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No. 1.

“HILLAIR,” THE COUNTRY HOUSE OF PAUL GILBERT THEBAUD, ESQ., WHITE PLAINS, N. Y.



IN selecting the fine site on high land overlooking a rolling country on the south, with an extended view of Long Island Sound, four miles distant, the owner of “Hillair” has afforded the architects an excellent opportunity for architectural effect. It is to be regretted that our American life requires the completion of a country home within two or three years at most, and, therefore, in this article the views produced are of the building itself rather than of the whole property not yet entirely laid out. The owner has spared no expense in carrying the work through, but a homogeneous whole cannot be expected within several years, because the planting of trees and shrubs, and all that pertains to the beauty of a finished country place takes time and much thought to perfect.

The house itself, facing south, is seen a distance of several miles away, and is a fairly true example of Georgian architecture. The plan being symmetrical, a necessity in this style, it has the usual porch, but on the rear or south front, and not at the entrance which is on the north. The material from which “Hillair” is built is Indiana limestone of the gray variety—the surface of the walls being of coursed ashlar. The original design shows a house of brick, with the same limestone trim, cornice and columns as now exist. The change to stone enhances the general good appearance, and is in fact more in keeping with the design. The semi-hexagonal “porte-cochère” on the north is a reasonable departure from the Georgian period, and is distinctly eclectic in character, but entirely reasonable in its purpose and form. The classical character of the period is well exhibited in the entablature and columns of the Ionic order, on every side of the house. The owner insisted on a veranda surrounding the entire plan. To compass this result, and adhere to the style, portions of the promenade

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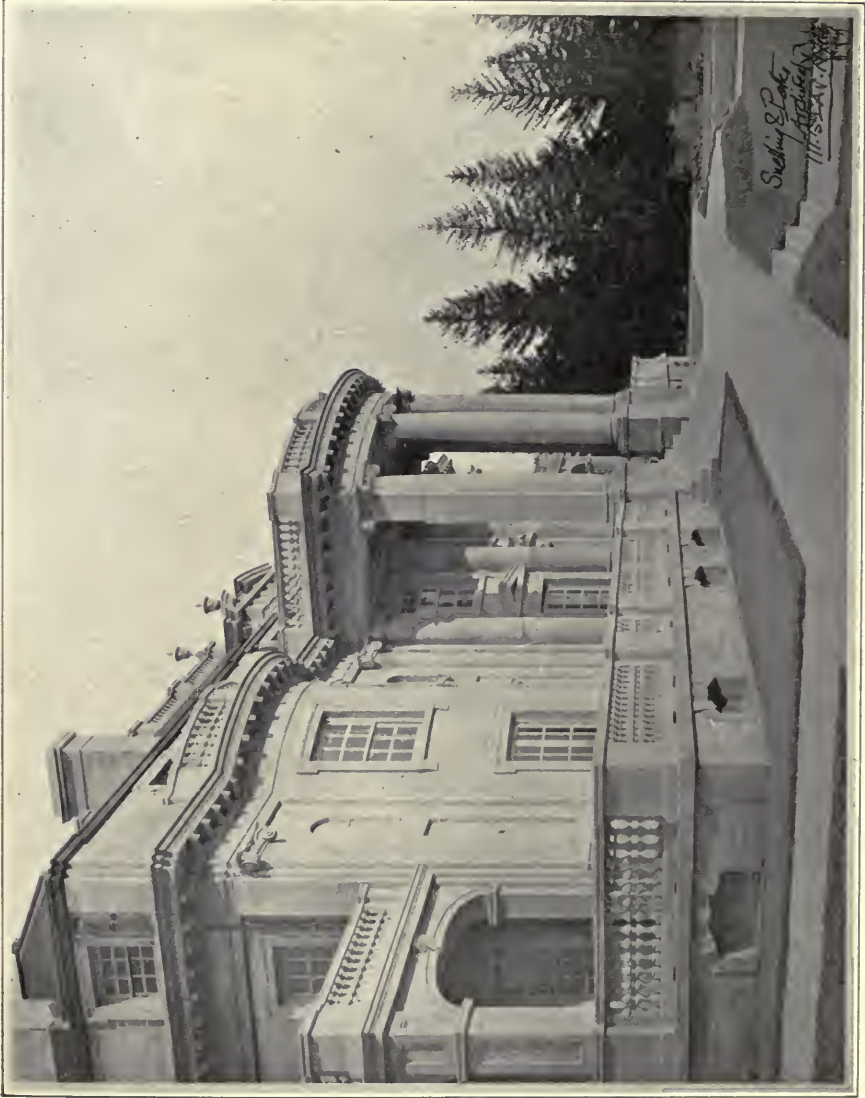
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Snelling & Potter Architects

White Plains, N. Y. "HILLAIR." The Residence of Paul Gilbert Thebaud, Esq. Snelling & Potter, Architects.



White Plains, N. Y. "HILLAIR." The Residence of Paul Gilbert Thebaud, Esq. Snelling & Potter, Architects.



THE VERANDA OF "HILLAIR."

The Residence of Paul Gilbert Thebaud, Esq.

White Plains, N. Y.

Snelling & Potter, Architects.

were left uncovered, but bounded by balustrades, making an appearance on north and south very similar to a terrace though distinctly an integral part of the building, as evidenced by the basement windows beneath the balustrade. The main porch mentioned is two stories high with a Guastavino arched ceiling. On either end, east and west, are the true verandas consisting of colonnade, and vaulted overhead. The surface of the veranda floor is cement tile 8x8 inches square of a light red color, and beautifully smooth, though of extreme difficulty to lay owing to the brittleness of the material. The main roof of the house is covered with a light red slate.

Lighting at the front entrance we have to ascend three granite steps to reach the main threshold. Here we face the large entrance doorway spanned by an elliptical arch of ten feet. The main arch is flanked by two narrow arches, and all three are filled in front of the plate glass openings with a severe and carefully designed grille work or heavy bronze metal, the doors themselves weighing perhaps 800 pounds apiece. Coming through the threshold we enter the main vestibule, floored in green veined Vermont marble, with the wall covered to the ceiling with Pavonazza marble. From the vestibule we pass through a glazed door to the staircase hall. This is the most elaborate piece of design in the house due to the character of the staircase, and the supporting members beneath the gallery. Above, at the third floor level, is to be seen a true elliptical dome light of late English Renaissance design.

The south hall is presumably a living-room rather than hall, opening with three pairs of folding sash on the main south porch. It is severe in detail, and is between the dining-room on the left and the library to the right, the former paneled in mahogany nearly to the ceiling of the later Renaissance period. The library is Empire and joins the south hall through glazed doors beneath two barrel vaults on either side of the hall chimney, giving an extended vista from the dining-room east wall to the west wall of library, 90 feet in length.

No bookshelves are adorned with more beautiful bindings, and few libraries of the same size can boast of a better selection of books than those of "Hillair." From the library we pass into the salon. Stepping back from the period of the Empire to the time of Louis XV., this room was designed to accommodate the furniture, heirlooms of the family. But like many such inheritances, while the typical furniture is beautiful and true to this epoch, there are pieces either too modern to belong with the better pieces, or else are altogether out of keeping. The room is paneled to the ceiling, and though too low for the best work in this lofty style, is faithfully carried through in detail. Beyond the salon we have



White Plains, N. Y.

THE STAIRCASE HALL OF "HILLLAIR."
The Residence of Paul Gilbert Thebaud, Esq.

Snelling & Potter, Architects.

the billiard-room, a dark stained teak wood room, the trim and wainscoting being of Indian carved members.

Passing through the vestibule again we enter to the east the owner's den. This is purely a man's room—all sides are covered with gun cases to the ceiling, the design is late German Gothic, and of dark oak with a cut stone fireplace on a large scale. A large butler's pantry is between the dining-room and den, but a space for a huge silver safe and a small toilet intervenes between the den and the pantry. A feature in the pantry is the electrical plate-warmer.

All the remaining service for the household is under the first floor. The kitchen is beneath the pantry, the servant's hall beneath the dining-room, the laundry beneath the den, the ceilings of which being several feet above grade, give good opportunity for light and air. The second floor contains all the owner's and guests' bedrooms, the boudoir and the dressing-rooms. To each bedroom is attached a bathroom. The owner's rooms open on a supplementary corridor which gives in turn on to the staircase hall gallery. All of the second floor rooms may be reached by domestics without crossing the gallery.

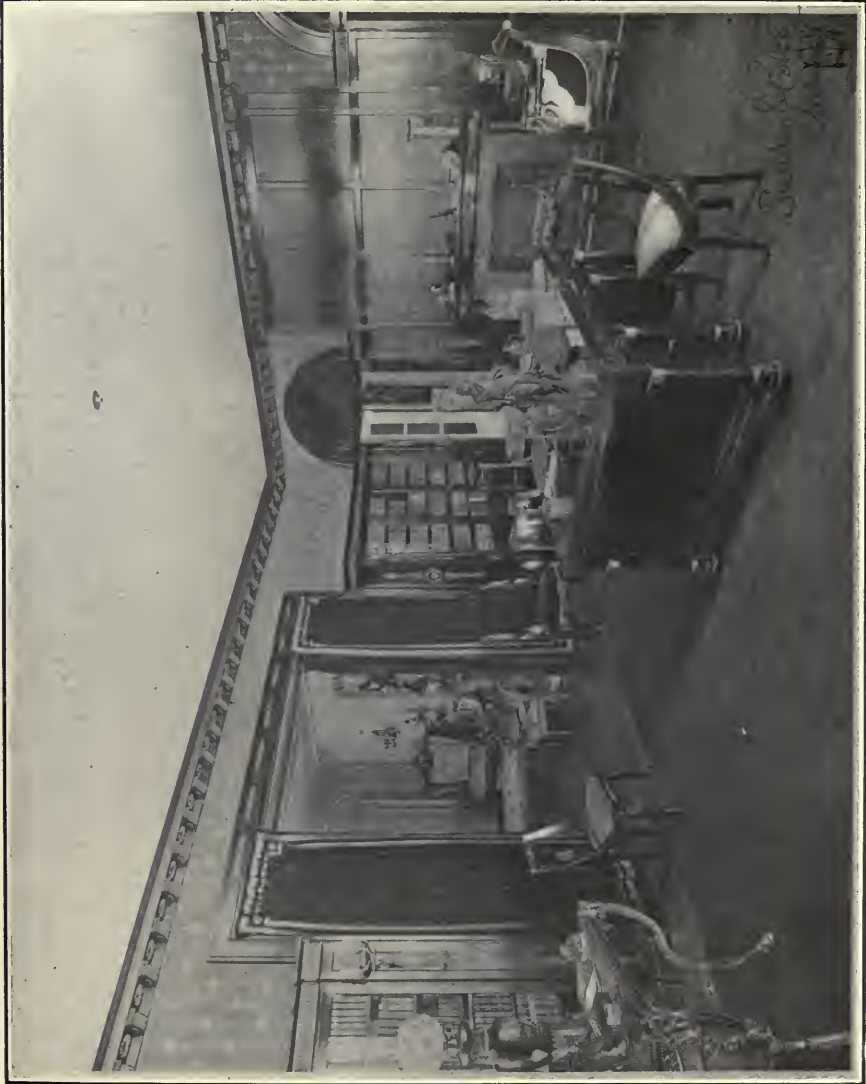
The other rooms on the second floor are simply treated with a dado, and papered with English papers, the floor being covered with handsome rugs. In fact, the rugs through the house owned and purchased by the owner are of interest. The floors throughout are solid oak floors, herringboned pattern, highly polished. Descending to the basement we find a very long kitchen, tiled entirely from floor to ceiling in white with gray and blue pattern tile on the floors. On the north of the kitchen is the laundry, the largest room in the house, which is paneled and floored in one continuous piece of Jenner's flooring, salmon colored.

On the south of the kitchen is the passageway adjoining the servants' hall leading to one of the outer doors and a servants' bath. The chef's room is again beyond and adjoins the servants' hall. The boiler room is in the centre of the house beneath the staircase hall. To the west of the boiler room are the cellars, store-rooms, valet's room, and the like.

The third floor is reached by the secondary flight of stairs which extends in four runs from the basement to the roof. The roof deck is surrounded by a balustrade, and from this point a far more extended and beautiful view of the surrounding country is afforded than from any place within ten miles. On the third floor we find a play room for the children surrounding the dome light, which is in turn surrounded by the corridor, from which corridor opens the sixteen rooms for domestics. In addition to these the two bath-rooms, a large cedar room and a trunk room. Above the third



White Plains, N. Y. THE HALL OF "HILLLAIR." The Residence of Paul Gilbert Thebaud, Esq. Snelling & Potter, Architects.



THE LIBRARY OF "HILLAIR."
The Residence of Paul Gilbert Thebaud, Esq. Snelling & Potter, Architects.
White Plains, N. Y.

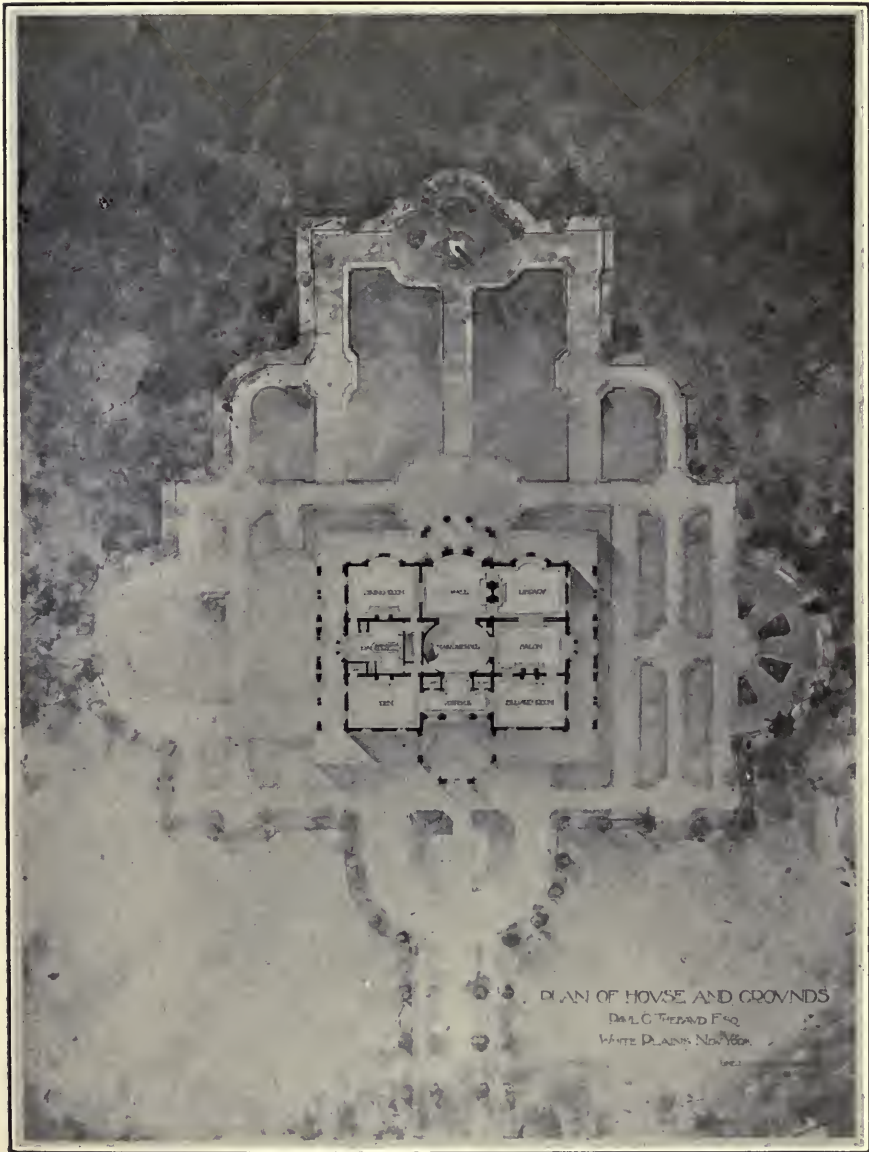


THE DINING-ROOM AND THE SALON OF "HILLAIR."

The Residence of Paul Gilbert Thebaud, Esq.

White Plains, N. Y.

Snelling & Potter, Architects.



THE PLAN OF "HILLAIR."

The Residence of Paul Gilbert Thebaud, Esq.

White Plains, N. Y.

Snelling & Potter, Architects.

floor is a mezzanine on which floor are steel tanks carrying the water supply of the house, of some 700 gallons capacity each. These tanks are carried on steel girders which are supported on four steel columns of forty feet in height independent of the general construction of the house.

Descending to the second floor again you find the boudoir is on the southwest corner designed in Louis XVI. style, and filled with appropriate furniture, the walls lined with silk in panels. Next adjoining the boudoir is the largest and most important bedroom in the house, and this is also done in the same style, the doors in both rooms being cut in the panels, and are blind or "invisible." The electric fixtures should not be overlooked as they are elaborate and well executed, designed to match the style of the various rooms.

William Heming.



MEMORIAL TABLET TO THE REV. RICHARD SALTER STORRS.
Executed by Henry Bonnard Co.

RECONSTRUCTED BUSINESS HOUSE FRONTS IN NEW YORK.



IN the Borough of Manhattan there are annually more buildings reconstructed for various purposes than there are new buildings built, and as a large percentage of these are altered for business purposes, much benefit would accrue to the appearance of the city from well directed thought and study spent on the building that is to be converted from a use for which it was originally designed to one that changed circumstances require. Yet in the great majority of cases the solution of the alteration problem is left to a builder, who approaches it solely from a utilitarian standpoint, and as a consequence, our most prominent thoroughfares, particularly those that have been residential and are now used for business, are disfigured in a way that cannot but be displeasing to anyone who has a pride in the city or love of the beautiful. As the business sections are continually changing, we are often confronted with the apparition of what was an orderly and well designed dwelling house, now supported on stilts in the form of iron columns, and these surmounted with a galvanized cornice, the upper part of the building being apparently held up by the plate glass show windows, the object being to get, first, as cheap an alteration as possible, and secondly, to secure a maximum of income by getting as much show window as the law will allow.

Take Fifth avenue for example and note in how few of the buildings on this, probably the most famous thoroughfare of its kind in the United States, has the slightest effort been made to add to the architectural beauty of the avenue in the change from the old, and in some cases dignified and well proportioned dwellings, to the hybrid buildings that are called "business premises."

It is conceded that architecture has a place in modern civilization, and that a city, well laid out with broad avenues and parks, good landscape architecture and pleasing buildings has a distinct advantage over one that is lacking in these advantages, for visitors are attracted, and the moral and artistic feeling of the people is quickened by harmonious surroundings. Take Paris for instance; note the good taste and air of refinement evidenced everywhere in this city by its attractive buildings. How much it owes to its architects and artisans in this respect! Millions of dollars are brought each year as a tribute to those who have helped to make the city a constant delight and pleasure to the tourist. This is also true of many other cities on the continent, and one of the pleasures

of foreign travel is to explore out of way streets and avenues, and find the most charming old shops and buildings which have had thought expended in the design of the façade, and in the use of materials, both in color and texture, and which express the life and taste of the inhabitants. Often a piece of well-designed wrought iron in the shape of a bracket holding a sign will arrest attention and pave the way for new discoveries.

But to come back to our own city. It can be shown that well-designed buildings with architectural fronts, pay better than slovenly altered makeshifts and cost very little more; for the money spent in shoring and underpinning the upper portion of the building will go a long way in the construction of a new front, which need not be expensive to be effective. Another fact that is becoming known to those who rent buildings is that a store front which has some pretensions to style attracts a more desirable class of tenants, will bring a larger rent and is less frequently vacant than does a front that puts up an ugly and mean appearance.

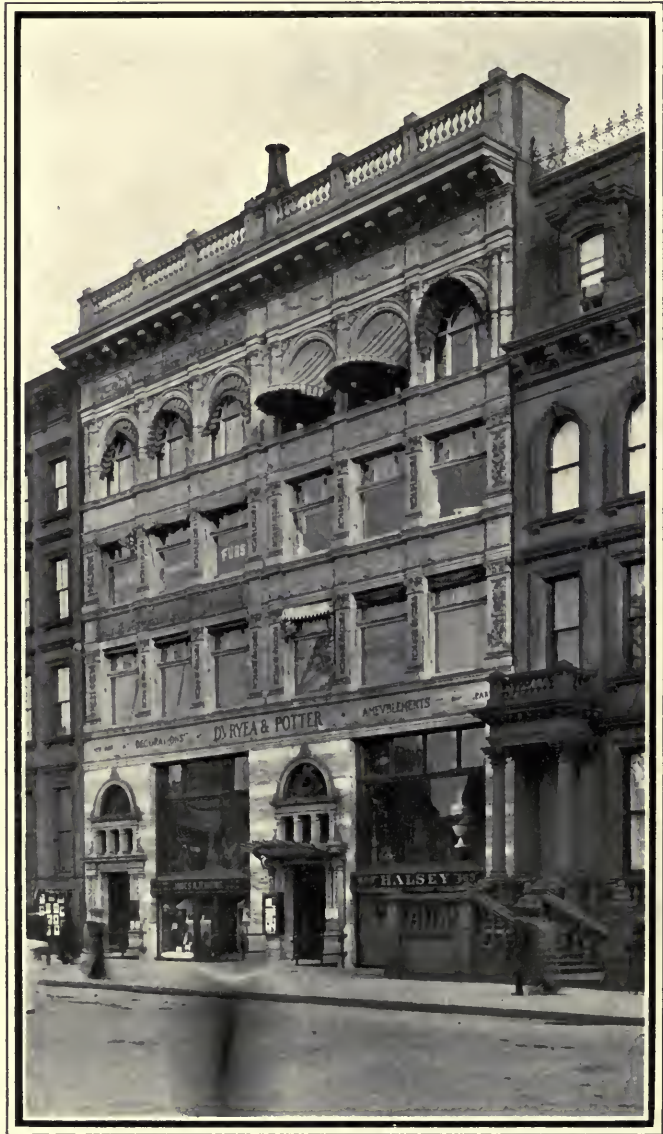
The accompanying photographs explain in a forcible manner how the general appearance of the city can be enhanced or marred by the aspect of the buildings on a business thoroughfare.

A very well designed front is that at No. 382 Fifth avenue. This is of brown stone and a brownish red brick with a recessed joint and laid in Flemish bond, giving all the value of a fabric, and this characteristic when used with the so-called Harvard brick, is to the writer its chief charm; for if properly handled it is like a thread in a rug and may be "woven" into an architectural design with infinite variety, and by the use of various jointings of header and stretcher, i. e., the length and width of the brick, patterns may be worked out that will repay careful study. In the above building, while no effort has been made to treat the brick other than a soft color note in the composition, the whole is well proportioned, dignified and full of interest. Not a little of the effect is contributed by the carefully designed wrought iron balcony on the third story, and the effective doorway and marquise, the carving being very well conceived and executed, suggesting Italian Renaissance designs. The treatment of the main cornice is also worthy of note, as it is received by bracketted projections of brick, and the mouldings returned thereon, making a happy solution of this division of the facade, which very often has been the undoing of an otherwise successful front.

The building at Nos. 463-467 Fifth avenue is a clever design in the style of Francis 1st; the window openings are large, and the floors have evidently the same levels as the dwellings adjoining on the north, and perhaps illustrates better than any other example how much can be accomplished in the remodeling for business



No. 382 FIFTH AVENUE, NEW YORK CITY.



Nos. 463-7 FIFTH AVENUE, NEW YORK CITY.



No. 259 FIFTH AVENUE, NEW YORK CITY.

purposes. The show windows are effective, and do not project beyond the building line, for it is difficult to maintain the appearance of good construction with projecting show windows. The ornamental detail is of terra cotta of cream color, with a Roman face brick of a slightly deeper tint.

It will be noticed that decorating firms have been among the first to realize and take advantage of the stimulating influence of refined buildings and good surroundings, and while this is particularly true of their business, it is also true of any that seeks to attract the appreciative buyer.

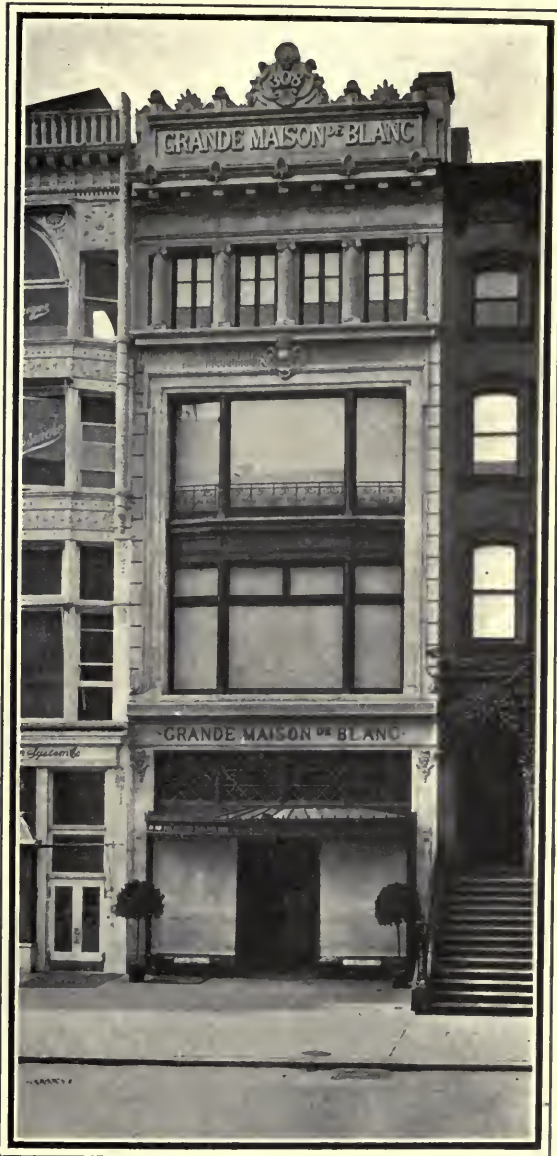
An entirely different front is that at No. 259 Fifth avenue. In this case the terra cotta serves the same purpose as a good frame does to a picture, and shows that it is not necessary to have iron columns on the lower stories to secure good window. It might also be well to note in passing, the advantages of terra cotta for ornament; for after the model is made, the design may be repeated many times, thereby greatly reducing the cost over a similar effect secured in carved stone; and, if the terra cotta be well designed and modeled, the effect is equal to that in stone, and it is also much more durable.

No. 308 Fifth avenue is a dignified composition on classical lines, and at the same time has large show windows, the Ionic columns on the top serving as divisions for the windows and carrying out the cornice treatment. The little carving used is very effectively placed and well designed.

