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THE Commissioners of Education of the city of New York lately appointed a special committee to consider the reorganization of the service of maintaining the city school-houses, which is under their charge. The first recommendation which the committee made in their report was that a supervising architect should be appointed to make plans for new school buildings as they were needed, that not being part of the duty of the Superintendent of Buildings, whose business it was simply to keep the existing ones in repair. One of the commissioners thereupon declared that the Board needed no architect, that his salary would be thrown away, and that the twenty-five hundred dollars demanded for it would pay the schooling of one hundred and sixty primary-school children; and, citing a school in Seventh Street, which the superintendent had planned, defied any architect to make a better school building. With these assurances, the Board decided not to have an architect. Now of the excellence of the Seventh Street school building we know nothing, but we think our readers' credulity will hardly stretch to the belief that no architect could build a better. If it really warrants this belief, it must at least be singularly different from the other school-houses of its native city, and we fancy that our enterprising fellow-journal, the *Sanitary Engineer*, will be mortified if its promised competition proves only that no advance is possible beyond what the Board superintendent has already accomplished. The argument of an alternative use for the salary is a familiar one, and a universal favorite, being applicable to all cases alike. The mayor's salary, for instance, would educate still more primary scholars. It was not made to appear, however, that if the twenty-five hundred dollars were spent on an architect any one hundred and sixty scholars would have to be left unprovided for. Private individuals have found it to their interest to have their architectural service, like their other special services, performed by persons who made it their special business of their lives to know how to do it, rather than by superintendents. Other cities have found advantage in appointing school architects and municipal architects. The school boards of London and of many English towns have their architects, to the benefit of their buildings. Boston has its city architect, and this has brought about a notable improvement in her school-houses, the building of which has been his chief duty. We do not know what might happen in New York if the office of architect to her Commissioners of Education should get into politics; but as far as economical reasons go we really think so rich a city might afford to risk twenty-five hundred dollars in an experiment, to see whether the skill of a capable architect could not make some improvement in the series of school-houses whose scandalous condition has made her notorious throughout the country.

We print elsewhere a letter which presents one phase of a question that we have several times discussed under other aspects,—that of the rights of an artist in the studies which he makes for works which are ordered from him. A sculptor made to order a portrait bust. It was cut in marble, and he incautiously left the plaster from which it was cut (the cast from his clay model, we presume) in the shop of the marble-worker

who did his cutting. The client took advantage of this negligence to order a second copy in marble from the stone-cutter, which was made without the knowledge of the sculptor. To the sculptor's protest that this proceeding injured him in two ways,—by the unauthorized use of the plaster model, which was his property, and by reproducing his work without his supervision,—the client answered that the model was not the sculptor's property, but his own, and that the sculptor was not injured by the reproduction, because his name was not put upon it; nor had the name a right to be there, inasmuch as the *replica*, like the model, was the client's property, with which the sculptor had no concern. The sculptor, on the other hand, claims remuneration for the use of his plaster, and "the right to pronounce as to the merits of its second reproduction."

As to the likelihood of enforcing a legal remedy in such a case as this of Mr. Bartlett's, that is a question for lawyers. But there are some points in the case which are clearly covered by prevailing usage, and there are others in which the right and wrong are easy to discern, whether the legal remedies are so or not. Two distinct questions are involved: that of the ownership of the plaster model, and that of the right to make copies. As concerns copying, no analogous American cases have come under our notice; but it is our impression that the latest English decisions are that the right of reproduction goes with a work of art when it is sold, in default of any stipulation to the contrary; and we should expect to see an American court take the same ground. From this understanding it would seem unlikely that the purchaser of a bust could be prevented from having copies made of that which he purchased, except by previous agreement. In the case presented here, then, we do not see that the client could have been prevented from copying the marble, for which he paid; but his right to copy the plaster would depend on the other question, whether that belonged to him or to the sculptor. But there is another side than the legal one to this question. It is an almost universally respected usage to go to the artist himself whenever a copy of one of his works is desired, because this is, as it were, a debt of honor to the artist, whose idea and skill give the *replica* its only value, and who has furnished it for a single use, and not for several; because, also, he is the person who can best insure that the copy shall have the qualities of the original, and his approval is the only one that is an adequate endorsement. Popular sculptors, like Mr. Powers, and Mr. Jackson, whose death we but lately noticed, have owed a great part of their proper remuneration to the many *replicas* they have made of their favorite works, by which, moreover, the knowledge of their work, and therefore their reputation, has been greatly extended. But an unauthorized copy is liable to injure an artist's reputation by representing him falsely, if it assumes to represent him at all; while if, as in Mr. Bartlett's case, his name is withheld, he is deprived even of the legitimate extension of his reputation due to whatever praise it may bring. To most considerate persons either argument would be sufficient: that the *replica* made without the artist's supervision will be inferior to the original; or that it is an offence against comity, at least, to deprive him of his share of the benefit of the reproductions. When a client is inaccessible to either of these arguments, we do not know that there is any protection for the artist except in copyright.

To return to the ownership of the model. We may assume that the client here ordered a marble bust, and not a plaster one; from our correspondent's account it is clear that the marble one was that which was delivered and paid for, and that the plaster was not delivered at all. It does not appear that the client either asked or paid for two busts, and, unless there were something in the negotiation which is not explained in Mr. Bartlett's letter, we see no more reason for setting up a claim on the plaster than on the clay model which was destroyed in making the cast. The case is of general interest, because it is only a special case of the general principle that the preliminary studies, draughts, and models which are an artist's means of arriving at the result for which the client pays his architect, sculptor, or painter are only the artist's tools, with which the client has no concern, except so far as they are the means, when they are exhibited to him, of securing his approval of the intended result. They are made absolutely and only for the service of the artist, and if he could and should do his work

and explain his intentions without them his client would have nothing to say in the matter. Under these circumstances, in the absence of any legal enactments, only an established usage could give the client any right to them. But the usage is all the other way. The painter does not give up his sketches when he makes them, except by special agreement; the architect does not give up his working plans, nor does one client in a hundred think of claiming the ownership of them; and this is not a local but a general rule, the world over. So far as we know, sculptors always keep their plaster models, as they would keep their clay models, if these did not perish in the using. The usage is as well established and as decisive in these arts as is the habit of the lawyer of filing away his briefs, or the minister his sermons. It is not so well understood only because people are not so well used, especially here in America, to dealing with artists as with lawyers and the clergy. It is but a small part of the community that ever orders pictures or sculptures of the artist who makes them, or employs an architect to build houses, and a majority of those who do these things do so for the first time. The usages of such transactions are new to such persons, and the reasons for them unknown. It is much safer, therefore, until the public is better informed on these matters, and will be a means of avoiding many controversies, for the artist who does not wish to waive his rights — and it is better, in the interest of his profession and of the general peace, that they should not be waived without special notice that they are rights waived — to make sure that his client understands them from the beginning; or at least that no opportunity is given him to disregard them, and no encouragement to misconceive them.

A SINGULAR case in architectural practice has just been brought up in a London court, as we learn from the *Architect*. A Mr. Brede, architect, had made a preliminary survey, contract drawings, and specifications for a new workshop, to the order of Mr. Dickens, boot-maker. The client, demanding no further service of his architect, got tenders from several builders for the work, and, though the lowest was below the architect's estimate, decided not to accept any of them; but found a builder who, furnishing his own specification, and substituting it for the architect's, built the workshop according to it at a cost below any of the tenders, and without the superintendence of the architect. When the architect presented his charge at the accustomed rate of two and a half per cent for such service, the client refused to pay the whole amount, alleging that he had used the builder's specification, and not the other, and therefore was not bound to any payment for the architect's specifications, but only for his drawings. Hence the suit. The judge in his decision strangely sustained the position of the defendant, and docked the charge for specification from the plaintiff's bill, allowing him four guineas for his fee and the costs of his suit. On what the award of four guineas was based is not shown in the report; but the original two and one half per cent demanded amounted to about thirteen guineas.

It is not surprising that the plaintiff took an appeal to a higher court. If such a decision as this were sustained, and the logical deductions from it applied generally in practice, the way of architectural business would be a rough and thorny one. The case, like most of those which come up in an architect's dealings with his clients, rests, in the absence of enactments for it, in equity and usage. The principles which should govern it are substantially those which we have cited in the preceding paragraphs. And the error in the judge's mind, as we must conceive it, was that which is common among persons who pass judgment *a priori* on an architect's relations without due study of the facts and conditions of his practice. It is ignorance of the principle established in ordinary usage that, unless by special agreement to the contrary, the architect, like any other professional man, is paid for his service, and not for the implements of it, which are his drawings and specifications. The implements may in particular cases be transferred to the client; ordinarily they are not. This principle being the basis of practice, and generally acquiesced in by clients, it follows that the service having been received by the client payment is due for it, whether the plans and specifications which are the incidents of it are used or not. On no other understanding could architects afford to practice. There are those now and then who will make their plans and specifications on approval, not to be paid for if not used, as there are some lawyers who will make their fees contingent upon a successful suit, and a certain class of physi-

cians who advertise "No cure, no pay;" but such conduct is as unprofessional, and as bad in its results, in the one case as in the others. In the instance before us, to refuse payment on account of the specification because another was substituted is like refusing to pay a physician's fee because the patient did not choose to take his prescription. The right to do so includes the right to refuse payment on account of the plans, if they had not been followed, — the right, that is, to refuse all payment to the architect whenever the client decides not to build according to his designs; for we can see no possible reason for discriminating between plans and specifications in this respect. Such a doctrine would place architects under a disadvantage which no other class of men have to endure; if practically applied, it would be ruinous to their profession. It has never been applied, but it is the logical outcome of this decision. The inevitable inference is, so far as we can see, that any man may go to an architect, may order him to make plans and specifications, and bring everything to the point of signing a contract, and then, if he chooses to desert him, go his own way, and have nothing to pay.

THERE is hardly a place in Europe dearer at once to the lovers of architecture and the lovers of the picturesque than the town, or rock, of Mont Saint Michel on the coast of Normandy. Certainly we know of no such striking combination of architecture and site as this grand and orderly conglomerate — crystallization, we might almost call it — of steep rock and lofty wall, enclosing town and abbey, and crowned with its florid fifteenth-century choir and tower, rising superbly four hundred feet out of the sea at the end of the long sands which at low water connect it with the main-land. In late generations, the town has been almost sacred to sight-seers of the more enthusiastic class, being remote from railways, and to the handful of fishermen's families who still live there. But now a company has been formed for its improvement; a dyke and a railway are to be led out to it from the shore, a harbor to be enclosed, and the town reclaimed for the practical uses of modern civilization. The friends of its picturesqueness have taken alarm, for already the company has attacked its famous walls, wonderful ramparts of the fifteenth and the three preceding centuries, and it is feared that irreparable mischief will be done to its beauty. Those who love this beauty may mourn the loss of the restorer of the walls of Carcassonne and of Pierrefonds, M. Viollet-le-Duc, whose energetic voice would surely, we think, have been lifted up to restrain, even if the concessions of the government have made it impossible to prevent, the injury done to this wonderful monument.

