion of the architecture, both as regards *ensemble* and decorative details, combined to satisfy the laws of construction; the solid and open portions, the profiles and the painting, all are arranged to contribute to the production of an imposing and pleasing effect, a living and rational effect, and prepare the visitor for the sentiment whose characteristic is so perfectly indicated by the utilitarian side of the monument under consideration. The expression is impressive and powerful, proclaiming that the builders were the rulers of the world; especially do we feel this when we take in at a glance the basilica and the numerous adjacent structures that responded to the *ensemble* of Roman needs.

History tells us that this basilica was reared in the first century B. C.

Our last example is chosen in France, where a large number of works of style are to be found; the characteristics of these differ much, because they are the results of dominant social needs of wide dissimilarity. Let us make a synthetical examination of the Cathedral of Notre-Dame at Paris.

Entering the edifice after having made a tour of it, we are struck with the harmony that prevails, despite the important modifications that it underwent in 1245. The present site of the monument was occupied, in the fourth century, by the church of Saint Marcellus. At the close of the sixth century, there were two structures on a part of the land destined for the future cathedral; these were, on the south, Saint-Étienne, and, on the north, Sainte-Marie.

The Council of Paris, held in 829, met in the nave of Saint-Étienne. In 857, the Normans burned Sainte-Marie, which was restored about the middle of the twelfth century, and Abbé Suger gave a large stained-glass window for its decoration. The only remains of this edifice are the bas-reliefs of the tympanum and a part of the coving of the portal of Ste. Anne, which were re-introduced into one of the doors of the cathedral in the thirteenth century. As to Saint-Étienne, the nave of which was nearly 9 metres broad, it was removed in 1218, in order to give ample space for the new Cathedral of Notre-Dame.

The plan is in the form of a Latin cross; there are two towers in front and a spire at the intersection of the arms of the cross. The apse is on the east, while the entrances, three in number, are on the west, in the main façade; the central

one of these is called the Portal of the Last Judgment; the one on the left, or northern side, is known as the Portal of the Virgin; while the southern one, toward the river, is dedicated to Ste. Anne; besides these, there are the Porte du Cloître and the Porte Saint-Marcel; and lastly, the Porte Rouge communicating with the chapter-house. In 1771, the architect Soufflot completely defaced the Portal of the Last Judgment, with an utter disregard for art which his ignorance as a constructor employed on the Panthéon at Paris could not adequately account for, and to which this latter monument would surely have fallen a prey had it not been for the knowledge of the skilful Professor Rondelet. There are five aisles, thirty-seven chapels, added after the fire of 1240, one hundred thirteen windows, almost all of which have been altered to admit light into the nave and choir, and lastly seventy-five pillars to support the vaults.

The main façade has four stories and is divided into three sections, marked off by four huge buttresses; the towers rise at the angles; the portals are in the Pointed style and are divided into two parts by a stone pillar, supporting a lintel, above which is a tympanum screened beneath numerous coverings. At no period has a flight of steps formed a basement to the façade; the foundations have always rested on heavy unhewn stones and not on piles, as has often been asserted. A gallery, called the *Galerie des rois*, runs along over the ground-story; it is a series of niches containing modern statues of several French kings. It is crowned by a terrace with an open balustrade. The latter is composed of small colonnettes surmounted by pointed and semicircular arches, the archivolts of which are decorated with diamond-points. The centre of the next story is occupied by a large rose-window, lighting the principal nave. At the sides are double pointed windows, beneath a single pointed arch, with a false rose-window in the tympanum and trefoils at the angles. The towers begin at this elevation, but they are connected by an open gallery, constituting the upper story. It is made up of pointed arches in pairs borne on clustered colonnettes, with an open trefoil in each tympanum. Above the gallery runs a balustrade, completed by figures of monsters and animals. The towers are square, with buttresses at the angles adorned with crockets and terminating in gargoyles and turrets. They are pierced by two large pointed bays, decorated with colonnettes and crockets and having their archivolts composed of numerous tori; finally, a cornice comprising two rows of leafy crockets, with gargoyles, supports a balustrade similar to that crowning the gallery below and encloses a terrace which caps the structure. Many wonderful bells were suspended in these towers. The great *bourdon*, which hangs in the southern tower, weighs 13,000 kilogrammes and dates from 1400. It was never intended that the towers should be finished with spires. The gable of the principal nave is surmounted by an image of an angel sounding a trumpet; it is one of the few sculptures belonging to the period of the façade that have not been mutilated.

The lateral façades, on the north and south, are very similar. They are full of interest to us, for, though the main façade has not been subjected to any serious modifications in the general plan, they, on the contrary, were greatly altered before the cathedral was hardly completed. In fact, although the light was at first distributed in a way to answer the original requirements, there was, nevertheless, a large zone, halfway to the vaulting, which was deprived of direct light and produced the heavy effect of solid parts resting on open; therefore, after the conflagration which destroyed the timber-work and the upper portion of the structure, an effort was made to remedy this defect and at the same time embellish the cathedral by enlarging the windows, so as to put in stained-glass, in the execution of which rapid progress was then being made. The original construction can easily be detected from certain traces that are left. It will be noticed, above, that the window-sills were on a level with the bases of the outer colonnettes; these windows admitted light to the vaults; a bay of the tribune may also be seen with its vaulting fan-shaped on the exterior, a disposition as original as it was remarkable, contrived to allow the light to be thrown into the principal nave and the tribunes; clearly, the openings from the side-aisles into the chapels once served as windows, through which the former were amply lighted, previous to the addition of the chapels between the buttresses. But, at the same time, it is evident that there must have been, as has been remarked, a large unlighted space midway to the vaulting; though embellished with rose-windows that are now destroyed, these opened into

the roofs of the side-aisles. It was to do away with this difficulty that the high windows were enlarged; the crowning of the tribunes was dropped and the fan-shaped vaulting modified, in order that this might be accomplished; the small interior rose-windows in each bay were removed and the tribune windows were lowered a great deal and enlarged. The fire of 1240 had also damaged the crowning of the nave as well as the pillars supporting the flying-buttresses, then constructed with two arches; these were rebuilt with a single arch and the pillars were cut down to the level of the open gallery above the story of the tribunes. Then, in 1245, chapels were erected between the buttresses of the sides; and the transepts, forming thus façades of the chapels, were extended in 1257; finally, in 1296, chapels were reared between the buttresses around the circular apse. It was not until the beginning of the fourteenth century that the choir enclosures and the painted-glass parts were finished. The Cathedral of Paris was then completed.

It produces the impression of a mysterious attraction; this is due to a softened light managed in the best possible manner; a profound sense of isolation rises within us, before the immensity and severity of the structure which envelops us; we feel ourselves lifted in spirit and borne as it were, toward a higher and happier world, to which we aspire as do the clusters of light columns supporting vaults of no less elevating influence; the calm that prepares one for meditation, the light gradually increasing until the high-altar is flooded with it, the wealth of coloring becoming more and more pronounced as we near the choir, everything tends to remove us from this world, separate us from earthly things and draws us nearer, not, in the Egyptian manner, to gloomy mystery, but to the glorious life of celestial beings; and the ogive arch, which constitutes the characteristic of this architecture, admirably images the sentiment experienced in its presence. After the terrors and miseries of the year 1000, came the revival of hope for Christian souls. This close correspondence between the sentiment and the systematic means that led to the expression adopted to respond so nobly to beauty shows us how deeply Mediæval artists concerned themselves with the laws of aesthetics.

[To be continued.]

A NOVEL HOT-WATER APPARATUS FOR RAIN OR DOUCHE BATHS.

IN my recent article on "The Modern Rain-bath"¹ I referred, in speaking of the hot-water arrangements for bathing purposes, to a novel and ingenious form of hot-water apparatus. This is called a "Gegenstrom Apparat," and it is now extensively used in Germany. It is invented and patented by Mr. Schaffstaedt, of Giessen, Germany.

The water is heated in this apparatus by means of high or low pressure, or by exhaust steam, and the apparatus derives its name from its special construction, it being so arranged that the cold water and steam travel in opposite directions (*gegenstrom*) without at all mixing together.

The Figures, 1 and 2, show a section and elevation of a small size of this heater. The cold water enters at *a* and travels upward in the direction of the arrow, while steam enters at *b* and travels downward, issuing in a condensed form at outlet *c*, which may be connected with the return steam-pipes. Pipe *d* carries the warm water to the douche *e*, which is placed inclined at a proper height above the bather. The water and steam cocks are designated by letters *f* and *g*, and a hot-water thermometer is placed at *h*.

The object of the apparatus is to heat water instantaneously to any desired temperature by means of steam, without the latter passing through the water. This it accomplishes thoroughly; the water is uniformly heated and the apparatus works without any noise whatever. It is so simple, and at the same time so efficient in construction, that the writer, with the approval of the medical superintendent of the Utica State Hospital, has adopted and ordered for its new bath-house now in course of construction, four heaters, each capable of supplying warm water for twelve douches, each discharging, on an average, about two and a half or three gallons per minute of warm water heated to 100° Fahrenheit. These will be the first "Gegenstrom" apparatus put in actual use in the United States.

In this apparatus, as is clearly seen in the illustration, the water and steam valves are so arranged that it is impossible to turn on the steam without first turning on the water. Moreover, the amount of heating-surface is so calculated and adjusted in all apparatus constructed specially for bath purposes, that for a certain constant pressure and temperature of steam, the temperature of the warm water will not exceed 110° Fahrenheit, when all the douches for which the apparatus is calculated are running simultaneously.

All similar appliances for warming water by direct admixture of steam are open to the objection that it is impossible, owing to changes in the water and steam pressure, to control exactly the

¹ Published in the *American Architect* of February 10, 1891.

temperature of the warm water. Sometimes the steam is not completely condensed, and, as a result, the bather may be scalded by particles of steam escaping with the water. Moreover, all mixing-valves for steam and water cause more or less disagreeable noises, and often the water becomes impregnated with a peculiar odor, or else it is rendered somewhat impure by admixture of oil from the steam-pipes. The chief advantages claimed for the "Gegenstrom" apparatus are the following:

1. It accomplishes the instant warming of any quantity of water to any desired temperature; that is, by turning on both the cold water and the steam, the water which is admitted cold is discharged as warm water at the douche or at the nozzle; hence this apparatus effects a saving in time.
2. It also saves the first cost of a hot-water reservoir or boiler,

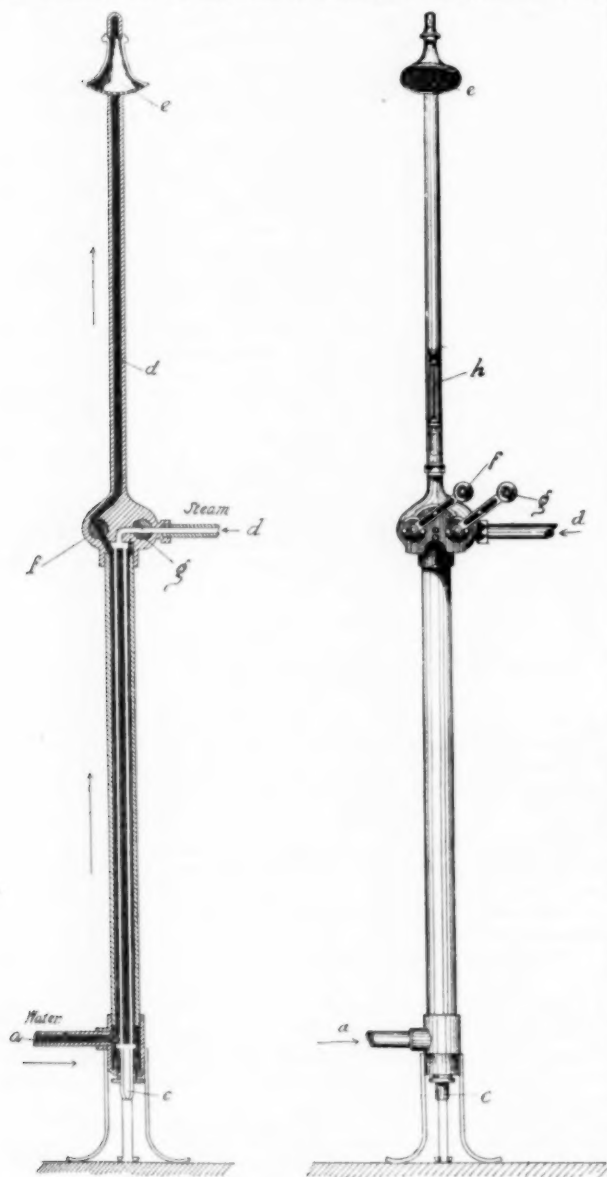


Fig. 1.