Of course, these are cases where it is not necessary to remove the entire front to put in stores in the lower stories, and where this is done, it is well to endeavor to make in the lower portion some sort of harmony and likeness with the upper portion. The building at No. 589 Fifth avenue is a case in point, and shows what may be done with a comparatively narrow front; and while this building is flanked on both sides by dwellings, it does not obtrude itself, but attracts attention by its quiet dignity.

The building at No. 53 West 33d street is an alteration with a new front of stone, terra cotta and brick, all the old floor levels being maintained, and while at present a portion of the second and third floors are used for apartments, the whole may be converted into offices with little change.

The photographs on page 23 show several fronts directly opposite the Waldorf-Astoria and they, together with those shown on page 24 are on Fifth avenue between 38th and 39th streets may be taken as examples of the average business alterations. It will be noticed that where the original brownstone steps have not been retained the steps and railing are of iron and glass of the cheapest pattern; and in some cases the brownstone, in the



No. 308 FIFTH AVENUE, NEW YORK CITY.



No. 589 FIFTH AVENUE, NEW YORK CITY.



No. 53 WEST 33D STREET, NEW YORK CITY.
Alfred H. Taylor, Architect.



No. 5 WEST 31ST STREET, NEW YORK CITY.

Israels & Harder, Architects.



UNRECONSTRUCTED HOUSE-FRONTS.

Between 33d and 34th Streets, New York City.



UNRECONSTRUCTED HOUSE-FRONTS.

Fifth Avenue, between 38th and 39th Streets, New York City.

upper portion of the building, has been painted white. Many of these nondescripts have existed for more than ten years, and unfortunately their end is not yet.

The absence of all rule in the placing of signs helps in general look of confusion, the whole effect being rambling and disjointed, for a sign need not disfigure a front, if it is incorporated in the design, and the letters may be made to add a decorative value to the general composition.

The last illustration is a photograph of several shops on the river Dyle, at Malines, Belgium. Note the effective sky-line and grouping, the use of the tile in the roof, and the general air of balance, the simplicity and the value of plain surface and window opening, the buildings having contrast, with harmony.

It would not have been a difficult matter to have used some such "motif" in the remodeling that is now going on in 30th, 31st or 32d streets between Fifth and Sixth avenues, and the effect of such a group of business buildings would be ever widening in its influence. The evident attempt in this direction made in the alterations of the former dwellings on 33d street between Fifth and Sixth avenues, seems to be the best in result, thus far attained in the city,

yet the plentiful use of galvanized iron instead of brick, terra cotta or stone has destroyed the desired effect.

The city may be redeemed in a large measure if the right kind of effort is used in this important reconstruction which is now going on in many parts of the city. May not an effort in the direction of improving the streets with good business buildings, at least with fronts that will not be offensive, result in the refutation of the charge so often made that New York stands for pure commercialism?

Many architects have abandoned all hope of making the so-called skyscrapers anything but utilitarian, as their height destroys proportion, which is the underlying principle of architecture. Visitors may be attracted to the city by monstrosities such as the so-called "Flat Iron Building," but the buildings that are to add to the refinement of the metropolis are those whose height does not transgress well-established laws. Inasmuch as the number of monumental edifices, such as court houses, city halls, and even of public libraries, is somewhat limited, the buildings whose influence will be most felt, are those that are part of every day business life, and much good may be done by stimulating interest in their study and design.

Alfred H. Taylor.



ON THE RIVER DYLE—MALINES, BELGIUM.



DIRECTORY BOARD—CORN EXCHANGE BANK.
Executed by the Hecla Iron Works. Robertson & Potter, Architects.

MODERN USE OF BRONZE AND IRON DECORATIONS.

II.*



T was in Italy that the decoration of houses with iron and bronze revived after the torpor that involved most of the arts during the middle ages, prior to the Crusades. Europe turned again to the Levant in order to obtain a fresh impulse. And from Italy the taste for decorative metal work spread to France and southern Germany, showing itself in the signboards, gateways and enclosures, the tombs erected in the cathedral and church, gradually affecting Holland and England. In the seventeenth century the Dutch and French brought it to North America, and in a less degree the Spanish to Central and South America. Iron fire-dogs, grilles, fire-backs, stoves of cast iron elaborately decorated with relief and inscription, candlesticks and rings to hold pitchpine torches are some of the objects the colonists forged or cast for themselves or imported from Europe, objects far removed in their primitive bareness from the highly artistic chains, lanterns, link-rings, door-knockers, railings, screens and fire-backs for hearths, with all sorts of decorative low reliefs on them, that were hammered or cast from iron in Italy, France and southern Germany. The reign of Louis XIV. saw France, more especially, excel in forged iron of great beauty for the interior and exterior of palaces and chateaux. The gateways at Hampden Court near London are examples of French work about 1690, while the tombs in Westminster Abbey show the skill of Italian, French and Flemish artists and artisans of earlier date. Although iron and the coal to melt iron are found close together in England that country has not excelled hitherto in artistic ironwork, all her energies going into commercial lines to exploit the demand of the world for machinery, steamships, locomotives, rails and the thousand and one branches into which the iron industry has split. Apostles of the arts and crafts have arisen in England from time to time and proclaimed the gospel of individuality, only to be crushed by the machine-made article. Indeed, a fashion for amateur blacksmithing once rapidly invaded England and crossed the Atlantic, leaving its trace in the manual training of our public schools and establishing in the school for arts and crafts classes in the easier forms of work in iron.

A powerful lever to the encouragement of decorative forms executed in iron, bronze and brass has been the growth of wealth in the United States. Banks and insurance companies have erected buildings in our chief cities which call for railings, grilles, screens and other objects which lend themselves to artistic treatment. The elevator shafts in skyscrapers have been enclosed in ornamental

*For Part I. of this article see June Number.



EARLY NEW YORK IRON RAILING.

No. 304 Mulberry Street, New York City.



HAMMERED GRILL AND ESCUTCHEON.

Residence of W. W. Allis.

Executed by the C. Colnik Manufacturing Co.

A. C. Eschweiler, Architect.

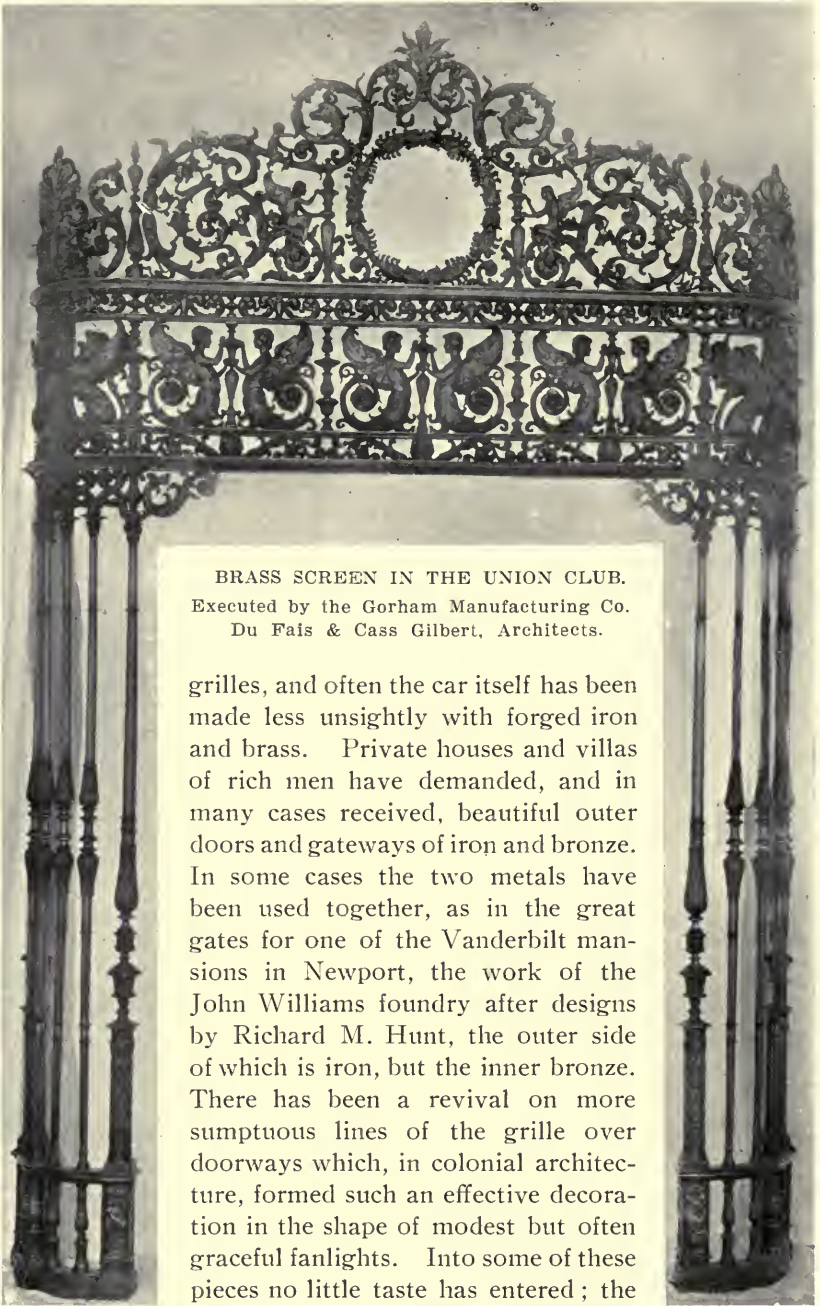


DOORWAY TO THE RESIDENCE OF CLAUS SPRECKELS, SAN FRANCISCO, CAL.
Executed by The Winslow Bros. Co.



BRONZE DOORS OF THE MARYLAND STATE BUILDING.
IN ANNAPOLIS, MD.

Executed by the W. S. Tyler Company. Baldwin & Pennington Architects.



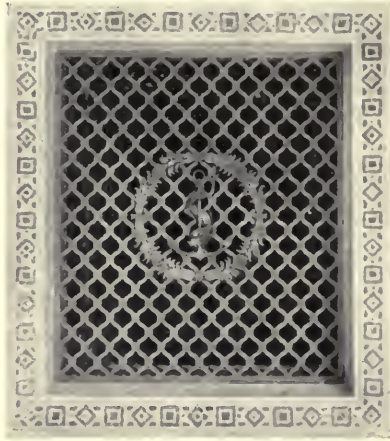
BRASS SCREEN IN THE UNION CLUB.
 Executed by the Gorham Manufacturing Co.
 Du Fais & Cass Gilbert, Architects.

grilles, and often the car itself has been made less unsightly with forged iron and brass. Private houses and villas of rich men have demanded, and in many cases received, beautiful outer doors and gateways of iron and bronze. In some cases the two metals have been used together, as in the great gates for one of the Vanderbilt mansions in Newport, the work of the John Williams foundry after designs by Richard M. Hunt, the outer side of which is iron, but the inner bronze. There has been a revival on more sumptuous lines of the grille over doorways which, in colonial architecture, formed such an effective decoration in the shape of modest but often graceful fanlights. Into some of these pieces no little taste has entered; the designs are often original and charming;

though it must be said that for the most part our architects are prone to save themselves the trouble of inventing new designs by taking over some motive ready to their hand in the treasure-trove

found in Italy and France among the old palazzi and chateaux. This is a trick of architects in all ages and almost all countries: it is defended on the plea that it is better to take something that is sure to be beautiful than run the risk of producing a novelty that will not bear the brunt of criticism in the long run. Plagiarism is the plague of all the arts, but in none is it practised with greater coolness and success than in architecture. It is evident that few clients exact originality in design. On the contrary, we see on every side an almost child-like eagerness to copy things in Europe, from a palace to a coal shovel. Only the exceptional person feels a pride in having about him things that are original and different from the objects that belong to other countries, other social conditions and other climes.

In decorative ironwork one of the leading forges, that of John



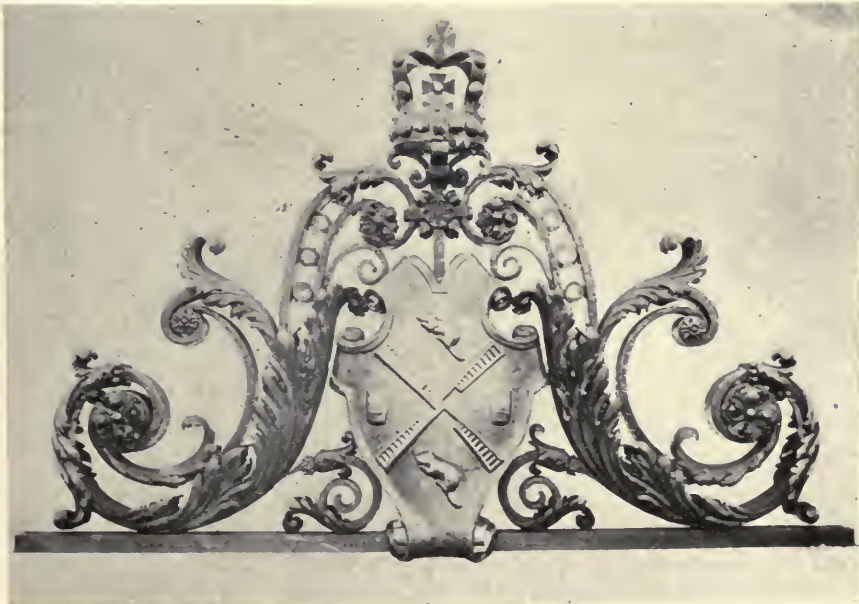
BRONZE GRILLE.

CHICAGO PUBLIC LIBRARY.

Executed by the

Chicago Ornamental Iron Works.

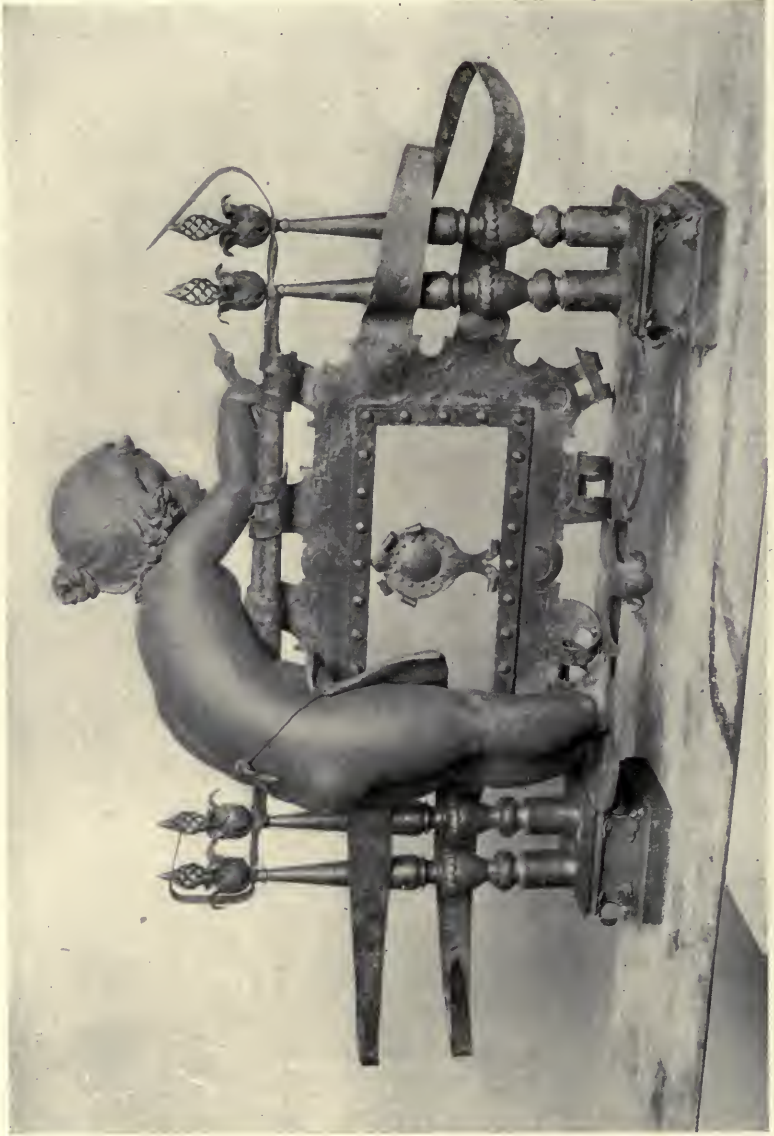
Shepley, Rutan & Coolidge, Architects.



ARCH AT COLUMBIA UNIVERSITY.

Executed by John Williams.

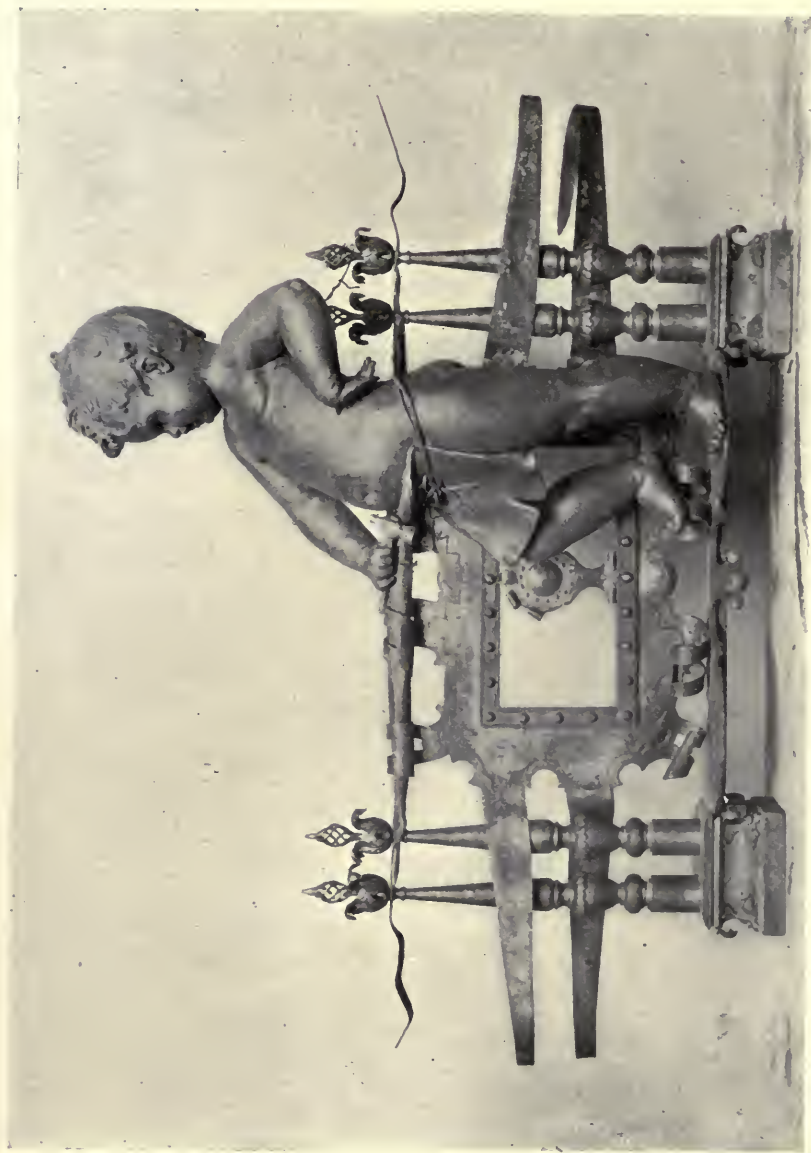
Designed by Lienau & Nash.



FIRE DOGS IN IRON AND BRONZE.

Executed by the Henry-Bonnard Co.

Designed by Henry Linder.



FIRE DOGS IN IRON AND BRONZE.

Executed by The Henry-Bonnaard Co.

Designed by Henry Lindner.



SHIP BELL FOR U. S. S. "CLEVELAND."*

Executed by the Henry-Bonnard Co.

Designed by Adolph Weinman.

Williams, of New York, has used designs by local artists for balconies, stair-ramps, balustrades, fanlights, brackets, screens and gates. In bronze the Henry-Bonnard Bronze Company has made exquisite doors for churches, casting them with many panels in relief and figures all at a single casting. dry that the charm Mr. Henry Linder shown in the illustration of children figures of children appropriate to we have again the iron and bronze, work of supporting the heat of the tact, bronze for the sculptor.

That iron is rare for statuary is by its greater resistance by its less resistance of moisture. The malleability of iron has not employed it for statuary a fault can be found in the heavy poses when the question a mold to its finest. The rusting of iron is not cured by application exposed to the vigilance is necessary a scar on the metal in the rust which paint. That is one of the old iron signs. Let one of these affairs be neglected destroys them in a cheap and effective discovered. An water does not es



ELECTRIC LAMP.

Executed by The Winslow Bros. Co.

stands better than forged iron and steel. But it is at least curious to note that the bottoms of iron steamships have to be protected from rust by a costly process of depositing on them a

most in the round. It is from this founding fire-dogs, by come, which are traction, having engaged in occupation the hearth. Here combination of iron for the rough the logs and stand-fire in direct confinement work of the

ly the material taken explained not only tion in melting, but ance to the attacks far greater cheap-persuaded artists to ues, although no with the adaptability metal to such purification is of filling curves and corners. is prevented but cations of paint. If open air constant sary. And even paint surface may eats under the reason why so few boards survive. somewhat flimsy and oxidation de-short time. No safeguard has been chor chain under cape. Cast iron

stands better than forged iron and steel. But it is at least curious to note that the bottoms of iron steamships have to be protected from rust by a costly process of depositing on them a

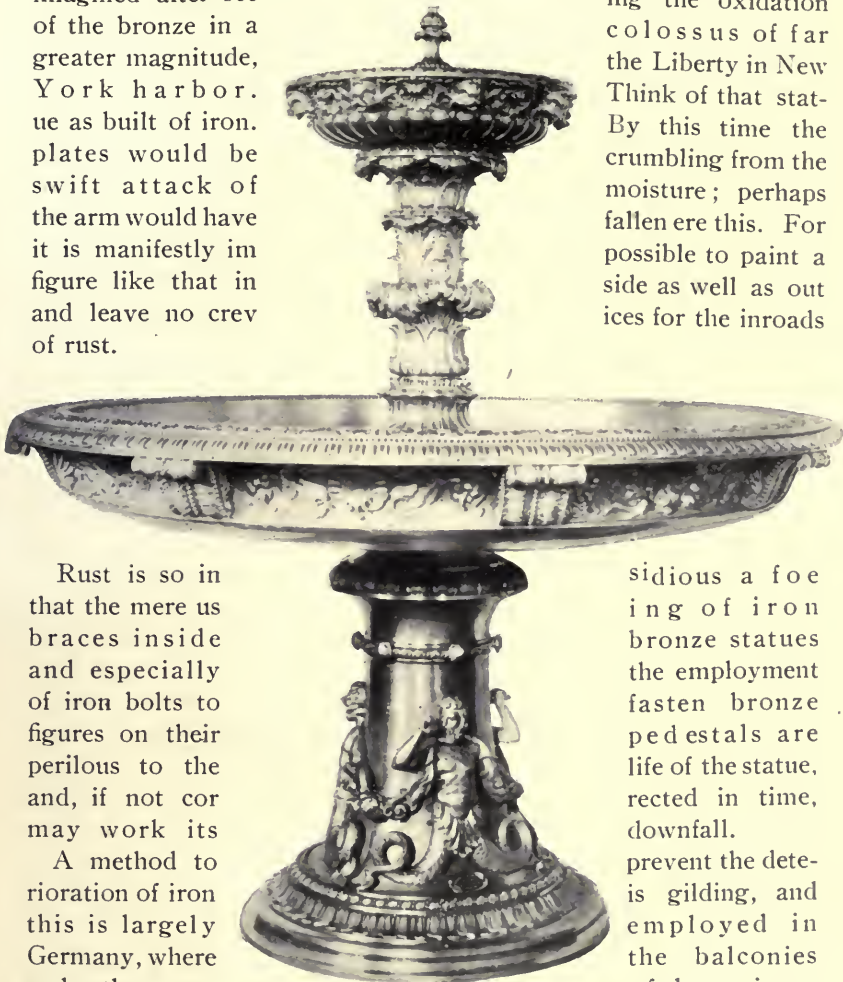


STAIRCASE IN THE BOSTON MUSIC HALL.

Executed by the Hecla Iron Works.

McKim, Mead & White, Architects.

layer of copper by the aid of electricity to prevent rust and the growth of barnacles. The iron colossus fifty feet high which Moretti has modeled to represent the iron trade of Alabama will have to be painted with great regularity, or it will be eaten up by rust from inside and out. How difficult that will be may be imagined after seeing the oxidation of the bronze in a greater magnitude, York harbor. The colossus of far the Liberty in New York harbor. Think of that statue. By this time the plates would be crumbling from the moisture; perhaps the arm would have fallen ere this. For it is manifestly impossible to paint a side as well as outside and leave no crevices for the inroads of rust.



BRONZE DRINKING FOUNTAIN.
South Bend, Indiana
Executed by the
Chicago Ornamental Iron Works.

Rust is so in that the mere use of braces inside and especially of iron bolts to figures on their pedestals are perilous to the life of the statue, and, if not corrected in time, may work its downfall.

A method of preservation of iron is largely used in Germany, where the statues are painted and gilt. In France,

and in Belgium, one sees gilding applied, but more sparingly than in Germany. All iron exposed to the weather in any but exceedingly dry climates has to be carefully protected from the air, and in moist climates like Great Britain and Ireland, Holland and northern Germany, in the tropics and on our own coasts iron things are not safe

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LAMP IN WILLARD'S HOTEL.

Executed by Sterling Bronze Co.

Washington, D. C.

from rust in the house unless constantly scoured. One of the hardest of metals, iron, is nevertheless one of the most perishable.

This does not prevent a liberal and constantly increasing use of iron for fences, doorways, gates to public and private parks, street lamps and lamps for the household, gas fixtures and those for electrical lighting as well as for architecture. Fire-escapes and the balcony are parts of the townscape which have not escaped the etcher and the water colorist who depicts the life of the street. Unfortunately, the fire-escape has not yet received artistic treatment from the architect, and the balcony is still too much neglected, though it affords a chance to relieve the almost hopeless reiteration



HAMMERED IRON WORK.

Executed by The W. F. Remppis Co.

of stories of the same height on the front of our overgrown apartment and office buildings. The art of disposing balconies over a façade, of making them appear natural outgrowths thoroughly a part of the brick or stone or terra cotta wall is still in its infancy. One might expect that the use of iron for the skeleton of the skyscraper would induce architects to link together skeleton and balcony and fire-escape as if the balcony and fire-escape were integral parts of the whole. Far from it.

