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# THE ARCHITECTURAL RECORD

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Subscription Yearly, \$3.00

PUBLISHED MONTHLY

TWENTY FIVE CENTS

THE ARCHITECTURAL RECORD CO. NEW YORK

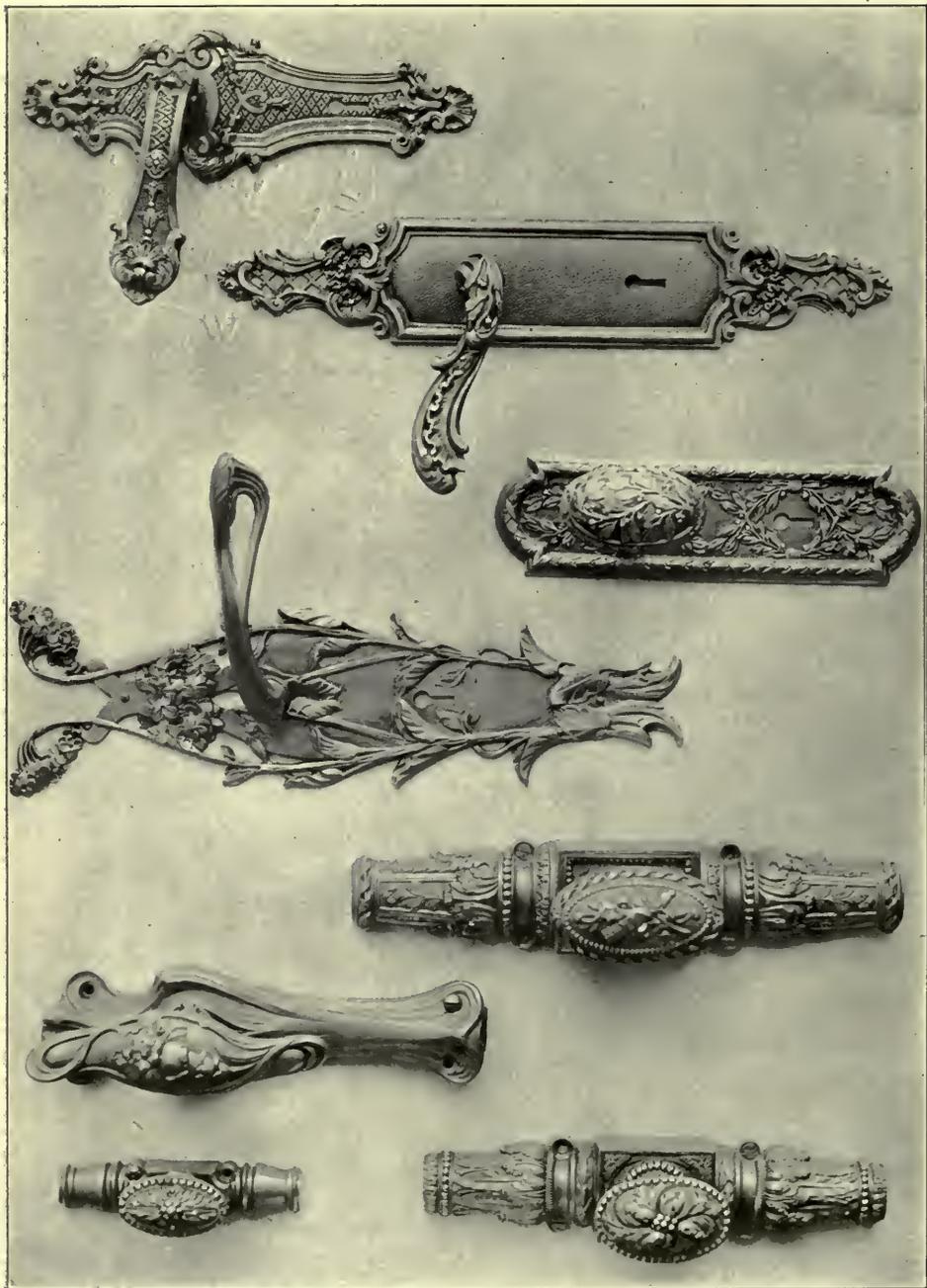
TWENTY FIVE CENTS

OFFICE OF PUBLICATION: Nos. 14 and 16 VESEY STREET, NEW YORK CITY.  
WESTERN OFFICE: 120 RANDOLPH ST., CHICAGO, ILL.

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EXAMPLES OF MODERN FRENCH HARDWARE.

Russell & Erwin Mfg. Co.,  
Art Department  
28 West 26th St., New York City.  
Concessionnaires pour Maison Fontaine.

Made by Maison Fontaine, Paris.

The  
**Architectural Record.**

VOL. XVII.

JANUARY, 1905.

No. 1.

**ARCHITECTURE IN SOUTHERN CALIFORNIA.**



It has been said that to obtain thoroughly characteristic pictures of a new place, one should use one's first impressions, should select those conditions which first strike one as distinctive, because when one lives long in a place, its distinguishing features fade. It is this idea which furnishes the writer—a comparative newcomer to Southern California—with an excuse for this article.

When one comes to the Far West for the first time, he is impressed with the newness of the country by the number of tents and tent-houses everywhere seen, not only in the outskirts of cities, but often in their very midst; the canvas home of the pioneer settler is still much in evidence. Next come the simple wooden dwellings of the poorer classes, square little cottages most of them, with awkwardly hipped roofs, but many displaying a degree of taste that might mystify one not familiar with a certain phase of California social life; for here, of all places in the world, a man's financial condition, or the kind of work he does, is not to be taken as an index of his real worth.

Politics makes strange bedfellows, but no more so than does health-seeking in California. An able young clergyman, for instance, thrown out of a pastorate by untoward circumstances, is found applying for work at the packing house of a lemon exchange. A young architect who once had an enviable practice builds up his health as a hired hand on a ranch, with wages of twenty-five dollars a month and board; one of his table companions at the cheapest of cheap boarding-houses being the stable-man of the lady with whom he rides horseback in the evening! A woman who drives a coach and four when at home, hobnobs at Catalina Island with the captain of a pleasure launch, every inch a gentleman, but without a penny in his pocket. Cases of the kind are numberless among the occupants of California houses, almost too simple to be classified as



THE SANTA BARBARA MISSION.

Santa Barbara, Cal.

Architecture, but which fill a very necessary need, and serve a very useful purpose in the present transient state of development of the Far West.

The buildings of more pretension, that constitute the real architecture of the country, might be styled, for convenience, as those which have and those which have not been affected by the influence of the missions, for the California missions are a factor that must be reckoned with in any complete discussion of Californian architecture. The original missions are most of them monuments of rare beauty that have a quality peculiarly in harmony with the Western landscape—a quality made up of broad, simple masses, plain wall surfaces and of low-pitched roofs that do not compete with Nature's own mountain Architecture. "What do you think of the Mission Style?" is a question repeatedly asked, and the answer is, that the original mission buildings bear about the same relation to the architecture of California as do the first Colonial buildings to that of New England. In both cases the original models are good, but their influence has been good, bad, and indifferent. The spirit of the style is made up of the low-pitched roofs and broad masses before mentioned, of courts and cloisters designed for out-of-door living, of thick masonry walls and consequent deep window and door recesses, of sturdy doors and window-

sash, of open-roof construction, and, in most cases, of well-studied proportion of parts. The flowing lines of some of the gables are a very incidental feature. Adaptation of the style to a modern house plan almost presupposes a patio where a family may live out of doors, the out-of-door aspect of California planning being one, it may be said in passing, that has not yet been sufficiently recognized. Almost every inn in France or Germany, for instance, has its delightful little courtyard, often with tables set out under arbors or loggias, where some of the meals are served. California has a climate infinitely better adapted to the purpose, and yet either the architects or the projectors of hotels have not often taken advantage of it.

The ornamental forms of the mission style may be and are applied to plans of almost any kind, but that does not make mission buildings. Ornament is not style, a fact that can scarcely be too often brought to our minds. Style is made up of the inherent quality in a building occasioned by its plan, by its site, by local building materials, by the life that goes on within its walls, and only partially by the ornament afterward tacked upon it. California is rampant with buildings that have borrowed the mission ornament but not its spirit, and, roughly speaking, they constitute the deadly uninteresting class of buildings that are without personality, and are even of questionable harmlessness.



THE BURRAGE RESIDENCE.

Redlands, Cal.

Mission Style aside, the greatest fault that can be found with the architecture of Southern California is that which may be found with all American architecture to a greater or less extent, namely, a lack of simplicity. There is too much airing of architectural knowledge, and too much application of architectural features to places where they do not belong. Wm. M. Hunt once advised his pupils to learn thoroughly the technique of their art, and then to forget it, that they might not be hampered by the application of its rules. It would be better if more of our architectural problems were worked out with less attention to architectural formulæ and architectural theory, and with greater attempt to solve practical needs in the simplest and most appropriate way. The public is not interested in the clockwork of architecture, but wishes to read its correct time; and the buildings are legion in America that have architectural wheels and cogs scattered over their exteriors with entire disregard for their fitness in the place.

Simplicity alone, however, will not make good architecture. If not produced by the hand of the artist, it is apt to be mere baldness. The practical requirements of a plan having been developed, it requires the artist's imagination, his deft touch and sensitive hand to make the final turn which differentiates the work of art



RESIDENCE AT LOS ANGELES, CAL.

Chas. F. Whittlesey, Architect.



RESIDENCE AT LOS ANGELES, CAL.

Chas. F. Whittlesey, Architect.

from the production of the artisan. The artisan architect, confronted with new building conditions, will solve them with old formulæ, not seeing their significance as opportunities for novel results. The artist will study like conditions until they become a part of him, and until the forms most appropriate to their expression take shape in what is at once seen to be a natural and effective solution of the problem. McKim, Mead & White and Wilson Eyre, for example, instil into their buildings a certain indefinable quality which nothing but long training and sensitive imaginations combined can produce. And a strange, intangible quality the art element always is; a certain unobtrusiveness, and yet withal a charm, that holds the attention, captivates and inspires. Unobtrusiveness comes with fitness to location, and with just proportioning of part with part, no one portion claiming undue attention over the rest. The charm is due to unique form arrangements that have been brought into consonance with novel requirements of plan. The mind is always pleased to discover new needs met by new ends.

It is the inappropriate use of new forms, their adoption without fit occasion that causes jar, and it is this that may be made the chief criticism against the "architecture of ideas." Fortunately this mis-

guided movement (the main asylum of which in this country is to be found in Chicago among the idolatrous followers of the really capable Louis Sullivan and Frank L. Wright) has not yet reached Southern California. The makers of poor architecture in the Far West are sometimes poorly trained, but they are seldom demented. Some of them realize that they have come to a new country full of wonderful possibilities. Few imagine themselves the wonderful discoverers of a new architecture, not needing the experience of



THE CLOISTER OF HARVARD SCHOOL.

Los Angeles, Cal.

A. B. Benton, Architect.

the able men of former ages. Their abilities are limited, but (unlike the Chicago coterie in question) so is their conceit. This "architecture of ideas" is merely a new outbreak of the kind of men who would be original if they could, but who, failing to distinguish what true originality is, have made themselves instead simply ridiculous.

What the future architecture of Southern California will be like it is difficult to say. The country is still in a very much undeveloped state, and the present character of its architecture is, on the whole, exceedingly ephemeral. Equivalents of the marble palaces of Fifth Avenue, and the brick rows of Philadelphia, are not to be seen, and nothing as yet points with distinctness to any particular character. The architecture of any country will, in the

end, however, be an accurate reflection of its commercial, social and climatic conditions and of its natural resources; and a rough inventory of such conditions and resources, as they exist at present in Southern California, ought to be suggestive of the character of its future architecture.

Los Angeles is the gateway to Southern California, the port of land entry, and also its most important commercial city, and what is likely to happen there in architectural character will, generally



A GARDEN IN SOUTHERN CALIFORNIA.

speaking, be a fair index of what is apt to happen over the entire southern part of the state. The population of Los Angeles has been increasing during the last five years at an astonishing rate, and continues to do so. In 1900 it was one hundred and two thousand, and at the last census one hundred and fifty thousand. The people who stream in come largely on account of its health-giving quality—as a health resort Southern California bids fair to rival the Riviera. The health-seeker is, therefore, an important element of the population. Another conspicuous factor of the same kind to be reckoned with, is the sight-seeing tourist, and largely on his account the architecture of the country has, so far, been an architecture of homes and hotels. To be sure, Los Angeles has lately acquired a few sky-scrapers, but it has been aptly said that many cities in the East have scraped higher and

harder. Southern California has nothing new to say in the line of tall office buildings.

Beginning thirty miles east of the city and continuing twenty miles west to the sea; along the foot-hills of the Sierra Madres, are countless residential and hotel sites unsurpassed anywhere in the world for beauty of location and climatic desirability. To the north rise the mountains, five to six thousand feet high; the everlasting hills of sage-brush, cactus and Spanish dagger, of pine on lofty summit and fern in shaded canyon; while to the south one looks down over orange, lemon and olive groves, across miles of rarely



beautiful valley, and on beyond to another range of mountains stretching away in the blue distance as far as the eye can see.

All this district is already accessible from Los Angeles by an inter-urban electric service, which for perfection of roadbed, car equipment, and speed of travel, is nowhere excelled. These electric lines radiate from the city in a dozen different directions, some toward the sea, others skirting the foot-hills eastward, altogether comprising over four hundred miles of track, and all along their routes the land is being taken up to house people whose headquarters are in Los Angeles. A goodly share of the city's business population already live in the foot-hill towns or at the sea-shore, and their number constantly increases.

At Santa Monica, where one of these lines terminates, the Sierra Madre range finds a culmination of fitting dignity. It there projects itself into the sea, forming a bay, which in point of beauty has been likened to the Bay of Naples. There extends along the top of the bluff at this point a beautiful avenue of cypress and eucalyptus, forming a sort of seaside Thames embankment (only higher and with more of an Italian character), and when the bay is



THE EAST PERGOLA, HOTEL GLENWOOD.

Riverside, Cal.

Arthur B. Benton, Architect.

seen from beneath their dark-hued branches toward the close of day, when its waters take on the soft shades of twilight, luminous grays intermingling with the deepest of indigos in a bewitching dance of color, when its shipping becomes imbued with the same evening hour's enchantment, and its mountains appear as great masses of purple silhouetted against a red and golden sky as wonderful as any ever produced in Italy, it is not difficult to believe in the fairness of the comparison.

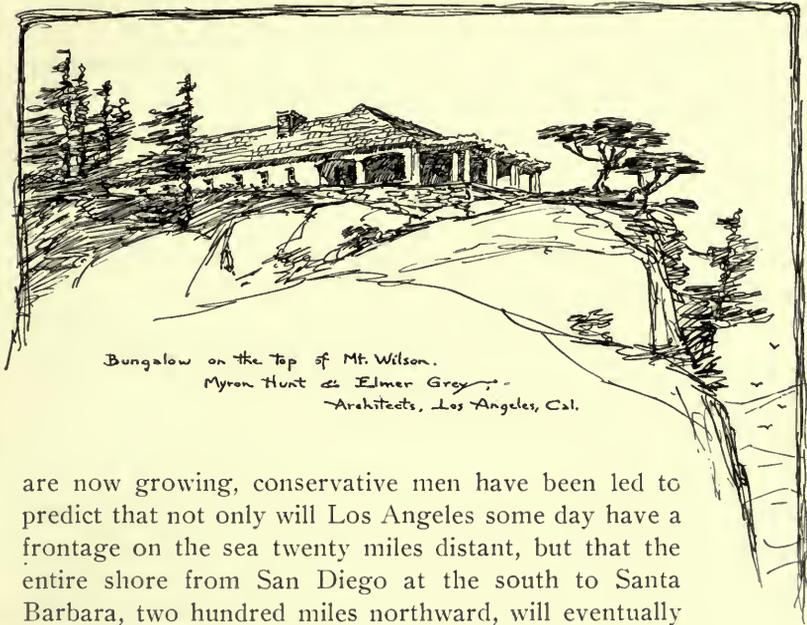
From Santa Monica another electric line runs southward along the seashore to Redondo, a distance of about fifteen miles; and as one speeds over it—the ocean breakers almost at one's feet, the wet sand dotted with water-fowl, the salt sea air buffeting one in the face, the waters of the bay sparkling with sunlight, and Catalina, "the Magic Isle of the Pacific," blue in the distance—the beauty of the scene and the exhilaration of the ride rouse all one's enthusiasm for the charm of Southern California.

It is not at all unlikely that some day Los Angeles' residential district will include all these seaside and foot-hill towns, and the entire intermediate territory, forming a city whose population, though not rivaling that of Greater New York, will constitute a great metropolis. Indeed, by the rate at which the seaside towns



PATIO OF THE HIGH SCHOOL.

Los Angeles, Cal.



Bungalow on the top of Mt. Wilson.  
 Myron Hunt & Elmer Grey  
 Architects, Los Angeles, Cal.

are now growing, conservative men have been led to predict that not only will Los Angeles some day have a frontage on the sea twenty miles distant, but that the entire shore from San Diego at the south to Santa Barbara, two hundred miles northward, will eventually form one continuous community like that of the shores of Long Island Sound.

However that may be, a bright promise of architectural possibilities is even now present at Santa Barbara, the northern limit of this new Riviera. The hills of Montecito near by, with their mountain drive skirting the sea, an equivalent of the old Corniche road, many widely traveled people declare to constitute the most beautiful country in the world. Heretofore a comparatively small portion of these hills have been available for country estates, on account of the scarcity of water, but a new water system now under way at Santa Barbara, for which a mountain is being tunneled and several million dollars spent, will supply them abundantly, and convert an extensive district into a possible Western Newport.

This suggests that Southern California is a land of great possibilities for landscape gardening in conjunction with architecture. A building and its setting are always inseparably connected, and especially must this be borne in mind in a land so rich in vegetable life. The beautiful cypress tree, the picturesque eucalyptus and the graceful palm, all so much coveted by the artist as adjuncts to architectural effects, grow here. And one may also have a perpetual bloom of flowers and the clipped hedge and vine-covered pergola green all the year around. The architect in Southern California must have a knowledge of these things, must know enough about them and the varying effects they produce to judge of their relation to his work, and to select with discrimination a

gardener to assist him in planning the surroundings of his buildings.

The question arises, what prospect there is that these great architectural possibilities in Southern California be turned into satisfactory realities. The factors which will determine it are its wealth, the caliber of its architects, and the degree of culture of its people. The twentieth century is a commercial era, and the American people are a money-making nation. They must inevitably be this before they have a great art. In past eras the means for such works lay largely in the hands of princes and popes. To-day, especially in America, it is chiefly with men of commerce, princes of finance. The money-making phase of American life is one not to be regretted; it is one to be looked upon as a stage toward a possible period of great accomplishment.

California already has some able architects, men of power and substance, who know a good thing when they see it, and are able to make good things of their own; but more of the same stamp are needed; men of original creative power, who respect tradition, but who are not slaves to it, are artistic, but not on that account unpractical, and practical, but not therefore inartistic; who have enough ability to get work, and, it may also be appropriately added, backbone enough to charge what they earn. For the item of professional charges is no small part of the problem here, as it is in the East. Years ago the American Institute of Architects established a minimum charge to be made by architects for certain classes of large buildings. This charge was five per cent. Their schedule called for higher rates on other classes of work, such as medium-sized residences, repair work, and the like. Architects of inferior ability cut these rates, using the Institute's minimum charge as a handle for the purpose of asking but five per cent. on all classes of buildings, and the general public fell under a misapprehension in consequence. There have been many architects since with both the inclination and ability to do good work who have slighted it, because unable to obtain the prices necessary for its execution. In architecture, as in any other line of endeavor, time and money are required to do the best work. It is absurd to charge the same percentage on a ten thousand dollar house, for instance, as on one costing but five thousand, when the latter entails practically the same number of drawings, the same amount of superintendence, and the same number of interviews with the client. The only rational basis for architects' charges is one which allows for a variation of percentage regulated according to the varying cost and nature of the building, and also one which does not level men of different ability who render different classes of service to the same plane of remuneration; in other words, a scale, sliding as to the

cost of buildings, and dependent in amount upon the comparative value of the service rendered. Men of standing in the profession in the East have long used such a basis, and the same system now prevails among the best architects of the West.

Co-operation on the part of the public is a very important factor in the furtherance of good architecture. The glorious art era of Florence owed as much to the patronage of the Medici as to the genius of Michael Angelo and Leonardo da Vinci. In fact, the architect is even more dependent upon the public than the painter



BUNGALOW AT HOLLYWOOD.

California.

Hunt & Eager, Architects.

or sculptor, for the latter *can* paint and model without commissions, while it is impossible to erect good buildings without some one to furnish the money for them.

The causes of the settlement and growth of Southern California are such as have been conducive to more culture than might be expected in a district so new. The population is made up very largely of Eastern people, who have in most cases brought taste and some degree of culture with them. After this praise has been bestowed, however, it must be said that there are plenty of men in California, as elsewhere, who are particular about their clothes or their equipages, but who entertain a slight estimate of the value of the artistic element in the buildings which they erect, considering that element as largely a matter of sentiment.

Art is the expression, through various mediums, of the most



PATIO OF A BUNGALOW.

Pasadena, Cal.