A MORE judicious resolution than those on the same subject which have preceded it is that introduced into Congress by Mr. Acklin to authorize the President to appoint a commission of five engineers (two from the army, one from the navy, and one civil engineer) to inquire into the need and the best route for an inter-oceanic canal. Mr. Acklin wisely took the ground that, though such a canal was to be desired, it was not clear to himself, and probably not to his fellow Congressmen, which was the best route for it; and his resolution provides that the commission shall examine all the surveys and report fully upon them to Congress. At the last meeting of the Geographical Society, Colonel Myers read a paper by Admiral Ammen, recapitulating the arguments in favor of the Nicaragua route, and criticising the action of the Congress at Paris in accepting M. de Lesseps's scheme; Mr. Menocal closed the discussion in the same vein, and admonished M. de Lesseps that when he got to Panama he would find a very different working climate from that of Egypt, and a great difference between its sand and the rock he would have to perforate. The strongest argument we have seen brought into the controversy is the amount of rainfall at Panama, which is said to be a half greater than that along the Nicaragua route, and to threaten the construction and maintenance of the canal. The fact remains, however, that a railway has been built and is continuously worked on what is substantially the same line, undeterred by the rains. The other side of the question was by no means unrepresented in the discussion, and letters were read from Mr. Nathan Appleton, a member of the Congress, who defended its action and the Panama route; from Mr. Walter W. Evans, a builder of railways in South America, who believed firmly in a sea-level canal, but not in that of M. de Lesseps; from Mr. Frederick M. Kelly, who, as General Viele declared, had sent out seven different expeditions to survey routes for a canal, and had no faith in that of Mr. Menocal, but favored a sea-level canal. On the whole,

it is likely that the Nicaragua scheme, though for the time being it has the ear of the public, is by no means sure, when the whole question of location comes to be generally discussed, of the suffrages of those who are qualified to judge.

WHATEVER may be the difficulty of fixing the cause of the fire in the Bellevue Hospital, which has seemed to baffle investigation, the causes which lent danger to it are clear enough; and if its lesson is not taken to heart it will not be for want of intelligibility. It ought not, indeed, to need the destruction of four lives to convince the community that hospital buildings which will burn like tinder before their occupants can be safely got out of them are not fit for their use, or that in any hospital, or any building, a room which connects directly with two dormitories is not a safe place in which to store combustibles. If there is any building whatever which should be built so as not to burn, it is one that is to be occupied by persons who, in case of danger, are absolutely incapable of moving out of its way. It happens, fortunately, that in hospitals sanitary considerations require the same kind of treatment that is necessary for security against fire, — that is to say, simplicity and openness of construction, hardness and impermeability of exposed surfaces, the absence of combustible material, which is also absorbent, and the avoidance of hollow spaces where contaminated air may linger or fire lurk unnoticed.

MUNKÁCSY'S PICTURE OF MILTON.

MUNKÁCSY'S Milton dictating *Paradise Lost* to his Daughters has now been some weeks on view at the Lenox Library. Within my recollection no single picture has excited such general interest in New York. Artists and laymen have alike flocked to see it, and this although it is peculiarly difficult of access. It is not in one of the convenient down-town galleries or shops, but where it necessitates a special pilgrimage and a special previous application for admission tickets — an application which has, unfortunately, to be repeated before each and every visit. The picture is so well known by reputation that to write in its praise would seem superfluous, were it not that it has recently been so severely handled by one influential paper that praise now becomes almost of necessity defence as well. The art critic of the New York *Tribune* has long been looked upon as the cleverest and most instructive of the American press. The general reader turns to him for trustworthy lessons, and our youngest, most promising school of artists for intelligent sympathy and comprehension. Often, also, they accept from him criticism and correction such as they would heed from no one else. When, therefore, the *Tribune* criticised Munkácsy's picture very harshly, its words, standing opposed to the universal verdict, professional and amateur, created general surprise. The gist of the criticism is that Munkácsy, whose first noted picture (*The Last Day of a Condemned Man*) led us to believe that he was "a dramatic painter with a special message of his own to communicate," has now, falling away from "the intensity of expression in this early picture, the truth of attitude and gesture, and the deep, instinctive power of feeling and sympathy," "entered the ranks of the painters of costume, furniture, and bric-à-brac, and left the story of humanity" to be interpreted by others. Of another picture of Munkácsy's (*An Interior*), recently exhibited at Goupil's, the critic complains that there "is no story told and no attempt at dramatic expression," and in the Milton, he resumes, "there is subject, but it is treated without sincerity, and without any real interest on the part of the artist. He cares nothing, knows nothing, except as he is told, and wrongly told, by some one else, of the incident he is narrating." In both pictures "we are reduced to admire the skilful painting of stuffs, costumes, and furniture, the arrangement of light and shade, and the clever drawing of the human figure." It is impossible to do justice to the vehemence of this condemnation without quoting the whole of this long paper. The writer does not even give unmitigated praise to the excellence of Munkácsy's achievements in the points last mentioned, but goes on to say that the painting of these things "does not give unqualified pleasure, for Munkácsy's color is most disagreeable, morbidly black and monotonous," although "the drawing is excellent and everything is in its place, and the technical merits of the picture challenge criticism. But there is nothing in the painting to enjoy for its beauty; we must be content to praise it for its skill." One can hardly believe, reading these last words, that some of us have been greatly indebted to the critic's own teaching for the realization of the fact that skill is beauty in a painting. Technical skill is not only a beauty that can absolutely and permanently be "enjoyed" by a trained eye, but a beauty without which no other beauty can exist for the trained eye. It does not comprise everything, of course. Skill alone is a delight, but skill representing an intrinsically beautiful object is a higher, and is the highest delight. I am not intent upon oversetting the opinion that there is no beauty in this picture apart from the workmanship. That must remain a matter of individual judgment. We may prove a critic right or wrong upon many points, but not upon the question whether a

subject in itself seems to him unlovely, or lovely, as it does to us. Still I think there are few who could stand before the Milton, and agree with this critic. The tone is peculiar, — sooty rather than simply dark, but less pronouncedly so than in Munkácsy's earlier works. But there is much beauty of absolute and of contrasted color, and I know of nothing in modern painting more exquisite, for example, than the head of the daughter embroidering, whom the *Tribune* calls Mary.

I do not quarrel with the critic for finding or not finding this or that quality in Munkácsy's picture. What I do grieve over is that he looks for and insists upon the necessity of certain things that are not essential to this or any picture. One must regret that he sees fit to leave the true method of criticism, especially necessary, though, perhaps, especially difficult, with a public so untrained as ours, — the technical artistic method, properly so called, which accepts an artist's work as he offers it, and judges it by the rules of art alone. When our public needs to be taught the very difference between good and bad painting *per se*, and needs, in the presence of such a painting as Munkácsy's, to be told in what consists its immense artistic value as compared with the work of their popular favorites, it is disappointing to find a journal of the *Tribune's* well-earned authority confusing properly artistic with moral, philosophical, historical, and dramatic criticism. The most surprising of the various points the critic makes is his demand for "historical accuracy," as the main thing, "when a picture is given a name, and we are told that we are looking at real people." He elaborately rehearses the authentic story of Milton and his daughters, and complains that the scene was not painted in accordance, showing Anne's "personal deformity," which "is here corrected," and Milton's gouty hands, and the plain, shabby interior, and the general discomfort and atmosphere of family discord that history lets us into. Instead of which, according to him, we have "a tableau of the sort now so tiresomely common." Had Munkácsy painted his picture as this writer dictates it to him, it might have been forcible in a way, it might have been valuable as a document as accurately compiled as was possible in a distant age, relating to a past reality. It could never have been a picture of artistic beauty in the actual canvas, or of aesthetic value and truth in its effect upon our minds. Not all kinds of tragedy are fit for tragic art, — surely not tragedy of the sordid, prolonged, unimpassioned, domestic kind. Lear, mad with age and grief, is one thing; Milton marrying because his daughters were inattentive, and cutting them out of his will because they were undutiful, is another. And there is the same distance, judged as subjects for artistic treatment, between Lear's demoniac children and Milton's spiteful Mary, saying "it was no news to hear of her father's wedding, but if she could hear of his death it would be something." But whether historical accuracy was here advisable or not, is not the main point. The critic claims for it a necessary place in art. To argue the matter is to go back to the very A B C of criticism. It should surely be more than a truism by this time that such accuracy is never the highest, never even a very high factor in the artistic value of work. The fault the *Tribune* finds with Munkácsy is the fault the ignorant tourist finds with half the pictures of the greatest schools, — they are not transcripts of facts as they actually occurred. It is strange to see the *Tribune* doing likewise. Yet does not Mr. Ruskin, with that fatal Philistine instinct all his culture has not eradicated, find the same fault on occasion, aye, and with the cartoons of Raphael! Surely not only the greatest critics, but the greatest artists as well, have said often enough in actual words as well as in their works, that art is not history, and does not exist for the sake of history, nor for any sake but its own. It represents what suits its own aims, and, moreover, as it suits those aims, and alters history to adorn its own artistic tale. To cite but one example among a thousand, we know how Michael Angelo spoke of his portrait statues of the Medici. Munkácsy has not sinned, in altering the facts of Milton's biography, to suit his artistic purposes, and to emphasize his artistic ideal, unless Shakespeare has sinned in numberless plays, and Goethe in *Egmont*, and Schiller in *Mary Stuart*, and the *Maid of Orleans*, and every artist in words or color who has been an artist, and not a mere copyist of the prosaic surfaces of actual things. If Munkácsy had known no more of how *Paradise Lost* should have been written than every one knows, he had had no call to paint its writing, that writing having in reality been a subject most unfit for artistic treatment. But he has proved that he did know more, for he has shown us how in the ideal, artistic fitness of things it ought to have been written. He has shown us a beautiful dream that we shall never forget, and that will help us to realize the dreams of Milton himself. We shall not confuse it with reality, shall not even bring them into comparison. Who cares whether Richard III. were in reality a hunchback, when Shakespeare paints him so? And the great Germans in like manner define and clarify our conception of their heroes, and give us a new hold upon their lives and characters, though we do not believe, nevertheless, that Joan died on the battle-field, or that Elizabeth was taunted by Mary Stuart in her prison, or that *Egmont* loved and lingered with his Clärchen. For the critic of the *Tribune*, however, Munkácsy has not accomplished this which I believe he has accomplished for most of his public. The critic sees merely a "tableau," and believes that the artist has altered history for the mere sake of external prettinesses, and is aiming "merely to please a frivolous society by dallying with the surfaces of ignoble things." For him the human

element in the picture is subordinate to the decorative. To me, and I believe to most others, Munkácsy seems to have altered facts for the sake of a high ideal, and to me he shows that ideal — the descent of the inspirational tongues of flame — by every line of the picture, and especially by the attitudes and expressions of the three women, so different from, yet so consonant with, each other. Upon the special technical merits of the painting, that the *Tribune* might so well have pointed out, it is not necessary to insist. I may say, however, that its main characteristic is its strength, its virile force of idea and execution. It is just this very quality that we need to have praised to us, as a wholesome antidote to our love of the emasculated suavity of our recent idols, — of Bouguereau, Meyer von Bremen, and the rest.

He who values individuality and force in art will be even more interested in the portrait bust of Munkácsy, by Barrias, also to be seen at the Library, than in his Milton picture. The latter is but a single witness to his power, and a witness that may, as we have just seen, be misinterpreted or disbelieved. But the portrait is a concentration, one is sure, of all that is strongest and most characteristic in the man. As a work of art it is delightful, executed with an incomparable *brío* and dash, yet with a painstaking accuracy that has seen to the careful modelling of every square centimetre of surface. Style and subject are wonderfully well suited to one another. The face is one that calls for bold yet careful handling, and the handling is such as would be wasted on a less characteristic physiognomy. There is a slight discrepancy between the two sides of the face that shows in every feature, — in nose and forehead and cheeks, in beard and moustache and eyebrows, and in the strabism of the eyes themselves. But this discrepancy, so accurately and lovingly followed by the sculptor, does not mar, it merely individualizes, the powerful beauty of the head. I can imagine no stronger presumptive refutation of the *Tribune's* presumptive grounds of complaint against Munkácsy's aims and ideas, than his face as here given. And I can recall, by the way, no brighter evidence that sculpture is not an altogether lost art to us moderns, than the bronze itself. It may be remembered that Barrias is the sculptor whose First Funeral, Adam and Eve with the Body of Abel, gained the Medal of Honor at the Salon of 1878.