We are still in the helpless stage of a new departure in architecture, when capitalist and designer cling frantically to precedent and try to make an iron building thinly fleshed



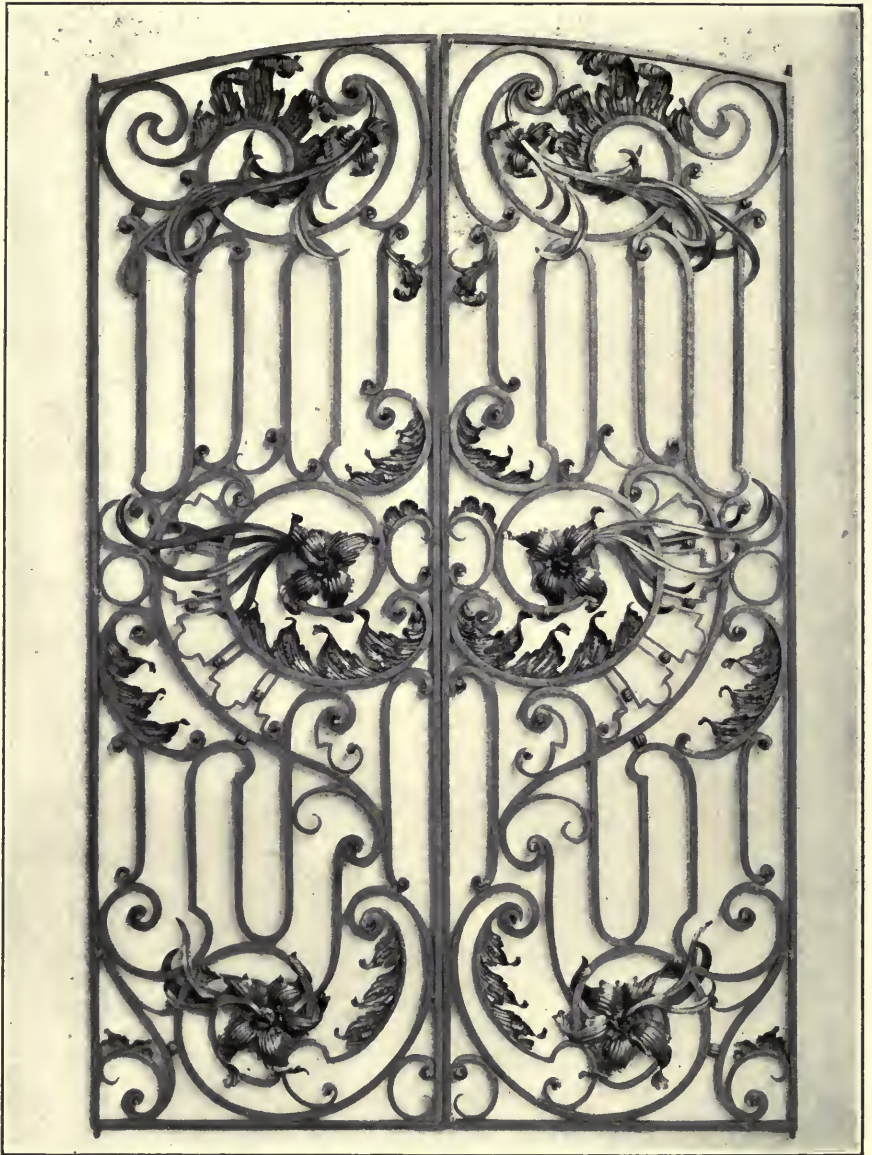
METALLIC WINDOW FRAME ON THE RESIDENCE OF SENATOR CLARK.
Executed by the Henry-Bonnard Co. Lord & Hewlett, Washington Hull and
K. M. Murchison, Associated.



METALLIC WINDOW FRAME ON THE RESIDENCE OF SENATOR CLARK.

Executed by the Henry-Bonnard Co.

Lord & Hewlett, Washington Hull and
K. M. Murchison, Associated.



DOOR GRILLES.

Residence of Mrs. A. B. W. Clapp, Newport, R. I.

Executed by the Snead & Co. Iron Works.

with stone or brick or terra cotta seem as much like a structure of brick or stone, throughout, as it is possible in the conditions that obtain. Later some architect may appear who is artist enough to feel the need of such treatment and strong

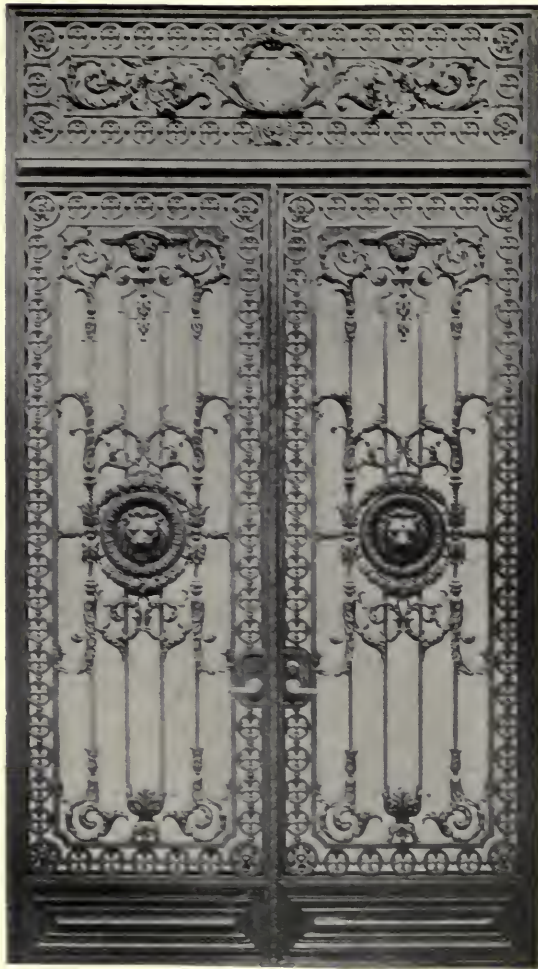
enough with his clients to make them follow his advice. Then we may have iron architecture used in such a way as to enjoy the particular advantages offered by a metallic construction, advantages which are apparent as soon as we turn to smaller objects in which there is no temptation to imitate forms proper to other materials and then imagine their combination of lightness, vigor and strength applied to the problems of architecture. The tower, for example, which seems to be the natural form of the skyscraper, could be built beautiful in line, with cornices or eaves casting strong shadows and yet slender also, owing to the feeling of strength conveyed by iron. But to convey the idea the material should reveal itself. And since it is necessary to paint iron, the next step would be in the direction of color. Instead of offering their present monotony of color, our streets, lined as many of them are with tall façades concealing iron structures, might be gay with colors used as a safeguard against rust, but decorative too.

For small decorations of the wall and the study table bronze must always be preferred, notwithstanding its relative cost. There are such fine natural tones in bronze, the metal when polished is so rich and soft to the eye, that it must continue to attract the artist. In the small bronzes for the writing desk, the smoker's table, the office and study, there is a good deal of excellent work done by Linder, Fribert, Mrs. McNeill, Mrs. Bracken and Mrs. Hyatt, by Brenner, Roth, Borglum, Barr and others too many for enumeration.

Chas. de Kay.



WROUGHT IRON STANDARD.
House of Geo. Gould,
Lakewood, N. J.
Executed by John Williams.
Bruce Price, Designer.



WROUGHT IRON DOORS.

Residence of Mr. Archer M. Huntington, No. 1083 Fifth Avenue, New York City.

Executed by the Wm. H. Jackson Co.

WHAT IS CIVIC ART?



THE question as to what is civic art might seem to be as unnecessary as the question: What is municipal reform? Civic art is obviously the name given to the very general aspiration and movement which aims at the improvement of our cities in convenience and appearance; and an answer to any question

about its nature would apparently consist of a description of the movement, its purposes, methods, achievements and principles. This is the way in which the question has been answered for the most part by Mr. Charles Mulford Robinson, in his book on "Modern Civic Art." After a couple of introductory chapters, of which more presently, Mr. Robinson enters into an elaborate explanation and illustration of the general rules which should determine the improvement of cities. He begins by establishing their focal points, such as the land and water approaches, and the administrative centre, goes on to discuss the plan and architecture of the business district, and the proper manner of furnishing its streets, and concludes this division of the book by a similar discussion of the proper disposition and embellishment of a residential neighborhood. Then he winds up with a section dealing with the city at large, with parks, parkways and open spaces generally. On none of these subjects does Mr. Robinson leave very much to say. His book will be the manual of municipal improvement for many years to come, and will render any other book of the kind unnecessary. He has sketched for us the ideal city of the civic art reformers—the city in which the utilitarian lion lies down with the artistic lamb, and in which all things are as they should be.

Mr. Robinson waxes very enthusiastic over his vision. "There is," he says, "the promise in the sky of a new day. The darkness rolls away, and the buildings that had been shadows stand forth distinctly in the gray air. The tall façades glow as the sun rises; their windows shine as topaz; their pennants of steam, tugging flutteringly from high chimneys, are changed to silvery plumes. Whatever was dingy, coarse and ugly is either transformed or hidden in shadow. The streets, bathed in the fresh morning light, fairly sparkle, their pavements from the upper windows appearing smooth and clean. . . . As when the heavens rolled away and St. John beheld the new Jerusalem, so a vision of a new London, a new Washington, Chicago or New York, breaks with the morning sunshine upon the degradation, discomfort and baseness of modern city life. There are born a new dream and a new hope."

For my own part, I cannot share Mr. Robinson's enthusiasm over his vision. While I believe that the movement towards better-planned and better-looking modern cities is as almost necessary and as praiseworthy as the movement towards political reform, I doubt very much the practical value or the theoretic defensibility of looking forward to a civic art millennium or definitely outlining such a consummation. Mr. Robinson's new Jerusalem, like the heaven of mythological Christianity is merely a bit of poetry, but unlike the heaven of mythological Christianity, it is a bit of poetry out of place. It is seductive and impressive only as it is vague and remote. In proportion as it is made definite, it becomes tame, characterless and uninteresting. The ideal city, which is envisaged by putting together the elements of Mr. Robinson's complete vision, in which the streets were all correctly laid out and furnished, the architecture sufficiently subdued and regulated, and the monuments most immaculately grouped and situated, and in which every suggestion of baseness and discomfort is removed—such a city would be less amusing, less suggestive, and in a real sense less habitable than the degraded but living cities of to-day. It is true that the well-planned, well-regulated and well-furnished ideal city is "cracked up" to be very beautiful; but its beauty is entirely a matter of words. Just as the irregularities and discomforts and degradation of London make a more interesting city than the monotonous machine-made regularity of the newer Paris, so no amount of elaborate and correct planning of streets, monuments, furniture and parks will of themselves make a beautiful, habitable and interesting city. The ugly actual cities of to-day make a livelier appeal to the imagination than does an ideal city, which in sacrificing its ugliness on the altar of civic art, sacrifices also its proper character and inherent vitality.

It will be answered immediately that this criticism is founded on a false conception of civic art and of the ideal city. The new Jerusalem, of which Mr. Robinson writes, is, it will be said, a flexible ideal, which can be adapted freely to the local peculiarities of any particular city, and which is described in general terms merely as a matter of literary convenience. Well! No doubt the ideal city is at bottom merely a matter of literary convenience; but the writer holds, nevertheless, that the criticism is based on a more wholesome and truer conception of civic art than is the one contained in Mr. Robinson's book and adopted by the majority of civic art reformers. It is the assumption of these gentlemen that the making of habitable, interesting and beautiful cities is fundamentally a matter of highly conscious and well-informed design; that provided sufficient means and authority were placed at their disposal, contemporary American architects and

sculptors are quite capable of planning and designing consummate New Yorks and Chicagos—cities, which would not only be devoid of offense and highly convenient, but almost as much a source of permanent æsthetic satisfaction as the great architectural achievements of the past. The writer strongly dissents from this assumption. American art is not sufficiently national and mature to undertake colossal and grandiose schemes. Public opinion is unprepared for such millennial flights of civic art. It is all very well to lay out a comprehensive scheme of development for a city like Washington, which owes its existence to the national government and its individuality to a pre-natal plan. It is all very well to carry out particular improvements in particular cases, for which the necessity is immediate and the times are ripe—such, for instance, as the group of public buildings to be erected in Cleveland, or the proposed rearrangement of the buildings in the City Hall Park of New York. But, at the present stage of American municipal growth and æsthetic capability, we should not try to plan too much and too far. However much we may borrow from Paris (and I do not question the desirability of such borrowing) we do not want a Frenchified New York. We want an American New York at any cost—even at the cost of good looks.

Whether an American New York can be obtained only at the price of good looks remains to be seen; but at least we should not fall into the naïve error of seeking to make either a consummately beautiful or a consummately American city merely by the magic of intelligent effort. A great city cannot be forced to bloom beautiful. Its comeliness must wait on the concurrence of a number of rare and happy conditions. The art, which is capable of making a consummately beautiful city must possess more than intelligence, good taste, and complete information. It must be a mature art, guided by authentic conventions, fertile in great designers, possessed for a passion for propriety and beauty of form, and confirmed by genuine popular appreciation, in every respect the master of its resources. We have plenty of clever and well-informed architects, painters and sculptors in this country and some few great ones, but it must be recognized that American art is mature only in spots, and that it should be in no hurry about attempting to rear a series of great municipal and national monuments. American art is not as yet guided by authentic conventions. Its methods are experimental. The subjects it uses are abstract and arbitrary. The popular interest it arouses is both lukewarm and restricted. Above all it has not yet succeeded in giving any large propriety to the forms it uses. That which is artistic is very artistic and is loudly declared to be artistic by every aspect of its appearance. That which is useful is very useful, and its grim utility is equally

a matter of loud proclamation. Only very few attempts have been made to make the architectural forms really expressive of the honest engineering and utilitarian fact; and until this gulf between the artistic and the useful has been bridged American architecture and the allied arts cannot become national and authentic. The vision of a local pseudo-classic Beaux-Artist New Jerusalem, which is the only kind of an ideal city the civic art reformer ever imagines, seems to the writer a very insipid ideal. For me the skyscraper and the furnace-stack.

The ridiculous extreme to which the idea of the consummate city may be carried was recently illustrated by Mr. Brook Adams. A few years ago he seriously argued in a public address that New York should spend a couple of hundred million dollars on beauty immediately, because history proved that beauty was a profitable investment—as if a great city could make itself permanently comely and effective by much the same methods and arts that an actress uses when she goes upon the stage, and for much the same purpose. Good looks, obtained in this way, if obtained at all, would be no more than a make-up. Should some millionaire be enthusiastic enough to give a few hundred million dollars to a committee of New Yorkers with instructions to spend it in buying a pretty mask for the city, the money would be more wisely spent in case the interest rather than the principal were applied to the task. It is far better, at present, to keep our city improvement plans confined by a comparatively modest ambition. If a city needs new streets and buildings let them be built, of course; but contemporary work should be restricted to contemporary needs, and no attempt should be made to build very much for a future that may be much better capable of building for itself.

In making these criticisms on Mr. Robinson's book, I have no wish to disparage the movement in favor of what is called civic art as such. Confined to its proper limits that movement is wholesome, necessary and promising; but I cannot help thinking that the civic art reformers in the appearance they make to the public over-emphasize the artistic and under-emphasize the utilitarian value of their laborers. Civic art is, properly understood, more of a science than an art, and its purposes and methods are better adapted to scientific and social rather than to artistic results. By all means let American cities be better planned wherever possible; let their streets be wider and more conveniently laid out, let the furniture in those streets be made from good routine designs; let the buildings that line them be regulated in their appearance, so that all of them are subordinated to a general effect; and let the harsh, straight lines of these streets and houses be relieved by trees and parks. These things are well

enough; but do not let us confuse them with such a high thing as beauty. They belong to a middle realm of scientific æsthetics, which is assuredly of the utmost importance for the health, convenience and looks of a great city, but which are the better managed and the better understood, the closer they are kept to the utilitarian and engineering level.

Mr. Robinson recognizes the importance of what may be called civic engineering; but he is not content to keep the business at that level. "Engineering," he says, "upon which the æsthetic aspect of cities is so largely dependent, differs from pure art in that it need not be the child of inspiration. It is an exact science, and as such wealth can buy it, bringing to the city the engineer who can make the municipality splendidly correct, if among its own citizens there be no other who has that power. The science of city-building does not wholly depend upon high impulse or inspiration. For its plainer yet essential victories the intellect is sufficient. And yet over and above this requirement which we can hope to meet so easily, there are the high motives, that must surely give birth to inspiration." Surely it would be very much better for the present to cleave to the modest ideal of making our cities wherever possible "splendidly correct." In New York, for instance, the reformers who want to make a city beautiful at the expense of a few hundred million dollars, would accomplish something more and better, in case they merely tried to revise the street plan along practical lines, and so rallied to their support all those interests in the city who will be benefited by a freer movement of traffic, both on the sidewalks and in the streets. The improvement of the mechanism of city life by means of careful and comprehensive planning, while it should not be pushed too far, is much the most fruitful soil for the application of scientific methods and civic enthusiasm, and while it would be absurd to deny that such methods can be applied within limits to great works of public art; still they should be applied in moderation. The beauty of a city life, if it is capable of acquiring any, must issue from more inevitable and less conscious sources.

This brings us back to the question with which I started: "What is civic art?" Mr. Robinson's idea of the essential nature of civic art is contained in his second chapter, which, however, is entitled not "What is Civic Art?" but "What Civic Art Is." The doctrine reads as follows: "It is municipal art, first of all. If men seek it, they seek it not for Art's sake but for the city's; they are first citizens and then in their own artists, and artists in this way only because they are citizens. We do not find men and women banding together to create a public sentiment and fund in order that some

sculptor may do a notable bit of work to the glorifying of his field of art. But they so bind themselves together . . . for the glorifying of civic art—not just because it is art, but because it is civic. They are not asking the town to help art, but art to help the town; the artists, not to glorify their art but by their art to glorify the city.” It is just this conception of civic art, which we believe to be erroneous and sterile. Good art is not the product of good intentions; high motives do not, as Mr. Robinson says, lead to inspiration. The motives that do issue in a great work of public sculpture are partly the “motives” peculiar to all artistic creation, and partly the peculiar vision proper to the particular art of sculpture. It is an intellectual and not a moral passion—a passion for consummate form and not for a consummate city. Does Mr. Robinson suppose that St. Gaudens had any particular wish to glorify “New York when he spent years of anxious and exhausting work in making his Sherman.” He probably never thought about New York, except to regret bitterly the fact that its city officials refused to let him place his statue as he believed it should be placed. If he was “glorifying” anything, he was “glorifying” his subject and his own power of daring and effective sculptural composition. Yet if the Sherman is not a piece of civic art, what would you call it? In truth civic art differs from other kinds of art only in the fact that its opportunities are bigger, and require on the part of the artist a larger vision, a completer training, a higher power of cooperation and a more authentic tradition. There is no reason why an artist who is an artist, should not love his city and want to “glorify” it, but if so, that is only a happy accident. If he cannot “glorify” his art, he cannot “glorify” his city, no matter how much he may love it.

Herbert Croly.



Ornamental Iron Work from Store Front.
THE SCHLESINGER & MAYER BUILDING.

State Street, Chicago.

Louis H. Sullivan, Architect.

THE SCHLESINGER & MAYER BUILDING.

An Attempt to Give Functional Expression to the Architecture of a Department Store.



THE tide of commerce ebbs and flows along State Street, in Chicago, and as the observer moves with the passing throng, his attention will be drawn toward the corner of Madison Street, and retained there by a building recently completed. It is one

of many devoted to the retailing of goods, but on an extensive scale and including a large percentage of women among its patrons. This function is unmistakably expressed in the design. The city in which the building is located has the peculiarity of concentrating its commercial district in a comparatively limited area, within which there has been erected a large number of buildings of like purpose and character. The one in question is not of colossal type. Its façade is not based on "features," but its individuality is distinct. Its exterior frankly betokens its structural basis and rises in no uncertain fashion from sidewalk to cornice. It is a logical solution of the commercial building, such as a department store, the latest and best achievement produced in this country.

This result has taken some time to accomplish and is the culmination of a long series of previous efforts, all working toward the better expression of what is regarded as our most unsatisfactory architectural problem. It is the outcome of careful preparation, skillful study and its application, maturity of mind and full sympathy between the maker of ideas and the makers of materials.

The design is thoroughly modern. It shows fully the structural function of the steel frame with the enclosing protection of terra



THE SCHLESINGER & MAYER BUILDING.

State Street, Chicago.

Louis H. Sullivan, Architect.

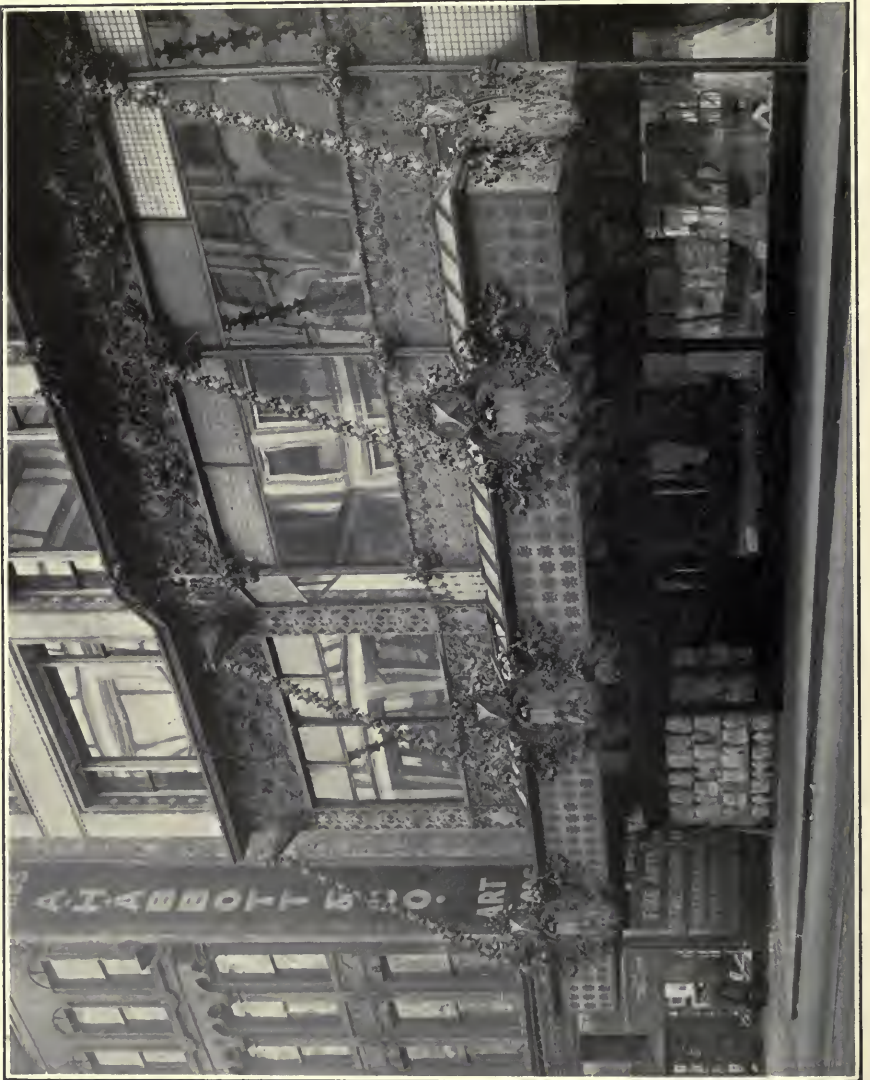


Corner Entrance.

THE SCHLESINGER & MAYER BUILDING.

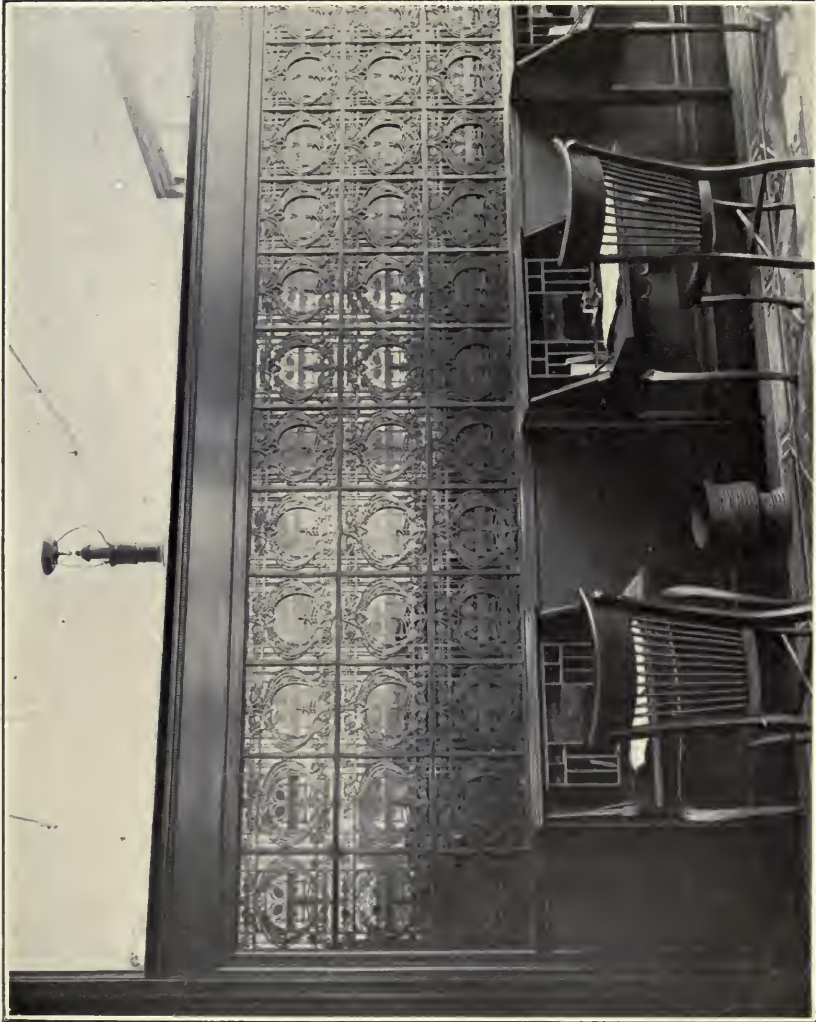
State Street, Chicago.

Louis H. Sullivan, Architect.



The Marquise.
THE SCHLESINGER & MAYER BUILDING.
Louis H. Sullivan, Architect.

State Street, Chicago.



Sawed Wood Screen.

THE SCHLESINGER & MAYER BUILDING.

Louis H. Sullivan, Architect.

State Street, Chicago.



A General View of the Ornamental Iron Work of the Lower Stories.
THE SCHLESINGER & MAYER BUILDING.

State Street, Chicago.

Louis H. Sullivan, Architect.

cotta, treated with full knowledge of its plasticity in its natural state and hardness and durability after treatment in the kiln. The lower portion on the street is equally straightforward in its qualities of "plate glass" architecture. Here are the largest openings possible for display windows and their attractions to feminine eyes are framed by a surrounding of elaborate decoration in cast metal. These forms immediately attract attention. They are full of vitality, of movement, grace and line. They twine and intertwine, divide and subdivide in marvellous fashion, yet they are ever traceable to their parent source and strongly organic.

