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ARCHITECTURAL ABERRATIONS.*

No. 1.—THE EDISON BUILDING.

DANGER lurks in the superlative degree. Of each of how many things is one tempted to say that it is the best or the worst of its kind, when he meets another thing of the kind that makes him congratulate himself that he did not yield to the temptation or repent that he did. Bearing this in mind, we shall not say that the Edison building in Broad street is the worst building in New York, or the worst commercial building in New York, or even the worst of recent commercial buildings in New York. We will content ourselves with saying what can be established beyond dispute and what "jumps to the eyes" in the contemplation of it, and that is, that it is of a very eminent badness.

In the first place it has no composition. There are six stories and they are set one upon the other, but they have no architectural relation one to another. The second, for example, is much solider than the first, and the fifth is the plainest of all. There is a basement, and it is a basement of two stories. This is proved by the fact that it is built of a different material than the other stories, for these two stories are of a bluish-gray limestone, or marble, while the stories above are of brown brick, with "trimmings" (the milliner's term is quite applicable here) of cream-colored terra cotta. But, then, these two stories do not constitute a basement in an architectural sense. If they did they would be united in treatment and divided from the superstructure. As a matter of fact, the first is divided from the second much more emphatically than the second is divided from what is above. The first consists of three columns, loosely Roman Doric, banded and set against square piers, while the lateral piers are left unadorned, making the feature "tristyle in antis." The detail is well enough, being such as any draughtsman knows where to get and how to copy. So far so good. But in the intercolumniation there is sprung from pier to pier a flat arch of which the voussoirs are treated with a ferocious vigor, as if they were meant to carry a great wall. In fact they carry nothing at all but themselves, for the columns sustain a heavy entablature, and this truculent

* We are making a collection of "Aberrations," and shall present one to our readers in each number of THE ARCHITECTURAL RECORD.

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arrangement of flat arches is nothing but the top of the sash frame. The entablature shows a heavily-moulded cornice of considerable projection which separates this story from that above. This second story is not bad in itself, though not particularly good either, and by its severity is much more appropriate as a basement than the very much overdone story below. But above this is a projecting course much narrower, much less heavily moulded, and of much less projection than the cornice below, so that, except for the change of material, the basement is much less sharply divided from the superstructure than one story of the basement is divided from the other. Moreover, this narrow course is the footing, the stylobate, for the large order that runs through the next two stories, and an absurdly inadequate footing it is, and looks particularly absurd when it is compared with the heavy entablature of the order, to which, in educated classic design, it is always proportionate. The cornice of this entablature has more projection than anything else in the front, and the entablature is the most emphatic horizontal member of the building. There are two stories above and three below, counting the order as a single story, so that the pleasant effect of this feature is to cut the building in two in the middle. Upon the whole, however, the disposition of this order is more rational than that below, for the order appears as the structure and the wall inclosed as a mere screen. The pediments of the lower included story do not, like the flat arches of the basement, pretend to be doing work or to be anything but window-tops. To be sure, the wall would have looked better if they had been left off, but one may say that of pretty much everything in the building. The order would have been much improved if its shafts had been monoliths, for it is simply degraded when they are built up in rounded bricks, and violence thus done to that respectable building material, while it is burlesqued by the ridiculous quarter columns that peer out from behind the piers that form the antæ of the order. Then comes a plain story of arches turned between pilasters. The arches are thin and weak, and the pilasters flat and feeble. Comparatively plain as this story is, there are too many things in it, and all the things are bad. The pilasters, for instance, might have been omitted with much advantage. They are too shallow to account even for the little shelf of a cornice they carry. This is, in fact, the main cornice of the building, and it is more important in function and less important in treatment than any other belting course in the building, excepting only the course that divides the basement from the superstructure, which is the next most important in function and the next most unimportant in design. So far as any principle of design can be detected in the front, indeed, it is to emphasize what is subordinate and to slur what is principal. The thin shelf which is the crowning member of the wall is even more conspicuously inadequate as a footing for the range of dormers it carries than the shelf at the top of the basement as a footing for the great order. In these dormers the designer lets himself quite loose and breaks out in such a riotous orgy of "things" as does not disgrace any other recent building we recall. The detached columns that carry the lintels of the dormers and their superincumbent bulls'-eyes have an aspect at once of feebleness and swagger that is highly exasperating, while the treatment of the parapet wall between them is more exasperating still. Between each pair of dormers stands a niche covered with an arch, of which the voussoirs are long thin tiles of terra cotta in two tints, and in each stands a tear-bottle—positively a terra cotta tear-bottle six or seven feet high. What all this stuff has to do with the Edison building is as inconceivable as what it has to do with the art of architecture. The aspect of the building is calculated to make the judicious grieve very deeply and possibly weep, but for the lachrymal exigencies of the judicious the tear-bottles should be ranged along the opposite sidewalk, where their shapes would still make them very inconvenient to cry into. Above this point nature is exhausted, and no won-

Broad Street, New York City. THE EDISON BUILDING,

der. There is another story above the bulls'-eyes, lighted by skylights at the top of the mansard, of which the architect has apparently left the design to the glazier. All the same, they perform a function in a straightforward way, and it is really a satisfaction to look at them after all the pretentious nonsense below.

It remains to be added that he who sees the Edison building in photography instead of in fact sees it to the better advantage. The combination of color is distressing in itself. It is the more distressing because in the superstructure the weak color goes with the more important structural parts and thus assists the negation of design which is attained by the forms. The front, as we have said, is not an architectural composition. Its stories are so many shelves loaded with architectural details, some of which have been and may be again used in architectural works, while some are altogether unsuitable for such use. The only single story which is neither ridiculous nor offensive is the second, while the building—as a whole, we were about to say, but it is not a whole—as a collection of things, is both ridiculous and offensive. To look at it one would say with entire confidence that the man who did it could never do anything good. As a matter of fact, he has done something good—something which has unity and quality and picturesqueness and charm. This fact converts the problem presented by the Edison building from one of architecture to one of psychology. We are inclined to give it up. Evidently the designer has failed to follow the injunction sometimes given by parents to inquisitive children. He has neglected to "use his thinker," and has trusted entirely to his "feeler," though how his feeling could have told him this was good is another baffling problem. Inasmuch as he has done something good, however, in considering this afflicting performance we gladly suppress what Mr. Swinburne has somewhere called—

"Our sad, bad, glad, mad brother's name."

CARVED PANEL IN THE RESIDENCE OF W. F. KINGSLAND, ESQ.
West 38th Street, New York City. Brunner & Tryon, Architects.

THE DIFFICULTIES OF MODERN ARCHITECTURE.

MODERN civilization has very unequally affected the fine arts. While sculpture in its methods and principles remains essentially the same art as in the days of Phidias, painting has been revolutionized by the discovery of new media of expression and new fields for its exercise. Oil- and water-colors, the scientific treatment of perspective and of the principle of values, landscape-painting, and, to a certain extent, *genre* as well, are peculiarly modern developments of the pictorial art. But it is in architecture that the changes have been most radical and far-reaching. Standing midway between the fine and the useful arts, architecture partakes of the nature of both; it is the finest of the useful arts and the most useful of the fine arts. It is, therefore, alike subject to those influences which affect the expression of sentiment in plastic form, and to those which concern the practical life and needs of society. In that strongly artistic period of Italian art which we call the Cinque Cento, we find architecture chiefly occupied with pure beauty of form, increasingly devoted to the purposes of public and private rather than of religious life. As physical science advances and life becomes more complex on its material side, it is only natural that practical and utilitarian requirements should become more imperative, relegating purely artistic considerations ever further into the background. This is precisely what happened in the case of architecture, which is to-day a different art, not only from that of the antiquity or of the Middle Ages, but also and even from that of the early Renaissance. It is prosecuted under different conditions, with different materials and processes; it is controlled by different considerations, and is called upon to supply different requirements. Those who complain of the failure of modern architects to profit by those historic examples of their art which are the admiration of all men, ignore or forget how difficult of application are the principles these exemplify to the special conditions prevailing in modern work. Conceived in another age, for other uses, and under conditions long since vanished, they can serve as models for modern practice only in the same way in which the epics of Homer or of Dante have stood as models for the study of writers of all subsequent ages. The fundamental principles of composition, construction,

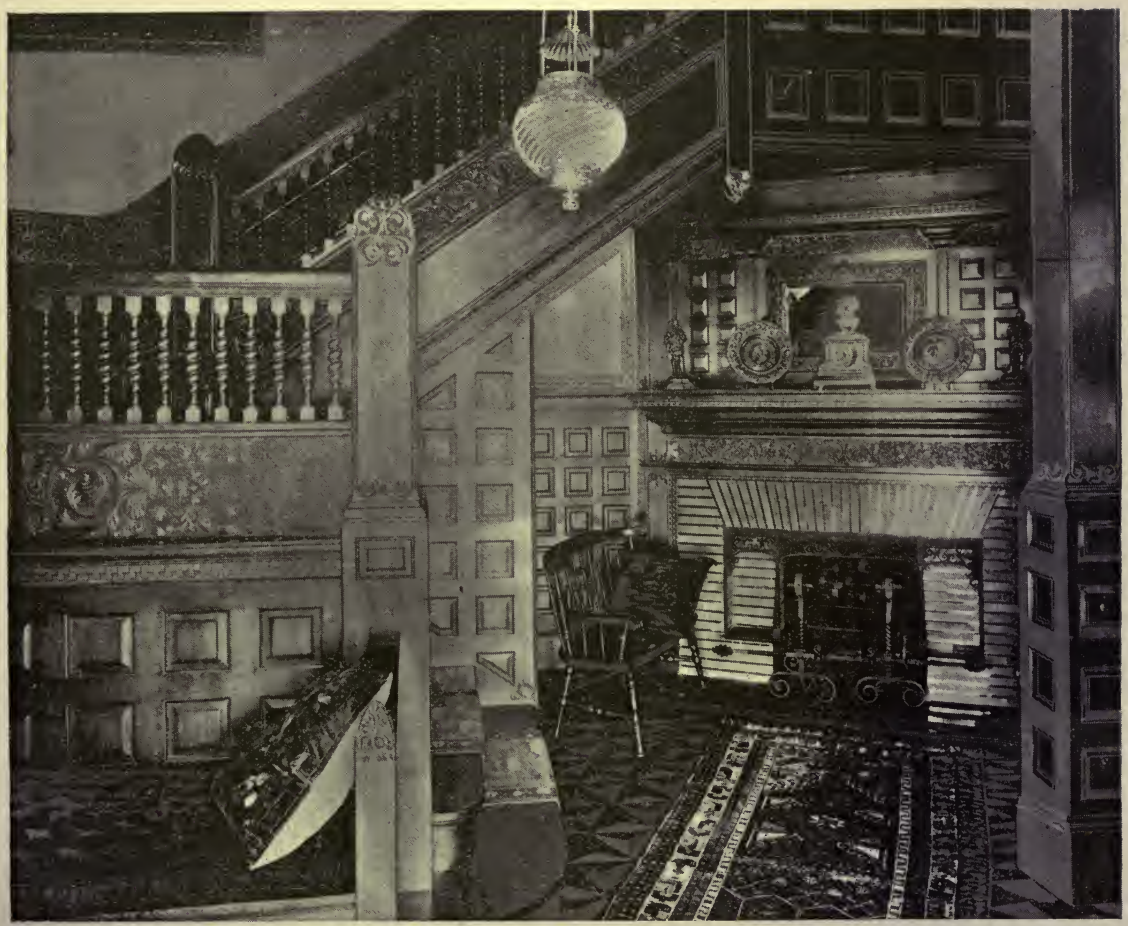
DUQUESNE CLUB HOUSE.

Pittsburgh, Pa. Longfellow, Alden & Harlow, Architects.

design, proportion and ornament, these triumphs of the builder's art certainly illustrate in consummate fashion, and are therefore ever worthy objects of study and admiration. But to apply the lessons they teach to the wholly new conditions created by modern life is no easy problem. Conscientious and highly-gifted architects have long been devoting themselves to this problem with varying success. If their failures have been many and their triumphs few, as some would have us believe, it is at least conceivable that the difficulties of the problem, and not the incompetence of the architects, may be the cause; but upon the architects usually falls the blame. The responsibility for the failure of modern architecture to reach the high level of past attainment, it is not wholly easy to rightly apportion. Many of those who have in recent times written on this and similar topics have shown themselves as incapable of discrimination and judgment in estimating what modern architecture has done or is doing, as they are ignorant or insensible of the actual conditions, requirements and limitations which prevail in modern practice. For this reason they fail to touch the true causes of the shortcomings they deplore, and instead of contributing to their cure they rouse futile and acrimonious discussion, bestow sweeping and unmerited blame, and fill the public mind with mistaken notions and unfounded suspicions. It seems, therefore, high time to call attention to some of the real difficulties of the problem of modern architecture. Certain preliminary considerations will first be in order, which if trite, are nevertheless fundamental.

The first of these relates to the two-fold nature of the art, to which allusion has already been made. Architecture has its origin in the material needs of mankind, and these must necessarily control its development. It has furthermore to deal with the stern laws of gravitation and of the strength of materials, to whose behests all its manifestations must be subordinated. In these aspects, then, it is purely utilitarian, and if it stops here, is not an art, but a science or a trade; it is mere building or engineering. It rises to the dignity and glory of an art only when it consults the demands of beauty and grace, seeking to reach the emotional side of man as well as to minister to his material wants. Mere fitness to an end is not artistic beauty, nor even an element in it. Convenient planning and stable, scientific construction may exist in—nay, they frequently seem to demand—forms and combinations wholly unpleasing to the eye. The demands of use and beauty not infrequently pull in opposite directions, as every architect knows. It is a sophism as hollow as it is common, that beauty consists mainly in fitness and appropriateness. It is time that this fallacy,* based as it is on a truth, were exploded. "Beauty is skin deep" in the sense that it relates only to external and visible form and color, not to function and internal structure. A wholly beautiful building or design may prove entirely lacking in convenience and appropriateness. The two kinds of excellence—utilitarian and æsthetic—are independent of each other. It is, however, true that when they coexist in one design, so that the perfect structure serves at once the ends of use and of beauty, each enhances the other; and herein we find suggested the true purpose and function of architecture. It is *to harmonize in one and the same creation, the independent and oft-conflicting claims of use and beauty*, so that the very forms devised to meet practical needs in the most perfect manner shall also satisfy the human craving for beauty, grace, refinement. In the highest types of historic architecture the beauty we admire is inherent. It is a part of the building, an outcome of its whole plan and construction, which have been made to serve the ends of beauty at

*The fallacy of this proposition lies in the use of the word "beauty" in two different senses. The proposition that "beauty" consists mainly or largely in "fitness" or "appropriateness to an end" is true if by "beauty" we understand the sum-total of qualities which give pleasure to the contemplation of a visible object. But it is not true of beauty in the special and technical sense of grace or loveliness of external form and proportion, qualities which, as we have said, may exist independently of fitness and appropriateness. It is a fallacy which in its essence one encounters not infrequently in Ruskin, to apply to this second meaning of the word "beauty," the conclusions based, correctly enough, on the first. The pleasure we experience in things well-designed from the point of view of mere utility, is intellectual rather than æsthetic. That which arises from loveliness of form is æsthetic rather than intellectual. These emotions are different in kind.



INTERIOR IN RESIDENCE OF THOMAS ADAMS, ESQ.

Corner Carroll street and Eighth avenue, Brooklyn, N. Y. Charles P. H. Gilbert, Architect.

the same time that they meet the practical purposes for which the structure was designed. In engineering works, fitness, stability, and economy absolutely control the design, grace and beauty being sacrificed to these practical considerations; while, on the other hand, every design whose beauty is merely the adventitious grace of ornament, or in which beauty is produced only at the cost of convenience and sound construction, drops at once into the category of bad architecture, however excellent, viewed merely as a decorative composition.

It is beside our purpose to enter at present into the question of the modern use of styles, further than to call attention to the real meaning of the term. A style is nothing but the customary and characteristic system of construction and ornament prevailing in a given time and place. It is the outcome and product of all the social, political, economic, intellectual and artistic conditions that govern the age and people that practice it, and can change only as those conditions change; that is, in the same way with languages and literatures. No man, nor any set of men, can create a new style, nor has there ever been in history any sudden change in styles, except as the consequence of the overthrow of one civilization by another. Even the Renaissance in Italy brought no sudden revolution in architectural forms. It is surprising to see how far back into the Middle Ages the beginning of Renaissance architecture can be traced. Each so-called new style builds on what has gone before, in the near or remote past. As time goes on, erudition and archæology place at the architect's disposal increasingly rich mines of historic form, which it is his right and prerogative to draw upon freely. But with this greater range of choice comes the greater difficulty of choosing and combining, while a thousand influences beyond the architect's control operate to hamper the free expression of his own artistic imagination. The difficulty of rational and artistic design grows with the relaxation of established precedent, consequent upon this vast widening of the field of selection. The confusion of styles, that is, the mixture in one building, or the contemporaneous use in different buildings, of forms borrowed or imitated from distinct historic styles, thus finds its natural explanation in the intellectual spirit of the time, which in all branches tends to archæology and eclecticism. Whether this is or is not to be deplored, and what its present tendencies and final outcome may be, are questions by no means to be answered off-hand. They may be reserved for future consideration, as their discussion would too far transcend the limits of this article.

In the third place it should be considered that whoever would criticise modern architecture must carefully distinguish between shortcomings rightly chargeable to the architect, and those which exist in spite of him and constitute the conditions under which his work is done. This requires a practical acquaintance with the profession and its *personnel* which some earnest writers seem to lack. The critic must know what are and what are not representative modern works. He must separate tendencies that have "run out," and shortcomings that are fast disappearing, from those which are on the increase. He must distinguish between the creations of acknowledged leaders in the profession and the mass of commonplace work emanating from the nobodies who have neither taste nor training. It is of course possible to draw instructive lessons even from this lowest stratum of the builder's work, but these lessons do not pertain to architecture, and the failings they set forth should not be imputed to any one but the authors of such productions. The critic must also understand the relations of architect and client, and the limitations imposed by local conditions as to materials, space, expense, the demands of commerce and the degree of public education and culture in the community. It is the failure to make these and similar essential distinctions and to institute just comparisons that vitiates some of the most recent writing on modern architecture.*

* See the "Popular Science Monthly" for June and December, 1890, also the "New Englander" for May, 1891.

RESIDENCE OF J. F. D. LENIER, ESQ.

Westbury, L. I.

James Brown Lord, Architect.

Keeping in mind these considerations, let us see how they bear on the main question before us.

It becomes evident, in the first place, that just in proportion as material and utilitarian requirements become exacting will the architect find himself hampered in the artistic expression of his conceptions. The problem of harmonizing the demands of utility and taste must grow more and more difficult as the claims of material comfort and scientific construction become more numerous, complicated and unbending. But this is precisely the case with modern work, which must first of all meet the practical requirements of a life infinitely more complex than that of any preceding age. Science has created innumerable wants which the architect must satisfy, whatever else he may omit to do. Sanitary engineering demands a complicated and elaborate system of contrivances for the proper heating, ventilation and drainage of even the commonest private dwelling. Steam, gas and electricity must enter the service of the householder, traveling through countless pipes and insulated wires to furnish heat, light and power, to actuate bells and burglar-alarms, or to communicate thought. Gas engines and steam engines, pumps and elevators, ventilating fans and dumb-waiters, coal vaults and ice chests must be hidden away in the recesses of the construction, and yet be within the easiest access. Our modern social life requires its special arrangements of drawing, and reception, and dining, and music rooms; the private life of the family must be accommodated with its bedrooms and dressing-rooms, studies, libraries and sitting-rooms, its closets and bath-rooms, all arranged for the greatest comfort and convenience of the inmates as to access, retirement and intercommunication. Add to these elaborate requirements the stern limitations of the building laws and the restrictions imposed by the size and shape of building-lots in the larger cities of the modern world, and we find ourselves, even in the planning of a dwelling house, face to face with an exceedingly complex and difficult problem. For within these compact limits of size and shape the architect must meet every one of the multifarious conditions enumerated above and many others before he can even begin to think of artistic proportions and a lovely exterior. The client is inexorable in resisting any sacrifice of convenience or comfort to mere beauty, and he is quite right. Architecture is his servant, not his master, and it is the architect's duty to work beauty into the forms born of these hard conditions, not to attain it by disregarding the conditions. Undoubtedly the task is difficult. Let those who bewail the inferiority of modern to mediæval art consult the article "Maison" in Viollet-le-Duc's "Dictionnaire Raisonné," and they will realize the difference between the poor, comfortless mediæval house of two or three rooms within damp stone walls, with its narrow passages, tortuous stairs, and unsanitary arrangements, to which not even the French author's eloquence can make us blind—and the elaborate combination of rooms, halls, stairs, sliding-doors, baths, closets, kitchens and scientific contrivances which constitute the house of the average dweller in a modern city. He will perceive what few seem to realize—the immense difficulty of the modern problem of house-designing as compared with that of the period he so admires. Moreover the conditions change nowadays more in ten years than in a century of the Middle Ages, so that past experience is soon out of date and useless, whereas in olden times the slightest modifications sufficed to adapt the solutions of one decade to the problems of the next. What modern architects have accomplished within these untoward limitations offers at least as much to admire as to deplore. Especially in modern American country houses of not excessive cost is there to be found a remarkable combination of careful, logical and artistic planning, in which comfort, health and convenience are admirably provided for, with charming and picturesque exteriors,* inviting

*Readers of the "Semaine des Constructeurs" and of the "Révue Générale de l'Architecture" must have noticed the interest and admiration which this phase of American architecture has excited among French designers and critics. While duly alive to the defects of much of our domestic architecture, especially its proclivity to eccen-

WAREHOUSE,
Corner Great Jones street and Lafayette place, N. Y. City. H. Hardenburgh, Architect.

and full of character. In these houses there is doubtless much to criticise; but the faults are those of a nascent and virile art, still in process of development. If Pliny's delightful Laurentine villa was planned with reference solely to the varied exposures of the different wings and chambers to the sun, the shade, the sea, and the various prevailing breezes, the architect certainly deserves the credit of his success in meeting those requirements. But it is probable that any modern architect of reputation under the same social and economic conditions would have solved the problem at least as well, perhaps better. For the fact that modern clients, with modern habits of life, refuse to live in endless one-story buildings attended by a vast retinue of slaves, and prefer, even in country estates, houses of two or three stories, with hot and cold water, gas, furnaces or steam heat, double walls, glass windows and verandas; in which they can be served by two or three

tricity or mere picturesqueness, they bestow upon its qualities of sincerity, common sense and comfortableness, regard for outlook and vista, originality and appropriateness to site and surroundings, the heartiest praise. Several collections of American house designs have been published by important houses like that of Daly, while the French architectural journals are increasingly attentive to the progress and performances of American architects.

servants instead of a few hundred, society, not the architects, should be held responsible.*

But if the modern house is an intricate structure compared with that of the Middle Ages, and, indeed, of any bygone age, the developments of modern business in large cities have given rise to a class of structures presenting vastly greater difficulties of design and construction. The problem they present to the architect is one of the most knotty and perplexing that can be conceived, and the practical requirements are more unyielding and more varied than in any other class of designs he has to prepare. Upon a plot of ground usually narrow and irregular in shape, hemmed in by lofty buildings, he must erect an edifice many stories high, and divide it into the greatest possible number of offices, so arranged as to bring in the largest possible revenue. He is usually enjoined against "wasting" in courts and areas a foot of space not "absolutely necessary"—the proprietor usually constituting himself the judge of the amount required; while at the same time he is expected to provide all the offices with sufficient daylight. Everything being determined upon a basis of possible revenue, stairs and halls must be reduced as much, and partitions or the building made as thin, as safety of structure thus laws will allow. The well-planned must be threaded and honeycombed with pipe and shafts, flues and chimneys; innumerable wires must be concealed in its walls and ceilings; and its basement be filled with machinery of various sorts. Every one of these things the architect must himself think for and specify in detail, out, provide not he bestows attention whether or artistic possibilities of the upon the building. He is likely to be far more severely blamed for a misplaced bell-button, or an inconvenient elevator, or for dark offices which the restrictions imposed by the proprietor alone have made inevitable, than for ill-studied and inartistic treatment of the architectural forms. In other words, material and practical requirements are by the conditions of the times made to wholly overshadow æsthetic considerations.

Modern processes of building strous over, as exemplified in these ces, still many-windowed stacks of ression of further hamper the free steel now artistic ideas. Iron framework of form a large part of the, and the de- every important build tive forms in velopment of const proceeded along metal has natural ing rather than of the lines of engi iddle Ages engineer- high art. In the ture were practically ing and arc e receiving their highest one, both nt in religious architecture, devel as modern engineering has busied itself mostly with railroads, bridges and factories, and similar utilitarian problems, to the suppression of any artistic development. Metal construction has followed in its lead, and the architect has to deal with the forms and processes which the market offers alike to the engineer and to him. It is only in rare instances that he is permitted to use these materials in the special shape and manner which his artistic taste would lead him to devise. Furthermore, new materials, building methods and appliances are constantly being invented, all of which the architect must appropriate and use to the best advantage if he would keep up with the times. The building thus becomes a truly mighty problem in construction, requiring an immense amount of scientific and practical knowledge of the most varied kind, and the constant application of elaborate mathematical calculations and geometric processes. It is safe to say that the designing of a great building like the Auditorium at Chicago involves problems of construction fully as serious and difficult as were ever encountered in the most stupendous of mediæval cathedrals. And in judging of the results two facts must be remembered which reflect the highest credit upon the talent of modern

*See in, "Discourses on Architecture," by Viollet-le-Duc, Vol. I, the "Discourse on the Architecture of the Romans," ents on Pliny's Villa; also in "Popular Science for comm" for December, 1890, article by Mr. Barr Ferree Monthly hitecture and the Environment." Mr. Ferree on "Arc ppreciates as they deserve the attention and pains hardly ap by most reputable American architects upon the bestowed ts he commends to their study in Pliny's Villa very poin y, exposure to sun and shade, situation, prospect, —salubrit ce of arrangement and rational combination of convenien parts.

designers. The first is that while the erection of a cathedral occupied usually from fifty years to three centuries, during all of which time the constructive problems it involved were being studied in the light of the experience acquired in other and similar buildings, it is not infrequently the case that a building like the Auditorium in Chicago, or the *World* office in New York, is completed and occupied within eighteen months or two years from the first inception of the plans. The second fact is still more significant, but rarely taken into consideration by the critics. During nearly the whole of the period from 1060 to (say) 1450—nearly four hundred years—architecture in all northwestern Europe was predominantly occupied with a single problem—that of cathedral design. In England, France, Germany, Spain and the Low Countries, and to a certain extent in Italy, the requirements of the cathedral or abbey church as to plan, arrangement and general construction were practically the same. In all these countries the one great preoccupation was to vault the nave and side aisles of the type-plan bequeathed by the early Christian basilica, and to execute these vaults in stone and in such a way as to provide a lofty clerestory and immense windows, with the minimum obstruction of the floor space by piers and columns. Gothic architecture received its whole character from this problem, and it required three hundred years at least of the combined efforts of ecclesiastic and monastic architects, assisted by the skill of the powerful bands of "lay builders" to reach such a consummate result as we admire in Amiens, Strasburg, York, Burgos or Antwerp. In our times no two successive problems present conditions or requirements as similar as are almost any two mediæval cathedrals of the same period; the experience of a quarter of a century ago is useless in dealing with the design of to-day; and the modern architect, instead of being able to devote a lifetime to one or two buildings as his contribution to the solution of a problem on which the whole confraternity of architects have been unitedly laboring for a couple of centuries, must in the course of a year or two solve twenty wholly diverse problems, not consecutively, but a large number at once, among which may be one or two quite as complicated as the designing of a mediæval abbey church.

The commercialism of modern life, which hedges in the architect with its inexorable demands, and measures his work not by its intrinsic merit but by its income-producing value, is furthermore curiously allied with a love of splendor and luxury which disregards expense. This usually takes the direction of personal comfort or of excessive display, seldom consistent with the most refined taste, but demanding what is showy and costly rather than what is really beautiful. This love of splendor the architect has to count with and minister to; he is thus compelled to prosecute his work under conditions adverse to any free expansion of his artistic nature. He is expected to master branches of knowledge the most diverse; he is compelled to consider requirements innumerable and harassing; he is constantly confronted with sordid considerations of cost and interest; he is held responsible for the proper expenditure of millions of money, and for the correct execution of the minutest details of the most extensive and complex structures. Dealings with contractors and sub-contractors by the score; the selection of plumbing appliances and gas fixtures; pesterings of stupid, self-conceited and unreasoning clients, who set up their own crude conceptions and vulgar taste against the cultivated taste of the architect; the adjudication of disputes between clients and builders, calculations of girders and trusses, thrusts and weights—these are cares and duties which try the capacity and patience of the modern architect wholly outside of the main task of designing the building and preparing the drawings for its erection. Amid such an untoward environment, and occupied with such perplexing cases, he is asked to solve problems of whose difficulty what has been already said can give no adequate conception. What wonder if the artistic faculties are warped and stifled; if

Providence, R. I.

CENTRAL CONGREGATIONAL CHURCH.

Carrere & Hastings, Architects.

considerations of the good and the beautiful seem less and less imperative; if his failures are many and his successes few in the task of reconciling his artistic inspirations with the heterogeneous and iron-clad demands of modern life and business, and the unformed taste, or bad taste, of a philistine *clientèle?* To reach the ideal solution of the problem, to extract from these hampering conditions results inherently beautiful, demands true genius, and the world has never been prolific of geniuses.

When one considers the results achieved in the domain of modern domestic architecture, to which brief allusion has already been made, one must recognize the existence of a vast amount of highly meritorious work, in which artistic beauty is admirably blended with practical excellence and scientific construction. In the architecture of modern commercial buildings, the failures are certainly more obvious, but the triumphs are numerous and praiseworthy. When we consider the immense difficulties of this branch of architecture, we cannot fail to be impressed with the talent and skill often brought to bear upon the problem. Even when the artistic aspect of these buildings is unsatisfactory—let us cite as an example the New York *World* building—one is compelled to admire the sound and often ingenious construction, the masterly dealing with extraordinary difficulties of planning and arrangement, and the taste shown in the details, while many of the most obvious defects prove on investigation to be due to the interference of a client in matters of taste, or the force of circumstances which the architect could not possibly control.

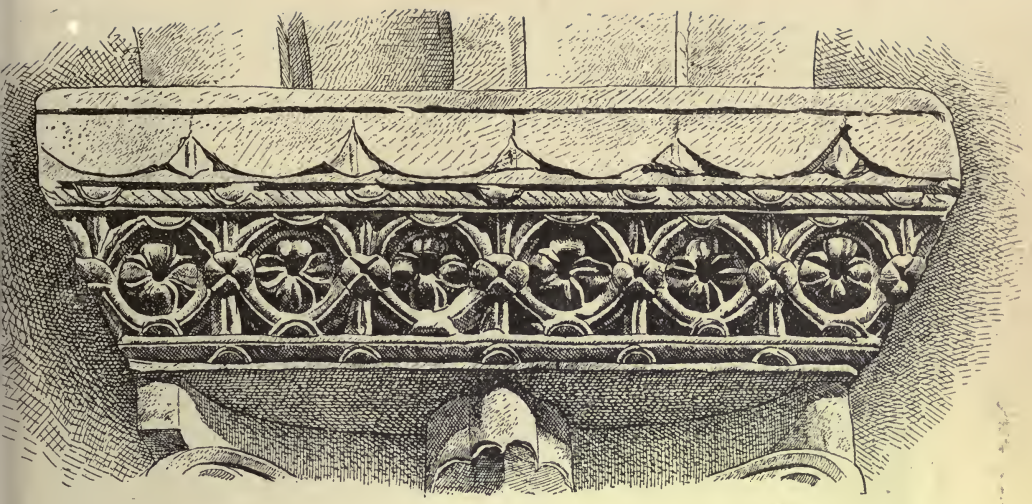
In the domain of public architecture, including theatres and halls of assembly and governmental buildings, the difficulties are of a different kind, and the opportunities for artistic expression greater than in commercial structures. The defects in such buildings are, however, greatest on the artistic side, in our own country at least, and for this our architects are certainly in a measure to blame. But here again we are met by the presence of the adverse environment amid which modern architects pursue their vocation. The universal commercialism, the constant pressure of utilitarian considerations, the lack of sympathy or appreciation on the part of clients and corporations for what is truly noble and lovely in art, the constant dinning of the question of cost, economy demanded precisely where liberal expenditure should be applied, and display called for where a sober economy were far better—all these influences tend to stifle the artistic spirit, and to reduce architecture as nearly as possible to the condition of a branch of engineering. In this department, moreover, as well as in religious architecture, the constant change in the requirements of buildings of the same class operates precisely as in domestic and commercial architecture to prevent any such continuous approach to a final and perfect solution as we find in earlier ages—in the Doric temples of Greece, for example; or in the Thermæ of Imperial Rome, or the churches of Mediæval Europe.