Green &amp; Green. Architects.

joyous aspects and the best ideals of the world, and familiarity with its standards implies familiarity with the best standards of life. There exists a certain elect society, eligibility to which is dependent upon the degree of such conversance. An acquaintance on terms of familiarity with the muses of painting, sculpture, literature, music and architecture are the terms of admission. Seldom is there one thus acquainted who has not assimilated into his own nature some of the attributes or virtues of their standards and who is not able also to impart some of their charm to his fellows. The process of assimilation is the stuff of which culture is made and the ability to impart its atmosphere is what makes a man welcome in the company of the cultured. The presence or absence of the artistic element in a building one erects, is not therefor a matter of mere sentiment; it is one indication of a man's quality, his ability to enter into the highest life of his fellows, and those who ignore the value of the beautiful in their lives, bar themselves from the world's best society.

A recent writer has reminded us that monumental architecture comes with the culmination of an art era, not with its inception, and that the American nation has a long ascendancy before it. This is particularly true of the Pacific coast because of its extreme newness. It took centuries of enlightened human effort, in addition to its natural beauty, to make the Bay of Naples what it now is, and

there are places everywhere in Europe that literally exhale the fragrance of ages of interesting human life. As far as a history of such art influences is concerned, California might be said to be just starting. Practically the only emotion here aroused by historic man is that furnished by the North-American Indian. The mission fathers offer the one exception. One may imagine the redskin in years past emerging from the brush on the shore of the Pacific to view the panorama of sea and mountains and then withdrawing to his inland wigwam. But the Indian has left nothing which contributes to the interest or beauty of the landscape, and practically nothing which adds to the taste of the people who have taken his place. It should not be expected of California therefore that the same innate taste be found among its-people as exists in more mature European countries where works of art have long been public heirlooms and good taste is an hereditary instinct. And all this, of course, more or less applies to our entire country.

There are plenty of indications, however, that the interests of art are flourishing in America. To one magazine devoted to the subject of art, architecture or house decoration, published twenty years ago, there are dozens to-day. Their continued issue is proof of their being read. The destruction of our forests may not be an unmitigated evil; the consequent shortage in wood supply will some day necessitate the use of more substantial building materials. Our



THE WAY TO LIVE IN SOUTHERN CALIFORNIA.



RAMONA'S HOUSE—SOUTH PORCH.



THE PATIO OF RAMONA'S HOUSE.

great international fairs are such as the world has never before seen, although even in this commercial age they have not been financial successes; they have been most conspicuously instrumental in the dissemination of taste. From the examples of the best of their buildings down to the humblest cottage built in good design we have an indication of potent forces at work spreading a wider realization of the utility and necessity of art in a finished civilization. Such influences are leading many to feel that we are to-day standing on the threshold of a new era in art, whose opportuni-



RAMONA'S HOUSE—SOUTH FRONT.

ties, enriched by the heritage of the past, include the greater possibilities of an age advanced in mechanical development far beyond the wildest dreams of its predecessors.

This new art era will nowhere have a more appropriate setting than in Southern California. Nature has here provided for it a background of the rarest beauty. Its distinctive architecture, though at present but vaguely outlined, here as elsewhere, is being sketched in with the erection of every new building of merit. May the completed picture fulfil its present fair promise.

*Elmer Grey.*

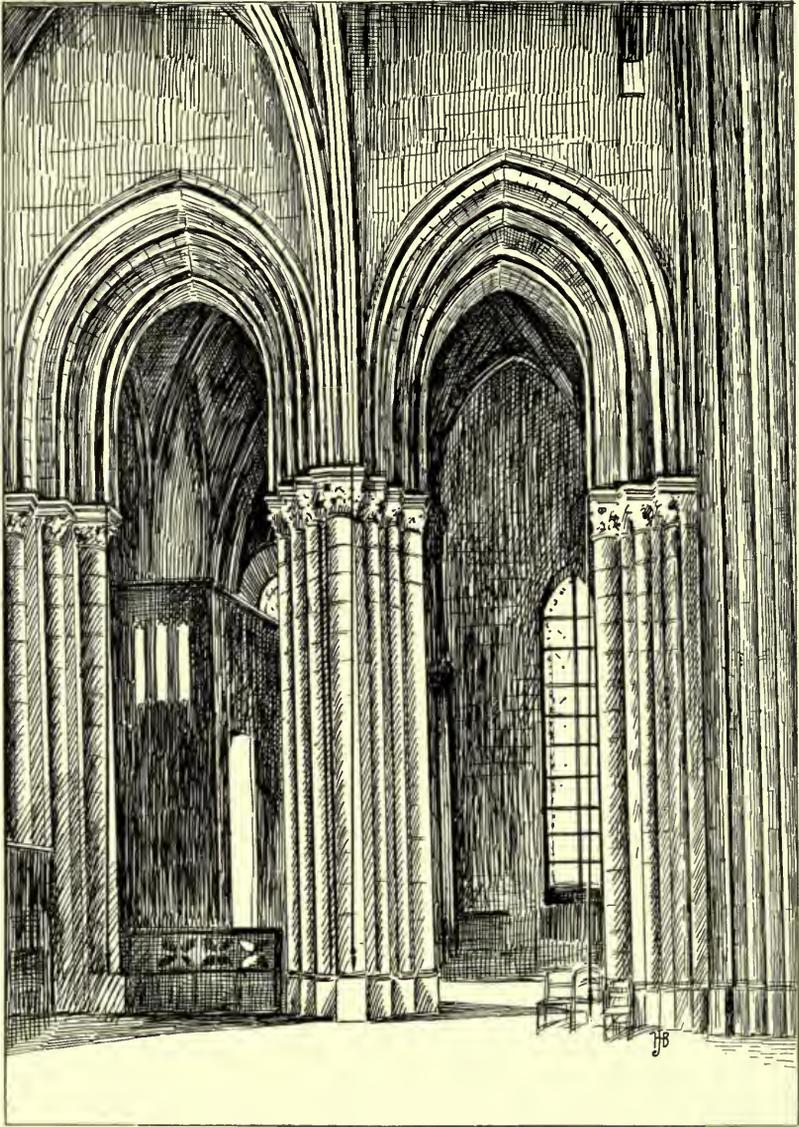


FIG. 1. NOTRE-DAME. VIEW ACROSS THE NAVE FROM SOUTH TO NORTH; NEAR THE FAÇADE. ACCURATE DRAWING FROM THE SURVEY PHOTOGRAPH.

Compare with Fig. 2, in which the same window is seen.

# ARCHITECTURAL REFINEMENTS IN FRENCH CATHEDRALS.

Fourth Paper.\*

## NOTRE-DAME.



IN two preceding papers, the first of which was partly devoted to Notre-Dame at Paris, while the second was wholly devoted to this Cathedral, we have described, first, its system of widening and curving the vertical lines of the nave (November Number), and second, the gallery bends in elevation, together with the constructive deflections from the perpendicular in the east and west direction, of the triforium piers and columns (December Number).

At the close of the last paper we had reached the description of the tower constructions as regards the great piers of their interior angles.

From this description it appeared that these piers lean west about 18 inches in a height of about 80 ft., curving toward the perpendicular in their upper portion. It was also found that the masonry courses of the interior walls, as well as the gallery parapets, are bent downward from the fourth bay (counting from the organ loft), so that they are normal in rectangular direction to the leaning piers. Thus, if any settlement had affected the piers, it must have begun at the fourth bay from the organ loft; but it was shown by the published illustrations and by the photographs in the Brooklyn Museum that no fissures amounting to 18 inches, or of any appreciable amount, have been repaired, either at the fourth bay or at points intermediate between that bay and the piers of the interior tower constructions. The account of these observations is now continued, in the direction of the façade.

### Piers of the Tower Constructions.

Fig. 1 of this paper connects with Figs. 1, 3, 4, of the last article, and shows the bays of the nave on the west side of the north tower pier, as taken from the pavement, whereas in the last article the triforium bays on its eastern side appeared in Figs. 3 and 4 of that article (December Number). From these illustrations and from the measurements quoted in connection with them, we shall proceed to develop the facts concerning the tower con-

\*Continued from the December Number. The illustrations of these papers are from photographs of the Brooklyn Museum Series of 1903.

structions, which will then be related to the façade construction on the one hand and to the points already made known for the main body of the nave, on the other.

As seen in Fig. 1, the pier of the north tower construction leans 0.44 in about 20 ft. from the pavement, up to the height of the capital, from which the plumb-line is suspended, and its mate has a similar lean. That part of it which is seen in Fig. 3 of the December Number, on the left of the triforium on the north side of the nave, leans 0.20 in a height of 10½ ft. The entire westward lean of this pier and its mate (which leans 0.14 in the corresponding 10½ ft.) from the pavement to the springing of the nave vaulting, is about 18 inches, as just mentioned, and as accounted for in detail in the last paper.

It will be noticed that these companion piers are imbedded in the solid wall on their west sides, from the nave arches up, and it will be remembered that columns which are only 3 ft. distant lean off in the opposite direction; 0.14 in the north gallery and 0.10 in the south gallery, in a height of 10½ ft. The masonry of the walls can be studied, block by block, from pavement to vaulting, in the Brooklyn photographs.

It is a matter of fact of importance that the leans of these piers, which are parts of the tower constructions, are paralleled by others in the corresponding exterior tower buttresses. This appears by referring to the diagram, Fig. 3, and we shall now begin to draw nearer to the exterior tower construction.

To return to Fig. 1, we have so far confined our attention to the pier on the right of this picture. We now include in our account, and in its illustration, the pier in the centre and the pilaster on the left, which is engaged in the wall of the façade. The leans, of the same amount as just quoted for the right-hand pier (0.44 in about 20 ft.), continue, and we shall presently find this lean repeated on the façade exterior.

It was in the last few days of my stay in Paris that the exposure represented by this drawing was made. During the forty-five minutes which the exposure required, while standing near the camera, glancing carelessly about, it suddenly appeared to me that the pilaster which is engaged in the side wall, and which projected, in that particular line of vision, slightly beyond the central pier (as it does in Fig. 1), and which was otherwise mainly concealed by it, was accurately in line with its inclination. When this observation was tested by the plumb-line, it appeared that both of the pilasters,\* which are engaged in the side wall, and which are in no wise exposed to any east and west masonry movement, exhibit parallel leans, with measurements corresponding to those already given.

\*Such pilasters are technically known as "responds."

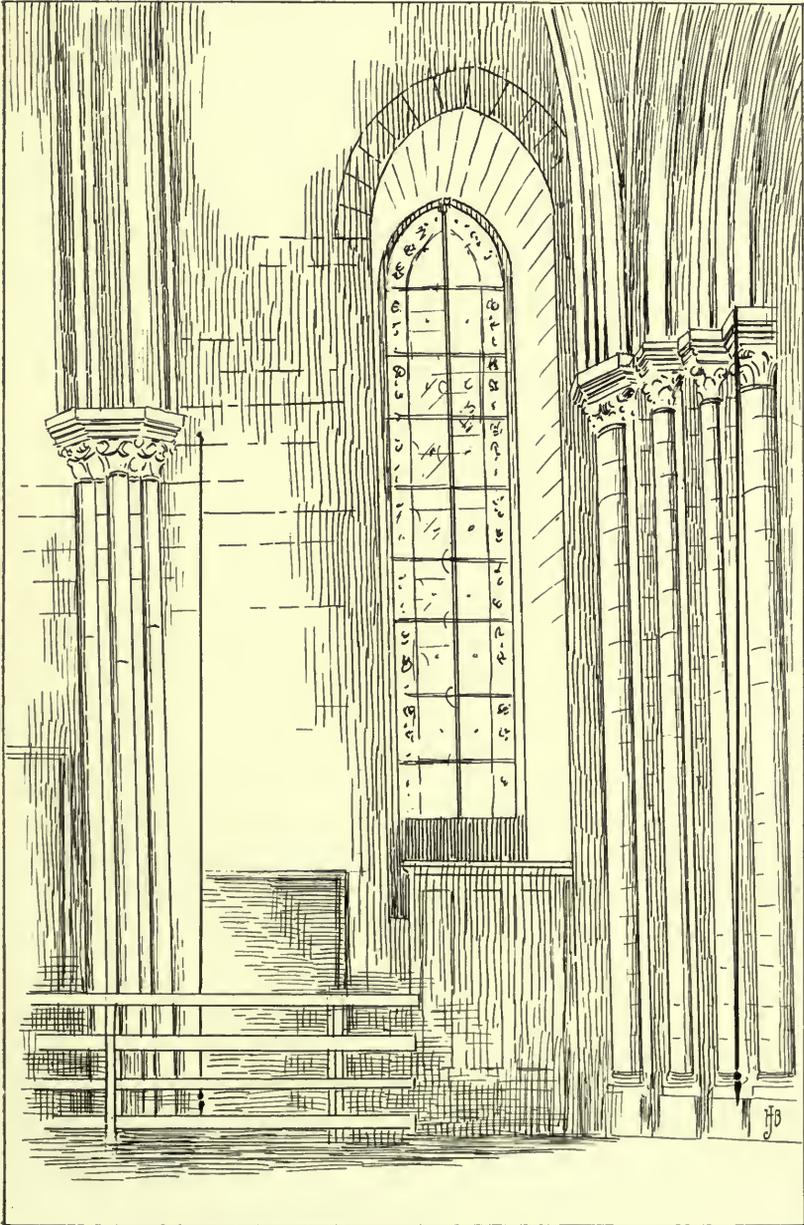


FIG. 2. LEANING WINDOW AND LEANING ENGAGED PILASTERS. LEFT AISLE OF NOTRE-DAME, NEAR THE ENTRANCE. ACCURATE DRAWING FROM THE SURVEY PHOTOGRAPH.

Compare with Fig. 1, in which the same window is seen.

These leans are also found in the construction of the windows, one of which appears, with both pilasters, in Fig. 2. The other window, farther to the left is included in one of the Brooklyn exhibits. These arrangements are found on both sides of the church.

Two enlarged photographs, each 18 in. by 22 in., are to be seen in Brooklyn, verifying the facts as shown in Fig. 2.

These astonishing phenomena demonstrate the same subtle purpose of concealing or obscuring the primary leans, which has already been described, for the transepts of Notre-Dame and Amiens in the November Number. It will be remembered that a similar device has been found at St. Quentin, and that it has been illustrated in publication for St. Loup at Chalons in the August Number. It should be added, however, that the concealment here in question may be related, with equal or greater probability, to the leans of the exterior buttresses, with which these windows are immediately in contact, as we next proceed to show by Fig. 4.

### The Towers.

It was several days earlier that I had photographed the leaning façade (Fig. 5),\* but I had not, up to this time, observed that the towers repeat this inclination.

Fig. 3 scarcely exaggerates the facts, which are accurately represented, as regards the amount of pitch, in the lower façade, in Fig. 5. The pitch of the main front, up to the Gallery of Kings, is repeated in both buttresses on the sides of both towers, as well as in the projecting abutments between them, which contain the tower stairways. These, however, curve toward the perpendicular (just as the interior piers of the tower construction curve toward the perpendicular, and just as the façade also appears perpendicular above the Gallery of Kings). The towers strike the true perpendicular at the point where they separate from the façade, just above the line of the eaves of the roof.

The pitch and the curve of the tower buttresses are shown by four large photographs in the Brooklyn Museum. Two of these are reproduced in Figs. 4 and 6. These photographs include, of course, the exteriors of the leaning windows, which are shown by Fig. 4. They also connect with a photograph of 2 by 3 ft. dimension for the leaning façade, from which Fig. 5 has been taken.

Before turning to the façade we once more specify the probability that the leaning windows, which are directly adjacent to the tower buttresses, were given the same pitch as a device of concealment for the exterior pitched and bending lines. (See Fig. 4.) The

\*It should rather be called a bending façade, as the lean bends to the perpendicular higher up.

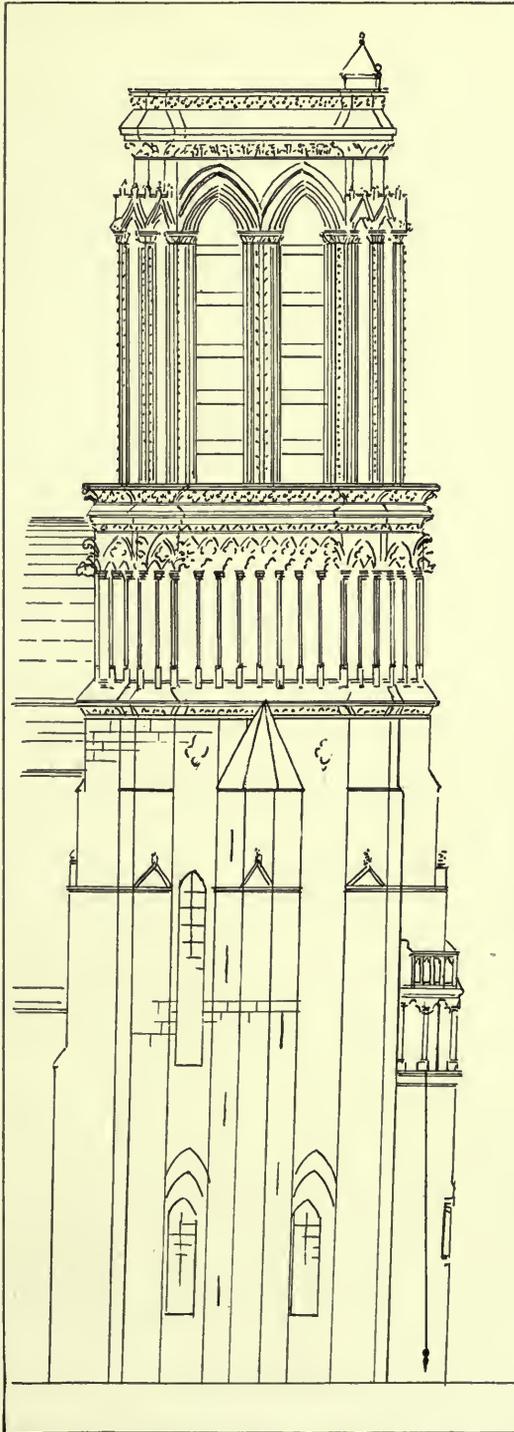


FIG. 3. VERTICAL BEND OF THE NORTH TOWER OF NOTRE-DAME. SLIGHTLY EXAGGERATED DRAWING.

Compare with Fig. 6.

interior wall pilasters may have been inclined to correspond with the windows as well as with the interior piers.

### The Façade.

The forward pitch of the façade, up to the Gallery of Kings, is about 11 inches in about 40 ft. The pitch of the buttresses on the sides of the towers is the same, modified by a curve toward the perpendicular above the level of the Gallery of Kings.

The suggestion of settlement is inevitable, and is met, to begin with, by all the explanations which have been advanced in the last article and which have been re-summarized in the opening of this paper, regarding the bends of the gallery parapets and of the interior masonry courses at the fourth bay from the organ loft (sixth bay from the entrance). If the façade went over to the west there must have been fissures in the masonry. These fissures must be sought where the settlement began. If any settlement took place, it began at the sixth bay from the entrance (see December Number), because the interior masonry courses slope downward in a direction normal to the leans of the piers, from that point. In Fig. 1 of this paper observe also this same slope above the arches, and the lowering of the westernmost arch which is connected with this slope. The theory of settlement is, therefore, forced to demonstrate that the bases of the interior responds (or engaged pilasters) at the façade, and the corresponding base mouldings of the exterior façade have sloped downward to a corresponding amount. (I have shown by the measurements in the December Number that the pavement does not slope, because the bend of one gallery parapet was measured by level in the gallery, and the bend of the other gallery parapet was measured by plumbing to the pavement.)

As the spires are perpendicular (see Fig. 6 and compare Fig. 3), the façade and the lower tower constructions must also have settled before the spires were constructed, which seems improbable. In fact, so many bending façades are now known that it somewhat taxes one's credulity to believe that they have all settled before the weight was added which might have caused a settlement, and that no records have survived of these curious accidents, which were never repeated after the load was increased. It is also incumbent on the sceptic to explain how the side buttresses of the towers could have settled in curves. This is surely pushing the theory of plastic masonry to an absurd extent. In Fig. 6 the camera is too far to the left, and the view is too small to show these curves. The fact of the lean with return bend to the perpendicular is, however, easily apparent in this view.



FIG. 4. NOTRE-DAME. DETAIL OF THE EXTERIOR NORTH TOWER CONSTRUCTION.  
Compare with Fig. 3 and Fig. 5. Note the window ledge as level.