In the Prudential Building, in Buffalo, which emanated from the same head, the essential element is masculinity. It is an American office building dominated by men and devoted to the transaction of their business in all its multitudinous forms—the elements of activity, ambition and directness of purpose, are all shown thereby in the architectural forms.

The Schlesinger & Mayer Building is a differentiation of the commercial problem and has been treated entirely on its own merits, both in the general design and in the detail. This is frankly a department store—an establishment where goods of many kinds may be retailed to many people and so displayed over large floor areas, that ease of examination and accessibility to products may be speedily achieved. Hence, throughout its typical floors, the window openings are of maximum size and form a distinct basis of the exterior design. The detail of the decorative treatment around these openings enhances the outlook, and gives additional values to the exterior effect. The building terminates in a cornice based on the projecting roof beams and rationally functional.

There were certain modifications in the structure during its erection based on changes incidental to the growth of the business and project. The first of the sections built was on the less important street and eight stories high. With the erection of the corner section four stories were added in height. This increase showed the integrity of the basic design. The building was simply carried up the additional stories desired, to twelve, and the terminal foliations of the stem-like columns and the cornice detail correspondingly enlarged for their additional distance from normal viewing.

The treatment of the ornamental detail is essentially appealing in its quality to femininity. It is sensitive to a high degree, delicately pleasing to the sympathetic eye and with fine feeling and movement permeating its most incidental ramification.

The entire scheme is one organic whole and is carried out in full harmony and balance. Values are carefully preserved and a consistent motive runs through the ornament. The surfaces, either

treated in relief or in one plane indicate careful study with fine appreciation of the natural qualities thereof.

In addition to the cast and moulded ornamental detail of the exterior, this same treatment is preserved to an exceptional degree in the interior work. All of the woodwork has undergone the most careful inspection and valuation before selection in the paneling and careful matching of the wood. There are also effects obtained through the product of modern machines and appliances intelligently used by logical designing. This is especially achieved in a screen of sawed wood, enclosing a corner of the third floor and making thereof a writing and retiring room. The upper portion of the wainscoting is made with panels of five thicknesses of sawed mahogany. The outer two thicknesses or planes are curved lines, the next two are straight lines, the middle plane a combination of both. These all placed in sequence produce a fine orchestration of ornamental form with a development of light and shade greatly enhancing the values of the successive surfaces. It is, without doubt, the most unique and beautifully elaborate woodwork made in this country, using modern methods in the manufacture.

So, throughout the entire building, inside and out, is carried the integral scheme of functional form and its appropriate expression in terms of material. All this is based on a comprehensive theory of architecture and a carefully developed system of expression.

Lyndon P. Smith.



Detail of the Ornamental Iron Work.
THE SCHLESINGER & MAYER BUILDING.

Another View—What Mr. Louis Sullivan Stands For.

I doubt very much whether Mr. Sullivan's work has yet received the estimation and recognition which unquestionably it merits. In the wilderness of our architectural practice Mr. Sullivan occupies to-day something of the usually isolated position of the prophet, the forerunner, the intensely personal force. It is strange



Terra Cotta Capital.

THE SCHLESINGER & MAYER BUILDING.

State Street, Chicago,

Louis H. Sullivan, Architect.

that this should be so in a land where strong individuality is rather prized and applauded than neglected and qualified; and in a profession, too, that is so frequently spurred by a general call for "originality"—a profession, moreover, that is at the same time brought almost daily face to face with new problems in design that really demand by the obvious logic of structure and function, the development of new architectural for-

noville



Detail of the Wood-Work.

THE SCHLESINGER & MAYER BUILDING.

State Street, Chicago.

Louis H. Sullivan, Architect

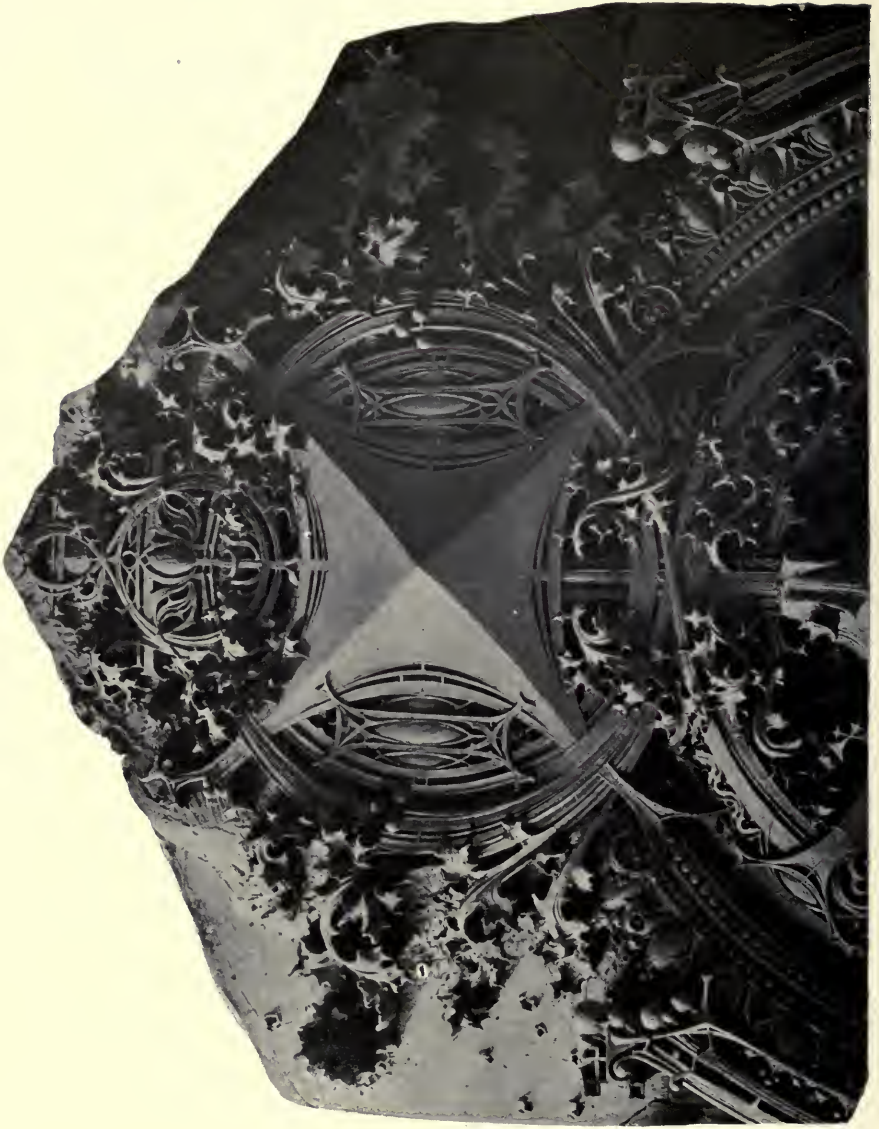


The Restaurant.

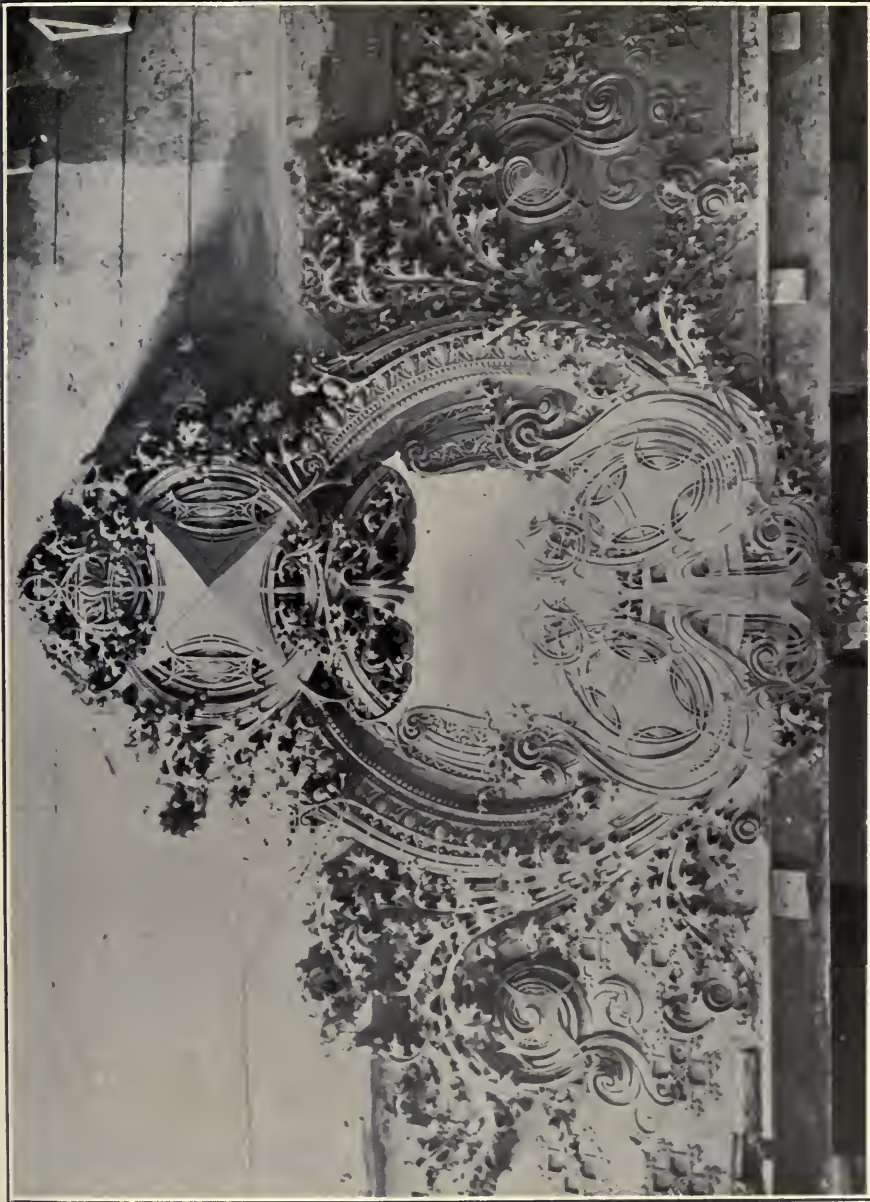
THE SCHLESINGER & MAYER BUILDING.

State Street, Chicago.

Louis H. Sullivan, Architect.



State Street, Chicago.
Detail of the Iron Work.
THE SCHLESINGER & MAYER BUILDING.
Louis H. Sullivan, Architect.



Detail of the Iron Work.

THE SCHLESINGER & MAYER BUILDING.

Louis H. Sullivan, Architect.

State Street, Chicago.

mulæ. For, let it be well understood, Mr. Sullivan is really our only Modernist. He is, moreover, strictly of our soil. He has his precedents, no doubt, but his mature work, we might indeed say all but a small residuum of all his work, is not to be dated from elsewhere either as to time or place. Mr. Sullivan himself is the centre of it. He is his own inspiration, and in this sense may be saluted as the first American architect. To say that he has invented a style would, of course, be to say too much, but he has certainly evolved and elaborated a highly artistic form of superficial decorative expression in logical connection with the American steel skeleton building. Richardson is our historical example of American originality in architecture, but Richardson's work, permeated as it is with the author's mighty personality, is not free, is indeed far from free from an archæological basis. In the presence of Richardson's buildings, we never lose the sense that we are confronted by a colossal importation, buildings lifted, as it were, by giant hands out of some mediæval locality, of which we fancy we can find the historical reminiscence somewhere in Romanesque France. On the other hand, there is not a vestige of the past in Sullivan's work. It is as modern as the calendar itself. The artistic ingenuity, nay, the artistic boldness of the attempt is admirable. Here, is L'Art Nouveau indigenous to the United States, nurtured upon American problems, and yet but scantily recognized or considered by a profession that busies itself with the exotic importation of the same principles from an alien source.

The Schlesinger & Mayer Building is the latest result of Mr. Sullivan's personal initiative. We understand from sources not authoritative, but still reliable, that Mr. Sullivan worked for three years on the problem entrusted to him. If this be true it is the only antique element in a design which is almost startlingly bald in its logic and blanched in its complete disregard for any of the traditional architectural tones. The artist has stuck to his own palette, developed from himself; trusted entirely to his own inspiration.

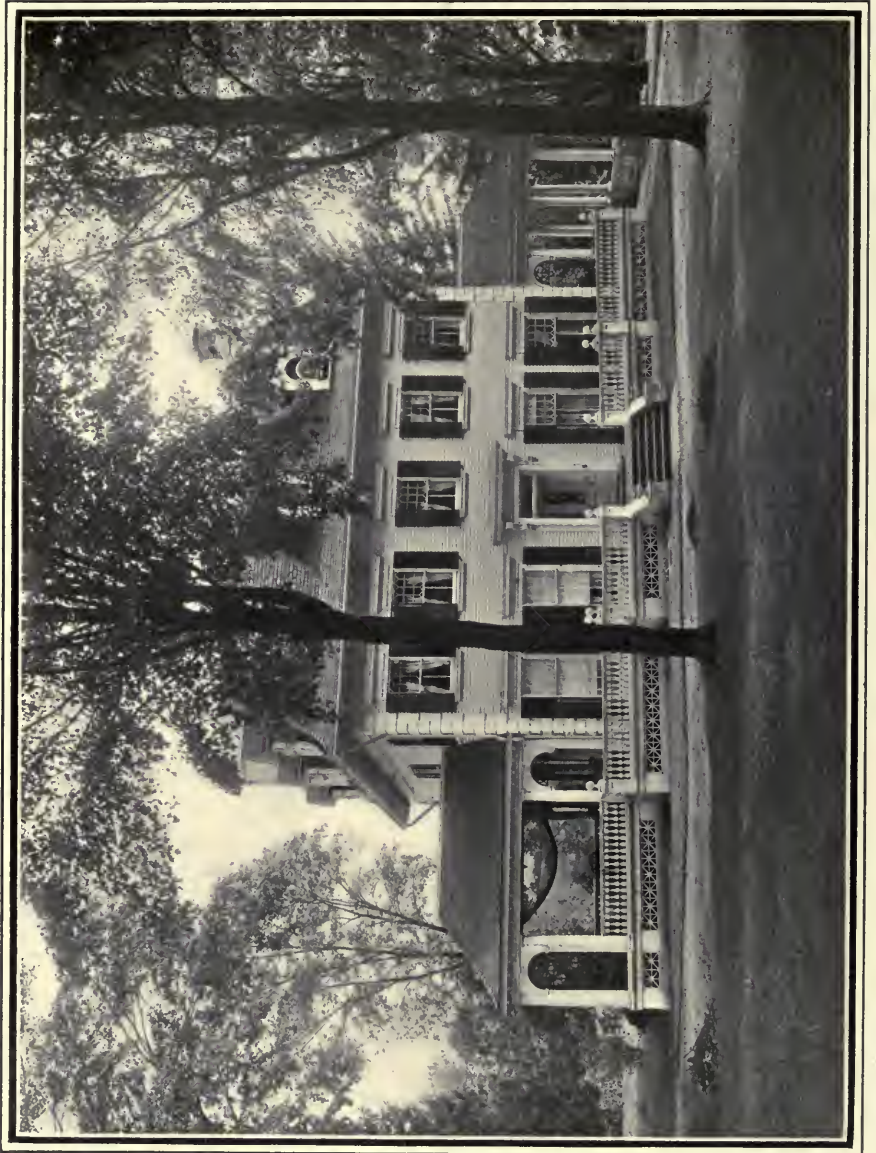
And the result?

Mr. Smith, whose remarks precede these of mine, speaks candidly as an intelligent admirer, as a convinced enthusiast. One's first feelings perhaps is, not to disturb the mellifluous *allegro*; not even to question the suggested metaphysics by inquiring with too rude an analysis as to what are the essential components of the expression of femininity in architecture. We may have philosophic doubts as to this part of the Sullivan doctrine—doubts which, if occasion required, one might even screw up one's courage to state with extreme positiveness; but about Mr. Sullivan's latest architectural achievement itself, one hesitates to say a word off hand or hastily. One's initial impressions of the building have a

treacherous elusiveness. At first glance some judges no doubt will be tempted to exclaim: "This will never do! Facility and ingenuity have here out-run themselves—jumped, as it were, on the other side. There is always danger that the mind by excess will parody its own cleverness, and in the Schlesinger & Mayer Building, has not Sullivan himself given us the Sullivanesque?"

There is, I believe, an element in even a rapidly enunciated opinion of this sort which will persist and be a component of a final and mature judgment, but how far will this superficial impression be qualified and in what direction? The immense ability of the ornamental design that like an efflorescence blooms on the Schlesinger & Mayer Building, is not for a moment to be questioned. Its successes are based upon a wonderful inventiveness and ability to handle in a harmonious manner involved surface decoration. Is there anything at once so original and so capable elsewhere to be found in American work? Where are we even to match its kind abroad? And if much of the decorative design is open to the charge of being vague and inorganic, no little of it possesses a really exquisite definiteness and suitability. The design, moreover, is all very true to its material. One is almost tempted to the exaggeration of saying it is too true, and in places is rather metalesque than metallic. There is danger in it all no doubt. The singer, we feel, is too much in the lyric strain. The sense of the thing tends to the incoherent. Nevertheless, there is an enthusiasm of inventiveness in the work, a personal reality, a sparkling artistic exuberance which confounds us when we compare it with the dull copybook ornamentation, the repetitions a thousand times repeated that pass in the ordinary category of architectural work for "modern decoration." Under these circumstances it is perhaps the wiser part of judgment to quietly permit this latest production of Mr. Sullivan's to speak to us itself for a time, feeling sure that in the final appraisal we shall find not only that the work possesses great value and inspiration, but also a lesson—in which Mr. Sullivan himself will need to share.

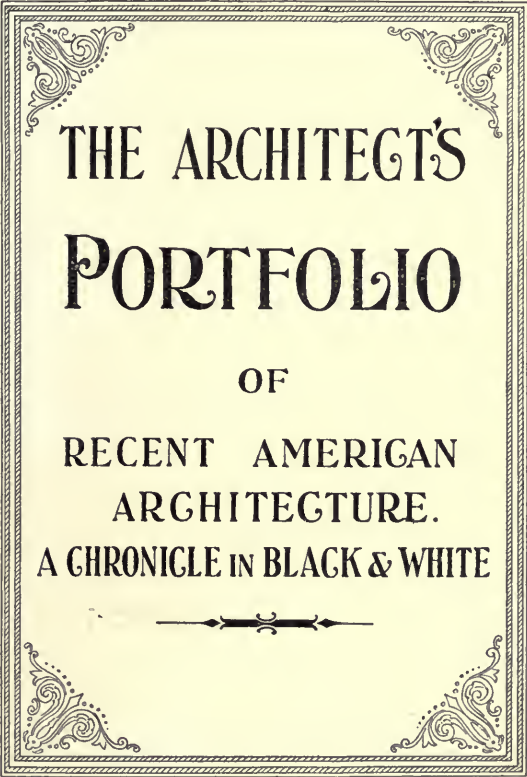
H. W. Desmond.



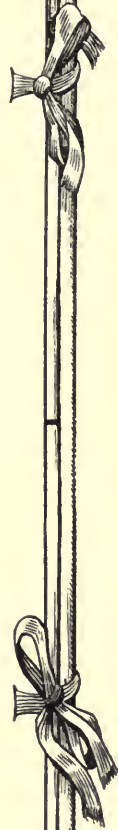
Rye, New York.

RESIDENCE OF MR. HORACE L. HOTCHKISS.

W. H. Beers, Architect



THE ARCHITECT'S
PORTFOLIO
OF
RECENT AMERICAN
ARCHITECTURE.
A CHRONICLE IN BLACK & WHITE

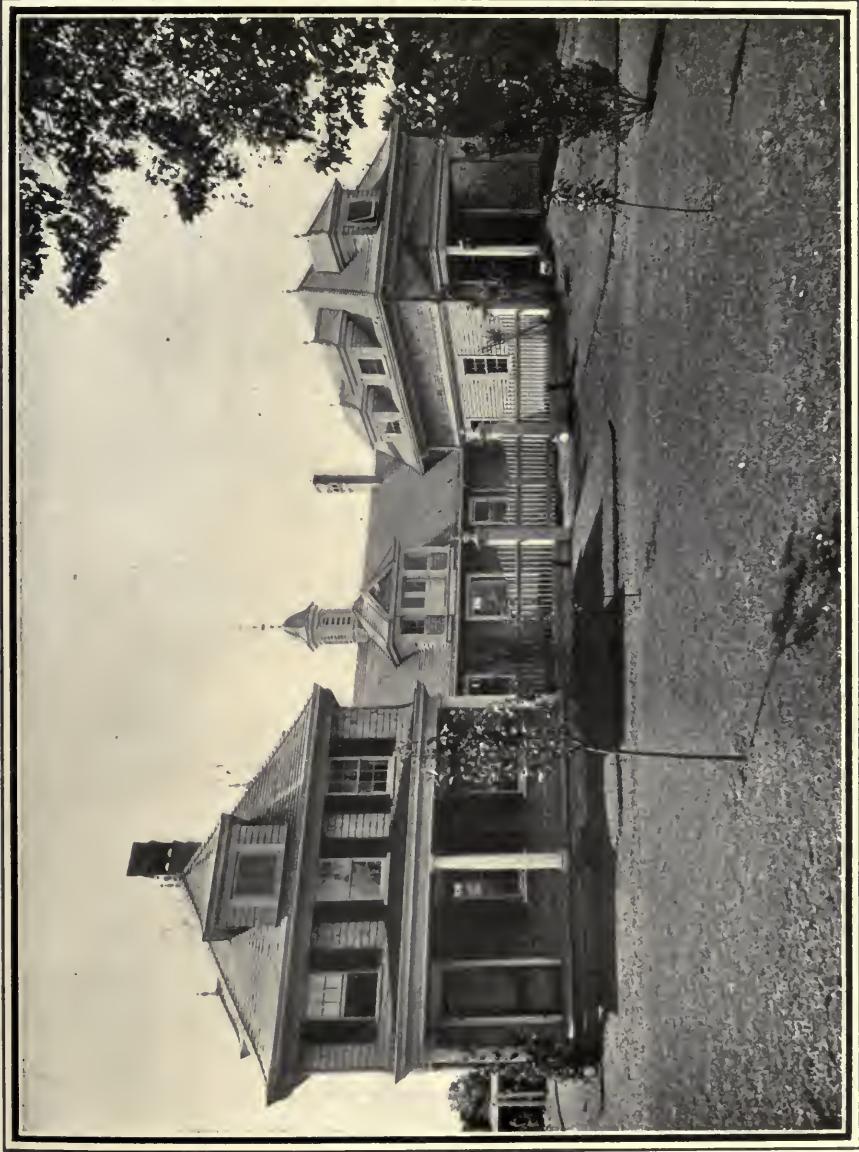




Rye, New York.

RESIDENCE OF MR. HORACE L. HOTCHKISS.

W. H. Beers, Architect.



Rye, New York.

STABLE OF MR. HORACE L. HOTCHKISS.

W. H. Beers, Architect.



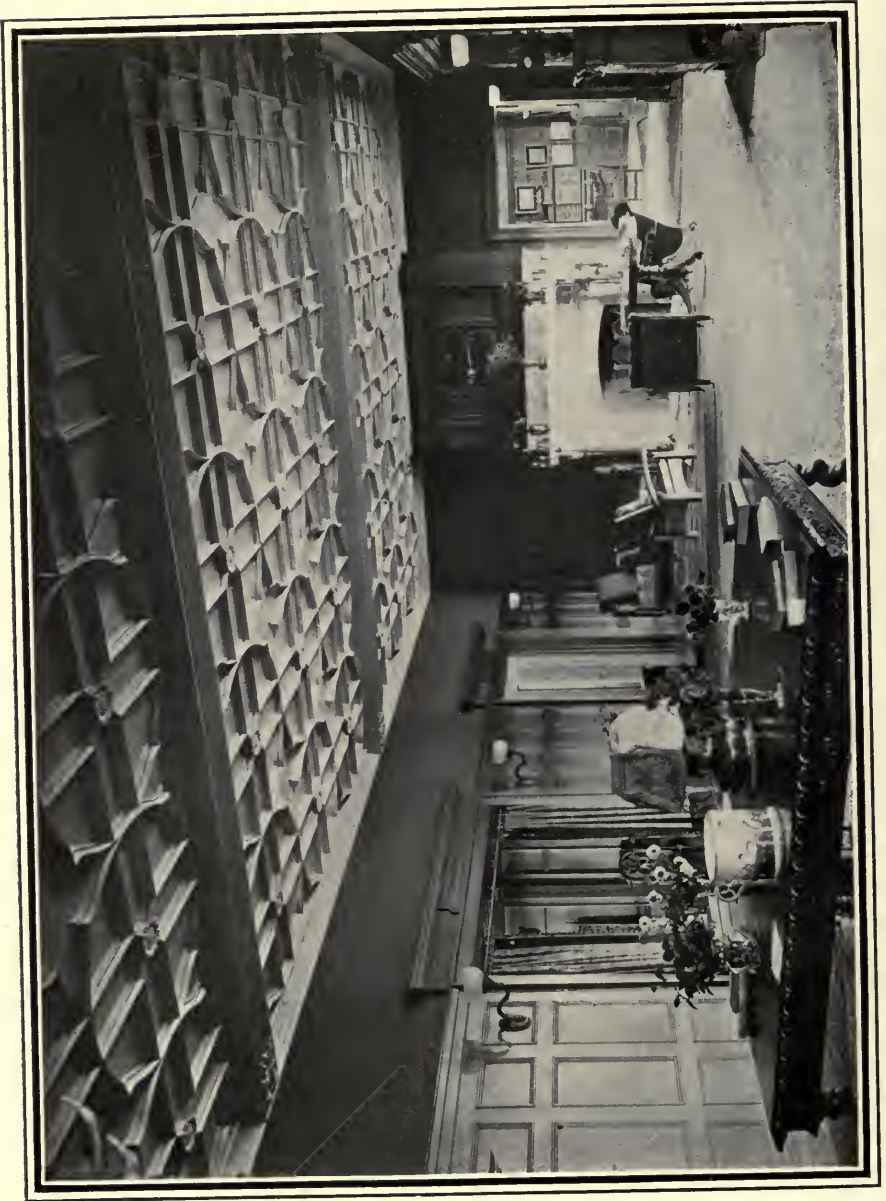
HOUSE AT BERNARDSVILLE, N. J.
Renwick, Aspinwall & Owens, Architects.



HALL IN THE RESIDENCE OF CHAS. D. SIMONS, JR.

Renwick, Aspinwall & Owens, Architects.

Dongan Hills, Staten Island.