Fig. 2.

The Gegenstrom Apparatus: small size.

because no such reservoir is needed; the space needed for the usual hot-water tank can be appropriated for other uses.

3. It saves fuel, because there is no heat wasted as is the case with hot-water reservoirs.

4. The warm water generated by this method has no bad smell or bad taste, and is not in any way rendered impure.

5. The apparatus works perfectly noiselessly, because water and steam do not come in contact with each other.

6. The apparatus is perfectly safe and free from the danger of inflicting scaldings.

7. The apparatus is capable of perfect regulation, and gives instantly hot water of any desired temperature (limited to 110° Fahrenheit in those apparatus which are constructed specially for bathing purposes).

8. The apparatus is exceedingly economical in actual use, because it does away with hot-water tanks, and the corresponding amount of piping and a double set of valves or faucets. It requires only four

connections, viz.: two steam, a supply and return connection, and two water, the cold-water inlet and the warm-water outlet, connections to the douche or the tub, as the case may be.

The Gegenstrom Apparatus is manufactured in various sizes and capacities. For smaller rain-bath establishments, and wherever it is contemplated to allow each bather to regulate the water himself, the smallest size, as shown in Figures 1 and 2, is used and each apparatus supplies but one nozzle or douche.

In larger establishments, and wherever it is desired to bathe a number of people together and as quickly as possible, it is better to fit up the larger sizes of the apparatus, capable of supplying warm water to two, four, six, eight, ten, twelve, or twenty douches, and in this case the apparatus is controlled by some attendant and not by each bather individually.

The illustrations, Figures 3 and 4, show a front and a side elevation of one of the apparatus used in the Utica State Hospital rain-baths, designed to supply twelve douches. A is the cold-water-supply connection inlet, B the steam-supply and inlet, C the warm-water

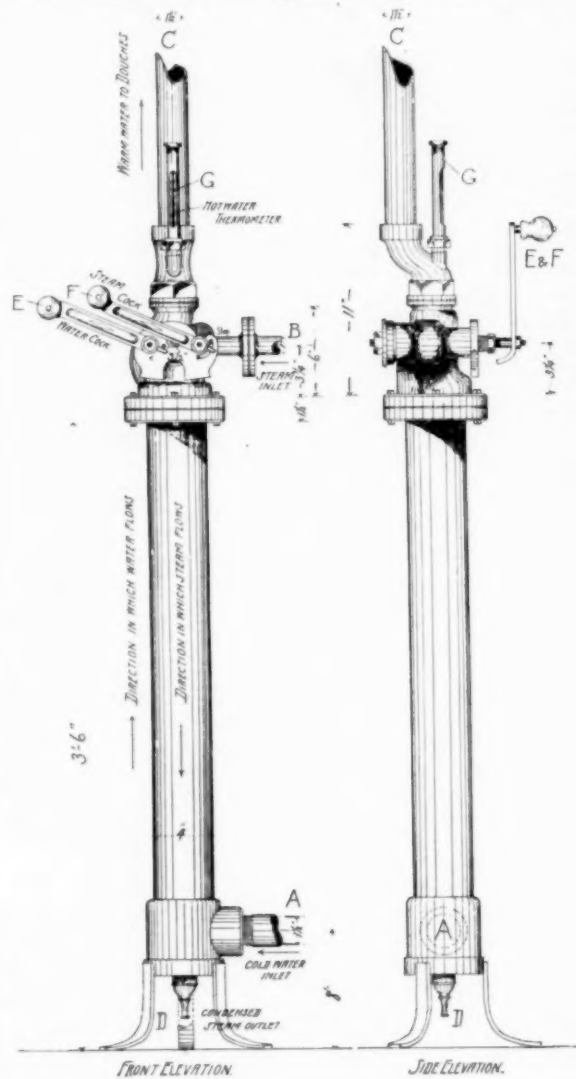


Fig. 3.

Fig. 4.

Counter-stream Apparatus for warming Water by Steam suitable for twelve douches, as used at the State Hospital, Utica, N. Y. (Schaffstaedt Patent.)

connection or outlet leading to the douches, D the steam return connection for the condensed steam, E and F are the water and steam valves and G is a hot-water thermometer.

A modification of the apparatus is suitable wherever large quantities of boiling or hot water are needed for washing or other purposes. A further modification of the same apparatus constitutes an economical and efficient feed-water heater for steam boilers.

After what I said in my previous article concerning the adaptation of douche or rain-baths, it is obvious that the "Gegenstrom" apparatus is suitable for a great many purposes. In fact, wherever steam is available it may be considered one of the most reliable, cheapest, and most economical apparatus for heating water of which I have knowledge. The Gegenstrom apparatus is, therefore, applicable to public or people's baths, whether the same be fitted up with bath-tubs or with rain-baths or with swimming-baths; it will also be particularly adapted in the case of hot mineral-baths, because with this apparatus the mineral water can be heated without losing any of its component

parts. The apparatus will likewise be adapted for rain-baths in factories, manufacturing establishments, schools, hospitals and institutions. A modification of the same is applicable for heating water for washing and scrubbing purposes.

It can be used on board of ocean steamships or vessels of the Navy for rain or tub baths for the passengers, officers and sailors, and for boiling water for making coffee, or tea, or other hot drinks, or for washing purposes, particularly in the emigrants' quarters. In hospitals, prisons, asylums, and other public institutions, as well as in hotels, one form of the apparatus can be used for baths and another for heating water for kitchen and household service. In breweries and malt-houses it will be useful in connection with the cleaning of vats, kegs and barrels. In slaughter-houses or abattoirs, where large quantities of hot water are used for flushing and cleaning the floors of the buildings, in gas-works and numerous other industries the "Gegenstrom" apparatus may be used with advantage.

W. PAUL GERHARD.

THE ITALIAN RENAISSANCE.¹—IV.

HINTS TO ARCHITECTURAL STUDENTS.

WHERE are in the environs of Rome a number of points of great architectural interest, but they mainly belong to ancient times.

Nevertheless they are, many of them, suggestive and profitable objects of study to the student of the Renaissance in the revelation they afford of the sources from which Renaissance architecture drew its inspiration and its models. We know that among the ruins within the city walls, the Basilica of Constantine and the Pantheon were the direct inspiration of such monuments as the dome of the Duomo, at Florence, and the dome and nave of St. Peter's, at Rome; that Alberti derived his idea of the façade of San Andrea at Mantua from the triumphal arches in and near the Forum and that the Colosseum undoubtedly suggested to the architects of Vignola's and Palladio's time the decorative use of engaged columns between the arches of a façade. It is well-known, moreover, that Raphael and his pupil, Giovanni da Udine, found in the frescoes and stuccos of the sub-structures of the Baths of Titus the suggestions for the arabesques of the Vatican loggie, and from the same or similar models Giulio Romano learned the art of stucco-relief, which he so masterfully practised at Mantua and in the Villa Madama at Rome. Palladio's measured drawing of the Roman *thermae* and other antique monuments are classics to this day. Hence, the student of the Renaissance cannot afford to pass by the Forum, the temples, amphitheatres, arches, basilicas, baths and columns of old Rome, or the ruins on the Palatine hill; and the suburbs of Rome offer him further suggestive examples of Roman architectural art. These it is not practicable here to catalogue, but one may mention among others, as worthy of more than a passing glance, such ruins as the Baths of Caracalla, the so-called Temple of Minerva Medica, the *Tor dei Schiavi* and, farther from the city, the extensive ruins of the magnificent Villa of Hadrian, and the marvellously picturesque ruins of Tivoli, the ancient Tibur.

Of Renaissance monuments there are few in the vicinity of Rome outside of the villas already mentioned (see the list in the *American Architect* for May 19, No. 969) just outside the walls. A pleasant excursion may be made to Frascati, a picturesque town among the hills about fifteen miles southeast from Rome, where there is a Rococo cathedral (1700) dedicated to St. Peter and several villas of the sixteenth century. The principal of those are the Piccolomini, the Aldobrandini (by *Giacomo della Porta*), and the Tusculana or Villa Rufinella. The country is extremely beautiful in this region.

The route proposed for the travelling class leads from Rome via Orte, Narni and Terni to Spoleto; thence to Perugia, Cortona, Arezzo and Florence. At Orte those who desire it may diverge to Orvieto (26 miles). Here the chief attraction is, of course, the Cathedral (1290-1309), which is not a Renaissance work at all, but which no architect should fail to visit if he would understand the true spirit of Italian architectural design. For this spirit, in which the decorative and aesthetic feeling continually dominates the constructive and intellectual, is the same in Andrea Pisano's Gothic front to the Cathedral of Orvieto as in Alberti's façade to Santa Maria Novella in Florence, or Borgognone's façade of the Pavia Certosa, or a hundred other façades of the Renaissance. Moreover, the Cathedral contains the famous frescoes of Signorelli (begun indeed by Fra Angelico) and several beautiful Renaissance altars, all of which are worthy of study. Most of the palaces of Orvieto are Gothic (Vescovile, Soliano, del Comune); but the latter has a façade by *Scalza*, dated 1585; and there is also a palace by *Antonio da San Gallo*, the younger, called the Palazzo Marsciano. Here is also the famous well designed by the same architect in 1527, called the Pozzo di San Patrizio, 43 feet in diameter with two fine broad staircases leading spirally down, 200 feet, to the water.

At Terni those who wish may stop over a half-day to visit the exquisitely beautiful cascade delle Marmore, one of the loveliest spots in Italy; and the class will then rendezvous at Spoleto, for a stop of a day and a night.

SPOLETO.

This is an ancient city of nearly 80,000 inhabitants, and contains notable antique remains: among others, a Roman house, theatre and

triumphal arch, with a magnificent Roman aqueduct (altered in the Middle Ages) across a ravine in the outskirts of the town. The Mediaeval monuments are more numerous than those of the Renaissance, but the latter are not without interest.

1. CATHEDRAL SANTA MARIA ASSUNTA, portico: 1491, by *Ambrogio* and *Pippo d'Antonio*. The church dates from the eleventh century, but was restored in the twelfth century and the interior remodelled in 1644.
2. ORSINI MONUMENT, in cathedral: 1499, by *Ambrogio di Antonio*.
3. TOMB OF FRA FILIPPO LIPPI: sixteenth century.
4. CHURCH OF THE MANNA D'ORO: 1527 (?)
5. PALAZZO ARRONI: sixteenth century palace with sgraffito decorations.
6. SANTA MADONNA DI LORETO: 1572, façade of seventeenth century.

From Spoleto the route is through Foligno and Assisi to Perugia. Foligno will hardly detain the student careful of his time, although a few hours' stay might be accorded it for the sake of *Antonio da San Gallo's* chapel (1527) in the cathedral, (the latter, also, internally remodelled in the sixteenth and seventeenth centuries); the Palazzo Orfini and the Palazzo Deli (1510). But the wise tourist will willingly forego this visit for the sake of giving the time to Assisi, which some will very possibly prefer even to Spoleto as a stopping-place on the way to Perugia.