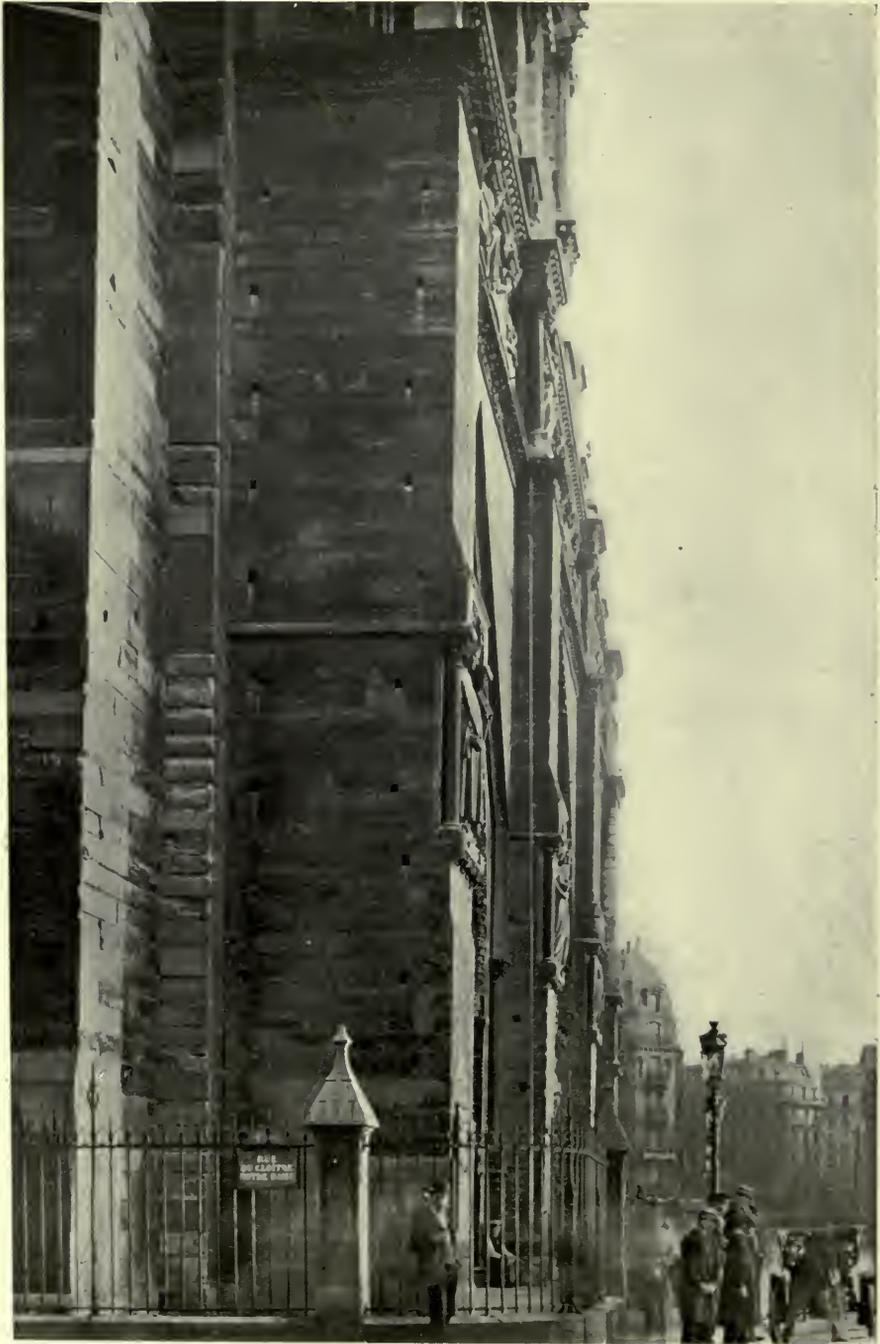


FIG. 5. THE LEANING LOWER FAÇADE OF NOTRE-DAME.

Note the plumb line. Note the cornice under the Gallery of Kings as rising from left to right instead of sloping downward, as would be the case if a settlement had occurred.



FIG. 6. THE TOWERS AND FAÇADE OF NOTRE-DAME; FROM THE SOUTH.

By sighting from the base of the picture the bend, by which the construction of the south tower is brought into perpendicular, can be easily perceived.

In Fig. 4 we notice that the window sill is level, and therefore constructed obliquely with reference to the leaning vertical sides. This is shown with great clearness in the 2 by 3 ft. enlargement from the same negative in Brooklyn (No. 102). If the tower had settled the window sill would dip downward to the west.

In Fig. 5 we reach a crucial observation, regarding the cornice which marks the beginning of the Gallery of Kings, and which is carried around the side of the north front buttress. It will be noticed that it does *not* slope downward towards the west, as it would if a settlement had taken place. It rather rises slightly, and so do the masonry courses directly under it. In Fig. 6 we notice that the same construction holds of this cornice on the south side of the south front buttress. Although the dimensions of this picture are rather small for the observation of this fact, it is more clearly shown in details for the south side of the west front, of the Museum series of 5 by 7 prints (Nos. 206, 208).

Special attention should be given to the plumb-line suspended against the side of the buttress near the centre of the picture in Fig. 5. The column directly over it is perpendicular, and so are the other corresponding columns above these buttresses. In other words, the bend of the façade begins at this point. This is much more clearly shown by the enlargements in Brooklyn. The bend to the perpendicular is also well shown from the south side in No. 204 of the Museum 5 by 7 prints.

The second story of the west front (which includes the rose window) steps back from the lower front (as shown by Figs. 6 and 7). We can, therefore, understand that no risk of stability was involved in the lower lean. My observation of this second story is that it is closely perpendicular, like the columns of the Gallery of Kings, but I had no time to verify this observation by plumbs or special photographs.\*

The multiplication of arguments on the question of settlement hardly seems worth while, and it may even seem to indicate want of confidence in separate individual demonstrations, any one of which ought to be sufficient. However, modern prejudice is so inveterate in these matters and antiquarian timidity is so natural in the acceptance of revolutionary facts that we may draw attention to one more point.

Viollet-le-Duc has long since overthrown the wholly unsubstantiated idea that piling was ever employed in the foundations of

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\*My time was so limited for the completion of these observations that the negatives for Fig. 4 and several companion pictures were taken after five o'clock on the day before sailing from Boulogne. It is for this reason that the plumb-line which establishes the perpendicular in Fig. 4 is suspended from the railing outside the towers instead of from a window. The tower was closed at five o'clock, so that it could not be entered for the suspension of a longer plumb-line, and I sailed from Boulogne the next morning.



FIG. 7. THE FAÇADE OF NOTRE-DAME.

View showing, in the upper galleries, the appearance of a bend in elevation, which is an optical effect of the bend in plan which is seen in Fig. 8.

Gothic cathedrals. He has also carefully examined and illustrated the extraordinary, elaborate, and costly precautions which were taken in laying the foundations of the Cathedrals of Amiens and of Paris. In face of these well-known facts about the foundations of Notre-Dame, the settlement theory has to face the fact that the settlement began, if at all, not under the weight of the towers, but at the sixth bay from the façade; that in a distance of some 80 ft. from the sixth bay to the façade this settlement must have amounted to some 18 inches. For if the piers went over 18 inches in a height of 80 ft. the corresponding settlement between the sixth bay and the façade could not have been less than 18 inches in a corresponding distance of about 80 ft. (The actual distance from the façade to the beginning of the sixth bay is close to 90 ft.)

The settlement theory has also to meet the difficulty that, as the columns of the Gallery of Kings are perpendicular, and as the spires of the towers are also perpendicular, it is necessary to prove that the massive foundations could not withstand an ordinary and inconsiderable load, and that, after yielding to the weight of this inconsiderable load, they have subsequently resisted successfully the weight of the much greater load which was subsequently added.

So much has been said in earlier publications on the subject of bending façades that we may shorten the discussion of purpose here, but it is important to press the point that, in three separate instances, certificates have been published from the engineering experts in charge of the buildings, verifying the arrangement as constructive and intentional.

The bending façade of the Pisa Cathedral was very carefully published, as regards surveys and constructive proof, in the *Architectural Record* for March, 1898; Vol. VII., No. 3, in an essay entitled "The Problem of the Leaning Tower of Pisa." The certificate regarding this façade was published in the *Architectural Record* for October, 1902, and also in *Museum Memoir* No. 1. Both articles were entitled "A Renaissance Leaning Façade at Genoa." These publications also contain, besides this certificate and another from the architect in charge of the Genoese church of S. Ambrogio, illustrations and measurements for the vertical bends in the façade of St. Mark's at Venice. The certificate from the architect then in charge of St. Mark's was published in *Museum Memoir* No. 2, and in the *Architectural Record* for November, 1903; Vol. XIV., No. 5. These various publications include mention of a series of other similar constructions, with illustrations and measurements.

Explanations as to motive must naturally be based on the obvious results of such arrangements, and on their analogies with

other constructive subtleties. To throw forward the lower portion of the façade is to improve the effect of its decorative details, by diminishing the appearance of foreshortening. It also increases the apparent height to a very considerable extent, in case of near approach. In quartering views, or side views, the bending line is also artistically superior to the straight line.

It also appears probable that all inconspicuous variations of architectural lines from the position or direction in which the eye naturally expects to find them, tend to produce an illusive optical vibration or mystification which is conducive to an effect of "life."\*

Notre-Dame varies from hitherto published examples of bending façades in uniting a system of westward leans in the interior with this exterior peculiarity. The Italian churches which have the bending façades have no connected spires or towers, and no other instance of a bending line in towers has, so far, been observed in France. The west façades of the other French churches which were visited in 1903 appeared to be generally normal, with the following exceptions:

Notre-Dame la Grande, at Poitiers, has a façade with delicate lean and return curve to the perpendicular (No. 112 of the Brooklyn Catalogue and exhibit). The Renaissance façade of the Gothic Cathedral of St. Malo has a constructive lean of about 5 inches in 50 ft. This was first made known to me by Commander Hugh D. Rooper, of the British Navy. I made a trip to St. Malo to verify the observation. The Sainte Chapelle, at Paris, which has no interior refinements, has a well-defined constructive forward inclination of about a foot in a height of about 38 ft., with return bend to the perpendicular. Several good negatives were made of it, but no enlargement has yet been exhibited.

The best analogies with the Notre-Dame façade, so far known, are those which are offered by the Italian examples—the Pisa Cathedral, St. Mark's at Venice, S. Michele at Pavia, S. Ambrogio at Milan, and other buildings, as previously published.

### Bend in Plan of the Gallery of Kings.

In Fig. 7 the reader is requested to note the horizontally bending line of the uppermost parapet and gallery of the façade (the one which unites the towers over the arcade of columns and arches). On the left side of the right (south) tower the parapet changes

\*M. Choisy's "Histoire de l'Architecture" uses the following words in his account of the effect of the Greek deflections from rectilinear building: "Que l'on en ait ou non conscience, il résulte de cet allure inusitée des lignes une impression étrange et neuve. Non averti le spectateur sent quelque chose d'insolite; averti, il reconnaît une attention délicate qui le charme; les contours prennent, grâce à cet recherche, un air de distinction auquel le goût ne saurait demeurer indifférent; l'édifice échappe à l'aspect vulgaire des constructions à lignes rigides, il s'empreint d'un caractère imprévu et neuf qui se soustrait peut-être à l'analyse mais nous saisit alors même que nous en ignorons le vrai sens et la cause."

direction, and becomes slightly oblique, rising from left to right. On the right side of the left (north) tower we notice another change of direction, and the parapet returns to the horizontal or inclines slightly below it, from right to left. In the parapet next below we see the same changes of direction. In the still lower gallery, the Gallery of Kings, these deflections are not visible in the given photograph. If, however, we came nearer to the building than the camera was placed when this photograph was made, we should begin to see a similar bend in the Gallery of Kings, while the bends of the upper galleries would become much more strongly defined, the uppermost being always the strongest. As we move farther back from the building, the bends will diminish and tend to disappear. They will disappear entirely from any point of view which is exactly level with the given gallery.

These bends are an optical illusion. They do not exist at all as the eye sees them, or as the photograph—No. 7—represents them, and the eye perceives them in varying strength according to the height of the given gallery, and according to the distance of the spectator from the façade.

These apparent bends in elevation are all produced by a bend in plan of the façade, which begins in the Gallery of Kings, and which amounts to 1.20 (Fig. 8). This bend continues throughout the entire façade in all its upper faces and stories, and may be noticed by the visitor as having the same actual amount in each successive gallery.

In optical effect the bend in plan produces, when viewed below its own level, the effect of a bend in elevation. At an angle of 45 degrees an advance, from right to left, of 1.20 in the middle vertical section of the façade, produces the effect of a rising obliquity from right to left of the same amount. At an angle less than 45 degrees, that is, at a greater distance, the obliquity decreases. At an angle greater than 45 degrees, that is, in nearer approach, the obliquity increases, in geometrical ratio to the amount of change in the angle.

Wave lines, in elevation, of alignment in pilaster capitals or in the capitals of columns, are occasionally found in the Pisan Romanesque. They occur on the exterior sides of the *Pieve Nuova*, at *S. Maria del Giudici*, near *Lucca*, and in the north wall of *Pisa Cathedral*. There is a wave line of columnar capitals to be noticed in the south gallery at *Pisa*. Wave lines of plan in interiors have been published for the *Fiesole Cathedral* (*Architectural Record*, Vol. VI., No. 4, p. 488). They exist in *St. Ouen* at *Rouen*, and in the *Cathedral of Lyons*.

Curves or bends in plan, when seen laterally above or below the level of the eye, are frequently translated optically into deflections



FIG. 8. INTERIOR OF THE GALLERY OF KINGS, NOTRE-DAME.

View looking North and showing a double bend in plan, which is repeated in the upper galleries.

in elevation, rising or falling in elevation, according to the position of the spectator and according to the direction of the deflection. It appears very improbable that these effects should not have been familiar to mediæval builders.

The artistic value of such deflections will appeal to many, without farther explanation, but such explanation may be offered presently, and with relation to the following additional instances of asymmetry in Notre-Dame.

### Gallery Curves in Plan.

The galleries of Notre-Dame curve in plan. The left (north) gallery curves concave to the nave. The right (south) gallery curves convex to the nave (Fig. 9). This curve is repeated, with the same amount of deflection, in the gallery wall, in the vaulting of the gallery (Fig. 9), and in the clerestory wall, which rests on the triforium piers and columns. Fig. 10 shows the outside of this clerestory wall, and the stone roofing slabs which cover the vault of the gallery below. The curve reappears in these slabs as a bend, which is very clearly shown by the photograph.

The amount of this curve, as indicated by the surveyor's rod, which lies across the tape, in Fig. 9, is  $9\frac{1}{2}$  inches.

In the left (north) gallery the curve of the outer wall is inconspicuous. The stationary benches which fill the gallery made it impossible to photograph the stronger curve in plan concave to the nave, in the parapet bordering the nave.

Notre-Dame is thus found to be once more similar to the Pisa Cathedral, for the Pisa gallery parapets also curve in plan, besides bending in elevation (Architectural Record, Vol. VII., No. 1, p. 87). Such curves or bends in plan are also especially interesting in the string-courses above the arcades in the Cathedrals of Siena and Cremona. They produce the optical effect of curves or bends in elevation, either rising or falling, as the case may be. Thus I was led into the error of announcing bends in elevation in the clerestory string-courses at Cremona, after observations in 1895, which were corrected in 1901, when it turned out that the bends were actually in plan, although giving the illusive effect, which was announced as a reality.

### The Deflected Choir.

The deflected choir of Notre-Dame is shown by the plans of the folio "Monographie de Notre-Dame de Paris," published by Morel, but the gallery curves are not included in these plans. The deflected choir is ascribed by the text, as is usual in such cases, to



FIG. 9. NOTRE-DAME. SOUTH GALLERY, LOOKING EAST.

View showing a curve in plan of the alignment of piers on the left, which is repeated in the exterior parapet of the nave, in the ceiling of the vaulting, in the exterior wall, and which reappears in the bend of the roofing slabs above the vaulting. See Fig. 10.

the symbolical representation of the bending of the head of the Saviour on the Cross.

It has been elsewhere shown\* that the asymmetric plans of Italian churches present many phases which have no relation to the plan of the Cross, and frequently do not even include it. I have also suggested that the sentimental or symbolic explanation above quoted, which is not mentioned by any mediæval record, and which is not verified in any other way, may either be a modern invention or a traditional explanation, originally given by some individual master-mason (or habitually given by master-masons) as pleasing to the clergy, and saving the trouble of æsthetic explanations.

The constructive intention of the deflected choirs has rarely been doubted by antiquarian authorities. It is the only phase of intentional cathedral asymmetry which has so far been generally recognized and published. In optical results it develops the same effects of picturesque variety, of mystery, and of illusive optical vibration which hold of other distortions of plan and of elevation, and which are only symbolical of artistic good sense.

Although the explanations of Choisy and Viollet-le-Duc both suggest accidental causes, this appears to be the result of their conviction, with which I thoroughly agree, that symbolism is not the explanation. Hence they naturally chose the only alternative explanation which had so far been offered. Both of these authorities have otherwise expressed their constant confidence in the scientific knowledge and engineering ability of the mediæval builders (note the quotations from M. Choisy in this paper farther on). It may be that M. Choisy might modify his previous views, after considering the plans and arguments which I have published in the *Architectural Record*, Vol. VI., No. 3, for 1897, "Constructive Asymmetry in Mediæval Italian Churches."

### The Point of View.

As the magazine publications of the current, and three preceding, numbers may find readers who have not been previously familiar with the subject of cathedral asymmetry, it is desirable not to confine these publications wholly to bare descriptions, without reference to the philosophy or possible explanations of the phenomena. For this reason readers who are familiar with the earlier publications must excuse some repetition of points presented in them. On the other hand, those who are new to the subject must excuse brevity and a rather summary disposal of the question as to what all these facts really amount to, because in many publications, both in and outside of this magazine, this question has already been fully considered for other buildings.

\**Architectural Record*, Vol. VI., No. 3, p. 405.

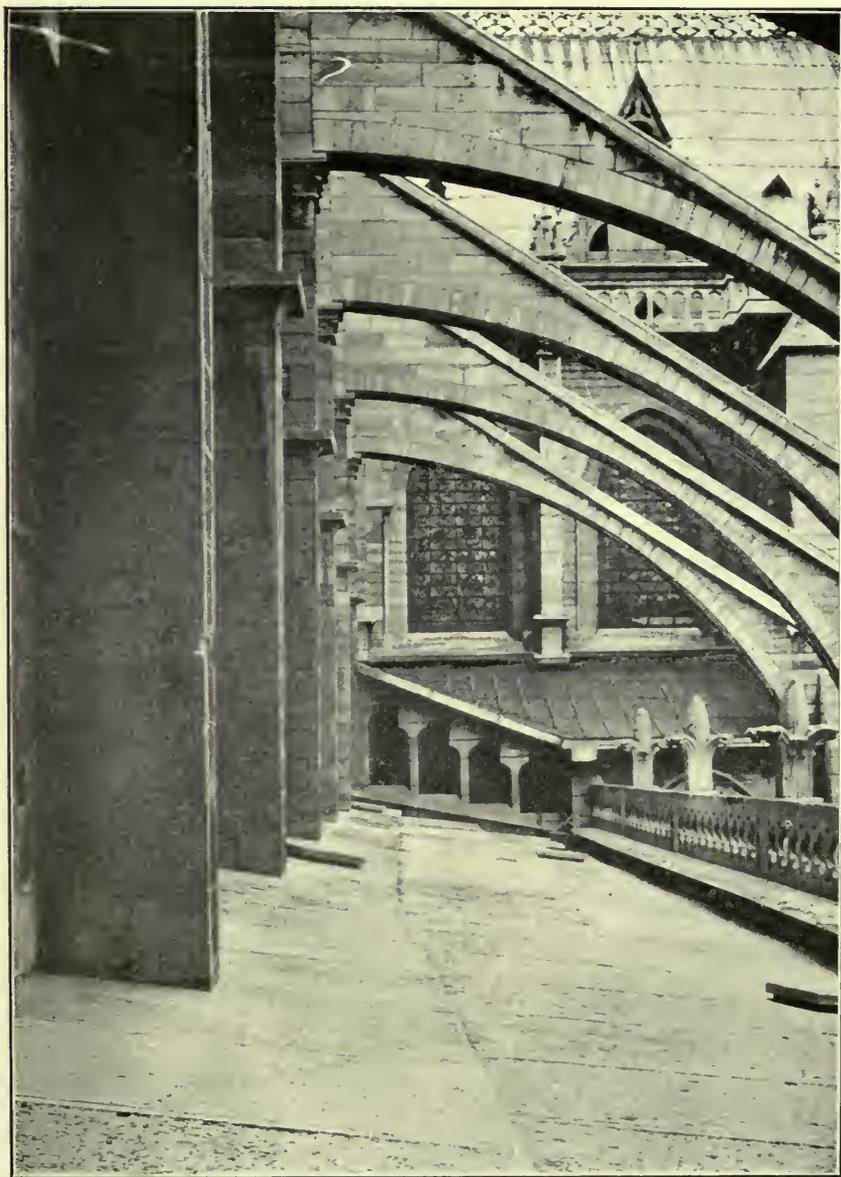


FIG. 10. NOTRE-DAME. ROOF OF THE SOUTH GALLERY, LOOKING EAST.

View showing a bend in plan in the roofing-slabs, which corresponds to a curve in the wall and in the alignment of buttresses. This is a continuation of the interior curve shown by Fig. 11.

It is, however, probable that the present publications for Notre-Dame will draw additional students into this field of interest, and that it will begin to assume larger proportions in antiquarian estimation, when it is found that Italian buildings are not the only ones involved. Hence the preceding matter-of-fact account of the extraordinary constructive phenomena of Notre-Dame may be considered as really demanding some rehearsal of the whole matter involved.

### Philosophy of Architectural Refinements.

Modern architecture has, since the close of the sixteenth century, gradually drifted into a mechanical formalism of mathematically exact symmetry and of monotonous repetition of details, which contrasts very unfavorably with the work of older periods. This older work was very largely dependent upon accidental conditions and causes for its more spontaneous, more varied, and more picturesque character. The difference between old and modern work is largely determined by changes in social organism and business system, which have eliminated the accidental element.

