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AS those of our readers who subscribe for English architectural journals are just now having again brought to their attention Mr. Cram's amusing paper on the methods alleged to be followed at the École des Beaux-Arts, there is a reason for reiterating, with more emphasis, some of the opposing views that were developed by the speakers who discussed the paper at the meeting of the Boston Society of Architects. It is true, as Mr. Cram says, that every architectural school in this country, except the one at Cambridge, has adopted the French method and inculcates French ideas in regard to planning, and, to a great extent, uses French examples, and the examples that the French themselves use—that is, the remains of Greek and Roman buildings, and the work of the Italian Renaissance. That he should disapprove of the choice of a style for study is conceivable enough; many others have done so before him; but it is necessary for students of architecture to begin by trying to understand some style, and, as the greater part of all buildings, public and private, in the civilized world, carried out under the care of an architect are built in this style, and as most stock patterns of mouldings, mantels, relief ornaments, finials and so on, are made in this style, it is certainly the one which a young man who intends to practise architecture at the present day needs to learn first. Mr. Cram would probably say that the student in the schools ought to learn all styles; or, at least, that after learning the Classical mode of design he should have a course in Romanesque and Gothic work; and this is what is actually said by hundreds of parents of architectural students, by students themselves, and by laymen generally; but the people who teach architecture know what those who try to learn it come to understand later themselves, that the two or three years devoted to instruction in design in an architectural school is none too much for acquiring one style in such a way as to be able to use it as an architect must—that is, with such thorough knowledge as to be able to design correctly and with something like Classical elegance, every detail in a building, both inside and outside. The experiment has often been tried of giving students in architectural schools some practice in mediæval design in the later years of their course, but the result has not been encouraging.

IT must be remembered that, after all, good art is good art, under all disguises of style; and strange as it may appear to a layman, the time spent in refining one's knowledge of the Classical styles gives a far better preparation for the appreciation of the real beauties of mediæval work than the same time devoted to copying Gothic mouldings and arches. So great a master of the mediæval styles as William Burges, whose work, to our mind, resembled more closely than that of any other modern practitioner what a mediæval architect would have done under the

same circumstances, always maintained that the best discipline for Gothic design consisted in the study of Greek work, and in drawing from the life,—precisely the training that is most in repute at the Villa Medici; while the late H. H. Richardson, the first of the moderns to feel and translate for us the greatness of the real French Romanesque, was saturated, by seven years of devotion to his work in André's atelier, with all the habits and traditions of the French school. Mr. Cram gave some amusing illustrations of what he supposed to be the infirmity of the French system in regard to planning: they may have been drawn from life in American schools, but they certainly do not apply to the Paris school, where the art of planning is incontestably better understood than anywhere else in the world. As for the "chimneys starting from the ceilings of *salles des fêtes*," or partitions that "depend for their support on miraculous agency," it is hardly necessary to observe that a "*porte-à-faux*" is the one thing which the juries of the Paris school detect with eagle eye, and never forgive. That symmetry is considered desirable in French planning is true, and great mental labor is expended upon arranging rooms symmetrically; but it does not follow that they are left without light, or that the kitchen is allowed to balance the reception-room. On the contrary, a good plan from the Paris school, such as Pascal's Prix-de-Rome plan, is a marvel of perfect adaptation of every part to its purpose, directed by a single artistic idea. Mr. Cram may have detected in some drawings by American freshmen a tendency to suppose that a decorative arrangement of "*points de pôché*" was desirable in a plan, but no Paris "*nouveau*" ever carried that notion beyond his first "*concours*." That a symmetrical plan, well focused, may present an agreeable arrangement of solids and voids is, of course, natural, and it is a common remark that a plan which showed such attractiveness in the drawing frequently proves very successful in execution; but the idea that planning consists in speckling a sheet of white paper with spots of India ink is altogether new.