The Renaissance monuments of Assisi are not numerous, but no student of the Renaissance can well afford to miss the opportunity to visit and study the frescoes of Cimabue, Simone di Martino di Sienna and Giotto in the lower and upper church of St. Francis (San Francesco), together with the tombs and other examples of the art of the fourteenth century. In these works we discover the germs of true Renaissance art; as the work of Cimabue may be said to be the foundation of Italian Renaissance painting, so in the decorative accessories of Giotto's frescoes, one discerns in sundry acanthus leaves and scrolls suggestions of the coming splendor of Renaissance ornament. The whole aggregation of fourteenth-century art in this noble church is intensely interesting, both for its own sake and for its revelation of that striving after the beautiful and for the freest expression of the artist's own individuality which were to characterize the Renaissance art of the fifteenth and sixteenth centuries in all its branches.

The only distinctively Renaissance buildings of Assisi are:

1. SANTA MARIA DEGLI ANGELI (near the station): 1569-73, by *Giacomo Barozzi di Vignola*, *Galazzo Alessi* and *Giulio Danti* (nave and choir rebuilt in 1832 after damage by an earthquake; dome intact); ALTAR by *Andrea della Robbia* (?) in one of the chapels, (brought from some earlier church?)
2. CHIESA NUOVA: 1615.
3. CATHEDRAL OF SAN RUFINO: interior modernized in 1572.

PERUGIA.

This ancient Etruscan town was at its zenith of prosperity at the very epoch of the first blossoming of Renaissance art. It contains interesting Mediaeval monuments, the Fonte Maggiore, Palazzo Pubblico, San Pietro de' Casinensi and San Domenico, among others, the latter remodelled in the seventeenth century; one or two structures dating from early Christian times, and an ancient Etruscan gateway, the Porta Augusta. It holds an important place in the history of Italian painting of the Umbrian School, as the home, though not the birthplace of *Pietro (Vannucci) Perugino*, who at one time had Raphael for his pupil. Its chief interest to the student of Renaissance architecture lies in the tombs, monuments, choir-stalls and pulpits in its churches, belonging to the transition and early Renaissance and in two or three conspicuous buildings of the same period, rather than in any large number of Renaissance palaces or churches of importance. Worthy of study are:

1. IN SAN DOMENICO: the late Gothic monument to Pope Benedict XI: early fourteenth century, by *Giovanni Pisano*.
2. IN SAME CHURCH: the monument to Bishop Guidolotti, 1429.
3. IN CHOIR OF SAME: the splendid stained-glass window, 1441, by *Fra Bartolomeo*; recently "restored."
4. ORATORY OF SAN BERNARDINO: façade 1459-1461, by *Agostino di Duccio* (or *di Gaccio*), with rich colored marble and terra-cotta.
5. IN SAN DOMENICO, choir-stalls: 1459, attributed to *Agostino di Duccio*.
6. SALA DEL CAMBIO: about same date, by *Agostino di Duccio*, who also executed the interior fresco decorations.
7. CATHEDRAL OF SAN LORENZO: of uncertain date, an unfinished fifteenth-century building; contains the tomb of Bishop Baglioni by *Agostino di Duccio*.
8. PALAZZO DEL PODESTA: 1472.
9. PORTA DI SAN PIETRO: 1473, *Agostino di Duccio*.
10. IN SAN PIETRO DE' CASINENSI: altar by *Mino da Fiesole*, 1473.
11. IN SAN DOMENICO, choir-stalls: 1476.
12. OLD UNIVERSITY, now Court of Justice: 1483.
13. IN SAN LORENZO, choir-stalls: 1491, by *Giuliano da Majano* and *Domenico del Tasso*.
14. IN SAN PIETRO DE' CASINENSI, pulpits: 1515-1521, by *Francesco di Guido*.
15. IN SAN DOMENICO, tabernacle: 1519, by *Cesarino del Rescetto*.
16. IN SAN PIETRO DE' CASINENSI, choir-stalls: 1535, by *Stephano da Bergamo* from designs attributed to *Raphael*.
17. PALAZZO GALLEGA: 1569 (?) by *Galazzo Alessi*.
18. IN SAN LORENZO, stained-glass window: by *Costantino di Rosato* and *Arrigo Fiammingo*; "restored" recently.
19. SAN DOMENICO: rebuilt early in seventeenth century, by *Carlo Maderno*.

The next important stopping-place of the class is Arezzo. Some of the members may, however, not find it amiss to make a short stop at Cortona on the way. Besides its Etruscan walls and Museum, the Mediaeval churches of San Domenico and Santa Margherita, Cortona is interesting as the birthplace of Signorelli, a number of whose paintings are to be seen in the churches, and of Pietro da Cortona, an architect of the middle of the sixteenth century. The Cathedral is ascribed to *Antonio da San Gallo*, the younger; there are also a church dating from the end of the fifteenth century, the Madonna del Calcinago, by *Francesco di Giorgio*, and a sixteenth-century palace on the Via Guelfi.

¹ Continued from No. 969, page 74.

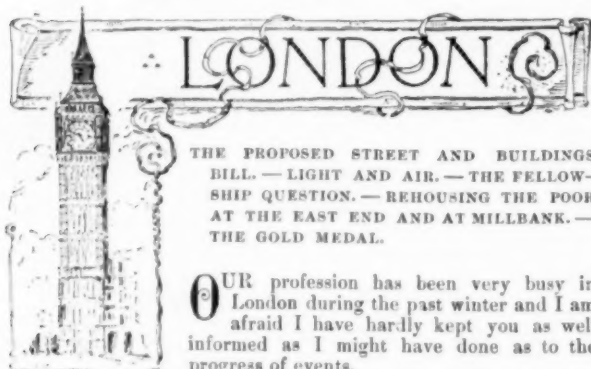
AREZZO.

Here, as in Assisi and Spoleto, we find a preponderance of Medieval work, especially of the fourteenth century, and many frescos by Renaissance artists, especially Spinello, Aretino and Lorenzetti. These it is not our province to enumerate, although the student will not fail to visit them for their intrinsic interest or beauty. The earliest architectural work by a Renaissance master was:

1. COMPLETION: 1434, by *Bernardo di Lorenzo* of the Gothic façade of the *FRATERNITA DELLA MISERICORDIA*, on the Piazza Vasari.
2. SANTA MARIA DELLE GRAZIE (outside the walls) porch: latter part of fifteenth century, by *Benedetto da Majano*; altar in marble by *Andrea della Robbia*.
3. SS. ANUNZIATA: 1520 (?) by *Antonio da San Gallo*, the elder; stained-glass window by *Guillaume de Marcille*, 1525.
4. BADIA DI S. FIORE: 1570 (?) by *Giorgio Vasari*, the artist and biographer, who was born in Arezzo and whose house is pointed out on the Borgo di San Vito.
5. LOGGIE on the Piazza Vasari: 1573, by *Giorgio Vasari*.

There is no place of special interest to arrest the attention of the student between Arezzo and Florence. A. D. F. HAMLIN.

[To be continued.]



THE PROPOSED STREET AND BUILDINGS BILL.—LIGHT AND AIR.—THE FELLOWSHIP QUESTION.—REHOUSING THE POOR AT THE EAST END AND AT MILLBANK.—THE GOLD MEDAL.

OUR profession has been very busy in London during the past winter and I am afraid I have hardly kept you as well informed as I might have done as to the progress of events.

Perhaps our chief excitement has been a new Bill which is being promoted in Parliament by the London County Council for the control over the streets and buildings of the metropolis. The antiquated and ill-constructed Acts that now govern our building-work in London are very troublesome and unsatisfactory, and the County Council in its desire for reform seized upon the precedents of the Housing of the Working Classes Acts and the Public Health Acts. In both these instances a number of short Acts existed which were passed from time to time as occasion seemed to warrant, but which were not always consistent and were always difficult of access. The late Government, therefore, drew up and passed a Consolidating and Amending Act in which all the small Acts were concentrated and amendments made to bring the legislation up to date. In the case of the building-work, however, the precedent hardly applied, because the amendments introduced were of so far-reaching and drastic a character that interests were touched in all quarters and the opposition grew and multiplied. The chief struggle has taken place over the laws governing light and air. As I have explained in former letters, the only practical influence which prevents London from being covered with buildings so high as to entirely shut out light and air from its neighbors, are the laws of easement. Under these laws, a window which has for a period of twenty years enjoyed a certain amount of light cannot be deprived subsequently of its right without the consent of its owner. This power extends even to houses on the opposite sides of the street, and there are many instances in London where old houses have been demolished and, the owners of the opposite houses proving recalcitrant, the new buildings are shorn of their proposed upper stories. Generally, however, a money payment will remove these difficulties, and, consequently, property is becoming more and more confined. Then, among the districts inhabited by the poorer classes, the great increase of population and consequent demand for house-room has caused a set of building-speculators to spring up, who buy up the old two-storied houses and in their stead erect large blocks of tenement-buildings, often six or seven stories high and so close together that some of the lower floors are almost entirely dark. From these and other reasons the London County Council arrived at the conclusion that it must strengthen its hands and, as is usual with reformers, it went too far in the opposite direction. It proposed that all new buildings should be enclosed within a line drawn at an angle of forty-five degrees from the back of not only all property to be built on virgin soil, but on all rebuildings. A similar line is to be drawn from the opposite side of the street and the owner's rights in his land, so far as building is concerned, are practically to be confined within the limits of his portion of the triangle formed by the intersection of these two imaginary lines with the ground. It will be readily imagined that such an enactment would have the gravest results upon a large commercial city like London. As Mr. Cates said, in an able paper read before the Royal Institute of British Architects, "Any such legislation as is contemplated by this part of the Bill, would repress the desire for

improvement, and compel the owners of houses which would be subject thereto to make every endeavor, by patching-up or repairs, to keep them out of the purview of the enactment." From what I hear, this portion of the Bill will either be wholly withdrawn or very greatly modified. There are a good many other important proposals contained in the Bill, but as its ultimate form is still a matter of uncertainty, no very useful object will be gained by rehearsing them. When the Bill is in its final form I will give you a *résumé*. Petitions have been presented against it from a large number of influential bodies and there is little chance of its passing in its present form.

A curious event has taken place with regard to the elections to the Fellowship of the Institute of Architects. In the olden days, architects desiring to become Fellows had, after being approved by the Institute Council, to be elected at the meeting by ballot. A desire, however, grew up that the Fellowship should only be conferred on men who had shown decided artistic ability and it was found that nominations were being increasingly rejected. The action of what was familiarly known as the "Art Clique" was defeated by a counter move of the Council who succeeded in carrying a proposal to substitute show of hands for voting by ballot, with an appeal to the whole body if necessary. At the last election a gentleman was nominated as Fellow who had previously failed to pass the obligatory examination for the Associateship and this created great indignation among those members who had passed. Consequently, a poll was demanded and, to every one's surprise, every architect nominated for the Fellowship who was not previously an Associate was rejected. Thus it seems that the Associates hold the opinion that entrance to the Fellowship should be entirely from the ranks of the Associates and, consequently, after examination. As the power is in their hands the position is a curious one, and will strengthen the hands of those who are aiming for a compulsory entrance-examination to the profession.