If these observations have assisted any reader to an appreciation, however imperfect, of the great difficulties which beset the development of modern architecture, he will perhaps view its shortcomings with greater lenience and its achievements with greater respect. An intimate acquaintance with the great body of its practitioners, not merely with the conspicuous leaders, but with many also of humbler reputation who pursue their labors modestly and faithfully in obscure places, would certainly lead to a high estimate of the general earnestness, conscientiousness and intelligence with which they endeavor to meet and solve the problems and overcome the obstacles they encounter. The proportion of highly-educated and thoroughly-trained men among them is increasing; architectural schools are multiplying, and amid all the confusion of styles which arouses the ire of the critics there is manifest a growing dignity and refinement in composition and detail. The future cannot be predicted, but it certainly is not without signs of promise. We are now in a period of transition, and suffer

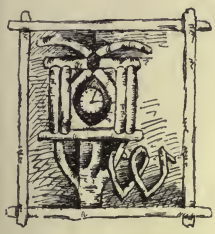
CRYPT, LINCOLN CATHEDRAL.

from all the difficulties inherent in such a period. Neither indiscriminate praise nor sweeping condemnation on the part of the public will help the cause of noble art at such a critical point in its development. It is to be hoped that the public, to whom the architect looks for his employment and his reward, may come in time to such an acquaintance with the nature of his work and with his own disposition and aims that the praise of the whole community shall be unstintingly awarded to every sincere and intelligent effort of his towards a pure and noble result, and its condemnation visit with merited severity all that is base and unworthy in this greatest of the arts.

A. D. F. Hamlin.



THE ROMANESQUE REVIVAL IN AMERICA.



WE have considered the Romanesque revival first in New York, although New York was neither its starting point nor perhaps contains its most noteworthy examples. But there is so much more and so much costlier building in the biggest and busiest town of a country than in any other that any architectural movement that is general and national is pretty sure to be there most fully reflected and illustrated. We are apt to deplore the conditions of our life as unfavorable to art, and so doubtless in many ways they are; but it is not because we are living in a commercial republic, for it is out of the conditions of republican and commercial cities, from Athens down to Venice, that some of the most energetic and spreading artistic movements have come that the world has ever seen, while it is directly to the commercial and political rivalry of towns that we owe the development of ecclesiastical architecture in France in the thirteenth century, of civil architecture in the Netherlands and of the mediæval architecture as well as of the Renaissance architecture of Italy. The palaces of Venice and Florence and Genoa tell us plainly enough that their merchants were princes and their traffickers the honorable of the earth—as plainly as that story is told by Fifth avenue and Commonwealth avenue and Michigan avenue and Rittenhouse square. If the monuments of these latter thoroughfares are upon the whole less admirable than those of the older and transatlantic towns, the cause of the difference must be sought elsewhere than in a difference of the pursuits of those for whom they were built.

While New York, then, may not be the American town in which interest in architecture, or in any art, is either most general or most intelligent, it is by dint of mere size and activity that from which most examples can be culled of any architectural movement, whether it be a serious attempt to develop a rational mode of building, like the Gothic revival of twenty years ago or the Romanesque revival of to-day, or the adoption of a frivolous and fruitless fashion like Queen Anne. The former generation in which Boston boasted itself to be the Athens of America has passed away, and in most respects the boast may now be idle, but Boston is the source of the Roman-

TRINITY PARSONAGE,

Boston, Mass. H. H. Richardson, Architect.

esque revival which has spread itself over the country, as our illustrations attest, to and beyond the Mississippi. Mr. Richardson himself was a practitioner in New York when he designed Trinity in Boston, and it was undoubtedly the success of that church which began the revival. It was very possibly this success that determined the removal of its author to Boston, where from that time until his death, for the decade that remained to him and that really comprised his artistic career, he devoted himself to showing the applicability of the style in which he wrought to all the problems that came to him for solution. The attempt would have been worth making even if its success had been more questionable, for a common style, an understood way of working, founded upon "a consistent system of construction and decoration," is a chief need, not merely of American architecture but of all modern architecture. In France, and among the Latin nations in general, there is an understood way of working. The trouble with it is that it is not founded upon "a consistent system of construction and decoration" for its decoration, its architecture, is inconsistent with its construction or irrelevant to its construction, and so the style lacks life, and in lacking life lacks the possibility

of progress. It seems strange that a style so obviously devoid of logic should have been matured and propagated by a nation that above all things prides itself upon being logical. It has been attacked upon this ground by many Frenchmen, most conspicuously by Viollet-le-Duc, whose literary work was a consistent and continuous protest against the system and the outcome of who remember the impression produced upon lovers of architecture throughout the country by the publication, in the "New York Sketch Book of Architecture" for 1874, of Mr. Richardson's perspective sketch of the tower of Trinity, remember it as the advent of a new and individual talent, an event that does not happen often in a lifetime to the lover of any art or of all arts.

SHADYSIDE PRESBYTERIAN CHURCH,
Shepley, Rutan & Coolidge, Architects.

the architectural instruction of the École des Beaux Arts. It was for this reason that when he came to lecture at that institution he was hissed and hooted for a blasphemer by its students, of whom, for all I know, Mr. Richardson may have been one, the very man who was afterwards to show the advantage that a training in the conventional architecture of France gave to the career of an architectural revolutionist.

Trinity was undoubtedly the starting point of the revival, and it would be rash to say that the revival has produced anything better. Those of us

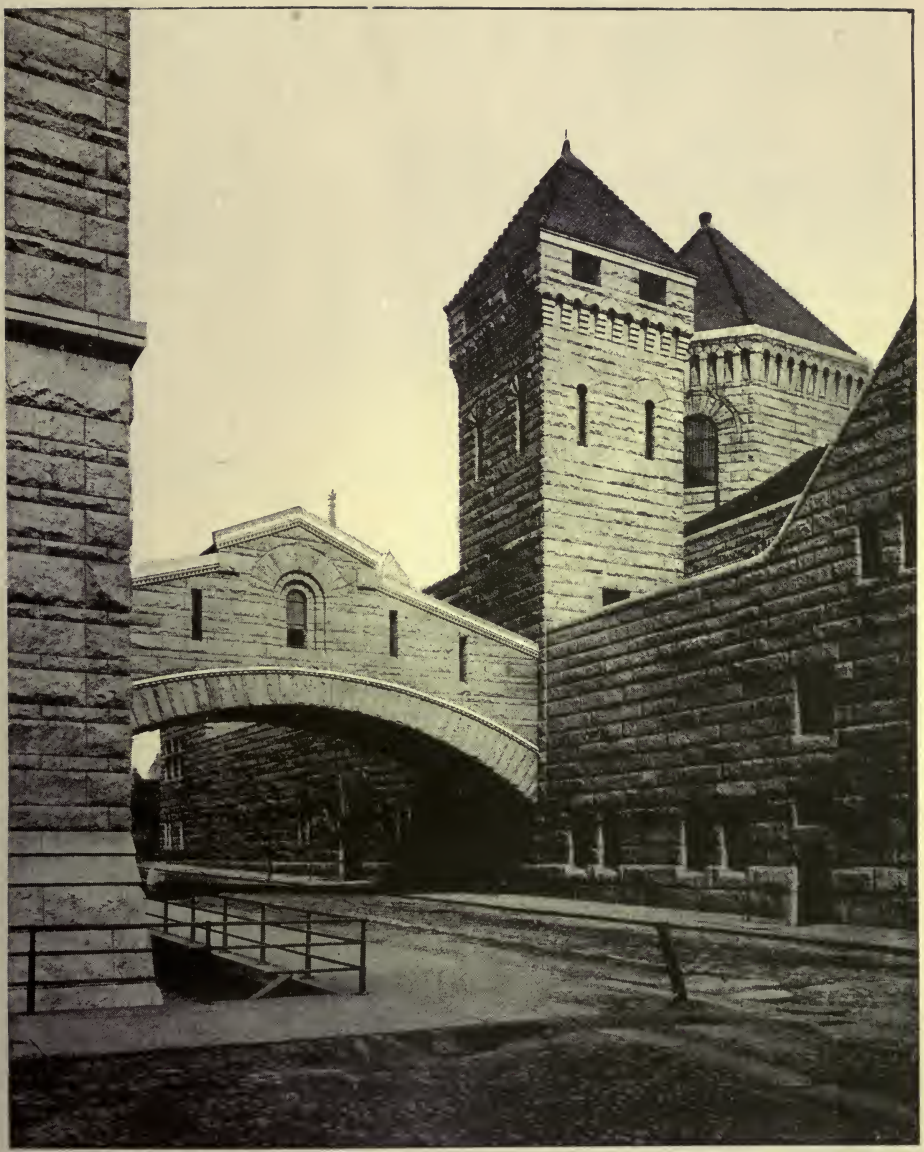
> "Then felt they like some watcher of the skies
> When a new planet swims into his ken."

Their admiration and their glad surprise were not at all diminished if they happened to remember that the work which thus affected them was, in its general form and massing, and in some of its features, a reminiscence of the central tower of Salamanca; for the tower of Trinity is not merely the tower of Salamanca restudied and enriched and improved, but the design of it throughout attests the presence of a more original power than that of the

COURT HOUSE.

Pittsburgh, Pa.

H. H. Richardson, Architect.

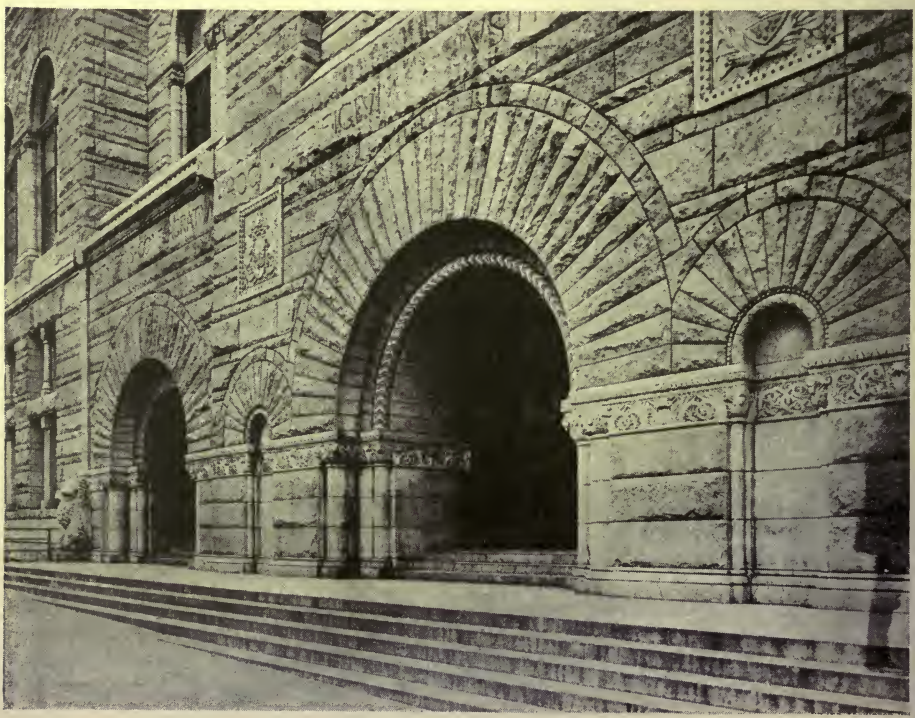


PITTSBURGH JAIL.

Pittsburgh, Pa.

H. H. Richardson, Architect.

Pittsburgh, Pa. MAIN ENTRANCE TO JAIL. H. H. Richardson, Architect.



Pittsburgh, Pa. MAIN ENTRANCE TO COURT HOUSE. H. H. Richardson, Architect.

designer of what we must still call the original. This tower is the church, and after fifteen years it remains perhaps the noblest work that American architecture has to show, and certainly the finest and most typical, as it is the first monument of the Romanesque revival. The church has its faults, as its architect well saw, and he endeavored during the first half of the thirteenth, and that nothing is likely to be done except under a sense of responsibility which it is almost unexampled to see exhibited with respect to a contemporary monument.

In church building itself the success of Trinity has not been so fruitful as in some other departments. Mr. Pot-

INTERIOR PITTSBURGH COURT HOUSE.

Pittsburgh, Pa. H. H. Richardson, Architect.

his lifetime to amend them. Perhaps these may be summed up in one fault, that the work as executed does not sufficiently and at all points subordinate itself to this central and dominant feature, and conduce to its predominance. But it is a fact not less creditable to the æsthetic sensibility of Boston than to the beauty of the work itself, that in the various projects for the improvement and completion of the church there is evident as great a reverence for a product of the last quarter of the nineteenth century as if it were a relic of

ter's work in New York, which we have already considered, is nearly all the ecclesiastical architecture in that city which has been directly inspired by Mr. Richardson's example. About the most important church erected since Trinity is the Protestant Episcopal Cathedral at Albany, by Mr. R. W. Gibson, a design in a free and somewhat Hispanized English Gothic, which in much of the detail, however, shows a reversion to Romanesque. Mr. Richardson's unsuccessful design for the same building gives promise of a build-

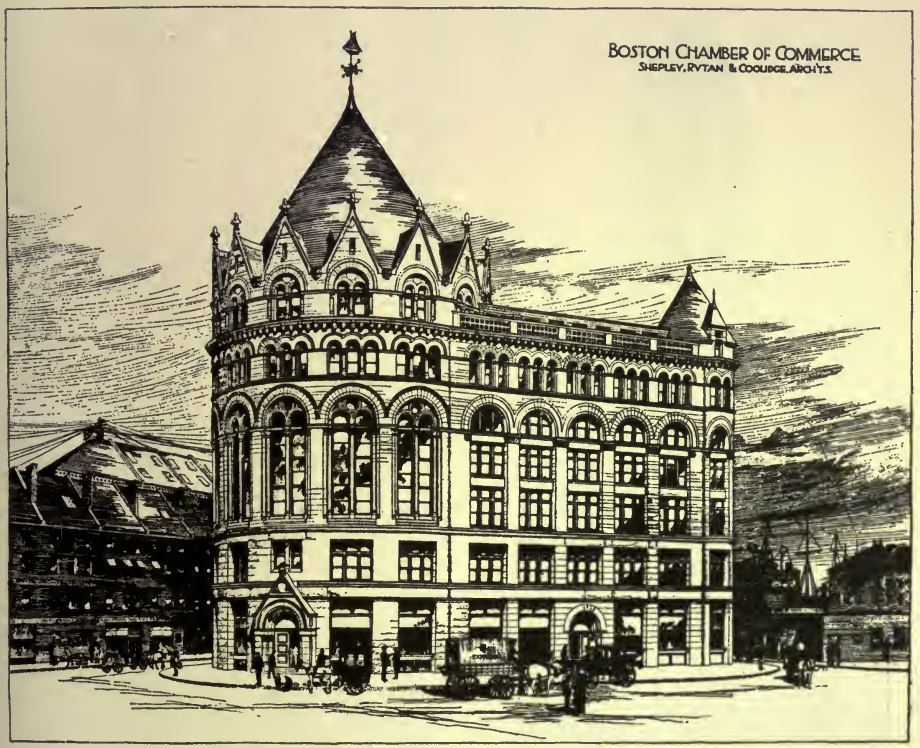
CHAMBER OF COMMERCE.

Cincinnati, Ohio. H. H. Richardson, and Shepley, Rutan & Coolidge, Architects.

ing perhaps upon the whole more successful even than Trinity, and the influence of this design, even more than of his executed work, was visible in many of the designs for the Cathedral of New York. A Presbyterian church at Pittsburg by Mr. Richardson's successors, Messrs. Shepley, Rutan and Coolidge, is an unmistakable and a very successful piece of Richardsonian Romanesque, which owes much of its success to the skill with which the central tower, a lower and much simpler crowning feature than that of Boston, is developed into the church to which the other features of a short nave and shallow transepts are brought into harmonious subordination. A church at Andover, Massachusetts, by Messrs. Hartwell and Richardson, comes much nearer in its general form and disposition to the accepted type of an American country church, a nave without transepts or clerestory and a corner tower. In the combination of material and in the treatment of the detail it is evidently enough Richardsonian, without excluding individual thought on

the part of its designer. The quoining of the angles of the square and massive tower in the darker of the stones employed is an effective device, and so is the framing of the belfry lights in an ample border of wall.

Nevertheless it is in civic work much more than in ecclesiastical that the influence of Richardson is manifested, and that the Romanesque revival most



prevails. Clergymen and laymen who serve upon building committees are still commonly of the opinion that pointed Gothic is more "churchly" than Romanesque, and architects continue to consult their preferences. It is perhaps fortunate that Trinity church in Boston is very much too large and elaborate and costly to be very often repeated on the same scale, while it is quite impracticable to reduce its scale so as to make it available for a smaller and cheaper church. Otherwise we might see reproductions of it in miniature springing up all over the country, and this would be a result very much to be deplored. Perhaps it is unfortunate that some of its author's civic structures are more easily imitable and adaptable. With intelligent and artistic adaptation there is of course no fault to be found. Have we not just seen how in starting from the lantern of Salamanca, Mr. Richardson himself not only made an advance upon his prototype, but evolved a beautiful tower which is to all intents and purposes a creation? If any architect can do this with the work of any other architect, we shall never say him nay. The success of Mr. Richardson's county buildings at Pittsburg has stimulated countless imitations, of which, fortunately, most remain on paper, but one is in course of execution in the Court House of Minneapolis. It would not be fair to call this a mere imitation, nor is its execution to be deplored. But its designer would not be apt to deny that the general massing of his

building is derived from Mr. Richardson's work, to which some of his competitors adhered even more closely. The Pittsburg buildings derive their individuality in great part from the conditions of the problem, a pile in intractable granite built in a smoky town in which the deposits of soot threaten to nullify all delicacy of detail and to encumber all projecting members. It would be highly unreasonable to reproduce, in a more facile material and in a clearer air, the treatment imposed by these conditions. All that can properly be conveyed from the building and made available elsewhere is precisely the general composition, and this the designer of the Minneapolis Court House has conveyed.

COURT HOUSE,
Pittsburgh, Pa. H. H. Richardson, Architect.

One of the latest civic works of Mr. Richardson, and one of the most successful, is the Cincinnati Chamber of Commerce. It is so late indeed that the design was left to be completed by his successors. His peculiar power of simplifying a complicated scheme by seizing upon what is really the most important of its requirements, detaching and emphasizing these, and converting the rest into accessories, has never been more signally illustrated than in this work. The main hall unmistakably asserts itself on the building, in spite of the four stories above it. Odious as comparisons are, it is worth while to compare the effect of this treatment with that of the New York Produce Exchange, where the requirements are very similar. The arcades of the hall are in themselves very powerful and impressive, and they gain very greatly in power from the solid bounding towers that give a greater assurance of secure abutment than could be given by an equal space of flanking wall, while these towers are produced above the eaves so as to relieve at once and to accentuate the great pyramidal roof, as pinnacles group themselves about a spire. The skyline is further animated and the monotony of the roof relieved by the tall and picturesque dormers that in their form and arrangement recall those designed by their authors for the Capitol at Albany, but are distinctly more successful. The material of the Cincinnati building, the pink Milford granite, compels a great severity of treatment. Of ornament, strictly so called, there is scarcely any, while the mouldings are such only as are needed to mark the main divisions of the building and to express its construction. Severe as is the treatment of detail throughout, that of the substructure is so much more uncompromising in its severity than that of the superstructure, and this character is so much promoted by the batter of the basement, as to give the superstructure an air of richness and almost of elaboration in comparison. Another building of similar purpose is the Boston Chamber of Commerce, now in course of erection. It is of the same material, and it is equally Romanesque in character, albeit the gabled dormers

of what may be called the tower give it a somewhat Gothic air. The separate roofing into a tower of an end of the building is explained and justified by the triangular site, and the resulting mass with its conical roof recalls the New York Cotton Exchange, although the treatment of masses as well as of detail is so widely different as to have only this point of resemblance. In this case the windows that indicate the great hall are raised upon a two-story basement and crowned by an attic of a single story, an arrangement that emphasizes the importance of the principal division, and that is pretty clearly more eligible in this place than would be the reversal of the disposition by giving a single story to the basement and two to the attic. Here again the principal requirement of the structure becomes the principal feature of the design, and this is in itself an achievement, considering the difficulty to which the elevator has given rise of uniting in the same building a place of public assemblage and several stories of rooms constructed to be rented at a profit, a difficulty which so many designers find insuperable.

After churches, perhaps even without this exception, the most attractive and tempting of problems to a modern architect are the institutions for the promotion of humane culture, the number and importance of which, in our country, attest not merely its wealth but its public spirit and its progress in civilization. In museums and libraries and the like the requirements of the problem, however intractable they may at first appear, will, upon sufficient study, yield to the designer who follows them faithfully, the basis for striking and individual architectural expression. That is to say, they are for the most part really architectural requirements. The most characteristic of our current work is in commercial architecture, of which this cannot be said. In an elevator building, for example, the need for light, especially urgent in the lower stories, makes very difficult the task of giving a lofty building a sufficient aspect of massiveness to secure apparent strength and stability, and the designer is tempted to contradict the purpose and character of his building in order to secure this aspect. That a building should be solidest at the bottom and lightest at the top is one of the most elementary of architectural requirements. That it should be lightest at the bottom, that is to say, that its ultimate supports should be attenuated to a minimum, is, in the minds of many owners, an elementary requirement of commercial architecture, and it is this which designers find most embarrassing. The highest successes of our commercial architecture have nevertheless been won by those architects who have not evaded this problem but have attacked it directly, but of course they must wish for a less exacting *donnée*, since even with the best of their works it is necessary to make allowances. It is otherwise with the institutions of which we are speaking. There is, for the most part, no such contradiction involved in them between use and beauty, but the facts of the structure need only to be expressed straightforwardly to tell an interesting story, of which the interest may be enhanced according to the ability of the story-teller. The first of Mr. Richardson's secular works to arrest the attention and to secure the admiration of his profession was the Woburn Town Library, of which the design was published in 1877, just after the completion of Trinity. It was well worthy of the admiration it excited, though it was improved upon in a series of charming works for the same purpose and of the same character at North Easton, Quincy and Malden. Perhaps the Crane Memorial Library at Quincy is the most successful and exquisite of these, and certainly it ranks very high among its author's successes. In another place I have expressed what seems to me the essence of Richardson's power of design as the power of simplification, and these buildings seem to illustrate this. Assuredly the series shows a progressive simplification which has its climax in the building at Quincy, where the simplicity would be baldness but for the great art of the adjustment of the three features of the front, the reading-room, the book-room and the entrance, while the interior shows some of the most exquisite of his detail. The

LAWRENCEVILLE SCHOOL,

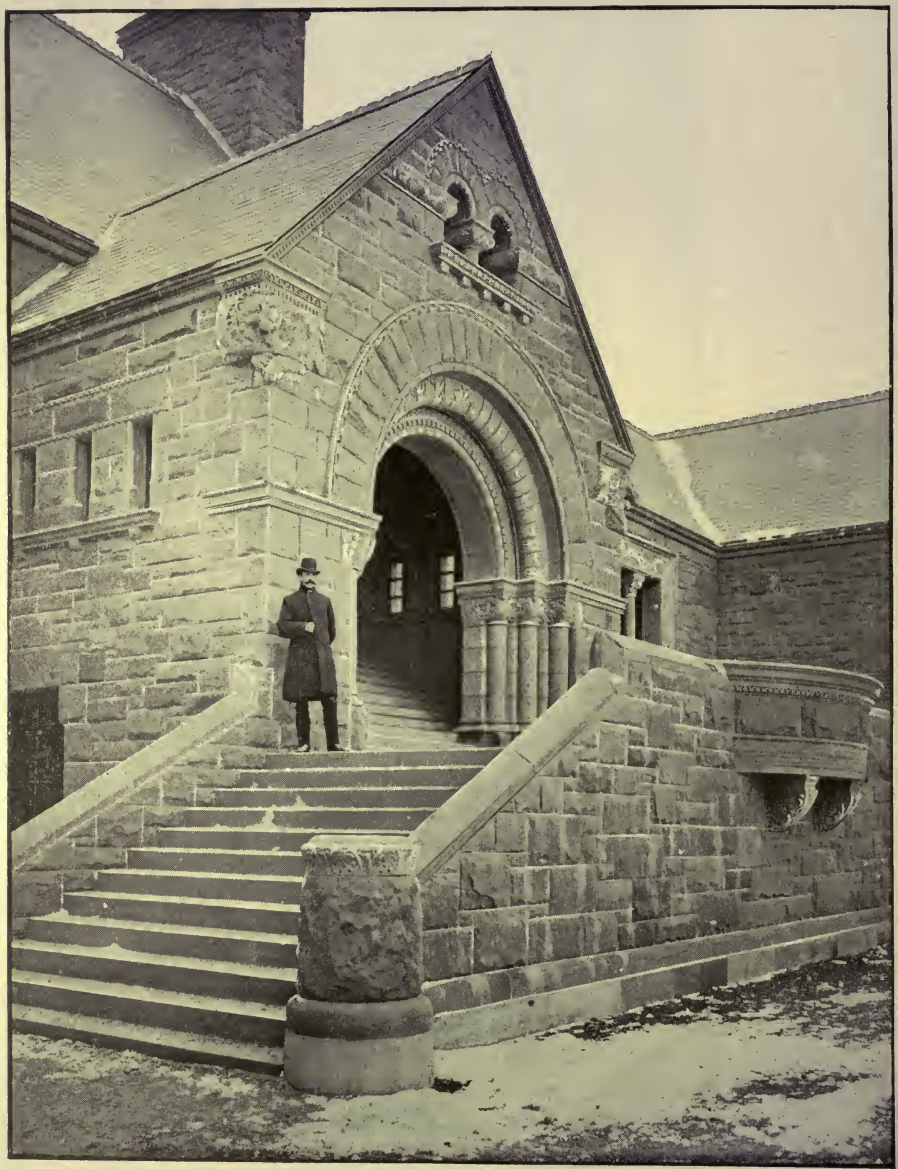
Lawrenceville, Mass.

Peabody & Stearns, Architects.

series has been admirably supplemented by Mr. Richardson's successors in the truly Richardsonian Public Library at New London, where the two features of the front, the arcade of the entrance and the large lintelled openings of the reading-room are cleverly harmonized by the introduction between them of a third feature in the polygonal turret, and where the chief defect of the design at Quincy, the leanness of the terminal pier of the colonnade, is obviated by an emphatic flank of wall. The success of this beautiful little building is another illustration, as indeed the progressive success of Mr. Richardson's own series of libraries is an illustration, of the wisdom of employing again and refining upon a motive already employed, rather than of abandoning it because at some points it fails to satisfy the designer, in favor of a radically different motive to be in turn worked out crudely and in turn abandoned.

Another very successful piece of simplification is the school at Lawrenceville, Massachusetts, designed by Messrs. Peabody & Stearns, where the principal story is a colonnade divided by the porch at the centre, set between a basement as nearly unbroken as may be and by a roof absolutely unbroken, except for the emergence of the plain chimneys, while it is framed between projecting wings of which the flanks are absolutely solid, while the fronts are pierced by but a single opening in each story at the centre of the face. It would be impossible to disturb the repose of such masses, the massiveness of which is accentuated rather than enfeebled by the openings, even with bad detail. In point of fact the detail here, excepting the questionable decoration of the lintels of the colonnade, is very good indeed, and in spirit is truly Romanesque, as the treatment of the porch bears witness, in which the ornament again accentuates the massiveness of the members to which it is applied.

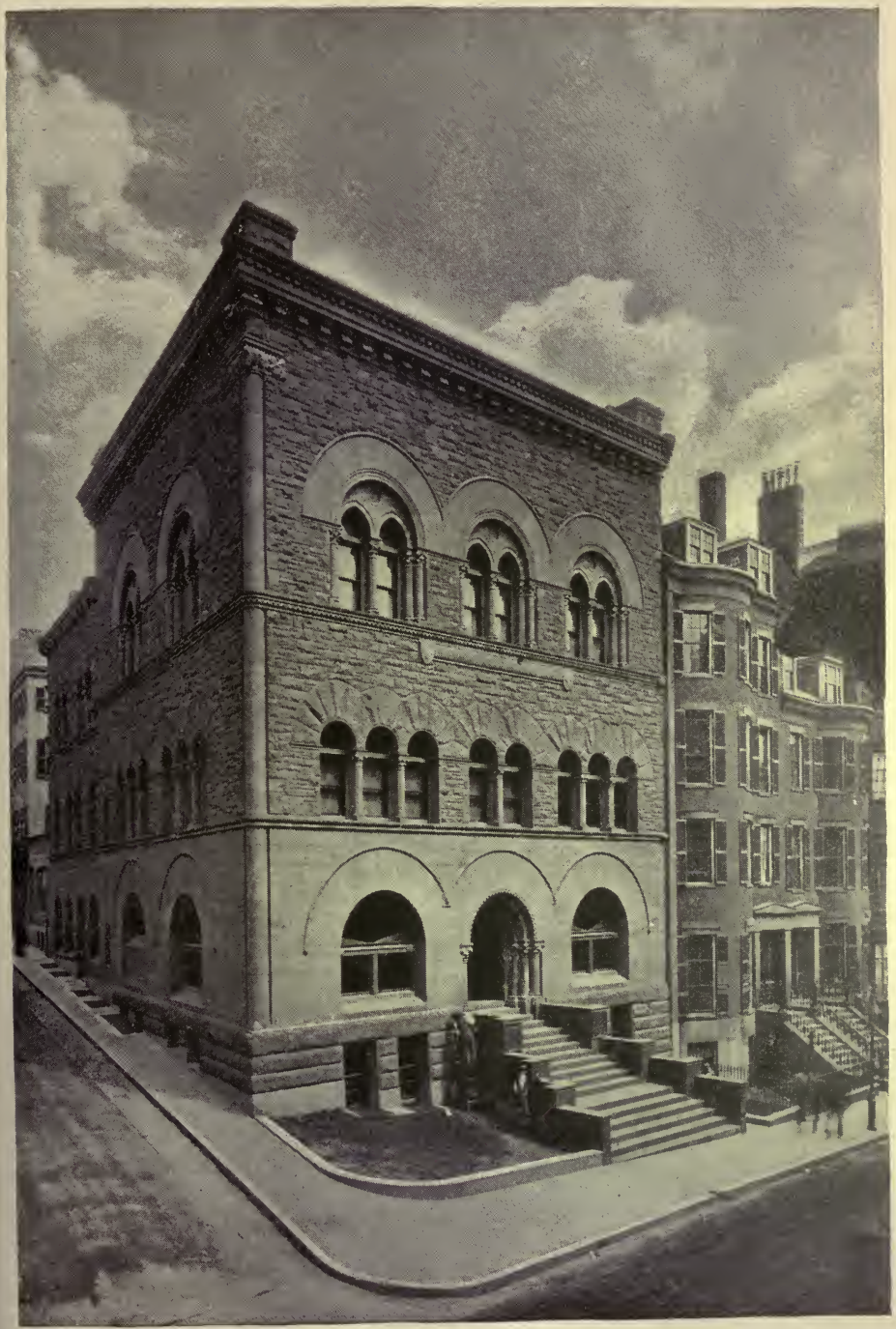
Another work by the same architects, the American Unitarian Association Building in Boston, though designed under very different conditions, is equally Romanesque in spirit, in spite of the arches doubled under relieving arches in the third story, which recall rather some examples of Italian Gothic than any phase of Romanesque, and it aims equally at walliness. Blank wall is indeed one of the most certain, though it is also one of the most obvious means of gaining architectural effect, and it was by his perception of its effectiveness, and by his faculty of judiciously letting it alone, that Mr. Richardson exerted one of his best influences upon the architecture of the country. But clearly enough it is necessary to the effectiveness of blank wall that it should be relieved with openings, and that it should be in the right places. In the amplitude of its blank wall the building now under consideration leaves nothing to be desired, and not much in respect of its disposition, laterally, with reference to the openings. These are grouped at the centre with piers dividing the front into three bays, but these intermediate piers are distinctly subordinated to the much wider terminal piers, and the effectiveness of this disposition is much enhanced by the large roll moulding that defines the outer angle of the building. Vertically, also, the arrangement of the blank wall is very effective, and gives the front a look of massiveness that is very satisfactory until one happens to ask himself where the floor lines occur. He then perceives that all the stories are lighted from the bottom, while the great stratum of wall between the openings of the upper story and the cornice even suggests that there may be an additional floor, not expressed at all in the exterior and lighted from the roof. At any rate, the practical sacrifices to the enlargement of the wall spaces seem to be alike serious and superfluous. The arrangement is questionable also by which a basement of cut stone is made to carry a rock-faced superstructure. This capricious variation from the rule, with the greater elaboration and enrichment of the first and third stories, gives the wall three divisions of which the central is much the rudest. Nevertheless the front has undeniably the look of massiveness which the designer meant to give it, and recalls some of the Florentine work by which it may have been suggested. The detail is of various



LAWRENCEVILLE SCHOOL,

Lawrenceville, Mass.