EVEN a symmetrical arrangement of spots is, however, a better beginning for a plan than the random accretion of parts which most people imagine to be of the essence of Gothic planning, and which it is so difficult to prevent young students from falling into. Every one who has taught architectural students knows that the conception of a plan as a unity is one which they acquire very slowly. Only by insisting on symmetry can this conception be encouraged, and a permission given to young students to design a so-called Gothic group would immediately cause a relapse into the ordinary layman's practice of sticking rooms together anyhow, from which recovery would be doubtful. In regard to the school at Harvard College, where much more freedom in design is given than at the other American schools, it should be remembered that this school was founded particularly for the cultivation of architecture as a fine art, and the development of the æsthetic sense in the same way that it is developed among painters and sculptors, rather than for the training of practitioners, and that its students have generally been prepared by a much fuller artistic development than is possessed by those who matriculate at the older architectural schools. It is true that the education which it gives, applied to such material as it has to deal with, may, quite possibly, develop the very best architectural talent that this country, or the world, can show; and it was through the confidence of its founders in the possibilities of the American character in the way of the highest artistic attainment that it was established; but its example does not show that the older schools have done wrong in adopting the system which they have all found best suited to their needs.

A LAW has recently been passed in New York, forbidding the employment of convicts in the prisons on any ordinary work. Of course, this statute is a product of trade-union mediævalism, but the discussion of its origin does not change its effect, which has already been to develop a spirit of insubordination among the prisoners which did not exist while they were kept regularly at work. The warden of Sing Sing prison, Mr. Sage, knowing the injurious effect of idleness upon the character of prisoners, but prevented by the new law from allowing them to work, has met the difficulty by forming two classes, one in free-hand drawing and the other in wood-carving, which, together, include about two hundred prisoners,

Good teachers have been employed, and it is rather touching to learn that the prisoners were eager to have a chance to join the classes, and took much interest in the work. So long as the experiment is permitted to last, it will be well worth watching, not only by students of humanity but by lovers of the fine arts. We all remember how passionately William Morris maintained the theory that the cultivation of the love of the beautiful, and the practice of art in a small way, was the surest antidote to selfishness, discontent and crime. Now, if Warden Sage can be left unmolested for a time, we shall have a chance to see whether there is something in this notion, and whether the practice of drawing and carving may not really give some of the more intelligent of the prisoners a new interest in life, and a source of modest happiness, which will protect them later from many temptations. The only danger is that the walking-delegates may discover that, as the daily papers incautiously suggest, the acquirement of the arts of drawing and carving "may lead to the convicts' securing employment in the arts after they are released from prison." It is obvious to the delegate's mind that if an ex-prisoner should secure employment, he would prevent some one else, presumably a constituent of the delegate himself, from securing the same employment, and the same argument which justifies preventing prisoners from being kept under good influences by useful work applies equally to the plan of having them fitted to be useful after their discharge. Fortunately for the community, as well as for the convicts, the New York Prison Association has taken up the matter earnestly; and, although its efforts were unavailing to prevent the adoption of the new law, it will, in its endeavors to secure its repeal or modification, be fortified by the evidence which is accumulating as to its injurious effects.

IT seems to us that there is a way of looking at the question of prison labor which has been too much neglected. We may take it as a proposition requiring no demonstration, that so long as people die in New York as a result of privation, foul-air poisoning, or other causes beyond their control, there is work for some one to do in removing these causes. The municipality already does all that it is able, and employs all the organized labor that it can afford, in the service of the citizens; but there is still a great deal to be done, which neither the municipality nor the people who suffer are able to pay for; and the most resolute champion of the workingman could hardly argue that the helpless poor ought to continue to suffer rather than allow unpaid labor to purify their surroundings, to alleviate their pain, or provide for some of their most pressing needs. Every year many thousands of dollars are given by charitable people to supply the convicts in the prisons with Christmas dinners, or other simple pleasures, and the effect on the prisoners is probably good; but could not the prisoners reciprocate the favor, if trades-union exigencies prevent them from working for wages, by manufacturing shoes and stockings for poor children, or warm coverlets for sick people who cannot buy them themselves, or doing other work of the sort? The Associated Charities of the great cities could be depended upon to distribute them judiciously, and would be very glad of such an addition to their resources; and the influence upon the prisoners themselves, most of whom have probably some remains of a heart, of doing work for pure charity, would certainly be interesting, and might be valuable, while the training to regular habits of industry, which is, or ought to be, the first object of prison life, could be quite as well secured by means of such work as by labor for a contractor under the direction of an overseer.