As the great rehousing scheme of the London County Council in the East End of London is well-advanced, a few particulars as to its progress will be of interest. The case was interesting, as it was the first that came under the new Housing of the Working Classes Act, 1890, which contained stringent provisions as to compensation. Under this Act if a house was overcrowded, the purchasing authority was authorized to calculate its value upon the rental which could have been obtained if the house had been let at reasonable rentals to its proper number of inmates. If it was in a bad condition, the cost of repair was to be deducted from its assessed value, and if it was altogether insanitary, it was to be reckoned as bricks and mortar only and valued at the net value of the materials. With an Act like this, it does not surprise one to learn that the claims of the property-owners, which amounted to £437,000, were settled amicably, or otherwise, for £266,000. The most difficult job was to remove the tenants, of whom there were nearly 1,300 in the area. Many of these people had lived in the district for years and the majority earned their living in the immediate neighborhood. The pressure for removal was, however, applied very leniently and gradually, and half those displaced found other suitable accommodation within a quarter of a mile of the area. Out of 948 who have removed, only 20 had to be summarily ejected and this says a good deal for the tact of the Council in dealing with them. While the valuer of the Council was acquiring the old property, their architect was preparing the plan for the new buildings. These will generally be on the "flat" system and some five stories in height. Some of the tenements will be self-contained while others—at a cheaper rent—will be arranged on the associated plan. The plan of the self-contained tenements is a very clever one. It is, I understand, proposed to erect a central laundry with the latest scientific appliances and in this building will be placed some huge boilers at which water will be heated and distributed with the help of calorifiers to all the sculleries over the entire area. The general plan of the scheme is a capital one and is based upon a number of streets radiating from a central circle, or open space, some 280 feet in diameter. This is connected with the main central street of Shoreditch by a central avenue.

The Council has in hand, as well as this, another great housing scheme at Millbank, in the West of London. This occupies about a half of the site of the old prison at Vauxhall, the front portion being occupied by Mr. Tate's Gallery of British Art and some military buildings. The general scheme here is also a good one. There is to be a wide central boulevard with four rows of trees running the long way of the site and the buildings will not be built fronting on the avenue, but at right angles to it, and so avoiding the monopoly which would have been almost inseparable from a great scheme of this nature had the other plan been adopted. Besides this, the Council have other rehousing schemes under way in other parts of the metropolis. It is not at first sight, perhaps, quite easy to understand why these schemes should be undertaken municipally and not left to private enterprise, but that is a large question which I must enter into another time.

Sir Frederic Leighton, President of the Royal Academy, has been offered and has accepted the Royal Gold Medal this year. He has always manifested a sort of architectural leaning and has lately been delivering a series of lectures on Spanish and other Renaissance architecture. His nomination is fairly popular, but from what one hears I think an architect's name would have created more enthusiasm.



DEATH OF AUGUSTUS BAUER, ARCHITECT.
— THE ARCHITECTURAL EXHIBITION AT
THE ART INSTITUTE. — THE ARCHITECT-
URAL SKETCH-CLUB. — KEMEYS'S LIONS.
— PARTRIDGE'S "SHAKESPEARE." — RECEPTION BY THE INSTI-
TUTE OF BUILDING ARTS. — THE POST-OFFICE. — SALE OF THE
FAIR BUILDINGS. — FAILURE OF THE STRIKE MOVEMENT.

DURING the month of February of this year there occurred in Chicago the death of one of our oldest practising architects, Augustus Bauer. He was at one time President of the Illinois Chapter of the American Institute of Architects and a man commanding respect from all who knew him. The Chapter has recently published a most excellent little memorial of him, which, in its quiet dignity and entire freedom from that post-mortem hyperbole so often found in such documents, is most suiting to the man it honors. The description of his character as given might almost serve as an ideal on which to form an honest, straightforward member of the profession, and as such an ideal it is quoted here: "As an architect, it can be said that as his works were largely of a utilitarian nature, he had few occasions for distinguishing himself by brilliancy or originality of design. Nor did he ever show any ambition in that direction. The several partners with whom he was associated at different times share this reputation with him. He was brought up in a conservative school, and always adhered to its tenets. He was thorough in everything, careful in matters of detail and a safe constructor, against whom no failure is recorded. While he never indulged in any extravagances of design, it can truly be said that nothing that is commonplace was ever produced by him. His experience was one of the largest that has ever fallen to the lot of an American architect, and it was well rewarded by the wealth that comes from industry and frugality, notwithstanding the great generosity of his nature as shown by his acts. It was a success that generally crowns the career of a strict practitioner, such as he was. For in the observance of the etiquette of the profession, to his clients and the contractors with whom he came in contact, he was a model for others to follow. When he said to a mechanic 'That is wrong,' there was no room for argument on either side. He never solicited patronage, and never entered a competition unless he was invited and paid for his services, and not always then. His friends were his clients, and his clients were his friends, and therein was one secret of his great success, from a business point-of-view. Here was a man who was in everything the opposite to the 'hustler' for business, who was always an architect, and never engaged in any other business (except as it became necessary for him to make good investments of the fruits of his labors), yet who was the most successful architect that Chicago has known. There was about him an element of honesty and straightforwardness which attracted clients, for he never misled them as to the probable cost of their investments. He estimated literally, knowing that he would always require good work that costs more than bad work, and no one was ever disappointed in the result."

The great interest of this month to architects is the exhibition now being held at the Art Institute under the auspices of the Architectural Sketch Club. The exhibition not only comprises architectural drawings, but much that pertains to the decoration of houses and buildings: architectural friezes in plaster, as well as the small models of sculptors, designs for color-decoration, stained-glass, architectural metal-work, tapestry, etc. The rugs, furniture and tapestry exhibit make a very attractive setting for the drawings, as well as adding much to the stained-glass and work of the sculptors. To meet all the requirements of an exhibition so varied in character, it was necessary to have the jury divided into various branches, or, in fact, a jury for each branch, which necessitated one in architecture and decoration, composed of architects, one for decorative subjects, composed of artists and architectural water-colorists and one on sculpture composed of sculptors. The Architectural Sketch Club is the second largest organization of its kind in the country. It has recently received encouragement from the Illinois Chapter of the American Institute in the shape of a gold medal, to be awarded annually to an active member of the Club, who has not been a practising architect for more than two years. According to a little history of the organization, published in the front of the catalogue for the present exhibition, "this Club was organized in 1881 by a few architects' assistants and designers in the allied arts, the object being then, as it is now, the mutual improvement of its members, and the advancement of art and architecture, accomplished by friendly competitions and a series of lectures and essays, relating to all matters pertaining to architecture or the arts."

"At present, classes are being held at stated times in water-color, modelling and pen-and-ink, under able instructors, and are fully appreciated by the members, as is shown by the large and steady attendance. The Club counts among its members some of the most prominent architects, artists, sculptors and members of the allied arts both in Chicago and elsewhere. The problems for competition are all carefully selected by the executive committee and all awards are

made by an adjudicating committee composed of three of Chicago's well-known architects. Entertainment for the members is provided by a committee appointed for the purpose, and many a pleasant evening has been spent in the rooms of the Club. Besides the regular club competitions, which are for members exclusively, the Clark Medal competition, held under the auspices of the Club, is open to all draughtsmen." Many of the most prominent architectural firms of the city contributed to the exhibition, entering the work under their own names or under that of some of their draughtsmen, who are members of the Club. The exhibition is by no means confined to members, but work is shown by any one who can bring in something good in his especial line.

In the stained-glass exhibit the Linden Glass Company have some very good things. Especially charming is a composition of F. L. Linden, numbered 250a, "A Beaded Glass Window," rich in color and excellent in design. Several large firms make some very artistic displays in furniture, giving the designers their full share of credit, while Marshall Field and Company have loaned to the exhibition a few pleasing examples of old furniture, and some most excellent reproductions of old. This is also the case with embroideries and tapestries from the same firm.

One of the most excellently-treated designs for decorative work is one exhibited by Winslow Brothers for some wrought-iron electroliers. It is to be regretted that the name of the designer is not affixed to this work, but simply that of the firm for whom it was made. The designs for schemes of color-decoration are, taken as a whole, much weaker than work in the other departments. They are treated, many of them, so sketchily as to be quite unintelligible and not by any means showing the close study that such work is supposed to require. Impressionism, however excellent in certain places, is not a thing to be absolutely desired in a design where accuracy of intent is supposed to be shown, and some watery red or green washes on a wall, on which hangs a suggestion of a picture, and over which are scattered, possibly, some vague fleurs-de-lis, is not satisfactory in the place of some well and carefully studied scheme of color-decoration. Entirely opposite to these in treatment are two water-colors by R. C. Spencer, Jr., entitled "Mantua Ceilings." They are absolutely miniaturelike in the care of detail, though clear and strong in coloring. Mr. Spencer will be remembered as having taken a few years ago the Rotch travelling-scholarship. Strength and freedom, combined with a detailed accuracy especially to be desired in architectural studies, are to be noticed in his work. In a large drawing of his for the design of the main staircase of the Art Building, exhibited by Shepley, Rutan & Coolidge, is this especially noticeable.

One of the most successful water-colors is the rendering of a church of De Witt Taylor Kennard's, by L. Buck. As a picture it is attractive and the necessary details have not materially suffered. Ernest Albert, whose works are very properly entered under the title of "artist," shows us some most attractive water-colors, masterly and strong in style. Especially attractive in treatment from an architectural point of view is his No. 7, "Brick and Stone Entrance."

This artistic treatment of architectural subjects, to the minds of many clients brings a much clearer idea than would the more technical school treatment of the same subject, and so becomes quite legitimate, it would seem. It would, however, seem to necessitate a certain artistic ability in draughtsmen aside from any architectural training which is not always easy to find. And, moreover, does the question occur that to attain such proficiency, some sacrifice must be made to the time required for actual study in design? Would it be wiser to leave such work to a separate set of men whose education should be that of architectural artists? Or, with the proper kind of training would such work be as simple, not for the exceptional few, but for all, as the ordinary school work? Of course, a class of such workers, of distinctly architectural artists, does exist and has existed for some time, but not as an acknowledged separate profession, as is that of the decorative designer. Men and women who entered it, not drifted into it would, undoubtedly, feel from the start that it had many limitations, but how few who study and have aspirations of becoming great artists are certain of reaching the goal, giving to the world really great pictures.

Many of the architects exhibit, here, drawings of buildings which have actually been built, which are almost a separate class from the work entered by younger men — much of it problems for competition, sketches, etc. This work has often to be judged by a different standard from that of the younger men, not for artistic rendering so much as solid architectural worth. These studies are many of them interesting, as one is able to compare them with the actual buildings. Taken as a whole, the exhibition is most interesting and far exceeds any previous display of the kind made in the city before. Very noticeable is the impulse received for better work here, not alone in the three great branches of art — painting, sculpture and architecture — but also in all the industrial and applied arts.

The unveiling of Mr. Edward Kemeys's lions, before mentioned in these letters, was made a feature of the opening night of the Club exhibition. Taken as works of art they are fine. One stands looking southward in an attitude of mild expectancy, while the other's gaze is directed to the north: here the attitude is one of aggressive defense, his head thrown back and his tail evidently in the act of lashing from side to side. A struggle is apparently imminent. In the place in which they are they seem dangerously approaching the too colossal, and it might be a question whether a more architectural

treatment of the beasts might not have made them more in harmony with the building they guard. They are certainly fine, and there is about them no suggestion of the usual iron lion, which was at one time so popular a sign at the front doors of dry-goods stores, but are able creations of art, and so entirely different from the things that have been sprung here so often on an unsuspecting public at the moment of unveiling, that we are devoutly thankful and proud of them.

Another unveiling which has taken place since the writing of last month's letter has been that of the Shakespeare statue in Lincoln Park, the work of Mr. William Ordway Partridge and the gift of one of our old citizens, the late Mr. Samuel Johnson. The work became quite familiar to us last summer through the plaster model shown at the World's Fair, and the final casting in bronze does not excel in excellence whatever idea may have been already formed of the work. The divine spark of genius, which should have come from Mr. Partridge to have made the "Immortal Bard" the truly immortal in this place, seems, alas! to have been lacking. There is nothing startlingly poor about the work, and neither is there anything by which we are convinced afresh by this figure before us that Shakespeare was a great and wonderful man. The well-rounded head, with which we are all so familiar, is here not idealized, but rather accentuated, and we feel to look at him, to use the Bard's own words, that he might have been one of those "dumb, wise fools, who saying nothing are considered wise," never the man whose words could have thrilled a civilized and cultivated world. The whole figure, which is a sitting one, speaks of weakness, not of deep thought and reverie. The unveiling was made an interesting occasion, by means of bright speeches, and Mr. Willard, the actor, being discovered among those present, the crowd demanded that a few words should be heard from him, and coming forward he recited Swinburn's lines to the man who was that day being honored.