An exhibition of American pictures has lately been opened in the Kurtz Building, and is, if I mistake not, to remain as a permanent place of sale for native works. There are not many important pictures there as yet. Those by La Farge and Shirlaw announced in the catalogue had not yet been hung at the time of my visits. The most noteworthy canvas was a large Still Life (23), by Mr. Chase. I do not remember a better piece of modern painting, in a similar field, than the brass dish in this picture. The solidity of the substance and the effect of its details are rendered with a marvellous rapidity and breadth of brush. The best landscapes were a delicate marine (107) by Mr. Quartley, and Mr. Macy's Marshes near New Bedford (93). This last is better than anything I have seen of Mr. Macy's. Though not faultless, — the sky is, perhaps, too heavy, — it has the great virtues so long lacking to our landscape painters, tone and atmosphere. Among the disappointments of the room may be reckoned Mr. Bridgman's pictures, which are much below his earlier work, I think. They are without tone or harmony of color, and have none of the perfect rendering of texture that is the characteristic of the master he follows. Nor has he caught the peculiar expression of Oriental faces that Gérôme gives so well, — the half-somnolent, half-suspicious glance, the slow, deep, fascinating, yet repulsive smile.

When I spoke last month of the new importations of the dealers, I had not seen those that Mr. Cottier now shows us. His taste and judgment are so well known to connoisseurs that it is unnecessary to say there is not a second-rate canvas among them. A special revelation is a number of Monticelli's, much the finest, I am sure, that have crossed the water. They are a very revelry of color. It were impossible to explain their wonderful charm if we believe in definiteness of some kind as imperative in a picture. It is impossible, however, for one who can be satisfied with the very perfection of a single element of beauty to forget them when once seen. They differ from pictures where line is given its legal place, as an intoxicating perfume differs from wine. Besides beautiful examples of Dupré, Daubigny, and Diaz, Mr. Cottier has landscapes by such admirable if less universally known artists as Du Chattel and Michel, and in his rooms we may again get a glimpse, though a very unsatisfactory one, of the incomparable Orpheus of Corot.

M. G. VAN RENSSLAER.

THE ILLUSTRATIONS.

THE METROPOLITAN CONCERT HALL, NEW YORK, N. Y. MR. G. B. POST, ARCHITECT, NEW YORK.

A CONCERT hall and garden is now building at the corner of Broadway and Forty-first Street, and extending through to Seventh Avenue. This property was leased by the Metropolitan Concert Company, Limited, — an organization incorporated under the laws of the State of New York. There will be a sliding roof, that can be opened or closed at pleasure, and a grand promenade around the roof. The orchestra, of fifty musicians, will be under the conductorship of Mr. Rudolph Aronson, the projector of the enterprise. It is to be a concert garden, where the people of New York, with their families, may enjoy recreation of a lighter order than Italian opera or symphony concerts, and at a reasonable price.

DESIGN FOR A COUNTRY HOUSE. MESSRS. ROSSITER & WRIGHT, ARCHITECTS, NEW YORK, N. Y.

ORGAN FOR THE OXFORD PRESBYTERIAN CHURCH, PHILADELPHIA, PA. MR. E. F. DURANG, ARCHITECT, PHILADELPHIA.

The organ here shown, which was built by Messrs. Hook & Hastings, was destroyed by the fire which a few weeks ago nullified the just completed labors of architect and artisan.

DESIGN FOR A CATHEDRAL. M. LALOUX, ARCHITECT.

We reproduce from the *Croquis* of the Intime Club the design which last year secured for M. Laloux the coveted position of grand-prize man at Rome and elsewhere for the following four years.

THE VIGO COUNTY COURT-HOUSE, INDIANA.

THE suit of J. A. Vrydagh against the commissioners of Vigo County, Indiana, exhibits a new phase of architectural life, and its history goes to show how even the best of architects may, through the eagerness to obtain employment, which is inherent in all men, get not only themselves but others into difficulty. It would apparently be a good move on the part of our State Legislatures to create a board of experts, or other body, charged with the care of all public buildings in process of erection, and to have especial charge of competitions and the letting of contracts; by this means perhaps competitions and contracts might be awarded in a more satisfactory manner.

It appears, from the records of Vigo County (and this is the first record in regard to this matter), that the commissioners, on December 2, 1872, resolved to build a new court-house in the city of Terre Haute, according to plans and specifications then submitted to the Board by J. A. Vrydagh, architect, and at the same time Mr. J. B. Snapp made his proposition in writing to erect said court-house, according to said plans and specifications, and by the outlines of the elaborate elevations and the stone trimmings of plain elevations, for \$292,000; and the Board, being advised (it does not appear who gave the advice, but the supposition is that it was given by Mr. Vrydagh), accepted said proposition. The bond of Mr. Snapp was tendered, approved, and entered of record, and Mr. Vrydagh was employed with full architectural powers at the usual rate of five per cent for his services.

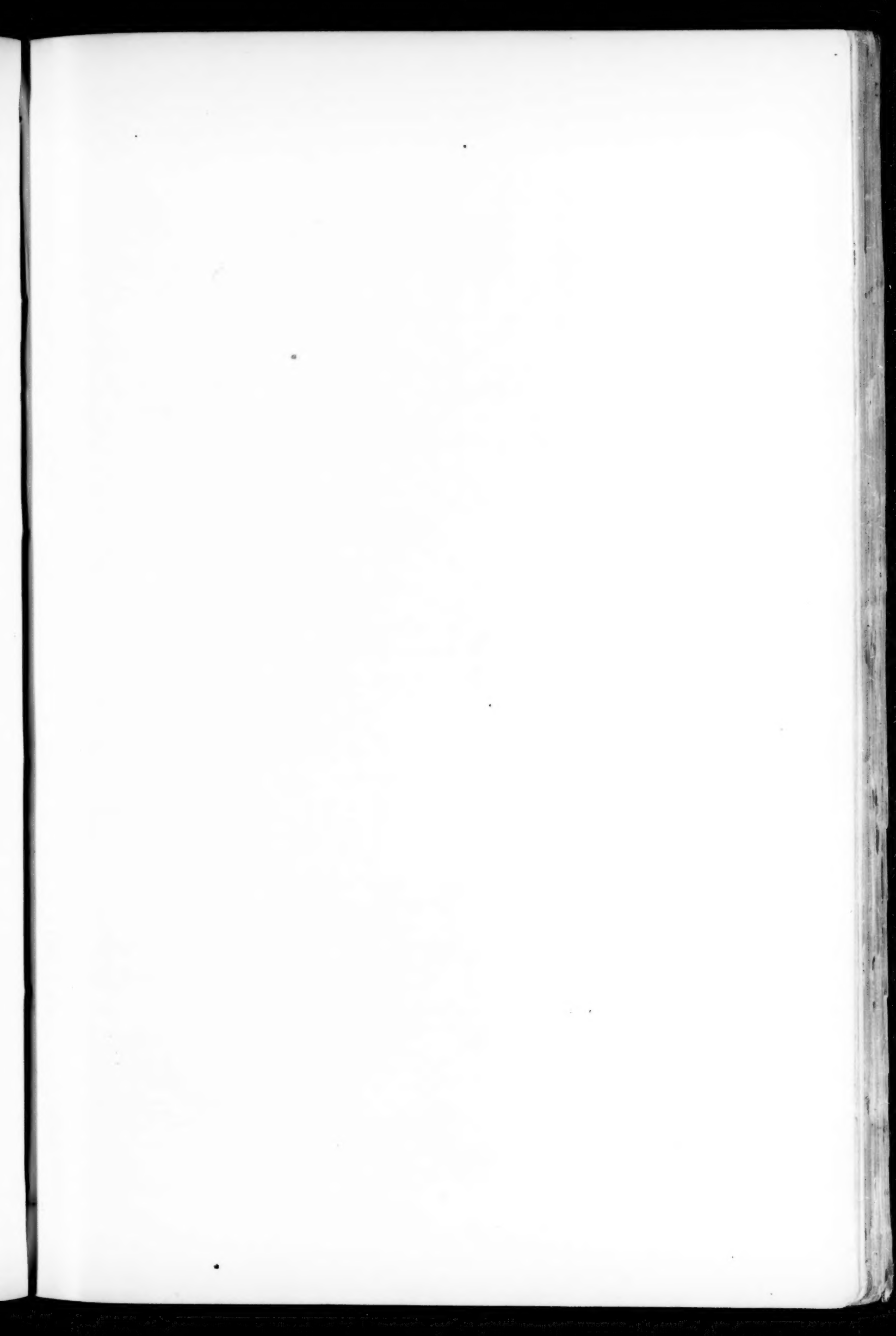
In the interim between December 2 and 10 the Board discovered that the contract they awarded on the 2d was only for the enclosing of the building and not for a complete structure finished in all its parts; they also discovered that there was a manifest disapproval on the part of the citizens, amounting to an almost unanimous voice against building a court-house at that time, and especially under such circumstances. The Board therefore ordered that the contract of December 2, 1872, with Mr. Vrydagh and with Mr. Snapp be rescinded. Notwithstanding this, the commissioners, only seven days thereafter (to wit, December 17, 1872), again found the present court-house unsuited for its office, and unsafe on account of fire, and they again ordered that a court-house be erected within a specified time, and for the specified sum of \$250,000, the records showing among other requirements one that the building should have fire-proof rooms attached. This time they advertised for bids and stated that the same would be received until the first Monday of March, 1873, and that each bidder should present his own plan and specification, together with his bid. But no plan or specification should be paid for except the ones adopted, this last clause being intended, no doubt, to exclude all bidders and architects except Messrs. Snapp and Vrydagh. On March 4, 1873, the day upon which plans were to be submitted and bids tendered, as required by the action of December 17, 1872, Mr. Vrydagh presented plans for a new court-house (the same plans that he presented at the previous meeting), which was examined and adopted by the Board, and he was ordered to prepare duplicates on vellum, detail drawings, and specifications, and file the same with the auditor on the 14th day of the same month, which was allowing a rather short time to do so large an amount of work, and the natural inference must be that they were already prepared.