Aside from this accidental element, the builders of the Middle Ages frequently practised predetermined and carefully considered constructive arrangements, which were intended to make their buildings more imposing, more attractive, and more interesting to the eye. The philosophy or substance of this attractiveness is essentially the same as that which inheres in the accidental element, and is similar to that which inheres in the necessary irregularities of hand-work, as contrasted with machine work.

The great subtlety and extraordinary constructive skill and forethought which are frequently displayed in these arrangements, when considered in connection with their inconspicuous and really unobtrusive character, justify us in applying the term of "architectural refinements" to these arrangements.\*

In certain cases optical effects were undoubtedly studied by these arrangements, such as an illusive perspective in the apparent distance of the choir, or the avoidance of a contracted appearance in the upper part of church interiors.

In other cases, as in the remarkable arrangements of the south and north walls at Pisa, or in the galleries of Notre-Dame, it may be a debatable point how far optical effects were studied or how far the simple principle of the agreeable and picturesque effect of varied arrangements may serve as explanation. In such cases the debate is largely one of the use of words, or a debate as to how

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\*See the article on "Refinements," by Mr. G. L. Heins, in the "Dictionary of Architecture," edited by Dr. Russell Sturgis, and published by Macmillan.

far artistic intuition and inspiration may have taken the place of a knowledge of optical laws or a deliberate calculation of optical effects.

As a matter of fact, wherever the main lines of a cathedral are distorted in such a way that the distortion is not obtrusively obvious, and is not inevitably detected by the wandering eye, there must be an optical mystification, which adds to the interest of the building.

It appears to be a self-evident proposition, that where distortions were laboriously and carefully constructed, they must have had a purpose.

It appears also to be a self-evident proposition that the effects which were undoubtedly obtained were the effects which were proposed, provided intentional construction be proven. As to the language which is used in describing those effects, it matters little. The buildings which exhibit them have long been praised as models of architectural beauty and power. The character of those buildings is not changed because some additional measurements have been taken and some additional photographs have been made, from special points of view or of specially accurate character.

Such photographs have very much the same relation to the buildings as the isolated pictures of a vitagraph have to the entire motion which they aid in representing. It is especially to be urged upon new-comers in this topic that the effect of the photographs on the eye is quite apart from the effect on the eye of the arrangement which the photograph represents. It inheres in the dimensions of a photograph that the eye seizes the entire arrangement at one glance, whereas it inheres in the dimensions of the building that the arrangement as a unit is overlooked, because it is perceived by a succession of glances. Thus the photograph serves as an excellent detective, but for that very reason it fails in showing the effect of the arrangement which it represents.

In a multitude of cases the photograph makes conspicuous, and therefore ineffective, the really delicate device of the original building.

I have frequently found it difficult or impossible to persuade those who are inspecting certain photographs or plans, that the arrangements represented are not instantly obvious, and consequently ineffective, in the original buildings. As a matter of fact, a choir deflection of 13 ft. is habitually overlooked at Cremona, so is a narrowing in plan of 23 ft. in S. Stefano at Venice. A diminution of pier spacings to the extent of 13 ft. is wholly inconspicuous in Sta. Maria Novella at Florence.

And yet representations of these facts by plans appear very abnormal. A photograph showing the perspective illusion at Fie-

sole (dropping of arches 3 ft. toward the choir) appears equally abnormal, although the facts are uniformly overlooked in the church.

How easy it is, then, to realize that the widening of St. Mark's at Venice (3 ft.), or of Amiens Cathedral (3 ft.), or of Notre-Dame (2 ft. at the transept), should be inconspicuous in the original buildings. The taste which rebels at constructive asymmetry is really a taste which only rebels at the abnormal appearance of the plans and photographs.

No personal distaste or dislike can be considered of importance in regard to the inconspicuous distortions of mediæval cathedrals, because the buildings themselves have been objects of unqualified admiration to the greatest critics. The character of these buildings is not changed because we understand better than we did the explanation of their enticing mystery. In spite of Mr. Ruskin's weakness as an authoritative architectural historian and critic, his luminous and convincing rhetoric in the "Lamp of Life" will always be a standard reference for the spirit which inspired the asymmetric arrangements of mediæval building.\*

### Notre-Dame as Compared With Other Cathedrals.

The philosophy of this investigation may be simply stated, as has just been done, but one cannot avoid a feeling of stupefaction, or it may be even difficult to avoid a feeling of profound incredulity, in face of the phenomena of Notre-Dame. As connected with others previously published, they imply a more profound and more destructive revolution in the transition from the Middle Ages to modern times than has hitherto been realized. Hence, my own disposition is to insist upon the evidence for the constructive facts, and to allow these facts to force their own inevitable conclusions. Wonderful as the phenomena are, the only point really to be debated is whether they are constructive. The interweaving and character of the evidence on this head appear to be solid and sub-

\*M. Choisy's "Histoire de l'Architecture" also contains several inspired passages on the philosophy of mediæval asymmetry, from which we select the following:

"Ce préjugé qui confond l'harmonie avec l'uniformité est le fait des architectures vieilles; les architectures jeunes et vivantes qui croient à leurs principes, ne connaissent pas ces compromis." Vol. II., p. 340.

"Ces irrégularités sont visiblement intentionnelles. Il en est qu'il faut mettre au compte des malfaçons. Entre les unes et les autres la distinction est parfois délicate; mais si l'on songe à l'esprit chercheur, presque subtil des architectes gothiques, on demeurera convaincu qu'il y eut plus souvent calcul que négligence." Vol. II., p. 410.

"D'une manière générale, les architectes du moyen âge évitent la froide régularité; S'ils admettent pour l'ensemble un parti symétrique, ils savent rompre la monotonie par des détails qui se diversifient à l'infini."

"Notre-Dame a sur sa façade trois portes élevées en même temps; de celle de gauche à celle de droite les effets de masse seuls se pondèrent; à chacune une physionomie distincte."

"Ces différences donnent à la composition une variété qui a son charme, une sorte de sympathie nous attache à ces œuvres où l'auteur a dédaigné la trop facile ressource des poncifs, ou chaque partie a coûté une étude à part, un travail individuel; au lieu de symétrie, il y a pondération, et l'unité d'impression n'y perd rien." Vol. II., p. 412.

stantial. There is, however, a disposition of the human mind which, in face of what appear to be even absolute certainties, will still withhold final assent, because no counterparts of the phenomena are known. It is therefore necessary to refer, as has been done, to earlier publications for other buildings. The territory which has been covered by these investigations is limited when the whole of Europe is considered, but there are two other churches so far known which are not less remarkable than Notre-Dame for the variety and subtlety of their asymmetrical arrangements. The facts which hold of the Pisa Cathedral and of St. Mark's at Venice have been elsewhere described at considerable length. As regards the individual features of asymmetry in Notre-Dame, these have, generally, individual counterparts of considerable number in other mediæval churches.

*Wm. H. Goodyear.*



BROOKLYN MUSEUM EXHIBIT AT THE BOSTON PUBLIC LIBRARY OF  
PHOTOGRAPHS OF ARCHITECTURAL REFINEMENTS;  
APRIL 21ST—MAY 15TH, 1904.



SHOP OF THE HAVANA TOBACCO CO.

Photo by Arthur Hewitt.

St. James Building, New York City.

McKim, Mead &amp; White, Architects.

## “THE FINEST STORE IN THE WORLD.”



SOME years ago a sign appeared in the show-windows of the store in the St. James Building, on the southwest corner of Broadway and Twenty-sixth Street, in New York City, which announced that in a few months there would be opened at that location the “finest store in the world.” The phrase was not very descriptive; but it aroused curiosity as to what in the world would the finest store in the world look like. It was not to be the biggest store in the world, or the cheapest, or the most popular, or the best-situated, or the most-convenient; it was to be the “finest.” The word fine implied some kind of an aesthetic quality, but there were no precedents for aesthetic merit in stores. The imagination was at a loss to body forth a store that should be superlatively fine. It was found, however, when the veil was removed, that some kind of a superlative had been justified. So far as we know, if not the finest, it was assuredly the best-looking store in the world.

We have said that there were no precedents for aesthetic merit in stores, and the statement is substantially true. A store is used for the display and sale of certain goods; and the business of displaying and selling goods is not one which lends itself to effective architectural framing. The best that can ordinarily be done is to make the trim and the show-cases simple and business-like, and the details of the arrangement neat and convenient. Even when the objects displayed are valuable because of certain æsthetic qualities, such as stuffs, bronzes and the like, there does not seem to be any chance of giving a shop much architectural design; and the only instances, so far as we know, in which it has been done, are certain celebrated establishments in Europe which sell very valuable pieces of old furniture. In these establishments the furniture is arranged in an elaborate series of apartments, like the apartments of a private house, each piece having its appropriate and effective position. However, only two or three such establishments as this are in existence, and they are not widely popular. To the enormous majority of people a store which was intended to be good-looking, would be an absolute novelty.

The fact that the store in question was to be used in selling cigars would add to the novelty rather than diminish it. While the popular cigar stores may be well arranged to attract attention, they certainly are not designed to put up an agreeable appearance. Yet it is none the less true that the use to which the store was to



SHOP OF THE HAVANA TOBACCO CO.

Photo by Arthur Hewitt.

St. James Building, New York City.

McKim, Mead & White, Architects.

be put gave the architects, Messrs. McKim, Mead & White, the opportunity and cue which they have seized so effectively. It was not any kind of cigars which were to be sold in the shop. The bill-of-fare was to contain Havana cigars only; and the idea which dominates the design is consequently that of a cool, clean, sweet, spacious tropical apartment—not precisely an apartment such as one would find in Havana, but certainly such a one as might give something of the illusion of Cuba amid the brick and brownstone of New York.

The effect of the store was not only, however, to be cool and clean, like a room in a tropical house; it also had to be expensive and distinguished. The owner of the shop, the Havana Tobacco Company, was seeking the custom, not of the passer-by on Broadway, but of well-to-do people who buy cigars in large quantities and (more or less) regardless of price. It did not wish to make any glaring display of its goods, but it did wish to create the impression that the man who bought his box of cigars in the finest store in the world, was in good company. Money was lavishly spent to achieve this result. Whether it was wisely spent from the business point of view, we shall not pretend to say; but the corporation which owns the principal brands of Cuban cigars is generally supposed to possess brains, if not a soul. At any rate, the whole experiment is an interesting example of the changes in business methods which ensue from the permanent control of important industries by trusts, so-called. No business organization, except a trust, on this side of the Dead Sea, would have dared or could have afforded to spend over \$100,000 in decorating a New York shop. But a trust has not only an unprecedented amount of money to spend, but it has many ways of getting its money back, which a less opulent company does not have. Its shop in the St. James Building is, of course, as much of an advertisement as it is a salesroom, and so it must always be with any shop which seeks to be more than an enclosure for counters and clerks.

The ability to design interiors which make a very distinguished effect at a very considerable expense, belongs at least to one firm of American architects, Messrs. McKim, Mead & White; and the Havana Tobacco Company in confiding the design of the store to this firm, was well-advised. It is good economy to pay a high price for an excellent thing; and there can be no doubt about the quality of the effect which the architects have achieved. That effect is positive without being excessive; it is spectacular without being theatrical; it is above all else "swell" without being inappropriate. Of course, objection may be made to any such treatment of an apartment which is used for a very common-place business purpose, but such objections are beside the mark, because a severer

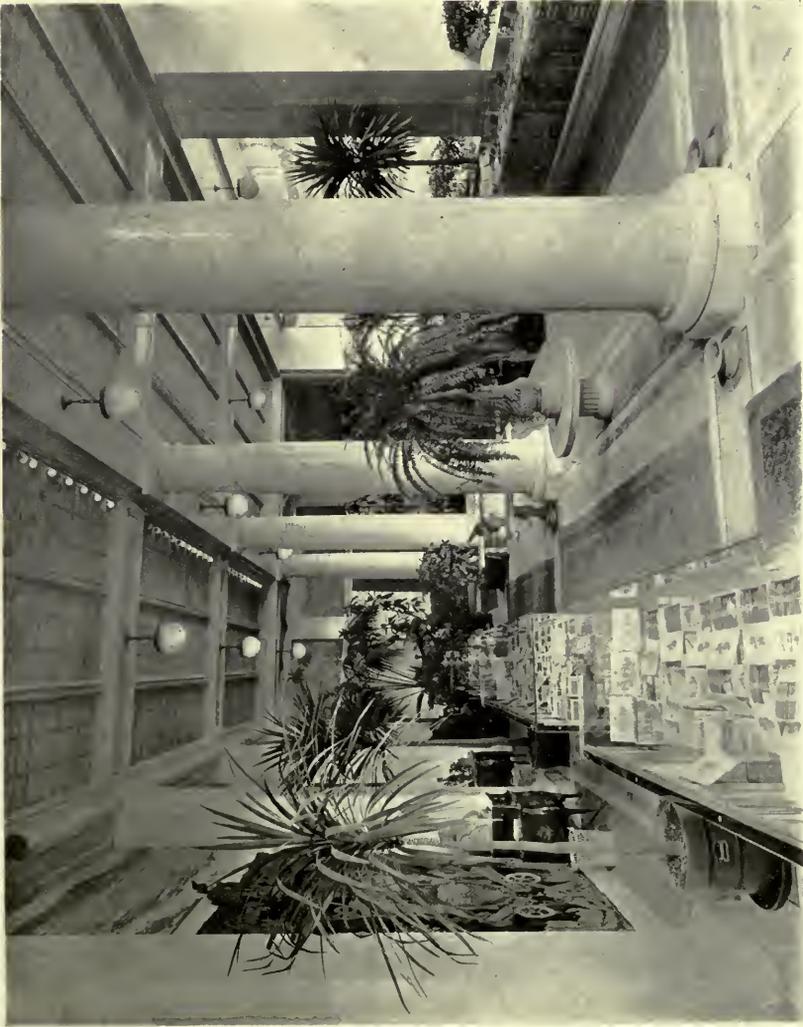


SHOP OF THE HAVANA TOBACCO CO.

Photo by Arthur Hewitt.

St. James Building, New York City.

McKim, Mead & White, Architects.

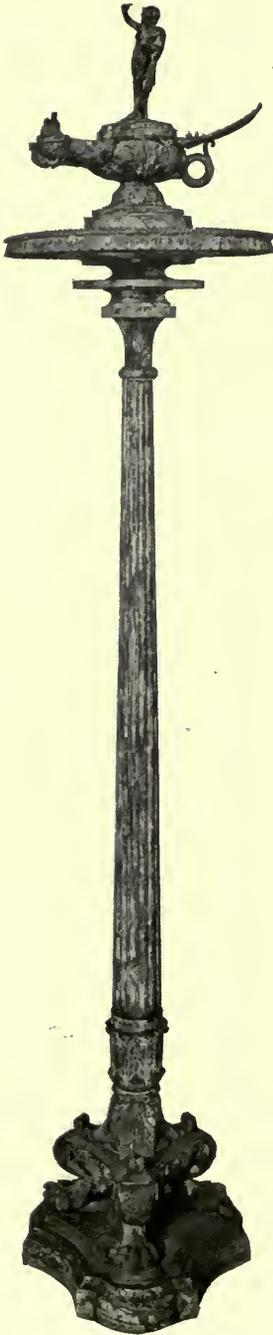


SHOP OF THE HAVANA TOBACCO CO.

Photo by Arthur Hewitt.

St. James Building, New York City.

McKim, Mead & White, Architects.



ORNAMENT IN THE SHOP  
OF THE HAVANA  
TOBACCO CO.

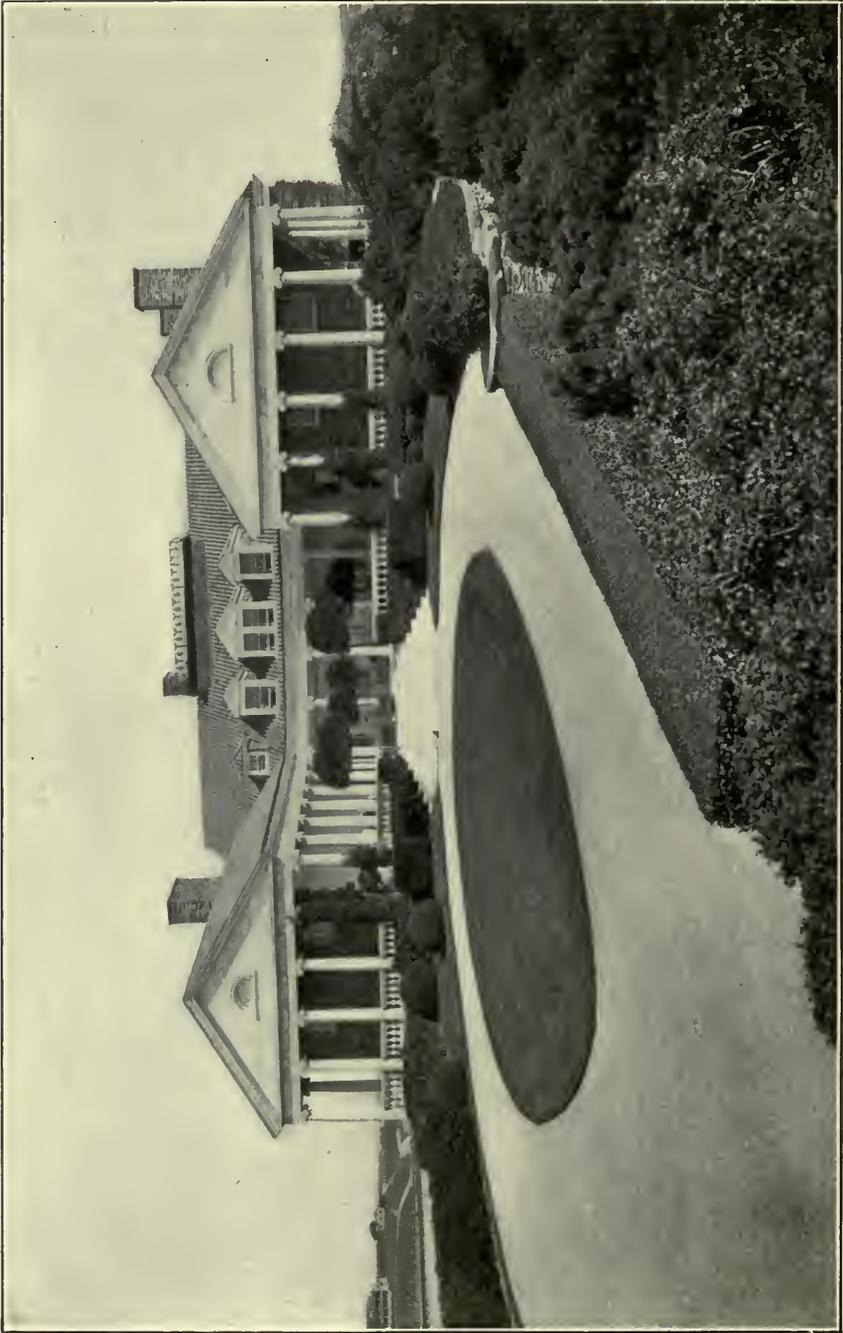
less spectacular and more structural treatment of the interior would have filled the bill. It would not have given the Havana Tobacco Company what it wanted, viz.: the "finest" show-room in the world. The store is a show-room from more points of view than one; but what a fine show it makes!

The cool, clean, rich effect to which I have referred, is, of course, obtained chiefly by the use of marble. The floors are of dull, white marble, with colored borders; the walls are lined with polished marble, and marble columns carry the marble beams on which the glass ceiling rests. The furniture of the room consists chiefly of marble tables and benches, arranged along the line of the marble columns; and the glass cigar cases have marble bases. The effect of so much white marble would, of course, be not only cool, but frigid, were it not for the ingenious measures which have been taken to impart life and warmth to the effect. Rugs of excellent color and design have been fitted into the rectangular spaces in the floor made by the borders of colored marble. A panel on the south wall is or was hung with a very beautiful piece of tapestry. Tubs, in which palms and other tropical plants are growing, have been distributed throughout the room. And most important of all, a frieze of mural paintings representing Cuban landscapes has been placed between the pilasters on two sides of the room. These landscapes, which were painted by Mr. Willard Metcalfe, are, of course, pictorial rather than, strictly speaking, decorative. Each one of them might be detached from its surroundings and placed upon an easel without losing very much of its effect. But their pictorial character affords no reason for quarreling

with them. Inasmuch as the subjects were selected for the sake of stamping the store with a Cuban character, they were bound to be painted in a representative manner, and even if representative, they are none the less highly decorative. That is, their colors harmonize with the general tone of the room, and they do more than any other single feature to impart to it a gay and cheerful aspect. The artist is to be congratulated upon the opportunity afforded to him of obtaining such a decorative effect without departing from the method and kind of work with which he is familiar, while the architects are to be congratulated upon the selection of a painter who was capable of carrying out their purpose with such complete success.