During the past years interest has so increased in the Institute of Building Arts that it now appears to stand on a firm and substantial basis, and the child of the Illinois Chapter seems to have an assured existence. Within the last week a reception has been held at the headquarters, the principal occasion being the opening of new rooms, which it was found necessary to add to the old ones. The chief room is the library, where those books that are owned by the Chapter are kept, as well as numerous photographs received from various World's Fair sources. This room is naturally used as a sort of club-room by members of the Institute when such a room is needed by them. The building-material exhibit has been much enlarged and formed an interesting feature of this spring reception. It has been satisfactorily demonstrated to all concerned that the Institute of Building Arts is a useful institution and helpful to both architects and clients.

In several letters, the insecurity and inadequacy of our post-office to the present needs of the city have been dwelt upon. It at present looks as if an appropriation from Congress might be forthcoming for a new structure. As usual, when any new and large public building is talked of in Chicago, there have been those who have advocated placing it on the Lake Front Park — in this case, a most inappropriate place as regards centralness of position to either roads carrying in or taking out the mails, as well as to the crowded business districts. The Lake-fronters have subsided for a time, at least, and though a temporary structure may be erected on this site, the old ground is more probably to be the one used. The report is (though very little that is accurate is known) that Congress will make an appropriation of four millions of dollars for this especial building, and with such a sum before us the first thought which arises is "What glorious possibilities of success — or most wretched failure, are to be had in such a building." What a pity that government work in our country is not synonymous, as it is in many European ones, with skill, artistic ability and success in design, meaning the employment of the best men that are to be found. It is to be hoped that politics may be eliminated from the matter and the advantages sought by the American Institute of Architects may be attained in this case.

Last month it was, for about the sixth time, again reported that the World's Fair buildings had been sold, this time to a Boston firm, but the sale fell through because of some complication concerning the understanding of the amount of cash to be paid down at the time of the transaction. The buildings, it would seem, have been finally sold this month, and the work of demolition has again been reported begun. With the exception of the Art Palace and the United States Government structure, the Chicago Wrecking Company gives eighty thousand dollars for the twenty principal buildings. The same company paid three thousand and three hundred dollars extra for the main Government Building, the Life-saving station, the Meteorological Building and some minor structures. Seventeen of the original twenty structures will be removed inside of sixty days. In an interview the President of the Company is reported as saying "We are not going to touch the Manufactures Building, Machinery Hall or the Agricultural Building until the last moment, and they will undoubtedly remain standing all summer. All of the structures are going to be wrecked for the material of which they are built. We expect to pull out thirty thousand loads of kindling wood, and for the thousands of car-loads of stuff on them we have been offered ten dollars a car. This is to be used for filling-in low land. Several railroads are figuring on the structural iron, particularly that of the Manufactures Building, which is good for bridge work."

Mr. Frederick Law Olmsted has been making plans for the laying

out of Jackson Park, by which it is to be hoped some of the beauty of last summer will be preserved. He proposes a canal system stretching the whole length of the Plaisance, though for the present a lawn extending through this length, bordered by four rows of trees on each side will be the only improvement undertaken. As has been mentioned before in these letters, the Ferris Wheel will go to New York and the work of taking it down has already begun. It was reported that after the cars were removed the big wheel would make a final turn, while several of the Ferris Wheel Company officials would make a hazardous trip around it, either holding on to the beams or being tied to them. It will take ten weeks to take the wheel to pieces. Fifty men will begin the work and several hundred will be employed before the last beam is laid low. The material will be loaded on Illinois Central cars at Woodlawn Ave. and Sixty-third Street. The car that was used for carrying the Krupp gun will be used for the seventy-ton axle. The material will be taken to New York in five trains of thirty cars each. There are three thousand tons of metal in the wheel itself, and five hundred thousand feet of timber will be needed for the false-work. Taking the wheel down will be more dangerous than putting it up. One hundred and fifty thousand dollars will be the cost of taking the wheel down and re-erecting it in New York, where it is to be placed at Thirty-seventh Street and Broadway. Old Vienna, it is said, will be reproduced around it. Here, the wheel had three thousand electric-lights upon it, but in New York it will have double that number.

With the bright warm days of our exceptionally beautiful spring there is a general feeling of regret that the Fair, which at this time last year was so rapidly blossoming into perfection and beauty, is now fading away from our sight forever.

It seems as if the mildness of our pleasant spring had also invaded the spirit of the strikers, which at one time seemed to bid fair to assume a belligerent temper. Instead of a strike of large proportions with a lock-out of still larger, such as was at one time predicted, both have seemed to dissolve in talk, till no one can exactly tell what has become of either. May-Day came and went with no labor demonstration and the plumbers' strike is the only one that seems to have had a definite settlement of which the public has any cognisance. In this settlement both bosses and men made concessions, the men on the matter of wages, the old rule of three dollars and seventy-five cents a day remaining in force, while some minor points were ceded by the bosses to the men. This strike lasted nearly a month, and coming just as it did, on the first of May, caused a good deal of inconvenience to owners as well as to contractors of unfinished buildings.

Work in architects' offices here is generally exceedingly quiet this spring, and what work there is, is of the smallest kind, the farthest removed from any of a speculative nature. More large office-buildings have been built than there is actually any demand for, and it looks as if it would be some time before some of these sky-scrapers would be erected.

The work on the Board of Trade Building is progressing, and the tower has already been levelled with the upper stories of the edifice.



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

THE MANUFACTURES BUILDING. MR. G. B. POST, ARCHITECT, NEW YORK, N. Y., AND THE NORTH END OF THE ELECTRICITY BUILDING. MESSRS. VAN BRUNT & HOWE, ARCHITECTS, KANSAS CITY, MO. WORLD'S COLUMBIAN EXHIBITION: CHICAGO, ILL.

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

THE SHEPARD MEMORIAL CHURCH, SCARBOROUGH HEIGHTS, N. Y. MESSRS. HAYDEL & SHEPARD, ARCHITECTS, NEW YORK, N. Y.

THE church will be of granite rubble, of a pink tinge, with trimmings of Indiana limestone. The height of the tower from the steps to the top of the cross will be about 120 feet. The interior dimensions of the main auditorium are: Width, 42 feet, and length, 80 feet. The entire length of the structure, including a large Sunday-school annex in the rear, will be 168 feet. The roofs also will be covered with copper. Steps from the front door will lead down to a plaza seventy-five feet square, and thence broad steps will lead to the roadway. In the three large windows of the main structure, each nineteen feet high, will be stained-glass designs. Strictly Classical treatment will be used in the interior of the main building. The main auditorium will have a seating-capacity of 350 and the Sunday-school room of 150 persons. The floors will be of mosaic in the church and there will be pews of carved wood. The wood-paneled ceiling will be one of the features of the main room: it is to be made of California redwood enriched with twenty-eight panels, each six feet square, and with carved wooden rosettes in their centres. This design will enclose, as in a huge frame, a large panel, itself broken up and subdivided into a large number of smaller panels. In the centre of the ceiling will be a great cross, carved

from redwood. The inner walls are to be of cement, tinted to harmonize with the ceiling. The choir dome, under which the pulpit is to be placed, at the east end of the church, will be panelled with rosettes, and a large skylight will admit light from above. The organ is to be in the main tower, while the key-board will be under the choir dome. The church will be called the Scarborough Presbyterian Church.

THE MCKAY MAUSOLEUM, PITTSFIELD, MASS. MISS MARY TILLINGHAST, ARCHITECT, NEW YORK, N. Y.

THIS Mausoleum was built for Mr. Gordon McKay, of Newport, R. I., in 1893 and 1894. The exterior is of white marble from the quarries of Lee, Mass. The style of the exterior is Byzantine. The interior is lined with rose Numidian marble up to the spring of the arch. The faces of the sarcophagi, of which there are six, are of the same marble, richly carved. Above this line the dome is of glass mosaic, after the manner of the old mosaics of St. Mark's, Venice. There is no painting on the glass, the flesh even of the figures being entirely made of small bits of colored-glass. The ground-work is of gold glass. There are six figures in the dome representing Charity, Justice, Patience, Fate, Force and Invention as illustrating the age in which we live, also having reference to the client who has made a large fortune out of his inventions. There are five stained-glass windows, three of them memorials to the different members of Mr. McKay's family who are buried there—each illustrative of their lives and deaths: father, mother and two young brothers—incidentally showing the different seasons of the year and the times of the day, morning, noon and sunset. The third window illustrates the power "of the voice which is stilled," in memory of the first wife of Mr. McKay. The door is of bronze, after one of the doors of St. Mark's, Venice. The drainage, ventilation, etc., are very carefully cared for. The building is hexagonal in form, 32 feet high and measures from angle to angle of exterior 12 feet. The floor is of stone mosaic.

ALTERNATIVE SKETCH FOR HOUSE OF DAVID PEPPER, ESQ., CHESTNUT HILL, PHILADELPHIA, PA. MR. WILSON EYRE, JR., ARCHITECT, PHILADELPHIA, PA.

The house actually built was quite different from that here shown.

THE TOWER OF CENTRAL COLLEGE, FAYETTE, IND. MR. W. C. ROOT, ARCHITECT, KANSAS CITY, MO.

HOUSE FOR C. B. MOORE, ESQ., PHILADELPHIA, PA. MR. WILSON EYRE, JR., ARCHITECT, PHILADELPHIA, PA.

ST. LOUIS WOMAN'S BUILDING, ST. LOUIS, MO. MR. W. ALBERT SWASEY, ARCHITECT, ST. LOUIS, MO.

[Additional Illustrations in the International Edition.]

THE IDAHO STATE BUILDING, WORLD'S COLUMBIAN EXHIBITION, CHICAGO, ILL. MESSRS. CUTLER & POETZ, ARCHITECTS, SPOKANE, WASH.

[Gelatine Print.]

THE INDIANA STATE BUILDING. MR. H. I. COBB, ARCHITECT, CHICAGO, ILL., AND THE BUILDING OF PUBLIC COMFORT, MR. C. B. ATWOOD, ARCHITECT, WORLD'S COLUMBIAN EXHIBITION, CHICAGO, ILL.

[Gelatine Print.]

WAREHOUSE, BIRMINGHAM, ENG. MESSRS. NEWTON & CHEATLE, ARCHITECTS.

WEST-COOMB, SUSSEX, ENG. MR. H. C. FRASER, ARCHITECT.



THE AMERICAN INSTITUTE OF ARCHITECTS AND THE LATE CÉSAR DALY.

PROVIDENCE, R. I., May 22, 1894.

DEAR MADAME:—

It was with feelings of profound regret that the architects of America received the tidings of the decease of your late husband, for, although but a few of us had ever had the honor of taking him by the hand, thousands were intimately acquainted with him through the medium of his pen, and in a greater degree through their familiarity with the productions of his pencil.

The American Institute of Architects, of which he had for many years been an Honorary Member, at the first meeting of its Executive Committee, after his death, unanimously adopted the enclosed minute as an expression, not only of the individual sentiments of the members present, but also, as an expression of the respect entertained for him by the whole society, whose representatives they are, and of the large body of architects throughout the United States to whom he

was as one of our own countrymen, because of that comradeship which obtains by devotion to the profession of Architecture and the love of Art.

With expressions of sympathy for yourself and family in the great loss which you have experienced, I have the honor to be

Yours sincerely, ALFRED STONE,
Secretary of the American Institute of Architects.

TO MME. CÉSAR DALY, Paris, France.