Peabody & Stearns, Architects.



AMERICAN UNITARIAN ASSOCIATION BUILDING,

Boston, Mass.

Peabody & Stearns, Architects.

quality. The sill courses that mark the divisions of the stories are very sharply and effectively profiled, and the ornament of the upper is well designed and well placed. On the other hand, the capitals of the columns at the main entrance are very unfortunate. They are not foliated, but merely projected into flabby and pendulous lobes, which do not in the least convey the notion of support that is expressed in every well-designed capital, and which are not in any respect admirable. A bare bell would be much more expressive and much more effective.

A striking illustration of Mr. Richardson's passion for simplification was furnished in his design for a public building in Buffalo, of which the requirements were that it should contain not only a large and growing library and a reading-room, but a museum of fine arts and an historical collection. The enumeration of these requirements does not indicate a simple building, much less a building of one feature as their outcome, and as a matter of fact the projectors of the building accompanied their invitation to competing architects with a sketch plan that was of considerable complication, since it had not merely to provide for these varied requirements, but to be adjusted to a site of irregular shape. Nevertheless, by disregarding this plan and putting his building on the site in his own way, Mr. Richardson managed to evolve a design of which the principal front is in effect a single feature, a long arcade abutted by two round towers and broken only by the steep gable of the porch at its centre. To this feature a very plain basement of lintelled openings below and a blank wall surmounted by a skylight above served as foils. It was a very interesting design, and the more so by reason of the complete subordination of the front to its principal feature. The accepted and executed design by Mr. C. L. W. Eidlitz worked upon the lines of the imposed plan, and the designer's effort is evidently enough to express in his building the different purposes of its parts, while at the same time bringing them together and binding them into an architectural unity. This latter purpose is the main object of the tower which is meant to unite and dominate the parts. Any requirement of a building that is in itself legitimate is a potential source of architectural expression, and may become the cause of an architectural effect, and this is a truth that is too generally forgotten by architects who, in despair of making an effective piece of architecture out of the requirements they are striving to satisfy, mask the work they are really doing with a screen of architecture derived from some other source than a consideration of these requirements. Nobody will dispute that all the varied purposes of the building are expressed in Mr. Eidlitz's design, while the tendency of an expressive treatment of such a scheme on such a site to "scatter" and to produce a straggling building, that is a congeries of parts rather than a whole, is effectively counteracted by the introduction of the tower, at the point where the abrupt change of axis of the building presents the chief architectural difficulty of the problem. The tower does evidently bind the buildings together and thus serves its purpose, while the detail, everywhere a modelling and modification of the masses, is very well adapted to further the impression of weight and solidity which the disposition of the masses gives, as well as the impression of picturesqueness which arises from the unusual arrangement. "Picturesqueness" in architecture, by the way, so far as it is an admirable quality, always gives the impression of being a casual and accidental result, and is always offensive when it is perceived to have been sought and premeditated. In this instance the picturesqueness of the building so evidently proceeds from the conditions of the problem that it is attractive by reason of its unsought and unforced character. The most conspicuous of the detail of the building is in the entrance, of which an illustration was given in the first number of this magazine. The position of this feature helps to dissemble the change of axis, and thus to further the purpose for which the tower is introduced, while its detail is truly and admirably Romanesque both in its massiveness, and in the fact, which is everywhere evident,

Buffalo, N. Y.

LIBRARY AND ART BUILDING,

Cyrus L. W. Eidlitz, Architect.

ST. PETER'S CHURCH,
Baltimore, Md. McKim, Mead & White, Architects.

that it is literally a "detailing" of the mass, and not the addition of anything extraneous. This last, of course, may equally be said of Gothic design, and indeed, in spite of its massiveness, and of the fact that none of its round arches are pointed, the general treatment of the building is such that its expression is as near to that of a sturdy Gothic as of an elaborated Romanesque, and that few changes could be needed to convert it into an unquestionably Gothic building, although it is quite plain that the architect had no intention of preserving academic purity or of presenting an example of any historical style. The Gothic and aspiring character of the design of the Buffalo building is given to it mainly by the frequent gables, and it is equally evident in another work of the same author, a design for a museum at San Diego, California, in spite of a detail equally Romanesque. This is a building on an unrestricted site and presents a front generally symmetrical, though the symmetry is obtained in the Gothic manner by a balance of masses rather than in the classic manner of providing for every feature on one wing its exact counterpart on the other. It is a very successful design, although the gabled centre of the principal block, in itself a very good composition, offers perhaps

an incongruity with the treatment of the roofs elsewhere, and the treatment of the crowning member of the tower leaves something to be desired. But the device is especially effective by which the base of this tower is incorporated with the building, while its shaft detaches itself at the cornice line, and the arcade of the nearer angle is a vigorous and effective piece of design, to which the expression of an abutment otherwise scarcely adequate is secured by the solid corbelled turrets at the corners.

A church in Baltimore, comprising also a group of parochial buildings, by Messrs. McKim, Mead and White, is one of the happiest examples of the skill of those designers and almost if not quite a unique essay of theirs in Romanesque, albeit its Romanesqueness appears rather in character than in detail. It owes its effect, indeed, more to the vigor of its massing and to the success of the general composition than to any felicity of detail. It is to pay a high compliment to a modern building to say that it is better in mass than in detail, and better in perspective than in elevation, and this may truly be said of the work under consideration. It is a modern "auditorium church" and the amphitheatrical sweep is perfectly expressed. Its expression gives rise to difficulties that are twofold, first in allying this central oval to the rectangular buildings that surround it and next in bringing the steep and conspicuous roof of the auditorium into harmonious subjection to the tower, which is a feature yet more important. These difficulties have been vanquished so completely that the ordinary observer is scarcely led to suspect that they existed, while the critical observer is forced to admire the results of what he perceives to have been the long and patient study by which the various masses are brought into a whole that has so much variety in its unity, and that is so complete a composition both from the point of view from which our illustration is taken and from the opposite point of view. Its success is enhanced by the material employed, a very dark stone used rough-faced for the walls and a dark glazed tile for the roofs. One can indeed wish that a design so successful should have been more carefully wrought out in detail. The masses here are so powerful that they would have borne a much higher elaboration than they have received, and that the spectator might have been led to linger over the parts with the same admiration that is extorted by the aspect of the whole. Rudeness is the defect of the quality of massiveness that so eminently belongs to Romanesque, but it is not in itself an artistic quality. The great solid tower is the most successful as it is the chief feature of the design and in the mass it is singularly impressive. But its massiveness and its solidity need not have been compromised, nay, they might have been promoted by a more careful modelling of its parts. A shaft of ten stages of rock-faced wall, the stages divided by unmoulded offsets, at each of which the tower is diminished in area, each pierced at the centre by one slit or by three, and the whole crowned by a steep hood is, as we see, a very striking object, but with the treatment that it receives here it has an effect of rudeness and archaism that seems affected and that has a dangerous tendency to convert it, in spite of its evidently structural character and of its mass, into "scene painters' architecture." It is as rude as an Irish round tower of the twelfth century, or as one of the earliest efforts of the Lombard builders in Italy. These structures are admirable for their *naïveté*, but an intentional *naïveté* such as the modern architect exhibits when he reproduces their rude work in spite of the later developments of it of which they could not know and of which he cannot help knowing, is not *naïveté* at all, but affectation. The quality of his work is not simplicity but *simplesse*, and so far as it appears tends to mar an admirable work. Surely there would have been no detriment to the vigor or solidity of this tower if its upper stage had been somewhat opened and somewhat lightened so as to become really a belfry stage, and if the summit had been so treated as to prepare for the hood of the roof. As it is, this hood seems to have been

casually dropped upon an unfinished tower, and this is an effect the designer cannot have intended. All the same, it would take a much worse fault to neutralize the impression of power that is given to the pile by the disposition of its masses, and the contribution that every member of it makes to the total effect.

Baltimore contains another very interesting specimen of an amphitheatrical church, designed by Mr. Cassell, in which the amphitheatre is not only completely

CHURCH,

Baltimore, Md. Chas. E. Cassell, Architect.

expressed but constitutes the building, the addition of a portico following its curve and framed between two apses, being simply an extension of it. The scheme is effective as well as expressive, and the scholarly detail is well calculated to carry out the effectiveness of the general disposition, which is still further enhanced by the combination of material employed, a light sandstone for the wrought work and a light granite for the wall field, with a roofing of glazed and corrugated dark tiles. The relation of the roofs and arcades of the flanking apses to the taller roof and arcade of the auditorium, and of the portico with its central pediment to all these is as harmonious as it is original, and the architect is very much to be congratulated. But it may be questioned whether this disposition would not have been even more successful if the circular building had been set upon a rectangular base, of which the rigid angles, if they had been treated as skillfully as the superstructure, would have given an assurance of stability which can scarcely be attained, or at least which has not been attained, in a building of which the plan is throughout curvilinear. Moreover, such a disposition would have enabled the architect to ally with his church the subordinate building which now appears quite extraneous to it if not incongruous with it. In an attempt so new as that here made, and upon the whole so successful, errors or shortcomings of detail may be condoned on much easier terms than in a case in which the designer is working upon the lines of an accepted type. The architect is entitled to the high praise of following out with fidelity the indications of his problem, and of having thus produced a successful and novel work, of which the novelty is not sought but comes of itself.

A Jewish synagogue, also in Baltimore, and built of a combination of

BALTIMORE SYNAGOGUE,

Baltimore, Md.

Chas. L. Carson, Architect.

materials similar to that of the church just described, is a striking work to which some of the details give a Romanesque character, but which in its general treatment belongs much more to the Eastern or Byzantine than to the Western or Romanesque departure from Roman architecture. The architects of synagogues in our time seem to be pretty well agreed that their works should have some suggestion of the Orient and they look for their precedents for the most part in the great repertory of Saracenic architecture. There is assuredly nothing of Saracenic in the design of the Baltimore synagogue, while the impression it makes is assuredly Asiatic, or at least Slavonic, if not distinctly Semitic. This is given to it mainly, if not entirely, by the bulbous and lustrous domical roofs of the towers and of the centre, features that even recall the Russo-Greek development of Byzantine architecture. In fact these clever and ingenious terminations alone designate the style, for if they were removed, and the octagonal shafts of the towers, the building would lose not only its Oriental character but the greater part of its architectural interest. It would not lose the impressiveness that it derives from the extent of massive wall of which the openings are so placed and so designed as to punctuate the mass. An exception to this rule occurs in the projection of the wall between the towers, and in the violent exaggeration of the size of the central opening, of which the exaggeration is rendered of no effect by the lack of modelling and by the equal exaggeration of the subdivisions. The meaningless cornices that traverse the walls at the foot of the gables are as far from being Oriental as they are from being Romanesque, and recall rather specimens of our colonial architecture than of any manner of building more germane to the designer's purpose. They give the building, indeed, the air of a "meeting-house" furnished with minarets, and that is scarcely the aspect that belongs to a synagogue. Doubtless a horizontal belt at this point is desirable, but the device employed does not supply this requisite. Indeed, the gables themselves are incongruous with the purpose and the treatment of the building, and it seems as if hipped roofs would not only have brought the substructure more into congruity with its crowning features, and supplied a motive for the horizontal band that is now motiveless, but would also have considerably improved the relation between what is now a somewhat commonplace and a somewhat awkward building, and a dome and towers which have spirit and character—a relation that at present is not fortunate.

In commercial architecture there is scarcely an American city, unless it be in the far South, which does not contain specimens of what the designers at least believed to be Richardsonian Romanesque, and many of them are of a high interest. The prototype of many of them is Mr. Richardson's own Field building in Chicago, which was perhaps his most important and successful work in that kind. The reproductions of it are not commonly very successful, and scarcely one is worthy of a comparison with the original, although analysis might have led an architect very much inferior to Mr. Richardson in power to advance upon it by avoiding such defects as became obvious in execution. The great commercial buildings in Chicago, designed by Messrs. Burnham & Root, are distinctly Romanesque in their inspiration, though they owe little directly to Mr. Richardson, and indeed testify to a very distinct artistic individuality in their designer. As building projects, so to speak, apart from their architectural merits, they have a very high interest, for scarcely any other American city has such a piece of intelligent planning and administration on so great a scale for housing a great colony of business men in the most commodious fashion as is presented by the Rookery, or, in another department, an enterprise on an equal scale so well conceived and executed as Messrs. Adler & Sullivan's Auditorium. In respect of architecture the Art Institute, admirably discreet and quiet and well-studied in its design, is as unmistakably Romanesque as it is unmistakably individual, and the successful feat-

YOUTH'S COMPANION BUILDING,

Boston, Mass.

H. W. Hartwell and Wm. C. Richardson, Architects.

ures of such buildings as the Insurance Exchange and the Phœnix have the same quality. By far the best of these features and one of the most artistic pieces of architecture in the country is the entrance to the Phœnix building. The admirable building of the *Pioneer-Press* in St. Paul is an extension rather of the work of Mr. Root than of that of Mr. Richardson.

ENTRANCE TO WAREHOUSE,

Boston, Mass. Peabody & Stearns, Architects.

There is a distinction to be taken between the commercial architecture that preceded the elevator and that to which the elevator has given rise. The limit of commercial building, when the elevator is not employed, is five stories, or at the utmost six, and such a building offers a problem so much easier and more inviting to a designer that he is entitled to congratulate himself upon it. Of course, even a five-story building is more commodious and desirable with an elevator than without it, and the value of land must be great to justify the rearing of a taller structure. Some of the most distressing architectural results of the elevator have been produced in places in which common sense has been so far overridden by local pride or personal vanity as to induce an owner to rear a building twice as high as is called for by the obvious conditions of the town to which it is expected to be an ornament and upon which it is in fact a monstrous excrescence. Such a straightforward and practical design as that of the building of the *Youth's Companion* in Boston, which owes most of its architectural effect to its evident straightforwardness and practicality would have its difficulties increased by an addition even of another story, and after that the increase would be in a geometrical ratio. Here the design consists in the grouping of the first two stories into an architectural

WAREHOUSE,

Boston, Mass.

Peabody & Stearns, Architects.

San Diego, Cal.

DESIGN FOR FINE ARTS ACADEMY,

Cyrus L. W. Eidlitz, Architect.

basement, united by the emphatic string course that separates them from the superstructure, and by the large arched entrance that includes them both ; in the grouping of the next two by the prolongation of the openings, and in the superposition of a light and simple attic, while the corners are strongly reinforced by the widening of their piers and the solidity of their treatment, relieved in the lower story only by a single arched opening at the centre of each. This treatment gives the building to which it is applied an aspect that is not only commercial but eminently business-like, but the problem here is by no means that presented by the typical American business building of to-day, and in this instance its solution is facilitated by a very ample area. It is to the solidity of these corners that the building mainly owes its Romanesque character, for the arcades framed between the piers, though detailed in tolerably consistent Romanesque, are of a lightness quite foreign to the style.

Boston contains another interesting example of a Romanesque commercial architecture in a warehouse built some years ago from the designs of Messrs. Peabody & Stearns, where the architects had the same advantage of a considerable area and a moderate height. The building is of five stories, of which the lowest is given to the basement and the uppermost to the attic, while the three intermediate are strongly bound together into a single division by the prolongation of the openings. The piers reserved at the angles are ample, and the treatment is of an appropriate severity. The openings of the basement are absolutely

LADIES' WAITING ROOM IN STORE.

Boston, Mass. Peabody & Stearns, Architects.

THE PUBLIC LIBRARY,

New London, Conn. Shepley, Rutan & Coolidge, Architects.

CHRIST CHURCH,

Andover, Mass. Hartwell & Richardson, Architects.

DESIGN FOR FIRE HEADQUARTERS,

Brooklyn, N. Y.

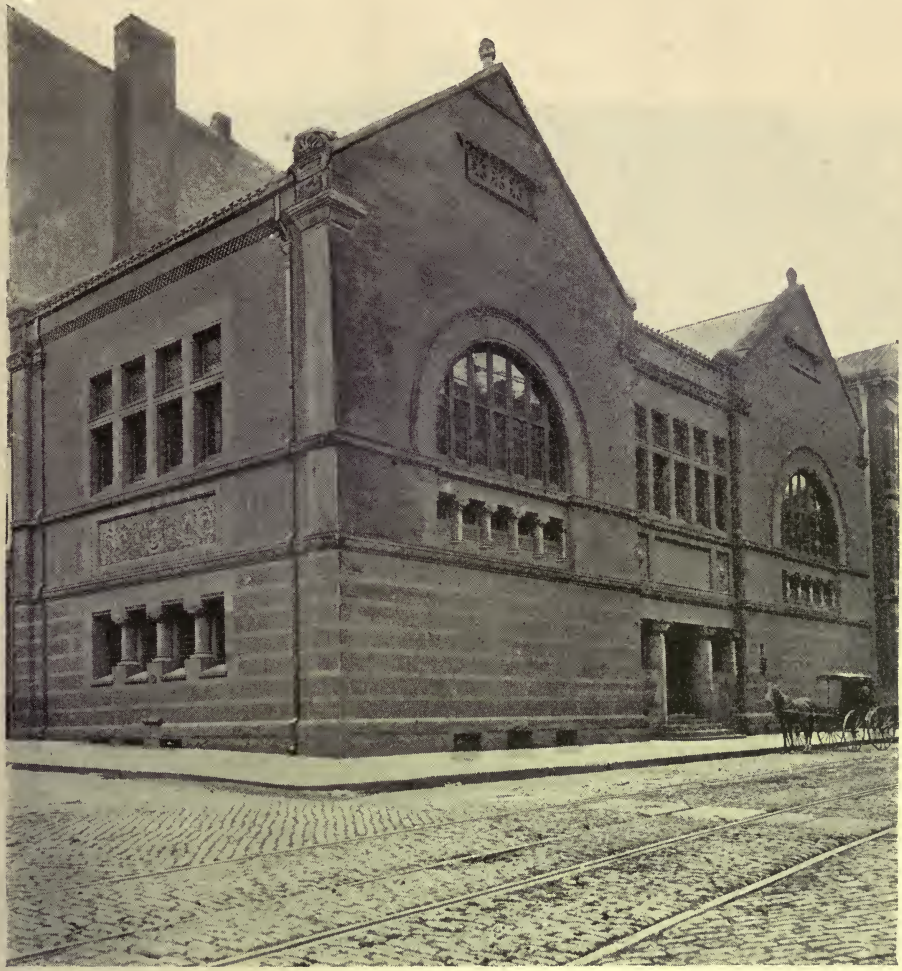
F. Freeman, Architect.

plain; the decoration of the central division is very sparing and strictly limited to the expression of the structure in the rough labels of the openings and the quoining of the angles, and to an effective emphasis of the impost of the arches. The attic might perhaps properly have been more lightened and enriched, for though it is subdivided, the treatment of it is as massive and rude as that of the basement. In any case it needs an effective cornice, and its base, in which the use of the columns, which might perhaps advantageously have been made still more sturdy than they are, secures a free circulation without seriously compromising the apparent stability and massiveness of the work. This feature seems to have attracted the admiration of the designer of the Central Savings Bank in Baltimore, in the entrance of which its design is reproduced, with modifications, of which the thickening

THE MARYLAND CLUB,

Baltimore, Md. Baldwin & Pennington, Architects.

the more with the baldness of the treatment adopted, instead of the plain parapet, with no projection at all, by which it is surmounted. In a building of which it is impracticable to exhibit the roof, it is the more necessary to suggest it by means of an emphatic cornice, and the omission of it here entails much the same unfortunate failure of expressiveness that would be inflicted upon a human countenance by the omission of the eyebrows. On the other hand, the treatment of the truncated angle, in which one bay of the fronts is reproduced, is extremely effective, as is that of the entrance at of the lintel and the shortening of the columns are decided improvements, as enhancing the expression of strength at a point where that expression is urgently needed. The Farmers' and Merchants' Bank, also in Baltimore, a building which is evidently meant as an example of Romanesque, shows again the facility for an effective disposition which is given by a moderate number of stories, and the general arrangement of a tall and massive basement of three grouped stories and of an attic above, is well marked and well proportioned, and it is emphasized by the introduction at the angle of a corbelled oriel



THE MERCANTILE TRUST AND DEPOSIT CO.'S BUILDING,
Baltimore, Md. Wyatt & Sperry, Architects.

running through the main division. It is not so happily detailed as to secure all the effect the general scheme promises. Indeed, there is no detail which can be called felicitous, while there is a conspicuous infelicity in the introduction of the two-story projecting sash-frames in the principal division, an infelicity which is aggravated by their treatment. The Maryland Club, a building in the white Baltimore County marble, by the same designers, equally an example of Romanesque, is, as to its detail, a much more satisfactory example of their skill, and the gabled centre of the principal front is a broad, massive and effective piece of design. It will be seen, however, that the tower at the angle is not fitted, either by its dimensions or by its design, to effect its architectural purpose of uniting and dominating the two fronts.

The most admirable of the commercial buildings of Baltimore is doubtless the Mercantile Trust and Deposit Company, though it is only with some hesitation that it can be classed as an example of Romanesque. The short stout columns of the colonnades are

CENTRAL SAVINGS BANK BUILDING,

Baltimore, Md. Chas. L. Carson, Architect.

THE FARMERS' AND MERCHANTS' BANK,

Baltimore, Md.

Baldwin & Pennington, Architects.

Romanesque, and so are the massive columns of the entrance, in which the same device we have just seen is repeated, of merging the columns into a supporting wall without the intervention of bases, and the carving throughout is Byzantine. Other detail, however, as that of the openings in the gables and the fret of the screen wall in the colonnades, is as unmistakably classic. In fact, in spite of the mixture of styles, the total effect of the building is one of classic purity, by reason of the art which has been bestowed upon the proportioning of its masses and the adjustment of its detail. One need not know even so much about the requirements of the building as the inscription tells him to be assured that these have supplied the basis of the design and that the building is the outcome of them, so straightforward and expressive is the treatment throughout. It is very rarely that an architect has the good fortune to design a building, especially a commercial building, of which a chief requirement is that the lower stage shall be almost an unbroken mass of wall; and it is still more rarely that his work shows a

MR. WINAN'S STABLE,

Baltimore, Md. Wyatt & Nölting, Architects.

consciousness of his good fortune. The ordinary designer, given a considerable expanse of blank wall, is apt to show even an impatience of it and a desire to "do something" with it. Here the basement of the longer front is a wall quite blank except for the entrance at the centre, the simplicity and massiveness of which emphasizes instead of relieving its expanse, which is further emphasized by the introduction in its brick-work of narrow courses of stone that not only develop its lateral dimension, but increase its apparent strength by the expression of bonding. A continuance of this treatment through the superstructure would result in a grievous monotony. This has been avoided in the principal front by the development of the triple division merely indicated in the basement into two gabled wings and a depressed centre, which is itself much lighter and more open in treatment than the flanking walls. On the side it is avoided by the range of four colonnaded openings, still very massive in treatment, at the centre of the basement, and by the repetition in the upper story of the central feature of the longer front. Perhaps the happiest point of the composition is the intervention of the frieze between the upper and lower stories, which brings them into harmonious relation and gives the building an effective triple division vertically. The detail is as carefully and successfully studied as the general de-

WAREHOUSE,

St. Louis, Mo. Shepley, Rutan & Coolidge, Architects.

sign, whether it be the strictly architectural detail of structural members and of mouldings, or the strictly decorative detail, such as the panel in terra cotta between the stories at the centre of the side. We may classify this building as Romanesque, upon the ground that it is more Romanesque than it is anything else, though it might nearly as well be called Neo-Grec. It has, at any rate, a high degree of massiveness and simplicity without degenerating anywhere into rudeness or clumsiness, and it is an unmistakably eclectic building, of which nevertheless the predominant impression is of purity. This is an unusual triumph in contemporary architecture. A brick stable in Baltimore, though in comparison a very unpretentious work, shows these same qualities almost in an equal degree, and is almost equally successful in its kind.

It is in "elevator architecture," however, that the test of the applicability of a style to commercial uses must be sought, while it is in elevator architecture that it is most clearly out of the question to produce examples of Romanesque or of any other historical style. It is like attempting to write an essay upon the events of the day in classic Latin. It cannot be done without the use of locutions

> "That would have made Quintilian stare and gasp."

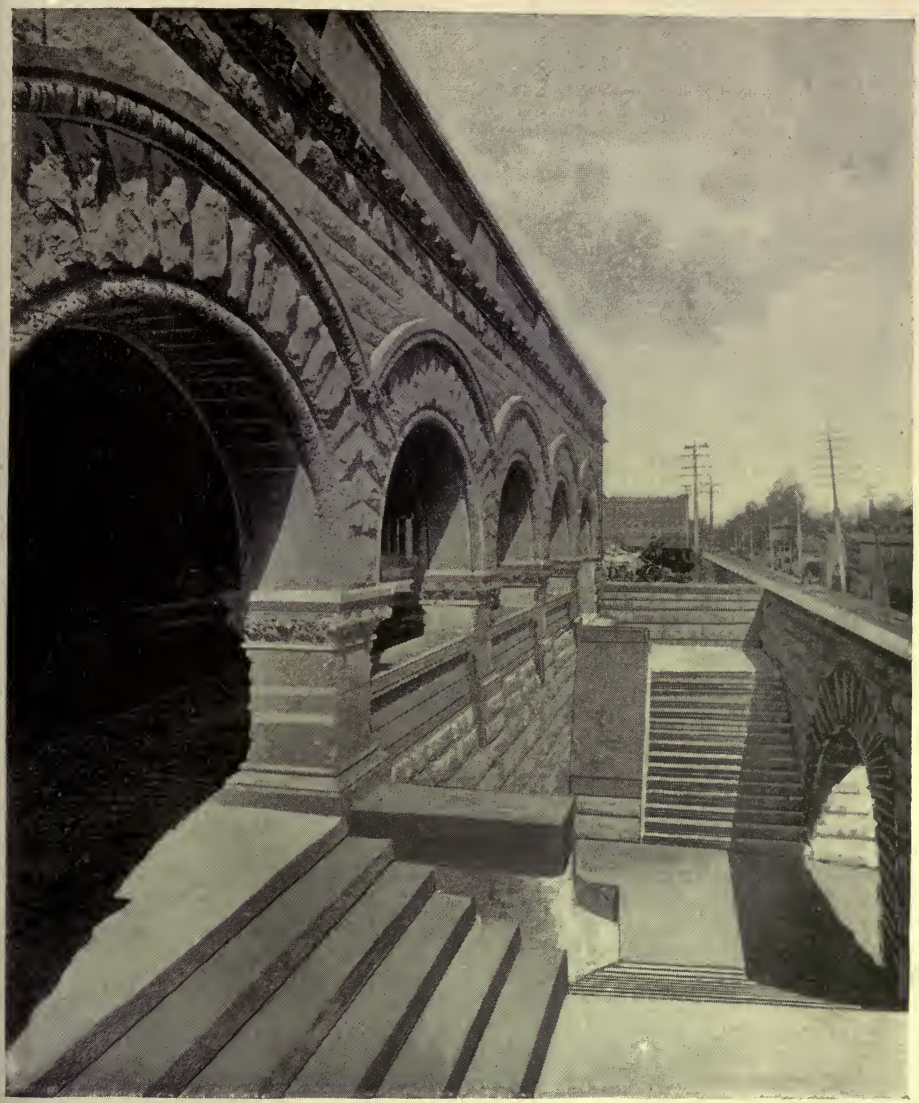
One can of course use Romanesque details, and even Romanesque features in unmistakably modern buildings; and one can, if he have skill enough, give a Romanesque character, the character of massiveness and simplicity, of "rest and immobility," even to a modern warehouse or office-building. One of the most interesting essays in this kind is the Limberger warehouse in St. Louis, of which the design was obviously enough suggested by Mr. Richardson's very impressive Field building in Chicago. Like that, this is but of seven stories, and so much more manageable than if it were taller, and it has the further advantage of an ample area, though by no means so great as that of its vast prototype. The chief resemblances are in the segmental arches of the basement, of which the treatment is almost identical, except that in the later work they are continued to the ground, in the great arcade of three stories next above the basement and in the rugged and almost cyclopean expression of the masonry. The differences are marked and interesting. In the Field building there is no lateral division except what is enforced by the great openings and is recognized above by the piers of the upper arcade and by the piers of the colonnaded attic. This treatment of course emphasizes the lateral extent of the building, and is more appropriate to a building of great magnitude where it is practicable to arrange a series of openings innumerable, or not readily numerable, by the eye, than in a building of moderate dimensions. In the later building, the division into bays is insisted on and marked by a projecting strip of pier which is continued downward from the attic until it merges into the battering basement. The attic of the Field building, in spite of the interruptions caused by the reappearance of the lower piers, is virtually almost a continuous colonnade, while in the Limberger building it consists of three square openings in each bay, and enforces the division below. All these changes may be regarded as due to the changed conditions of the problem in which, the magnitude not being of itself so impressively great, it is the less desirable to make sacrifices to its development; and they do not necessarily imply any criticism upon the model. It is otherwise with the substitution, above the great arcade, of two stories of lintelled openings, four in each bay, for the two-story arcade of the Field building, with openings doubled over each of the larger openings below. Doubtless this change implies a criticism, and the criticism seems to be just, whether or not it has been quite successfully obviated. Without doubt the superposition of the arcades is the least successful point of design in the Field building, since the scale of the upper is not so much less as to make it coöperate with the lower, or seem a subordinate appendage to it, but allows the upper to assert itself as an independent and competing member

AMES BUILDING,
Boston, Mass.
Shepley, Rutan & Coolidge, Architects.

of the composition. The same defect appears in the design of the New York Produce Exchange. The change of motive in the St. Louis warehouse is therefore not a capricious variation, and the two tiers of lintelled openings do not compete directly with the arcade, though it cannot be said that they directly coöperate with it or contribute to its effect, as would be necessary to the complete success of the design. A more successful composition in this respect is that of the Masonic building in Pittsburg, a front of six stories in dark brown stone. Here the basement is of two stories, while a tall arcaded attic of a single story traverses the whole front, whereas below, the centre of the building, three openings wide, is framed between wings more massively treated, and each pierced in each story with a single opening much smaller than the openings of the centre. This arrangement allows of the introduction of a store front with supports as attenuated as a store front demands, but which is saved from the disastrous result that usually ensues from such attenuation, both by the solidity of its frame and by the general massiveness of the treatment. Above this the central division consists of three tall stories, of which the openings of the upper are lintelled, with mullions and transoms, while the other two, though grouped by the continuation of the openings, which are closed by traceried arches, are nevertheless sharply distinguished from each other by an emphatic transom at the floor line. The feature thus formed, and effectively framed by the flanking piers, evidently consists of three members, of which the uppermost is an effective culmination, as neither the two-story arcade of the Field building, nor the two stories of lintelled openings of the Limberger building can be said to be.

MASONIC BUILDING,
Pittsburgh, Pa. Shepley, Rutan & Coolidge, Architects.