A NEW theory has been put forward in regard to the central figure of the east pediment of the Parthenon. It has generally been supposed that this figure represented Athene standing, as the standing figure of some divinity, represented as taller than the surrounding mortals, usually occupied the middle of the triangular pediment groups, and Athene would naturally be the most important personage connected with the sculpture of her own temple. No fragment of any such figure has, however, been discovered in or near Athens, and it is only very recently that Dr. Furtwängler has become convinced that the torso of *Minerva Medica*, now at the School of Fine-Arts in Paris, is none other than the central figure of the Parthenon group. Even a conjecture of this sort would give great interest to the Paris torso, and it will certainly be studied with

renewed interest by archaeologists. It has generally been supposed to be of Carrara marble, and to be a Roman copy of some fine Greek original of the school of Phidias. Dr. Furtwängler himself has regarded it as a copy of a bronze original, but nothing is known of any bronze statue of such importance belonging to the Phidian period; and the natural supposition, that it might be a copy of the chryselephantine statue in the Parthenon, is shut out by the fact that several copies of the latter are in existence, all of which differ materially, in position and dress, from the *Minerva Medica*. A circumstance which counts against Dr. Furtwängler's new theory is that the *Minerva Medica* has marks of dowel-holes in the plinth, while there are no corresponding marks on the Parthenon pediment; but it is not necessary to suppose that dowels were originally used, and Dr. Furtwängler thinks that, after the statue was carried to Rome, it may have been set up in some temple there, and the dowel-holes made at that time.

THE Assistant Secretary of Agriculture, Dr. C. W. Dabney, is said in the daily papers to be an earnest advocate of the project for uniting all the scientific work now carried on by the United States Government under a single department, the affairs of which should be administered by one responsible official. As he says, about eight million dollars are annually expended from the public treasury for carrying on scientific work, but the work and the money are so scattered through different departments that much of it is either done twice over, or might be saved altogether if the departments could act with a common understanding. For example, there are four distinct hydrographic offices, belonging to four separate Departments, but all engaged in studying our coast and inland waters; there are three distinct topographical survey offices, attached to two different Departments; and there are eight different agencies, under six Departments, engaged in collecting statistics of various sorts, all working independently of the census, which, at stated intervals, does the same work all over again. Of course, the politicians would oppose any change in the present system, which gives a good living, at the public expense, to more than five thousand persons, but there can be no doubt that the public generally would approve a consolidation, such as Dr. Dabney suggests. In municipal affairs, the same struggle has long been going on between the politicians, intent upon making places for their followers at the public trough, and the citizens, who are beginning to find it hard work to keep that trough supplied with nourishment. At present, almost all towns with a million dollars a year or more to spend on public work scatter that work among half a dozen or so of independent departments, or commissions, or boards, or whatever they may be called, which make it a point of honor to know nothing of each other's movements, and view the suggestion of coöperation with horror. Each of these bodies employs a staff of engineers, also working independently, and, as a position as assistant engineer in the office of the Street Commissioner, or City Surveyor, or Water Board, or Sewer Department, does not demand extensive qualifications, and is attractive to nice young men with political influence, the pastures and roadsides of most of our infant cities are dotted in all directions with weather-beaten stakes, the memorials of the efforts made by their protectors to give these nice young men something to do. The tax-payers of the municipalities by whose bounty they are supported, have long been familiar with the working of the system, and annual efforts are made in most of them to secure a charter amendment providing for a single commission, or board of public works, to take charge of all such matters; but the politicians who have been elected to office by the efforts of their nice young protégés, and the nice young protégés themselves, with their families and friends, naturally object to a consolidation which would greatly reduce the number of places open to such candidates, and they are always strong enough to prevent any effectual action. So far as a Government Bureau of Scientific Work is concerned, there is a danger, which would not be felt in regard to an ordinary Commission of Public Works, that the head of the Bureau, if he were a scientific man, would be very likely to consider some particular branch of science of undue importance; while if he were not a scientific man, the chances are that he would not appreciate the importance of any of them, or understand the proper way of carrying them on; so that the person required for the post must have the very unusual qualification of an intelligent comprehension of all branches of scientific work, without special interest in any.

GERMAN ACHIEVEMENTS IN EXHIBITIONS.