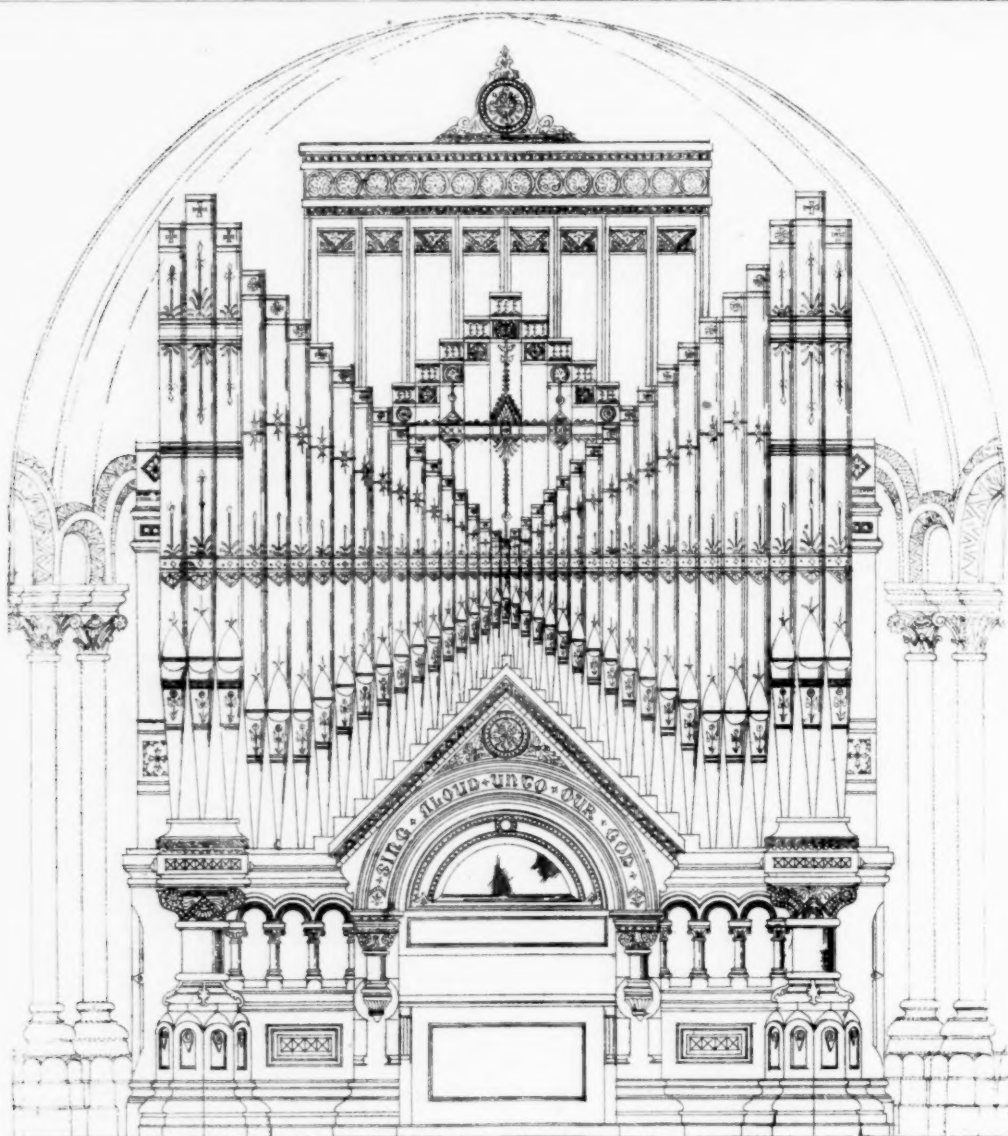
March 18, 1873, for the third time the Board found the present building unsuited and unsafe for county offices, and they again ordered a new court-house to be built; and that the plans and specifications prepared by Mr. Vrydagh, and on file with the auditor, should be adopted, and the building built according to the same, and that bids be received for the erection of said court-house until June 4, 1873.

June 3, 1873, the Board met in regular session, and all the previous orders in reference to the erection of the court-house were set aside, and on June 10, Mr. Vrydagh having asked the Board if he should complete the working drawings, the Board replied that they desired no further work done; here ends the reading of the county records so far as this case is concerned.

Mr. Vrydagh, in his contract with the Board, based his charges upon the schedule of the American Institute of Architects; he therefore sues for three and one half per cent, instead of the customary two and one half per cent.

His claim for fees is as follows: one per cent on the cost of the proposed building for the preliminary sketch, the proposed cost being \$406,000, or \$4,060; and three and one half per cent on the second court-house, the proposed cost being \$250,000, or \$8,750; and interest and damages sufficient to make a total of \$15,000.





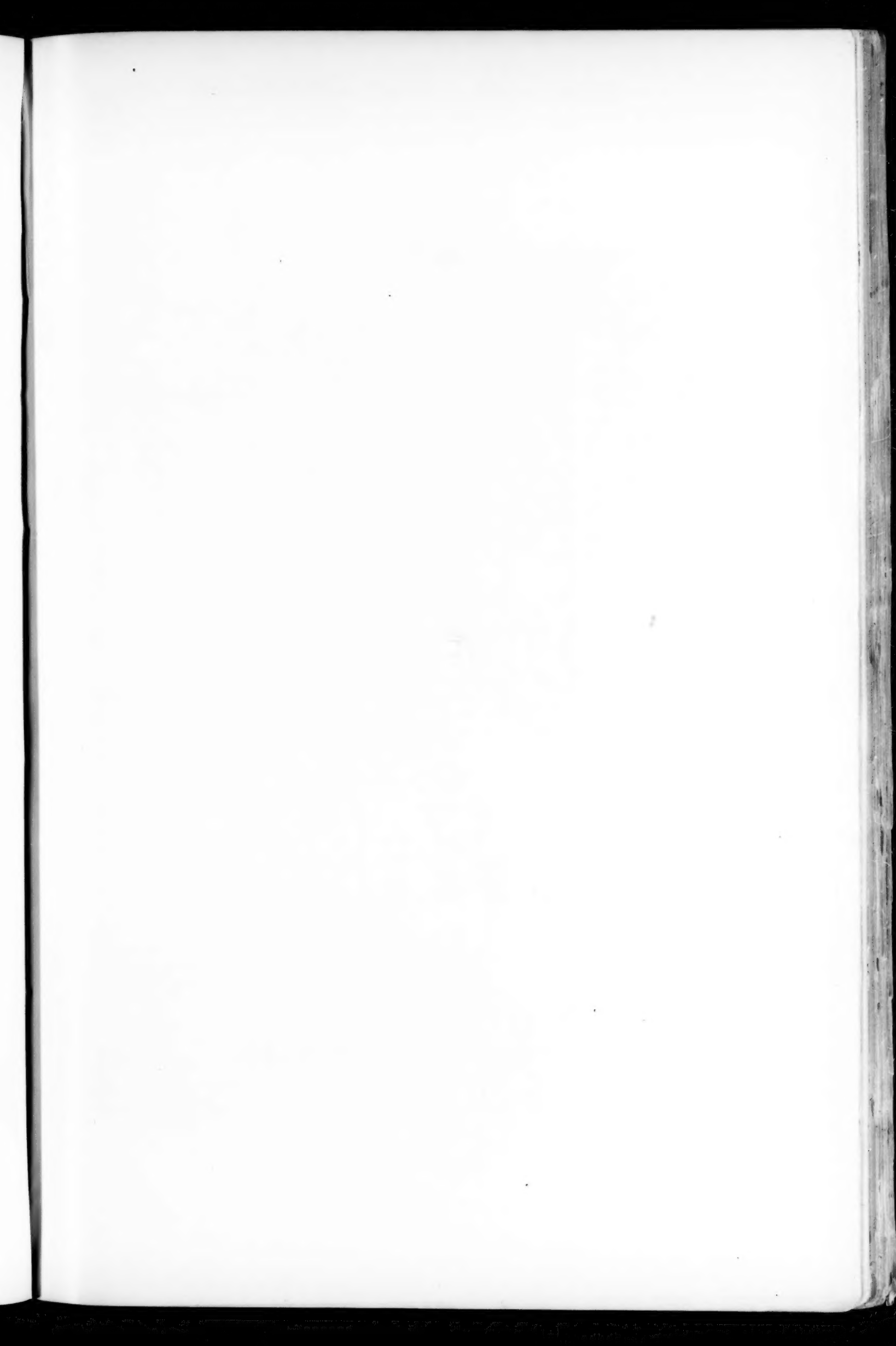
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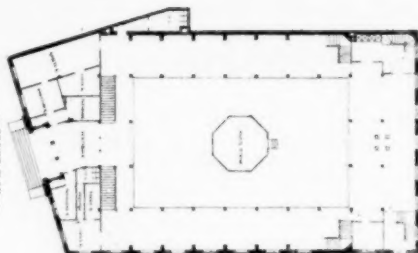
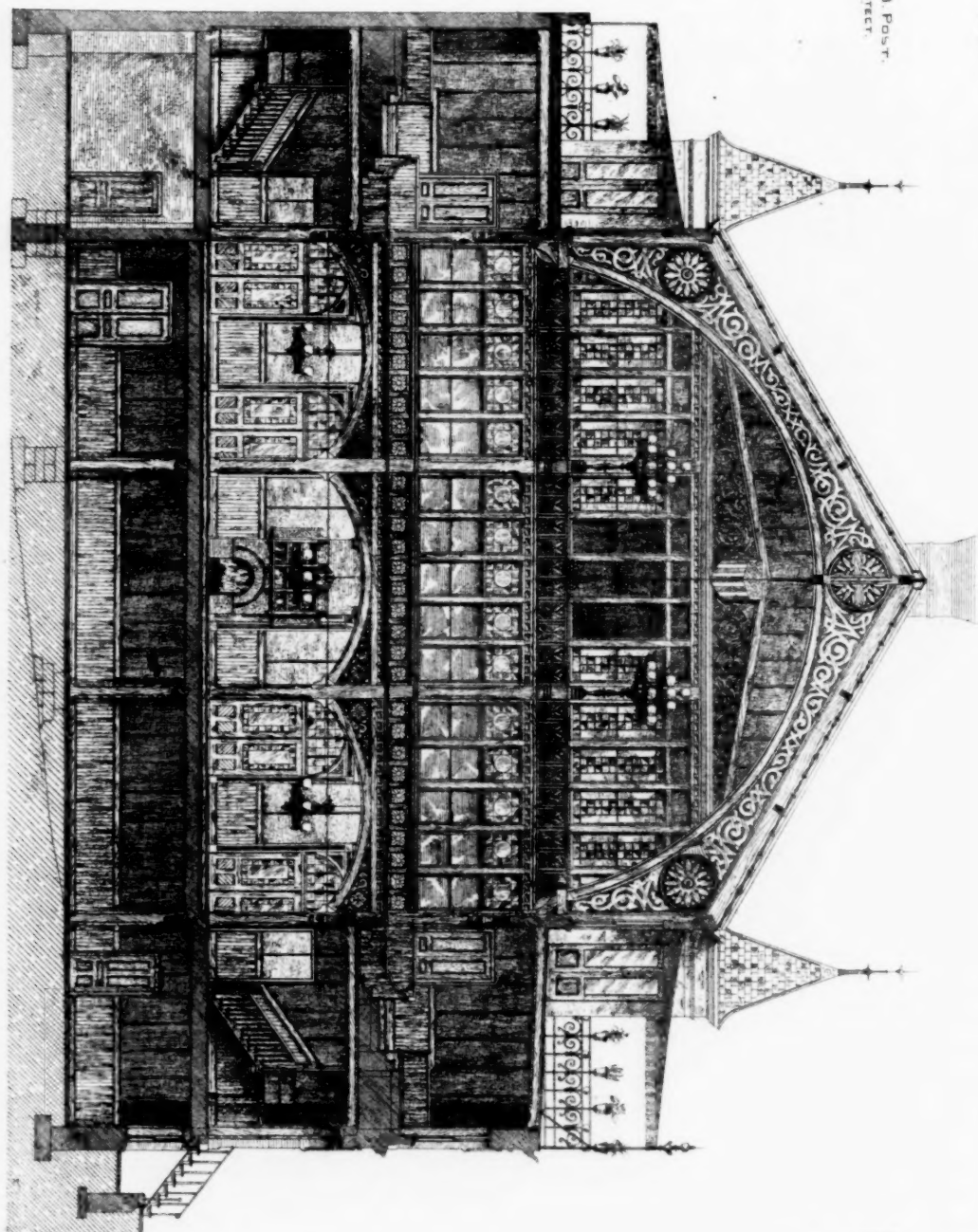