Perhaps part of this difference may be attributed to the greater difficulties of design that a building of seven stories presents over one of six. However that may be, it is certain that the difficulties of the designer of an elevator building, properly so called, increase very much more than directly as its height. The Ames building in Boston presents one of the really crucial problems of elevator architecture, a building of moderate area and of immoderate altitude, of which all the stories are to be put to the same or very



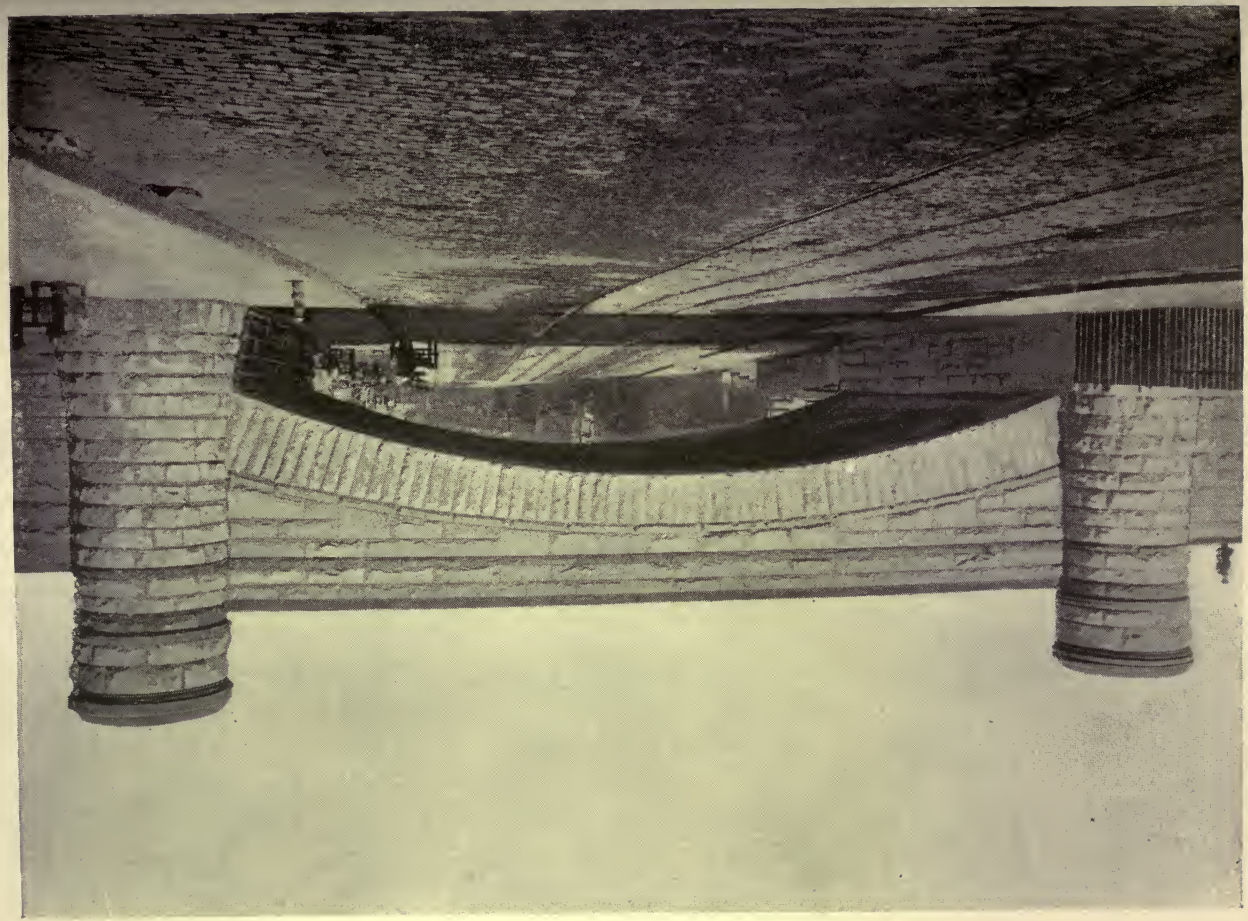
BOSTON & ALBANY R. R. STATION,

Springfield, Mass. Shepley, Rutan & Coolidge, Architects.

similar uses. So successfully has this problem been solved in the Ames building that this edifice has been chosen by Professor Kerr, in his continuation of Fergusson's "History of Modern Architecture," as the typical specimen of American elevator architecture ; and it would be hard to make a better choice. A three-story basement of light granite carries an eight-story superstructure of light sandstone, which in turn is surmounted by an arcaded attic and a cornice of very great projection, an incident of which is still another story. With a fourteen-story building, on a site of not much more than 6,000 feet in area, a tower-like treatment is absolutely enforced ; and such a treatment has been carried out here, upon the whole with brilliant success. Nothing

could well be happier than the design of the basement, in which the designer had the advantage of one story considerably more important than the others, and which of itself has an unmistakable and harmonious triple division. Nor does the treatment of the upper member of the composition leave anything to be desired. In such a building, where it is impracticable to exhibit the actual roof, the summit, as all architects of successful spireless towers have found, must be strongly marked and the roof that cannot be shown must be suggested ; and here this purpose is admirably attained by the spreading cornice. The central and chief division, the shaft of the tower, so to say, is not only justly and effectively proportioned to its supporting and to its crowning member, but it is very effectively framed between the plain and solid corners that give an assurance of strength and stability. In the design of the stories thus fortified there arises the same difficulty that we have noted in the Field building and in the Limberger building. The motive of the latter has been adopted here, and an arcade of five stories carries three stories of lintelled openings, with the effect less of a combination than of a competition. We may grant that an identical treatment of eight stories would be intolerably monotonous, though with the variety secured here by the treatment of the basement and the attic that does not seem quite certain. At any rate, in a building that has a general triple division, the sub-division of one of the principal divisions into two masses, of which one is not a mere appendage to the other, seems an error. At least the result of it is not completely fortunate in any one of the three buildings in which we have been considering it. If the predominant member of the composition must be sub-divided, it seems that it must again be triply sub-divided like the whole into a beginning, a middle and an end of its own, as is so effectively done in the front of the Masonic building at Pittsburg. The defect thus indicated does not prevent the Ames building from being a very impressive and dignified work, equally admirable in mass and in detail, and perhaps the most successful example in the country of the adaptation of Romanesque architecture to an extreme requirement of "elevator building."

The distinction between engineering and architecture is very modern, and it really applies less to the character than to the classification of the works which are by custom allotted to the practitioners of these arts respectively. The erection of a twelve-story building on an untrustworthy soil is a problem involving as much mechanical knowledge and consideration as most engineering works. Engineering, like architecture, is the art of building, but in modern practice it is the art of building structures which are works of bare utility, and of which the owner does not much care how they look, though of course there is no reason why a bridge should be less a work of fine art than an office building. Until within a few years all structures pertaining to railroads were allotted to engineers as a matter of course, except in the case of important city stations where architects were called in to furnish exteriors to the works of engineers, and where we may see the structures which the architects were not enough constructors to be intrusted with adjoining the structures which the engineers were not artists enough to be intrusted with, with an effect of much confusion and incongruity. Although this practice is by no means obsolete, there is an increasing tendency to intrust the design of stations to architects. As we have seen with regard to the Mott Haven station at New York (*Architectural Record*, No. 1, p. 25), and as many other instances might be adduced to show, this practice has resulted in great benefits to people who care about architecture. One of the most striking of these instances is the station of the Boston and Albany Road at Springfield, a group of buildings of high architectural interest, of which an illustration is given. There is an inherent force in the long and low and sturdy arcade of the *porte-cochère* that it could not wholly have lost if treated with the baldness of ordinary engineering work, but it is evident how greatly



this impressiveness has been heightened by the careful proportioning and adjustment of the parts, by the definition of the impost and of the arches, and by the sparing but effective decoration which helps to express this arrangement; and these things are the fruit of a strictly architectural training. A still more noteworthy example of the advantages of this training is furnished by the bridge that carries the railroad over a street, and that belongs to the category of works usually relegated by common consent to the engineer. It is here still more noteworthy because here there is no ornament, not so much as a moulding except in the upper members of the flanking turrets, but the whole force of the work resides in the disposition of the masses which again merely expresses the facts of structure. An arch of 70 feet span with so slight a rise as this obviously needs for its stability voussoirs of great depth, and the great depth of voussoir, which so often appears a merely capricious exaggeration, is here seen to be neither a caprice nor an exaggeration but the simple and straightforward response to a real requirement of the structure, while the single unmoulded course at the extrados serves to define the arch. Another obvious requirement in an arch so broad and low is an unusually ample abutment. This abutment is doubtless in fact provided by the prolongation of the wall, but it needs to be expressed and emphasized to furnish a visible guarantee of the sufficiency of the abutment and the immobility of the arch. This is the purpose that is served by the turrets. Perhaps it might have been even better served if these flanking masses had been rectangular instead of curved in plan, for as we have already seen, a circular base has not the same aspect of rigidity as one that shows corners. The poet knew what he was about when he likened his hero to a

> "Tower of strength
> Which stood four-square to all the winds that blew,"

and would by no means have produced the same effect if he had compared him to a round tower. It is questionable, also, if the general ruggedness of the treatment, perfectly appropriate to its purpose, might not have been mitigated with advantage in the parapet. This is in fact merely a screen, and as such its only requisite is that it should be opaque. By giving it an aspect of great weight and massiveness, it is made to increase the apparent load upon the arch, and in consequence the apparent thrust against the abutments. But that the design of a railroad bridge should tempt one into these minute criticisms is in itself a testimony to the immeasurable superiority of the work so criticised as a work of art to the usual works of its class, and really an additional tribute to the success of the design.

In city houses throughout the country the influence of Richardson has been perhaps even more marked than in any other class of buildings, but in most cases it has operated by the unprofitable method of direct imitation, and has consisted in fastening "features" from his work upon buildings of inconsistent physiognomies, or no physiognomies at all, which is much as if one should attempt to make up a countenance from a collection of mouths and eyes and noses, "by taking the best parts out of divers faces to make one excellent," as Bacon accused Albert Durer of doing. Such a procedure no more leads to ideal beauty in architecture than in painting. There are doubtless many single dwellings of which the designers have been inspired by Richardson's work to do something good in the Romanesque spirit, but in their own way. Summit avenue in St. Paul, the north and the south sides of Chicago, and Mount Vernon square in Baltimore furnish interesting examples, and in the last-named city Mr. Cassell has attempted, with a considerable degree of success, a row of dwellings of moderate size and pretensions, of which the spirit is undeniably Romanesque. In many of Mr. Richardson's own city houses the Romanesqueness is carried much further than a consideration of what ought to be the aspect of an American city house in our day would warrant. The rectory of Trinity Church, Boston, remains one of

the most interesting of his essays in this department, and it is the more interesting and suggestive because, with all its spirit and picturesqueness, it is still a decorous and well-behaved city house, a residence suitable for an American gentleman. While the imitators have been at it, it is rather surprising that they should not have imitated much more extensively the device of withdrawing and sheltering the steps and the "stoop" behind the front wall, a device which is as sensible and practical in our climate as the architectural outcome of it is here effective.

In a country house much more of fantasy can properly be indulged, but even in a country house it is doubtful whether many architects have the good fortune to fall in with clients who desire these dwellings to wear a really Romanesque aspect. One such is evidently the owner of the massive and rugged and picturesque country house in Massachusetts, the photograph of which one would be likelier to take for a chateau of the twelfth century in Languedoc than for the residence of a "railroad magnate" in our prosaic time, and in matter-of-fact Massachusetts. But there can be no doubt either of the satisfaction with which a sensitive American architect must hail such an opportunity, or of the satisfaction with which a sensitive American observer contemplates the use that has been made of it. A much simpler and smaller and more conventional country house near Baltimore shows the applicability of the style to the more usual problems of the American designers of country houses.

RESIDENCE OF GABRIEL DU VAL, ESQ., Near Baltimore, Md.

Wyatt & Nölting, Architects.

Such an array of buildings in so many different kinds, some admirable, many suggestive and nearly all in some degree interesting, constitutes at once an impressive demonstration of the extent to which the Romanesque revival

has already gone, and a promise that in the future it may go further and fare better. What we have called the Richardsonian Romanesque has for the most part been done within the past five years, within the years that have elapsed since the death of Mr. Richardson himself. While he was living and practising architecture, architects who regarded themselves as in any degree his rivals were naturally loth to introduce in a design dispositions or features or details, of which the suggestion plainly came from him. Since his death has "extinguished envy" and ended rivalry the admiration his work excited has been freer to express itself either in direct imitation or in the adoption and elaboration of the suggestions his work furnished. These pages have furnished illustrations of both these processes. The body of Romanesque work in this country is now more extensive, and upon the whole more meritorious than the building of any style which our architects had previously taken as the point of departure for a "movement,"

COUNTRY HOUSE,

Dedham, Mass. Shepley, Rutan & Coolidge, Architects.

excepting only the Gothic revival. That an architect must build upon the past is plain enough. It is equally plain that if he means to produce an artistic result, he must select, as a starting point, some phase of past architecture in which a definite style, "a consistent system of construction and decoration," has already been attained. Rightly construed, this apparent limitation is not a real limitation. It does not forbid eclecticism, as we have seen in several of the most interesting works illustrated in these papers; it requires only that eclecticism shall be so conducted as not to impair the impression of artistic unity, of style, of "a consistent system of construction and decoration." One may compose well in any style that fulfills this definition, and may add to it details and features

Newport, R. I. RESIDFNCE DESIGNED FOR THE LATE MISS CATHARINE L. WOLFE, Peabody & Stearns, Architects.

STAIRCASE IN COURT HOUSE,
Pittsburgh, Pa. H. H. Richardson, Architect.

which the past practitioners of the style did not use, just as one may write well and purely in any language without confining himself to the vocabulary of its classical literature when he has something new to express. A style like a language is dead when it ceases to grow and change. This is a very different thing from a hodge-podge of eclecticism which attests either the eclectic's ignorance of "styles" or his insensibility to style, or both. We do not look for any masterpieces of prose or verse in Volapük. Nor is the selection of an historical style as a starting-point inconsistent with life and progress, provided the style chosen be in itself rational and consistent, and provided it be chosen as a point of departure. The style which has prevailed throughout continental Europe for three centuries is not such a style. It is not a consistent system of construction and decoration, because it uses one system of construction as the decoration of another system of construction. It is

essentially the "classical or transitional Roman," and no progress in it is possible until it is freed of its inherent contradictions. The Romanesque builders, as we have seen, freed it of its contradictions, giving the antique column a function to perform in an arched construction, and discarding altogether the antique entablature. The French architects have, indeed, made essays much earnest and intelligent and some brilliant work, it failed to "impose itself." The reason is not very far to seek. In the hands of all but its strongest practitioners the American variety of Victorian Gothic became a thing of shreds and patches, of which the effect was so uneasy that the judicious observer was often led to wish that the incompetent designer had remained

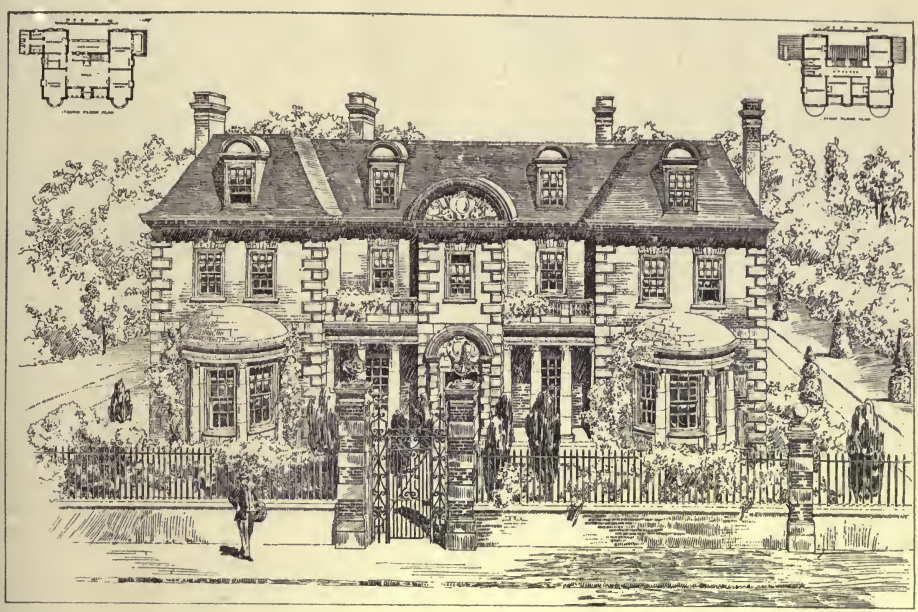
WAITING ROOM IN STORE,

Boston, Mass. Peabody & Stearns, Architects.

towards rationalizing their official style, as in the omission of the orders in such a building as the library of Ste. Genevieve, or as the reversion to a lintelled construction in such a building as the Faculty of Medicine, but these isolated exceptions emphasize the rule of irrationality. For our purpose the choice of a point of departure may be taken to lie between the two phases of mediæval architecture. The Gothic we have already tried, and in spite of in the comparative safety of the American Renaissance. The expression even of the historical masterpieces of Gothic art, doubtless the most wonderful and intellectually the most admirable of all the works of man in the art of building, is the expression of ideas and sentiments that do not belong to our time. Mr. Moore contends, with much force, that the only truly Gothic building is a fully developed cathedral; and indeed it is evident that the vast

repertory of detail and of ornament which Gothic architecture has bequeathed to us was very largely developed from the buttress-system of which the cathedral was the perfect and typical example. Romanesque is, indeed, not applicable to all our needs. It is essentially and almost exclusively an architecture of stone-work. It furnishes no precedents for timber construction, and very few for brick-work, since a building in which brick is used merely for the fields of wall, and stone for the features, is not an example of an architecture of baked clay. Nevertheless, Romanesque may be commended as a point of departure for modern architects precisely because it has never reached its ultimate perfection, as Gothic did. There is not in the world what may be called a completely typical specimen of Romanesque in the sense in which there are completely typical specimens of Greek Doric or of French Gothic. In this there is still room for improvement, for development. As the besetting tendency of Gothic is to tenuity and complication and unrest, so the besetting tendency of Romanesque is to clumsiness and crudity and rudeness. Where mass and weight and power are to be expressed it leaves nothing to be desired, but we can scarcely point either in the original or thus far in the revived Romanesque, to a design that can fairly be called "elegant." Yet elegance is a quality as suitable for architectural expression as force, and no style can be accounted complete until it is adequate to every expression. It is in this direction that modern architects may develop Romanesque into the elegance of later Gothic, without direct resort to Gothic precedents, and without losing the vigor and massiveness of Romanesque as we know it, where these qualities are required. It is not by any means a question of pointed arches or round. History shows plainly enough that the pointed arch was introduced, not at all because the designers who introduced it preferred its form to that of the round arch, but because they needed it as a constructive expedient in the development of the vaulting system. The proof is furnished by the many transitional buildings of which the builders used round arches where they could and pointed arches only where they must, and the apertures of the walls were at last pointed only in order to conform to the structural arches the form of which was determined by their function. We are no longer bound by the exigencies of a vaulting system, and the development of Romanesque in the direction of elegance and refinement, which is the one thing needful to adapt it to all that we require of an architecture in masonry, need not take again the same direction which it took in the thirteenth century. A too literal adherence to Romanesque precedents on the part of a modern architect does not, as we have seen, reproduce the effect of simplicity and *naïveté* that is made by the work of the early Romanesque builders who were working towards the solution of problems which their successors solved, and of which we know the solution. What was childlike in their work is childish in ours. It is by beginning where they left off and not where they began—by taking their work as a point of departure and not as a point of arrival, that the architects of our day can create the beginnings of a true and living architecture, such as for four centuries the world has not seen. The Romanesque revival in this country is the most promising sign of such a movement that has yet appeared.

Montgomery Schuyler.



London, Eng. RESIDENCE, R. A. Briggs, Architect.

WHAT IS ARCHITECTURE?

FIRST let us marshal the authorities:

"The art of building specifically of fine or beautiful building. Architecture includes, in the widest sense—(1) the principles of design and of ornament as applied to building; (2) the science of construction, including the properties of materials and the methods of combining them; and (3) the practice of construction, including estimates of cost and the directing of builders and workmen. The practice of this art requires skill in design, which is the special province of the architect, and skill in execution, which is the special province of the workman whom the architect employs and directs. It is the function of skill in architectural design to combine in a harmonious scheme the independent and often hostile requirements—(1) of use and convenience as dictated by the conditions of the problem in hand; (2) of constructive necessity and fitness as determined either by practical experience or by scientific theory; and (3) of artistic excellence in the proportions of the parts and in the decorative treatment of details, in accordance with either principles and canons of good taste or the prescriptions of custom or tradition. It is the function of skill in execution practically to carry out the scheme so designed; and this skill is exercised by draftsmen, surveyors, mechanics, artisans and artists, each in his place. Architecture is properly distinguished from mere building by the presence of the decorative or artistic element."—*Century Dictionary.*

"Architecture is the art of building according to principles which are determined, not merely by the ends the edifice is intended to serve, but by considerations of beauty and harmony. It cannot be defined as the art of building simply, or even of building well. The end of building as such is convenience, use, irrespective of appearance; and the employment of materials to this end is regulated by the mechanical principles of the constructive art. The end of architecture as an art, on the other hand, is so to arrange the plan, masses and enrichments of a structure as to impart to it interest, beauty, grandeur, unity, power. Architecture thus necessitates the possession by the builder of gifts of imagination as well as of technical skill, and in all works of architecture properly so called these elements must exist and be harmoniously combined. The greatest works of the architect must always be those in which the imagination of the artist is most plainly seen."—*Encyclopædia Britannica.*

"Architecture is the art which so disposes and adorns the edifices raised by man for whatsoever uses, that the sight of them contributes to his mental health, power, and pleasures. It is very necessary, in the outset of all inquiry, to distinguish carefully between architecture and building."—*Ruskin.*

"Ornamentation is the principal part of architecture. That is to say, that the highest nobility of a building does not consist in its being well built, but in its being nobly sculptured or painted."—*Ruskin.*

"The proper definition of architecture is merely the art of designing sculpture for a particular place, and placing it there on the best principle of building."—*Ruskin.*

"Architecture is nothing more or less than the art of ornamental and ornamented construction."—*Fergusson.*

"The forms of combinations in all styles of architecture are but so many means of suiting the climate and country in which they are used."—*Gwilt.*

"Architecture, the art of building, includes two elements, theory and practice. The former comprehends the fine art side proper, the body of the general rules inspired by taste and based on tradition, and the science which admits of demonstrations by means of invariable and absolute formulas. Practice is the application of theory to particular needs; it is practice which causes the art and the science to conform to the nature of materials, to climate, to the customs of a period, or to the necessities of the occasion."—*Viollet-le-Duc.*

"Architecture is the art of construction according to the principles of the beautiful."—*Blanc.*

"The attentive study of the architecture of the different people of antiquity shows us in an unmistakable manner that what we call the style and character of the architecture is not only determined by the taste and needs of the population, but is influenced even by the nature of the country in which the ancient architects exercised their arts."—*Texier and Pullan.*

A truly astonishing variety which it would be easy to extend, but these are ample evidence of the opinions of the doctors, thus reflecting, in a degree, the opinions of lesser folk whose opportunities for forming a judgment on such a subject is more limited than those who have made architecture their life work. At the best the art of defining is a difficult one, and it is especially so in a subject embracing so many different elements as architecture. As a matter of fact, most of those who have essayed to define the word have solved the problem by either limiting it to beautiful work or to that in which beauty or ornament—two terms apparently closely united, but frequently thoroughly opposed to one another—are included. Mr. Fergusson, whose enormous popular following is only exceeded by his general untrustworthiness and unsuitability as a chronicler of architectural history, took the trouble to illustrate his definition by a diagram, at one end of which was a structure whose hideous plainness was much like an ordinary factory, and which through a series of applications of various quantities of ornament and decoration was transformed, at the other end, into a palatial façade of truly amazing proportions. This was architecture; the other stages of the progression were buildings or constructions.

No distinction could well be more misleading, and it would have been hard to have composed a more artificial definition. It is true there is an impression among general readers and observers, as well as specialists, who should know better, that if architecture is not ornamental or ornamented building, it is not far from it. Mr. Ruskin, for example, has devoted much of his life to the composing of definitions of architecture, and has propounded some of the most extraordinary and fanciful conceptions that have been given to the world, yet every one of them is but the expression of his own ideas, his individual impression, the statement of what he thinks architecture is or should be.

The fact is, the definers of architecture base their definitions upon what they see around them. They are fascinated by the great monuments of architectural art and refuse to admit anything unpretentious into their field of vision, unless forced to do so by the paucity of other memorials. In the present day we do not build monumental structures to feast our eyes upon, but many writers obviously compile their definitions upon modern practices and needs. The complex conditions of the day lie at the base of their meanings, not the historical associations or the story contained in

Paris. CHURCH OF THE SACRED HEART, The late M. Abbadie, Architect.

the record of the art from immemorial ages.

Architecture is the most ancient of the arts. Not as we know it, not as it was practised in ancient Egypt or Assyria, or even in the stupendous monuments of ancient India, of unknown age and origin. If "architecture is the art of building according to principles which are determined, not merely by the ends the edifice is intended to serve, but by considerations of beauty and harmony," then indeed is its origin recent and its history comparatively modern. But the structures in which beauty and harmony are considered are the successors to other structures into which these elements do not enter or in which their influence can only be traced in a rudimentary degree. The houses and buildings that line our streets to-day are the legitimate successors, or descendants if that be a better word, of the huts and "lean-to's" erected by primitive man in the primeval forest. In other words, the complex modern office buildings or dwellings with all their harmony and beauty, their ornamental and ornamented construction, their contributions to the mental health, power and pleasure of man, with whatsoever other qualities the imagination of the artistic critic may suggest, fulfill the same function in modern life, perform the same duty in modern society as the hut does for the rudest savage in the lowest stage of humanity.

Like all other things, architecture had a beginning; it could not have originated in any known edifice, because if the date or time of its erection is not known, the skill required in the construction of any structure that has survived from a distant past is sufficient to show that some earlier experience must have preceded it. Those, therefore, who search the sands of Egypt, the mounds of Assyria for the earliest architectural work of men are deluding themselves with a false idea. It may be possible in one or the other of these localities to find the earliest known historical monument, the earliest structure whose history can actually be traced, but not the earliest feeble attempts man made in providing himself with shelter. The origin of architecture must be sought in prehistoric, not in historic times, and the conditions there found must explain the meaning of the word, the nature of the art. Its earliest stage is not its most useful because it is not the most developed, but no definition can be accepted, no meaning adopted, which will limit the art to its latest form and make a natural product the plaything of the imagination of civilization.

Were all men now living in the happy state of culture the highest type of white race has attained, it would be quite hopeless to look for the beginnings of architecture or to find anything but a relatively advanced stage. Fortunately, many primitive forms of existence have survived intact to the present day in the savages who form a very considerable part of the population of the earth, and even if the customs and ideas which they exhibit are not actually survivals from a primeval age, they are not less primitive in conception and employment. The early history of all phases of life has received fresh and abundant illustration from researches conducted in the primitive life of the present, and though it can never be ascertained how close this reconstructed life approaches the reality, it throws much valuable light upon the beginnings of the human intellect. And as we look for the origin of manufactures and institutions in these early records so the origin of architecture must be sought in the same source.

The first thing to be noted in primitive architecture is the total absence of the harmony, beauty and ornament which make up a large part of modern building. The struggles for existence with which primitive man had to contend were too severe for him to spend time on anything but actual necessities. If his shelter had any idea at all it was to be useful, and nothing more was expected. Indeed, how could it? With few mental powers, with an active but fearful imagination, with narrow mechanical means and appliances, he had to do the best he could. Sometimes he took a strip of bark from a tree, sometimes gathered a heap of leaves; the cave was palatial, the hut of rough logs or branches, tied at the

top by a twig and covered with leaves, a miracle not less amazing to his undeveloped mind than the dome of S. Sophia to the cultured Justinian. It is quite unnecessary to trace the successive steps in architectural evolution. Whatever it may be now it certainly began in expressing a use, in performing a service, as an actual necessity. Shelter of some kind was as needful to man as the gaining of food. It was natural to eat, it was equally natural to seek shelter, and if Nature did not herself provide it in the way of convenient caverns or accessible hollows in trees, it was necessary to secure it by artificial means. This was accomplished, not by the exercises in the elements of beauty and harmony, nor with a soulful longing for mental benefits, but by a forced adherence to the requirements of use and limitations of the materials at hand and the climate conditions. In other words, architecture originated in utility and the environment.

It did not long remain within these confines. Even in primitive society the influence of other ideas can be seen. As society progressed, as mankind spread out in fresh directions, as new conditions arose, the changed circumstances found their reflection in architecture. Architecture became in a measure, if not altogether, the product of the environment, grouping all external phenomena under this one head, acting through the mind of man. The evolution was not unconscious, man did not act as a blind agent in the hands of the evolutionary force; his intellect was needful in the making of any architectural work, but with the exception of this variable element the evolution of the art has not been less marked than the evolution of society, or of any form of culture. Culture and architecture have not always advanced simultaneously, but both have progressed towards one ideal; to an extent they are coördinate factors. The individual element which is feebly to be traced in primitive erections increases immensely in volume when we cross the border line between the primitive and the advanced, the prehistoric and the historic. The oldest architecture affords no comfort to the historian, for the most ancient art in the valley of the Nile is sometimes more advanced than that known to be later. There are ample prehistoric remains in Europe, but nothing that throws any light upon the beginnings of architecture.

Historic architecture shows in an appreciable manner the influence of the imagination. No human work could be expected to do otherwise, and with the increasing influence of this element architecture reaches a fresh stage in development. Yet it is slow to forget the associations of its birth. The new elements of beauty and ornament take a more and more increasing part, but it still expresses the factors which correspond to the natural environment in early times. Materials, politics, government, society, natural products of the locality, climate, and innumerable other elements affect the formation of an architectural style. It is not always possible to trace the influence of all of these in many buildings, but in the great styles of antiquity and the Middle Ages they are thoroughly active. They direct the evolution of architecture; they do not hinder it nor do they render the art of these epochs different from that of primitive times save in the matter of the imagination and constructive detail. Architecture expresses a human idea, a human thought, the state of society, the progress of culture. It may be beautiful and ornamented and suggest all manner of delightful ideas, but it is still the product of a natural evolution, it still answers the requirements of mankind, it is still a useful art and a necessary one.

The most intellectual occupation of mankind is the enjoyment of the products of his imagination. The more complex the products, the higher the culture required for their full absorption. Not every mind can appreciate an opera by Wagner nor a painting by Millet, yet it is in the creation of these works that civilization finds its fullest expression. Architecture, as the product of the imagination, as the idea of the artist, as the combination of beautiful parts, as ornamental and ornamented construction, has no more real reason for its existence than an amateur's water-color or a spring poet's

THE CHURCH OF THE SACRED HEART,

Montmatre, Paris.

The late M. Abbadie, Architect.

VESTIBULE OF LEHRTER BAHNHOF,

Berlin.

Kayser & v. Grossheim, Architects.

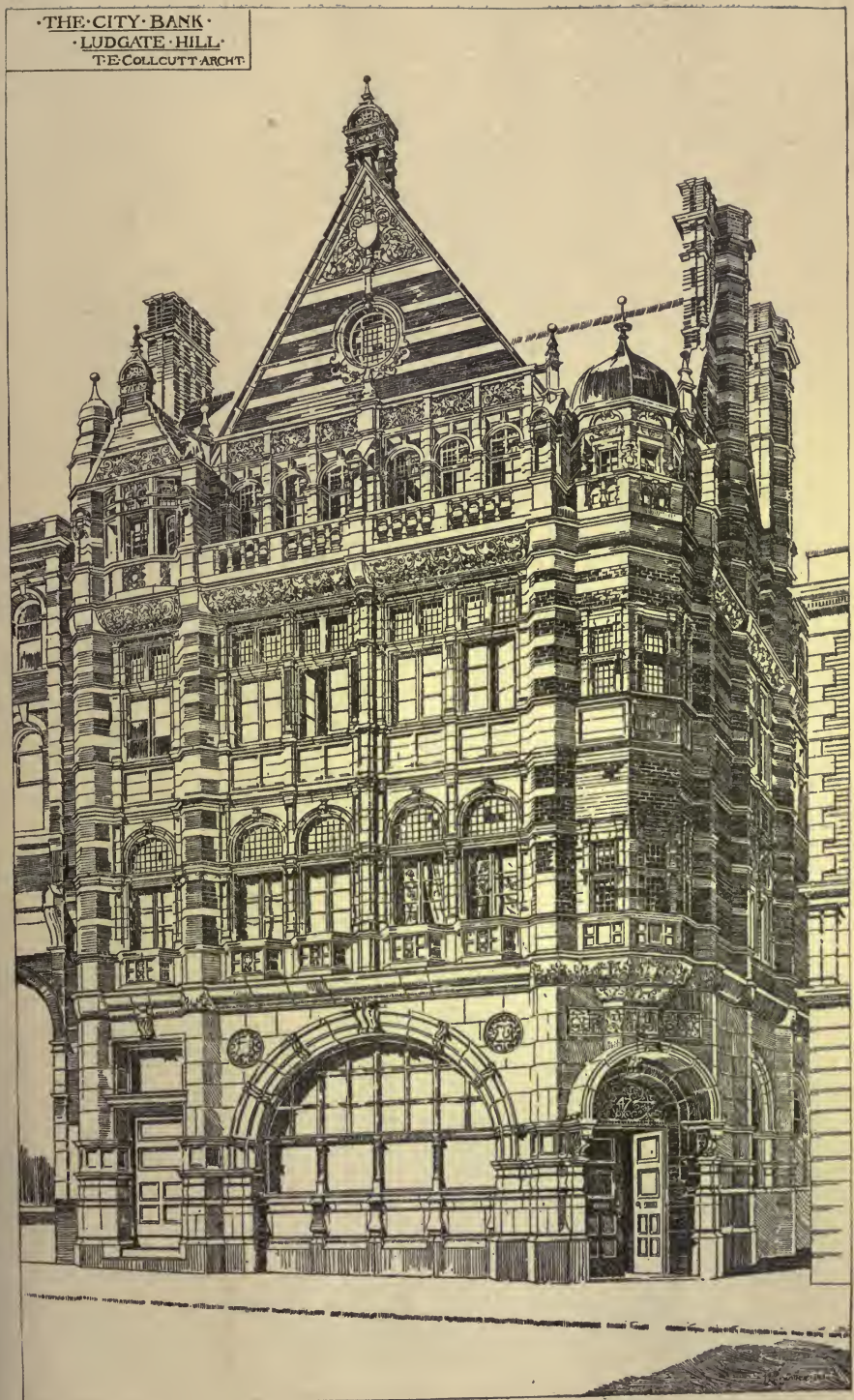
last poem. The architectural monument is too cumbersome to be stowed away in a museum, but no better fate is suitable for a building constructed on such principles. It is quite well enough to view architectural art through the delicate fancy and brilliant imagination of a Ruskin, the positive individuality and self-assertiveness of a Fergusson, or even in the light of more modern and less professional lexicographers, but these are pleasant exercises of the imagination, neither resting on truth on the one hand or on history on the other.