It will be seen from the foregoing description and from the accompanying photographs that the architects have used the richest materials known to decorative art in turning the store in the St. James Building into the "finest store in the world," and the completed result, although obtained by the use of familiar forms and materials, is individual and unique as well as superlatively "fine." It is, on the whole, more like a hall in a palace than it is like any other known room. It has a similar public character, while at the same time not departing from the domestic tradition in the use of materials, and it is an amusing illustration of the incongruous extremes of American life that this "palatial" shop, this tapestried emporium, this marbled and painted humidor, should occupy the same space which was formerly occupied by Dr. Munyon's displays of pictorial therapeutics.

*A. C. David.*



HOUSE OF MR. E. D. MORGAN.  
Photo by Alman & Co.

Newport, R. I.

McKim, Mead & White, Architects.

A GROUP OF  
NEWPORT HOUSES



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THE HOUSE OF  
MR. E. D. MORGAN

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THE HOUSE OF  
MR. E. C. KNIGHT

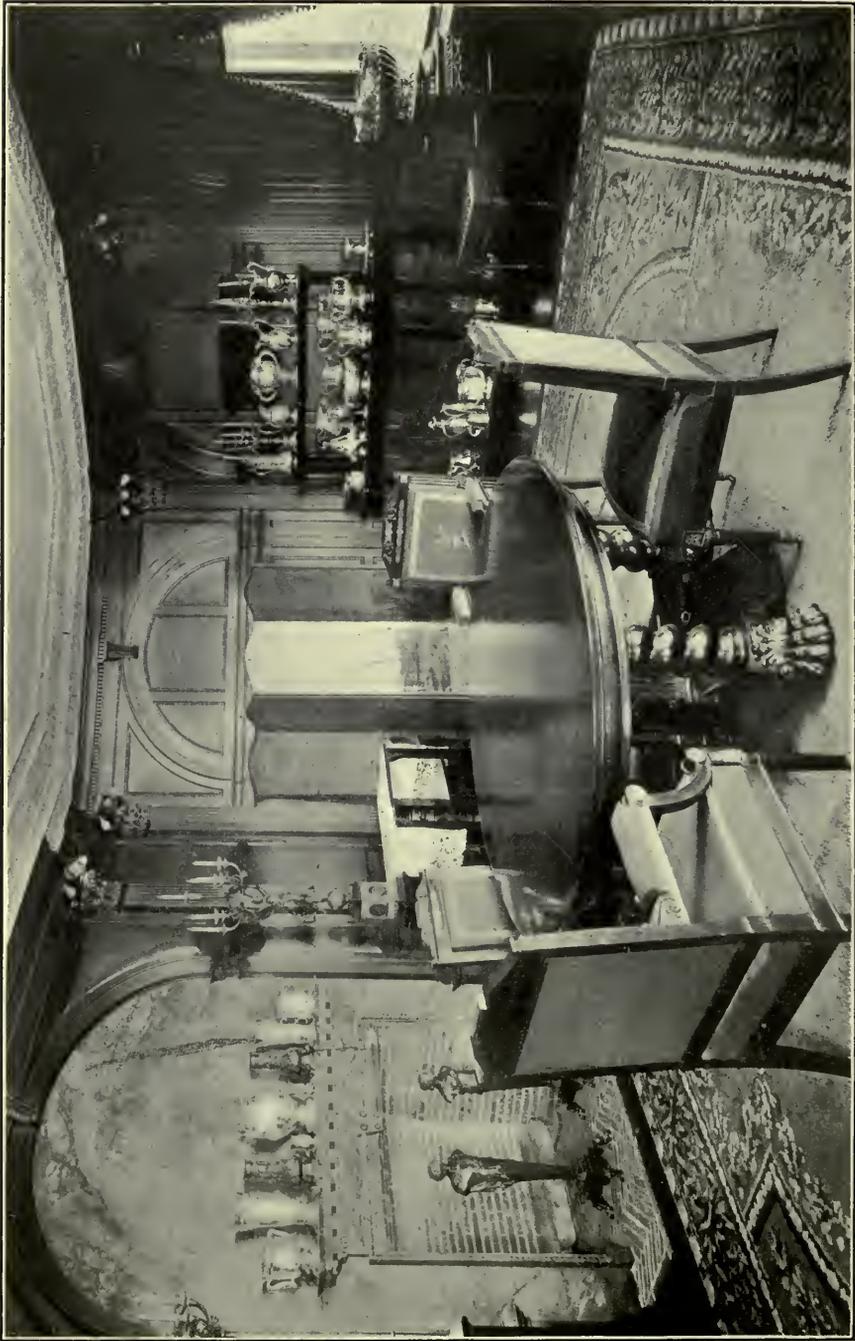
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THE HOUSE OF  
MISS MASON

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THE HOUSE OF  
HERMAN OELRICHS



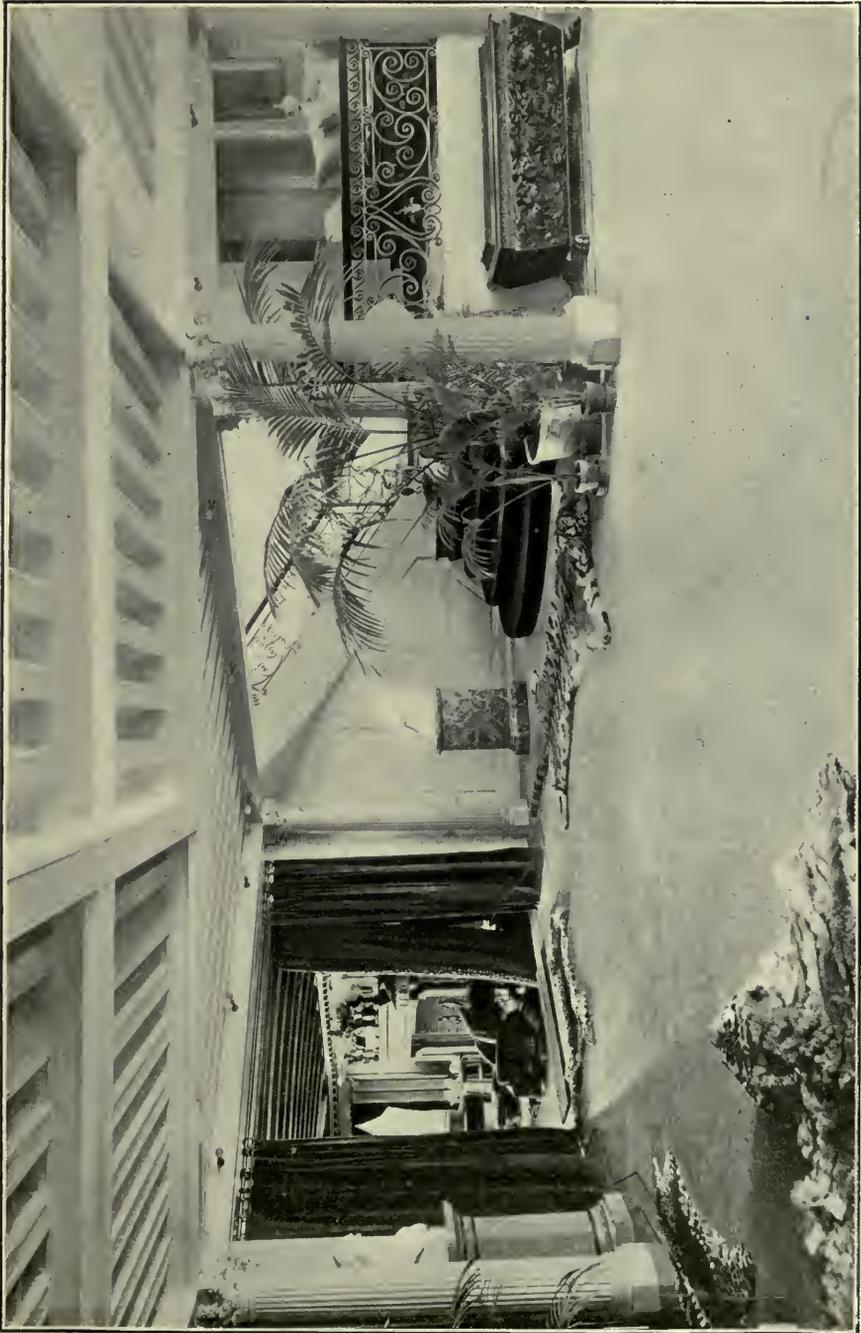


DINING-ROOM IN THE HOUSE OF MR. E. D. MORGAN.

Photo by Alman & Co.

Newport, R. I.

McKim, Mead & White, Architects.



HALL IN THE HOUSE OF MR. E. D. MORGAN.  
Photo by Alman & Co.

Newport, R. I.

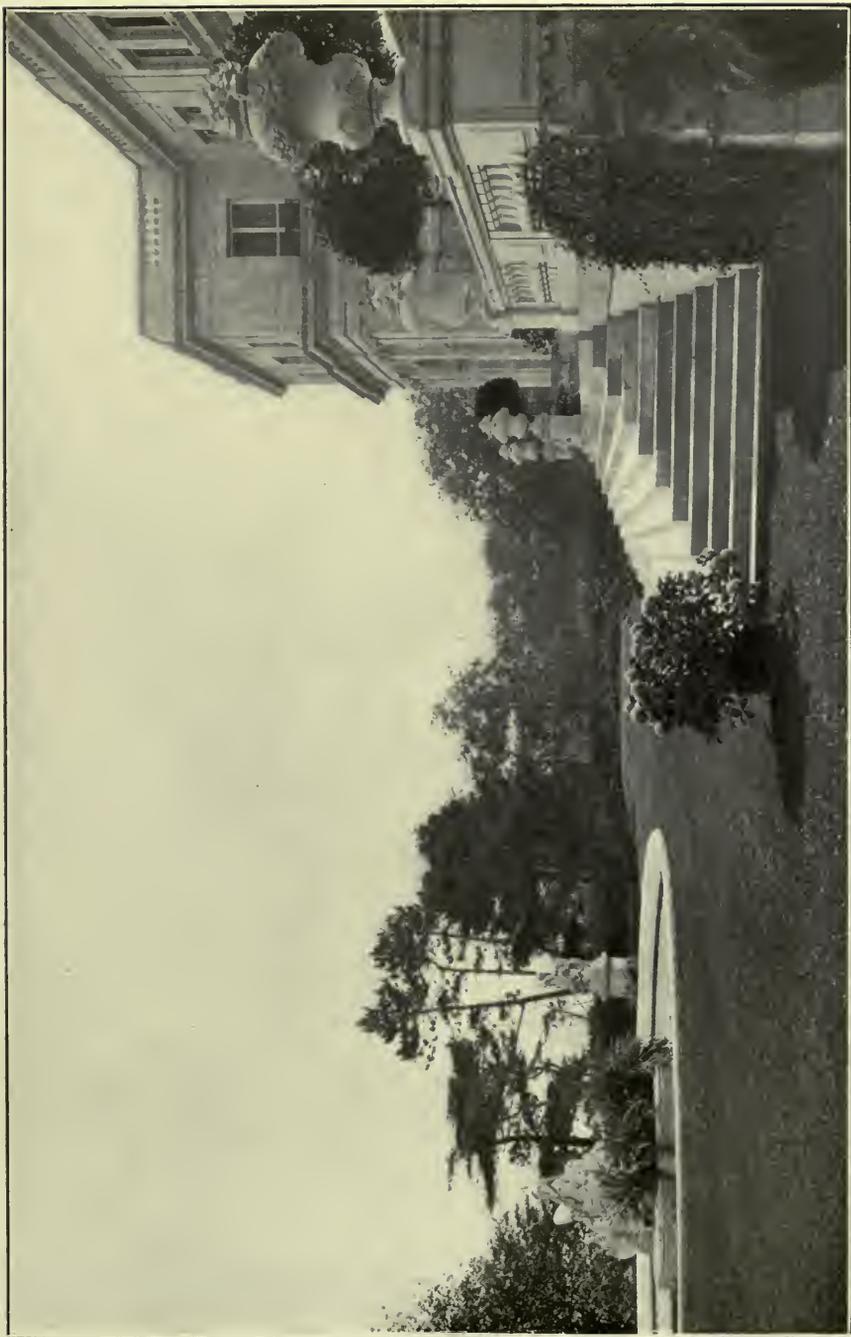
McKim, Mead & White, Architects.



HALL IN THE HOUSE OF MR. E. D. MORGAN.  
Photo by Alman & Co.

Newport, R. I.

McKim, Mead & White, Architects.

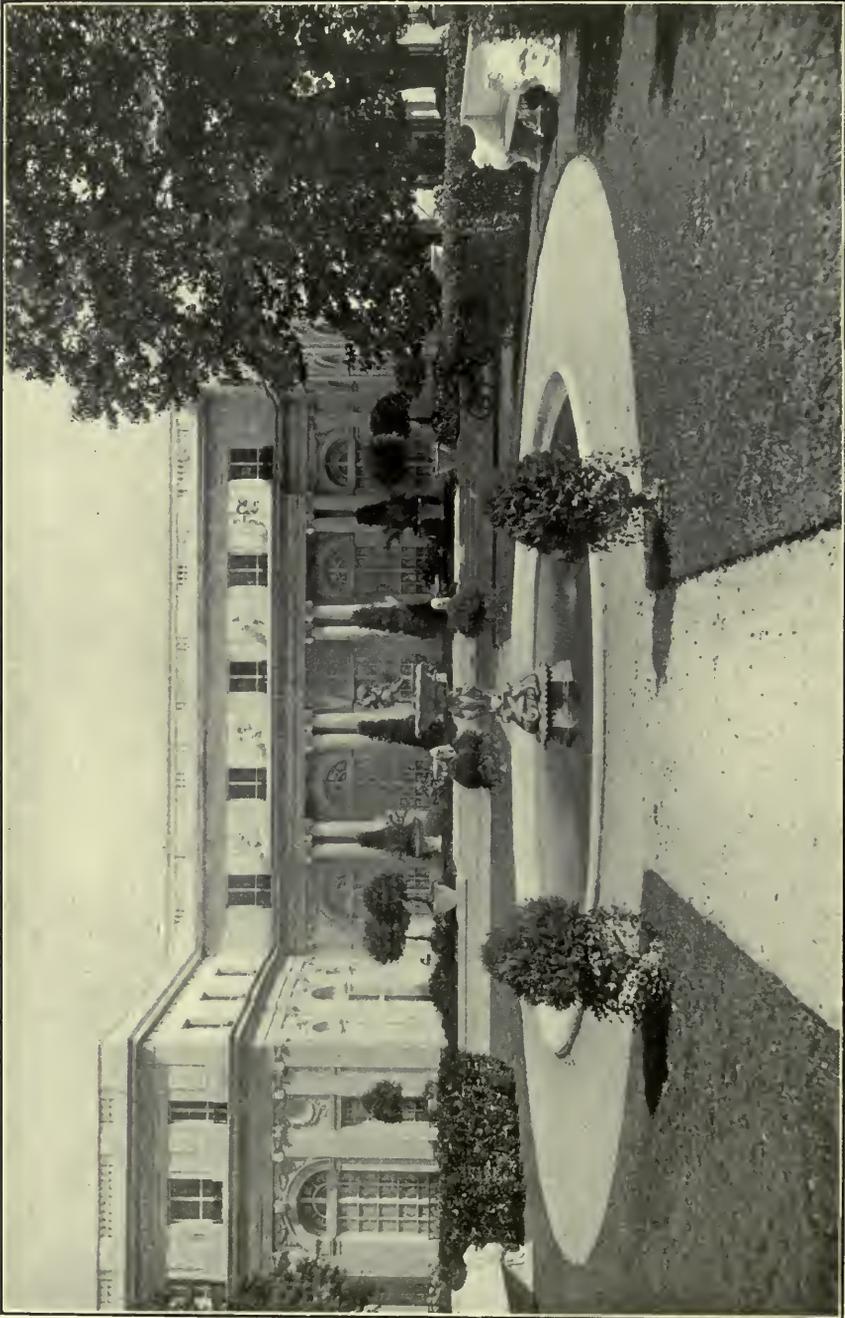


HOUSE OF MR. HERMANN OELRICHS.

Photo by Alman & Co.

Newport, R. I.

McKim, Mead & White, Architects.

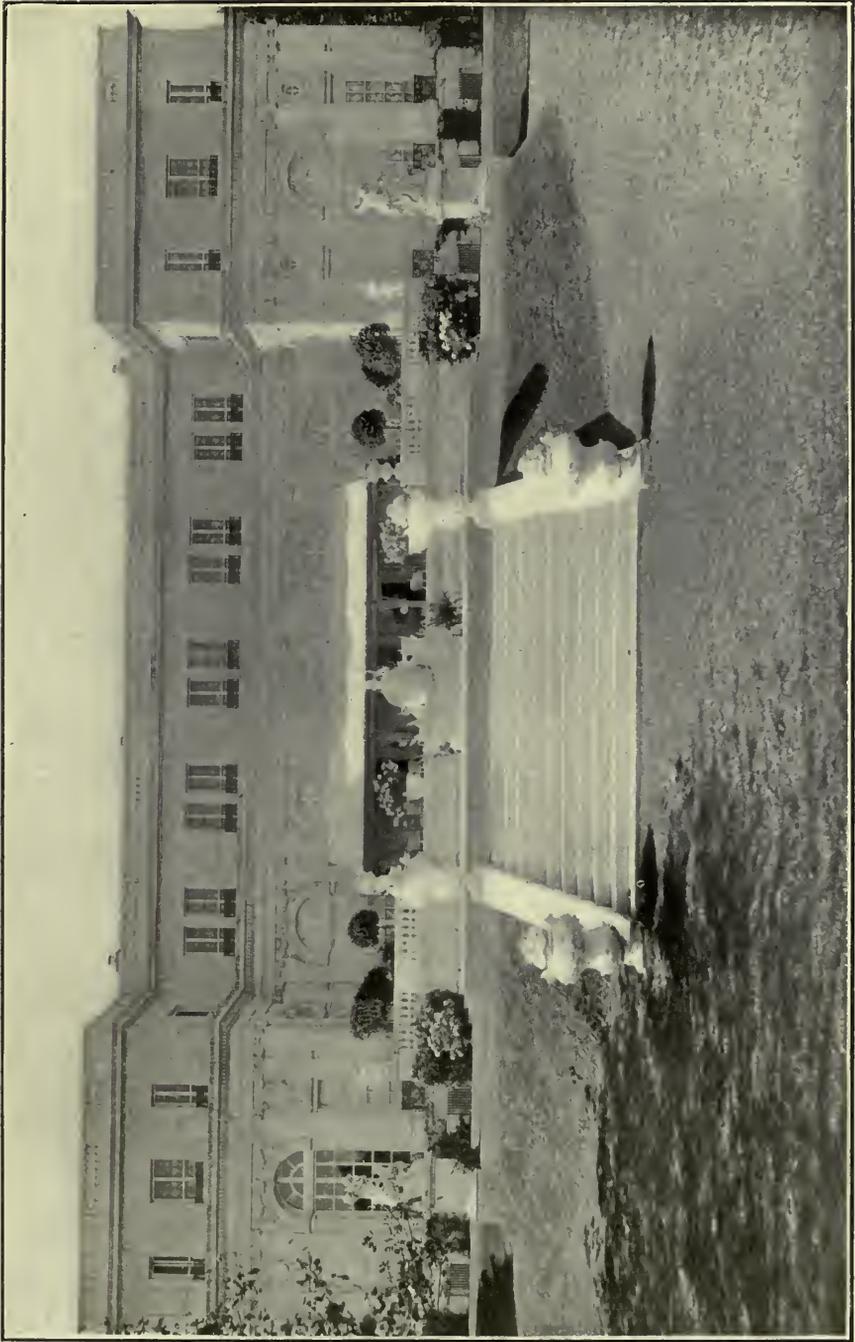


HOUSE OF MR. HERMANN OELRICHS.

Photo by Alman & Co.

Newport, R. I.

McKim, Mead & White, Architects.