LIVING-ROOM IN A HOUSE AT BERNARDSVILLE, N. J.
Renwick, Aspinwall & Owens, Architects.



DINING-ROOM OF THE BILLINGS HOUSE.
Warrington G. Lawrence, Architect.

Elleron, N. J.



HOUSE AT BERNARDSVILLE, N. J.

Renwick, Aspinwall & Owens, Architects.



THE BILLINGS HOUSE.

Elberon, N. J.

Warrington G. Lawrence, Architect.



THE BILLINGS HOUSE.

Elberon, N. J.

Warrington G. Lawrence, Architect.



THE BILLINGS HOUSE.

Elberon, N. J.

Warrington G. Lawrence, Architect.



THE BILLINGS HOUSE.

Elberon, N. J.

Warrington G. Lawrence, Architect.



FIREPLACE.

Warehouse of Wm. E. Uptegrove & Ero.

No. 457 East 10th Street, New York City.

Wilkinson & Magonigle, Architects.



WAREHOUSE OF WM. E. UPTEGROVE & BRO.
No. 457 East 10th Street, New York City.
Wilkinson & Magonigle, Architects.



OFFICES.

Warehouse of Wm. E. Uptegrove & Bro.

Wilkinson & Magonigle, Architects.

No. 457 East 10th Street, New York City.



ENTRANCE HALLWAY.

Warehouse of Wm. E. Uptegrove & Bro.

No. 457 East 10th Street, New York City.

Wilkinson & Magonigle, Architects.

The

Architectural Record.

VOL. XVI.

AUGUST, 1904.

No 2.

THE WORK OF RUTAN & RUSSELL, OF PITTSBURG.



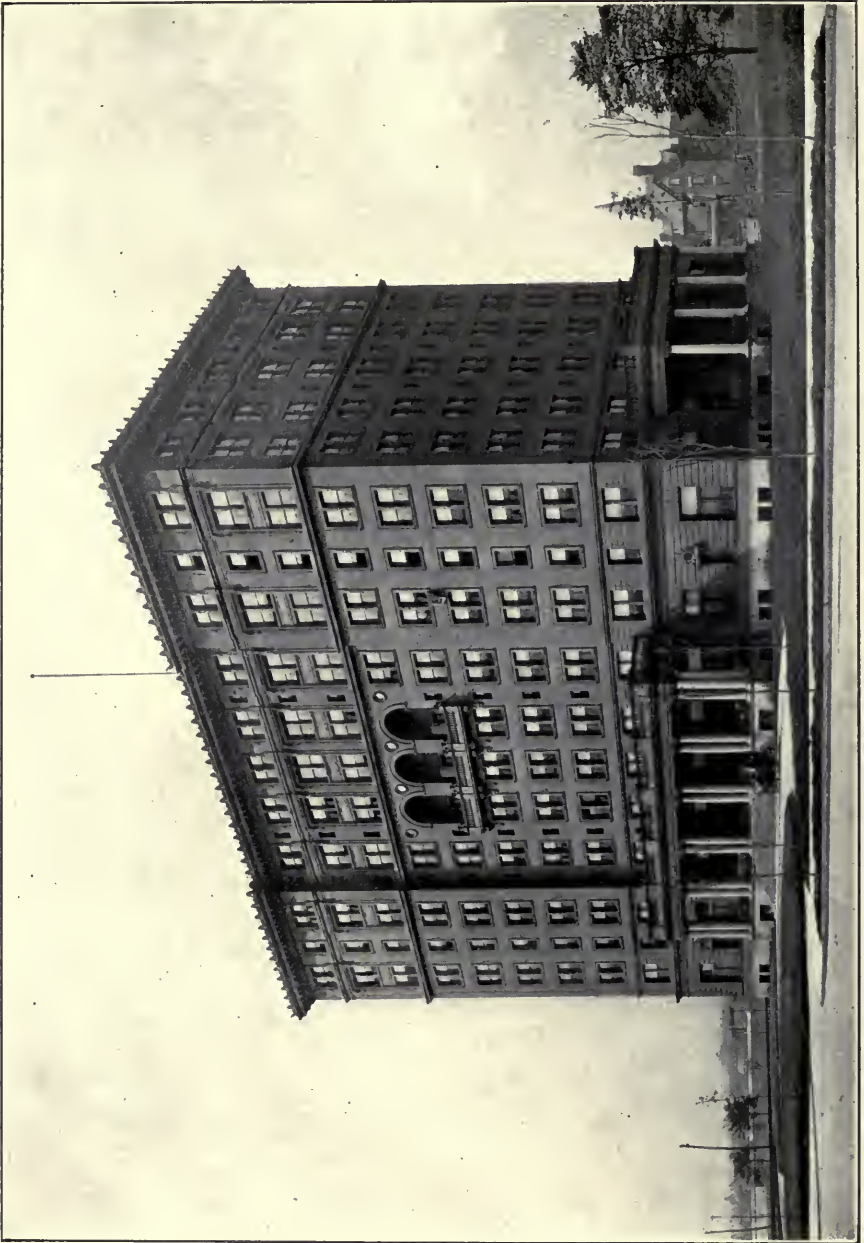
NOTHING is more certain than the Western march of empire. The broad waters of the Pacific acted as an impassable barrier to further Eastern expansion; humanity found more ample scope in the West for the development of its culture; and the steps of human progress can be noted, not alone in established centres, but by the creation of new centres, always Westward.

The modern movement in architecture, as observable in the United States, has a number of characteristics of its own. It looks both ways, both forward and backward. It has eyes upon the West and eyes upon the East. It is in no sense spontaneous, although the soil on which it is planted is new and barren of types on which it may model itself. On the whole, this condition is a disadvantage. Architecture is not a spontaneous art, but one of culture and development. It rests on models and achievements. Its progress is achieved on what has been accomplished; each new effort, like the courses of brick or stone in a building, depends on the solidity and actuality of what has gone before.

But America has nothing of its own in architecture that can, in any practical way, serve as a basis for modern use. The American architect, seeking for inspiration and suggestion, cannot scan the structures of his own land, but must hark back to the buildings of Europe, new and old. His originality is simply the re-adaptation of an art that flourished under conditions different from his own to the newer ideals of his Western home. It is his distinction that, under such circumstances, his work, while seldom possessed of the qualities of real greatness and real originality, is nevertheless highly distinctive, highly individual, admirably suited to its enviroinic conditions, and often of very real interest.

It must be entirely patent that, save when the structures of other lands are frankly copied, our designs are our own. It is true

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Rutan & Russell, Architects.

HOTEL SCHENLEY.

Pittsburgh, Pa.



THE LOBBY—HOTEL, SCHENLEY.

Pittsburgh, Pa.

Rutan & Russell, Architects.

enough that when some thoroughly American designs are called to mind this distinction is but a sorry one, and gives small comfort to the historian; but, taken as a whole, American buildings have qualities and often have character which stamp them indelibly as American, even though this result be reached only by exclusion. This, of course, is true of all national architecture. The buildings of England, of France, of Germany, to limit the list, have each essential qualities that mark them as the products of these various nations. The phenomenon is by no means peculiar to our own time or our own land; the single point of interest, so far as we are concerned, is that, without any models of our own, and with the necessity of basing our work on the achievements of other people, we should have given to our architecture qualities so marked and so personal.

But if we have no architectural models of our own on which to base our architecture, we have architectural schools and traditions in designing and methods, due to the strong personality of individual architects. The educational influence must increase each year, because its utility has long since been demonstrated beyond peradventure of contradiction. It is quite immaterial that the highly interesting and often very original architecture of our early history was largely produced by untrained men. Untrained they were, as training is now understood; but even these early architects did not labor without such aids as were available to them.

Architectural education has a double value, in not only producing men grounded in the elements of their professional work—for the most advanced schools do no more than this—but in setting up and diffusing a uniformity of architectural taste and ideas throughout the entire length and breadth of our country. No other nation has a larger area dominated by a single civilization; and in no other land are the demands made upon the architect so widespread and so uniform. It is true the United States embraces climates of varying kinds; the needs of California are not the needs of New York and Pennsylvania; yet the area in which our architectural needs are practically uniform is without parallel in modern times.

Architectural education is rapidly breaking down whatever barriers nature may have set up in matters of climate and space. Architectural education, architectural knowledge, the increase of an interest in architecture among the people, the prolificness of architectural periodicals, the amplitude of architectural information, all help towards the same end, albeit the supply is sometimes in excess of the demand. Yet positive as this movement is, it may be questioned if each centre in the United States has not an architectural quality of its own; not, indeed, so marked that we can refer each

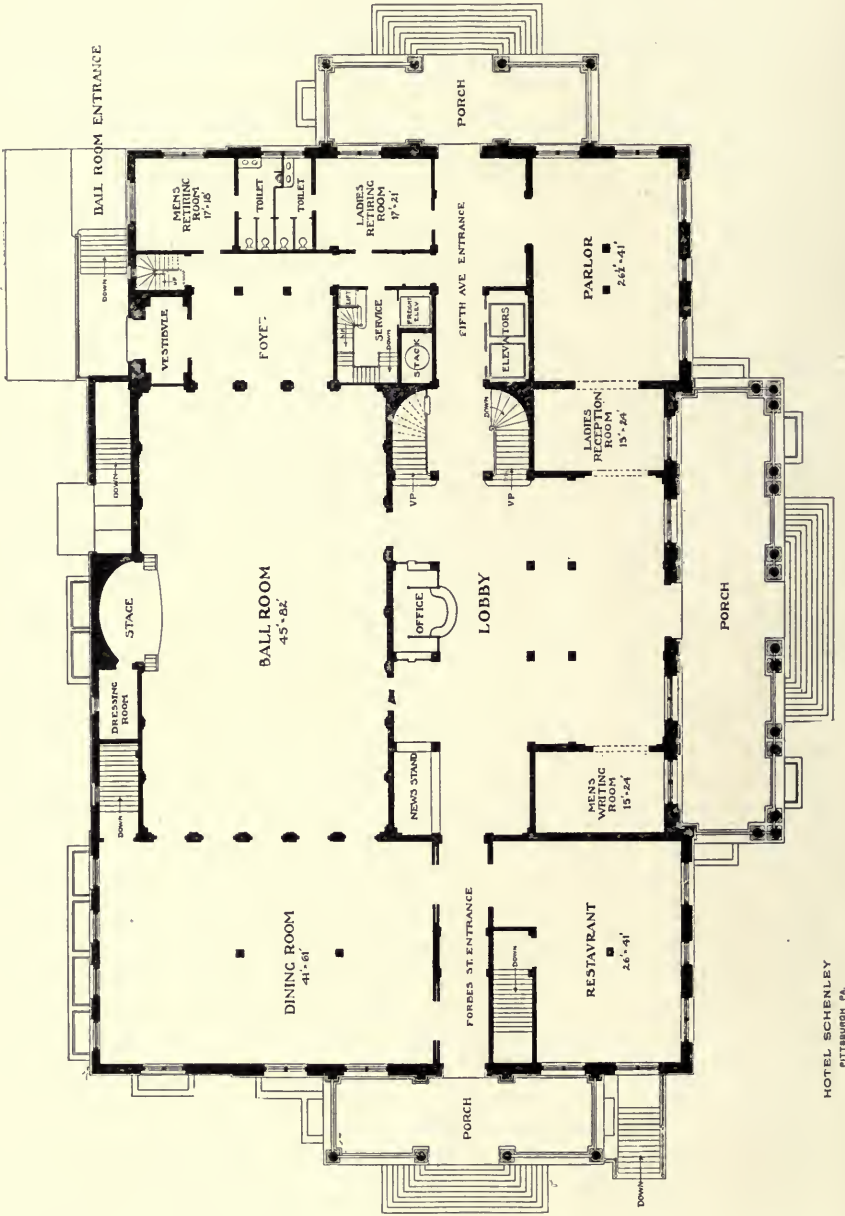
building to its locality by mere inspection—our intercommunication is much too close and intimate for that—but still so evident to the observer saturated with the architecture of the East, that the architecture of the West can truly be said to have a feeling all its own, a character that adopts itself to its own locality, an art that is still architectural, but architecturally Western.

For the origin of our architecture is the East. More costly buildings and more extended enterprises are to be found in the East than in the newer West. That the West is rapidly becoming a competitor of the East in things architectural is demonstrated by the proud pre-eminence of Chicago, which in not a few architectural matters is able to give lessons to the older communities on the Atlantic coast. But, like all progress in America, architecture moves Westward, and at each great centre has established a vogue and adopted a model which, if not entirely its own, is much unlike that of any other community.

In examining the work of any architect or group of architects whose work has been largely local, some quite distinctive aspects will be uncovered which have, it not the earmarks of locality, certain aspects which mark them as belonging to a special locality. The work of Rutan & Russell, of Pittsburg, may well be taken as an illustration of this thought. One does not look for the same interpretation of architectural problems in Pittsburg that one may find in New York. While some very extensive architectural operations have been carried on in Pittsburg in recent years, the scale, as a whole, is not the scale that obtains in the larger Eastern cities. The architectural methods and ideas will be much the same as in the East, but the interpretation will not be so grandiose; the decoration will not be so elaborate; the great house will not be quite the same kind of a great house that the East will offer.

The Hotel Schenley admirably illustrates these points. It is at once the largest work of Messrs. Rutan & Russell, and the most considerable hotel in Pittsburg. It is a building well thought of and much admired in Pittsburg, and this is quite natural, considering the fact that it has given to that city a hotel of the first rank in size, in a word, a thoroughly modern hotel. The requirements of such a structure are well known, and are summed up in the one word, completeness. There must be a place for everything, and everything must be arranged with absolute convenience.

The exterior of the Hotel Schenley has been treated in an exceedingly direct and simple manner, and the architects have achieved a very great success by following this method. A slightly recessed centre is buttressed by two end wings projecting but slightly beyond the central line. These wings are so large that they are in no sense corner pavilions, but essential parts of the



HOTEL SCHENLEY
PITTSBURGH, PA.

FIRST FLOOR PLAN.



HOTEL LINCOLN.

Pittsburgh, Pa.

Rutan & Russell, Architects.



S. AUGUSTINE'S CHURCH.

Pittsburgh, Pa.

Rutan & Russell, Architects.



DETAIL OF S. AUGUSTINE'S CHURCH.

Pittsburgh, Pa.

Rutan & Russell, Architects.



Sewickley, Pa.

THE RESIDENCE OF THE HON. B. F. JONES.

Rutan & Russell, Architects.



THE RESIDENCE OF THE HON. B. F. JONES.

Sewickley, Pa.

Rutan & Russell, Architects.



WATER-TOWER—RESIDENCE OF THE HON. B. F. JONES.

Sewickley, Pa.

Rutan & Russell, Architects.

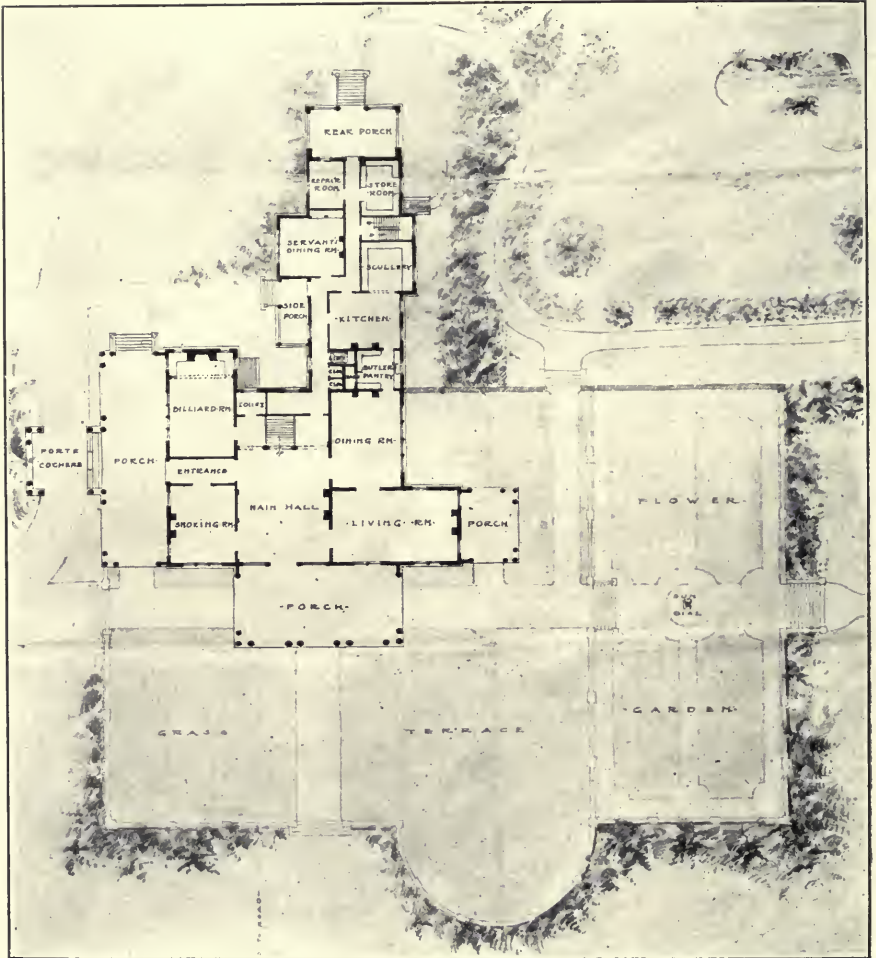


INTERIOR VIEWS IN THE RESIDENCE OF THE HON. B. F. JONES.

Hall and Billiard Room.

Sewickley, Pa.

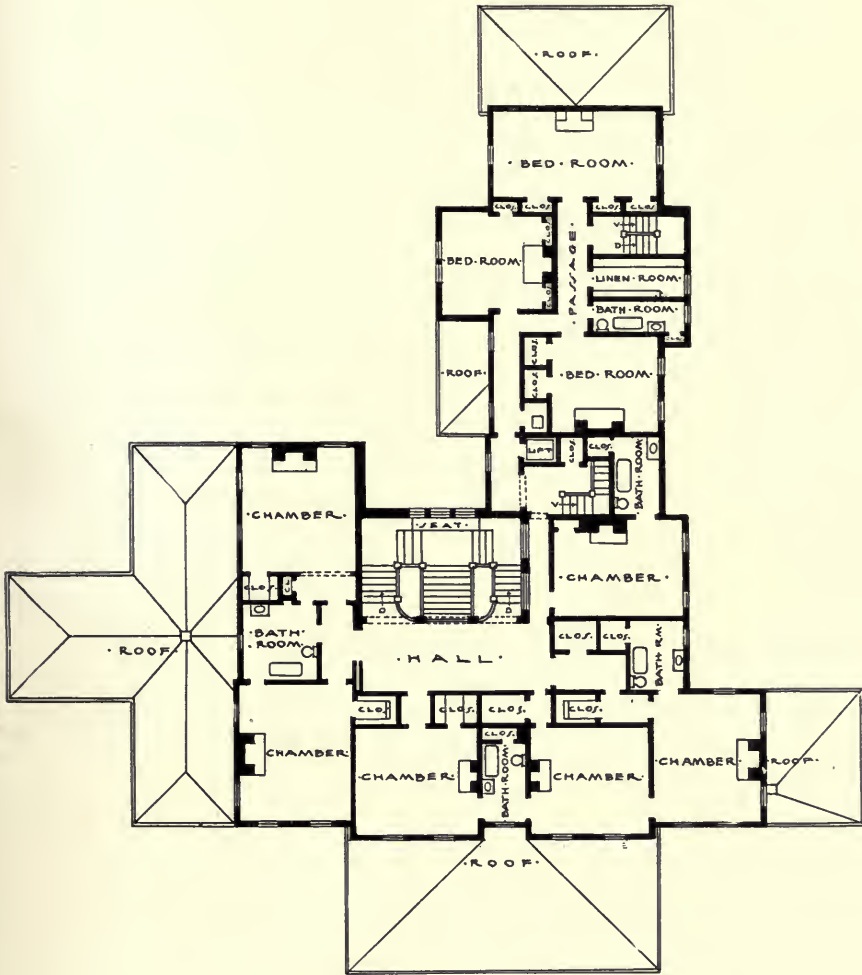
Rutan & Russell, Architects.



GENERAL PLAN OF THE RESIDENCE OF THE HON. B. F. JONES.

Sewickley, Pa.

Rutan & Russell, Architects.



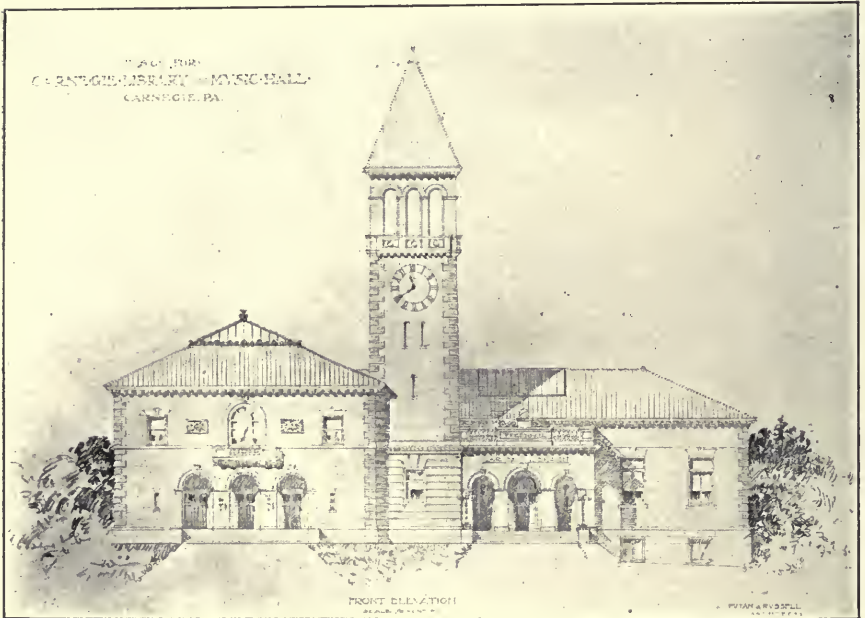
SECOND FLOOR PLAN
SCALE - 1/16" = 1'-0"

RESIDENCE OF THE HON. B. F. JONES.

Sewickley, Pa.

Rutan & Russell, Architects.

building, with sufficient variety of surface to break up a front that, without such a device, might be dull and uninteresting. The wall treatment is plain almost to severity, yet rightly so, for the architects have wisely recognized the fact that dignity, in a structure of this size, can only be had through simplicity. The windows are arranged chiefly in pairs, their rather decidedly marked frames offering the single decorative feature of the superstructure. The crowning member, which consists of two divisions, is somewhat un-



DESIGN FOR CARNEGIE LIBRARY AND MUSIC HALL.

Carnegie, Pa.

Rutan & Russell, Architects.

necessarily marked, and an emphasis to the centre is given by the three arches in the sixth and seventh stories.

The hotel stands in spacious grounds, and has, therefore, a character and placement quite different from the usual city hotel placed on a crowded street. The non-metropolitan character is further enhanced by the porches with steps, so that the immediate surroundings and approaches are quite unusual in large city hotels of this class. A structure of this size and height appears somewhat incongruous in such a situation; but this is a circumstance over which the architects exercised no control. They have certainly produced a dignified and stately edifice, and, that done, nothing more remained to be accomplished.

The plan of the hotel discloses some peculiarities of its own. A

spacious lobby occupies the centre of the building; on one side is a ladies' reception room; on the other a men's writing room. Beyond, to the right, is a parlor; on the left is a restaurant. Corridors to the side porches and entrances cut off this front portion of the building from the other parts. Immediately behind the lobby is the ball room, which has its separate entrance on the rear to the right. On this side is a foyer and retiring rooms for men and women; the opposite corner of the building is filled with the dining



RESIDENCE OF EDWARD O'NEILL, ESQ.

Sewickley, Fa.

Rutan & Russell, Architects.

room. Here, again, is a generous disposition of area, the ball-room separated from the other parts of the hotel, which, in their turn, are excellently arranged and spaced. The New York architect, with his ball-room on upper floors, and expensive and crowded construction, must envy these Pittsburg fellow-craftsmen in their opportunity to plan so broadly on the ground floor. As the ball room does not extend above the second floor, the plan of the upper parts of the hotel presents the form of a double T, of which the inner arms are much the longer. The plan of the upper floors scarcely calls for comment. With the exception of a ladies' parlor in one corner of the second floor they are practically identical, and consist of bedrooms with and without bathrooms, and arranged singly and en suite. Each wing has its corridor lighted from either

end; the corridor in the centre of the building is lighted from these halls. It is a plan eminently simple and direct, and, in fact, the only plan which could be followed in a building of the dimensions and shape of the present one.

The straightforward treatment that distinguishes the Hotel Schenley is characteristic of the Hotel Lincoln. This is a building of a very different type, standing on a street, and with interior courts that are unavoidable in deep buildings of comparatively moderate frontage. It is nine stories high; but the top story,



THE EDGEWORTH CLUB.

Sewickley, Pa.

Rutan & Russell, Architects.

being above the heavy cornice which is the single enrichment of the front, does not count in the design. The entire façade is bare of ornament, unless the rusticated treatment of the first story be so considered. The window sills and caps, the grouping of the windows, and a simple string two stories below the cornice, constitute the sole features of the front. Yet it is remarkably good and strong, manifestly the work of architects who know how to treat a simple front simply, and who know how to make the most out of a problem that offers little opportunity.

A true appreciation of the value of wall surfaces appears to be characteristic of the work of Rutan & Russell. Their two hotels

show it in a very marked degree, and the same can be said of their S. Augustine Church. It is built of brick and terra-cotta, and is a very careful study in these two materials. The design is Romanesque, with strong Rhenish feeling in the shape of the towers and the octagon on the crossing. There is no surface decoration except in the string courses over the main portals; everything else is rigidly severe, the ornament being confined to window hoods and the characteristic row of small arches below the cornices. Interest is thus concentrated upon the portals, with their delicate



RESIDENCE OF E. H. UTLEY, ESQ.

Pittsburgh, Pa.

Rutan & Russell, Architects.

twisted columns and arch mouldings of the same form. These portals are very well done, and give quite the needed interest to a design that, otherwise, must necessarily be plain almost to severity. The large niche containing the statue of S. Augustine immediately over the central doorway is hardly so happy, but the insertion of so large a statue in a conspicuous place in a front is an extremely difficult problem, and perhaps it could hardly have been solved otherwise than here.

The Phipps' Training School is another building in which the same feeling for surfaces and restrained treatment in general has been followed. The doorways are again properly elaborated, but entirely in harmony with the quiet treatment of the rest of the de-



RESIDENCE OF W. E. REIS, ESQ.
(Exterior and Main Hall.)

New Castle, Pa.