As a matter of fact, far from detracting from the interest or value of architecture, to view it as a result of a natural evolution instead of as the exclusive outpouring of the human imagination, it adds very greatly to it. Architectural beauty is not dependen tupon looking at a building as a design, the individual thought of the artist. It detracts nothing from a structure to view it as the result of circumstances or of the environment. The Parthenon at Athens, the cathedral of Notre Dame at Paris, are not less wonderful and impressive because they express the thought of the times in which they were built, because they are the exponents of two different civilizations, because they are the products of circumstances not less than of human hands. These buildings would still be marvellous had they been the outcome of the imagination of two particular architects ; they are not less remarkable because they represent epochs and express universal ideas.

And as with great monuments so with small ones. It is a different spirit which produces the castle than that which produces the church, the civic edifice, the house, the château, the shop, the warehouse. Each grade of building, it might almost be said each class, is called into existence through special circumstances. Each must be judged by its own standards, its own origin, its own use, not by the imagined rank of another nor by an artificial standard of taste based on the popularity of some critic. The shop and the warehouse, the château and the dwelling express ideas, perform useful functions, as does the cathedral or the castle. It is not the same idea nor the same function, but there is no greater error than the confounding of them all under one head and scheme of definition.

It is well that our buildings should be harmonious, beautiful, ornamented, that they contribute to our mental health, power and pleasure, but it is a false limitation to use these terms in telling what architecture really is. It is equally erroneous to raise the distinction between building and architecture, as Mr. Ruskin and a host of lesser lights do. This fallacy is one of the most popular at the present day, and is found even in technical journals who define themselves as devoted to "architecture, building," etc. It is a most admirable way of relieving architects of the burden of unsatisfactory structures to represent them as the work of the builder, not of the architect. In modern usage there is a considerable difference between the two persons and the two occupations, but there should not be. This is largely owing to the fact that people do not know what architecture is, of what it consists, what it means. They know they live in houses, that the building of a newspaper edifice is the signal for at least one organ of public opinion to go into ectasies over the products of modern architecture, but this is all. Construction, the technical operations of wall building, occupy the public mind to the exclusion of almost all else. Writers and lecturers on architecture very largely confine their attention to the cataloguing of the structural elements of buildings, describing their æsthetic qualities as interpreted by the writer or speaker, and preparing chronological tables of buildings from an imaginary year I. to the present day.

Architecture is more than this. Each of these operations is distinctly valuable, but they are not always understood, certainly not always appreciated. They relate to superficialities and show the art by itself, apart from the thoughts and the times that made it. No art has followed man from his origin to his present state as closely as architecture. It is not only the most ancient but the most human of arts.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With each successive step forward man made it advance likewise. It reflected his life and his thought, and in some epochs, as in the Middle Ages, it was the sole means through which he could give expression to his intellectual feelings. It became beautiful, harmonious, and ornamented through his deliberate choice; it was not so originally; these characterize a developed state of which the first form was exclusively useful.

The definitions of architecture reproduced in the beginning of this discussion have been brought forward to show the great diversity of opinion as to the nature of the art among leading critics and authorities. It is obviously impossible to examine them in detail in the narrow scope of a magazine article, nor can the varied conditions which form and affect architecture be reviewed with sufficient care to permit the formulation of a definition. M. Blanc found it necessary to devote a considerable portion of a large volume to explaining the nature of architecture, and it is obviously impossible to attempt a similar work in these few pages. All that can be done here is to briefly indicate what architecture is by showing its origin and the part it has played in human history, and it cannot be unsafe to maintain that the facts grouped under these heads must be trustworthy and infallible guides to the true explanation of the question at issue. It is quite a needless assumption of superiority to assume with Hittorf that the "art of building is found among the least civilized people, while architecture can only be the result of the highest civilization." Architecture, either as a fine art or as the product of constructive skill, has nothing to gain by being limited to the last new building, and, to tell the truth, even the definition that Mr. Fergusson prepared with such elaborate care fits perfectly many structures of primitive people, which are often highly ornamented, not with the ornament of civilization, but with rich and varied decoration that performs the same function in the savage canon of art that the most polished and refined ornament does in the hands of the most skillful artist of the present day.

It would doubtless be a source of unending delight to the esthete if an art of beautiful building could be devised in which nothing but the beautiful and magnificent would be admitted, but such a limitation of architecture would be thoroughly artificial and contrary to history. Human beings are not called men simply because they are good looking, but to do so would be no more senseless than to call all ornamental and ornamented buildings architecture, and those not possessed of these sacred characteristics something else. Such a division is not only unnatural and untruthful, but the recognition of two classes of structures, architecture and building, is detrimental to the art. It gives an exaggerated importance to the one, an unnecessary slight is put upon the other, and, which is much more important, the ornamental parts are frequently detached from the constructive, and instead of expressing the construction hide it as something that should not be visible. Architecture, therefore, comes to be looked upon as an artificial product, the result of the architect's imagination, a work of beauty, not as the outcome of the application of human resources to human needs and circumstances. The artificiality of modern life is eminently conducive to the furtherance of this unnecessary division, yet it should not be forgotten that this is the environment of modern architecture, and in meeting it as best it may it is performing a task identical to that it accomplished in expressing the less restricted environment in which the structures of past times were erected. The environment is not the securing of a pleasant location for a building, but the combination of every circumstance that affects or should affect its erection.

Viewed in this light architecture becomes a natural art with a wider, broader field than it is possible to have under the narrow definitions of the text books or the fanciful conceptions of the critics. It does not degrade the art to include all manner of structures within it, nor is it necessary that the historians from this standpoint should confine their researches to the investigation of unornamented structures, as

ENTRANCE, SHEFFIELD MUNICIPAL BUILDING,
Sheffield, Eng.
E. W. Montford, Architect.

in the past they have limited themselves to the beautiful. Neither will architecture lose any of its fascinations by being considered akin to nature. Much valuable light cannot fail to be thrown on its nature and history by viewing it from the natural standpoint, not, as heretofore, from that of the critic or the chronologicler. Nothing has ever yet been gained by the ignoring or the concealing of the truth, and architecture has nothing to fear by being placed on its natural and actual footing.

On this basis alone can any definition of architecture be formulated. Without, as has been said, undertaking this task, it may be well, in conclusion, to point out two conditions a satisfactory definition must fulfill: First, it must not ignore the history of the art and relate only to the structures of a limited time or erected by a small number of people; and, secondly, it must be general enough to be independent of the mental state of the inquirer, his personal feelings or tastes, his peculiar predilections or imaginings Architecture is a general art, affecting all men and characteristic of all ages. Any definition or explanation of it which ignores these facts fails of its purpose.

Barr Ferree.

WHAT IS ARCHITECTURE?—A LAYMAN'S VIEW.

JUDGE from Mr. Barr Ferree's scholarly paper that it is about as difficult to make a good definition of Architecture as it is to make a bright epigram: the man who attempts either plays considerable hazard with his reputation. One is quite prepared to find the conflict of definitions which he exhibits, also to learn that none of the authorities are authoritative, for one of the surprises that attend the dull awakening of a layman's curiosity to things architectural is to discover that the only definition of Architecture that seems to have any acceptance among the professional learned is—Architecture. Tradition is the oracle of the art. Now, a definition of this sort has obvious disadvantages for the uninitiated. It has too many of the good qualities of a good fence. The wall should not be too high to be scaled by the vagrant intelligence that seeks the fruit of the tree of Knowledge within. We, the Philistine Public, are repeatedly denounced as enemies of Architecture, as a sore trial sent, it is hoped, for a beneficent purpose to the spirit of the conscientious architect, because we prefer architecture that after the manner of good stocks pays six per cent, because our predilections are for "strong" architecture like the Westerner's taste for drink, because we delight in piebald work, exclamatory decoration, shams and Queen Anne. But when, like the Hebrews of old, we return occasionally from worshipping our false gods, and ask for instruction in the "law and the prophets," ask to be told what good architecture is, ask to be referred to even some initiatory standard of the fixed, the indubitable, the excellent in Architecture, some starting point as it were, like the Post-Office in New York, from which we can measure distances, it is very unsatisfactory, to say the least, to be informed that the only standard of Architecture is Architecture, that to make a beginning we must study the entire art, in its superficies at any rate, and that we who are so used to carrying nineteen-twentieths of our better knowledge in the shape of ready-made formulas and rules-of-thumb must in Architecture dispense entirely with those aids and begin to extract an elaborate architectural alphabet

for ourselves out of the work done by the ancient Greek and the Gothic builders and others, and out of (for us) recondite considerations about harmony of construction with environment and purpose. Than to do this, it is so much easier to return to the old flesh-pots, and afterwards see to it that the next architect whom we deal with pillors himself in his own work in return for considerably less than the professional commission.

There are, however, certain opinions about Architecture which we laymen* were gradually forming for ourselves through the aid of that instinct for better things with which even the commonest nature is endowed, and because of the persistence with which Art, like morality, insists upon recognition in life. We cannot thrust either from us. Complete exclusion means chaos, death. It is simply impossible to live by bread alone. Now I am sorry to see that many of these weak and faltering opinions are ruthlessly attacked by Mr. Barr Ferree, for I do not think it will be as well for us if they be driven quite away from our midst by the force of Authority. Though they be but gypsies from the great ideals of art, they bring into our dull lives suggestions and glimpses of the sunshine, the warmth, the joy and exuberance of an existence fuller than is ours. I purpose, therefore, to set down here some of such of these opinions as concern Architecture, and to beg Mr. Barr Ferree and others like him to do what they can to protect them for us.

In the first place we *do* believe that there is a difference really fundamental between what we call Building and what we call Architecture. We have come to think that Building, be it ever so scientific, or in harmony ever so complete with environment, purpose and so forth, still remains mere Building. For instance, an absolutely plain brick wall, perfectly constructed, admirably adapted to exclude trespassers and secure privacy does not contain the first element of Architecture. Between the apex of the pyramid of Cheops—surely the crown of the greatest piece of mere Building in the world—and the rudest finial in a Gothic pinnacle we consider there is a distance simply immeasurable. From the one only the torrid sunlight breaks, but from the other the light of the inspiration that came to some human heart mystically, as all our visions do.

Besides this, we have come to acknowledge, and some few of us really to perceive, that among the Fine Arts there is a close kinship—a consanguinity, if the word will pass. As a consequent, it is difficult for us to accept with full satisfaction any definition of Architecture that refers us solely to the mechanical, technical, special or singular attributes of the art. The real value of any one art lies in the revelation which it holds of something wider than itself, lies in the part which it has in the "large lordship of the light;" and a definition that tells us that Architecture is the art of building in conformity with purpose and environment, or anything of the kind, is a denial of this unity among the arts. Right or wrong, we feel that a definition of Architecture to be quite acceptable must recognize the kinship of that art with Sculpture, Painting, Poetry, Music, and if it should recognize technical attributes it must do so in a secondary and incidental way only.

When we look at a noble picture we may perceive not only the purely material elements of which it is composed such as the pigments, canvas, etc., and, if our powers of observation be sufficiently well trained, the technic skill of the artist, displayed it may be in truth of drawing, accuracy of perspective, delicacy or brilliancy of coloring, exactitude or finesse of detail, but also an *immaterial element* which endues the work with vitality and meaning for us and affects our feelings. In a picture gallery we may buzz and exclaim to the ineffable disgust of Mr. Ruskin before a piece of realistically-painted lace-work, but we certainly do not view it in quite the same spirit that we do a picture, such as, let us say, Millais' "Huguenots." Here we recognize the element of feeling

* It may be said that laymen can have no opinions of any real value. Some persons will tell us that we should humbly listen to and accept what Authority teaches us. But where are we to find Authority? There are authorities; but they war with one another.

London, Eng.

SOUTH KENSINGTON MUSEUM,
(Selected Design.)

Aston Webb, Architect.

in the work. The secret of the picture lies beyond what the eye sees, in what the heart feels. As Mr. Hamerton said of Turner's Venetian pictures: "The question is not whether they are close imitations of nature, but whether they have the art-power of conveying a profound impression." A photograph, even one highly colored, is not Art for us; not because of the absence of anything technical, but because it lacks the human element, the suffusion of feeling. Despite all that is said to the contrary, it is not fellowship with Nature that we seek in Art, but fellowship with Man. Parenthetically it may be worth while to point out here that these considerations, if they be correct, reveal the fatal deficiency of realism as it is commonly understood; for Art is more than faithful representation, it is revelation. The artist must be more than the showman; rather he must be like the chorus in Greek tragedy—a part of the play subtly heightening the action.

But to return. That immaterial element which we recognized in a noble painting as its peculiar art-quality, the secret of its power of profoundly impressing us, we recognize quite as readily in the indubitably great works of Sculpture, Poetry, Music, Architecture. From all, the impression we receive is fundamentally identical. The feelings we receive from the choir of Beauvais, the stir of emotion produced by the inaudible

> "Tones of minstrelsy
> Which linger yet about lone Gothic arches"

are the same that we receive from Poetry, from, for example, the following of Wordsworth's:

> "But from the arms of silence—list! O list!
> The music bursteth into second life,
> The notes luxuriate, every stone is kissed
> By sound or ghost of sound, in mazy strife,
> Heart-thrilling strains that cast before the eye
> Of the devout, a veil of ecstacy"—

or from (to turn our attention to Music) the "Swan" song in "Lohengrin." The spell which each possesses is the same; each alike is an expression of the minstrelsy of the human heart. The soul of Art is feeling. Architecture has exactly the same source as Sculpture, Painting, Poetry and Music and has precisely the same message for us.

Viewing the matter then in this light it will readily be seen how difficult it is for us to regard Architecture as *primarily* construction in harmony with environment and purpose, or as good building, or as decoration, or as ornamentation, or as "the art of designing sculpture for a particular place." It may be any or all of these, so long as it is *Building with feeling in it.*

There! we have run into a definition, and, as Mrs. Poynter said, "when your head is in a bog your feet may as well follow," so let us accept that definition and do the best we can with it. Of course it is not necessary to say that the word feeling as used here is not co-extensive with the psychological province of feeling. Not all our intellectual, moral and religious sentiments can be expressed in Art. The particular concern of Art is the æsthetic feelings. Moreover the word "feeling" itself may be objected to as implicitly denying the intellectual element of Art. This element, however, is not necessarily excluded. There is no sharp division between knowing and feeling; they are the opposite ends of one line. The terms are not antithetic or exclusive, but in a given mental state denote the predominance of a certain mental condition. Indeed, Wundt speaks of all the sentiments, Intellectual, Æsthetic, Religious, Moral, as Intellectual Feelings. No one who keenly appreciates Art or has striven himself for artistic expression will doubt for a moment that an exalted condition of the emotions is the prerequisite of Art. The centre of the inspiration with which Art begins is in feeling, not in cognition. Plato recognized this fact when he said: "But he who having no touch of the Muse's madness in his soul comes to the door and thinks that he will get into the temple by the help of art—he, I say, and his poetry are not admitted; the sane man is nowhere at all when he enters into rivalry with the madman." Indeed, the positive, purposeful, intellectual element in the most inspired works is probably less than is ordinarily supposed. Nay, more, the

gift "inspiration," as commonly understood, denies, precludes the pause and search which mark a mental operation predominantly intellectual. Goethe said of one of his works that it contained more than he himself knew. Socrates found the Athenian poets of his day poor expositors of their own writings, and no doubt Shakespeare had nothing like the intellectual appreciation of his most inspired sayings nor the insight into the meaning of them that a modern commentator has. Every great artist has builded better than he knew. He has worked, if one may say so, unconsciously.

There is in contemporary architectural effort so little of the real art-impulse that not a few objections will probably be made to the predominant position given in the foregoing to feeling. The architect has become so much a copyist, a dealer in second-hand material, that the sources of the true creative-impulse is dried up in him. Feeling! He scarcely knows what it is in the production of his work. His designs lack the quality of inevitableness, which is one of the characteristics of true art. Real feeling, truly expressed, demands the form of expression suitable for itself. The great artist allows the inspiration to suggest the form. The architect of to-day, however, apparently changes his styles as readily as the modiste does her "fashions." On not a few offices this legend would be appropriate—"Architecture in every style." It is not to be wondered at then if we find architects inclined to exalt the circumstances of "style," choice of material, concord of structure with purpose, and other matters concerning the form or method of expression into the first place as the essential element of their art. But the art-feeling—the source, the inspiration of art—should not be confounded with the art-expression. Take, for instance, the following verses of Shakespeare's:

"Five hundred poor I have in yearly pay
Who twice a day their withered hands hold up
Towards Heaven to pardon blood; and I have built
Two chantries, where the sad and solemn priests
Sing still for Richard's soul."

There are two sources of pleasure here for the sympathetic reader—(1) the feeling of the poet revealed in the verses, and (2) the musical and perfect expression of that feeling. As a rule the reader rarely separates these elements in his appreciation. Technique, skill, the modes and forms of expression are to the art-feeling but a vehicle, a means; and their excellences are of value to Art, not in themselves, but only in so far as they insure a perfect expression of the artist's feeling. Sir Joshua Reynolds says: "The great end of the art (painting) is to strike the imagination. The painter is, therefore, to make no ostentation of the means by which this is done; the spectator is only to feel the result in his bosom." I take this to mean inferentially that our admiration of, say, fine coloring or accurate drawing in a picture is not admiration of art in the real sense, because fine coloring and accurate drawing are valuable to art, not for themselves, but because the artist can express his feelings more perfectly by their aid than without it. Similarly in Architecture, when we concern ourselves about the means, the vehicle of the architect's expression, we are stopping short of the real matter.

It may be urged, however, that in judging of the merit of a particular piece of architectural work we must consider not only whether it is an expression of feeling of a high order, but whether it is an expression of feeling in *harmonious relation* with the material used, the form adopted and the purposes of the building. True, but are these matters of relation matters of art? The design of the Parthenon would no doubt be very unsuitable for a modern office building; but if submitted by an architect for that purpose could we correctly say it is *bad architecture* absolutely? It would be *unsuitable*, certainly. No matter where it might be placed we who, to-day, have only at best a very dim appreciation of the purposes of the Parthenon would recognize that the building is an expression of art-feeling of the highest kind and in the highest degree. One of Chopin's Nocturnes played for a party to dance to


: THE :
PLOUGH ROAD SCHOOLS LAMBETH
Thos J Bailey Architect
HALL

would be very unsuitable, but would it be bad music, as music? A statue out of proportion to the niche in which it is intended to stand would also be unsuitable, but would it be poor sculpture? Art exists out of relationship to considerations of utility, purpose, etc. But—and this is the necessity for the artist's considering these matters—the feeling produced in us by a given art-production *may be contradicted*, as it were, by other mental states in which it is not in harmony, and this contradiction, at war with the satisfaction otherwise given, minimizes the pleasure we received. The incongruity which we would feel in viewing the Parthenon as an office building would lessen the sum total of the pleasure the structure would give us. Many writers perceiving the pleasure experienced in recognizing the harmony of a building with its purpose exalt this concord into an element of art. There is no finer concord between structure and purpose than we see in a steamship, but is the concord there fine art; and if it is not fine art there can it be such when exhibited in a building? From a work of art we may receive more pleasures than those which are purely æsthetical.

With these considerations in mind, then, it may be wise for us to modify and extend our definition of Architecture thus: Architecture is Building expressing æsthetic feeling. To produce the highest effect this feeling must harmonize with the form and the material in which it is expressed, and with the purposes to which these (form and material) are put.

But, the question may be asked: Even if we accept as a definition of Architecture, Building with feeling in it, how much more serviceable will it be to you laymen than any other definition? Building with feeling in it may be Architecture, but not necessarily good architecture. Much poor poetry is pitably charged with feeling. It is quite as important to know what kind of feeling must be present in Building to make of it good and worthy Architecture, as it is to know that the presence of feeling is required to make it Architecture at all. This is undoubtedly true, and our defense is a *tu quoque:* our definition is not more defective than other definitions. If we say Architecture is the "art of ornamental and ornamented construction," or the art of building beautiful buildings, or anything of the kind, we leave quite as much unexplained and undefined as when we say Architecture is Building with feeling in it, or building expressive of feeling. There is, however, we believe, this difference: our definition emphasizes the indispensable element of Art. The definition we give takes a broader and a deeper view of the art than when we say it is "ornamented and ornamental construction," or "the designing of sculpture for a particular place and the placing it there." A deeper view, for behind the ornamental construction and the designing and placing of sculpture there must be feeling if the result is to be anything more valuable than a mechanical operation. A broader view, for our definition keeps Architecture in closer touch than the others do with the human element in it and makes Architecture a part of History in the best sense—the revelation of the spirit of mankind. The Classic spirit is revealed in Classic architecture—the architecture of reserve, repose,— and the Mediæval spirit in Mediæval architecture,— the architecture of exaltation and exuberance. In the former there is no fire. The inspiration is of the kind that tarries, that reveals itself logically, that consists primarily in the manifestation of a direction rather than an end. The invitation of Socrates to Phædrus, "Come, let us go to the Ilissus and sit down at some quiet spot," is the perpetual invitation of Greek art to mankind. How different from Mediæval art where the exaltation is so manifest, where the inspiration seems to have been a light breaking forth on a dark and solitary way. The Classic has become the architecture of grammar, the Mediæval the architecture of freedom, and so long as our architects are copyers, transcribers of "styles"—other people's feelings—whenever the times become logical, formal, we may expect contemporary architecture to revert to the classical types; whenever the times are restless, roman-

tic, free, we may look for a reversion towards mediæval types. In our own times we have seen proof of the accuracy of this statement. The "English Renaissance," so called, with the pre-Raphaelite movement, was a revolt for deeper feeling against the conventional, and in a sense a cry for greater freedom. It was attended, as we all know, by a revival of Mediæval architecture: it lingers with us to-day in the prevailing admiration for the picturesque in architecture.

And, finally, our definition reveals to us the real direction in which we in this country must look for good architecture. An improvement in our condition will not come from a turning to new copy-books, a following of new fads, but from a heightening and a refining of national feeling. As a people we are to-day too exclusively appreciative of mere vigor—too ready to accept extravagance, coarseness, size, show—the form which mere vigor is so prone to take. The public sentiment needs refinement, the subtle heightening of delicacy and charm.

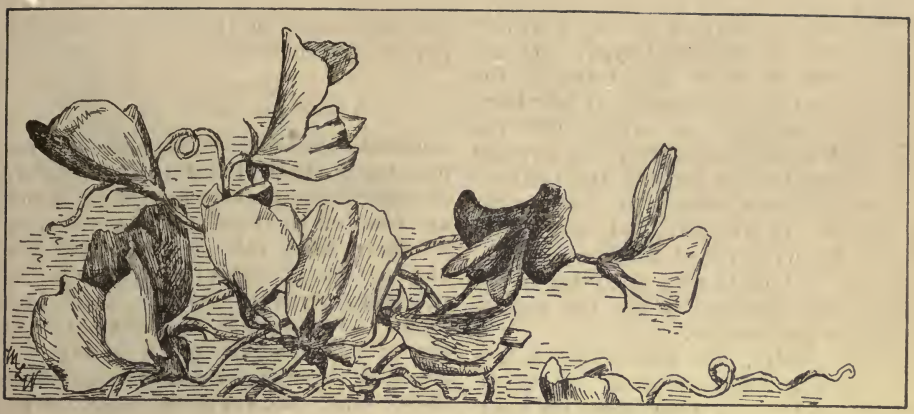
There are strong reasons, however, why Architecture should flourish with us. In the Old World the characteristic sentiment of the age is a contemplative melancholy—

> "Violent sorrow seems
> A modern ecstacy"—

a mental condition better suited to expression in Music, Painting, Poetry, than in Architecture or in Sculpture which are adapted to voice a robuster feeling produced by a full physical existence and a rapid constant touch with the practical, concrete side of life. This robuster feeling is ours. But before it can produce fine art, reach a lofty expression, it needs, we fear, considerable chastening. However, in many directions and along many ways refining influences are at work. There is reason for much hope. While we cannot, indeed, build a city as Amphion did Thebes, with music to the enchanted sense, the day may come when we shall set each stone in place to the music of high thoughts and noble purposes. All who are interested in Architecture should pray and work, particularly work, for the dawning of that day, so that those coming after may say of the humblest building in the land:

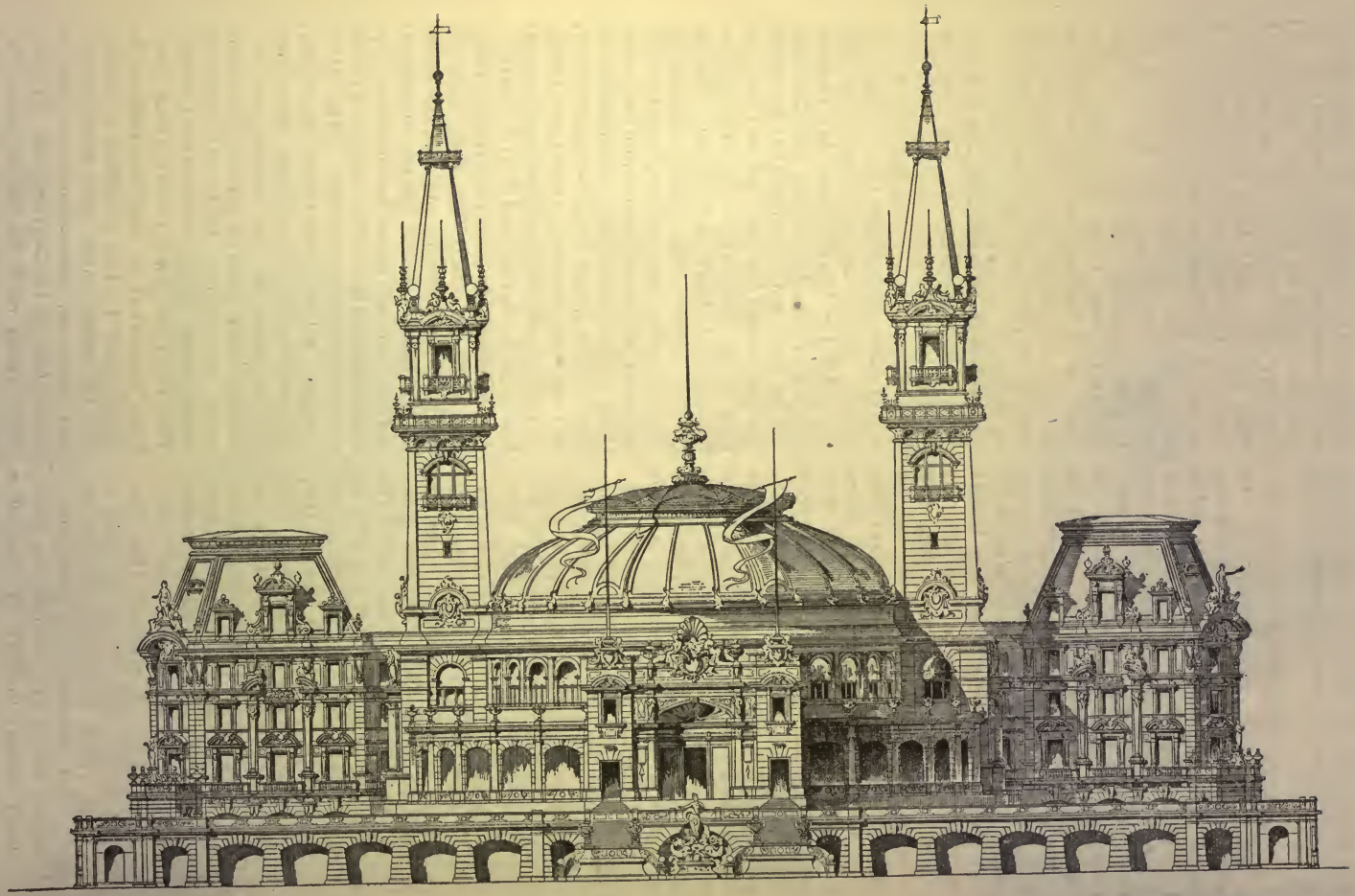
> "They dreamed not of a perishable home
> Who thus could build."

Harry W. Desmond.



ART AND LIFE.