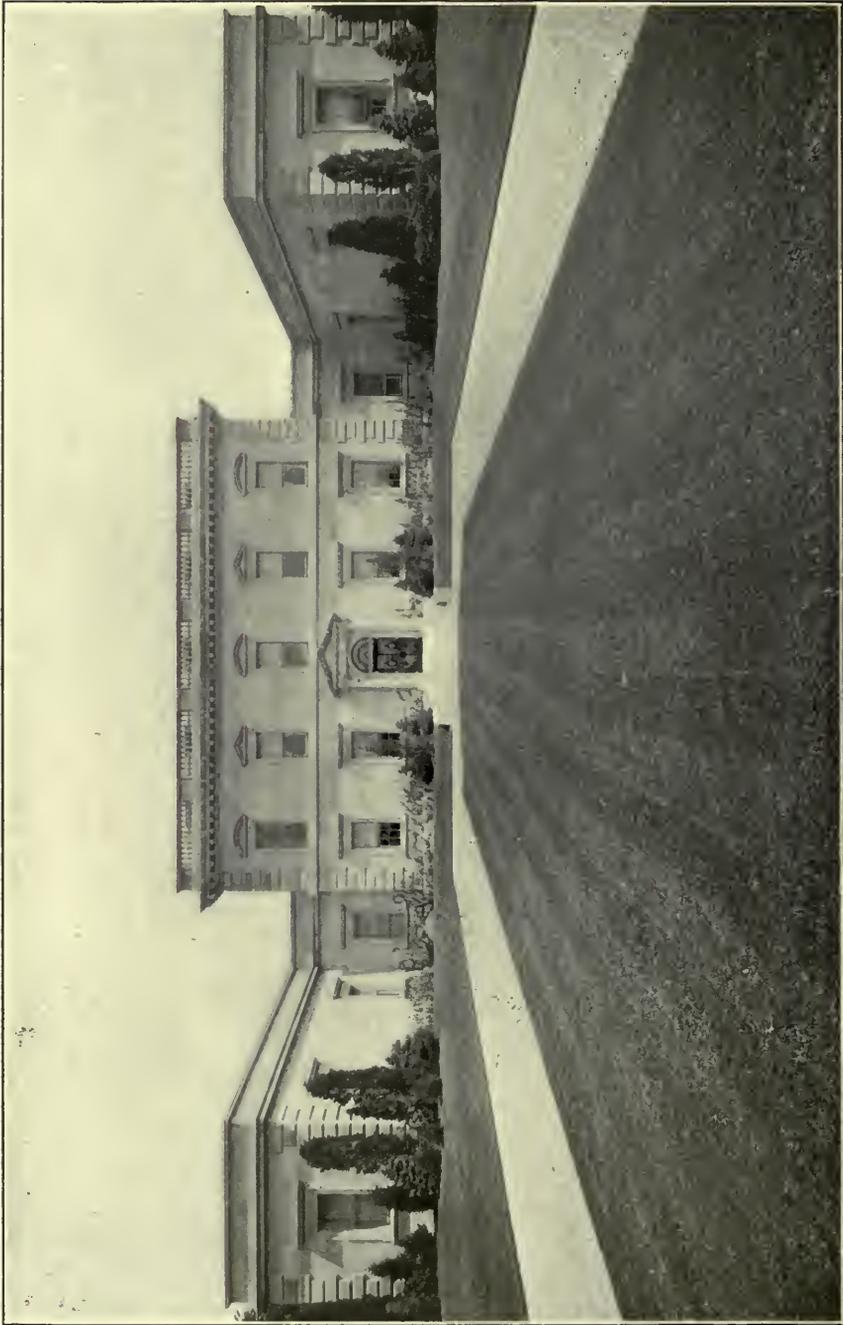


HOUSE OF MR. HERMANN OELRICHS.

Photo by Alman & Co.

Newport, R. I.

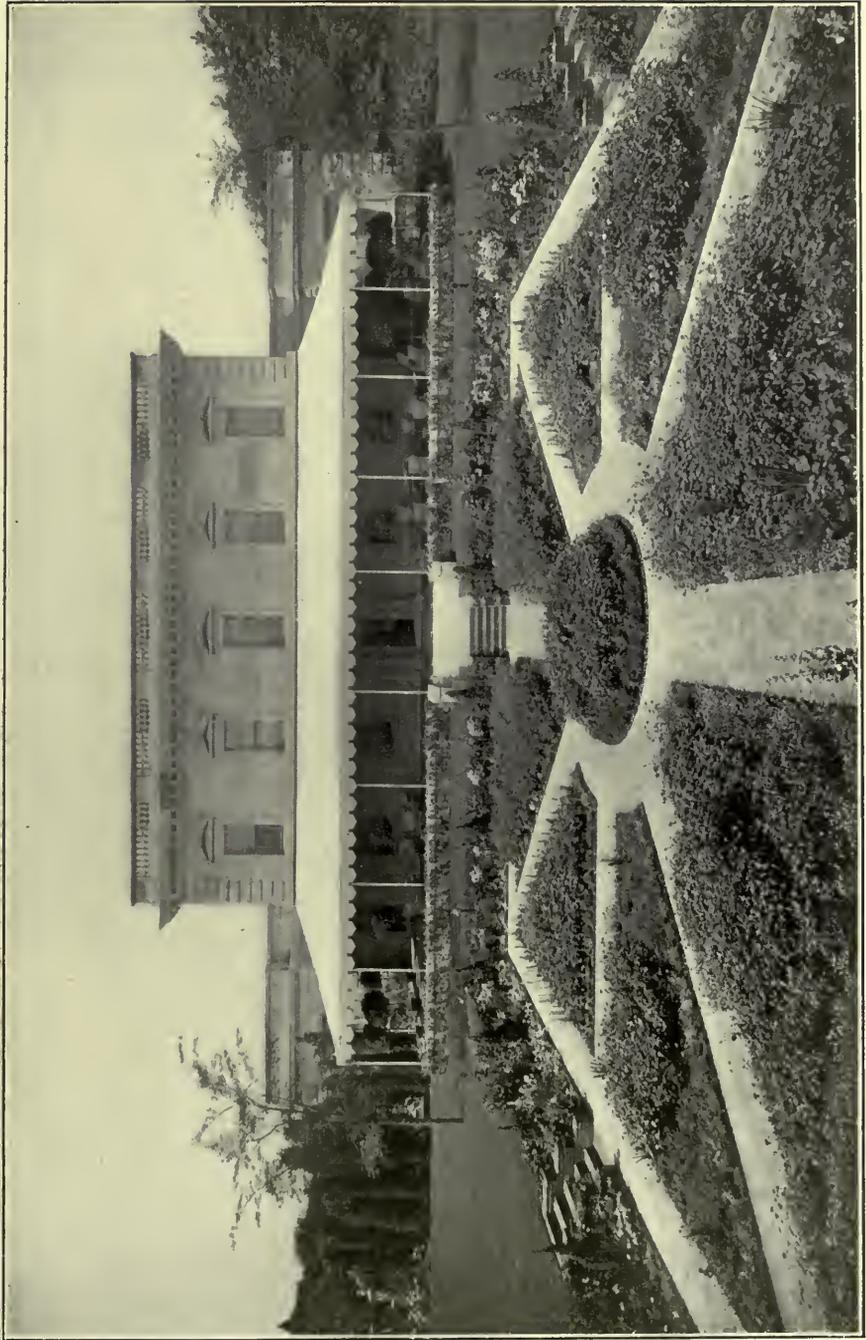
McKim, Mead & White, Architects.



HOUSE OF MR. E. C. KNIGHT.  
Photo by Alman & Co.

Horace Trumbauer, Architect.

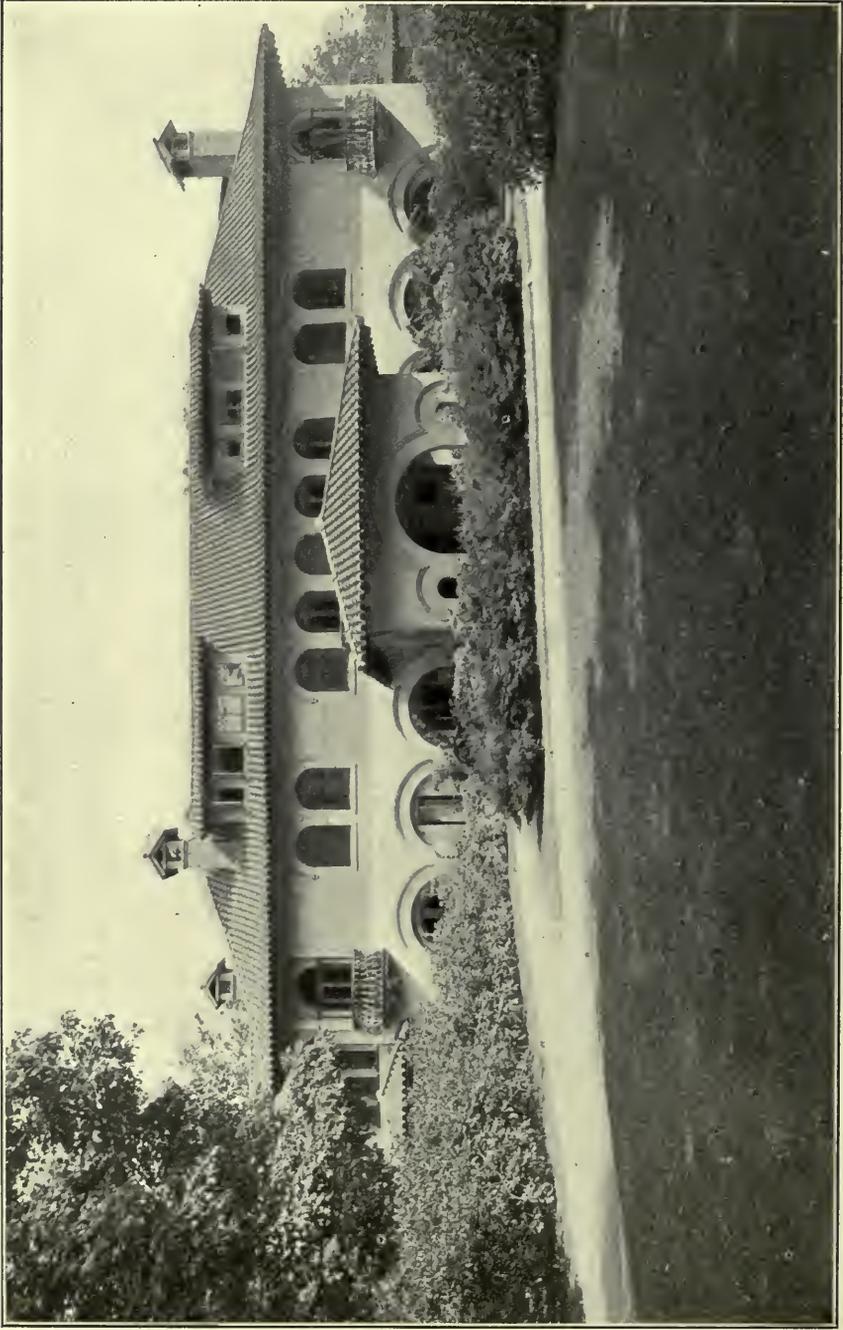
Newport, R. I.



GARDEN OF THE HOUSE OF MR. E. C. KNIGHT.  
Photo by Alman & Co.

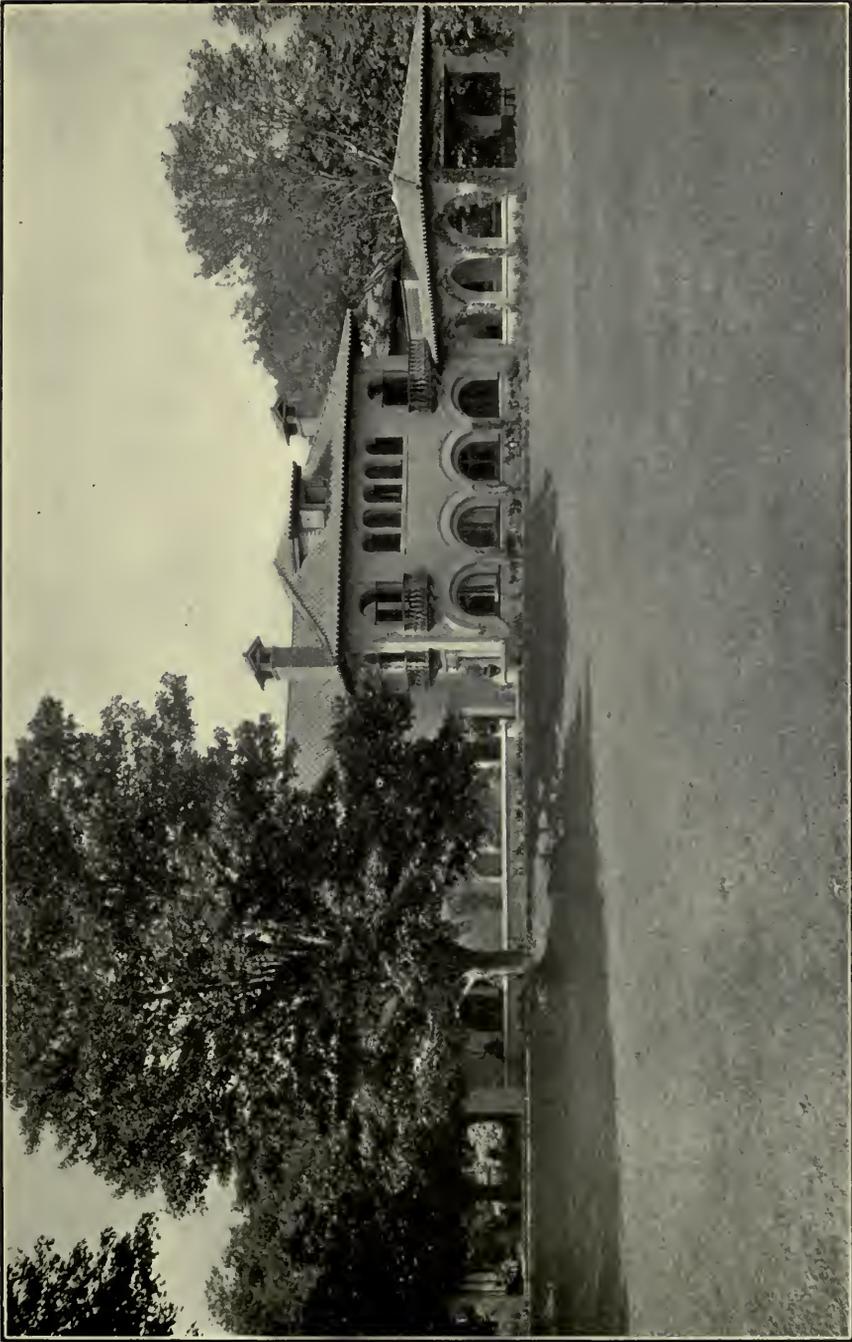
Newport, R. I.

Horace Trumbauer, Architect.



HOUSE OF MISS MASON.  
Photo by Alman & Co.

Newport, R. I.



HOUSE OF MISS MASON.  
Photo by Alman & Co.

Newport, R. I.



HOUSE OF MR. E. E. JACKSON.

No. 424 Clinton Street, Brooklyn, N. Y.

Babb, Cook & Willard, Architects.

## NOTES AND QUERIES.

### A HOUSE IN BROOKLYN.

The small city house whose front we offer (page 62) is an instance of that character in design which one seeks, and for which, indeed, one cries out in accents which are considered much too piercing. Its details have been studied, each by itself and in connection with all the rest. The complete design of the façade has only been reached by the marshalling of these details so as to help one another and to subserve the purposes of the architect who has tried to make a whole design out of many parts—*e pluribus unum*. The front in question forms a part of the general design, because the house is so fortunately placed that its flanks can be seen and its whole mass studied from a little distance away and from near at hand; and it appears that the street front is part of a pavilion, as it were, which is advanced from the main mass of the house, the end wall of which main mass rises above the roof of the pavilion in a self-assertive fashion. This end wall is echoed, repeated, emphasized, by the other end wall, that which faces on the garden behind, the rear wall, as our parlance has it; and in this way the dimensions of the main house are marked and the greater size of that *corps de logis* is contrasted more sharply with the smaller size of the pavilion. And in all this, that skilled use of detail already alluded to is seen in full force even if the detail in question is but the familiar old corbie-step; for if your stepped gables repeat one another you have a stronger repetition than if these gable walls were coped with the usual sloping bars of stone or terra cotta.

In a certain dim way the half-tone print shows all the features of which there has been mention here, but it fails to explain the use of the chimney rising from that wall within which separates the front room from those behind it, and is topped out in a stack which is placed exactly on the axis of the curious little feature of cut-stone which crowns the street front.

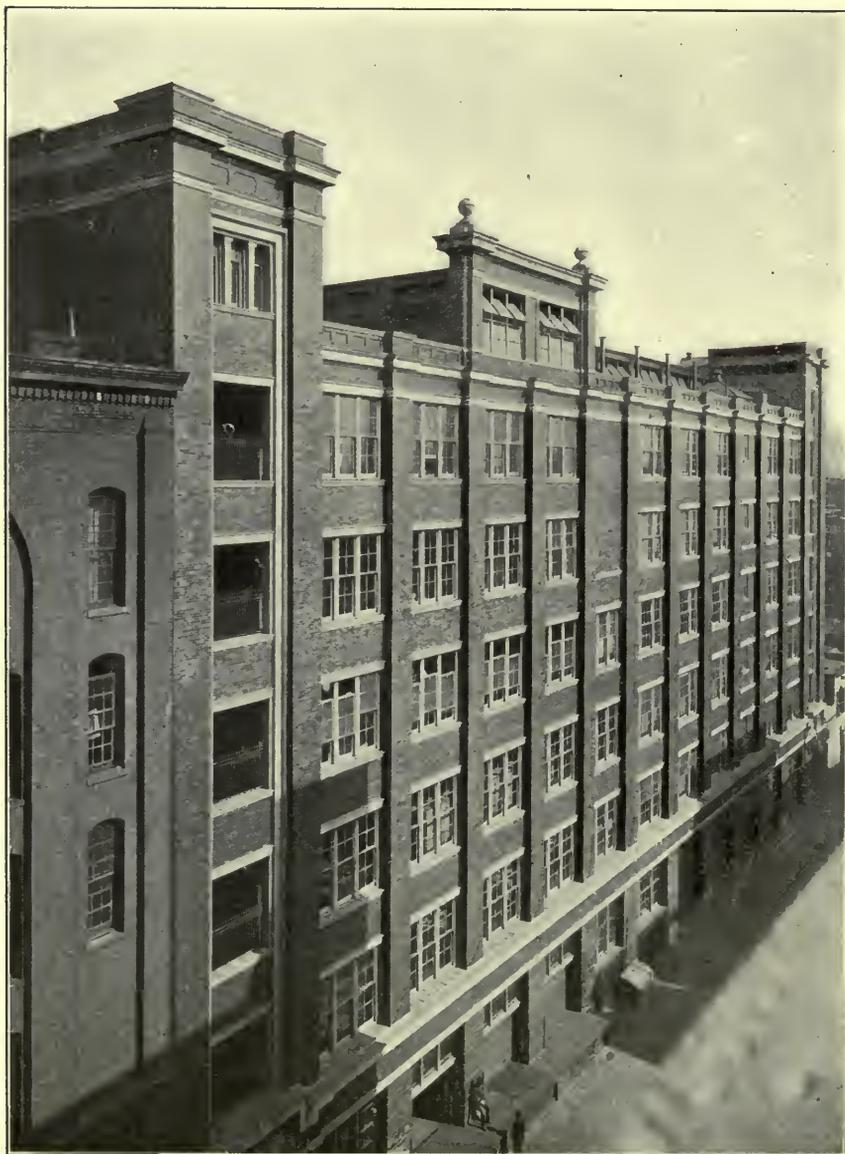
That culmination of the front gable-wall would be thought a little too aggressive, a little too highly wrought for a mere exercise, were it not for this doubling of the chimney by it and the doubling of it by the chimney. Those two features proclaim the position of the main line of the roof. They insist upon the ridge, so to speak, they pro-

claim it from the front, much as a cresting of unusual elaboration might show it from the flank. Then, in order that we shall not lose this two-fold disposition of the house—this long-drawn ridge of roof which yet is subordinated in a way to the larger mass of the house—the porch of entrance is opened up completely, so that not only is the corner extension which covers the porch cut off from the rest by its inferior height, but also the fact that there is only one enclosed story in it makes of this extension a thing apart.

Then, as to details and their careful balancing, observe how the sculptural medallion with the date, which is built into the smaller false gable above the porch, repeats the note struck by the sculptured window-piece which forms the central feature of the larger gable, and how that central feature is again repeated by the ornamental cap of cut-stone at the point of the gable, the two being connected by the window between them. The cutting off of the middle pilaster by that sculptured window-piece is the only solecism or possible error that I can discover in the front, and I can understand that even this is open to discussion. Apart from that the use of the pilasters, of the two which rise from the water-table to the first step of the gable, and are then capped with a cut-stone moulded course prolonged from the step itself, is a perfect piece of architectural ingenuity employed in the right way. Ingenuity may be a mischievous thing in a delicate design, but here it is employed as it should be to give us the use of pilasters and their valuable vertical lines, in spite of the absence of that huge entablature resting upon the pilasters which a less skilled dealer in details would have found himself bound to furnish. The extremely delicate mouldings of the window-casings are contrasted in a curious way with a very rough brick wall, for not only is the front built of common brick but even the bond used in laying the brick is our old familiar New York system, the "American bond," four courses of stretchers, then one course of headers, then the stretchers again and so on, *ad infinitum*.

Yes, that is a charming design, and it confirms a lifelong impression, which is that even in these dark days a man may make a design if he will think it over and take time to think it out. That is not to deny that some men are better designers, by nature, than are some others.

R. S.



FACTORY OF THE NATIONAL BISCUIT CO.

15th Street, near 9th Avenue.

Photo by A. Patzig.

**THE  
FACTORY  
OF THE  
NATIONAL  
BISCUIT CO.**

The building of the National Biscuit Co. is not recognizable by any permanent or temporary signs—not even by a small plate at the office door. Let us identify it as the building with the freight elevator and its tower in the extreme foreground, thoroughly recognizable by its great gaping openings, and the iron railings which replace shutters and sash alike. The corresponding tower at the farther end of the front is used in the same way. The extremely high point of view from which the photograph is taken is so far fortunate that it shows the elaborate system of window-ventilation arranged for the uppermost story. Rotating sashes are seen not only on the front of the middle tower and in the long stretch of bulkhead behind the parapet, but also in the retreating wall, the side wall of the middle tower, though these last-named are nearly lost in darkness. The usual stove-pipe ventilators are also much in evidence. The modern business building tends to have such conveniences as these more and more common, more and more thrust into the front of observation—it will tend also toward the giving to them of an architectural treatment, though when and how is not yet visible perhaps even to the most prophetic insight.