Rutan & Russell, Architects.

sign. The building is a simple one of two stories, the roof, which forms the third story, being lighted with large dormers whose carved consols are, with the ornament of the doorways, the single bits of ornaments in the fronts. Properly speaking, the building has no cornice; but the string course at the top is surmounted by a low piece of wall on which the dormers rest, and behind which the base of the roof is concealed. A piece of wall is here transformed into an ornamental feature, which satisfactorily fills the function of a crowning member, and does it very admirably.

The building for the Chartiers Trust Company is a structure of a very different type, yet it may be referred to here. Built in a small town and for a financial institution of comparatively modest resources, it is naturally a building of moderate size. So much space is here given to windows that the wall hardly amounts to more than an enclosure for the window frames. The classic portal, with its entablature and pediment, is, however, entirely unrelated to the other parts of the design. It is an interesting little structure, on the whole, and yet it has a family likeness to many other structures of a similar size which have appeared quite numerous throughout the country in the last few years.

The demands made upon a busy architect by the exigencies of modern practice are so varied that except in a few occasional instances it is impossible to look for uniformity of ideas and methods in the work of any one man or group of men. This is especially true of domestic architecture, which is so largely influenced by the taste and predilection of the owner and by the necessarily varying conditions of cost and site. It is no criticism of Rutan & Russell to remark of their domestic work that it offers a very decided range of styles and forms. The same may be said of the work of most architects, and is as much a truism as to point out that the utmost variety exists in domestic architecture as a whole, since houses erected for different persons by different architects may be expected to exhibit a corresponding difference in design. A brief survey of some of the more important houses built by this firm will make clear their achievements in this very important branch of architecture. That most of these are country or suburban residences but emphasizes the good fortune of the architects in having houses of this sort to build. That not a few of them are houses of considerable cost is a further advantage. No house is easy to design, easy in the sense of being told off by rule of thumb; but the designing of suburban houses is hedged in by none of the rigid requirements that surround the designing of the city house. The suburban house has at least air and space, and offers many more opportunities for individual treatment than the city house, which, in point of view of external design, is often

nothing more than a piece of wall, with the very marked disadvantage of having no relationship with the adjoining wall pieces.

The house of the Hon. B. F. Jones, at Sewickley Heights, is a country residence of large size. It stands in the midst of grounds which, while ample, are not excluded from the scrutiny of nearby neighbors. It is a large house, generous in size, standing in large grounds, and with agreeable appurtenances of subsidiary buildings. Three sides of the lower story are almost completely masked by broad porches, to one of which is prefixed a portecochère. This floor is of brick; the upper is of half-timber work,



RESIDENCE OF GEO. W. McCALLAM, ESQ.

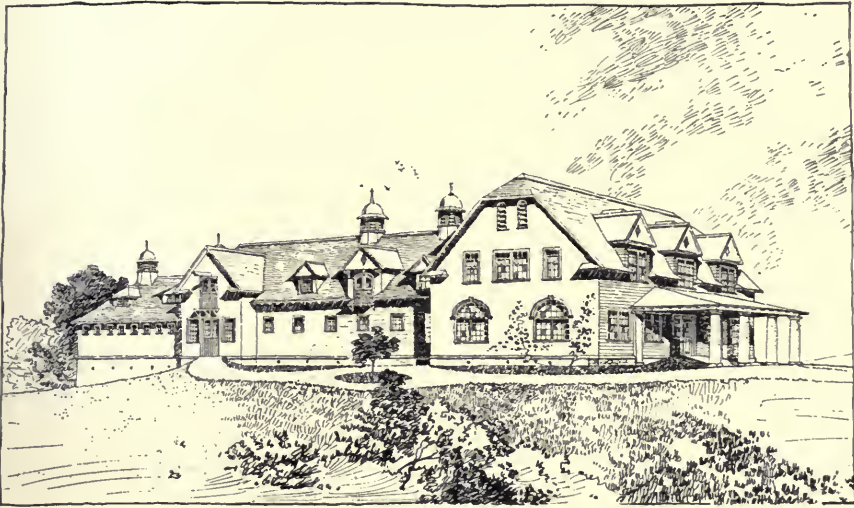
Pittsburgh, Pa.

Rutan & Russell, Architects.

with gable ends, which give a very happy variety to the roofing outlines. It is an ample country home, so large that nearly half of the ground floor is given up to the kitchen and service rooms; yet it is eminently "homelike" in feeling, perhaps the highest praise that can be given to any house.

The residence of Mr. W. E. Reis, at New Castle, Pa., is a structure of very different type. The picturesque English style of the Jones house here gives way to Colonial models. The house is built wholly of brick, with a spacious porch on the main front and the inevitable portecochère on one side. The corners are given a pilaster-like finish by Ionic capitals, and a similar device supports the small central pediment on the main front. As in much of the best work of Rutan & Russell, there is little ornament, but the

walls are strongly treated, and the whole exterior is characterized by a fine dignity. As in most large modern houses, the interior is richly treated. The architect who is called upon to build a large modern house is no longer content to turn it over to the occupant with plain walls and the slightest of structural decoration. The interior of the house now calls, and rightly calls, for elaborate study by the architect, and Messrs. Rutan & Russell offer no exception to what is now the established custom in all domestic work of some size. The main hall of the Reis house is an elaborately designed room, with a beamed ceiling, ornamental "grand" stairway, and supporting columns. The oval dining room is panelled through-



• STABLE OF THE COUNTRY CLUB, OF PITTSBURGH, PA.

Rutan & Russell, Architects.

out, with closets let into the walls, and panelled pilasters carrying the carved cornice.

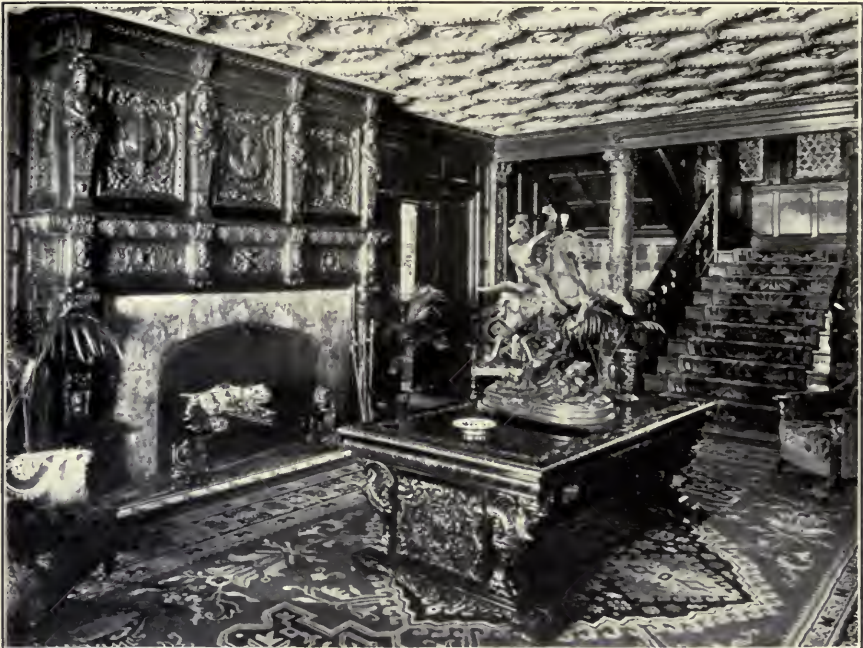
The house for Mr. W. H. Rowe, in Pittsburg, is of a different type, although standing in grounds spacious enough to give it suburban character. It is built wholly of brick, with brick porches and porte-cochère. The main front has two gable ends, with large bow windows. But the architects' feeling for concentration of ornament is further illustrated by the general severity of every part except the spandrils of the main arches of the front porch and the pierced balustrade of the two porches. The sobriety of the exterior, however, hardly prepares one for the gorgeousness of the interior, although the size and character of the exterior directly suggests that the interior must have some special importance. No part of the main hall is without decorative treatment.



Pittsburgh, Pa.

RESIDENCE OF W. H. ROWE, ESQ.

Rutan & Russell, Architects.



INTERIORS IN THE RESIDENCE OF W. H. ROWE, ESQ.

Pittsburgh, Pa.

Rutan & Russell, Architects.

The mantelpiece is most elaborate; the ceiling is in high relief; even the columns which support the stair space have their own rich dress of surface decoration. The dining room likewise has a ceiling in decorative relief, and is supported by panelled walls and elaborate mantel. This enrichment of the interior, however, is more a tendency of the times than the characteristic work of any architect. These interiors are more interesting as highly finished



CHARTIERS TRUST CO. BUILDING.

McKees Rocks, Pa.

Rutan & Russell, Architects.

rooms than characteristic examples of the work of these Pittsburg architects.

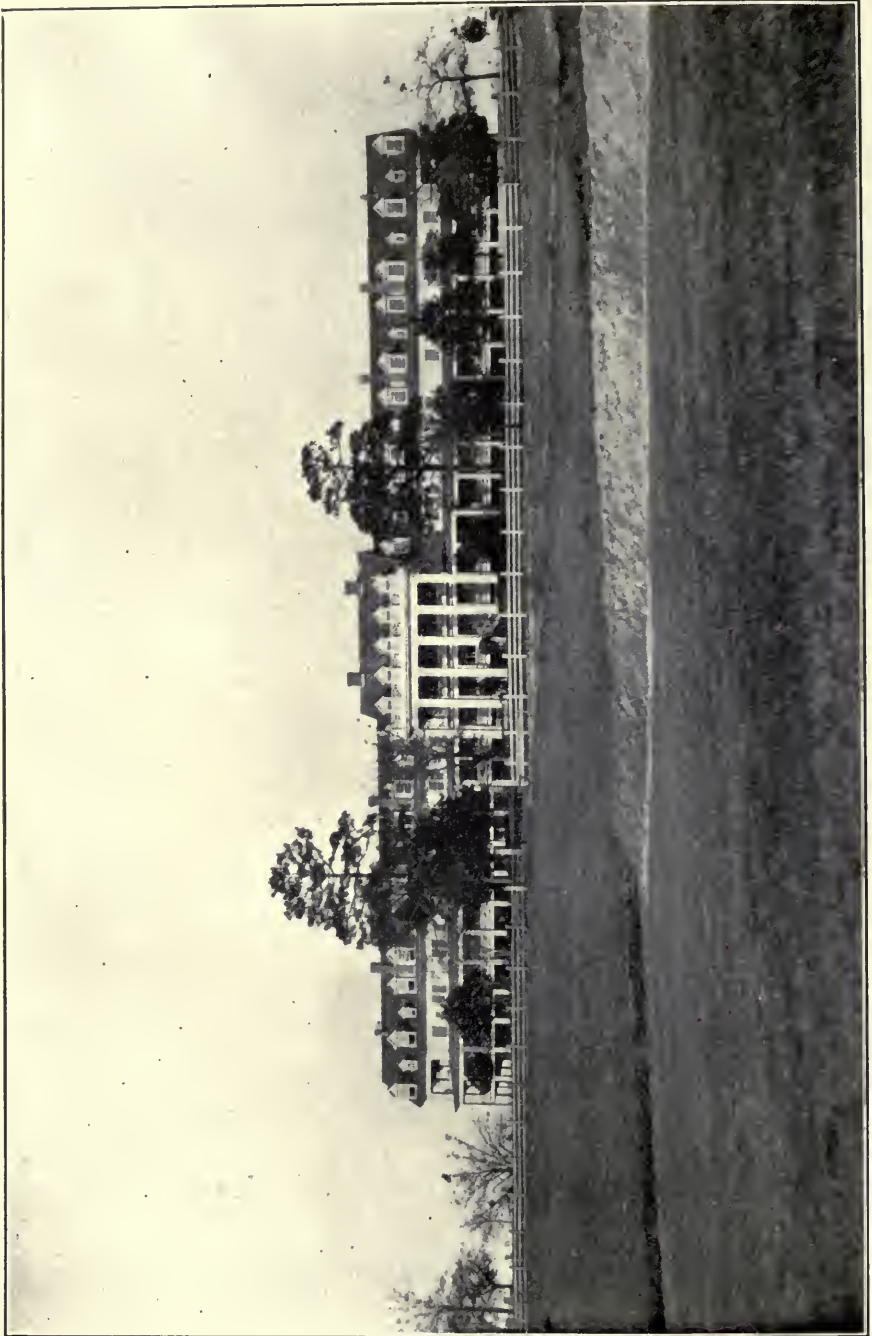
Another version of the old Colonial is the house of Mr. Edward O'Neill at Sewickley. It is architectural parts—the windows let into ample wall space, the porches, the high sloping roof, the dormer windows—which give character and distinction to this fine house. The house for Mr. James Todd, in the same suburb, is built of stone. A stone wall encloses the terrace and porch, and again



INTERIORS IN THE W. H. SCHOEN RESIDENCE.

Pittsburgh, Pa.

Rutan & Russell, Architects.



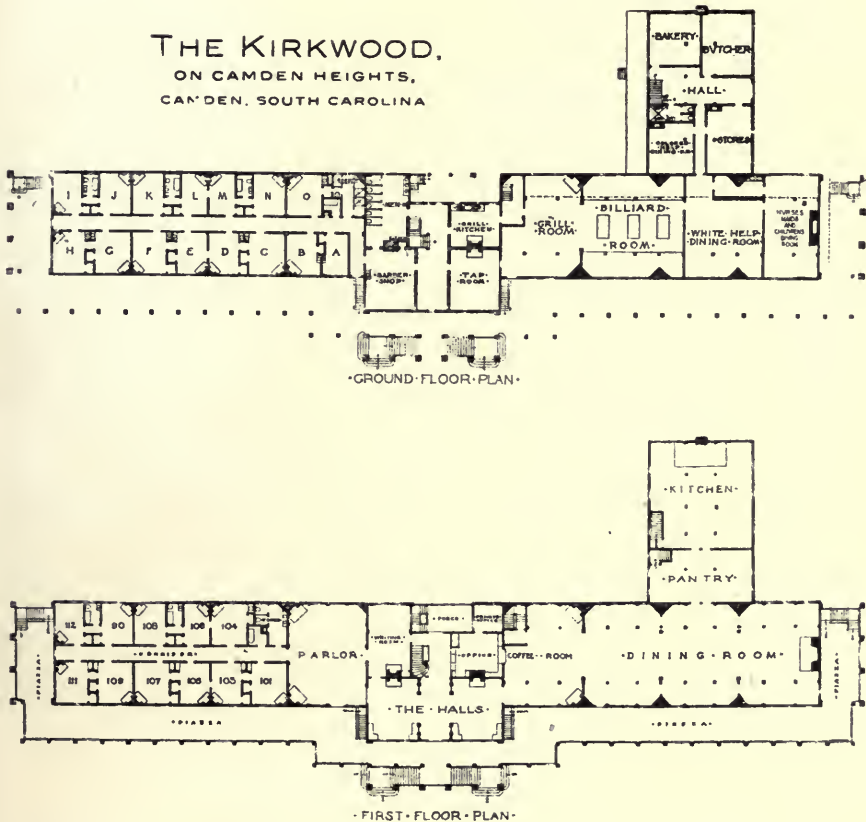
Rutan & Russell, Architects.

THE KIRKWOOD.

Camden, S. C.

there is the dependence on materials alone for effect, for of ornament there is none at all.

The house of Mr. E. H. Utley, in Pittsburg, has a pleasant suburban air, as have many houses built in the non-crowded portion of our growing cities. The first floor is of stone; the upper of half-timber work; the whole effect is picturesque. Much more modest than any of these houses is that for Mr. George E. Mc-

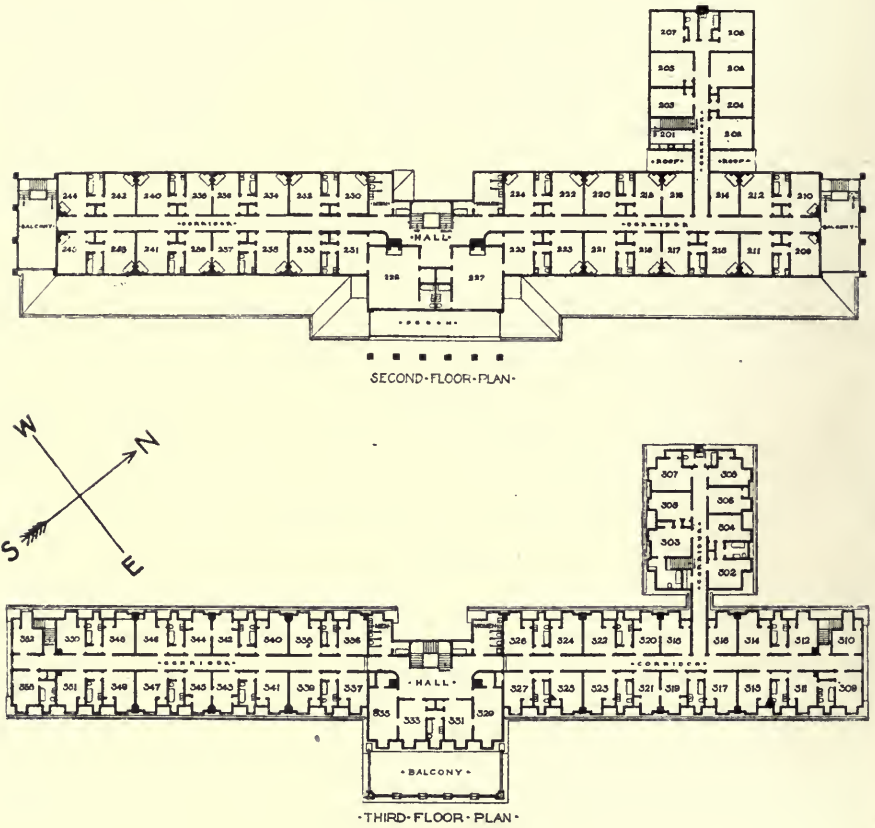


Callan, also in Pittsburg. It is hardly more than a cottage; the lower story in brick is surmounted by a gambrel roof in shingles; it is an interesting study in the designing of small houses.

The Edgeworth Club of Sewickley is a building that, in some aspects, might be mistaken for a comfortable country home. This, of course, is exactly what a country club is intended to be, and very successful and good the present example is. The building is shingled throughout, and is an interesting study in structural form,

since of ornament, as it is generally understood, there is none at all.

Is it possible to draw some general conclusions from the work of Messrs. Rutan & Russell from this hasty review of some of their more important work? It is well known that they are among the leaders of their craft in Pittsburg. It is apparent from what has been said, and from the illustrations which accompany this article,



THE KIRKWOOD.

Camden, S. C.

Rutan & Russell, Architects.

that their work has embraced some of the largest structures in their own city, and has well covered the wide range of subjects attained by all architects of prominence. Excellence of workmanship is perhaps the most notable characteristic of all these designs. Sobriety of treatment is another point in their favor. The building of buildings as buildings, of obtaining effects of form and shade through constructive materials, is clearly enough their most indi-

vidual point. This in itself is so rare and unusual, and the results obtained are so generally satisfactory, that special importance should be attached to it.

How far their art may be characteristic of Pittsburg is a more delicate question. It is certainly not provincial and certainly not Western. It compares most favorably with work of similar cost and size erected elsewhere. No doubt, had the Hotel Schenley been erected in New York it would have been more grandiose in



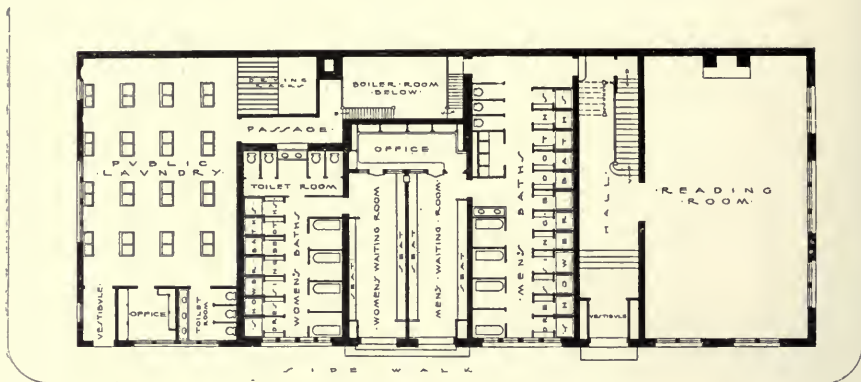
THE PHIPPS TRAINING SCHOOL.

Allegheny, Pa.

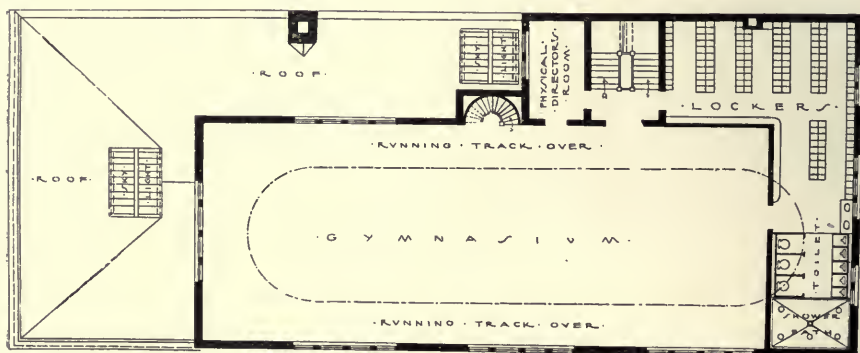
Rutan & Russell, Architects.

design or more elaborately treated with ornament. But it would not, because of that, have been a better hotel, nor one better adapted to the requirements that might be demanded of it. But, taking all this work as a whole, it is evident that Pittsburg has reason to be completely satisfied with the standard set by buildings which so thoroughly testify to the strength and ability of their creators.

Barr Ferrce.



FIRST FLOOR PLAN
SCALE 1/8"=1'-0"



SECOND FLOOR PLAN
SCALE 1/8"=1'-0"

PLANS OF THE PHIPPS TRAINING SCHOOL.

Allegheny, Pa.

Rutan & Russell, Architects.



THE NEW HOTEL ASTOR.

Long Acre Square, New York City.

Clinton & Russell, Architects.

ARCHITECTURAL REFINEMENTS IN EARLY BYZANTINE CHURCHES AND FRENCH CATHEDRALS.*



IN the Architectural Record for July-September, 1896, Vol. VI., No. 1, was published an essay on "Optical refinements in mediæval architecture," which was followed by a series of six papers under various individual titles, but all relating to the same general subject (the concluding paper of this series was published in Vol. VII., No. 3, for 1898).

These papers furnished the report of an investigation which had been undertaken by the writer under the auspices of the Brooklyn Institute of Arts and Sciences, and which was carried on, in Italy, between the months of May and October, inclusive, of 1895. The general results of this investigation were summarized in the preliminary report, having the above-quoted title, under fourteen headings, and from these announcements we will now draw attention to the following, which were the first three in order of mention.

The first announcement related to vertical curves in mediæval church interiors: "The construction of the piers of many mediæval churches in a delicate curve, sometimes leaning into the nave, sometimes bending back from the nave, and in either case making a delicate return curve to the arch of the vaulting." The second heading announced the existence of "a refinement analagous to the last-named, and probably the original and earlier form of it," viz., the survival in the Middle Ages of the classic entasis.

The third heading mentions: "A refinement possibly or probably derived from the first-named, and frequently connected with it; a leaning outward and away from the nave of the nave piers, in phases grading from an exaggeration of the backward bend, and continuing the curve, to others in which the leaning backward, or spread, of the nave piers is in a straight line and not in a curve."

For the sake of brevity this arrangement will be described as the "widening" or the "widening refinement" in the later mentions of this paper. An account of the motives probably underlying this refinement has been given in Memoir No. 2 of the Brooklyn Museum Memoirs of Art and Archæology.*

It was further mentioned in the preliminary report that careful attention had been given to the question whether accidental causes might not be a sufficient explanation of the phenomena, and that

*The illustrations of this paper are from photographs of the Brooklyn Museum Surveys, of the series of 1903.

**"The Architectural Refinements of St. Mark's at Venice," with 14 plans and 44 illustrations. Published by the Macmillan Company.

a negative answer to this question must be given. This question was also subsequently debated at considerable length in two of the following papers, which were respectively entitled, "A discovery of the entasis in mediæval Italian architecture," and "An echo from Evelyn's diary."

Observations in Italy.

As far as Italy is concerned all possible scepticism as to the refinements just described was laid to rest in 1901. In the Summer of that year additional observations were made, of a wholly convincing character, which bore on the announcements just quoted. Other observations which had previously been a matter of personal assertion were corroborated by photographs and measurements. Finally, certificates regarding the constructive facts in the two most celebrated Romanesque buildings of Italy were obtained from the Italian engineering experts who were respectively in charge of the Pisa Cathedral and of St. Mark's at Venice.

A review of some 3,600 words in length, by Antonio Taramelli, accepting the statements which had been published on behalf of the Brooklyn Museum Surveys, had meantime appeared in *L'Arte*, the leading art journal of Italy (Vol. III. for 1900). A review accepting the announcements for St. Mark's at Venice was subsequently published by Alfredo Melani, in the *Gazetta di Venezia* for November 9, 1903. Personal letters, of an approving character, were also addressed to the author of the reports, by Giacomo Boni, the excavator of the Roman Forum, who has been at various times associated with the repairs of St. Mark's, by Francesco Saccardo, one of the authors of Ongania's publication for St. Mark's, by Professor Pompeo Molmenti, President of the Venetian Academy and a distinguished authority on the history of Venetian and Italian art; by Baron Henry De Geymüller, the distinguished German architectural authority, who has edited the most recent edition of Burckhardt's "Cicerone" for Italy, and by other experts of distinction.

Under these circumstances it is sufficient to say for the observations in Italy regarding vertical curves and bends, and the system of diverging piers, that they have so far included some twenty-one Italian churches and cathedrals, most of which have been illustrated in one or more publications, and especially in Memoir No. 2 of the Brooklyn Museum Memoirs of Art and Archæology.

Among these twenty-one churches it would be possible to single out a few in which the observations might not be regarded as wholly convincing, from the standpoint of an engineering expert, but the following list may be regarded as a list of impregnable cases from

the standpoint of the expert in construction: St. Mark's and S. Giorgio Maggiore at Venice; the Cathedral and S. Lorenzo, at Vicenza; S. Ambrogio and S. Eustorgio at Milan; S. Michele, at Pavia; Ss. Pietro e Paolo, Bologna; the Cathedral of Borgo San Donnino; the Cathedral and S. Paolo Ripa d'Arno, Pisa; Sta. Maria della Pieve, Arezzo; S. Agostino, Orvieto; and the Cathedral of Trani.

Before speaking of churches outside of Italy it is important to rehearse the evidence for constructive intention in the instances mentioned.