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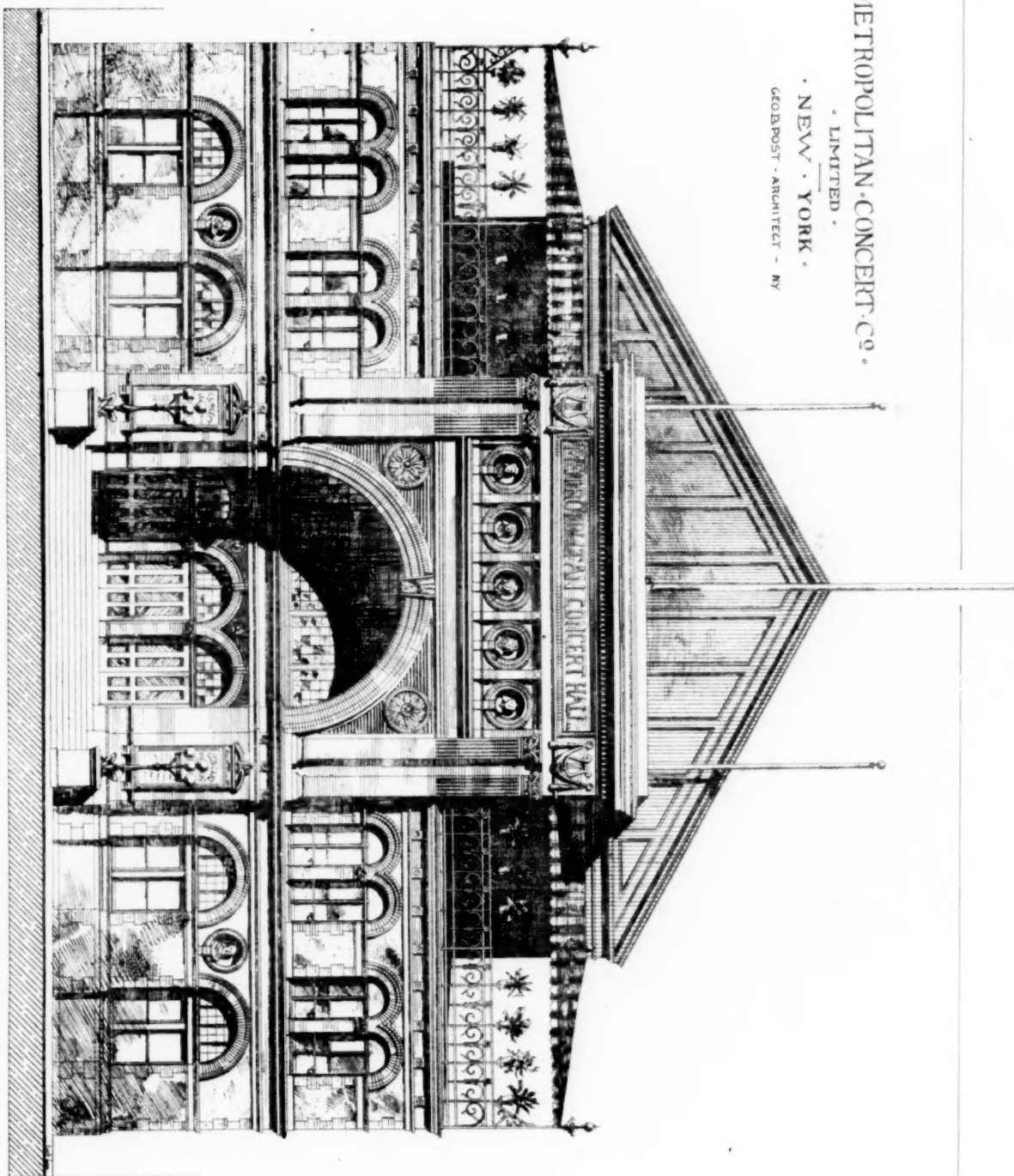


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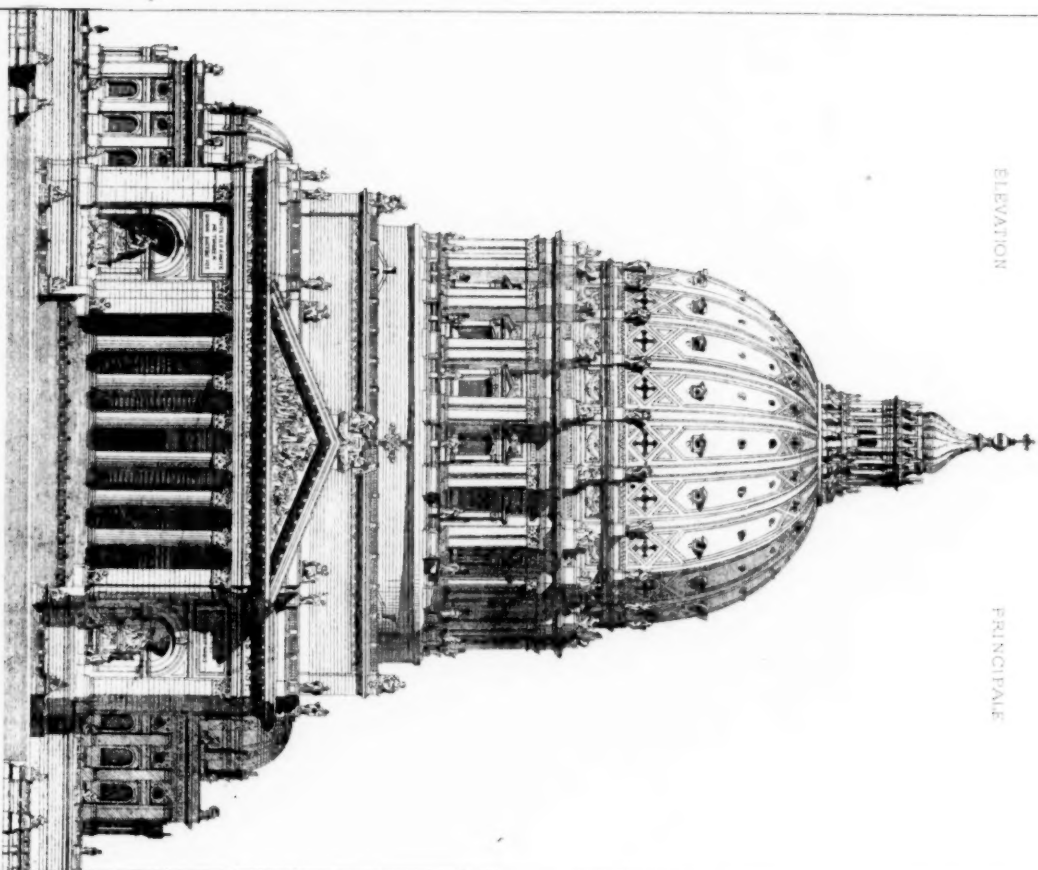
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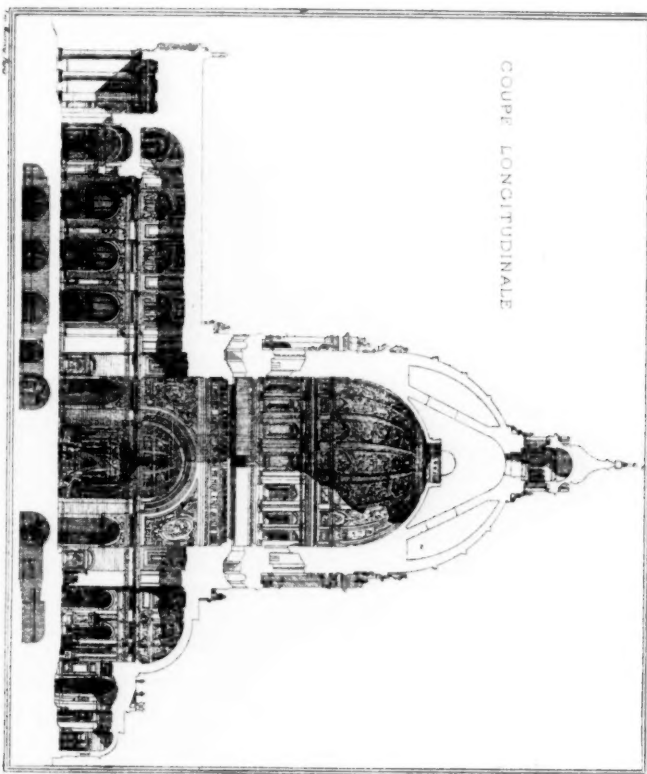


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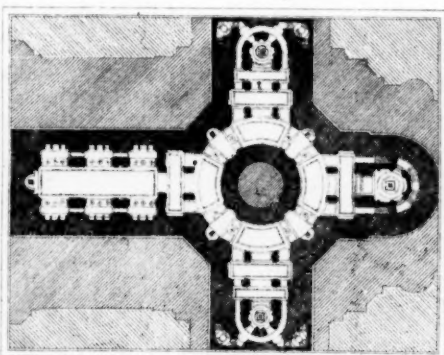
PRINCIPALE



COUPE LONGITUDINALE



PLAN DE LA CRYPTÉ



A. D. R. A.

CONCOURS DU GRAND PRIX DE 1878

UNE CATHÉDRALE

1^{er} GRAND PRIX

M^{re} LALOUX Elevé de M^{re} AUBREY

How Mr. Vrydagh can claim his full percentage is somewhat obscure, from the fact that on June 3, 1873, as we have before stated, he asked the Board if he should complete his drawings, and received a negative answer. The whole case looks as though there had been collusion somewhere.

An entirely new board is now in office, and as it was their desire to do right by all parties, being ignorant of what architectural services are usually worth, they summoned to their aid, in December, 1878, a board of experts, composed of I. Hodgson and W. H. Brown, of Indianapolis, Charles Eppinghausen, of Terre Haute, and Charles Crapsey, of Cincinnati, all architects, to inform them upon this and other points. The chief duty of the experts was to prepare a full and careful estimate of the cost of the building, which they found to be \$182,000 complete. The plans call for fire-proof construction in the first story and cellar, and this end is gained by means of brick groined arches, which spring from the walls at the outer sides, and from iron columns in the centre of each room. Above the first story the construction is of wood entirely; some 275,000 feet board measure being used, which amount of wood is sufficient, we should judge, to nullify the expense and pains taken to fire-proof the first story, inasmuch as a fire in the roof would let great weights fall upon the groined arches and iron columns, and probably destroy them.

The attorneys for the county put certain questions, which, with their answers, were as follows:—

Question. What is meant by "preliminary sketches," and are such sketches charged for? *Answer.* By the term "preliminary sketches" are meant such sketches of a proposed building as an architect usually prepares in advance, for the purpose of arriving at a final and definite understanding with his client, and when the architect is finally employed to prepare full drawings and specifications they are considered as forming a part of such service, and are not separately charged.

Question. What is meant by and involved in the term "fire-proof"? Does the fact that a particular portion of a building, if isolated, is or would be fire-proof, but if constructed with other portions would not altogether be fire-proof, entitle the architect to any additional credit by reason of such portions being fire-proof? or does it add to the merit of the building? *Answer.* By the term "fire-proof" is meant a building constructed entirely of incombustible materials. A building cannot be considered fire-proof when inflammable materials enter largely into its construction.

Question. When an architect submits plans and specifications, what is the rule as to his duty in relation to fully advising his client as to the cost of the building? Has he any right to guess at it? *Answer.* It is the duty of an architect to advise his client as to the cost of a proposed building, which he should be able to do with a reasonable degree of accuracy, say, within a margin of ten per cent.