At a meeting of the Executive Committee of the American Institute of Architects holden in New York, April 21, 1894, the first meeting since the announcement of the decease of César Daly, it was unanimously voted to enter the following minute on its records and to send a copy of the same to his widow:

In the death of M. César Daly the American Institute of Architects, of which M. Daly had been an Honorary Member for more than a quarter of a century, recognizes the great loss of the profession of architects, not only in his native country but in the United States of America, where his voluminous and valuable publications were widely read and highly valued.

M. Daly's eighty-two years of intense and active life were devoted to the advancement of that profession to which he brought consummate skill of draughtsmanship, a profound knowledge of history and principles of design, great executive ability as an editor and writer while actively engaged in the exacting demands of a large practice and as architect to the French Government.

The influence of his writings and publications produced a marked effect on the architecture of the latter half of the nineteenth century, while his unselfish and enthusiastic helpfulness were appreciated by the architects of the civilized world.

The American Institute of Architects joins with the vast throng to do honor to his memory and to testify to its appreciation of his manly worth.

Attest, ALFRED STONE,
Secretary American Institute of Architects.



[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.]

DALY'S THEATRE, LONDON.

PORTLAND, OREGON, May 19, 1894.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—In an article on "Theatres" in the *American Architect* of April 14, I see that your correspondent begins with a description of Daly's Theatre in London. Most of the article is devoted to planning and arrangement, but toward the end there occurs the following paragraph: "The decoration of this house is not quite as happy as it might be, being carried out in unrelieved masses of lacquered gold and silver; the architects, however, it is understood, were not responsible for this. The decorative idea originally sketched out and approved by them was much lighter in treatment." I imagine that the sectional drawings accompanying the article are from the architects' original drawings, since they are entirely different from the theatre as it now stands. I do not think that any one would hesitate long in deciding between the two.

The commonplace, stereotyped design shown in the drawings cannot be compared with the completed work—and it was a conviction that the interior of the theatre must have been done by some other than the architects of the rather unsatisfactory exterior, which kept me from mentioning them in a letter published in the *American Architect* of January 13, last.

I am inclined to believe that there are few, if any, more cleverly-designed interiors in existence than this same Daly's Theatre—but whether it is that your correspondent is taken with the mania of over-doing and frittering away chances, which is the inherent weakness of most English architects of the present generation; or that the architects spoken of above have won him over to their way of thinking—he has certainly given a wrong idea of the interior and has left us with the impression that the exterior and other work of the architects are above the average.

Yours faithfully, WM. M. ELLICOTT.



BOSTON, MASS.—Several hundred Specimens of Textile Designs of all countries, from the second century to the present time, from the collection given by Denman W. Ross; also the Shibusu collection of Japanese Art: at the Museum of Fine Arts.

Exhibition of New Tiffany Glassware: at the Galleries of Williams & Everett, 190 Boylston Street, May 21 to June 2.

CINCINNATI, O.—*Exhibition of the Cincinnati Art Club*: at the Art Museum, May 17 to June 30.

NEW YORK, N. Y.—*Twenty-sixth Annual Spring Exhibition*: at the Metropolitan Museum of Art, opened May 8.

Exhibition of the Competitive Designs for the Decoration of the Oyer and Terminer Court-room: at the Century Club.

Group Exhibition by American Painters—William M. Chase, J. Alden Weir, Childre Hassam and others: at the Galleries of the American Fine Arts Society, 215 West 57th Street.

NOTES AND CLIPPINGS

BIG BELLS.—Some facts and statistics concerning the big bells of the world afford interesting reading. In the size and number of its bells Russia must be accorded first place. Moscow alone had 1,706 large bells before the great conflagration. Of these, the foremost was the Bolshoi (Giant), cast in the sixteenth century, and recast in 1854, when broken by falling from its supports. Its weight was estimated at 288,000 pounds, and it took twenty-four men to ring it by pulling the clapper. It was broken again when it fell during a fire in 1700, and its fragments were used in 1730 in casting the Tsar Kolokol (King of Bells), still one of the sights of the old Muscovite capital. It is 19½ feet high and 60¾ feet round, and its weight is estimated at 443,772 pounds, the value of its metal being placed at \$335,000. Tradition had it that this bell fell from some kind of belfry and buried itself partly in the earth; but experts have established that it was cast in a cavern under the Kremlin, where it had to remain, as the engineering skill of the time was not equal to lifting and removing it. The Emperor Nicholas raised it upon a granite pedestal, where it now stands, being used as a chapel. Entrance is gained through the chasm in the side, made by timbers falling upon it during a fire in 1737. Clarke reports of its predecessor that "when it was sounded, a deep, hollow murmur vibrated all over Moscow like the fullest tones of a vast organ or the rolling of distant thunder." Curiously enough, all the recent English writers omit any mention of the bell placed in the Church of the Redeemer, in Moscow, just three years ago, to commemorate the emancipation of the Bulgarians. The contractor tried to swindle the donors out of about seven tons of metal; but, even after this knavish "shortage," it weighed 60,736 pounds. Novgorod, too, claims a bell weighing 69,450 pounds. According to the Jesuit Lecompt, Pekin used to boast seven bells of 120,000 pounds weight each, and the big bell in the suburbs, 14 feet 6 inches high and 13 feet in diameter, is called the largest suspended bell. Burnah is a very country of bells. When the British took Rangoon, in 1852, they tried to carry off the sacred Shway Dagohn bell, but Maha Ganda was too heavy for the raft on which it was placed, tipped it over, and sank. The Burmans rescued it, and still use it. It weighs 95,000 pounds, and is of such fine tone that a flick of the finger nail will set it vibrating. The Mengoon bell, which has slipped from its supports, touches the ground on one side, weighs 201,500 pounds and is really the largest bell in the world.

Among the big bells of Europe are the famous Suzanne of Erfurt, 10½ feet high and 8¼ feet in diameter, cast in 1497, which weighs about 30,000 pounds; one at Olmutz, cast in 1711, which weighs 40,100 pounds; another at Vienna, some 450 pounds less; and that in the Cathedral at Paris, 38,000 pounds. The biggest bell in England is "Great Paul," cast for St. Paul's, London, by Taylor, of Loughborough. About twenty tons of metal were poured into the three furnaces, and, after overplus and waste are deducted, it will weigh about 39,200 pounds. It is 8 feet 10 inches from the lip to the top of the cannons, and 9 feet 6¾ inches from edge to edge of lip. Big Ben of Westminster is 9½ feet high and 7 feet 10 inches in diameter, and weighs 30,324 pounds. Great Peter of York Minster, founded in 1845, weighs 27,000 pounds; Great Tom of Oxford weighs 17,500 pounds, and Great Tom of Lincoln 12,000 pounds. According to Vincent, the bell of St. Peter's, at Rome, weighs 18,000 pounds. The big bell in one tower of the parish church at Montreal—erroneously called the French Cathedral—weighs about 29,500 pounds, and there is a chime of ten bells in the other, weighing about 22,000 pounds. This is called the largest on the continent, being nearly thrice the size of the big fire-bells of American cities. The old City-hall alarm-bell in New York weighed about 23,000 pounds. It was broken in 1867 in process of removal, and recast in smaller fire bells. The biggest now in New York is said to be that over the prison in Jefferson Market.—*Illustrated Carpenter and Builder.*

THE POSSIBILITIES OF BAMBOO-GROWING IN LOUISIANA.—That the Japanese bamboo can be grown with profit in Louisiana seems to be shown by the result of some experiments that a planter of Marksville has made. He says, "Three years ago I bought ten plants from a San Francisco importer. They were not received in the best condition. Only one plant out of the ten lived and grew. The first year the shoots or canes came out about the size of a pencil; the second year (1892) the canes came out the size of a man's thumb, ten feet high. This, the third year, they came out as large as big cornstalks. The plant has grown twenty feet high and spread over fifty feet of ground. A furniture man from New Orleans was here this past summer, and says there is a fortune for any man who will grow the bamboo to supply the furniture manufacturers, and he engaged all I could grow at a good price. I figured out what an acre would bring me. If I were to put it down, no one would hardly believe my story. Suffice it to say that there is nothing that grows from the ground that will pay better. Merchantable canes are grown in one season from a five or six year-old set plantation large enough to make bedsteads, chairs, picture frames, etc. The canes come out stouter each year until they get large enough to split in four and make a good fence, and as the canes are cut down from year to year, new shoots constantly come up, which grow with

increased vigor and phenomenal rapidity. Gen. Kirkham has a record of eight inches per day attained in his California plantation. My plants have not yet made such rapid growth, but from indications of their past growth I expect to see next year even more rapid growth."—*N. Y. Evening Post.*

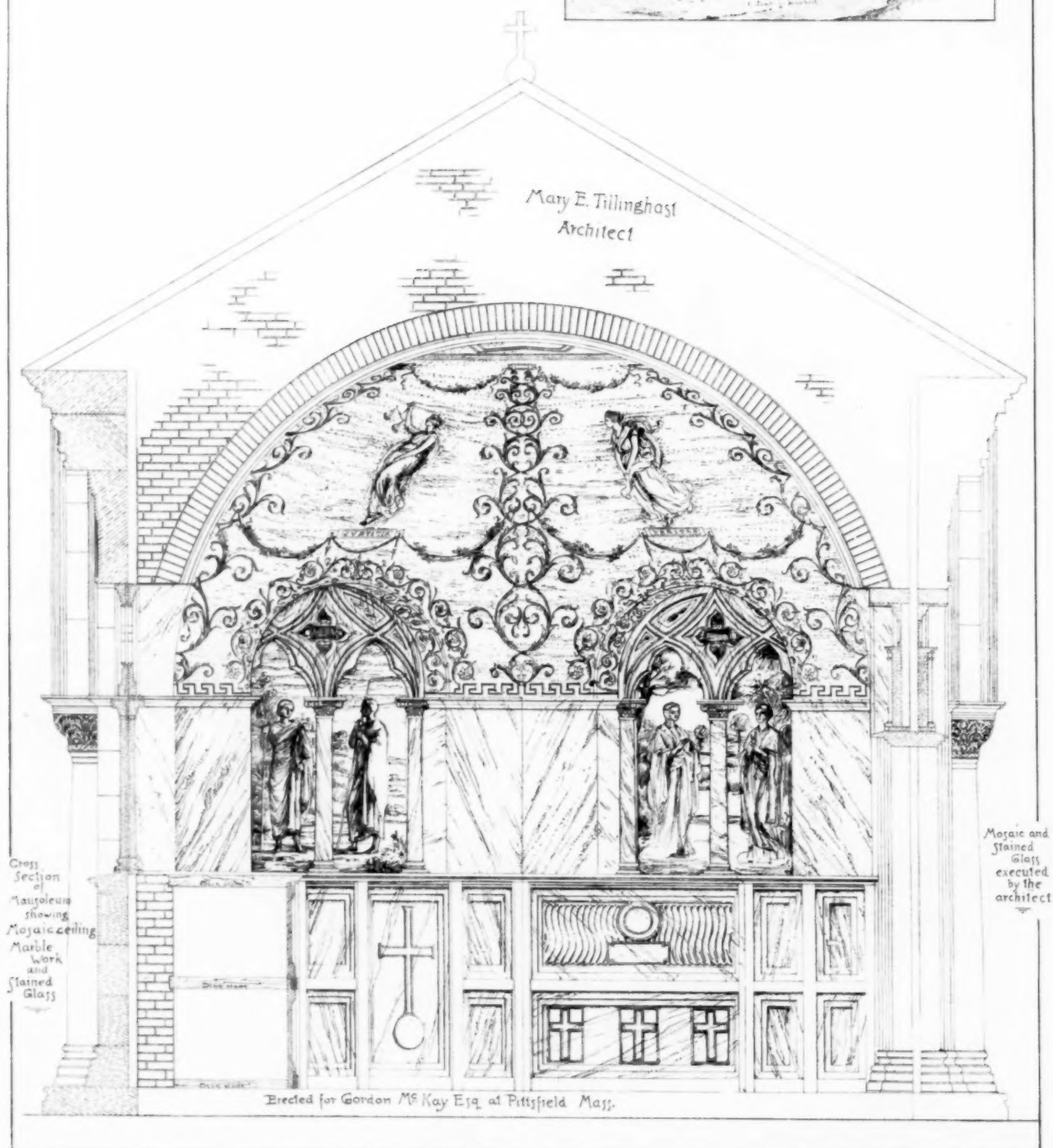
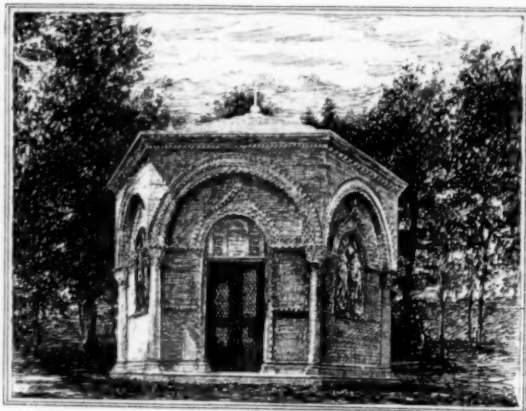
ORIGIN OF SPIRAL WIRES ON ELECTRIC FIXTURES.—More than one observing person not familiar with electrical apparatus has had his curiosity aroused by noticing that in a great many pieces of apparatus when installed the wire immediately next to the appliance has been twisted in a neat coil not unlike that of a spring. This curious feature is seen in the wire leading to telephones, push-buttons, call-bells, and the like, while it may be also observed sometimes in the heavier wires, which are attached to the "hanger-boards" of arc lamps. As a matter of fact, these coils are not an essential element in any mechanism, though many believe them to be so; but are simply a symmetrical way of disposing of the slack wire that had been allowed in measuring the distance. So easily do we become fixed in our habits, that this transitional arrangement may now be noticed in a great many places where there is not the slightest necessity for it, and the most striking example is that furnished by a large electric-lighting plant in England, where the huge copper rods leading from the dynamos to the switch-board have actually been tortured into corkscrew resemblance to the involutions attached to the smaller and cruder devices of bygone years. This is another instance of English conservatism, which is still manifested, as Herbert Spencer has noted, in the retention of the lines of the old stage-coach in their most modern railway cars.—*Philadelphia Press.*