St. Mark's at Venice. Certificate from the engineering expert in charge of the church in 1901. Unanimous concurrence of other experts in Venice, as far as heard from. The widening of the nave (nearly 3 ft. in amount) would have caused the collapse of the church, if it had been accidental. The widening effect of the left aisle is managed by inclinations of engaged columns against a wall which has the north vestibule on its opposite side. The widening effect in the north vestibule is obtained (on the given side) by leans of engaged columns, which incline against the wall in the direction opposed to that of the engaged columns in the left aisle. In other words, engaged columns lean against the same wall in opposed directions on opposite sides. The inclinations by which the widening is effected in the side aisles are repeated in engaged pilasters facing the transept walls, which are not exposed to thrust or settlement. The east and west leans of the transept system are found in the engaged pilasters of the north and south end walls of the transepts. The engaged pilasters in the angles of both transepts repeat the leans called for by the general system of parallel treatment, at points where such leans could not be caused by thrust or settlement. The north and south leans of the end walls of the transepts (which are not subjected to any thrust), lean out to an amount (of over one foot in thirty feet) which would have caused the collapse of the adjacent arches, if these leans were accidental, whereas these arches are all perfectly true and in good condition.

S. Giorgio Maggiore at Venice. Aside from the widening of the nave, the refinement is systematically employed in the piers of chapels in the side aisles which are not exposed to thrust. The widening is not produced by an exaggerated entasis, because the same entasis is found on both sides of each aisle, whereas the widening lean is only found on each exterior side of the aisle.

S. Lorenzo, Vicenza. The widening of the side aisles is repeated in an outward lean of the exterior accessible wall, having buttresses of homogeneous and contemporaneous construction with exterior perpendicular faces.

S. Agostino, Orvieto. The inside widening is repeated in exterior outward leans of the side walls, while the buttresses, of homogeneous and contemporaneous construction, have faces which lean inward against the walls.

Vicenza Cathedral. The vertical curves are found in the pilasters of the chapel walls which face on the nave and which are 25 ft. deep.

S. Ambrogio, Milan. S. Eustorgio, Milan. S. Michele, Pavia. The widening is carried out in the aisles by leaning pilasters, which face chapel walls of considerable depth, and which are at right angles to the line of thrust.

Borgo San Donnino. The widening appears in the apse, in pilasters which are not exposed to thrust.

Ss. Pietro e Paolo, Bologna. The widening of the clerestory walls extends to the points at which they are interlocked in the end walls, and where they are not exposed to thrust.

Pisa Cathedral. Vertical curves in the piers at the crossing. Certificate for constructive facts from Signor Annibale Messerini, engineering expert in charge of the building.

S. Paolo Ripa d'Arno, Pisa. Vertical curves in engaged pilasters at the apse which are not exposed to thrust.

Sta. Maria della Pieve, Arezzo. The widening system is carried out so as to include engaged pilasters which are not exposed to thrust or settlement.

Cathedral of Trani. The widening of the nave piers at the transept crossing extends from the pavement up. The thrust of the arch is inconsiderable, and it thrusts against transept walls of considerable depth.*

It may be frankly admitted that there is no impregnable constructive evidence to be offered for the following seven Italian churches: Cremona Cathedral (vertical bends bulging into the nave to the height of the aisle, with marked widening in the upper nave); Perugia Cathedral (piers leaning outward in straight lines from the pavement up); Arezzo Cathedral and Sta. Trinitá, Florence (vertical curves); Siena Cathedral (ruined portion, vertical bends, doubtful case); Cathedral of Aosta (not personally examined); Capella Palatina, Palermo (widening of the apse comparatively insignificant).

The following list mentions a number of important Italian mediæval churches which were examined in 1895 (some of them re-examined in 1901), and in which the refinements of the widening, or of the vertical bends and curves, have not been so far observed: Venice, Churches of the Frari and of Ss. Giovanni e Paolo; Ravenna, S. Vitale; Ancona, S. Ciriaco; Bologna, S. Petronio; Padua,

*All the buildings cited are represented by large photographs in the Brooklyn Museum exhibit, excepting Borgo San Donnino.

S. Antonio; Verona, the Cathedral and Sta. Anastasia; Milan, the Cathedral; Piacenza, the Cathedral; Modena, the Cathedral; Parma, the Cathedral; Florence, the Cathedral and Sta. Maria Novella; Lucca, the Cathedral; Assisi, the Cathedral; Siena, the Cathedral (completed portion); Rome, Sta. Maria Sopra Minerva.

The above list of negative results is confined to vaulted buildings, as the refinements in question would be unavailable in columnar basilicas, outside of the apse, unless they resembled the Pisa Cathedral and Trani Cathedral in having transepts with piers supporting arches which span the nave at the crossing.

It will be noticed that the observations in Italy for the refinements which are in question in this paper are very evenly balanced numerically, as regards positive and negative results.

As regards period there is no late Gothic church in Italy, and only one Renaissance church, which has so far been observed to show the given refinements. On the other hand, the list of observations with negative results includes several late Gothic examples.

If the negative results are compared with positive results for the Romanesque period, it appears that the positive results are obtained in several buildings of Romanesque period having great fame and distinction, such as St. Mark's at Venice; S. Ambrogio, Milan; S. Michele, Pavia, and the Pisa Cathedral. These may be contrasted with the less important Cathedrals of Modena, Parma and Piacenza, Padua and Ancona.

As regards buildings of distinctly Byzantine character, we have the splendid St. Mark's at Venice, on the positive side, as against the less important S. Vitale on the negative side.

The situation for Italy, as far as known, may then thus be summarized. No late Gothic examples of the particular refinements in question are so far known. Several early Gothic examples are known, among which Cremona Cathedral (if admitted as a constructive case) must be considered very important. The Romanesque churches giving positive results are more important buildings than those giving negative results. The most famous church in Italy is the only one known in Italy in which there are intersecting systems of vertical bents for both nave and transept. (In St. Mark's the details of the intersecting systems are elaborated with incredible ingenuity and persistence.)

The conclusions to be drawn from the above comparisons for Italy would be that the given refinements were gradually abandoned before or during the close of the Gothic period, and that they were introduced into Italy under Byzantine influence.

Observations which were undertaken in 1903 at Constantinople have confirmed the conclusion regarding Byzantine influence. Observations in France have much increased the list of early Gothic

cathedrals showing the given refinements, but they have not antagonized the conclusions regarding the later Gothic period.

Observations at Constantinople.

It is the special object of the present paper to give an account of observations which were made at Constantinople and in Northern France, during the Summer of 1903, for vertical curves and bends and for the phenomenon of constructive divergence, or widening of mediæval interiors in the upward direction. These observations will be offered as far as possible in the shape of photographs, with comments and descriptive text relating directly to the photographs.

Fig. 1.—Balaban Aga Mesjid, Constantinople; an undated small Byzantine church, with apse showing an outward divergence, in the lines rising to the arch, of $5\frac{1}{2}$ inches in a height of 12 ft.; width at the pavement, 7 ft. This is an inappreciable constructive demonstration for the use of the widening refinement. A short plumb-line hanging from a nail on the right side of the apse establishes the perpendicular. The surveyor's rod (6 ft. high), on the right, furnishes a scale of dimensions.

Fig. 2.—St. Mary Diaconissa, Constantinople; dating 599. View looking toward the entrance. The piers diverge in straight lines from the pavement up. There are plumb-lines on each pier (which are, however, not suspended for the entire height of the church). Surveyor's rod on the right (6 ft. high). It is apparent in this picture that a vaulting thrust could not have spread the piers in this fashion in straight lines beginning at the pavement. This case is palpably constructive. Height to the vaulting, 33 ft., widening at the arch, 16 inches; width at the pavement, $25\frac{1}{2}$ ft.

Fig. 3.—St. Mary, Diaconissa, Constantinople. View looking toward the choir; showing vertical bends of a character which are palpably not due to thrust. Height to the springing of the vaulting, 33 ft.; amount of the bend on the right side, 11 inches. Total widening, something less than 22 inches.

This church has the plan of a Greek cross. The transept arms of the cross exhibit similar bends, which are transverse in direction to those illustrated, thus anticipating by four hundred years the arrangement found in St. Mark's at Venice.

Bends similar to those of St. Mary Diaconissa are found in Sta. Sophia, but permission to make photographs in this mosque could not be obtained. In the commercial photographs of Sta. Sophia the bends are concealed by the large shields, on which are inscribed the names of the companions of Mohammed, which are hung in the angles of the mosque. These bends could be photo-



FIG. 1. APSE, BALABAN AGA MESJID, CONSTANTINOPLE.



FIG. 2. ST. MARY DIACONISSA, CONSTANTINOPLE.



FIG. 3. ST. MARY DIACONISSA, CONSTANTINOPLE. FROM THE GALLERY, LOOKING TOWARD THE CHOIR.

graphed to great advantage from positions in the rear of the shields. Procopius, who wrote a description of the church in the 6th century, mentions that the building "rises from the ground, not in a straight line, but setting back somewhat obliquely."*

The Brooklyn Museum exhibit of enlarged photographs includes another Byzantine church at Constantinople, the Church of the Monastery of the Chorah (11th-13th centuries), which is quoted by Fergusson and other authorities as having furnished the model for the primitive façade of St. Mark's at Venice. This church also has the plan of a Greek cross, and also has two widening systems which intersect one another. The marble casing of the interior is well preserved.

As measured at the choir, the outward bends result in a widening of 9 inches in a height of $21\frac{1}{2}$ ft., with a width at the pavement of 20 ft. The outward bend is partly effected by the inclination and stepping back of four courses of marble panelling, which are directly under the half-dome of the apse. The constructive arrangement of these panel courses is clearly apparent in the excellent enlarged photograph of this church, which is on exhibition in Brooklyn.

The photographs made in Constantinople include fourteen from St. Mary Diaconissa, four from the Church of the Monastery of the Chorah, and three from the Balaban Aga Mesjid. They establish, beyond dispute or cavil, the use of the widening refinement, both with and without vertical bends, as having existed in Byzantine architecture as far back as the 6th century of the Christian Era.

The results indicated by observations in Italy, and especially in St. Mark's, are thus definitely confirmed.

Observations in Northern France.

The following illustrations are selected from a large number of photographs which were made in Northern France in the Summer of 1903.

Fig. 4.—St. Jean at Caen. Two instances have been so far observed in France of the widening in late Gothic. One of these has been selected as an opening illustration for France, because it appears to show very successfully the artistic effect which was obtained and desired by the widening system. This effect is most easily appreciated in naves of relatively low proportions. In this church the system appears to be confined to the piers at the intersection of the nave and transept. By plumb from the gallery the second pier at the transept on the right was found to incline out-

*See p. 25 of Lethaby and Swainson's work on Sta. Sophia.



FIG. 4. ST. JEAN, CAEN, FROM THE CHOIR.

ward $5\frac{1}{2}$ inches in a height of $35\frac{1}{2}$ ft. The entire amount of widening is thus about 10 inches.

Fig. 5.—Choir of the early Gothic Church of St. Loup, at Chalons. Although this view is confined to the choir, the widening system is found throughout the nave. The widening at this point amounts to 13 inches in a height of 32 ft. The width between piers is 24 ft.

This view illustrates, like Fig. 4, the relatively infrequent cases in which the piers of the nave diverge in straight lines, beginning at the pavement. Similar constructions were otherwise found, in 1903, only in St. Thomas at Strassburg and in the church of the Monastery of Montierneuf at Poitiers.* Parallel cases in Italy, for piers diverging from the pavement up, are S. Ambrogio at Milan, the church of Sta. Maria della Pieve at Arezzo, and the Cathedral of Perugia.

The Curate of St. Loup gave the information that the architect in charge of the repairs of the church (M. Aubertin) is familiar with the constructive facts, and that he explained the system of construction as related to the feeling which designed the horse-shoe arch. The same suggestion of a feeling akin to that of the horse-shoe arch is found in the church of the Monastery of the Chorah at Constantinople.

Fig. 6.—The windows at the ends of the aisles of St. Loup at Chalons are built with mullions and exterior sides leaning off in lines which are parallel with the leaning piers. In Fig. 6 we see the window of the right aisle. The pier on the left is the one which is seen on the right in Fig. 5. A plumb-line is suspended from a nail on the right side of the window. (The pole by which the line has been raised to the nail is also leaning against it.) The pilaster to the right of the plumb-line leans off about 7 inches in 24 ft.

The motive of setting the window obliquely is obviously to avoid an over-conspicuous prominence of the primary leans, or to avoid such a contrast between perpendicular and leaning lines as would lead to the detection of the latter. Similar arrangements have been found in other French churches. The system of sustaining a parallelism of leans at all points where a perpendicular would conflict with them is carried out to a marvellous extent in St. Mark's at Venice, as shown by the plumbs which were published in Memoir No. 2.

The Brooklyn Museum exhibit includes two photographs for the left aisle of St. Loup.

The general system of the aisle arrangements in this church

*The Museum exhibit includes an aisle view from St. Thomas at Strassburg, in which the leaning pilaster faces a chapel wall of great depth.



FIG. 5. THE CHOIR, ST. LOUP, CHALONS.



FIG. 6. THE RIGHT AISLE, ST. LOUP, CHALONS.



FIG. 7. THE LEFT AISLE, ST. ALPIN, CHALONS.

and the character of the constructive evidence which these arrangements offer is shown by the following illustration from another church in Chalons.

Fig. 7.—Left aisle of the early Gothic church of St. Alpin at Chalons. The plumb-line which hangs on the second pilaster records a lean of 4 inches in a height of 14 ft. This photograph is a very valuable one for constructive demonstration at a distance from the original monuments. By virtue of the small dimensions of the aisle the deflection is more than usually prominent, in relation to the size of the picture. The self-set task of furnishing obvious demonstrations within the limits of 5 x 7 prints, and even smaller reproductions, is a very difficult one when the average dimensions of the French cathedrals and the really inconspicuous character of these deflections are considered, and it is not often that such convincing pictures can be obtained, although the facts as observed in the churches themselves are frequently quite as convincing.

The picture is especially successful because the slant of the first pilaster happens to contrast in a very distinct manner with the adjacent perpendicular of the side of the photograph.

The fact that the masonry courses are all visibly horizontal is especially to be considered. If thrust or settlement had produced this deflection the masonry courses would dip downward to the left. The same horizontal arrangement of masonry courses is also found in the aisles of St. Loup, which otherwise resemble this view. The Museum exhibit includes a similar photograph for the right aisle of St. Alpin, and two photographs for the nave. The latter has a more delicate and less perceptible widening, but it is well defined notwithstanding. The divergence in the nave is connected with a bend.

Fig. 7 is obviously conclusive as to questions of settlement or thrust. There are three Italian churches from which constructive evidence of the same character has been published, i. e., churches in which there are chapel walls on the exterior side of each side aisle, which are opposed to the line of thrust, and of such depth as to make accidental movement of the masonry impossible. These churches are S. Ambrogio and S. Eustorgio, Milan, and S. Michele, Pavia, as previously mentioned.

Fig. 8.—The left aisle of Notre Dame, at Chalons. The plumb-line records an outward lean of $3\frac{1}{4}$ inches in 15 ft. The masonry courses of the pilaster in its upper portion and the fillet under the capital are inclined downward to the left. If the wall had gone over accidentally they would incline downward to the right.

The great importance of this photograph lies in its illustration of a vertical curvature, which is uniform in all the pilasters. In face



FIG. 8. THE LEFT AISLE OF NOTRE DAME AT CHALONS.
LOOKING TOWARD THE FAÇADE.

of this picture it is wholly impossible to deny that a vertical curvature analogous to the entasis and directly related to it was employed in mediæval Europe. A similar observation and a similar photograph have been made in Fiesole Cathedral. Other instances of the mediæval entasis have been quoted in Vol. VII., No. I, of the *Architectural Record*. (One of these instances, quoted in 1897, must be withdrawn, viz., S. Miniato, at Florence. The observation was made in 1901 that the pillars of San Miniato are covered with a very deceptive Renaissance stucco, in imitation of green marble, although the church itself is early Romanesque.)

The illustration from Notre Dame at Chalons shows the importance of wide observations and of many of them. In face of this picture the hypothesis that the vertical curves in the naves of French Gothic cathedrals are derived from the classic entasis by way of Romanesque classic survivals or copies seems highly attractive. Much new light on this subject may be expected from a wider examination of the French Romanesque. The observations of 1903 in France were almost wholly confined to Gothic buildings.

The nave of Notre Dame at Chalons shows delicate vertical bends.* The pilasters of the right aisle have the vertical curves, but do not incline outward. This is the only church so far found in Europe in which constructive leans are confined to one aisle. The explanation would naturally be found in a change of builders. The use of the widening in the aisles is not frequent, and it is clear that there were many builders who did not employ it in the aisles.

Fig. 9.—The Church of St. Quentin, from the choir. This photograph illustrates the most pronounced case of vertical curvature which has so far been found in Europe. At the piers on the choir side of the crossing the widening is 2 ft. (Width at the pavement 34 ft.) It is quite evident that the vaulting would have collapsed if such an outward spread had been due to accidental causes.

According to accounts given by the Sacristan, the recently deceased architect in charge of this church (M. Benard), who had presided over its repairs for thirty-six years, was well acquainted with the facts as being constructive, and attributed them to the *hardiesse* of the mediæval builders.

If any additional argument were needed it would be found in the arrangements connected with the system of vertical curves in the transepts, which intersects the system of the nave. This intersection is shown by the following illustrations.

Figs. 10, 11 (Church of St. Quentin), represent two adjacent

*This statement corrects the one recently made regarding the nave of this church in *Museum Memoir* No. 4.



FIG. 9. THE CHURCH OF ST. QUENTIN. FROM THE CHOIR.

sides of the pier at the southwest intersection of the nave and transept. This pier is the farther pier on the left, at the transept, as seen in Fig. 9. The face which fronts the spectator in Fig. 9 is the eastern side of this pier, and this is also shown by Fig. 10. Fig. 11 shows the south side of the same pier as having curves which intersect at right angles those of Fig. 10. The curves of Fig. 11 belong to the transept system, which is transverse to that of the nave. The same arrangement of intersecting systems of bends has been mentioned as existing in St. Mark's, at Venice; in St. Mary Diaconissa, Constantinople, and in the Church of the Monastery of the Chora at Constantinople.

It is obvious that these intersecting curves imply very intricate masonry cutting in the stones of the pier. The facts are uniform in all four piers at the crossing of nave and transept.

It is inconceivable that any builder or mason could inspect these intersecting curves as they are seen in this church and attribute them to thrust. If the facts represented by these two photographs are perfectly understood, and if they are understood to be typical for all four piers at the crossing, it is not easy to understand how any architect can question the existence of constructive curves at St. Quentin. The facts are, however, already sufficiently apparent in Fig. 9. The curves and the widening are bound up together in this church. Both must be accepted or both must be rejected, and the only alternative here is to hold that a vaulting can spread $4\frac{1}{2}$ ft. without collapsing.

The use of tie-rods may be noted in the nave (Fig. 9). I was not advised whether these were introduced before the time of M. Benard. The strengthening of the church by these rods was probably advisable, and it is extremely natural, in view of the great divergence of the nave piers, that this expedient should have been suggested at some time later than the original construction, possibly under the recent architect in charge.

Fig. 12 introduces another interesting feature of the Church of St. Quentin. The openings from the transept into the aisles are also constructed with a widening. Thus the nave piers bend slightly into the nave before they curve away from it higher up. This is seen in Fig. 9 as well as in Fig. 12.

On the other hand, Fig. 12 shows the vaulting-shaft on the left as bending slightly toward the perpendicular above the widening. The Brooklyn Museum exhibit includes four pictures in which these facts are found to be uniform. The return curve of the vaulting-shaft is more clearly seen in these other pictures than in the one here published. In this picture a portion of the vaulting-shaft is concealed.

A widening of the aisles in two directions is unusual. In the

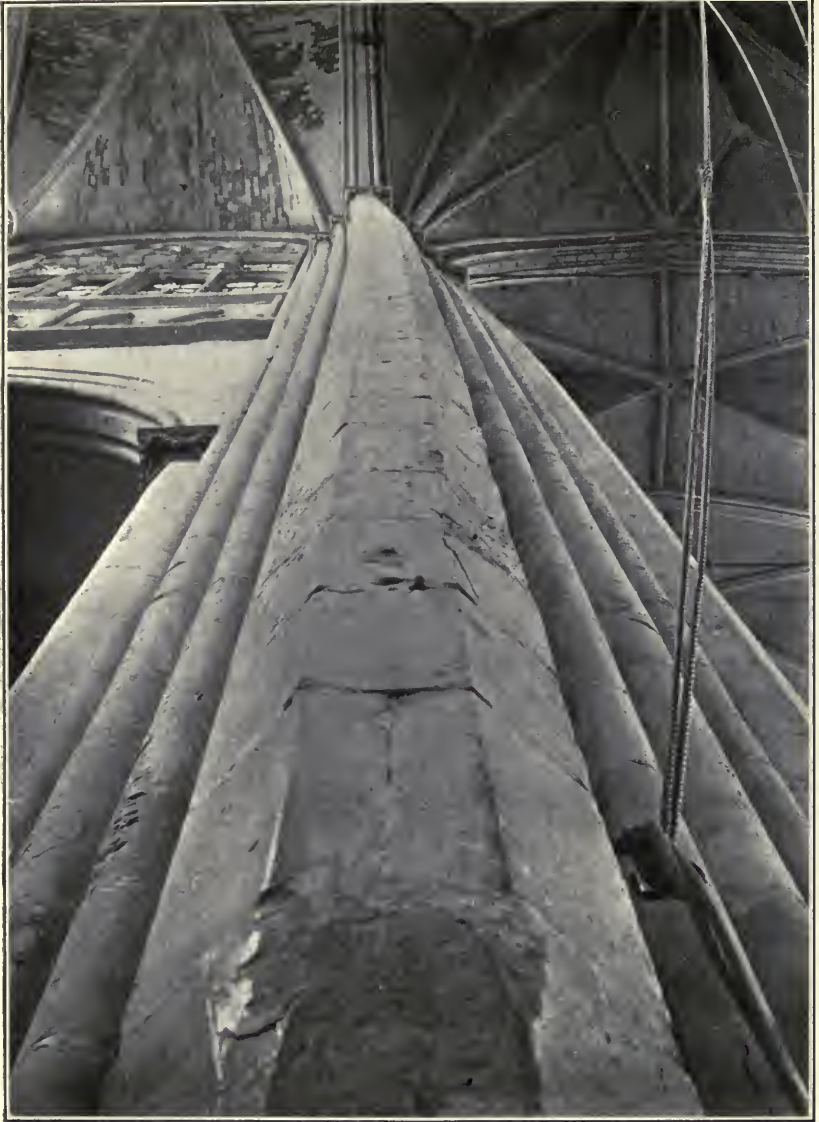


FIG. 10. THE CHURCH OF ST. QUENTIN. SOUTH-WEST CROSSING
PIER, EAST SIDE, LOOKING UP THE PIER FROM THE
GROUND TO THE ROOF.

(To see this picture correctly, hold it flat above the eyes and view it looking upwards.)



FIG. 11. THE CHURCH, OF ST. QUENTIN. SOUTH-WEST CROSSING
PIER, SOUTH SIDE, LOOKING UP.

(To see this picture correctly, hold it flat above the eyes and view it looking upwards.)



FIG. 12. THE CHURCH OF ST. QUENTIN, RIGHT AISLE. FROM THE CHOIR, LOOKING THROUGH THE TRANSEPT.

Italian churches which have been quoted for the aisle widening, the leans are only found on the exterior side, and this is also true of St. Loup and St. Alpin, at Chalons.

As regards the western portion of the Church of St. Quentin, it is in the opening from the transepts into the aisles rather than in the aisles themselves that the widening is found, but in the choir aisles the piers lean apart on both sides of the aisle. This is the explanation of the extraordinary and abrupt bends which may be noticed in Fig. 9 as existing in the choir. They are due to the fact that the piers lean into the choir as far as the capitals, whereas the vaulting-shafts and walls lean out above that point. The entire wall of the choir is twisted sideways, on both sides, in order to obtain the desired end.

It is a very frequent arrangement in French cathedrals that the widening is inconspicuous or wholly absent at the façade entrance, and that it gradually increases toward the choir. This fact may be observed in Fig. 9.

Conclusion.

The continuation of this paper in the next issue of the *Architectural Record* will describe other French churches and cathedrals having similar refinements. The general result of the Brooklyn Institute observations of 1903 may, however, be briefly stated here. Twenty-seven localities were visited, including Constantinople, Vienna, Strassburg, and twenty-four towns in France. In these twenty-seven localities, thirty-one churches and cathedrals were found to exhibit vertical bends and curves or vertical widening. In most cases the two arrangements were combined.

It is believed that all the instances described and illustrated in this paper carry their own internal evidence of constructive intention to the eye of the expert, even in the limited dimensions necessary in these cuts. Not less remarkable constructive evidence will be published for other French cathedrals in the continuation of these papers.

It could hardly be demanded by the most exacting critic that impregnable constructive evidence should be furnished for every building cited or illustrated. From the standpoint of historic probability and historic criticism it would be incredible that even one case of architectural refinement could be demonstrated to have existed in the Middle Ages as an isolated example. The existence of other cases would be presumed, as a matter of course, even if they had not been seen. Why, then, be over-exacting of constructive proof for every case which has been seen? One instance absolutely proven would involve the certainty that a

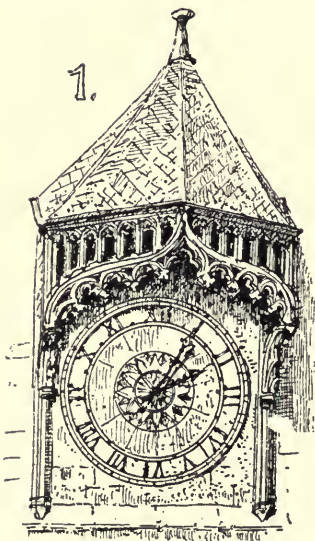
traditional practice of such refinements must have existed. And this is the only question which is at stake in this investigation.