SPECIALISTS have inherited such a large part of the kingdom of current knowledge, that one, who would act upon the supposition that their dominion is restricted, takes his head into his hands. If a man who does not pretend to be an expert hazard a suggestion on, say, political economy, hinting that the masters of that science have applied its presuppositions and principles somewhat too rigorously to the varied phenomena of life, he is forthwith pulled up sharp by some aggressive and astonished follower of Ricardo. "What do you know about political economy?" he is scornfully asked. "Have you read every book on the subject from Adam Smith down? Why, you are ignorant enough palpably to confuse the cost of production with the price of labor. An edifying authority you are! Pray take yourself off and speak whereof you know?" We have frequently heard language of this sort leveled at the slippery head of some venturesome speculator; and perhaps it is very often justified by the poor man's crying ignorance of the specialist's primer. But even so there is something more to be said. "Is it necessary," one might ask, "for every specialist to be a schoolmaster? Must he scold and rate men as old as himself because they have placed mistaken feet within his fences?" Hence our sympathies, if nothing else, would lead us to speak out what could be said in favor of the vanquished presumer. By seeking we might find that if he was measurably wrong, he was also measurably right. He was doubtless very careless and very ignorant to confuse such an acid as the cost of production with such an alkali as the price of labor; but then the economist was very blind and quite inhuman to dress the major part of the Hercules of human nature with the stiff knee-breeches of his science. Having gone thus far, we might take further heart and make bold to dogmatize a bit; we might apply to the occasion the time-honored rule that the whole is something more than a sum of its parts, and we might add that this something more has a claim to representation greater, far greater than the claim of any of the component elements. Do they not live only through its embraces? We might say (this with a lower voice) that there is a definite place for men like Lord Brougham who, as it is said, wrote about one thing as a man who knew a great many other things, that such a one may be useful as a moderator of specialists, just as each specialist is useful in his own little department, and that, although he must tread gingerly in the ticklish and bewildering labyrinths of

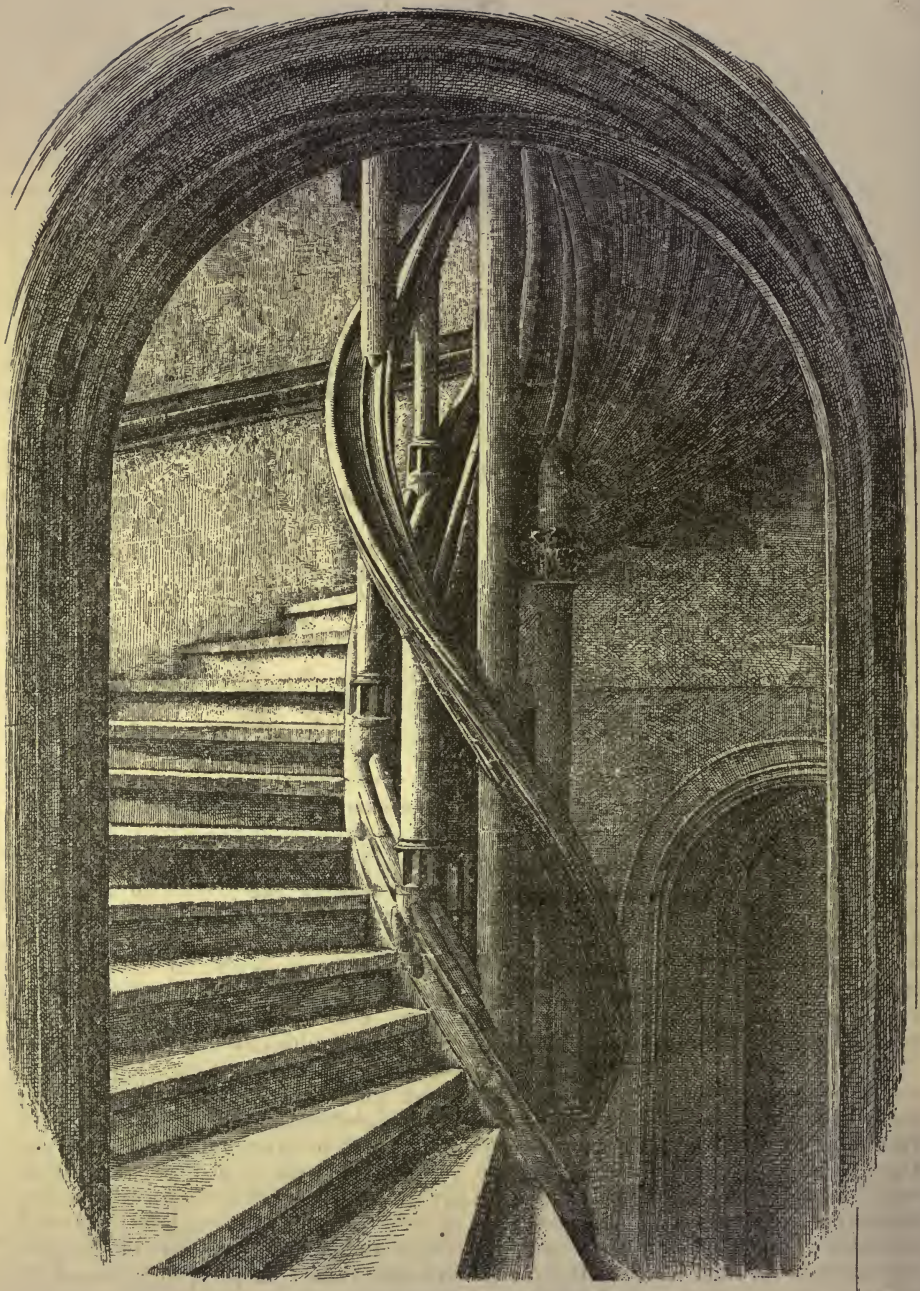


Zurich, Switzerland. DESIGN FOR THEATRE AND TONHALLE, Chiodera & Tschuldy, Architects.

private property, he may strut boldly on the broad common lands of the earth.

It is on the supposition that one who is neither artist nor learned in the arts, may yet have something to say on art matters that is of possible value to layman like himself, that the present writer ventures a few remarks concerning the effect of art on life. These remarks, it is scarcely necessary to say, are not addressed to artists or connoisseurs. Their own experience will tell them what the effects of art are on life more vividly, more truthfully and more completely than any words of anybody. But there are in this country a great many intelligent and well-meaning men to whom art is nothing more than either a plaything or a fad. Such people, indeed, form the bulk of society. They toil and toil; they build their houses; they rear their families; they make their associations; they find their places, hard or soft as the place may be. In all these necessary occupations, art helps them never a bit. A picture gallery becomes the place to waste an hour in; a book of poetry the admirable but incomprehensible and alien outgiving of a popular name. The more dogmatic and robust of them, seeing that the pursuit of art is frequently a fashionable excuse for delicate drones to make light of commanding responsibilities declare roundly that it is nothing more than the refuge of the inefficient; but the majority of those who do not come within its influence are too much the creatures of the hour not vaguely to grant to art a certain but utterly undefined place in life. In passing they cast a glance at its treasures, raise their hands in tribute, and then trot off to the familiar round of ordinary occupations. We must have a very much more advanced stage of civilization before the mass of these workers can share with any degree of intimacy that love of the ordered and living fairness of the world which at bottom is the life of art. But pending this problematical higher stage of civilization, there are many money-makers by necessity who yet would wish to be something more than money-makers. Either early or late these people might dimly ask themselves what they would gain by the pursuit of art and what they would lose by its neglect. It is doubtless very seldom that they put this question to themselves consciously, and answer it with any sense of its importance. The process is generally reversed. People seek for what art has to give them in response to an inner demand; and it is only later when they have learned to live somewhat amid its splendor that a faint suggestion of its peculiar message is revealed to them.

But it will be sufficient for my purpose to imagine the case of a man, who put these questions to himself—a man who never wore clothes, but who so far might have worn them that his name is Smith. This man is obliged to occupy a good many hours every day in earning his living—in selling tin, perhaps; but he does not consider that his debts are paid when his bills are receipted, or that he has nothing to his credit when his debtors have settled up. Rather does he believe that a man is something more than a corporation, and that his immortality depends on something more than financial solvency. Circumstances, however, demand that he must always sell tin, and that the other good things in life cannot displace this occupation, but must be reconciled to it. Furthermore, let me suppose that friend Smith has eyes that can see, ears that can hear, and something impalpable inside of his head. At the same time he is without one of those unfortunate lopsided dispositions that might severely circumscribe his activities. His nature is eager, willing, adaptable, discerning, wholesome; his inclinations are neither the engineer of his actions, nor yet simply their motive power, but rather more the vehicle that will bear him wheresoever his right mind shall direct. This right mind will tell him, that apart from somewhat trying concessions he must make to the necessity of selling tin, he must come into most varied and measured correspondence with all that is best in life—giving art, friends, good works each its proper place, determined partly by his character, partly by his circumstances, partly by their



STAIRCASE, NOTRE DAME, STRASBOURG.

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claims. In order that this duty may be efficiently done, he will, among other questions, ask himself what is the sphere of art—a question that he would answer largely by a few further queries as to its effects and message. It is these queries that I now wish piously to make attempt at answering.

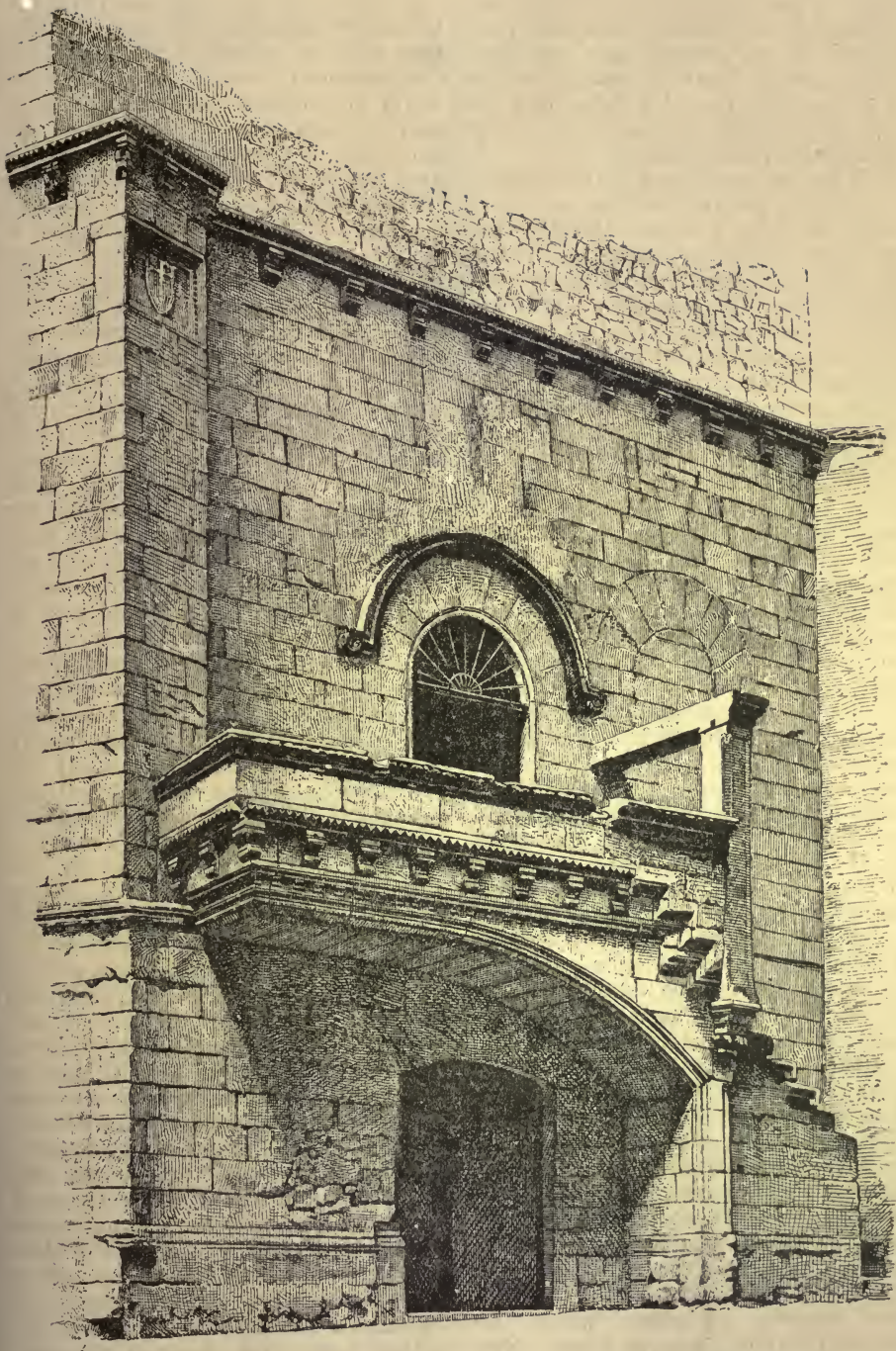
"Friend Smith," I would say, "happy in a virgin nature, I can, perhaps, best meet your needs by bringing to your attention the effect which the pursuit of art has had upon one who has devoted his life thereto. 'It is the privilege of art,' says John Addington Symonds, 'to quicken feeling and to lead our soul through all the labyrinths of life as in a vision. Sculpture and painting, in particular, teach us to see what is noteworthy in the form of man, and in the face of nature. Not many weeks ago I walked in the light of a mellow July sunset along the Serpentine, watching the crowd of men and boys who bathe there. I recognized, how impossible it would be to reproduce in its complexity of interest and beauty what I saw before me—the space, the atmosphere, the massive trees, the luminosity of the sky above, the sheeny, troubled surface of the pond, and above all the innumerable groups and changeful attitudes of the naked men in every posture. And yet, at the same time, it was borne in upon my mind that only through the service of art, through the labor of Greek sculptors and the service of modern painters, was I at the proper point for discerning what this common scene contained of beauty and interest. No painting could place in right relation to the whole, and to the parts the multiplicity of marvels it offered to my

vision. No sculpture could fix and perpetuate the grace inseparable from the movement in those men and lads. But except for years of training under this influence, should I have had the eyes to see and the spirit to admire what was revealed to me?'

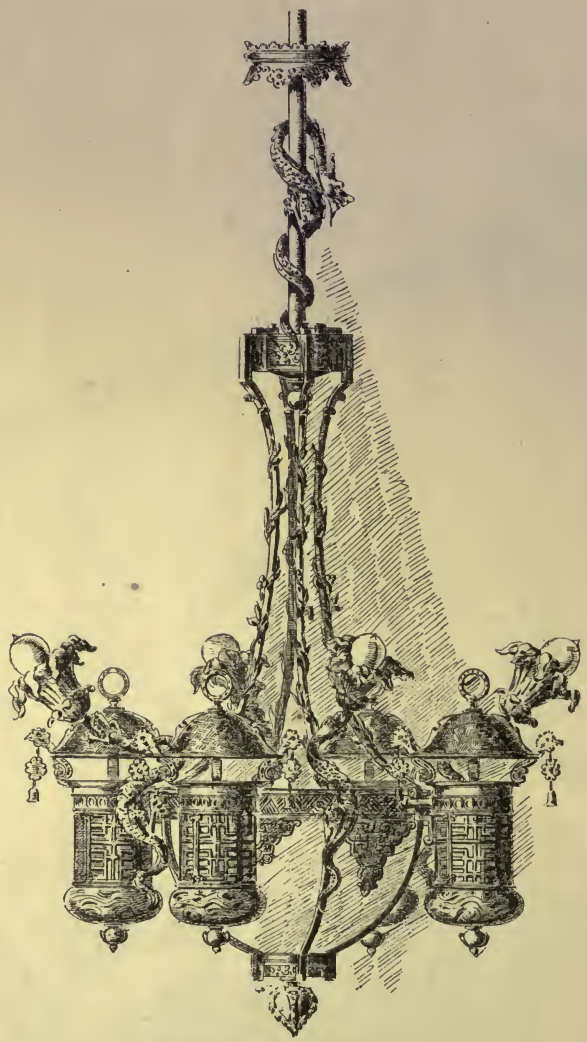
"What art has done for the student, it can in a measure do for all of us —'it can lead our soul through the labyrinth of life as in a vision.' How do you spend your time, friend Smith? Recollect for a minute all that you see and hear in the round of an average day, the inevitable sensuous accompaniments of rising, dressing, eating, business, going up and down town, social diversions, and a trip to the country. It all seems very monotonous, does it not? One day is very much like most other days; everything is a confused blurr. Perhaps here and there, now and then, some domineering impression will stand out —a pretty face, an odd suit of clothes, an imposing building newly seen, or some horrid clatter into which you have been accidentally thrown; they are not very numerous, but such as they are they constitute the sensuous events of the day. If you are pressed for conversation, you might talk about them in the evening; but more frequently their effect is too ephemeral for any verbal tribute. They are buried in a hazy mass of sensation, and are brave enough to stick out, only because of some adventitious circumstance. Instead of traveling through life as in a vision, you make the journey along a stupid canal that is lined with the commonplace.

"The point of all this is, friend Smith, that you are in danger of becoming deaf and blind. Your life is crowded with sensation; the whole earth is displayed before you—the earth that is teeming with faces, forms, sounds, color, life, motion, contrast, discord and harmony. You are groping your way through this manifold as if there was nothing to find until you came to the final jumping off place, which, for aught you know, may be night. Now art, if it be properly learnt, will enrich and refine this poor coarse, sensuous life of yours. Under its influence you will gain an eager, searching, selective, correct eyesight, and a hearing that will be sensitive to the elusive concordance of sound. For the whole world will become expressive and suggestive, instead of being merely arid and blank. Sensations will begin to have meaning. They will not glance off as a bullet does on a hard and slanting surface, but will find a place in your sensorium, each of them being filled with a thousand little attractions and repulsions. It will rest with you to discover what these attractions and repulsions are—to sort the sensations, discarding for the sake of economy much that you would like to keep, and giving each a proper, although it may be by no means a permanent compartment. For the life of art must be a life of constant growth, and as years go on, and the taste changes, things will seem somewhat different. But the end will remain always the same—to offer a warm and appreciative hospitality to the diverse wonders of the world.

"Thus art, friend Smith, should make you not simply a virtuoso, but a detective medium—eliciting from the manifold of life what aspects of beauty, color, music and distinction things contain. For all of us art has but one permanent abiding place—in our own minds. That we find it in a picture-gallery, in a concert-hall, or on the pages of a book are but accidents. They are the kind of accidents which society should make inevitable in the lives of its units; but taken alone they are meaningless. It is the inner and pervading presence of the spirit of art, the love of living beauty, that is necessary. In order that this spirit may be acquired, and find the expression needed for its growth, you must, of course, make a careful and intelligent study of all the painting, sculpture, architecture, music and literature within your reach. You must learn how far adequate is the revelation afforded by each one of these arts, what their relations are one to another, and what the advantages and limitations of the vehicle that each one of them uses. You must at the same time learn something of the historical development of art in general, and of each of the separate arts—the many



EXTERIOR STAIRCASE AT VITERBO, ITALY.



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forms and the varying importance they have assumed in different nations at different times. And you must bring this schooling and knowledge to bear in estimating the worth of current art products—wherein consists their peculiar flavor, and what elements of permanence and transience they contain. Concurrent with your ability to acquire, and to use this knowledge, will proceed the education of your sensorium already mentioned.

"And here it is time to make a distinction. I have already indicated that underlying all love of art there must be hospitality of sense; so underlying all interpretation of art there must be justice of sense. After you have begun to see, friend Smith, you must make sure that you are seeing clearly and straight. Danger exists in the over-education of any one of the faculties. No man can afford to surrender himself too completely to a stream of impressions. The detective medium must be sensitive; but it must also be active. It must receive; it must reject; it must modify; it must combine. The twinkling impression must first of all be seized—but only to

show cause why it should not be summarily dropped into the catalogue of the misplaced. If it passes successfully through this test, the work of appreciation and comparison begins. If it be a human face, we look to the expression of the whole; the excellence of each of the features, the extent to which they are friends or enemies, the way in which the lip curls, the eye flashes or the nose predominates. If it be a building we seek the conditions under which the architect labored, the opportunities which were offered to him, the idea which he sought to express, the degree of skill, consistency and taste with which the idea has been developed, and the amount of originality and vitality the conception and the composition betrays. The phrase 'justice of sense' covers the whole of this process. It is not a matter of mere perception, because perception always tends to be passive; it is not a matter of intellect alone, because a multitude of impressions empower the free play of the mind; it is the union of the two in one composite act. What this justice of sense has to fear is the great Idols of the Cave and the Market Place. It should allow no advocate to confuse; and no prepossession to bias. The true lover of art can wear no livery; but, taking the advice of Goethe, must live resolutely in the whole.

"Open your senses, friend Smith; discipline and broaden your intellect; quicken, chasten and subdue your feeling. There is an element in art, in nature and in life that cannot be detected by the senses alone, although the senses are necessary; that cannot be discerned by the mind alone, although the mind is indispensable; feeling, emotion enters into the interpretation, but does not make it. That this element may be elicited all the faculties of a man must meet in the unity of spirit; and when this unity is attained, the surest, yet the most delicate communion on earth is established. The slightest loss of balance, or superabundance of part mars and may unmake the communion; but it is only thus that men speak to one another with complete truth. All other means of communication are faulty. Sense can speak to sense only through personal contact, and the message conveyed is brutish; feeling can speak to feeling through symbols, but the message always intends to become either maudlin or vacuous; reason can speak to reason through symbols, but the message lacks warmth, vitality and power; spirit, which is all of these things and something more, can speak to spirit through symbols; and these symbols will convey a meaning that is clearly defined and yet infinitely suggestive—a message that will stimulate our feelings, satisfy our reason, convince and occupy our nature. In this way, friend Smith, art will not only enrich, refine and clarify your life; it will also ennoble and dignify your life.

"All that I have said, friend Smith, comes to this. Art is an indispensable element in the matured and perfect life; but in the words of a recent writer, it must not be made a fetich; it must be kept simply as a contribution. Like all things that are possessed of a unique and captivating nature, some men make too much of it; and thereby lose not only the best of life, which is a clean, organic wholeness, but the best of art as well. If you mistake it to be the patented possession of a cultured few, who thereby are alienated from the herd, it will make you exacting, finical, and even querulous. It will interpose a barrier between you and the seamy and sordid side of men and things. No man is too good for life; no man is above rational and proper activity. If art is not made a distracting, disabling, and at bottom a disheartening thing, it should by sweetening, enlightening, and to a certain extent even steadying our natures, make us the more adequate to those necessary activities. Therefore, I say, friend Smith, bring art into your life, that you may have a high and temperate soul."

"'Tis human fortune's happiest height to be
A spirit, melodious, lucid, poised and whole."

Herbert D. Croly.

LOBE.—AMIENS CATHEDRAL.

SKELETON CONSTRUCTION.

THE NEW METHOD OF CONSTRUCTING HIGH BUILDINGS.

WITHIN the past three or four years a new method of constructing very high buildings in New York has come into vogue. It is known as the skeleton construction, and consists in the use of iron or steel columns, with thin curtain walls between, in place of solid thick brick walls. The curtain walls themselves are carried on wrought iron or rolled steel girders spanning the distance between the columns, which is usually about 15 feet. In addition, the weight of floors is also transmitted to the columns, so that the latter support the entire building and contents. The columns are encased with brick-work, and when the building is plastered and finished on the inside there is no visable evidence of novelty.

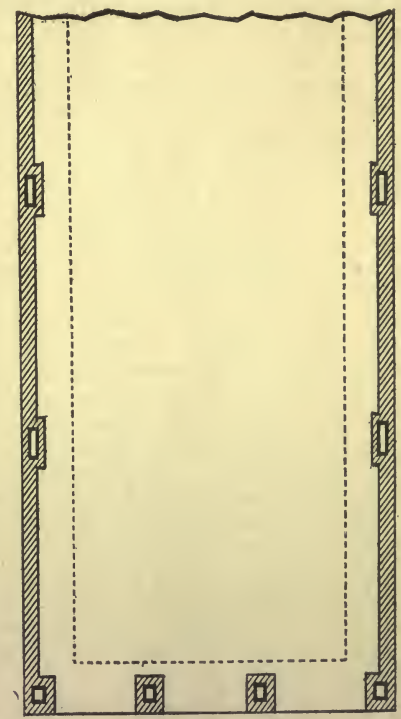
The advantage of using the composite construction is the room space gained in the difference between a thick wall and a thin one. In the ordinary method of building, the higher a brick wall the thicker it must be in its lower parts. The New York building law very properly requires a wall to be built on the principle of a mast of a ship, the off-sets at various stories in the thickness of a wall in heights securing what is in effect a taper from the bottom to the top. The lower story of a building is the most valuable for rental, yet it is in this story, of all the stories above the sidewalk, that the greatest area of a valuable lot must, under the old method, be wholly surrendered to enormously thick brick walls. Every inch gained in the width or length of the inside measurements of a costly building increases the availability of the structure, and therefore swells the income derived therefrom by the owner; but when this gain of space is feet instead of inches, in width and length as well, the reasons become obvious why the new method of construction, which takes up less than one-half of the area of plain brick walls, should immediately spring into public favor after an example or two had proved its strength, safety and probable durability. The great value of favorably located lots, fairly forces owners to build skywards in order to get an adequate return on their investment. The London and Lancashire Insurance Company not long ago erected an office building on a lot which the company purchased on Pine street, New York City, immediately adjoining the U. S. Sub-Treasury property. The lot measures 24.2 front by 74.4 deep, and the price paid for the same was $195,000. The lot is one foot

wider on the rear than it is on the front, and one side is one inch deeper than the other side, so that the actual area of the lot is about 1,834 feet, and makes the price figure about $106 per superficial foot. The old building was torn down, and a new building erected of the skeleton construction. The curtain walls between the vertical columns are 12 inches thick, the same thickness in the first story as in the tenth story. Lots on Wall street and lower Broadway are of greater proportionate value than that of the Lancashire Company, which has an area of only three-quarters of the unit of a city lot.

The era of high buildings began with the year 1870. Let any person who has long been a resident of New York draw on his memory and he will find that all high buildings which in the popular and received interpretation of that term are now so styled, are of a date subsequent to the erection of the Post-Office building. Prior to that date there was a very limited number of fire-proof buildings within the limits of the United States. Those which did exist were chiefly Government buildings. Only ten years before that the first "I" beams were rolled in this country. Peter Cooper's Trenton, N. J. Mills, and the Phœnix Iron Co., of Pennsylvania, began to manufacture them about the same time. In the early fire-proof buildings—the Cooper Union, Harper's publishing building and the New York Historical Library building—the iron floor beams are of a shape

very similar to what are commonly known as deck beams, with brick arches between. It was seen that if buildings were to be built higher than the conventional five or six story limit, to a height beyond the ability of firemen to successfully cope with a fire, such buildings must be constructed with something better for the floors, partitions, stairs and roofs than a mass of wooden beams, studs, plank, furring and lathing, and more scientifically arranged than a pile of kindling wood for burning, each piece being separated and exposed to the air. With the incoming of high buildings came a safer construction. Eight or ten stories in height—the height always being considered as above the sidewalk, and not including the stories below that level nor including towers nor stories above the level of the main roof—seemed to be the limit for a long time that owners could see their interest in going to. Suddenly a very much higher jump has been made, and it is a matter of general knowledge that Mr. Astor's new hotel, now erecting at 59th street and 5th avenue, will be seventeen stories in height. It is quite as generally known that the proprietors of the *Sun* are talking of putting up a new building, to be some twenty-eight stories in height, on their little corner which only measures 57 by 72 feet.

The accompanying plan shows the relative space occupied by the walls in



the new system and the old, the dotted lines representing the portion of the area of a lot that solid brick walls would occupy. High buildings are demanded, and to-day there is simply

no limit to the height that a building can be safely erected. This result has been reached mainly through three inventions, all of which are distinctively American:

1. The modern passage elevator.
2. The flat-arch system for fire-proof floors; and
3. The skeleton construction.

The last enumerated one has only lately joined the combination in which the first two were so long inseperable, but it has come to stay, and the three work in unity for a common purpose. It is with the third invention that this article has to deal, but the other two form so important elements to a comprehensive understanding of the usefulness of the third, that a brief reference to them will be necessary.

Up to the year 1870 the elevator was not used to any great extent for passenger service. Many persons will recollect the old elevator in the Fifth Avenue Hotel, with its vertical iron screw extending the whole height of the elevator well, and passing through a sleeve in the centre of the car; very slow in movement, but safe, although frequently getting out of order. This was one of the first passenger elevators in this city. Improvements rapidly followed, until now great speed with absolute safety has been attained. It was the elevator that taught men to build higher and higher, for without the elevator a high building is impracticable. A story that long ago went the rounds emphasizes this fact. A gentleman had occasion to make a call upon an architect whose office was on the top story of a high building. The elevator service was temporarily stopped on account of repairs being made to the steam boiler, and the caller ascended by the stair-case, up flight after flight, towards the clouds until he finally reached his destination in an exhausted condition, when he feebly opened the door and inquired, Is Saint Peter in?

It was in the Post-office building in this city that for the first time in this or any other country was introduced hollow-tile flat arches between iron floor beams. This was the invention of Mr. Kreischer, a well-known manufacturer of fire-brick. His was not the invention of a flat arch in itself, but of a flat arch, whose end sections abut against rolled iron floor beams, and recess around the bottom flanges of the beams, having on top wooden sleepers and wooden flooring, thus forming a level ceiling underneath and a walking surface above. Previous to Mr. Kreischer's invention the method of filling in between iron beams was by means of common brick arches, leveled up on top with concrete, and floored over. On the underside the bottom surfaces of the beams were left exposed and painted. A ceiling of a room then consisted of a series of curved arches between iron beams, which were very unpleasant in their appearance and effect on the eye. If a level ceiling was determined upon, it had to be obtained by wooden or iron furrings and lathing, fastened up to the underside of the beams and then plastered. The flat-arch system provided a level ceiling at once, at a less cost and with much less weight of material than before. The iron beams were covered in and protected from fire, and the side walls had a lighter load to carry. A new impulse was given to fire-proof construction, and following the great fires in Chicago and Boston, the Kreischer system came into general use all over the country. In a legal contest that lasted for a number of years, it was finally decided in the U. S. Circuit Court that the Kreischer patent was void for want of originality under the crucial test of publications from all parts of the globe, that a patent must sustain when the law is invoked in its behalf. The decision of Judge Wallace prevented the inventor from realizing the profits of his invention. It did more, it deprived the inventor of the honor of having made the invention which abroad is recognized as an American system of fire-proof floorings.

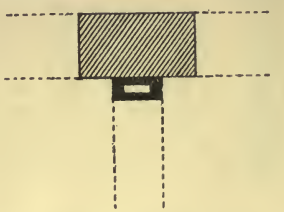
At a meeting of the Royal Institute of British Architects, held in December, 1882, Mr. A. J. Gale described various things which he had seen during his tour in the United States. Among other things he stated that "In New York at the time of his visit there were many vast building schemes in hand. . . . The floors were mostly

of fire-proof construction, consisting of iron beams filled in between with hollow tile flat arches, the iron being protected above and below, and joists being laid on the top surface." In connection with this statement, Mr. John Slater said: "It seemed to him that America was the country, par excellence, where suggestions were to be picked up by architects. To put the matter colloquially, it was the great place for 'tips,' and there could be no better place for an architect to visit than the States, after studying on the continent of Europe the artistic and archæological sides of his profession. The Americans were, in fact, so ingenious that their ingenuity was catching, and it appeared to be impossible for any one to visit the States without deriving much instruction. . . . . They would be taught the wholesome lesson that everything English was not necessarily the best. It was only in regard to what might be called the constructional part of an architect's profession that he made these remarks." The Chairman, Mr. Ewan Christian, said that "having had the advantage of traveling in America, though only for a short time, he was very much impressed by the go-aheadedness of Americans. If a man in the States brought out a good invention connected with building or anything else, it was straightway adopted all over the country until something better was produced, when that, in its turn was taken up."

The skeleton construction will entitle Americans to as much future praise as have ever been so generously given them for past improvements made in the art of building.

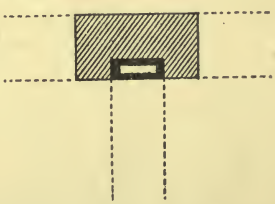
The whole history of science is one continuous illustration of the slow progress by which the human mind makes its advance in discovery. It is hardly perceptible, so little has been made by any one step in advance of the former state of things, because generally it will be found that just before there was something very nearly the same thing discovered or invented. This is true of the modern Elevator in its steps forward from the hoisting apparatus of the ancients. It is true of the American flat-arch floor system in the light of earlier publications made in France and other countries. It is true of the skeleton construction.

Without likening the skeleton to a cast iron front buried in a brick wall, its immediate predecessor can be seen in the devise frequently used to provide sufficient bearing strength in brick piers of too small an area to safely bear the load to be imposed without re-enforcement. A brick pier, of a size not larger than required for the safe support of the brick work above, is perhaps also required to carry the end of a line of girders supporting floor beams. An iron column is therefore placed im-

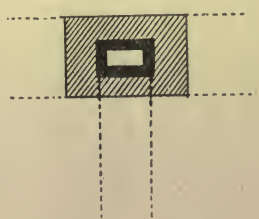


mediately adjoining the back of the pier.

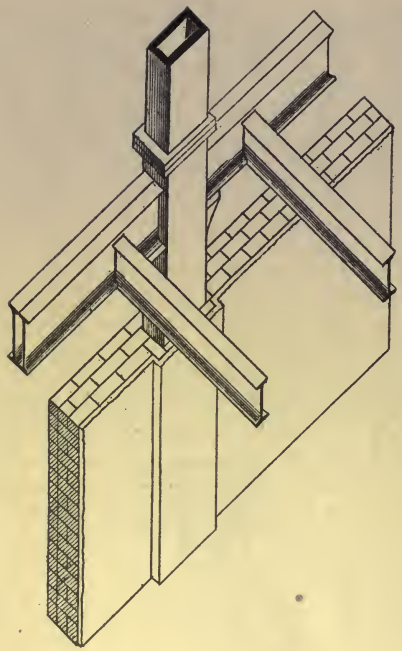
If the projection of the column be undesirable, then the column is embedded within the back line of the pier.

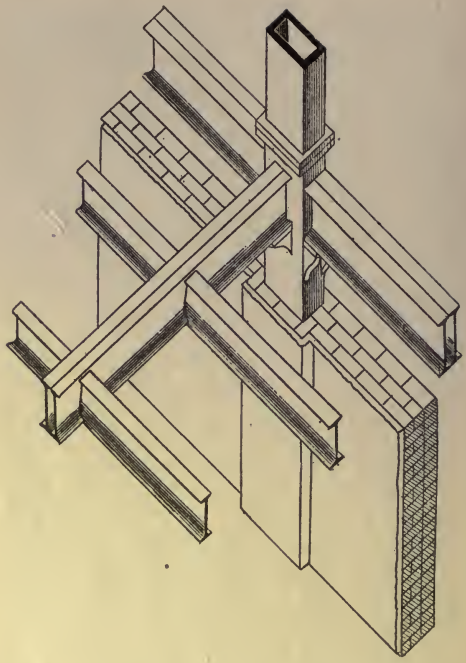


In the case of a flank wall on a street front, where the window openings are numerous and the brick piers too small to carry the weight of wall above and floor loads in addition, the piers have been



stiffened and strengthened or relieved of load by iron columns entirely con-





cealed within the piers, and iron lintels also concealed above the columns.