CEILING PAINTINGS DECLARED TO BE FIXTURES.—Judge McAdam in the Superior Court to-day, filed a decision continuing until trial, a preliminary injunction obtained by Isaac Cahn which restrained Mary L. Hewsey from removing "five certain ceilings consisting of hand-painted canvas firmly cemented and affixed to the building," from the premises, No 1045 Fifth Avenue. Last February the plaintiff conveyed the premises to the defendant for \$80,000. The property was previously mortgaged for \$40,000 and Cahn took from Mrs. Hewsey another mortgage for \$20,000. The ceiling paintings were in the house at the time of the conveyance and enhanced its value. They were not mentioned in the inventory of the furnishings of the house which Mrs. Hewsey also purchased. Recently she has advertised the paintings for sale among her household effects. In the opinion filed by Judge McAdam he held that the failure to include the paintings in the inventory of furniture showed that both grantor and grantee regarded them as fixtures attached to the realty, and that they must therefore be regarded as fixtures as between mortgagor and mortgagee. He held also, as well established, that injunction will lie against a mortgagor in possession to stay waste. He quoted at length the decision of Lord Romilly in *D'Eyntort vs. Gregory*, which held that paintings affixed to the wall of a dwelling are fixtures.—*N. Y. Evening Post.*

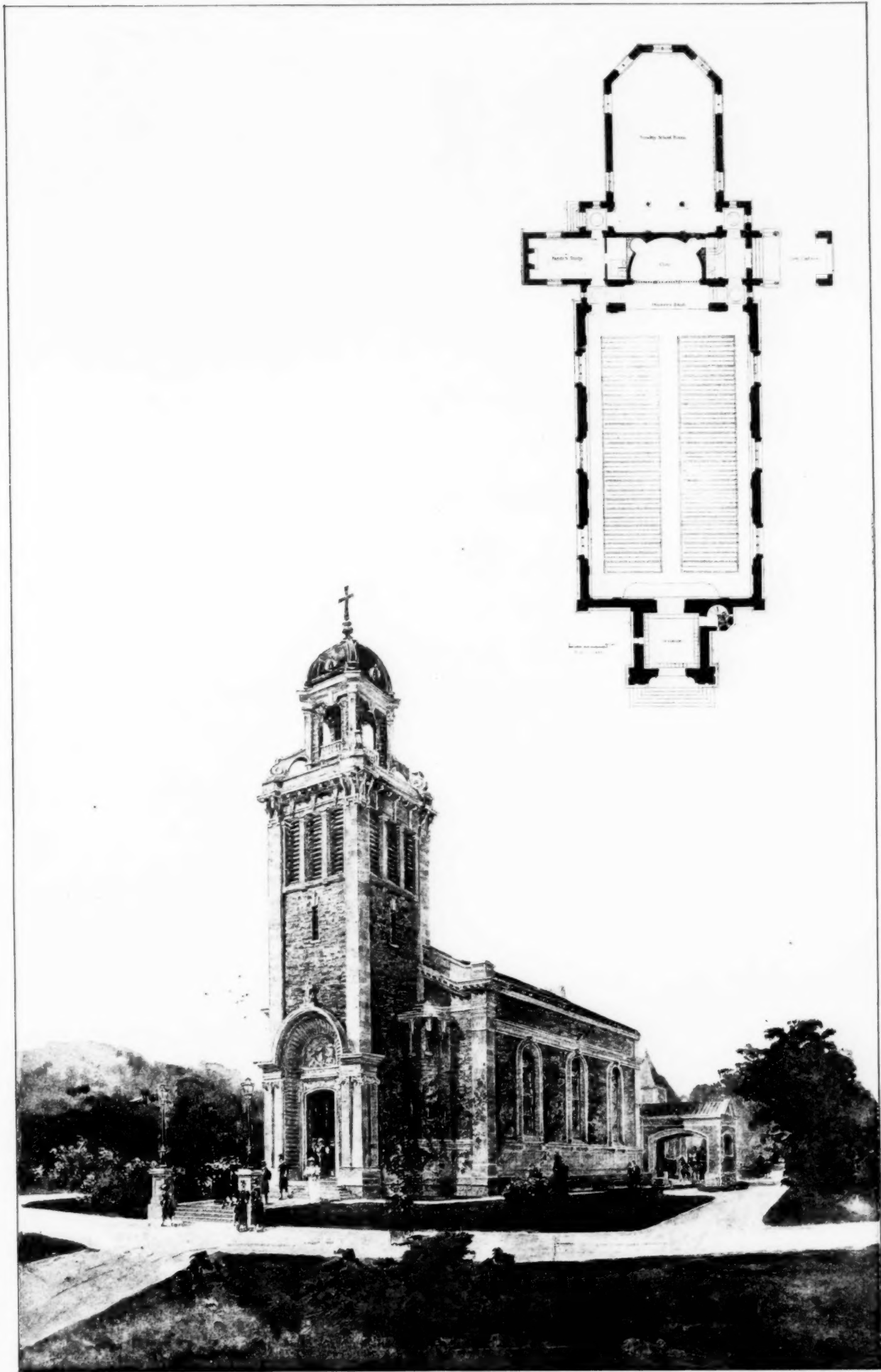
IRON RAILWAY TUNNEL IN SCOTLAND.—The completion of one of the largest railway iron tunnels in Great Britain, at Glasgow—the Mound North tunnel on the North British line—is noted in *Transport*. The mound is a large artificial earthen embankment made across the bed of the old Nor' lock, and carrying the National Gallery and one of the main thoroughfares between the old and new towns, and the work has, therefore, had to be carried out with great care. At the beginning of the tunnelling operations a slight "movement" took place at the National Gallery, and cracking was observable here and there throughout the building, but nothing very serious occurred. The new tunnel is in effect a huge cast-iron tube, 17 feet six inches in diameter, composed of segments 4 feet long by eighteen inches in breadth, bolted together through flanges 7 inches deep and 1 7/8 inch thick. In cutting the tunnel the shield system was adopted; the average rate of progress per day being one foot nine inches. The appliances used in the construction of this work will now be removed to the south side of the existing tunnel, where a second single-line tunnel, in connection with the Waverly Station improvements, is also being pierced.

CURIOUS MEMORIALS IN ENGLAND OF AMERICA'S TRIUMPHS.—John Fretwell says in the *Providence Journal*: During a late visit to my native land I was the guest of the owner of Parlington Hall, in Yorkshire. Driving through the park we passed under a triumphal arch which bore the inscription, "Liberty in North America triumphant, 1783," and on asking its origin, my host replied:—"My wife's grandfather, a member of the Whig party, erected the arch to commemorate the victory of George Washington over the troops of King George at Yorktown." Another time, when lecturing at Rotherham, in Yorkshire, I passed an inn called the Boston Castle, near the entrance to the park, and asking the reason for the strange name, was told that Lord Effingham, as the former proprietor of the estate, was so delighted when he heard of the throwing of the tea-chests into Boston harbor that he christened his hunting-lodge, now in the park, the "Boston Castle" and so arose the name of the inn. While English literature contains many memorials of the sympathy of the best class of Englishmen with the cause of the American Colonies, there are, I believe, no edifices of this kind outside of Yorkshire.

BUCKINGHAM PALACE A SCHOOL SITE!—At a recent meeting of the London School Board the question of a site for a school near the Victoria Station was discussed. A site of 18,000 ft. was suggested, but General Sim insisted that it was not large enough. The Rev. Stewart Headlam then proposed that Buckingham Palace would make an excellent Board school. Seeing that it is never occupied, and that it is State property, it ought really to be turned to some useful account.—*Reynolds's Newspaper.*