Other questions were asked, but they were not of sufficient interest to require to be noticed here.

The case was tried during the week ending December 6 inst. before a jury, during which trial all the points before stated were fully brought out by the attorneys on either side. The jury returned a verdict for the plaintiff of \$10,423. Just how they could reason out such an amount is something beyond the understanding of any one, unless it be the jury. The case, we understand from the attorneys, is to go to the Supreme Court of Indiana. **

THE SEWERING AND DRAINING OF CITIES.

A PAPER read before the American Public Health Association, at Nashville, by George E. Waring, Jr., of Newport, R. I., sets forth a radical change in sewerage practice. We published last week (page 189) so much of this paper as describes the details of the work,—which has especial interest at this time, since the plan has been finally adopted for the city of Memphis. We now give the rest of the paper, as a necessary elucidation of that description:—

"The president has asked me to prepare a paper concerning the most perfect methods of city sewerage, one which may serve as a standard of comparison in considering the character of existing work. It would savor of presumption to describe or to prescribe methods radically different and better than those now in use. It is impossible to foretell the improvements which are to grow out of the present rapidly-increasing interest among intelligent and ingenious men in all that relates to sanitary practice. If I were to attempt now to set forth the details of a perfect system of sewerage, I fear that my recommendations, like Dr. Richardson's City Hygeia, would surpass what practical men and investors of capital would accept.

"The most that it is prudent to do is to consider the question in its purely sanitary bearings, and to indicate in what way the best requirements of public health may be met, in the light of our present knowledge.

"So far as we can judge of the future from the indications of the present, it would seem that in one respect we are to witness a very marked change in the practice of sanitary engineering. There is much reason for believing that there will be a distinct separation between the application of sewerage to the removal of domestic and manufacturing wastes and soil-water, and the construction of conduits for the protection of public and private property against the action of storm-water. This latter, like the construction of roadways and bridges, will be treated as a purely civil-engineering question, having

at best only an indirect sanitary relation. The interests of public health, so far as sewerage is concerned, will, in my opinion, be best served by a close adherence to the collection and removal of foul waters, and to their proper final disposal.

"This suggestion is not new. The discussion between the advocates of the combined and the separate systems of sewerage, especially in England, has long been active. The issue between them seemed doubtful until the matter of agricultural or chemical purification of the effluent became prominent.

"The arguments in favor of the exclusion of storm-water from the sewers proper seem to me so conclusive that I no longer hesitate to accept such separation as essential to the best sanitary sewerage.

"Sewers large enough to remove storm-water, according to the usual formulas, are open to several serious objections.

"The question of cost is so often the controlling question, even in improvements of the most vital importance, that the expense entailed by the construction of storm-water sewers constitutes an insuperable obstacle in the case of many a small town where sewerage is most necessary. Even in the larger cities the expenditure in this direction might sometimes, if not always, be economized for the benefit of other necessary work.

"The larger the sewer the more difficult becomes the matter of ventilation.

"Cases are extremely rare where sewers of the storm-water size are not, at least during the dry and hot season, sewers of deposit to such an extent as to have their air made most foul by the decomposition of their sediment.

"Where the question of final disposal has become important, the admixture of storm-water with the sewage leads to the constant embarrassment of the system, whether the process be chemical or agricultural.

"There seems to be no controlling reason why storm-water should be admitted to the sewers at all for very long reaches of the streets; and not seldom, throughout the whole of the smaller towns, the whole rainfall may be discharged over the surface without causing inconvenience.

"Until about 1854 the cities of Albany and Troy, both large towns, and both having very steep grades, terminating on level ground, had no storm-water sewers. The inconvenience caused during heavy storms was inconsiderable, and there was practically no material injury to public or private property. I am informed by the engineers of both cities that neither inconvenience from the overflowing of the streets nor injury from wash constituted an essential argument in favor of sewerage. The sewers were built to the storm-water rise only in conformity with the general custom.

"The carrying of surface-water to a depth of ten or fifteen feet below the surface seems to be at least unnecessary. Street-wash can be safely admitted to sewers only after passing through settling-basins, which are sure to accumulate an offensive and dangerous amount of decomposing filth.

"I believe that one of the most important improvements that we are destined to see is the removal of storm-water, as far as possible, by surface gutters,—carrying away the greater accumulations through very shallow conduits, largely, perhaps, through covered gutters, easily accessible for cleaning and flushing.

"This part of the engineering problem being satisfactorily provided for, the sanitary drainage of a town—the removal of the wastes of its population—becomes a simple problem. It implies, however, one condition which, although almost unknown in America, has been shown by foreign practice to be an attainable one,—that is, it requires that the streets be kept clean by some other means than occasional drenching by storms. There is no more inefficient, costly, and dangerous scavenger than the rain which falls upon the surface of our roadways, and washes their horse-droppings into the catch-basins at the street corners.

"Circumstances are occasionally such, as in St. Louis, as to require extensive engineering works for the removal of storm-water through very deep channels. Ordinarily, as I have before said, the removal of storm-water is a very simple matter, if we will accept the fact that it is best removed, so far as possible, by surface gutters, or, in certain cases, by special conduits placed near the surface.

"It is often necessary, in addition to the removal of house waste, to provide for the drainage of the subsoil. This should not be effected by open joints in the sewers; because the same opening that admits soil-water may, in dry seasons, and in porous soils, permit the escape of sewage matters into the ground, which is always objectionable. Soil-water drains may be laid in the same trench with the sewers, but preferably on a shelf at a higher level; and they should always deliver into the upper part of the sewer or into a man-hole at a point above the flow-line of the sewage, or at an independent outlet.

"There is one point connected with the drainage of towns which is not sufficiently appreciated, especially in this country,—that is, that it is easy and cheap to secure a deep outlet in low land, and to deliver sewage at a considerable elevation for agricultural treatment, by artificial pumping.

"The average cost of pumping for water-works is about nine cents per foot of elevation for each million gallons raised.

"On this basis the cost of raising the sewage of a town of 10,000 inhabitants, supposing every three persons of the population to contribute one hundred gallons per day to the flow, would be about three cents per day for each foot of elevation.

"Even supposing that twenty inches, or about one half of the annual rainfall, finds its way into the subsoil, the cost of lifting this ten feet to a surface outlet would, on the same basis, cost only about \$160 per annum for each one hundred acres of the town area.

"Both of these estimates are practically somewhat too low, because a small amount of water cannot be lifted relatively so cheaply as a large amount. I give these figures only to show that, with a community of any considerable size, it is really a matter of minor consequence whether the natural outfall is high or low.

"The experience of Holland, in the practice of drainage, indicates a complete relief for the natural disadvantages even of the city of New Orleans, of which the cost would be quite insignificant as compared with its benefits.

"Many of our riparian towns, dependent upon high-lying water as the outlet for their drainage, or, like Chicago and Milwaukee, delivering their foul drainage into streams whose contamination means the contamination of the town itself, may find their only practical relief by means of an artificial outlet. The city of Boston is now establishing a conspicuous example of the application of mechanical power to deep drainage and distant removal,—even applying this costly means for the discharge of the rainfall of an enormous area.

"Aside from its benefit in securing deep drainage, discharge by pumping makes us quite independent of natural topography in adopting means for agricultural disposal. Pumping, and the separate removal of foul wastes, puts it in our power, under all circumstances, to adopt this means for purifying our outflow. Along our greatest rivers, from the sanitary standpoint, the disposal question counts for nothing. The Mississippi River will annihilate the sewage of St. Louis, to whatever size she may grow; but there is an enormous proportion of our towns which must, for purely sanitary reasons, adopt some other means of outlet than delivery into rivers and harbors.

"There is an agricultural consideration, and an important one, which looks to the utilization of all our sewage; but in the present condition of our agriculture, this must remain a secondary argument. Wherever we resort to irrigation as a means of purification, the manurial value of the sewage will serve to lessen the cost of our work. Probably it will nowhere repay the whole cost.

"The methods of irrigation disposal are various, and all are not equally well adapted to all conditions. The outflow of a large town can be purified satisfactorily, either by simple irrigation over large areas or by intermittent downward filtration over much smaller areas of land properly graded and deeply underdrained. Under this system the discharge is intermittent, and during the intervals the soil-filter is purified by atmospheric action.

"The outflow of smaller towns, of public institutions, and of suburban and country houses may be much the most satisfactorily treated by the absorption-drain or sub-surface irrigation system, working in conjunction with Field's flush-tank. By this system a small area of land, naturally or artificially well drained, is underlaid, at a depth of ten inches from the surface, by a series of open-jointed, agricultural drain tiles. At each discharge of the flush-tank, the accumulated sewage is sent rapidly into the tiles, whence it escapes through the open joints into the soil. During the interval between the discharges, the water, purified by filtration, settles away to the subsoil, and fresh air enters, to supplement, by oxidation, the purifying action of the roots of the grass or other crop growing on the land.

"This latter system has now been so thoroughly tested under various conditions, as to climate and quality of soil, as to have proved itself of almost universal applicability. It has the very great advantage that, as the sewage never appears at the surface of the ground, it may be carried on in immediate proximity to the dwelling. It would be equally effective, under proper arrangement, in dealing with the sewage of cities; but for such use it would be much more costly than would the removal of the sewage to a distant field, where surface irrigation would be unobjectionable.

"I trust that, as I am neither a Southerner nor a physician, I may be excused for attaching more importance than many of you probably do to the proper drainage and cleansing of a city, and to the proper disposal of its outflow, and more than to any system of quarantine. My knowledge of the history of the yellow fever epidemics in this valley is infinitely less than yours; but I feel warranted, and I take my warrant from the history of the plagues which devastated the filthy mediæval cities of Europe, and from my own knowledge of the want of cleanliness and want of drainage in the city of Memphis, in venturing the suggestion that even that fever-smitten town may be made an impossible field for the invasion of yellow fever in an epidemic form.

"While yellow fever is for the moment uppermost in all our minds, and while its sudden and more fatal outbreaks strike the public imagination with peculiar force, we should, as sanitarians, never lose sight of the fact that it is one of our minor diseases; that, indeed, along the banks of the Mississippi River, far greater mortality, and infinitely greater disability, result from the constant operation of diseases which should come equally within our purview, and which are equally preventable by measures of sanitary improvement."

THE London Times states that bas-reliefs and statues, some of them of colossal size, have been found at Marathon, near the site of the Temple of Nemesis.

THE YELLOW CÉDAR OF ALASKA.

MR. JOHN MUIR, in the course of a description of the trees of Alaska, in an article in the San Francisco Bulletin, speaks as follows of the yellow cedar:—

The most important of these as to timber is the yellow cedar, or cypress (*Cupressus Nutkatensis*), a truly noble tree, attaining a height of 150 feet, and diameter of from three to five feet. The branches are pinnate, drooping, feathery, dividing into beautiful light green sprays, like those of the California libocedrus, but with finer foliage and more delicate plumes. The wood of this tree is undoubtedly the best the country affords, and one of the most valuable to be found on the whole Pacific coast. It is pale yellow, close-grained, tough, durable, and takes a good polish; and to these qualities is added a pleasant fragrance, like that of sandal-wood.