Meantime we are face to face with that most curious problem, the treating in an architectural fashion of these wholly utilitarian buildings. Thirty years ago this present writer, at a convention of the Institute of Architects, took the ground that the only apparent way of striving hopefully for originality in ornament would be to deny ourselves every kind of ornament for ten years or so—to build absolutely without decoration of any sort. The hope was in this, that, after the ten years of prohibition had elapsed, the artists would find themselves full of a wholesome longing to mould their jambs, to carve their impostes, to break up their parapets into picturesque sky-lines, and gradually to introduce a called for, an inevitable ornamentation in place of that which they would have then forgotten to copy from photographs of old-time work. We are come very near to that situation, at least in some of the factory buildings of the twentieth century. The papers in the *Architectural Record* of January and February, 1904, deal with factories and

warehouses indeed, but rather with those which had more decided architectural treatment than the one we are now considering. They were admirable in their way, but their way is not quite that of the Biscuit Company's building, nor of that of one or two other structures which demand consideration as being *without* architectural treatment. That is to say, not treated architecturally as to the whole design; for the question about the scraps of technical architecture which still linger in those buildings is a very important question, as it seems.

Thus in the building which we have now to consider, let the reader study that cornice, that frieze, and that group of mouldings below, which must pass for the arcitrave; a whole entablature, indeed, carried around each of the freight elevator towers, around the frontispiece of the middle tower with the rotating sash, and along the whole front between, breaking in the fashion of a *ressaut* about each and every one of the structural piers of the front. Above this there is a perfectly natural parapet with nothing more markedly architectural about it than some sunken panels and a moulded front to the inevitable coping. But the entablature, even though it is made a part of the wall, even though the frieze is of plain brickwork and the moulded parts above and below that frieze are of baked clay or metal according to their position, and although there is perhaps a gutter masked by the *cyma recta* or what replaces it at the summit, is still an architectural termination of a wall for which the rest of the building does not prepare us, and which, indeed, has no visible or discoverable reason for being. One longs to see the designers of these realistic buildings face the situation fairly, defy traditional architecture in cases when they cannot follow its behests gracefully, naturally, easily, and in the whole structure alike.

Why, when you have a building which is to be wholly utilitarian, and which nevertheless you long to adorn in a small and innocent way without undue cost and with a continual recognition of the general business-like aspect of the thing—an aspect which is assuredly the reverse of architectural in the old-fashioned sense—why cling to those forms which are of no value whatever without their surroundings, their accessories, their ancient and recognized allies in the matter of making up a design?

R. S.



THE KENT BUILDING.

Chicago, Ill.

Pond & Pond, Architects.

Photo by Henry Fuermann.

A  
CHICAGO  
FACTORY.

In the Chicago building which we identify by means of the signs B. Kuppenheimer & Co. (signs which are seen reversed against the sky) there is certainly no affectation of architectural ordonnance with entablatures and all the rest of it, but there is what is fully as surprising, a reference to the very latest and clumsiest forms of the seventeenth century, *Barockstil* in the attempted architectural treatment of the entrance doorways. Why those blocks are built into the abutments and into the arch itself unless it be for the purpose of claiming relationship to a fantastical form of Neoclassic architecture it would be hard to say. The forms of pediments wrought into four of the windows of the second tier and the similar pedimental forms in the woodwork of the doorway are of the same character. The appearance of these forlorn old conventions here is disheartening enough, coming in the work of such daring and intelligent realists as are the members of the firm, Pond and Pond.

But indeed the addition of purely ornamental features to this building has not been fortunate. The diagonal squares in the parapet and those other features of the wall surface below, square frames with diagonal squares set in them and triangular pendants below these, with little square blocks between them, are altogether most uncalled for and it is indeed impossible to form a conception of what their purpose has been. That the building would have been better without them seems so obvious a truth that one would have thought even the elevation drawings certain to proclaim it.

Apart from those little accessories how straightforward, simple and dignified the building is! As a matter of opinion one might have wished away the segmental arches of the parapet, for why shirk the responsibility of carrying out the square effect of the window-openings to the very top? Why affect an arcuated construction where there is no need, namely, at a point where there is no weight upon the arches? But that is a small matter. It might even be defended on the ground of getting more light through those windows which alone among the windows of the front would have a deep reveal at their heads, and as for the rest of the work, it is certainly most inspiring in the assurance it gives us that a wholly realistic lay-out of a front of brick and glass may be effective. Dignified it can hardly be, because

it can hardly have weight enough; one cannot make a lantern dignified. Picturesque, in the usual sense, it cannot be because of its squareness and uniformity, the flatness of its roof, the general box-like appearance of the whole. It cannot appeal to the past; it is neither historical nor ethnological in its genesis, because it has grown up from a momentary need which no one could have foreseen. Just because it pretends to none of these excellences, because it is not a reflex of old and fine work, nor yet a ponderous mass impressive by its grave solidity of proportion, nor yet again a florid and richly-adorned composition of highly organized sculpture, it is the more attractive. The modern world requires such buildings as this, and this is a serious attempt to make one of them comely.

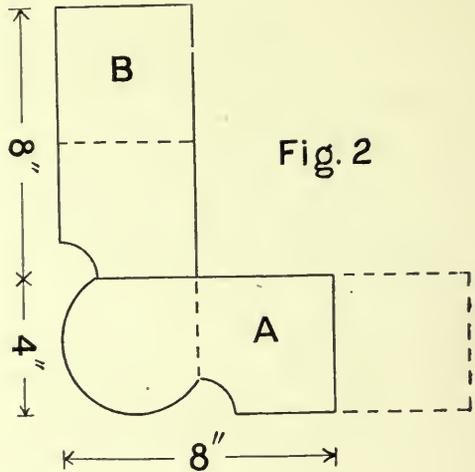
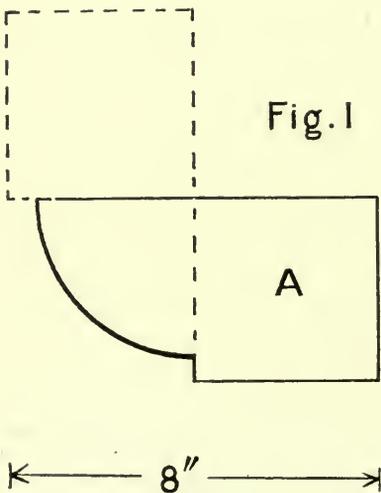
R. S.

THE  
TREATMENT  
OF PLAIN  
FRONTS.

In the notes above there have been considered a New York building and a Chicago building, each of very restrained design. And it was suggested, in each case, that the introduction of scraps of conventional architecture, entablatures and pediments, were likely to be blots upon the design. Is there not, then, any architectural treatment which these plain fronts invite? Yes, there are several forms of it, and the suggestion which the memory of old conventions offers, first, to the student of new departures is: Mouldings. Why mouldings should be *tabu* is more than this present advocate of realistic building can explain. They are cheap; and really it does seem as if a doctrine should be preached—the doctrine of the beauty of the penumbra, its value and the facility with which one can obtain it in architecture by the simple means of moulding the jambs! Given a square window opening, a mere hole in the wall; get at it with your chisel and cut grooves, and round off a little the solids left between those grooves, and you will certainly have made an architectural work out of what is a mere piece of utility. It does seem as if the most precious of all kinds of architectural details were being neglected because so easy to procure.

In the Kuppenheimer or Kent building, of which there is consideration in the last paper, a dim sense of the beauty of mouldings is visible in the little steps, the rebates, or what you please to call them, which modify the jambs and soffits of those three archways of

entrance. There is, first, on the outer wall a little projection of, say, an inch beyond its general surface, and then a fillet of perhaps  $2\frac{1}{2}$  inches in a plane parallel to that wall surface; then begins a series of two rebates as said above, four inches in and out, two inches parallel with the face of the wall; four inches in and out, and again, two inches parallel with the face of the wall; and, finally, a continuous jamb. It seems necessary to explain this, visible enough in the original photograph, because a half-tone will hardly make it clear. Now, such little breaks as those are very much better than nothing. Such little breaks have much of the charm of true mouldings, the light and shade upon them and the little shadows which they cast at certain times of the day are most attractive in their combinations. Again, in the New York building, contrast of local color is used to give offsets which frame in the freight-elevator doorways; as indeed the same contrast between the colors of flat wall and moulded projection is visible in all the drips, the sills, the lintel, the transoms. But none of these details are considered seriously as to their value as groups of mouldings, and they suggest, merely, how very much could be done at the expense of so few extra dollars, and with the saving of so many dollars used in the cutting of little inefficacious details of stone, or the shaping of them in fine clay. The true way to use mouldings, the natural, the obvious way, is to add nothing—to take away, rather; to soften off angles, to hollow out curves. That is the way in which one adorns realistically a realistic building.—R. S.



#### SUGGESTED MOULDINGS.

Persons who speak in a somewhat down-hearted way about the prospects and the actualities of recent architectural design are often asked for suggestions as to what should be done; and that seems a fair question to ask. No critic is obliged to answer it; but one can hardly be a heartily convinced critic without having some suggestions to make. And so in the cases which have been just now before us, the need of mouldings does seem to cry itself aloud, to speak out to every designer who is not a follower of recognized styles pure and simple. There are many styles, famous and accepted styles, in which mouldings play but a small part; but assuredly the imagined architecture of the future, that which will not refer to the past except for slight suggestions, will make much of mouldings as one of the simplest devices for great delightfulness of result. In brick building they are so very easy to procure, to make up of bricks cast at almost no extra cost! In terra cotta they cost nothing. In stone they are worked with but a slight advance upon the expense of surface dressing.

Diagram No. 1 shows a very simple form of brick-moulded corner. Two patterns only needs to be cast, A and B, which are repeated in alternate long and short lay-up on either face. The diagram No. 2 shows at A the flat of a brick of about four by eight inches, and also at B the flat of another brick just as big as A, without the rounded moulding and with only the small quirk. Then in

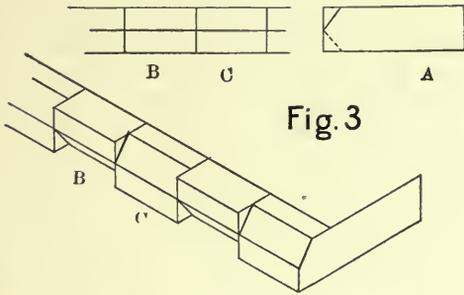


Fig. 3

continuation of A is shown the way in which the brick B will fit up against A when the two are employed in laying the first course of a corner of any sort—corner of a building, corner of a pier, corner between the wall-face and the jamb of any opening. The brick-builder knows how to lay the course above the one shown here in the diagram; that is to say, a long brick, A, will be laid to the dotted line, and the brick B will be laid upon so much of the first brick, A, as it will cover. You proceed in this way for the whole height of the vertical corner. When there is question of turning an arch above this moulded angle you proceed in a still more simple way because you simply take the long brick A and lay the first ring of a rollock arch with it in such a way that the round moulding is continuous with the vertical moulding made in the corner below. The second ring of the rollock arch may be made of common hard bricks of the usual sort. You may, if you choose, lay two of such plain rings and then put in a little hood moulding above; and about that hood moulding let us say a word. Diagram No. 3 shows the adaptation of a simple moulded brick to what is called the Venetian moulding. A shows the thin side of one of those bricks, eight inches long where it is longest, two and a half inches thick, of which thickness one half is left flat and the

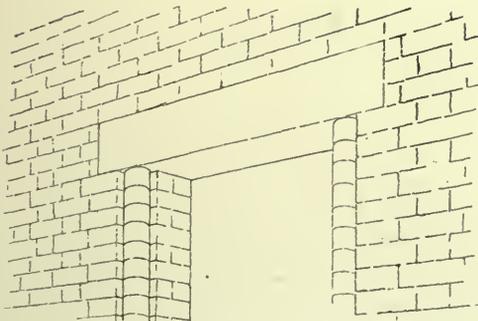


FIG. 5.

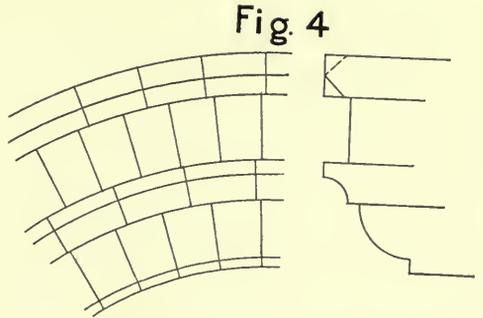


Fig. 4

other half bevelled away at an angle of 45 degrees. B shows the end of a brick cast in the same form as A, with the bevelled side down, and C shows the reverse of this, the end of a brick with the bevelled side up. You put in your bricks in four-inch lengths like those, following the curve of the outermost ring of the rollock arch, and there you will have an effective little hood moulding, one which, as in marble originals at Venice, will be lovely in the strange little sharp-toothed shadows which it throws upon the wall, while even on gray days or when the sun is behind the building, the play of light upon the sloping surface is attractive enough. Of course the brick shown as moulded, in Diagrams 1, 2 and 3, may be used also in the arch, or you may build a rather elaborate archivolt of your simplest forms of cast brick, as in Diagram No. 4.

In the Kuppenheimer building there are no semicircular arches except those of the doorways. How, then, do we proceed with square-headed windows? Let us begin with

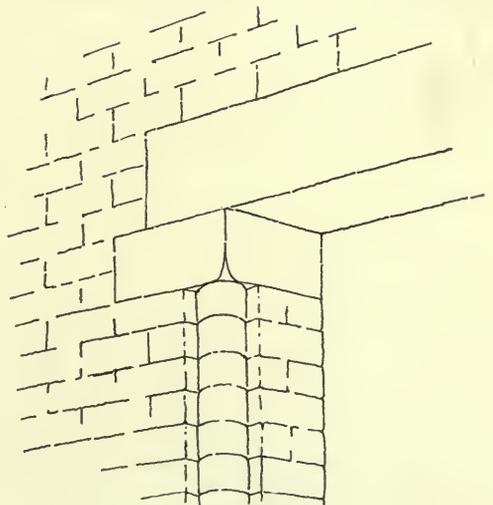


FIG. 6.

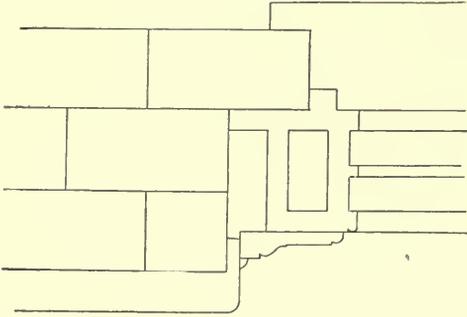


FIG. 7.

the simplest case, those windows which are square and nothing else, the plain openings in the piers which mark the corners of the building. The Venetian moulding may be carried along all three sides of that parallelogram, above the sill, and will look well there; or the same moulding that we have in Diagram 1, or that in Diagram 2, carried up the jambs, may stop directly against the under side of a lintel of stone or terra cotta or whatever material you will, as shown in Diagram 5. Or else a stop-block can be cast in brick for the purpose, as shown in Diagram 6; but, indeed, to the present writer there is nothing in the least degree repellent in the simpler conditions of Diagram 5.

We shall be told, however, that this involves a reveal eight inches deep, and that that takes away valuable space from the interior; and that only four inches can be given, of which four inches a part is to be covered by a wooden moulding. Now, no doubt there are conditions under which architectural effects cannot be had. If you cannot have any reveal to your window a great chance of decorative treatment is lost, unquestionably. But you will remember that building with a four-inch reveal and (as must be, very often) a four-inch rebate for

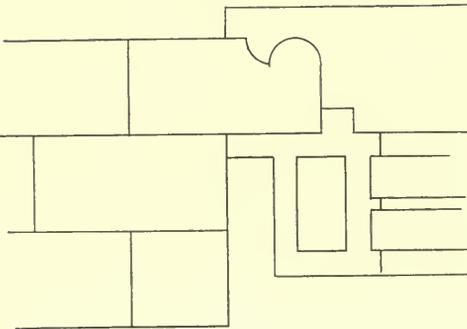


FIG. 8.

the window-box is very bad building. We don't always realize this, but a glance at Fig. 7 shows how feeble that necessarily unbonded flange of single bricks must be.

If needs must, then, this at least may be done with your four inches of reveal. Have a brick cast, the flat of which shall be like A in Diagram No. 8; or a richer one, as you please—no limit of choice is to be considered here. A four-inch reveal may be laid up as an arch is laid up, without bonding; it will last as long as the common square corner, and will be pretty enough.

Figure 9, then, shows how, according to this scheme the horizontal section of the brick corners in the Kuppenheimer Building might be managed. At A is the four-inch reveal of one of the windows in the corner pier, and at B an eight or twelve-inch reveal for the continuous upright, like one of those which frame in the triple windows of the chief part of the front. If the bonding of the

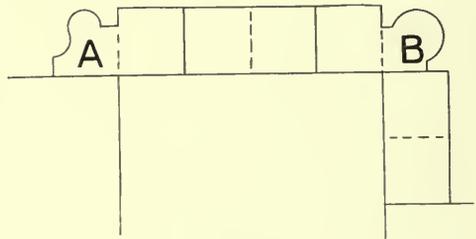


FIG. 9.

work and the breaking of the joints throughout be not maintained the variety of mouldings at your disposal is unlimited; you may employ ogees and what not besides; but even with the alternation of the bricks in their succeeding courses a considerable variety is obtainable, and there is this comforting truth to call to mind when a few moulded bricks only are needed; first-rate masons have been known to say that it is less trouble to cut with stone-cutter's tools a thousand or two thousand bricks than to have them cast, and to proceed accordingly in despite of signed specifications.

R. S.

### BEAUX- ARTS TRAINING.

A well-known architect was asked recently whether in the employment of draughtsmen he found any reason for discriminating in favor of men who were trained in any particular school. The answer was that, so far as the American schools were concerned he had no preferences, but that he

found difficulty in having his work properly done by draughtsmen who had been trained in Paris. "The Beaux-Arts graduate," he said, "is on the average a better draughtsman than the product of the American school. He is better trained in the sense that he can make a better drawing. But in spite of their skillful drawing I find that I can rarely trust them to work up properly an idea, which is given to them. They are competent, but they are not flexible. The mark of the school is written all over their work. One particular fault is their preference, amounting almost to an ingrained habit, for the use of big bunches of hybrid ornament. They must, of course, be acquainted with the simpler classical forms; but they have not been trained to use them, and when left to themselves their drawings break out into an eruption of mixed decorative detail, which smothers the simplicity of the original idea. The great difficulty is, however, that they are too frequently only architects on paper. They know how to make admirable drawings; but they have little or no knowledge of these sources of architectural effect, which cannot be made very explicit on a draughting-board. While this may be due partly to the fact that when they reach my office, they are mostly inexperienced and fresh from school, there certainly seems to be some defect in a method of training, which cultivates the student's draughtsmanship more than his knowledge of the realities of architectural design." The foregoing is, of course, the experience of only one architect; and it is set down for what it is worth. Probably the trouble with many of this architect's draughtsmen was that they had spent only a year or two at the Beaux-Arts, and had learned how to draw without supplementing that knowledge by the work upon actual buildings which is required later in the course.

CUSTOM  
HOUSE  
SCULPTURE.

We reproduce herewith four spirited figures which are destined for a position on the façade of the new custom-house as soon as that slow-growing structure is complete enough to receive them. Two of these figures are by F. M. L. Tonetti, while the other two are by Louis St. Gaudens, the talented brother of Augustus St. Gaudens. These figures represent four of the great maritime powers of history, Spain, Venice, Holland and Portugal. Spain is figured as Queen Isabella, with a caravel

on her shield and the cross on her crown. Venice is represented in the person of one of her Doges. In his left hand is the ring, with which Venice is wedded to the Adriatic, while his right arm rests upon a column carrying the lion of St. Marks. The maritime hero of Portugal is naturally Prince Henry the Navigator, to whom the modern world owes so much, and whose martial and zealous character receives a strong embodiment under Mr. St. Gaudens' hands. Finally, Holland has a gallant spokesman in Admiral Van Tromp, who swept the channel clear of English ships and who appears in this latest representation more like cavalier than Calvinist. But as so many of the paintings of the 17th century show, a Dutchman of that time might well be both cavalier and Calvinist. In order to understand these figures, it must be explained that they are twelve feet high, and are to be situated on the top of the colonnade, no less than one hundred feet above the level of the street. In such a position as this details do not count very much, and the sculptors have been obliged to treat their figures with an emphasis, which would be excessive in figures that are to be seen from comparatively short distances. Their effect is gained chiefly by a definite and comprehensible silhouette, by the distribution of light and shade and by the color qualities of the surfaces. A minute examination of these figures will show how carefully these sources of effect have been studied; but any consideration of the success which has been obtained must be reserved until, in the fullness of time, they are actually standing upon their proud pedestal.

THE  
AMERICAN  
CIVIC  
ASSOCIATION.