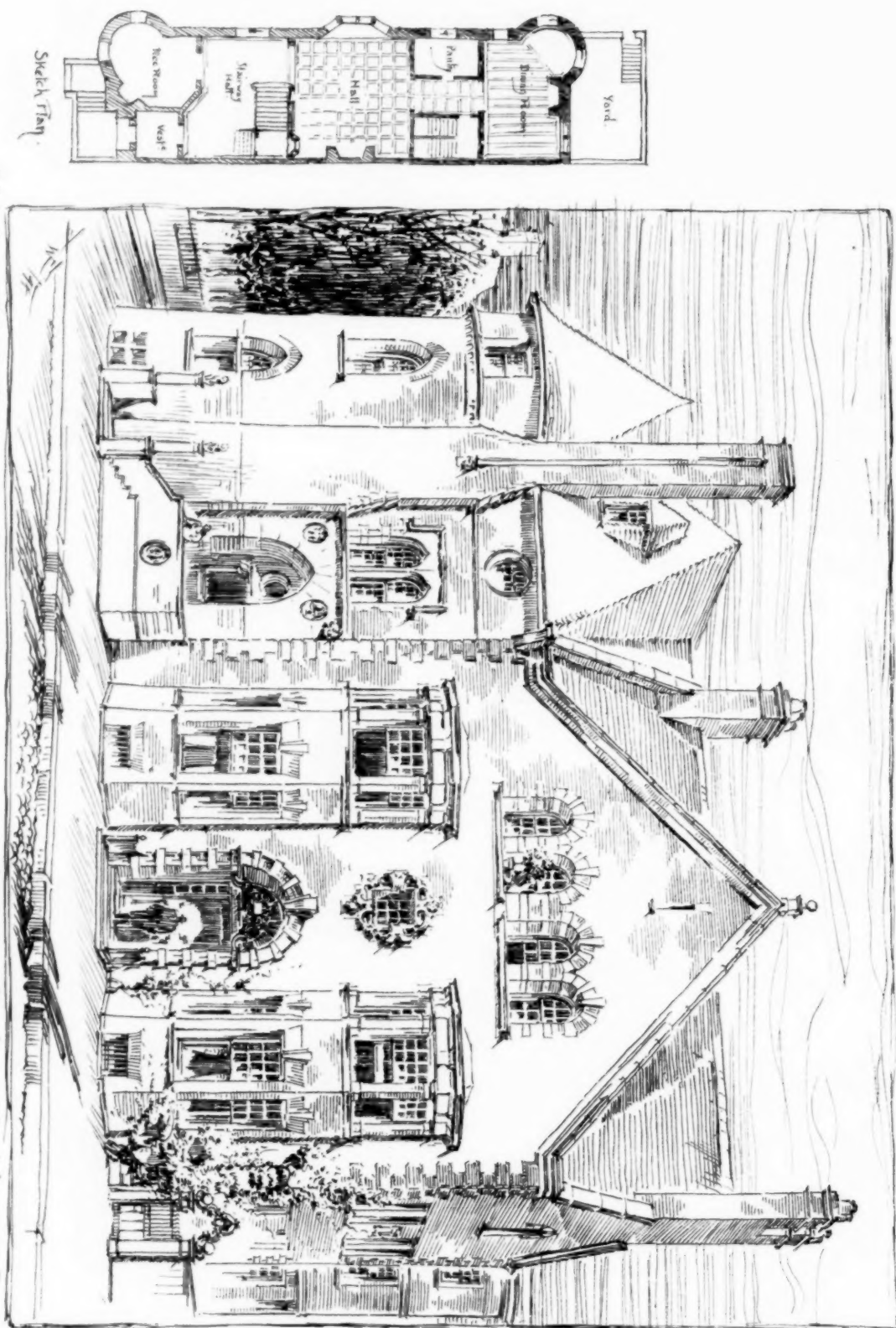
REPRODUCED FROM THE AMERICAN ARCHITECT & BUILDING NEWS CO.



HELIO TYPE PRINTING BOSTON

THE SHEPARD MEMORIAL CHURCH, SCARBOROUGH HEIGHTS, N. Y.

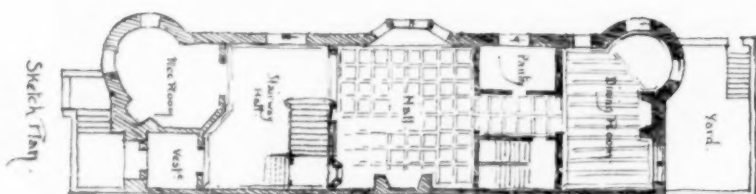
HAYDEL & SHEPARD, Architects.



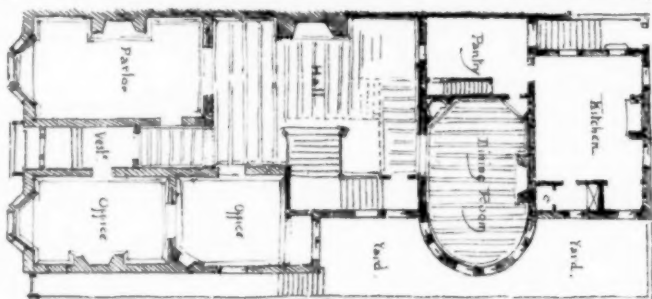
House for Mr C. B. Moore 1321 Locust St

WILSON EYRE JR ARCHITECT, PHILA.

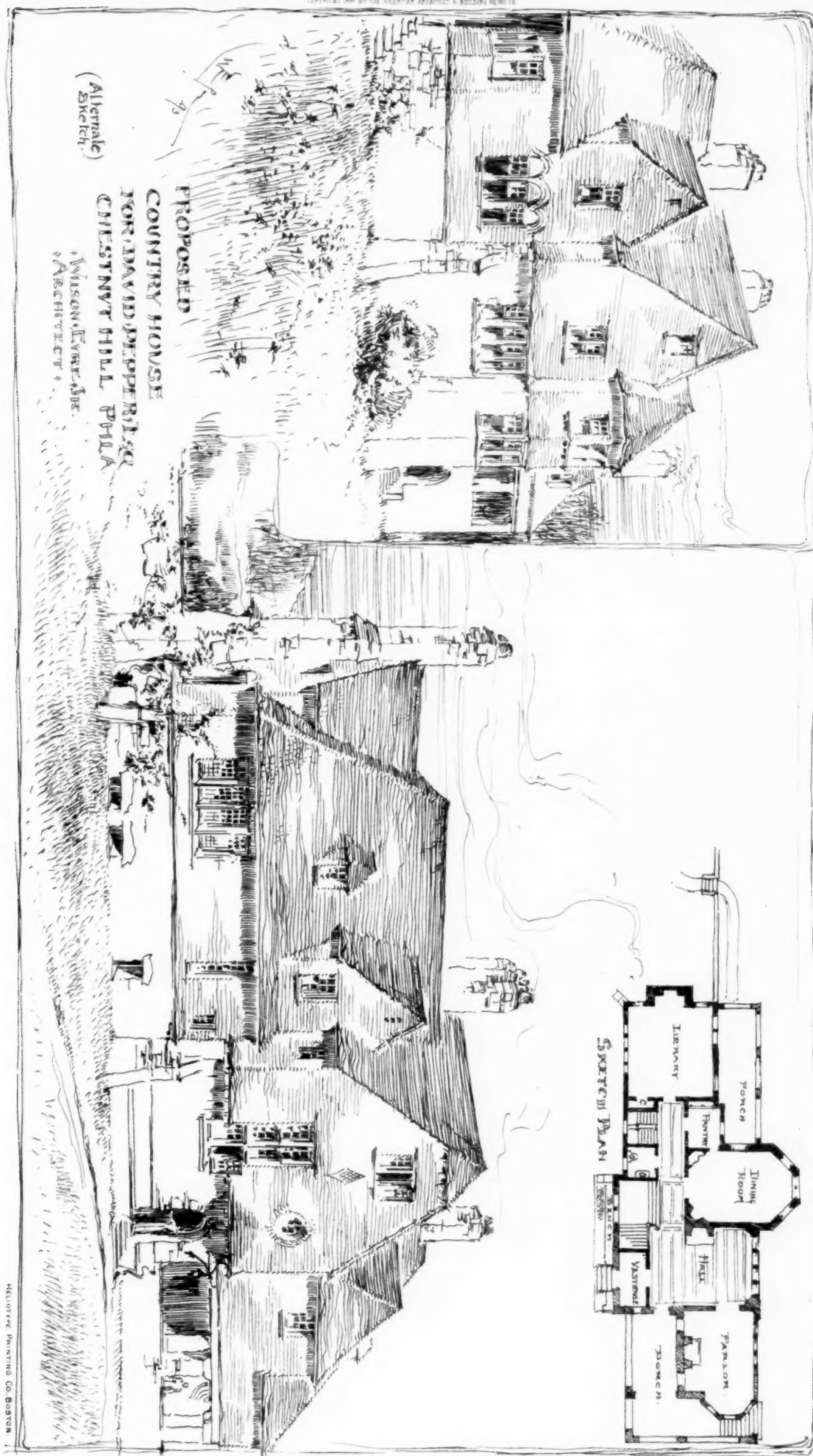
House for Dr Joseph Leidy 1319 Locust St.



Sketch Plan.

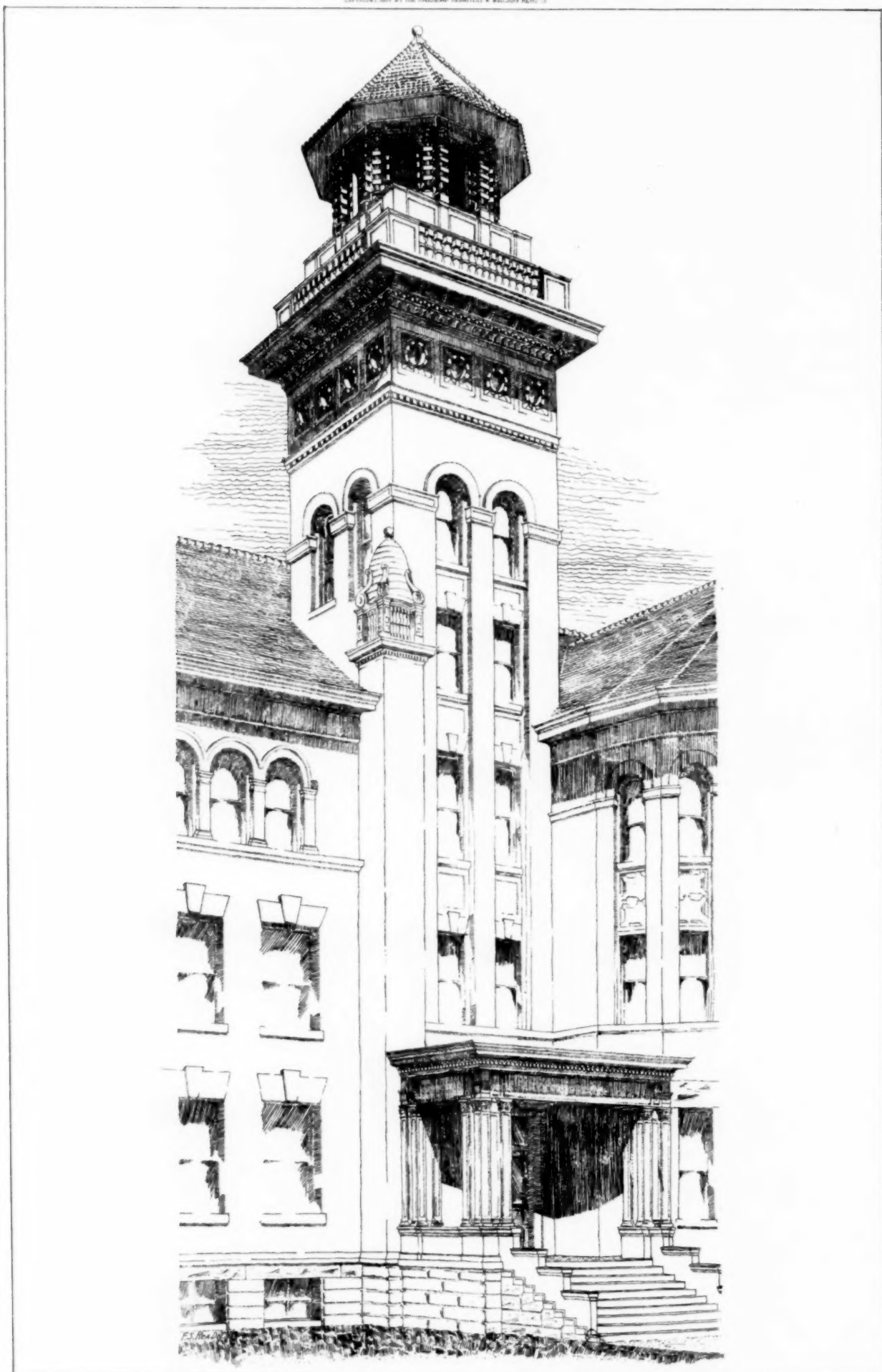


Sketch Plan.



(Alternative
Sketch)

PROPOSED
COUNTRY HOUSE
FOR DAVID PEPPER, JR.
CHESTNUT HILL, PHILA.
WILSON, LUTHER, JR.
ARCHITECT.



❖ TOWER OF CENTRAL COLLEGE ❖ FAYETTE MO. ❖

❖ W. C. ROOT ARCHT ❖ KANSAS CITY MO. ❖

ST. LOUIS WOMAN'S BUILDING.
WALBERT SWASEY ARCHITECT.