The only California wood that resembles this is the torregia, which has the same delicate yellow color and close texture, but the pleasant scent is wanting, while the trees are small and scattered in and out of the canyons. Some three or four ships have been built of yellow cedar, and small quantities, a few thousand feet at a time, have been sent to Portland and San Francisco from Sitka, Fort Wrangel, Checan, and Port Simpson, probably less than a million feet in all. Some little goes to China, and is made into fancy boxes, it is said, to be returned to us for camphor-wood. It deserves to be far better known, not only to shipbuilders, but to carpenters and furniture makers. The Indians here make their paddles of it, and weave matting and coarse cloth from the inner bark of the tree, which is quite durable, and of a fine brown color. It is also the favorite fire-wood of the coast region, burning very freely, though it does not last long. A yellow cedar fire, to any one witnessing it for the first time, is quite a notable phenomenon. The flames quiver and rush up in a multitude of ragged-edged lances, while the burning surfaces snap and crackle and explode, and throw out a shower of glowing coals with such a noise that conversation in an ordinary pitch of voice is at times impossible. Every open hearth in which this wood is burned has to be closely screened with a framework of wire netting, else the floor would be sown with cinders. The durability of this timber is forcibly illustrated by the fallen trunks lying in the damp woods. Many of the largest of them last for centuries, retaining even the delicate color and fragrance unimpaired. Soon after they fall they are overgrown with moss, in which seeds lodge and germinate and grow up into vigorous saplings, standing all in a row on the backs of their ancestors. As they grow larger they stand astride, sending their roots down and out on both sides like the straddling legs of a spider. And, after they have reached an age of several hundred years, the down-trodden trunk when cut into will almost always be found as fresh in the heart as it was when it fell. Decay goes slowly on from the outside, never commencing in the heartwood, as far as I have noticed, though a good many of the living trees are injured by a fungus which produces a dry-rot similar to that found in thuja and libocedrus. The species is found as far south as Vancouver Island, and is pretty generally distributed along the coast and through the islands, as far north as Sitka,—how much farther in either direction I am unable to say. But though its range is thus extensive it does not seem to be very abundant at any one place, or to occupy any considerable area to the exclusion of other species.

A NEW FEATURE IN CINCINNATI FAIENCE.

THE interesting paragraphs on Cincinnati Faience in a late number of the Contributors' Club suggest the mention of other work in this way which is being done among us. Mrs. N. B. Plimpton, of this city, is working out an original style of decoration in faience, whose effects are different from anything hitherto known.

The Sèvres porcelain gives us the most exquisite effects in color; the Haviland a bewildering depth of richness and changeful iridescence; the old Meissen has its individual beauty, differing from all in its deep-modelled decorations in *alto-relievo*; but differing from these or from any important type of decoration is the method now being wrought out by Mrs. Plimpton. It is a decorative relief in different clays, so delicately blended and shaded that only the trained eye of the connoisseur would see that these exquisite blendings of color were not painted, but were worked in in the different clays which, through the process of firing, retain their relative colors,—these colors being, of course, changed in the firing, but coming out with relative variations.

The finest example of this is shown in a vase of light-yellow clay ornamented with a butterfly in relief, of that large and curious variety known as the South American. The butterfly is shown in four shades of browns,—the rich sepia browns,—and white, and no one on first observing it would dream that not a brush had touched it with paint, but that each different shade of color is a different clay, or combination of clays. The insect is shown in as precise a portraiture of all the little anatomical details as a painting could give. The little antennæ, the "suckers" about the mouth and head, the all but invisible peculiarities of butterfly structure, are faithfully reproduced. The butterfly is represented as soaring from some reeds and starry-flowered grasses. The little star-eyed flowers are in white, and the petals as distinct as, in nature. This decoration is all modelled in the wet clays. After firing, the coat of glazing is added,—for it should be clearly understood that this is all under-glaze work,—and the last firing is given. —Atlantic Monthly.

"CENTRAL MUSIC-HALL," CHICAGO.

KEOKUK, IOWA, December 8, 1879.

TO THE EDITOR OF THE AMERICAN ARCHITECT:

Dear Sir, — Referring to Mr. Hallberg's letter in your issue of November 29, the only present possible danger which is apparent on a hasty inspection of his sketch is the shearing or detrusion of the iron plate or lintel over the main door-opening where it rests on the iron columns in the south jamb.¹ There may also be detrusion or crushing weight that these columns impose on the south jamb of the six-foot openings underneath them. The overstep of the wall of one foot five inches, between the vertical line of the south jamb of the main door-opening and that of the north jamb of first gallery door-opening, is dangerous *only* if the iron plate above alluded to be insufficient for the duties it serves. If the footings of the walls have been properly distributed underneath the vertical lines of pressure of the jambs of openings, and proportioned according to the superincumbent weights, and are omitted from under openings where no weight of piers or jamb is imposed — so as to avoid the tilting leverage of *continuous* footings under openings, and thereby unequal settlements, whereby the wall would be liable to weakening by rending, etc. — and so that the wall will remain homogeneous, there is no immediate danger to be apprehended, provided no serious tendencies have yet appeared, and that the work has all obtained its permanent set, as it will require an extraneous force or strain nearly equal to its stability to do violence to its integrity.² I may remark, in reference to the quoted strengths of brick, that they are derived from that of a class of brick and of brickwork superior to what is usually produced in this country under the contract system and close, unscrupulous trade competitions. The corbelling strength of the portion of wall between the top of the main floor-opening and the foot of the roof-truss is sufficient to carry the truss, when the brickwork is good and is properly set, and everything adjusted to its ultimate bearing. There appears to be about thirty-five feet vertical of twenty-five and three fourths inches wall projecting about four feet over the north jamb to a vertical line under the centre of the roof-truss bearing. This overhanging weight is balanced by the greater leverage of the northerly truss, and is compensated and resisted by the cohesive strength of this and adjacent parts of the wall sufficiently to counteract any ordinary disturbing force of the mass of brickwork, etc., of about twenty tons per foot lineal.³

The above, although somewhat apologetic, is not intended in any sense as a defence of such reckless constructive design, but rather to appease any unnecessary apprehensions. Strictly speaking, the data given by Mr. Hallberg are scarcely sufficient to authorize any who have not personally examined the building-quality of materials, manner of workmanship, etc., in giving an emphatic expression of opinion as to the extent of the possible danger, if any.

The linear expansion of the iron roof-trusses will probably not exceed one half inch or five eighths inch. The walls would each spring half of this distance without any serious injury if of good materials and workmanship.

This subject is deserving of exhaustive discussion, and to this end all precise data should be supplied which affect the critical solution of the problems involved.

ALEX. BLACK.

THE HYPÆTHRAL QUESTION.

BOSTON, December 11, 1879.

TO THE EDITOR OF THE AMERICAN ARCHITECT:

Dear Sir, — In a communication in your issue of December 6 Professor Norton says: "It appears plain that Mr. Davidson has permitted himself to make positive and incorrect statements concerning the opinions of Dr. Reber."

Now, as I made only *one* statement, and that on another's authority, with reference to one of Dr. Reber's opinions, I can hardly have made more than one incorrect one. I think, therefore, I might return with interest Professor Norton's remark, and adhering strictly to fact in the matter of number, say that he has made a "positive and incorrect" statement on his own authority, concerning me. But, after all, how far was my statement "positive and incorrect"? When a writer makes an assertion and immediately cites a well-known and generally trustworthy authority for it, he makes himself responsible clearly for the correctness of the citation, but not for that of what it contains. The worst that can be said of him is that he has been incautious in the use of an authority, — an incautiousness which must be held to diminish in proportion to the usual reliability of the authority and the accessibility of the means for controlling him. Now when I made my assertion about Professor Reber I not only cited my authority, but gave clear reference to the passage I had in my mind. It reads as follows: "Ἰδε λ. χ. πῶς ἐν νεωτέρῃ βιβλῷ πανεπιστημιακοῦ καθηγητοῦ τῆ τοῦ Fr. Reber, *Kunstgeschichte des Alterthums*, Leipzig, 1871, ἐν σελ. 206 κ. ἐξ. λέγονται τὰ περὶ τῆς καμπύτης τῶν φαινόμενων ὁρίζοντιών καὶ ἄλλων εἰδησῶν γραμμῶν, μετὰ πόσον ὀλίγη πηδανισμὸς ἐκτιθένται καὶ πόσον εἰρωνικῶς ἐγκρίνονται πρᾶγματα ἀπὸ τῶν σῶρων ἢ δὲ δεκαετηρίδων γνωσθέντα," which means: "See, for example, how in the most recent work of a university professor (Fr. Reber's

K. des Alt., Leipzig, 1871, pp. 206 seq.) the question concerning the curvature of the horizontal and other apparently straight lines in Greek architecture is treated, that is, with what absolute skepticism (Pyrrhonism) are set forth, and with what mockery⁴ are criticised, facts that have been known for forty years." Unless, then, this translation can be shown to be incorrect, my authority says what I attributed to him, and my only fault was that I did not refer to Dr. Reber's work itself. This I should most certainly have done, had it been within my reach; but as I did not own the book, and there is not a copy of it in either the Boston Public Library or the Athenæum (a fact which furnishes a presumption that it is not a work of much authority), I was obliged to accept Professor Koumanoudis's statement, which I gave on his authority. In spite of this Professor Norton charges me not only with incautiousness, which is hardly fair, but with making "incorrect statements," which is entirely groundless. I have certainly no desire to undermine Dr. Reber's authority, although I do not regard it as high; but I do strongly object to having a mere complimentary remark of his in a private letter used to weaken what I have established by facts and citations.

I am, however, after all, very much obliged to Professor Norton for his two communications. In the first he shows his desire to defend Mr. Clarke's theory, and in the second his willingness, even at the risk of inaccurate statement, to contest assertions of mine; whence I think I may fairly conclude that even he, with all his well-known scholarship, knows of no proofs sufficient to render even plausible Mr. Clarke's theory of the artificial lighting of Greek temples. I am, sir,

Very truly yours,

THOMAS DAVIDSON.

A SCULPTOR AND HIS MODELS.

BOSTON, December 12, 1879.

TO THE EDITOR OF THE AMERICAN ARCHITECT:

Dear Sir, — I wish to ask your opinion on the professional rights of a case that has happened to me.

I am engaged to make a marble bust (portrait), — make it, deliver, and receive my money, just as I have always done, — that is, no special agreement or stipulation. As it often happens, I leave the original plaster copy at the shop of the marble-cutter. The family for whom I made the marble copy go to this cutter, and, without my knowledge or consent, employ him to cut another marble copy from my original plaster copy. He does it. I find this out, and protest, — saying, first (to the family), You have no right to use my property, and, second, You may injure me by reproducing my work without my care and supervision.

They reply that the plaster copy is theirs (though there was never any stipulation to that effect, nor was anything like it understood). I claim remuneration for the use of my plaster bust, and the right to pronounce as to the merit of its second reproduction in marble. They say, No, we have not signed your name to the last copy, nor have you a right to sign it. It is all ours, to do with as we please, plaster and marble.

What do you think about it?

I shall be greatly obliged to you for an opinion. I mean to contest, if there is any ground.

Very truly yours,

T. H. BARTLETT.

PUBLICATIONS RECEIVED.

BUILDING SAFE-GUIDE. By Charles Marcotte, St. Louis, Mo. 1879. Price \$1.00.

THE WORKSHOP COMPANION. A Collection of Useful and Reliable Recipes, Rules, Processes, Methods, Wrinkles, and Practical Hints for the Household and the Shop. New York: The Industrial Publication Company. 1879. Price 35 cents.

ILLUSTRATIONS OF THE HISTORY OF ART. Part III. Architecture and Sculpture of the Renaissance Period and of Modern Times. Boston: L. Prang & Co. 1879. Price \$2.00.

NOTES AND CLIPPINGS.

THE OCCURRENCE OF Christmas Day next week, and the desirability of mailing with our next issue the index of the current volume, will together somewhat delay the delivery of the next number of the *American Architect*.