The American Civic Association, organized last June, has issued its second bulletin. This is an interesting catalogue of the improvement literature published by the constituent societies: The American Park and Outdoor Art Association and the American League for Civic Improvement, prior to their merger in the new association. In the list of one hundred and eleven papers, included in twenty-two pamphlets, there are only two titles that suggest a reference to architecture. Nearly all the others relate to the treatment of public and private grounds, and from the multiplicity of these titles, touching all phases of the subject, it would seem that the best work that the Civic Association can now do will be the collection,



MODEL OF THE FIGURE OF VENICE.

To be placed on the New York Custom House.

F. L. M. Tonetti, Sculptor.



MODEL OF THE FIGURE OF SPAIN.

To be placed on the New York Custom House.

F. L. M. Tonetti, Sculptor



MODEL OF THE FIGURE OF PORTUGAL—PRINCE HENRY, THE NAVIGATOR.

To be placed on the New York Custom House.

Louis St. Gaudens, Sculptor.



MODEL OF THE FIGURE OF HOLLAND, THE ADMIRAL VAN TROMP.  
To be placed on the New York Custom House. Louis St. Gaudens, Sculptor.

perpetuation and dissemination of the better of these papers; and then the reserving of its energy for the comparatively neglected side of improvement work—the architectural—and for giving practical assistance to real workers, instead of continuing to publish papers in a field already sufficiently well covered, even by itself. It is to be regretted that this second bulletin has not been more carefully prepared. Some of the titles are obviously given inaccurately, and the grouping is so slipshod that of fourteen titles under the head of "Children" only four refer to them or are concerned in any way with them. But the Civic Association will probably improve as it goes along. It has an inspiring opportunity, if it conscientiously and with a single mind avails itself thereof; and when a new secretary is selected, to take the place of Charles Mulford Robinson, whose resignation became effective in September, more care than is now evident may be expected in the preparation of its material. The American Civic Association, having been formed by a union of the only two national organizations engaged in improvement work, has something more than an opportunity. It has an immense obligation to this movement, for it may put back—if, indeed, it may not wreck—the whole development unless its executive officers are ready to efface themselves in something like consecration to the cause. It is no secret that Mr. Robinson continued in the office of secretary long after he could afford to do so, and when he did retire, the union having been accomplished and the society having been given the strength of an extremely large membership, the association was in a condition that makes it difficult to excuse false steps even in an *inter regnum*, and that ought to render continued progress easy. The events of the next few months will be watched with exceeding interest, but with great hope.

**MUNICIPAL  
IMPROVE-  
MENT IN  
ST. LOUIS.**

The report to the Mayor of St. Louis by the Public Buildings Commission—which is composed of John Lawrence Mauran, William S. Eames, and Albert B. Groves—has been handsomely printed in pamphlet form, with plans and illustrations. The commission explain that in devising the comprehensive schemes for the city's official construction, they do not expect that the whole project will be undertaken by one administration; but they advocate only such placing of the buildings that are now most

urgently required as to "start a plan so obviously advantageous that in years to come succeeding administrations will recognize the desirability of adding to and finally completing the project." The structures immediately needed are a modern jail and a group of buildings to house the police and fire department headquarters, the dispensary and detention rooms, etc., and all the courts now using the Four Courts and the old Court House Building. Two plans have been drawn up, each of them forming a civic center of which the present City Hall would be a feature. Plan No. 1, which is rather the more obvious, places these buildings on Twelfth Street, facing the City Hall, and would involve an immediate expenditure of \$2,970,350. Plan No. 2, which would create a magnificent parkway in front of the City Hall, involves the acquirement of all the land between Thirteenth and Fifteenth Streets, from Chestnut Street to Clark Avenue; and yet after deducting—as was done in Plan No. 1—credits from the sale of vacated city property, there would be necessitated an expenditure of slightly less than \$2,725,000. The latter plan provides a larger amount of property for future development; while its Parkway would furnish a vista from the new Public Library to the Municipal Group, and would create something very like a City Hall Park. Both plans include locations for important monuments and fountains, and promise a very imposing effect.

**CIVIC  
DAY AT  
ST. LOUIS.**

That a necessity still exists for going carefully and slowly in civic improvement matters, in spite of the recent enormous growth of the movement, is well illustrated by the comparative success of the Civic Day, celebrated in mid-October at St. Louis. As originally planned, there was to be a Civic "Week" in mid-June, when members of the various national bodies engaged in efforts for civic betterment were to confer. But falling through from lack of adequate attendance, there was a four months' postponement and the programme was cut down to a single day. The new date was chosen with reference to the always well-attended convention of the League of American Municipalities, and Civic Day found an audience, an interesting list of papers and speakers, and a representation from the various bodies whom it had been sought to interest—all this without change of personnel in

the management, John A. Butler, of Milwaukee, continuing as the efficient chairman, and in spite of the handicap of a record of failure in June. The national societies represented officially at the Civic Day Conference were: The League of American Municipalities, the American Society of Municipal Improvement, the National Municipal League, and the lately formed American Civic Association. Officials of these societies outlined in papers, that made a series striking and significant, the aims and accomplishments of their various organizations. There was also a series of papers dealing with the civic problem from the sociological, political, legal, religious, improvement, and administrative points of view, and there was shown, not as a surprising, but as a most significant, feature of the meeting a mutual good will that spoke well for the genuineness and earnestness of the wish of the officials of these societies to better municipal conditions and that promised well for their ultimate co-operation. By another year or two it should be possible to hold successfully a Civic "Week" conference.

MR.  
BURNHAM  
IN  
MANILA.

Early this month Daniel H. Burnham, having spent *en route* a month in Japan, is expected to reach Manila. It can be no unkind or unwise betrayal of confidence to state that, although he goes at the request of Secretary Taft, and for the purpose of making a plan for the splendid reconstruction of the city, he stipulated that he should be paid no salary. This is a noble sort of patriotism that can be belittled neither by any theory of emotional excitement nor by any cool calculation of resulting benefit. The case is one in which the office sought the man. Secretary Taft dreamed of a new Manila, nobly built, when he was still Governor of the Philippines, and it is said that when the expert commission on the improvement of the City of Washington—of which Mr. Burnham is a member—went to Europe to get ideas, he asked that it be allowed to return by way of the Philippines, so that it might give suggestions for the rebuilding of Manila. The request was not granted; but when Governor Taft himself became Secretary of War, he lost no time in consulting Mr. Burnham. This trip results. There are certain government buildings that must in any case be erected at Manila, and the idea is to seize the opportunity offered by their erection for devising a scheme of general improvement. Before sailing, Mr. Burn-

ham spent a little time in San Francisco, where also he is at work on an improvement plan, having been commissioned thereto by the association for the improvement and adornment of that city.

IN  
ENGLISH  
HOMES.

Charles Latham, of London, is known to many persons who wish to secure photographs of buildings other than those distant views of cathedrals which every traveller buys. His establishment has been known for twenty-five years at least as producing good work in the way of special negatives. And now a large book, a folio with several hundred illustrations, has been made up from the pages of *Country Life*, a London monthly, and with the statement on the title-page that these half-tone prints have been produced "from photographs specially taken by Charles Latham." To this folio the obvious name has been given, "In English Homes," and yet it is not the home quality which predominates in these books of splendid country mansions, the homes—if they are homes—of those who make up what Mr. Hamerton calls the "most spending class" in Europe.

The very first words of the introduction deal with that noble book, Nash's "Mansions of England in the Olden Time," and those folios, first printed in the years between 1839 and 1849, have served at once as a suggestion for the arrangement of the present book and as a standard to follow. and if possible, surpass. Nash dealt with the really noble interiors of the Tudor, Elizabethan and Jacobean mansions, giving much less attention to their outsides, and Nash's plates, drawn with a certain dash and *verre* very difficult to describe, were of that character as drawings which makes the most of the subject treated. Joseph Nash could handle architectural detail, and he drew the figure with reasonable accuracy and with great dexterity and readiness, putting a picturesque quality into the armor and costume, the pose and bearing, of his *bonshommes*, little figures which gave to the architectural drawings an added appearance of reality. The remark of Mr. O'Donoghue in a biographical notice of Nash, to the effect that he gave little attention to constructional character, is accurate enough. Nash was not, perhaps, skilled in building or in the necessary conditions of building; he was a water-color artist and lithographer,

with an eye for the characteristics of architecture as of humanity.

It is easy to see, then, the ways in which the new folio might surpass the old one. We have the photographer to replace the draughtsman, and so far it is well. On the other hand, we may easily see wherein the old books are still delightful to possess, and why no one need sell them in a hurry, if he owns them, with the thought that the present folio takes their place. For consider the inferior comeliness of the half-tone prints when compared with the fairly well printed lithographs! There are, indeed, prints in the new English book which leave little to be desired. Thus, in the very introduction, if we open at pages XXX and XXXI we shall find a full-page and a half-page view; a view in the great hall of Ragley Hall, Warwickshire, and a view of the old parlor at Birts-morton Court, Gloucestershire. Each picture shows nearly the whole of one side of the room in question, and if the one print is much larger than the other that is mainly because it is a huge apartment, over thirty feet high in the middle, while the other is a low-ceiled sitting-room of the well-known seventeenth century type. This is as much as to say that the views are nearly on the same scale; a foreground chair in one corresponding closely in size to one in the other view. This, of course, is a signal merit, and, although it is not asserted that the same unity of scale is carried through the book, it will yet be found that an approximation to it has been secured, and that it will prove on examination to be a great virtue. The two prints that we have named are also valuable because they are in pale gray tones without all-swallowing black shadows. Herein it is evident that they are peculiar. No one needs to be told that this could not be said of the whole series of prints. Some of them are bound to be as black and gloomy, as ugly on the page as it is the manner of half-tones to be on occasion. But there are many of the good kind. The views in Hatfield House, that magnificent Elizabethan mansion which belongs to the Marquis of Salisbury, are of both kinds—the pale and delicate, and the violently black. There are a great many of them, sixteen in all, of which two only are exterior effects, and in this way a really splendid series of the studies of interiors are furnished—interiors the richest and most picturesque that can be imagined, and all shown as of rooms in daily use. The book is published at the offices of *Country Life*, London, and imported by Charles Scribner's Sons, New York: 1904.

R. S.

**BRITISH  
HOME  
OF  
TO-DAY.**

The folio volume named above, as published by *Country Life*, deals with the buildings of the sixteenth and seventeenth centuries for the most part. And now we have to mention briefly a very inexpensive book (price five shillings) "The British Home of To-day." This book, published in London by Hodder & Stoughton, is large in page and abundant in contents, to such an extent that the low price can be wholly explained only on the supposition that the material was largely without cost to the publisher. Its page is nearly 8½ inches wide by 11½ high, and it is crowded with illustrations, some of which are in color. It is made up entirely of separate papers, for the authorship of which excellent and even famous contributors have been secured: R. Norman Shaw for "The Home and Its Dwelling Rooms;" Frank Brangwyn for "The Home and Its Bed Rooms;" and seven other men only less well known. The plates also are the contributions, very often, of men of light and leading. The fact that an advertisement supplement invades the volume in such way that it is hard to be sure just where mercantile interest begins to talk and artistic criticism ceases can only be lamented. The tendency of the time is in that direction and there is apparently no escape from it. The cost of the book, which sells at such a low price, must be largely borne by the advertiser.

The interest that our readers will take in the book if they will examine it, will be in the comparing of the English plans with those with which they are familiar in the United States. Accessories are everywhere, which denote the employment of many domestics and of an old-fashioned handwork way of doing the business of the house. The separate rooms on the kitchen court which are lettered Dairy, Larder, Scullery, Coals, Boots, Footman, Valet, Brushing, form a feature which one does not find reproduced in American country houses.

As for the rooms of the house itself, the complete shutting off of one sitting-room from another, so that to go from the morning-room to the dining-room and thence to the drawing-room you must twice pass through the hall and the passage which leads from the vestibule to the house, although the drawing-room and the dining-room have only a wall to separate them, is again something which American plans will not often show. The mistress of this house, if an American lady, would wish a door cut through from

dining-room to drawing-room, and that forthwith. And as for the morning-room, she would try to get that into touch with the other two rooms mentioned, and would alter without hesitation to do it—unless, indeed, "morning-room" is another phrase for the master's work-room or study or "den."

There is no system of pagination, so we must leave our readers to find their own way through the book; but in the latter part of Signature A there will be found a house by Ernest Newcomb in which the vestibule of entrance has a stair upon your right as you enter, and a large hall, fairly square, on your left, from which hall open morning-room, drawing-room and dining-room, while morning-room and drawing-room at least have a huge doorway to connect them *en suite*. That is more in the American way. The other—that which we have called the characteristic English plan—is seen in a plan by the same architect on the same page; for here the drawing-room occupies the extreme southeasterly corner, the billiard-room the extreme southwesterly corner, and the dining-room the extreme northeasterly corner of the house, or at least of the main building, exclusive of the servants' wing.

I do not think that there is much inspiration to be drawn from these pictures of the exteriors. None of them seem to be capable

of seizing the attention. They are quiet and comely enough and they have that characteristic of English buildings of no great pretension that they seem to be at home with their surroundings, and that they will probably look in a year as if they had been there always. Now that is very high praise—I feel it to be so—and yet it is in a way as if it were given to the whole British community taken together, to them and to their architects alike, and, as the American cannot "hineinstudiren" himself into English ways of thinking by any effort, he will never succeed in designing in the English way unless he resorts to simple copying—and simple copying is not what is recommended just now. As for the suggestion, as for the stimulus, as for a strong pull-up to the American who feels almost in despair that there is nothing given to the architect of his country to say—for him there is perhaps no great comfort in the book before us. These remarks apply to the illustrations rather than to the text; but as for the text, buyers of this book must be prepared to face that curious insularity of criticism which accepts as real, fine and important, things which the rest of the world knows to be local, temporary, and not for the student to absorb into himself. Think of repeated praise of William Morris, as if he were a great designer!

R. S.

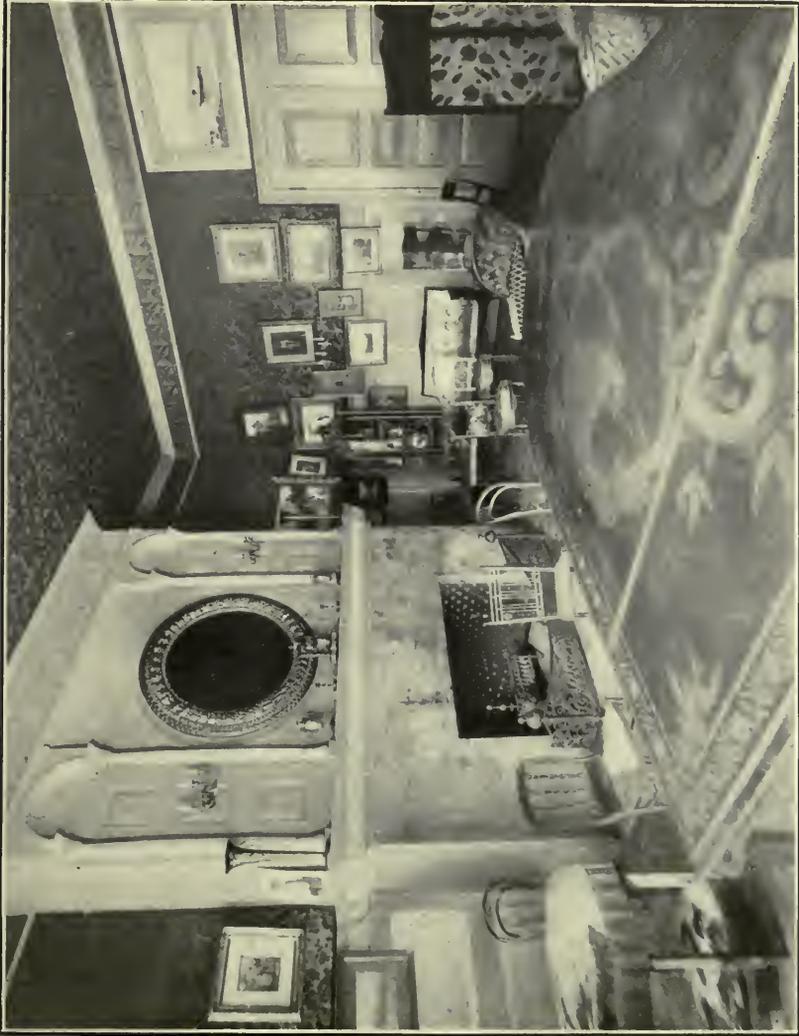




HALL IN THE HOUSE OF MR. JOHN HAY, SECRETARY OF STATE.

Photo by Waldon Fawcett.

Washington, D. C.



DRAWING-ROOM IN THE HOUSE OF MR. JOHN H. Y. SECRETARY OF STATE.

Photo by Waldon Fawcett.

Washington, D. C.



DINING-ROOM IN THE HOUSE OF MR. JOHN HAY, SECRETARY OF STATE.  
Washington, D. C.

Photo by Waldon Fawcett.

## INTERIOR FIREPROOFING.\*

*[The following is the third of a series of Technical-Industrial Reports upon a certain System of Fireproofing, made to the Manufacturers by the well-known expert on Building Construction, Mr. William J. Fryer.]*

### Combined Materials

In combining materials to make a homogeneous one that will equal stone, clay and other natural products, and be worthy of the name of fireproof and have the requisite strength, and be durable and lasting under all conditions, many requirements have to be met; and if any such combination falls in any respect to meet these demands it would be worse than useless to use the product in the construction of a building intended to be permanent.

### Artificial Stone

So many times has artificial stone proved false to expectations and promises that few architects will dare to use it in or about an important structure. And so of a great variety of articles that seemed to offer great advantages only to prove disappointing in practical application. Some years ago a mixture, the chief component parts of which were sand and cement, was introduced to the public as a desirable and cheap substitute for ornamental terra cotta. Tested by extreme heat, by extreme cold, by strong brine, by water, by these singly or together, the artificial terra-cotta withstood them all. A sample block, however, was placed on the roof of a building and left there undisturbed for several months during a winter's season. In the spring the sample was found in a shapeless mass. In another case, samples of an artificial stone were scientifically tested and stood the tests in a highly creditable manner. Unfortunately the simple test of prolonged outdoor exposure was not thought of or not resorted

to. One of the men who became interested in the invention, he being a mason builder and possessed of large means, was so well pleased with the results of the tests that he used this artificial stone for the trimmings and quoin blocks of a large brick warehouse that he built for his individual investment on St. Nicholas avenue, in New York. In less than a year's time thereafter the owner was looking for stone preservatives in the hope that he could check and further prevent the scaling off and disintegration of his artificial stone. There is something in the atmosphere and the workings of nature that seems to wreak destruction to most of the artificial mixtures more surely than man's ordinary tests by high and low temperatures in determining the non-conducting and fireproof qualities and durability of materials. Therefore the verdict of nature must be sought, and until favorably pronounced no mixture intended to take the place of long proven materials used in construction is entitled to absolute reliance.

### Nature's Approval

Nature has put its stamp of approval on stone and on brick or burnt clay as building materials, but when those materials are improperly used natural laws entail punishment for transgressions. Stone stood on edge and not laid on its natural bed; brick so laid in walls as to leave innumerable air spaces within the wall; clay pressed into shapes to form hollow spaces within and then burned; concrete of improper mixtures and full of voids—these are not what have been proven by time and experience to withstand the rigors and changes of climate and the heat of conflagrations.

\*For previous articles see November and December numbers.

**Room and  
Demand for  
a New  
Material**

There is room for, and there is a necessity for, a new, strong and durable material that will be solid and lighter than concrete or burned clay; that will withstand fire and water or both combined; be impervious to water and be water-tight when in place for fillings between iron floor beams; suitable for partitions, elevator inclosures, column coverings, floor surfaces, and stair treads; be a non-conductor of heat; be not affected by temperature from the outside or the inside of the building; be capable of being pressed into any desired shape for trim, doors, window frames and sash; be susceptible of receiving a smooth, exterior finish of any desired color; and lastly, but very important, the cost must not be excessive, and compare favorably with the cost of other approved systems. The field for the use of such a material is well nigh limitless.

**Shutters  
and Doors**

Fireproof shutters and doors of such a material as will stand fire without warping, shrinking or cracking, and be a fire stop and not merely a fire retarder, would be welcomed as an addition to the building arts. The old-time iron shutters and doors, although still largely used, have long

been out of favor with those who have knowledge of their defects. Their warping by fire, their wriggling away from their fastenings when struck by heated air and flying open at the very moment when the purposes that they were intended to serve demanded that they should be shut, justly secured a greater liking for solid wood covered on both sides and edges with tin or tight fitting metal, as such would not warp or twist and equally as well withstand flame. Reasons have been previously given why metal-covered wood shutters are not durable, in that the tightly covered wood soon becomes dozed or mere punk within a metal casing, particularly when such shutters or doors are exposed to the weather or where there is dampness. Is it too great a stretch of the imagination to believe that the preference given to metal-covered wood shutters and doors over iron ones will in turn be given to shutters and doors made of a material such as has been described as ideal for this purpose? And if this be true of shutters and doors, why not for other purposes? Concededly it depends upon the material being all that is set forth that an ideal material should be.

Such a material has been produced, been subjected to every kind of test, and proven by actual use—the latter the most practical of all tests—in places where conditions greatly differ. Of this material subsequent articles will fully treat.

**“HECLA FIREPROOFING”—PATENTED.**  
The System of Real Fireproofing.

The Hecla Iron Works,

Brooklyn, N. Y.