Such examples have been used repeatedly for many years, and contain all the essential features of the skeleton construction. The first complete cast-iron front ever erected in the world was put up in New York in 1848, yet that was but a repetition of iron columns and lintels long previously used as a substitute for stone and brick to the extent of a single story. So the skeleton is simply the evolution or expansion of the principal so long used in a smaller way. No patent stands in the way of the free use of the skeleton construction. A patent was issued in 1869 to a manufacturer of architectural iron work in New York, which covered the skeleton construction, but that patent expired by limitation five years ago, and the invention is now public property.

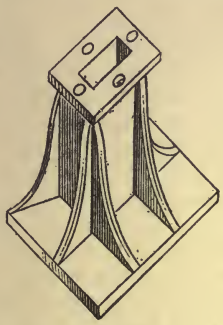
There are several variations in the use of iron skeletons. In some cases the frame is carried up to within three or four stories of the roof, and a solid brick wall used for the balance of the height, carried by the skeleton at the top line of the latter. In some cases the columns start from the base course of the foundations; in other cases from the top of the foundation wall, or the top of the basement story. There is still another method, such as was used in the *World* building, but which is not, strictly speaking, the skeleton construction, as the columns are not embedded in the walls but stand clear from the same; the walls are of solid brick and of great thickness, although supporting nothing but their own weight, which indeed is enormous on account of their great height. The floors are carried independently of the walls, and in this respect embodies the same principle as the skeleton construction.

One or the other of two methods is generally used in the skeleton construction. In one the girders are placed between the columns at each story and carry both the curtain walls and the ends of the floor beams. In the other the girders carry the curtain walls only, and are placed at every second or third story; the floor beams are supported by girders placed at right angles to the columns. In the foregoing cuts the two arrangements

are so clearly shown that further description is unnecessary. The small details of bolting, etc., have been omitted, as these would add nothing to the information that the drawings are intended to convey.

The inside four inches of the curtain walls are usually built with hollow bricks, of the dimensions of common brick, so as to allow of the plastering being done directly on the wall, and thus obviates the necessity for the use of furring to prevent dampness from striking through.

At the foot of each of the vertical lines of columns it is the general practice to use a cast-iron flanged base to



distribute the imposed load over a greater area of bearing surface.

Crib footings of rolled steel or wrought iron beams are frequently used; and when placed below the water line they should be thoroughly coated with coal tar applied hot.

For the skeleton construction the existing building law makes no special provision. At the time when the law was enacted, in 1887, the use of composite structures was not foreseen. True, under that law, walls may be constructed of stone, brick, iron or other hard incombustible material, and by implication a combination of any of these materials, but the skeleton has been ruled to be one of the kind of cases to which the law does not directly apply, and is therefore subject to the decision of the Board of Examiners whose permission must be obtained before such a structure can be proceeded with. The Board regulates its action in skeleton cases in accordance with one of the amendments contained in the revision of the building law which failed to pass the last Legisture of this State. The columns are required to have a casing of brick work not less than four inches in thickness which must be bonded into the brick work of the curtain walls. The exposed side of the girders are required to be similarly covered in. The thickness of a wall is determined by its height, but where walls are carried upon girders, the heights are measured from the top of such girders, except that no curtain wall is permitted less than 12 inches in thickness. The metal work is required to be painted before being set up in position.

In the greater number of skeleton buildings erected in New York the columns are of cast iron; in the smaller number rolled steel or wrought iron of various forms of section. Some constructors advocate the use of cast iron only as the material for the columns which are used in the walls. High buildings are erected for permanency, to last for centuries. When columns are built around with brick work they are buried out of sight for all time, so to speak. The oxide of iron paint, so commonly used for coating iron and steel work is largely mixed with fish oil instead of linseed oil, and soon dries out leaving a coating of dry, broken scale or powder. Between the columns and the outer air is only a few inches of brick or stone work, through which dampness or rain finds its way. In wrought iron rust is insidious, and it honeycombs and eats entirely through the metal. Mild steel, such as beams are rolled of, rusts faster than wrought iron at first, then slower. Cast iron, on the contrary, slowly oxides in damp situations; rust does not scale from it, and the oxidation when formed is of a much less dangerous kind, extending only a little way into that metal, to about the thickness of a knife-blade, and then stops for good. There are other dangers to be apprehended, such as gases and creosote from flues, escaping steam from defective pipes, leaks or an overflow of water, all quite possible and probable to reach the columns. Wrought iron is seriously affected by such mishaps, cast iron

practically not at all. Mild steel has come into use so recently that time has not yet enabled men to speak positively how short or how long it can retain its integrity in adverse situations. Damp plaster and cement corrode wrought iron and steel; lime is a preservative. If from any cause a column is affected in one place the entire structure above it is affected, but if a girder is affected the trouble is local for any one girder only carries a portion of the floor of one story and the bay or portion of the brick wall which reaches up to the next girder above. While failure in a girder would be far less disastrous than failure in a column, any trouble would be serious enough and fully warrants every precaution being taken in the first instance to avoid possible bad results. For wrought iron and steel columns a margin in material should be allowed to cover partial deterioration from rust. Instead of a low factor of safety, as 3 to 1, when weight is to be sustained by material that is to remain unimpaired, the factor should be as high as 5, to provide for the loss of a portion of the sectional area of such columns by rust, so that the remainder of the metal may be sufficient to safely carry the load calculated to be imposed. No part of the metal in a wrought iron or rolled steel column should be less than three-eighths of an inch in thickness, nor should such columns have an unsupported length of more than thirty times their least lateral dimension or diameter.

For beams and girders wrought iron has almost entirely superseded cast iron, and latterly rolled steel has crowded out wrought iron. The facility and promptness with which rolled beams can now be obtained; their admirable and scientific shape by which the greatest strength is obtained with the least weight of metal; the concise and simple tables of the bearing strength for the respective sizes and various lengths of beams freely circulated by the manufacturers; their reasonable prices; and the preference of architects and engineers to use wrought iron or steel when the load tends to separate or tear the metal asunder; all this has contributed to the extended use of wrought iron and steel for certain purposes. But for durability and lasting qualities under any and all circumstances of time and elements, particularly when buried out of sight in a casing not sufficiently thick to prevent dampness or wet or change of temperature from reaching the metal, as in the case of wall columns and beams for the support of the curtain walls, cast iron is the best material to use. For floor beams and for interior girders, wrought iron or rolled steel is matchless.

There was some fear expressed by members of the Board of Examiners when the first plans of the skeleton structures were presented for their approval, that the greater expansion of one material than of another, might work some trouble. The same bugbear had to be overcome when cast iron fronts were first introduced, when predictions of failure were based on the expansion and contraction of the metal. Events proved that the temperature of our climate, from the greatest cold to the greatest heat, exerts upon cast iron no appreciable effect, and for use in buildings is practically without expansibility. Cast iron, if of goodly thickness, offers a far better resistance to fire, or fire and water combined than wrought iron or steel. How well even thin plates of good cast iron will bear heat is shown in a familiar way by a common cook stove. Thin sheets of wrought iron will shrivel up almost like paper when brought in contact with flames. A comparatively moderate amount of heat will elongate and twist wrought iron and steel out of shape. When used for girders and floor beams they should be entirely encased in some non-conducting material. Whether columns of these materials should be encased is an open question. The advantage in one direction of a casing for wrought iron or rolled steel columns as a protection against fire, is a disadvantage in another direction, in that it may allow rusting to go on unseen to a dangerous extent. Covered or without covering, cast iron is the superior metal for columns. Cast iron is best for compression, rolled iron or steel for tension. The least thickness

for a cast iron column should be three-quarters of an inch, and the greatest unsupported length for such column should not exceed twenty times its average diameter. Usually the box form of cast iron column is employed, but in many respects the H-shape is the best for use in skeleton construction. In order to make allowance for poor quality of cast iron, and for unseen defects in the castings, the factor of safety for cast iron columns should be 6 to 1, the same as the present building law provides for all posts, columns and other vertical supports of every kind of material.

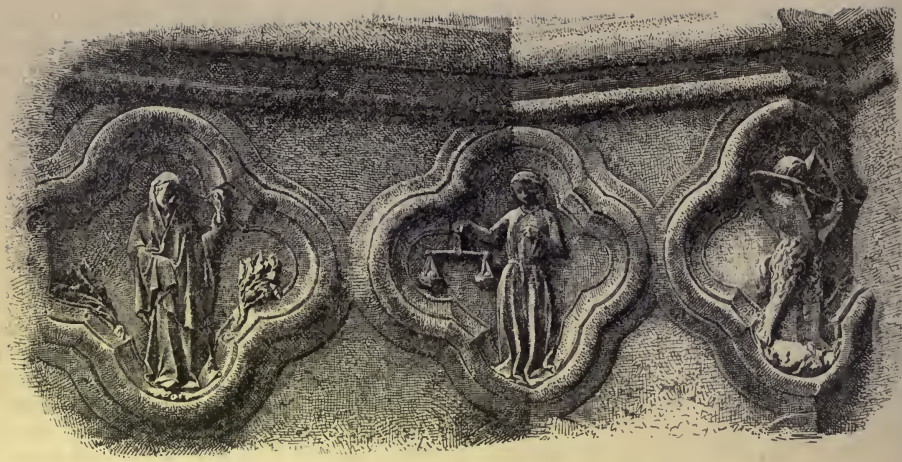
When cast iron is used architects should insist on having the very best kind. Many columns are made in the Pennsylvania iron districts of iron run directly from the blast furnace, thus saving the expense of re-melting pig iron in a foundry cupola. Such columns are almost as brittle as glass, and when so made should be prohibited by law from being used in a building. Pig iron, when melted in a cupola, changes its nature and becomes a different grade of iron, getting rid of a certain amount of impurities, such as combined carbon, which makes iron hard, and phosphorous, which is one of the elements of weakness in iron. The re-melting is not only a purifying process, but it is an annealing process as well. By melting different brands of pig iron together the mixture is given desired qualities which they do not possess separately. This is the practice in all the architectural iron foundaries in New York.

The brick work which surrounds the skeleton cannot entirely be depended upon as a protection for the metal against the effects of fire. The covering is thin, and at best brick work is not fire-proof. That bricks resist far better than anything else is beyond question, but a brick wall is quite another thing. The mortar joints compose nearly one-fourth of the whole wall, and lime mortar is no more proof against severe heat than is limestone. Consequently the bond, by burning out, allows the wall to fall, making the damage as complete as though the bricks had been devoured by the flames. The manner in which bricks are hurriedly and carelessly laid up in a wall, not slushed in on all sides with mortar as they should be, but with one inner side of each brick having little or no mortar at all against it, leaves countless air spaces within the wall, and the air within these confined chambers is expanded during a fire. If heated air will run an engine, its expansive force can surely aid in the overthrow and destruction of a brick wall.

The skeleton construction imposes no new conditions on the architect. It calls for no skillful treatment to make it appear what it is. The metal frame, like the bones in a human body, is concealed from sight. Indeed, the architect is relieved from many troublesome conditions. He may design his structure without regard to width of piers, so that a front of brick or stone may be made nearly as light and airy in appearance as one of cast iron, and with as large window openings as desired. The building is so tied together laterally and vertically as to resist wind pressure or any other strain with impunity.

Already the architectural appearance of New York is being altered by the skeleton structures. New opportunities are opening up for architects to display their skill in treating problems of height, such as their professional brethren of a few decades ago never dreamed. It remains to be seen whether the æsthetic spirit will keep pace with the mechanical progress in the art of building, and bring forth designs of grace and beauty for the tower-like structures, notwithstanding any pre-conceived notions of disproportion between height and width.

William J. Fryer, Jr.



Byzantine Architecture.—Part II.

(continued.)

WE see that the Byzantine architects and sculptors were full of resources, both constructional and artistic: the dome "pendent by subtile magic" on its four pendentives was a prime invention; I say invention, because, though it may have been known for centuries, no one had before dared to use it on a grand scale. We say wrought-iron girders are an invention of the nineteenth century, though they were used in the third century at Caracalla's Baths. Heavy abutments had to be provided to resist the thrust of pendentives, domes, and semi-domes. Many of the curious flat apses with which Byzantine architecture abound were made to that end, though flat apses had been used very much earlier. All sorts of ingenious devices were used to save centering and its shoring, as I shall show you, and when the capitals of columns were required to be large and heavy to support immense superstructures, new forms and new adaptations of ornament had to be used.

Mr. Ruskin and Mr. W. Morris have both been eloquent on Byzantine Architecture; the latter went so far as to say publicly that the interior of Sta. Sophia was, in his opinion, the most beautiful in the world; and Professor Lewis, in his preface to Procopius' Buildings of Justinian, says: "Earthquakes and faults of construction occasioned the rebuilding of the great dome, but it still crowns, after a trial of more than 1,300 years, one of the most beautiful buildings in existence." I shall tell you what I think of it hereafter.

There is no recipe for invention, it is a gift; but when the elements of architecture have been learnt, there seems to me no better exercise as a preliminary to invention than studying how former architects adapted old forms to new wants, how they solved the new problems of construction that were forced upon them, and how they artistically treated those new forms, so as to bring them within the pale of architecture; nor a better study for sculptors than how to adapt the old ornament to the new forms, until they can invent new ornament for them.

Greek architecture was purely an artistic invention—the constructive principle was that of Egypt and Stonehenge. The Romans seem at first to have copied, as well as they could, the

debased Greek architecture of their day, to have introduced such alterations as would make every part conform to a general rule, and to alter the æsthetic part so as to make it more in accordance with their coarse taste and love of magnificence. After a time the arch was found to be too convenient to be disregarded, and gradually superseded its older and more dignified rival, the lintel. As soon as vaulting came into general use the thrusts had to be counteracted, for even supposing that the vaults when set had no thrust, this was not the case when they were green.

You can see how the halls or compartments, in large vaulted buildings such as the baths, were arranged, so as to act as counterpoises to one another. When groined vaults were adopted, projecting piers were brought out at the angles of each chamber and plain arches sprang from them next the walls, so as to provide abutments for the diagonal thrusts of the groins; where groined vaults were used in an apartment higher than the rest, the lower part of the wall was abutted by deep walls and by vaulted recesses, but above these, where the outer walls were comparatively thin, buttresses were used, as in the case of the tepidaria of all the baths and the nave of the basilica of Maxentius. In the West, before the emergence of the Byzantine style, the half-domes of apses were abutted by inclosing them in solid half-squares, the angles of which acted as buttresses.

The walls of circular-domed structures were either of enormous thickness, or else the structures were made square outside to get abutments at the angles. We see no signs of any great organic advance in construction, after the invention of groined vaults, until we come to the Baths of Constantine, where the groined vaults of the building in front of the Laconicum are abutted by shallow apses without solid angles. We know, too, that as these great tepidaria of the baths wanted lofty arches to the recesses both for effect and light, the entablatures between the columns were consequently dispensed with, and the columns were merely shores with a strip of entablature above them to help support the groins of the vault. I say help, because the entablatures then became lintels. When the architect of Caracalla's Baths wanted to make his celebrated solar cell, *i. e.*, a covered swimming bath lit from above, he could not vault it, or he would have blocked out the light from the tepidarium, so he hit upon the original scheme of carrying the flat roof and ceiling by means of wrought-iron girders, forestalling the modern English invention by some 1,600 years.

It is possible that at some future time, churches and cathedrals may be wanted whose plans and arrangements are adapted to the Protestant ritual. In the Byzantine churches we have every sort of plan that can well be imagined, circular, octagonal, square, trefoil, quarterfoil, cruciform, of many varieties, and of that form which the Byzantines called "in the shape of a circus," but which we call "in the form of a basilica," and these Byzantine churches might give hints for what is wanted for a true Protestant church or cathedral. Two-storied museums, picture and sculpture galleries may some day be wanted to show the works exhibited in their lower rooms instead of concealing them, and many Byzantine devices might give us hints how to do this.

The Byzantine churches were constructed of all sorts of materials. The walls mostly of stone, with a course of bricks between each stone, and the vaults and domes of burnt brick, and roofed in all sorts of ways from the common truss of perishable and inflammable wood to the permanent vault or dome. In Syria another form of roofing was used, *i. e.*, vast slabs of stone were supported on arches and formed the ceiling, and supported the rubble terraces that acted as roofs.

If we owed that Bulgarian peasant, Oupravda—afterwards called Justinian—a debt of gratitude for nothing else, we owe it to him for having Sta. Sophia built without wood, as well as for the excellent construction of the fortifications of the Castle of Edessa on the Euphrates, which have lasted to the present day. We, who are Londoners living in a brick district, naturally take the greatest interest in vaults and

domes of brick, as we have the materials at hand without the expense of carriage from a distance, besides being more familiar with brick construction, not to speak of brickwork having a flavor of the locality. Vaults and domes naturally took their rise in treeless countries. The old proverb says, "Necessity is the mother of invention," and were good timber was not to be had, some other means of covering had to be devised.

We see how the people of Persia and Mesopotamia contrived to cover their buildings with vaults and domes almost without centering, from having no other means of roofing. Strabo (Lib. 16, c. 1, p. 5), speaking of Babylon, says: "Whence among the seven wonders of the world are reckoned this wall and the hanging gardens. . . . the garden consists of vaulted terraces, raised one above another, and resting upon cube-shaped pillars. . . . The pillars, the vaults and the terraces are constructed of baked brick and asphalt," and, in speaking of the city, he says: "All the houses are vaulted on account of the want of timber. For the country is bare, a great part of it is covered with shrubs, and produces nothing but the palm."

Now and then in London we see a vaulted church or a vaulted hall, but the greater part of our buildings are only walls with a wooden roof; even St. Paul's would present us with the lantern on a limekiln if the wooden dome were burnt, and the fall of the timber did not bring down the cone. Ware says "It is the roof that makes the house," and it is pitiable to think that a fire would reduce nearly all our great buildings to the state of walls, for most of the great vaulted constructions we simulate are built by us of lath and plaster. The great Ahmed-Ibn-Touloun showed his wisdom in forcing his Coptic architect to build his Mosque at Cairo of burnt brick, saying that every other material perished by fire or water. When we recollect what architecture does for a country we ought to insist that our national buildings should be built of burnt brick and vaulted with the same material, so that when our empire has passed away there may be remnants left of our former greatness.

You all know that I am a great advocate for the architectural use of iron, but under the destructive influence of fire iron is even more ruinons to structures than wood itself, and stone and marble calcine, or split to pieces.

The value of the past is in the priceless lessons it can give us for present use. The study of Virgil gave the world the Divina Commedia of Dante, and the study of the written masterpieces of antiquity the present literature of Europe; the study of the fragments of antique sculpture revived the sculptors' art, and gave dignity to painting. Even in the present day, the discovery of the ruins of an ancient civilization may be fraught with wonderful and unhoped-for results. Look at M. Dieulafoy's discovery of the ruins of the Persian palaces! The magnificent enamelled friezes from the Palaces of Darius and Xerxes, that were found at Susa, have not only enlarged the minds of every visitor to the Louvre, have given an almost unique lesson in monumental coloring, but have also given a fresh impetus to that beautiful branch of art, enamelled pottery. All of the roofs of last year's Exhibition building at Paris were resplendent with color, wholly due to the exhibition of those enamelled friezes. I do not grudge our gifted neighbors these well-earned trophies, of which they have made so excellent a use, but we cannot forget that it was the parsimony of our Government that prevented us from having them. Loftus began the excavations in that very mound some thirty-five years ago, and had to relinquish them for want of funds.

I will, however, return to my subject, and try and whet your appetites for learning more about Byzantine architecture. Though the Byzantines had become Christians, they by no means eschewed those sins which are denounced under the names of the "lust of the eye" and the "pride of life." When these sins were indulged in for ecclesiastical buildings, furniture, and dresses, they were supposed to be peculiarly favored by Heaven. Procopius tells us that Justinian having ordered a

church to be built at Jerusalem, in honor of the Virgin, required it to be "surrounded on every side with columns such as in beauty would be worthy of the main building, and of a size capable of supporting the weight that would be laid upon them," but from the precipitous character of the place such columns could not be brought there. He goes on to say that "while, however, the Emperor was grieving at this difficulty, God pointed out, for this purpose, in the nearest mountains a bed of stone of a kind suitable for this purpose, which either had existed there in former times, and been concealed, or was then created. Either story is credible." And he tells us that these columns were "of a color that resembles flame." In addition to this new marble every splendid marble that had adorned ancient temples not only in Rome, but in all the Roman provinces, had been stripped from them, and conveyed to Constantinople to enrich the churches; glass mosaic was manufactured there; gold and silver, precious gems, and costly stuffs were given to the churches in profusion, and as the silkworm had been introduced into Constantinople there was no lack of silk. Procopius says in the Sanctuary of Santa Sophia alone there were 40,000 pounds weight of silver, of which the iconostasis and furniture were composed. And Paul the Silentiary says: "In the circular part under the great dome was the Ambo, which was built of the rarest marbles, enriched with precious stones and ornaments in enamelled gold. This tribune, big enough, for the consecration of the Emperors was crowned with a dome covered with plates of gold enriched with gems; a great cross, ornamented with rubies and whole pearls, completed the decoration."

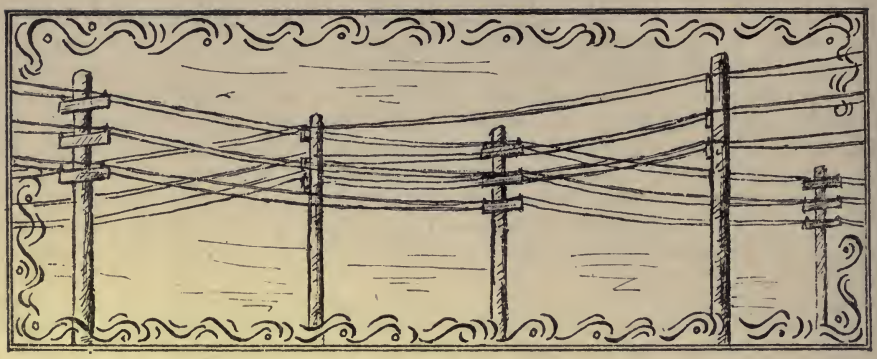
I think I have already said enough about Byzantine architecture to interest you in it, but I will say a few words more about Byzantium and the Byzantine Empire. Though architecture is our study, we cannot be altogether indifferent to those other fine arts which so greatly add to its beauty and interest; we must have some feeling of respect for the centre of an empire which was so long a bulwark against barbarism, and for that seat of art and learning from which cultivation was obtained: we can hardly expect architecture to be desired and appreciated by people who are wholly destitute of any feeling for the fine arts. Byzantium itself was a centre of all the arts, and though they did not flourish there as perfectly as at Athens in the days of Pericles, nor even as they did at Rome in the days of Augustus, yet the fine arts to a certain extent were there when they were extinct in the West. At Byzantium the traditions of antiquity were at least kept up, and in this way it was able to sow elsewhere the seed of artistic regeneration.

Byzantium supplied twelve thousand artisans for the construction of Walid the First's Mosque at Damascus between 708 and 718 A.D., and supplied him as well with the mosaic; it furnished architects and artificers to Charlemagne (771–814), and to Abd-el-Rahman the First at Cordova (755–787). Subsequently it sent architects to design and superintend the building of St. Mark's at Venice, and probably these same architects built St. Front, at Perigueux, and to its arts we mainly owe the Cathedral of St. Trophime, at Arles, and St. Gilles.

It was for many centuries a barrier against the devastation of the savages, and a bulwark against Mohammedan invasion, until it was left to its fate by the European nations through theological hatred. To the learned men it still cherished, to the codices of the ancient writers it preserved, and to the engraved gems, the bas-reliefs, and the statues it cherished, we mainly owe the great Renaissance of the fifteenth century, from which we are still reaping the benefits, and from the escape of its scholars before its last throes we owe the knowledge and study of Greek throughout Christendom.

Professor Aitchison.

(TO BE CONTINUED.)



CROSS-CURRENTS.

TO the many terrors proverbially possessed by death, has now been added the terror of posthumous notoriety. The obituary writer, with his blank array of dates and facts, set in a frame of meaningless and indiscriminate praise, is a matter no more to be pleasantly contemplated by the wise man preparing for death than a smattering of dead flies in a pool of thin molasses; but the post-mortem *raconteur* is even more unpleasantly suggestive. If Manfred had been a living celebrity instead of the paper offspring of the "bilious Childe," never would he have said:

"Old man! 'tis not so hard to die."

Being an emotional hero, he might in a weak moment have anticipated, with something like pleasure, a few newspaper anecdotes about his wanderings through the Alps, and the various supernatural entities which enlivened his path; but even his love for attitudinizing would shrivel at the thought of being minced to make an American newspaper. No doubt, many men of reputation have something of the Manfred in them. Being in the eye of the public, unless their natures are very simple and sincere, they naturally fall into a habit of posing; but if at the same time they are sensible men, they know that too many postures and too liberal a publicity makes them absurd and common. While they live, they can so shape their lives and form their acquaintances as to keep the anecdote-seeker at a safe distance; but death is a signal for a flood of wickedly false or foolishly true reminiscences to be poured on a public greedy with baleful curiosity. It is bad enough to have one's biography written by a sympathetic, intelligent and accurate friend, with access to all the available material, for even then it is really some other man that is delineated; but to have one's memory snatched up by a multitude of ignorant, careless, stupid and often malicious scribblers and hashed into unseasoned "copy," to have one's weakest driblets of conversation passed off as profound sayings or delightfully humorous tid-bits, to have one's most cherished and tenderest associations distortedly distributed to a heedless multitude—all that is profoundly obnoxious.

We need scarcely say that it is not the anecdotes and reminiscences that of themselves are objectionable. If properly told, they are far less objectionable than a set and formal biography, which is necessarily unsatisfactory. We thoroughly sympathize with any author who throws what obstacles he can in the way of his prospective and inevitable biographer. The latter is nearly always wrecked between the danger of including too much and including too little; he may not tell everything he knows, and there is much which he does not know. A life cannot be written in black and white, not even by the man himself. On the other hand, reminiscences that really mean something, that betray some trait of character or include some shrewd saw told pleasantly and gracefully, may be as serviceable to the critic of the author's works as they are delightful to his admirers. These reminiscences do not pretend to be more than momentarily descriptive. They tell the tale of the man, not as he was, but simply as he occasionally appeared to keen and perhaps fond observers;

they illustrate his social personality. To ask to know this is not to ask too much ; more than this he has every right to reserve. Such reminiscences, with a plain account of the facts of his life, should be sufficient for both critic and admirer ; his works, if they be well read, would tell the rest. For our part we should be glad to see all famous men follow the example of the pious Bishop Butler and destroy their private papers. Such a course would make their writings the more closely and fruitfully studied.

But the post-mortem story-teller often exercises no discrimination. He writes for a multitude of people who know only the name of the corpse ; and for a time anything with that name in it finds a ready reading. Sometimes he has met the departed celebrity casually; he can write in a tone of a personal acquaintance and include copious I's in the narrative ; but as a rule his ammunition is all second-hand. He either misreads or garbles the authentic recollections of a personal friend, or he comes across some nonentity who has known the celebrity. The few formal words that the great man uttered, which were perhaps pleasantly turned, are given out as characteristic and pregnant sayings. But worst of all is the close and often indelicate scrutiny to which the details of his private life are subjected, for your indiscriminate post-mortem *raconteur* never knows, of course, what not to report. The effect of all this is often very unfortunate. Spurious anecdotes are circulated, false impressions created; and the only man who can put things straight is safely surrounded by dirt. Just because these reminiscences are so suggestive, so delightful, and frequently so instructive when they are judiciously, truthfully and sympathetically told, they become barren, absurd and tiresome when retailed by some blunderer or inconsequent.

It is to be hoped that the obituary writers and post-mortem *raconteurs* will retain their literary integrity. In the increasing specialization of newspaper work they will doubtless become largely, as they are now partially, a particular class; and when this time arrives they will possess a peculiar power and become very desirable associates—to men seeking notoriety on the other side of the grave. For this reason the proprietors of newspapers will be wise beyond their publications in resisting firmly any tendency to sign obituaries. A great many people are committing suicide nowadays for the apparent purpose of attracting public attention to their own precious personalities ; and it is patent that the writer of facile death notices would be in great demand with such theatrical enthusiasts. Fame on this side of the dividing line is all very well. One can attain it by putting a great deal of "individuality" into a very little work, and then courting "literary" friends. How many people have been written into a reputation by others ! But there is one drawback to this. A reputation has to be maintained, and is not consequently all a joy. It is frequently very difficult and somewhat trying to keep one's "literary" friends up to the proper writing point. Now a post-mortem reputation has no such abatement of its charm ; and circussy suicides might very well attempt to attain it by similar methods. True, only a posthumous mortality would be granted to such an one, for the newspapers are the graves, as they are the creators of reputations ; but even a few days of public existence would be something. Let us be modest in longings for a journalistic life after death.—*Primus*.

That the biography of Richard Monckton Milnes, the first Lord Houghton, should be written by T. Wemyss Reid is perhaps more fortunate for the late lord than for the living author. No friend of Milnes need fear to trust the latter's memory to the former's account of his life. The book is pleasant reading from one end to the other; it makes one know the man (to a certain extent) and like him. Mr. Reid's success is, then, indubitable, and I should add it was no easy matter to dress up such a life for the public. There were so many points that needed explanation that the elements of a good *showing* were lacking. It follows that since Mr. Reid is always removing plausible misconceptions, the book is pervaded with an undeniable flavor of advocacy; but by this I do not mean to impeach his fairness. A case had to be made for much in Milnes' life; his biographer had much to carry. It was not a massive force, bearing all its littleness with ease, forever revealing its own strength and rejoicing in the revelation; it was not a simple, steadfast life, that reveals itself completely, firmly and quietly; it was, on the contrary, rather a mixed life, the current of which wandered deviously and as it were uncertainly over many fields—with great good to some and great waste.

One result of this is that the contributions of Milnes to his own biography are not on the whole the most interesting parts thereof. His external associations formed such an important part of his life, that his story is told largely through them. Correspondents must have found his letters

pleasant to receive; but he was not a good letter writer, and they do not contain very much charm for an outsider. Of incidents and actions there are few to be called prominent. In spite of any interest we may feel in the man, the parts of the book that read most pleasantly are the letters of his friends and the explanations of Mr. Reid; yet this statement, standing alone, would create a false impression. While the letters of his friends to him are interesting in themselves, and often eminently readable, yet the man to whom they are written is responsible for no small part of the interest and the charm. And Mr. Reid's explanations and additions, in excellent taste and happily worded though they are, derive interest mainly from their subject. Milnes gains a good deal by being presented to the reader mediately; because being something of a woman, he exerted his best influence through personal contact—on the few not on the many. He was probably the most indefatigable seeker after men of reputation and ability that his day and generation saw. People accused him of a mere vulgar curiosity, of being a hunter after celebrities; but there can be no doubt that the mainspring of his desire to meet clever people was an eager interest in them—in their ideas, in their work, and in their personalities; and that his mental vivacity helped to stimulate, and his mental hospitality to encourage many even of his most casual acquaintances. His manner was captivating and pervasive. Tennyson said that his presence in a room at once put everybody into a good humor; and this tribute is a key to his excellences, his peculiarities and his popularity. He helped both Tennyson and Swinburne to fame and influence by being the first to publish critical estimates of their works which recognized the fullness of the poetical genius of each. Others he assisted by advice. Still others he opened his purse to; and by using his large social influence in their behalf, secured to them the start which subsequently led to success. The extent to which he endeared himself to literary England was fittingly displayed by the large number of published regrets which his death called forth—a number out of all proportion to his direct public standing.

Yet it is obvious that if this best part of his life had been all there was of it, his biography would never have been written. A man whose nature is most fruitful through personal effect must be content to have his tale untold. If his friends be prominent men, his name may figure in their lives; and, no doubt, Milnes will receive mention in the biographies of many famous men of his time—as it has already been mentioned in that of Carlyle and others. Such a record alone would, of course, be very incomplete; by far the larger number of his friends, acquaintances and dependents never will have their biographies written; and it is something of a pity for Milnes' sake that the England of the present century has not been an England of memoirs; for if it had, he assuredly would have been remembered through many pages. But there is really no way in which this incompleteness can be properly remedied. The life of a statesman, a general, a man of action of any kind tells itself with a reasonable degree of truth; the life of a poet, an artist, or a man of expression can be told plausibly, and we have his works to round off the tale; but a man of character, whose effects are exerted through personal contact—his life, although its influence may be as beneficial and its message may be as vital as those of the other two, can never be adequately delineated. We can get glimpses and suggestions, but that is all.