THE SANITARY SURVEY OF MEMPHIS. — The committee which made a sanitary survey of Memphis recommend a sanitary superintendent for that city; that all houses be chilled and ventilated; that a new system of water works be adopted, to be under the control of the city; that the use of cisterns and wells be discontinued; that several houses be torn down and their material burned; that a system of sewerage be adopted by which all drainage will be discharged into the Mississippi; that the bayous be properly drained, and a stream of pure water continually run through them, and their banks grassed; that they be protected from back water by dams; that all buildings be erected subject to sanitary plans, and that all streets be constructed of gravel.

THE LUXEMBOURG PALACE IN DANGER. — The *Standard's* Paris dispatch says that the Luxembourg Palace has narrowly escaped destruction. A fire, which had been smouldering for some time, broke out under the flooring of the library, but was discovered before it had extended. A number of books were burned.

⁴ Εἰρωνικῶς is rendered in Th. Kind's Modern Greek Dictionary by *spöttisch*, which may be fairly rendered by "with sarcasm and contempt."

¹ No dimensions, etc., of this plate are given whereby to judge of its sufficiency.

² The resistance to crushing of brickwork is considerably less than that of single bricks, with which it is often confounded.

³ The allowance for live loads and strains should be deducted to obtain the net dead load.

JOHN WESLEY'S CHAPEL.—By the fire on Sunday, December 7, which threatened the total destruction of the Wesleyan Chapel in City Road, London, the main chapel was greatly injured and the historic building, Wesley's morning chapel, was gutted. Wesley's pulpit was saved. The beautiful frescoed ceiling is irreparably injured, and great doubts are entertained whether the roof of the structure can be restored.

THE TOWERS OF COLOGNE CATHEDRAL.—At present the towers of Cologne Cathedral are, after the new *fleche* of the cathedral at Rouen, which is 492 feet high, the highest in the world, the height they have attained being 5 feet higher than the tower of St. Nicholas's Church in Hamburg, which has hitherto been the second highest edifice. Ultimately they will be 51 feet 10 inches higher. The *Cologne Gazette* gives the following as the heights of the chief high buildings in the world: Towers of Cologne Cathedral, 524 feet 11 inches from the pavement of the cloisters, or 515 feet 1 inch from the floor of the church; tower of St. Nicholas, at Hamburg, 473 feet 1 inch; cupola of St. Peter's, Rome, 469 feet 2 inches; cathedral spire at Strasburg, 465 feet 11 inches; Pyramid of Cheops, 449 feet 5 inches; tower of St. Stephen's, Vienna, 443 feet 10 inches; tower of St. Martin's, Landshut, 434 feet 8 inches; cathedral spire at Freiburg, 410 feet 1 inch; Cathedral of Antwerp, 404 feet 10 inches; Cathedral of Florence, 390 feet 5 inches; St. Paul's, London, 365 feet 1 inch; ridge tiles of Cologne Cathedral, 360 feet 3 inches; cathedral tower at Magdeburg, 339 feet 11 inches; tower of the new Votive Church at Vienna, 314 feet 11 inches; tower of the Rathaus at Berlin, 288 feet 8 inches; towers of Notre Dame at Paris, 232 feet 11 inches.

ANECDOTES CONNECTED WITH VENTILATING AND HEATING ARRANGEMENTS.—A writer in a recent number of the *Sanitary Engineer* says: A large public institute near New York was heated with a hot-water apparatus, which proved quite satisfactory until one very wintry day word was sent to the contractor that the inmates were freezing. He came, and after listening to the trustees' complaints at the apparent failure of the apparatus explained that the heat from the boilers was neutralized by the enormous windows on the north side of the building, reaching from the ground to the roof and covering some hundred square feet of surface. The casings of these windows were so loose that the keen wintry blasts were forced into the rooms and then down the registers, so that the hot air was blown out of the cold-air supply box into the yard, melting the snow, and as an actual fact the inmates gathered around this out-door opening to warm themselves. The contractor said that if the trustees wanted more heating surface they could have it, but more fuel would be needed. He thought the simpler mode of remedying the difficulty was to put shutters on the windows. This was finally done, and no trouble has since been experienced. Here is another illustration of a popular ignorance. A gentleman while attending church one evening found that his feet were icy cold, so that he had to raise them from off the floor. Calling the attention of the sexton to the fact, the latter said with some perplexity, "Yes, we have a good many complaints of cold feet from others; but I can't understand the reason why we can't keep the church warm; we surely have fires enough." So saying, he pointed to a register in the floor directly behind the gentleman, in the adjoining pew. Looking around, the latter could see that there was a hot fire in the furnace beneath, and yet no heat came up. When a handkerchief was laid over the register it scarcely stirred. The visitor asked the sexton, "Have you any means of ventilation?" "No, sir." "Are there no windows open?" "None whatever." "How, then, can you expect the air to come in here if it can't get out somewhere?" There was no response; the man was nonplussed. "Did you ever try to blow into a bottle?" continued the inquirer. "No, sir." "Do you think, if you did, that you could force any more air into a bottle by blowing than was in it before?" He could not say; never had thought of it. "Well," continued the gentleman, "you would soon find, if you tried, that it was impossible; and neither can you force air into this church through a register if you don't open a window or some other orifice." But the sexton demurred, "opening a window would let in the cold air, would n't it?" "You just try it," was the response; "raise some of the windows on the leeward side of the church, and see what will happen." It was done; and instantly the handkerchief lying on the register rose half-way to the ceiling with the force of the ascending current. The sexton stood and stared in astonishment. "Now what you want to do," explained the visitor, who was a ventilating engineer, "is to keep your windows open, or to put in ventilators." He further offered to plan the latter free of charge to the church, and left his card for the trustees to call on him; but of course they never came near him, and I suppose cold feet are still the main attraction to the faithful attendants of this church, in spite of the red-hot theology preached there.

DUTIES ON WORKS BY THE MASTERS.—To buy a picture by an old Italian master is one thing; to get it out of Italy is another. Report now comes that four pictures have been stopped on the northern frontier by the Italian custom-house authorities, who require that the enormous tax of twenty per cent on the value of the pictures shall be paid. This tax was imposed through Cardinal Pacea, in 1820, and is known as the Pacea Edict. After the Italian occupation of Rome the edict was looked upon as virtually annulled, and since 1870, up to ten months ago, pictures and other works of art were exported without being subjected to it. Now, however, it is revived. No other formality was observed than a notice by the Council of State in an official journal that the edict was again in force. A suit against the Government is likely to grow out of the case. Art-dealers regard the duty as very unjust, and with reason argue that the property is theirs, and that if the Government does not wish it to go out of the country, it should offer to purchase it, and not act the part of the dog in the manger.

COLORING BRASS-WORK.—Cleaned-up brass-work, if left in damp sand, is said to acquire a fine brown color, which, when polished with a dry brush, remains permanent and requires little cleaning. Black, much used for optical brass-work, is obtained by coating the brass with a solution of platinum, or with chloride of gold mixed with nitrate of tin. The Japanese are said to bronze their brass by boiling it in a solution of sulphate of copper, alum, and verdigris.

RANSOME'S HYDRAULIC CEMENT.—*Engineering*, in an issue of recent date, speaks highly of Ransome's hydraulic cement, which is shown by actual tests to be superior to good Portland cement. Mr. Ransome's first efforts were directed to overcoming the objections to using Portland cement for decorative purposes, for which it is unfitted on account of its color. He obtained a beautiful white cement, capable of receiving a polish resembling Carrara marble, by burning a mixture of kaolin, chalk, and soluble silica which he obtained from New England. After burning, the mixture was composed of 60 parts of lime, 12 parts of alumina, and 22 parts of silica. This product, though valuable for special purposes, was too expensive to compete with ordinary cement, and Mr. Ransome therefore began the use of blast-furnace cinder, granulated by Wood's patent apparatus. This slag sand, made at the Tees Iron Works, Middlesborough, was found to contain:—

Silica	38.25
Alumina	22.19
Lime	31.56
Magnesia	4.14
Sulphide of lime	2.95
Oxide of iron	0.91

The use of slag for cement is by no means new, large quantities having been turned out for years by Lürmann, at the Osnabrück works in Germany; but it would seem that Mr. Ransome's method is capable of producing exceptional results. He reduces the slag to a fine powder, and after mixing it intimately with one to two parts of powdered chalk or limestone, burns it at a moderate temperature. The following results are given as developed by comparative tests:—

AGE.	Breaking Strain of Samples 1½ inches Square, giving a Sectional Area of 2¼ Square Inches.	
	Portland (123 Pounds per Bushel) Pounds.	Ransome's Pounds.
2 days	510	740
3 "	608	870
7 "	818	1,170
12 "	—	1,300
15 "	—	1,330
21 "	—	1,440
28 "	933	—
3 months	1,056	—
6 "	1,176	—
9 "	1,219	—
12 "	1,229	—
2 years	1,325	—
3 "	1,314	—
4 "	1,312	—
5 "	1,306	—
6 "	1,308	—
7 "	1,327	—

A NEW VARNISH.—Some few years ago it was discovered in Natal, South Africa, that knives used in cutting down plants belonging to the natural order Euphorbiaceae were protected from rusting by the gum which adhered to them. This led to further experiments being made with a view of utilizing the gum as a preservative material. Iron plates were coated with it and subjected to immersion in the waters of South Africa, which are stated to be proverbial for their foulness, and for the rapidity of the growth of vegetation. The euphorbia in Natal grows close to the seashore, so that there was ample opportunity for severely testing its value as a protecting covering for iron against corrosion and marine growth. The experiments proving successful it was then sought to put the discovery into a practical form. To this end the gum was dissolved in a preparation of spirits, and this was found to be a ready means of applying it as a coating for ships' bottoms, and for iron-work generally requiring such protection, the spirits evaporating and the gum being left on the surface of the metal. A sheet of iron coated with this preparation was placed in the waters in the Naval Dockyard at Chatham, where anything immersed becomes rapidly fouled. At the end of two years the plate was taken out and was found to be quite clean and free from fouling and corrosion. The composition has also been successfully tested in Africa against the ravages of the white ant. These successes have led to its adoption in practice for various purposes, and it is now being introduced in England. — *N. Y. Tribune*.

THE STATUE OF THE REPUBLIC AT PARIS.—The first competition for the Statue of the Republic which is to be erected at Paris has resulted in the selection of MM. Gautherin, Morice, and Sortoux, who are to be allowed until April, 1880, to prepare their full-sized models for the final competition.

ESTIMATING FOR SHINGLING AND LATHING.—If you wish to make an off-hand estimate of the number of shingles required for a roof at one quarter pitch, multiply the ground surface of the house in square feet by 10. Example, a house, 20 x 20 on the ground, has 400 square feet, multiplied by 10, gives 4,000 shingles; if it is one half pitch, add one tenth more. For a close estimate it is better to obtain the square feet of roof surface (after allowing four inches on each side for lap of gables, and 10 inches on each eave for lap over the moulding), then multiply by six, the product will give the number of shingles, laid five and one half inches to the weather. If 16-inch shingles are to be used, laid four and one half inches to weather, divide the square feet by nine and multiply the product by eleven. To estimate lath, allow 14 pieces to the square yard. In estimating, allow twelve inches for the base board, but include doors and windows. — *North-western Lumberman*.

DEL SARTO'S MADONNA.—More recent reports from Florence go to show that the injury which Andrea Del Sarto's Madonna del Saco has received from a defective water-pipe on the outer wall of the Annunziata took place two years ago, when the fresco was in reality in worse condition than it is now, and that since then the pipe and roof have been thoroughly repaired.