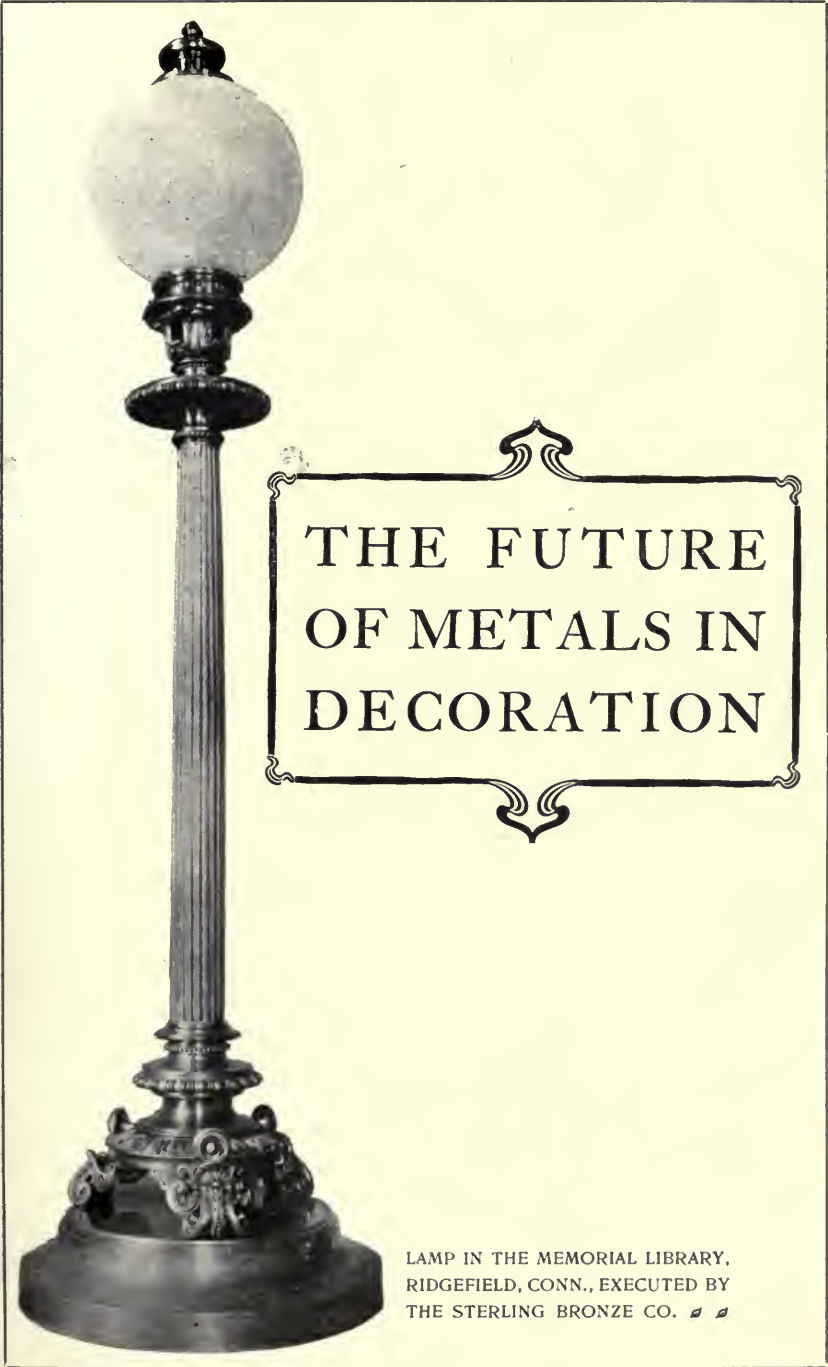
That deformations due to accidental causes are found in many mediæval buildings is beyond dispute, but a vague insistence on the existence of such accidental deformations will hardly be considered as overbalancing or obscuring the evidence now being presented.

Wm. H. Goodyear.

(To be continued.)

On p. 135, 25th line, read 2 ft. in place of 4½ ft.





THE FUTURE
OF METALS IN
DECORATION

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RIDGEFIELD, CONN., EXECUTED BY
THE STERLING BRONZE CO. ■ ■

THE FUTURE OF METALS IN DECORATION.

III.

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OLD WROUGHT-IRON WORK, No. 27 EAST 20TH STREET, NEW YORK CITY.

bilities of iron either from the æsthetic side or the side of comfort. One may say that the field is still virgin, waiting for the inventive mind to subdue the metal to the finer uses of man. What we now have in the cities is not calculated to raise one's respect for anything but the mathematical mind that calculates weight and the resisting power of iron and masonry, also the strain of wind-pressure on enormous walls and on giddy miles of iron bridgework.

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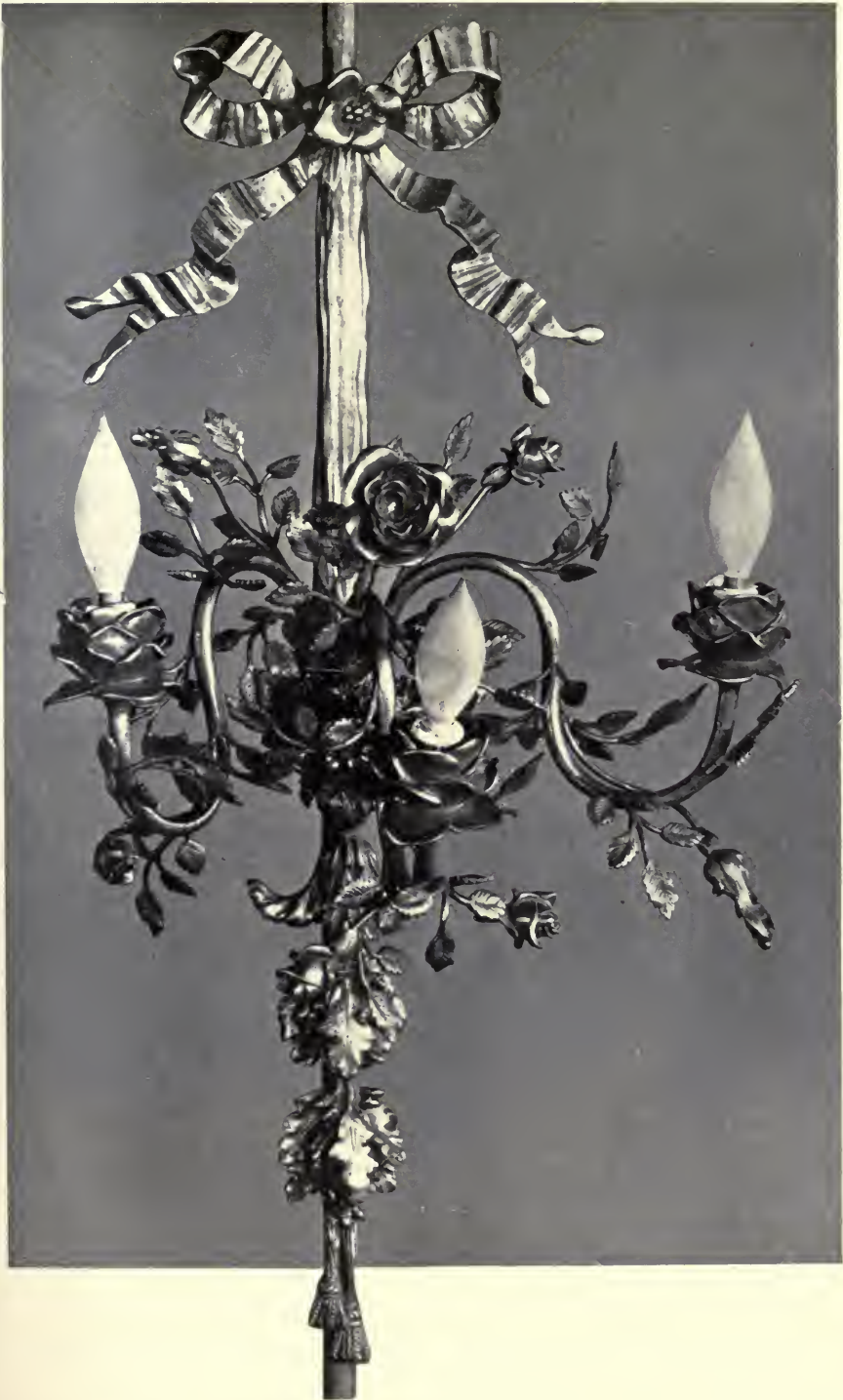
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Jas. Knox Taylor, Supervising Architect.



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WROUGHT-IRON ELECTROLIER.

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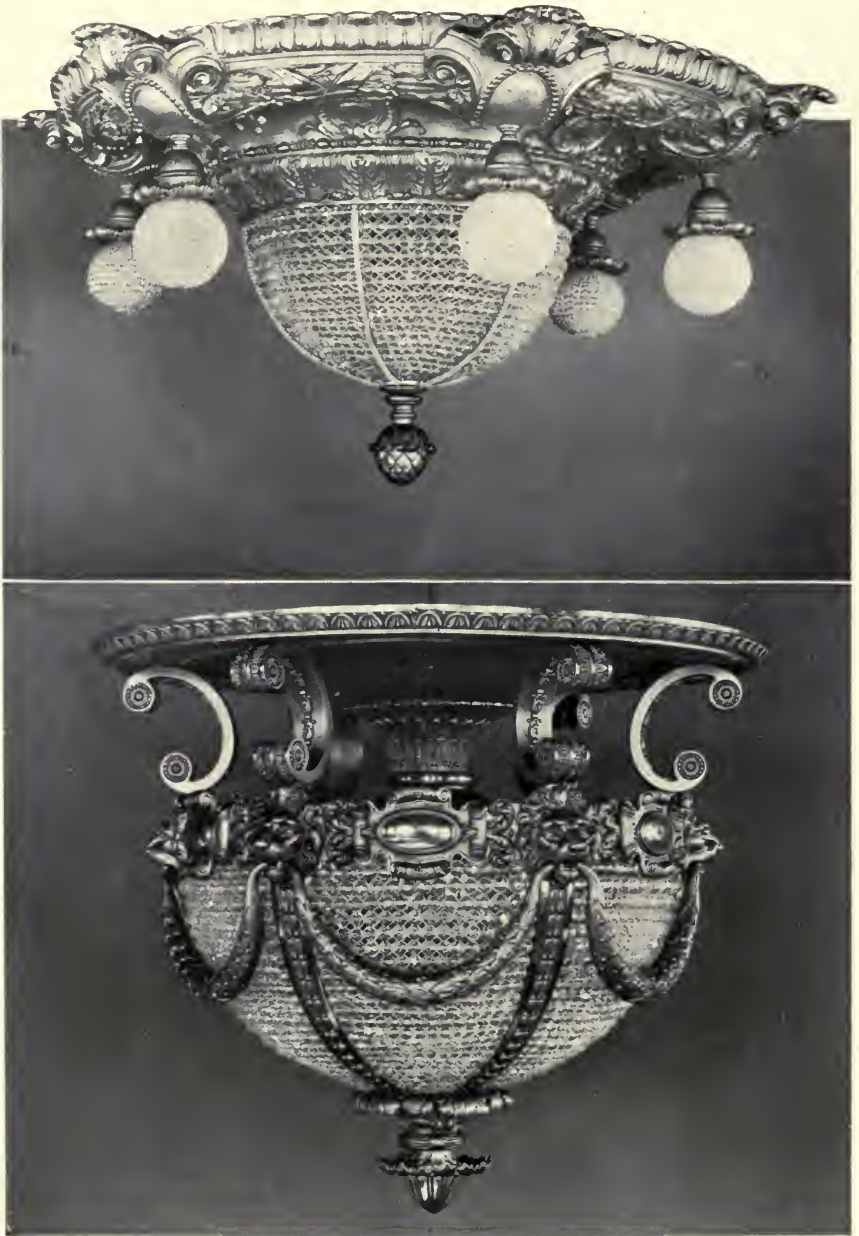
from corrosion. Even when carefully protected by earth or masonry or paint from the atmosphere, which otherwise will make short work of iron pillar and beam and bracket, the metal is not proof against the insidious attack of electricity, which slowly but surely destroys iron piping and must affect the great buildings which are penetrated in all directions by electric wires and affected by currents that escape from the heavy charges required to move our street cars. This, however, is not the place to consider dangers of electrolysis or calculate how soon our



BRONZE ELECTROLIER.

Executed by the Mitchell Vance Co.

enormously tall and heavy office buildings will last without expensive repairs. The greater number of them are so devoid of grace that their disappearance need not cause in anticipation much sorrow to anyone save him who will be injured in pocket thereby. What is of more immediate importance is this :



BRONZE ELECTROLIERS.

Executed by the Mitchell Vance Co.



BALCONY RAILING—THE UNIVERSITY CLUB, NEW YORK CITY.

Executed by the Hecla Iron Works.

McKim, Mead & White, Architects.



BRONZE MEMORIAL.

Executed by Chicago Ornamental Iron Works. Designed by Richard E. Smith.

A vast amount of money is spent in the fitting up of elevator shafts, offices and halls with iron and bronzework. No expense is stinted and yet the result is far from satisfactory. All we get is an impression of brute expenditure of money. If an architect can tell his client that the ironwork must be acknowledged artistic because this portion is copied from a certain model in Europe, and that portion from another, the client is proud, not remembering that for such sums as he is paying a fresh design from a living artist might be had. It is also in the interest of speed that the architect works by short cuts. The haste with which city buildings are erected causes many of the sins against beauty we see about us. It is impossible to finish such enormous structures with loving care in the period set for their completion. Instead of leaving certain parts for later on, when there is time to have designs made and these designs carried out by the most competent workers in iron and bronze, everything must be in place at a given date for good or for evil. In such conditions it is no wonder that architects set a dozen draftsmen to work getting designs from any available quarter, with small regard to the appropriateness of the models selected or the source from which they are conveyed. The impression of lavishness in decorations which first meets one gives way to doubt and one grieves to recognize the costliness of the

work on perceiving that the sums expended have gone into channels which are of no use in fostering American art.

Along with the steady increase of metal in construction there must come a more thoroughgoing use of metal in decoration. The new building of the Knickerbocker Trust Co., on Fifth avenue, New York City, offers an example of metallic sheathing on jambs and window frames. There is a liberal use of metal treated so as to appear like bronze already oxidized to a fine green tone in the decorative grillage over the large windows. The most striking example of the employment of bronze is afforded by Senator Clark's house, where the dormer windows and the corners of the roof are big single castings of bronze. We have suffered in this country from the false cornices and false eaves made of thin sheet metal painted to represent brownstone, but here we have bronze used as bronze and employed for some of the most prominent parts of the edifice, corresponding with bronze doors and iron entrance gates, and like them executed with the greatest care from models of full size. So far as the writer is aware this is the first time that the metal has been used on such a scale for the exterior of a mansion. It seems to indicate that as time goes on we shall have bronze employed more and more in the ornate portions of buildings where carved stone or terra cotta has been preferred. For the persistence of iron as the material for the skeleton of great buildings must entail the spread of metal work to the rest of the structure, as not only appropriate but more enduring and cheaper in the end. As to the artistic treatment of bronze, iron and other metals, on that side there is no trouble. What has alienated people of taste from metallic construction has been the unnecessary ugliness of forms and the clumsy way in which the new material has been handled by architects. Neither the Eiffel Tower nor the Machinery Palace at Paris, although an endeavor was made to produce beautiful results, was successful enough in that respect to satisfy those who demand a good deal in the way of art.

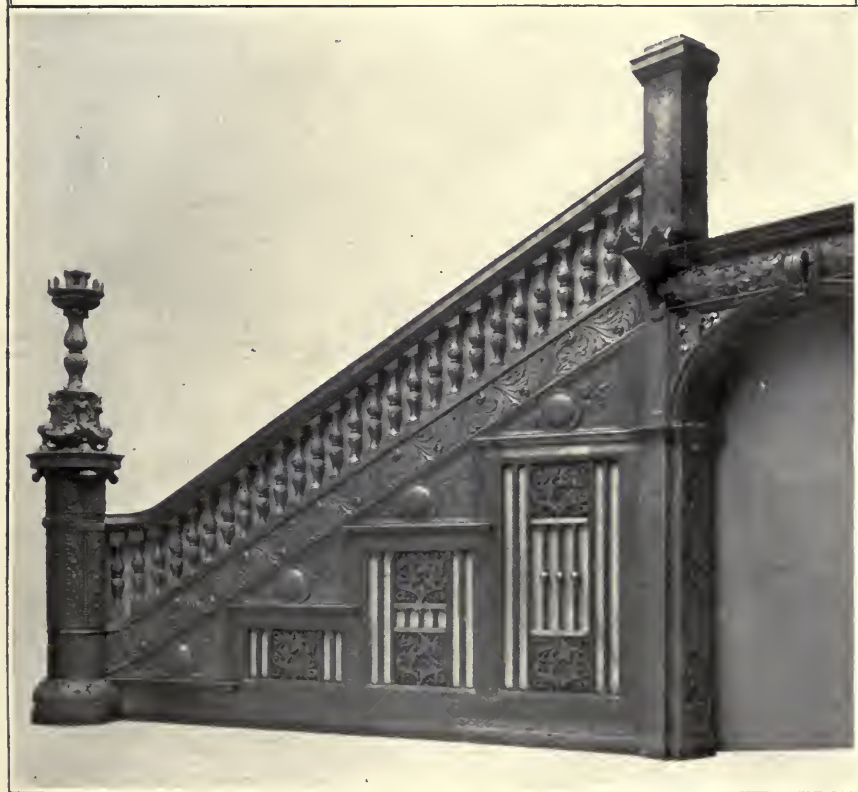
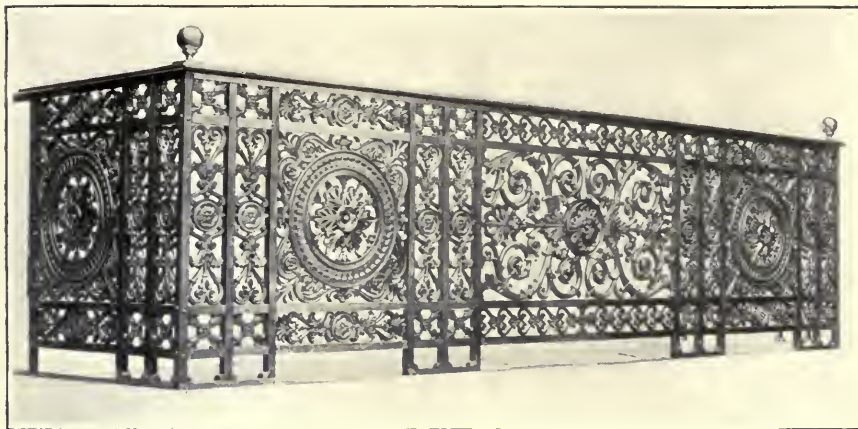
When it has been thoroughly understood that metal in decorative work is not to be employed for cheapness, and that it is as necessary to engage an artist to design metallic decorations for an interior as for a monument, then we may see a much wider field open to the craftsman in brass, bronze, iron and costlier metals—friezes in galleries, floors and ceilings, wainscots and furniture—just as we find to be already the case to a large extent in museums, libraries and public buildings where everything is done to minimize flammable materials. When one examines the results of an artist's labors in small pieces, entirely or in part fashioned from metal, such as the work of the old Bavarian forge masters and

the cabinetmakers in France during the reigns of Louis XIV. and Louis XV., one realizes that metals can be as readily made to serve the purposes of usefulness and beauty as any other material. They are not meant to imitate stone or terra cotta or wood, although for doing that there is abundant precedent in the past. But they can be managed in their own several ways so as to effect as fine results, produce as completely a satisfaction of the æsthetic sense and add the extra touch of durability to their value as works of art. It would not be unreasonable to make a forecast of the future to the effect that the present century will see a return, on a much grander scale, to something like those interiors decorated in precious and semi-precious metals which we find described by the early poets of Europe.

Charles de Kay.



BRONZE STAIR RAILING IN FLAGLER RESIDENCE, PALM BEACH.
Executed by William H. Jackson Co. Carrère & Hastings, Architects.



(1) CAST-IRON ELECTRO-PLATED BALCONY IN BOSTON PUBLIC LIBRARY,
BOSTON, MASS. McKim, Mead & White, Architects.

(2) ALUMINUM BRONZE STAIRCASE, COLORADO STATE HOUSE, DENVER, COL.
Executed by The Snead & Co. Iron Works.



THE NEW THOMAS MUSIC HALL.

Chicago, Ills.

D. H. Burnham & Co., Architects.

THE NEW THOMAS MUSIC HALL.

Editor Architectural Record:

It was my destiny to be in Chicago in April, 1904, and it was during the few days of my stay that the drawings for the new Thomas Music Hall were taking their final shape. The very energetic and enthusiastic services of a few managers had brought the business to the front in a way surprising even to the people of Chicago. And yet Chicago (which ought to be called, from now on, Thomas-ton) has for its chief glory, as you and I understand glory, the willing welcome which the town has given to that unmatched orchestra and to the man who has created and developed it.

Now, the triumphant establishment of that orchestra and its series of concerts is marked by the completion of the plans and the satisfactory filling of the subscription list. The building will be built; so much seems to be assured. That it will be ideally good in its plan, in its acoustic properties, in its fitness for the perfect rendering of great music, is apparently as certain as anything human can be. All that care on the part of Theodore Thomas and his allies can do has been done and is still in the way of being done in the preparation of the interior. Every curve and every straight line, each flat and each hollow surface have been considered and reconsidered; and while we have not yet the completed drawings of the interior, that is merely because no amount of pains and time have been begrudged, and no part of the interior is to be pronounced complete in scheme until the same can be said of every other detail in the whole complicated lay-out of the interior surface. If you want your Music Hall to respond like the shell of a violin to every note; if you ask that it shall be resonant enough and not too resonant; if you demand that the material of every part and the exact shape given to that material is settled by a long process of elimination and the rejection of every conceivable second-best, you will find that not weeks, but months of time—months stretching into years—will be consumed before your Music Hall stands perfected, even on paper.

There is still another part of the building to be considered, and that part, now, may be called complete in its preparation. Although you cannot publish at once the drawings of the interior in such fulness that the new Music Hall will stand out plain on paper, as it will be by and by in brick and iron, yet the front on Michigan avenue may be understood. The building of the hall for musicians and hearers has, of course, nothing piled upon it. It is roofed with its own roof—no ten-story building, nor the heavy substructure

ture for it, is to interfere with the faultless interior which Mr. Thomas and his friends are hoping to give to Chicago. But between the Music Hall proper and the street-line there is a space which, on the ground floor, will be devoted to ticket offices and entrances to the hall itself; which, on the first upper floor, will be occupied by a "foyer" and such-like reception rooms and rooms of resort; which, on all the stories above the great foyer, will be occupied by offices one row deep, fronting on Michigan avenue and the Lake, with a corridor running past them on the western side. That is all, and the picture which you will publish with these few words of introduction shows the façade of that shallow, thin office building—a piece of real estate investment, of course, the income of which, it is hoped, will help the Music Hall to prosper as a permanent institution.

The front had been studied many times over before I first entered Mr. Burnham's office, and what I saw there, the same elevation which is now in hand, was the result of very considerable preparation and of many rejected schemes. It is one of those frequent cases in which the simple and obvious, and therefore probably the best scheme, was slow to evolve itself. A good friend and a truly critical judge of architecture calls this front commonplace, and I am compelled to recognize some ground for such an opinion; and yet my own feeling about the front is what it was two months ago, and I hope to give your readers a sufficient explanation of my admiration for the design.

When I was a young man there was a term much in favor among the builder-architects, the contractor-architects, the real-estate-agent-architects and the like—a term which was intended by them to be opprobrious, as applied to those few rivals in the profession who were supposed to be more careful than was thought reasonable about the beauty and fitness of their designs. If a man spent much time over his designs and was exacting about his details, and if, when the building had begun, he insisted upon the precise carrying out by the contractor of the terms of his rather elaborate and minute specifications, he became unpopular, he was a marked man, he was a person whom the builders were shy of, and he was called "a fancy architect." Now, Mr. Burnham is not a fancy architect. More than any other man of the time he has apparently made it his business to ascertain just what the capitalist or the company will stand, in the way of exterior effect, and just what deference is to be paid to artistic considerations. So with the interior—Mr. Burnham's office is not one of those which force marble dadoes and mosaic floors upon its employers. In like manner, no one would dream of going to the Burnham *atelier* in the new Railway Exchange Building, to look for delicate designing,

which might involve long-continued and expensive workmanship to put into permanent shape.

And so the front which has finally come into being, at least on paper, is to be noted as probably as economical a piece of building, as rational a system of openings and solids, as the wish of man could devise. We are to take it for what it is—not as a costly work of art, created as a work of art and admittedly involving much expenditure of time and money as a work of art—we are to take it as an entirely reasonable design with nothing in it which could well be spared. A decent and somewhat elegant exterior was thought necessary, fronting on the most attractive avenue in the great town, and this it has been the architect's purpose and his pleasure to supply; but no one is to look to any front built under these conditions as a model of thoughtful designing.

So much premised, let us now see what there is really characteristic in the front before us. Remember that there is no architectural success like that design which grows, or seems to grow, out of the absolute requirements of the situation. The requirements of the present situation are these: a broad and ample hall for entrance and exit, which need not be high "between timbers," but which would be, almost of necessity, an extension inward of the sidewalk—the footway of Michigan avenue; above this, a grand story indeed, a *piano nobile* if there ever was one, an overwhelmingly important story of lofty rooms; and above this again five horizontal layers of small offices to be rented to the first comer. Those are the conditions.

Now see how the well-advised designers went at their work. They treated together the low ground story and the lofty first story above, as one architectural basement, and to emphasize this unity they carried the jambs of the great arched windows straight down vertically, plumb to the sidewalk, so that each one of these three huge openings looks as if it were thirty feet high to the crown of the arch. There is no pretense about it. Most happily there was avoided here that ugly trick of making two stories of windows look like one window. The stories are separate and their division emphasized by flat arches on the wall surface; arches flush with the outer face of the building and not recessed between jambs, and above these are balconies with balustraded parapets; and yet the architectural treatment is such that the dignity of the three big arches is increased many-fold by this apparent extension downward of their vertical lines. This arcade of three immense arches is flanked by two very well composed classical windows with frontons, which windows are on the axes of two large openings in the ground floor, which may, perhaps,

be show windows of rooms for rent as shops. The five stories of windows above are, as they have need to be, all of the same size—for why should one office have bigger windows or different shaped windows from another? Logic says that they should be alike, and somehow designs made according to logic are very apt to be effective, very apt indeed to appeal to something in the human mind which is not altogether artistic feeling, but which is closely related thereunto. These windows are on the vertical axes of the openings below, and also, as far as practicable, on the axes of the piers which separate them; so much is called for by the exigencies of a semi-classical system of design and also by the rules of the more simple and obvious building of masonry walls. You may have a front made up of false bearings (structure in *porte à faux*) and a very good thing may be produced by that picturesque way of dealing with your front—but you will have trouble with it both in its design and its stability.

Further than this it is hardly necessary to go. The building is to be of brick with speckled, light gray granite much paler than the brick, and the design, once taken as classical in its main characteristics, has become an Old Colonial front without anyone's expecting it, as I think. It does not seem that we often meet in our streets large front walls, just as wide as they are high and pierced, as need is, with a multiplicity of windows, in which the general result has been so good. The front is most attractive to me, and I am the more glad of it that whenever one goes to Chicago to hear the best music that there is to be heard he will have a comely front to meet him as he approaches the temple of his delight.

Sincerely yours,

Russell Sturgis.



PORTRAIT BUST BY PIERRE ROCHE.



BUST OF HUYSMANS BY PIERRE ROCHE.