I may have seemed to go too far in saying this of a man of such diverse and multitudinous activities as Milnes—a man who apparently sought and certainly attained much publicity throughout something like fifty years—a man who was poet, statesman, diplomatist, wit, reformer, philanthropist amd scientist, and at different times well advertised in all of these occupations. I have, however, no intention of under-estimating his public enterprises. This is no time or place to put a careful value on them. During his early years his poetry was very popular, so much so that he was regarded as Tennyson's most promising rival. Lately it has been almost entirely neglected save by them who knew something about the man; but if it did not deserve its ephemeral popularity, competent critics are agreed in asserting that it as little deserves its subsequent neglect. As one would imagine, there is a wonderfully wide chasm between his best efforts and his poorest, his inspiration frequently failed and he fell back on current affectations. Some few of his poems, however, ought to find a place in any anthology of the best English verse. As a member of Parliament, he was active, prominent and conscientious, but not very successful—largely because, though ordinarily he was a party man, his opinions were always formed independently, and often led to independent action. He was eagerly and peristently interested in many of the social reforms of his time; but the few with which his name is particularly identified are not of much importance. His social duties were of

the most varying and occupying description, for he was a generous entertainer and a frequent visitor. Besides all these interests he had many smaller ones, such as bibliophilism, charities of various kinds, and essay-writing for the quarterly reviews and some of the monthlies and weeklies. It is evident, however, that every one of these occupations interfered with all the others; and for that or some deeper reason he was not in the front rank either as a writer, a politician, a scholar, or anything else.

The fact was that Milnes' life lacked an end, and any proper subordination of part thereto. He took no means of making his work peristent and effective. His disposition was mercurial and altogether too easily discouraged. Nearly the whole of his poetical activity was included within ten years of his younger life: during part of the same time and for somewhat longer, he made a specialty of continental politics and foreign affairs generally, his purpose being to qualify himself for a ministerial office. After a couple of disappointments, however, he utterly relinquished that specific end and settled down as a kind of literary expert, social leader and political independent. He still retained the keenest interest in the affairs of the day; but allied himself most actively with young and needy causes—the kind that would be most benefited by the assistance of a person with his name and social influence. In the end he naturally felt that his life had not been altogether a success, and an observer must reluctantly agree with him. Every person whose aims are noble will feel when the time comes for finally taking stock of his own position, that most of his objects remain unfulfilled, and consequently he may call his life a failure, but in Milnes' case the failure was not primarily due to stubborn circumstances, but to the want of any integrity of purpose.

That a nature so sound, so mature, and so rich should have left nothing permanent behind it is a great pity; and, unfortunately, although we know our loss, we cannot estimate our gain. For amid the confusion of diverse aims—some trivial, some halting, and nearly all conflicting—the sweet, hospitable, generous and stimulating nature of the man stands out with great distinctness; and we can never tell how much his contemporaries owed to its action. If it was much, his life was no failure whatever the result of his more immediately practical aims, for the possibilities of effective influence by a fresh, persuasive and captivating personality are boundless. In the necessary absence, however, of any such knowledge, one can only regret the palpable loss. Here was a nature that seemed to be highly and richly adapted to beneficent and successful achievement. Contributions to its abounding life poured in from every source; but they gathered as in a great lake, and instead of rushing out in some fit and ample channel, were gradually evaporated or trickled away in a thousand little outlets. In putting down his biography, one can only say with a sigh: "It was a good life. Would that mine might be as worthy. But there was pity in it."—*Secundus.*

MEN WHO HAVE ASSISTED IN THE DEVELOPMENT OF ARCHITECTURAL RESOURCES.—No. 1.

JOHN B. CORNELL.

THE history of successful men teach important lessons, and give encouragement to those who are struggling amidst adverse circumstances.

John B. Cornell, to whose energy and ability the present condition of the iron trade (particularly in New York) is due in no small part, was born on Long Island, Feb. 7, 1821. After the ordinary schooling that boys received in those days, he was placed with his elder brother, George, in New York as an apprentice to learn the trade of a worker in iron, in the manufacture of wrought-iron-doors, shutters, gratings, railings and other iron work for buildings. Shortly after starting in business for himself, in 1847, when the architectural iron business was in its infancy, John B. took into partnership his younger brother, William W., under the firm name of J. B. & W. W. Cornell; and they continued as partners until the latter's death, which occurred in 1870. When Mr. Cornell commenced business it was in a small way, and in a modest building, on Centre street, just south of Walker street, where now stands the large building which the firm in due course of time erected for their office purposes, and which is still occupied as the office by the successor of the old firm, J. M. Cornell, son of John B. Cornell, under the present title of J. B. & J. M. Cornell. Business steadily increased with the young firm, and in 1856 additional adjoining lots were leased and an iron foundry erected. Greater shop capacity was soon required, and in 1859 large foundries and fitting shops were built near the foot of West 26th street, that in the course of a few years spread out to cover some seventy full city lots of ground, with a river frontage, the

JOHN B. CORNELL.

buildings filled with all the best known appliances for working wrought iron and making castings.

The small foundry in Centre street was started principally to cast chilled iron for safe and bank vault work. In the manufacture of bank vaults the firm acquired an extended reputation. In those days the steel industry had no place in this country. Wrought iron I beams were not rolled here until 1860, and for years after that date 7-inch beams were the only size that could be had of American manufacture. Structural iron was nearly all imported from abroad. More pig iron was imported than was produced in this country. But a new industry was looming up in New York, that of cast-iron fronts for buildings. One-story iron front columns with rolling iron shutters had long been used. Entire fronts of cast iron was the natural sequence. Instead of stone ashler with an architrave around each window opening, as was the usual style of commercial buildings, came iron columns and arches and projecting cornices for the upper stories as well as for the first story, and at a cost far less than the same designs could be executed in stone. The Messrs. Cornell read correctly the signs of the times, and increased the size of their works to meet the public demand for iron fronts. The architects who had the largest practice were those who, like John Kellum and Griffith Thomas, designed the most in cast iron. The architectural iron industry was fortunate in receiving the early patronage of some of the most intelligent and best known of the large property-owners, such as the Harpers, A. T. Stewart, Peter Gilsey, the Goelets and others.

It is the province of the contractor or manufacturer to produce what the architect may design. Architectural critics have rarely had a good word to say in favor of cast-iron fronts. Their demand has been for such a treatment of an iron front that it will unmistakably bear the stamp of cast metal, and they blame designers of iron fronts for following outlines and proportions suitable to stone, insisting that an iron architecture should be invented, if none yet exists, one that will give an expressive treatment and an appropriate decoration to the material used. In architecture the recognition of permanency is one of the true principles of the art. A front must not only be strong enough, but it must possess an evident reserve of strength, which is the result of obvious abundance. A building should bear the impress of solidity, as though it were indeed a growth of the earth itself, and not of so fragile an appearance that the winds can blow it away.

In the initiatory steps for the manufacture of iron fronts a great deal of ingenuity and experiment were required. Mr. Cornell had much inventive skill, and the records of the Patent Office bear testimony to many ideas originated by him, such as his rolling shutter, his dove-tail sheet lath, and his double shell iron column, all of which have been extensively used.

A large mechanical establishment must be constantly and unremittingly kept supplied with work to make it profitable. There came stagnant times in building operations, and when work in other channels had to be sought out. Following the outbreak of the Civil War, the Messrs. Cornell built turrets for the Ericson monitors and other work for the Navy and War Departments of the Government. Later, when a dull spell occurred in 1876, the firm went into elevated railroad building for the New York, and afterwards for the Brooklyn companies.

A photographic view of A. T. Stewart's store building is given on the following page, by way of illustrating the magnitude and character of the Messrs. Cornell's manufacture. It is now thirty-two years since the first section of that store front was set up in place.

Stewart's store covers an entire block of ground bounded by Broadway, Ninth and Tenth streets and Fourth avenue, in size nearly 200 feet in width, by 328 feet as the greatest depth. Mr. Stewart was an enthusiastic advocate of cast-iron fronts for commercial structures, believing that the material had in its favor unequalled advantages of lightness, strength, durability, economy, incombustibility and ready renovation. His down-town store, at Broadway and Chambers street, was of marble above the first story, cumbrous and excluding light. His up-town store gave the ample light that this merchant had learned was so valuable for his business. In its dress of white paint, Mr. Stewart used often to liken his iron front to puffs of white clouds, arch upon arch, rising 85 feet above the sidewalk. When Mr. Stewart, in 1870, erected his Women's Home on Fourth avenue, Thirty-second and Thirty-third streets, a fire-proof structure, he adopted cast iron as the material for the fronts, and that without any desire to save in the first cost of what he generously intended should be a gift to the public. Mr. Stewart's architect was Mr. John Kellum. Another of Mr. Kellum's iron front buildings is that of Tiffany & Co., jewelers, Union square and Fifteenth street, also executed by the Messrs. Cornell.

Broadway, New York City. STEWART BUILDING, John Kellum, Architect.

The dry-goods store of Messrs. Arnold & Constable, Broadway, Nineteenth street and Fifth avenue, was built in two sections, the easterly portion first, with marble fronts above the first story, and the westerly portion next, fire-proof and with cast-iron fronts. The architect was Griffith Thomas, the contractors for the iron work, the Messrs. Cornell. Another of Mr. Thomas' iron fronts is that of the Domestic Sewing Machine Company, on the southwest corner Fourteenth street and Broadway, and made by the Messrs. Cornell.

Light, sunshine and pure air are modern innovations in business houses. The time was when bright and healthful surroundings were deemed incompatible with commercial thrift, and business was carried on in dingy, gas-lit cells. The old race of merchants and bankers lavished their gains on their residences, to which they escaped with all the zest such a contrast could give between home and office, but their clerks toiled on in sedentary labor, blanched in countenances and withered in forms. The time did come, however, when beauty, sunshine and health united in the environments of trade, and to the introduction of cast-iron fronts is the wonderful change primarily due.

The process of manufacturing an iron front is interesting in every stage, from the time when the architect's small scale elevations are received until the finishing coat is put on the work set up in place. Large scale drawings are made, followed by full-size drawings of the principal parts. Then the patterns are prepared. In the foundry the pieces are moulded in sand and the castings made. Cleaning, chipping and filing next follow. The ends of the cast columns are cut off true and smooth in a double-ended rotary facing machine, In the fitting shop the columns are laid on their backs, spaced the right distance apart, bolted together story upon story. The light castings, the arches, the soffits, the sills, the ornaments, are all fitted in their place and bolted or secured fast. Lying on the floor the iron front is thus put together in all its parts. A surface coat of oxide of iron paint is given to the work. The parts are then separated, care being taken to mark each piece so that it can be put back in its proper place. All surfaces that the first coat of paint did not cover are now painted, including the opposite surfaces of the light castings. The parts are laid aside in an orderly manner, until the building is ready to have the front set up. The making of iron fronts is only one branch of the general manufacture of iron-work for buildings, which includes forging, blacksmithing, punching, drilling, planing, rivetting.

It is somewhat difficult to speak of John B. Cornell without linking in the same sentence the name of his brother, William W., in the praise that both are entitled to in organizing, systematizing, and conducting so vast and complicated a manufacturing business, and creating a new industry. Both were men of discernment, energetic and progressive. Both commanded the respect of their fellow citizens, to which their well-tried integrity and upright course entitled them. Their views were alike in many respects. In religious beliefs both were earnest members of the Methodist Episcopal Church, to which they made large contributions. In William's death the Methodists lost one of their most active and liberal members.

When the manufacturers of architectural iron-work in New York and vicinity organized into an association to advance the best interest of their trade, Mr. John B. Cornell was elected president thereof, a position which he continued to hold until his death. When the constitution of that society was being drafted, Mr. Cornell insisted that it should recite that the society should neither fix wages nor selling prices; that each and every member should be entirely free to employ whomsoever he saw fit, and for whatever he should deem best, and to sell his manufactured products and wares at any price and on any terms he pleased; and that in no way and at no time should individual liberty be abridged or restricted by society action. This declaration of principles discloses Mr. Cornell's love for fairness and freedom in business transactions. The respect and esteem of his fellow iron manufacturers is shown in his repeated re-election as president of the society over which he continuously presided for many years.

Mr. Cornell long resided, prior to his death, on the nortwest corner of Fifth avenue and Forty-fourth street. The house was recently altered in the lower stories, and is now occupied by the Fifth Avenue Bank. Mr. Cornell died October 26, 1887. The memorial resolutions adopted by the Society of Architectural Iron Manufacturers declares that his career illustrates how a man can be a true christian, a patriotic citizen and a just employer. The history of his life does indeed present an encouraging example of success by straightforward and legitimate enterprise.

THE NEW EDITION OF FERGUSSON.

History of the Modern Styles of Architecture. By James Fergusson, D.C.L., F.R.S., etc. Third Edition. Revised by Robert Kerr, Architect, F.R.I.B.A., etc. In Two Volumes. With Illustrations. New York: Dodd, Mead & Co. 1890.

To the student of architecture, Fergusson's works, however unsatisfactory they may be, are indispensable. No other author has so nearly covered the whole field, or produced a book for popular reading in which the history of architecture is so well presented. This is as true of his "History of the Modern Styles" as of his general "History" and of his "History of Indian and Eastern Architecture." Not one of these is satisfactory, as we have intimated, and yet there is no other book that covers the same ground. His books on ancient architecture are unsatisfactory in great part by reason of his proneness to indulge in fantastic "restorations" for which better instructed archæologists find no warrant, and which indicate rather what he thought ought to have been done than what in fact was done. A French archæologist observed of his restoration of the Erechtheum that "nothing whatever exists to support these suppositions." An American architect observed of his theory of the method in which the Greek temples were lighted: "That is the way in which Fergusson would have done it, but it is not the way in which a Greek architect would have done it." Mr. Fergusson, indeed, enjoys the unique distinction of having produced a standard work upon a subject upon which nobody regards him as an authority. In Indian architecture he is, indeed, an authority, and even the authority, but that is only because there is no other. It is an illustration of the general ignorance and incuriosity of Anglo-Indians touching the country they govern that Mr. Fergusson should have been almost the only Englishman resident in India who has paid systematic attention to the monuments of the former possessors of the land.

In the body of his history Mr. Fergusson's defects are a general lack of perception of the subtleties of architectural art, and a tendency to dogmatize from rules of his own creation, which are commonly founded not in the nature of things but only in the nature of Fergusson. His account of Gothic art is moreover in a great measure vitiated by his individual dislike of it in comparison with antique architecture. This constitutes a personal equation which he could not allow for, because it seems that men are born Romanticists or Classicists, as they are born with black hair or red. This dislike appears, not only in his preference for other modes of building, but also in his preference, among buildings of the Gothic period, for those which are least Gothic. This coöperates with his patriotism to make him overestimate most absurdly the value of English Gothic in comparison with that of France or even with that of Germany, and to praise the English architects for their superiority in various points, when, as Mr. Moore has lately shown, what he is really praising them for is for not understanding the French Gothic they attempted to domesticate. On these accounts and on others, he is a very unsafe guide, and yet, as we say, his books are indispensable. They are indispensable by reason of the extent of the field they cover, and especially by reason of the range and number of the illustrations, and the judgment with which the subjects of these are chosen. So that, to the reader who reasons upon what he reads, Mr. Fergusson ordinarily supplies the means for refuting himself.

The "History of the Modern Styles" is as valuable as his other books, in the respects in

which they are valuable ; but it is even weaker in the respects in which they are weak. In any case, a work on modern architecture that is twenty years old would stand in need of revision ; and the latest edition of Fergusson before that under notice bears the date of 1873. His account of modern architecture on the Continent of Europe needs no revision, and not very much extension. There has been no architectural revolution, nor even an architectural "movement" since his book was written, but only the addition of new examples to a well understood and universally practiced style. Of the works of this style, too, Mr. Fergusson was an impartial if not a highly discriminating critic. All that was needed for this part of the book was the addition of the most striking examples that have been furnished since Mr. Fergusson's time, and an occasional correction of his eccentricities. The examples have been chosen with excellent judgment, for the new Hôtel de Ville and the Faculty of Medicine in Paris, the library in Marseilles, and the Palais de Justice in Brussels, with the street fronts from Berlin and Vienna, are nearly all admirable and are all highly typical buildings.

It is in the treatment of English and American architecture that the book needed to be revised and even castigated as well as modernized. Fergusson's account of architecture in the United States is disgracefully incompetent and ignorant, as well as contemptuous. It is true he wrote in 1873, but in 1873 Trinity Church was nearly thirty years old, and photography was available. Fancy describing "Calvary Church" and "the Church of the Holy Redeemer in Third street" as among the most creditable buildings in New York, even at that time, and referring for authority as to what was going on to "some recent paragraphs in American papers!" The publishers would have done honor to Fergusson's memory by destroying the plates which bear witness to an ignorance that is certainly careless if not willful, and employing the editor to treat the whole subject anew. This he has, to be sure, virtually done in an additional chapter on "Recent Architecture in the United States," which is very well informed and highly appreciative, not merely of the achievements of the better of our architects, but also of the aims and tendencies manifested in their works. The influence of Richardson, which is the most conspicuous fact in our recent architecture, is recognized and traced to its true source, and Richardson's own work is very fairly estimated. The examples chosen for illustration are selected with reasonable skill. If the selection is not such as would be made by a traveler of Professor Kerr's perspicuity from an observation of the buildings themselves, it is a highly creditable selection to have been made by a foreign critic from such sources as were accessible to him at home. The chapter on American architecture will repay a careful perusal by all readers who are interested in its subject. Of course they will wish it were longer and more exhaustive, but that is a desideratum that can be supplied only by a history of American architecture for American readers, a work for which the time seems now to be ripe.

The other blot upon Fergusson's book is his account of the English Gothic revival, and this is perhaps even less excusable, since his material was abundant and easily accessible. He erred here willfully and through the violence of his prejudice. Nobody could imagine from his account of the revival that it had enlisted the enthusiastic efforts of a number of able and disciplined artists, who made a great mark in the history of English architecture. His treatment of these men and their work is outrageously peevish and contemptuous, and his selection of illustrations of their work seems to have been satirical. His editor, without directly contradicting him, has managed to give a fair account of the movement which Fergusson travestied, and to furnish it with suitable illustrations. The reader of Fergusson's book who reads it for the first time in this edition is much to be congratulated if he be a reader who takes his opinions from his author without question ; and upon these two subjects Fergusson did not pursue his custom of furnishing the means for his own refutation.

RAYMOND LEE.

CHAPTER III.

FIFTEEN YEARS LATER — THE GUESTS WHICH THE STORM SENT.

"MOTHER, why do you watch me so?"

"Because I love you, Raymond. Oh, never mind the weather; come here to me, sit on this stool and put your head on my lap."

Mrs. Lee said this, and when her son was seated beside her, she ran her fingers caressingly through his locks.

"God bless thee, my boy."

The mother filled those words with every tone of all within the harmony of love. Naturally affectionate and sympathetic though Raymond Lee was, the deeper notes of this music were inaudible to him. Very few in youth have ears attuned to it. The capacity to appreciate it comes to us later in life — with some other things. Then, alas, too often we can awaken but the echo of the music. Raymond, years afterwards, in thinking of these early days, recalled the old fable which tells of the bad fairy who endeavored to turn to clay the wealth in a certain great king's palace, and succeeded with the crown, which was his ambition; the sceptre, which was his power; the diamond, which was his fame; the opal with its iridescent depths, which was his hopes and dreams; all were changed to dross save a certain little golden casket wherein was his mother's love.

"Mother?"

"What is it, Raymond?"

"Won't you let me have that boat?"

"Don't ask me, Raymond; I fear...."

"But I'll be careful, mother. I'll tell you what I'll do: I'll never go out in it unless you say yes."

"Even then, Raymond, something might happen. Oh that gust, how it shook the house; this is an awful storm."

"But, mother, nothing can happen; besides, Joe Slagg says...."

"What is it Joe Slagg says?"

"He says (this with much hesitation) that I am a woman's boy, and the sea would make a man of me. He says the sea does not love a weakling or a coward."

"I wish Mr. Slagg would mind his own business; he's a fool."

A pause followed. Mother and son were busy with their thoughts which with both moved in the same direction.

"Am I a woman's boy, mother?"

"You are your mother's boy, Raymond."

"Is there any difference?"

"Raymond, dear, don't; you pain me. Do you want to grieve your poor old mother? There, there now, I knew it. Play me something—sing to me."

* * * * * *

"Heigh-ho, the lowering skies,
The black clouds over the sea,
And by and by the storm will arise,
Bringing a message to me."

"Oh, my boy, God has given you a heavenly voice."

"Why do you cry, mother?"

"Because it is sweet to do so. You touch something hidden."

"What is it, mother?"

No answer was given to this question.

"Mother, when is Mr. Fargus coming again. It is nearly three months since he was here."

"You love him, don't you, Raymond? He is a good man."

"Oh, yes, he is kind to me, but I like him to come because you feed him as though he was an old red-faced cardinal—that's what Kate says—and I go halves with him."

"Gourmand, come here."

"In a minute; let me watch the clouds. Whew, look how the wind is blowing them. The sea must be fine. Mother?"

"What, dear?"

"Would you mind if I ran down to the beach, only for a minute or two? I won't be long."

"Restless one, I believe the sea has charmed you. Go if you want to, but don't be long. Wrap up."

The last words were spoken to the air. The mother watched her son running down the street bending against the wind.

"Oh," she sighed, "can I keep thee, Raymond, my boy."

She resumed her work. The cotton took form from the point of her crochet needle, but I doubt if an answer to her question shaped itself so easily.

The hurricane which Raymond faced when he left the cottage even yet is not quite forgotten on the South coast. Those who remember it always speak of it as the "Great Storm." The wind blew in mighty gusts which smote the earth. Great banks of gray clouds scurried across the heavens. The rain fell in torrents. It was a day in which the strong soul delights. The fury of the storm was intoxicating; wild emotions stirred the pulse to an unwonted measure, and something of the passion of the mighty tumult passed into the veins and forced to the lips a cry of wild exultation. Raymond felt these sensations when he stood on the cliff-top, and steadying himself against a part of the old ruins, looked seaward. The evening light was fading. The gray waves and the gray clouds mingled, mingled in mist and foam, and were scarcely distinguishable one from the other. Suddenly a very faint reddish light flashed far out from land. So faint was it that Raymond might have mistrusted his eyes had not the roar of the storm a second or two later taken, for an instant, a sharper accent. Immediately afterwards he saw what was like a star shine forth for a moment and then go out. Raymond trembled at the sight. So great was his excitement that he tried to utter a cry, but the roar of the storm stifled it in his very teeth.

He started at a run for the village. On his way he was blown down twice. To shorten the road he scrambled over walls and made through the gardens of some of the cottages, and thence down the steep winding cliff-road to the coast-guards' station on the beach. He hammered the low door of the building with his fists, and it was flung open by a man in a "sou'wester." It was Joe Marley.

"Oh, Joe, there's a vessel sinking off the Monastery Cliff."

"Off the Monastery Cliff, Raymond!" exclaimed the man.

"I was up there and heard a gun."

Accompanied by three other men and Raymond, Joe Marley hurried out of the station—up to within a few feet of which the great waves were dashing—and shading his eyes with his hand, as though a better vision were gained thereby, peered seaward. The sharpest eye could then distinguish nothing but the turbulent confusion of the sea and the sky. For the space of some minutes the men listened intently.

"Up the cliff, boys," cried Joe Marley. "Two of you get out the gun. We'll see if they hear us."

Marley, with Raymond and another coast-guard at his side, stationed himself at the top of the cliff. Word had passed through the village that a ship was foundering off the coast, and a small crowd soon collected around the three.

"Where is she?" asked several voices.

"Off there," cried Raymond, pointing to where he had seen the light; but nothing was visible there then. After a minute or two Tom Burroughs asked, "Are you sure you heard a gun?"

"Aye, aye," said several, as if approving of the doubt.

"I am sure," said Raymond positively, "and I saw a rocket too."

"You did, eh?" said Joe Slagg, nodding his head. "I wouldn't give much for her chances, then. It was a night like this when the Polly went down, nigh on twenty years ago."

"Oh," said a bystander, blowing the rain from his beard, "this is worse than that. We got the boat out then, but yer couldn't do it to-night."

The boom of the gun sounded from the beach below, but how faintly!

"They won't hear that," said Marley shortly, shaking his head. "The wind will kill it."

The words were barely uttered when the men at the station sent up a rocket. It rose scarcely a hundred feet, and fell without breaking. In the next lull in the storm another rocket went up, and this sent a golden shower of light high over the land. The little crowd cheered, and then every eye and ear were strained to catch an answer from the sea. The minutes passed, and none came.

"You are mistaken, my boy," said Joe Marley quietly, "or she's gone down."

"Then down she's gone," said Raymond, "for I've made no mistake, John. Hark! There's a gun."

Every soul thrilled at the sound.

"There's another," cried half a dozen voices, as another and more distinct report was heard.

"To the boat, boys," cried Marley.

The crowd of men, women and children hurried down the cliff to the station. The life-boat was speedily run out on its carriage to the water's edge where the sea foam washed around it.

"It's no use," said an old gray-bearded man approaching Marley who with the rest of the boat's crew was putting on a cork jacket. "You can't do it, Joe."

"John, let me go with you?" Raymond asked, seizing the seaman's hand.

"You, Raymond!" said Marley, putting the boy aside. "No, no, this is no trip for you. Out with her boys."

"You'll take their lives, Joe," said the gray-bearded man, "if you launch that boat. I don't think you can, though."

But the boat was launched. Joe Marley stood in the stern, his body thrown forward, his weight upon the tiller-ropes. As a great sea rolled in he cried to those on shore and the life-boat slid off the carriage into the wave as it receded and was swept out to the black seething water beyond. An incoming wave broke completely over it, but the power of a dozen strong arms was on the oars. For a second the white hull was visible, wavering in the billows.

Another instant and it had passed from sight into the darkness.

"God is with them," said the gray-bearded man, "or they never could have done it."

The fisher folk were still peering into the darkness seaward after the life-boat, when Mrs. Lee, with a black shawl tied about her head, pushed in among them. Zipcy accompanied her.

"Where is Raymond? Where is my boy?" she cried.

"He was here a minute or two ago," said Tom Burroughs, looking around. "He wanted to go in the boat, but Marley wouldn't let him. He told him to go home."

"But he did not," cried Mrs. Lee, greatly alarmed and on the point of tears. "He is not in the village."

"Pr'aps he's on the Monastery Cliff," suggested one of the coast-guards, "where he was when he heard the gun. It was him as brought us the news."

"Yes, yes," said Mrs. Lee eagerly. "Will some one go and see for me? Oh, Raymond, Raymond, where are you?"

"I'll go, ma'am," said a tall boy in the crowd.

"Who's that?" asked Mrs. Lee, for it was too dark to distinguish faces.

"Will Perry, ma'am," said the lad.

"Good boy," said Mrs. Lee, "be quick. Hurry, hurry. I'll pay you well. Oh, Mr. Burroughs," she cried, as the lad set out, "could—could—do you think anything could have happened to Raymond? Oh, those waves."

"No, no, ma'am, no danger of that," said the fisherman.

"It may be," said the gray-bearded man slowly, "he's in the boat."

"How could he be there?" said Mrs. Lee, fighting the suggestion. "Surely, surely, you wouldn't let him go?"

"No, ma'am, of course not," said the gray-bearded man, apologetically, "but I was thinking, you know, may be he slipped in. He wanted to go so."

A few minutes later the boy who had gone to the South Cliff returned and reported that although he had searched everywhere and called aloud, he could not discover any one. Mrs. Lee burst into tears and wailed in a piteous

way. Zipcy and the fishermen tried to reassure her in an awkward but not unsympathetic way.

"Don't take on so, ma'am," said the gray-bearded man. "Mark my word he's in the boat. I feel it in my bones he's in the boat. Don't you think you had better get out of the damp. Come to the station and wait. The boat can't be back for some time yet."

"Will it come back? will it come back?" cried Mrs. Lee. She knelt down on the beach and cried aloud: "Oh, Christ, give me back my boy." She fell forward prone upon her face, sobbing piteously.

"Come ma'am, come, said the gray-bearded man softly, as he lifted her to her feet. "Here, Burroughs, give a hand; take her other arm." And the two men almost carried the woman to the coast-guards' station. There they placed her on a bench before the fire, where she sat, in a half-comatose condition, sobbing. Every voice or new sound outside made her start and listen.

Two hours passed, solemn, anxious hours for the watchers ashore, then doubt, dark as the storm itself, filled every heart. Would the life-boat return? Fear created fantasies, and amid the howling of the wind and the sea many thought they heard shrill cries from afar out on the waters. Another hour had nearly passed when a cry, this time distinctly audible, rose from the sea, and in another minute the life-boat was seen rushing shoreward on the white crest of an enormous wave which carried it high upon the beach. As the keel grounded the fisher-folk sent up a mighty cheer. Mrs. Lee heard it, and without shawl or bonnet flew along the strand.

"Where is my boy," she cried, seizing Joe Marley, who had bounded ashore, followed by the crew, to assist in hauling the boat out of reach of the waves.

"Safe," was the reply given in a husky voice, for Joe Marley was putting forth the last effort of his strength. "He's astern with a little gal."

"Thank God," exclaimed Mrs. Lee.

"All of us should say that," said Joe Marley. "Give a hand bo...."

The strong man was completely exhausted. He tottered and fell to the ground.

Tom Burroughs and half-a-dozen others scrambled into the life-boat to help out the rescued. The first to disembark were three seamen, whose blanched and haggard faces told of the fearful struggle they had undergone. Afterwards two women were carried out, and Tom Burroughs followed, bearing a young girl who seemed to have fallen asleep in his arms. Then Raymond Lee dropped over the side of the boat. Mrs. Lee uttered a cry and ran to him.

"Oh, Raymond, Raymond," she sobbed, with her arms around him as she covered his face with kisses.

"There, mother, there; I'm all right. Take care, I am wetting you through. Oh, that was a sail! I wonder where the fat man in the dressing gown is. He's got a nigger with him who's nearly turned white. His daughter fell into the water."

"Oh, Raymond, whose daughter?"

"The dressing-gown man's. She isn't drowned. Marley fished here out. There she is. Tom Burroughs has got her. Oh, there's the fat man, mother. Look at him, look at him. He's climbing over the wrong side of the boat."

"Come home, Raymond, you are excited—and, my boy, you are drenched to the skin."

"That's nothing. Just a minute, mother, let me give the fat man a hand. Hie up there, the ladder's on the other side."

"Damn the ladder! Ugh! my feet are too short."

"Don't go back. Step on my shoulders. In the lexicon of youth, etc."

"You can't hold me."

"Never mind. I can break your fall. There. Easy—easy. That's better than breaking your neck, sir, isn't it?"

"Whoever you are, my lad, I thank you. Where is my daughter? Have you seen her?"

"That's she, isn't it? lying on the beach over by that man."

"Yes, yes.... My darling, you are better, eh? Thank God. Oh, how cold your hands are. Give them both to me. Where are we, my good fellow? Where's the town? How can I get to the hotel?"

"There's only the 'pub,' sir," said a sailor, "the Ship."

The name was ominous. The fat man shivered.

"You had better come home with us, sir," said Raymond, "eh, mother?"

"Certainly, dear, certainly. I shall be very glad in a time like this if the gentleman and his daughter...."

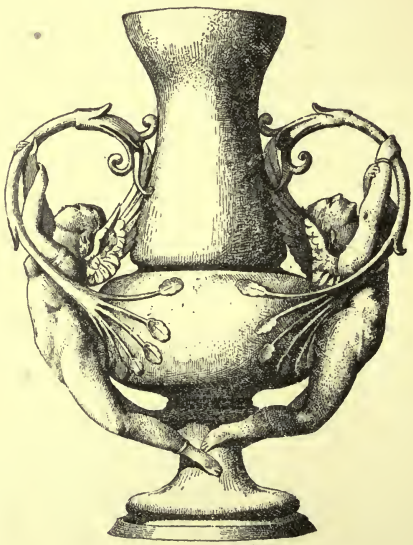
The fat man made a low obeisance.

"Madam, you are very kind. My helplessness must be my excuse for any intrusion."

"Come on, sir," cried Raymond, setting out. "If you will go ahead with mother Tom and I will carry Miss...."

"Pilgrim," said the gentleman.

To be continued.



INTERIOR VIEW OF DESIGN SUBMITTED FOR CATHEDRAL OF ST. JOHN THE DIVINE,
New York City. Wm. A. Potter and R. H. Robertson, Architects.