Fig. 1. Entrance to the "Old Town" at the Dresden Exhibition.

THE World's Fairs of other nations have always been appreciated by German engineers, and praised warmly. There arose among them the wish to have an opportunity to try their own hands at the task of creating a show city; and not only they, but a good proportion of the wider-awake citizens felt it to be unworthy of Germany to not strain herself to vie with the other great countries of the world in their rivalry to outdo one another in the greatness, the beauty, and the success of their international fairs. Six years ago, therefore, an attempt was made to put this ambition into practical shape, and a committee of patriotic men began to endeavor to arouse an enthusiasm for their idea among the people, and to obtain aid from the government. But their efforts failed in every direction; it would be too long and too political a story to explain why here. Enough to say that all that came of the undertaking was, first, a renewed interest in exhibitions; the resolve of several town magistracies and provincial syndicates to inaugurate such ventures; and lastly, the fact that the local Berlin exhibits were placed within a frame so extensive, elaborate and manifold that it seemed meant for a competitor of the whole-world fairs of Chicago and Paris. For it was to a mere local Berlin Industrial Exhibition that the original grand idea of a German Exhibition was finally reduced. The year 1896 was appointed by all the several establishments of fairs for the holding of them, simply because it is the quarter-century anniversary of the founding of the new German Empire.

I pass over the Stuttgart, the Nuremberg and the Kiel Exhibitions, to dwell only on the two fairs that seemed, to my eye, to stand for the best that German architects can achieve, that is to say, the exhibitions in Berlin and Dresden.

In Berlin the arrangement of the exhibits was below criticism; and in Dresden the exhibits themselves were. But on the other hand, the fair buildings and grounds in Berlin were grandiose, for a local fair, and in Dresden a complete and charming success was scored in a favorite fair enterprise. I will refer to the latter again presently.

The site of the Berlin *Ausstellung* was Treptow Park, and, for an engineer, the spot itself offers a good deal of interest, it being nearly wholly an artificial production, having been made some twenty years ago from a waste of sand and marshy forest situated along the river Spree. Its general aspect is that of a large suburban park. Numerous winding walks and drives traverse it, and one brand-new, wide highroad. Its particular landmarks are a large, irregular-shaped fish-pond, and an immense playground for children laid out in the form of a rectangle, and bordered by four rows of fine plane trees. Its front along the river may also be counted as one of the park's distinguishing features. The river at this point is broad, the banks flat and there is no continuing of the park on the opposite side.

At the command of the Emperor, who is notably passionately fond of everything naval and grandiose, a natural-sized model of a huge Atlantic steamship was anchored in the shallow little inland stream, and this struck the note, as it were, of the Exhibition. Enterprise, daring, crude determination to appear imposing, met one henceforth on every hand. There were first, the expensive, separate buildings of the City of Berlin, of Fisheries and of Chemistry, on a scale of size and of a studied variety of style fit almost for an international show.

Inland, upon the lake-like fish-pond, lay a second centre of architectural exuberance, one of the two most extensive settlements being a copy of Old Berlin, and the other of a Wendish Village. I remember telling Mrs. Julia Ward Howe at her house in Boston a couple of years ago, that the Wends are the last of the Vandals, and the whole dinner-party were ready to start to see them in their obscure village in the heart of the Spree forest, where the Wend language is spoken and ancient customs and dress maintained. But I had been misled myself by an ignorant authority, so-called, and have been instructed since as to the total lack of identity between this harmless remnant of aborigines and the aggressive, valiant tribe that destroyed Rome. The Wends are nonentities, so far as history is concerned, just like the North American Indians; and like the latter, they are brought forth from their settlements in the woods as

objects of civilized curiosity. The only thing remarkable to a stranger about them is the fact of their being in existence. The architecture of their cottages and farmsteads affords no new motif, that I could discover, and is a great deal plainer than the timber architecture of the Swiss and Scandinavians.

Old Berlin, on the other hand, was worth a study by the student, inasmuch as the plan of the place as well as every architectural feature were the work of Hoffacker, one of the cleverest engineers and masters of decorative art in Germany.

Numerous other constructions clamored for spectators; but the guide who had the national honor at heart steered past the "Alpine Meadow" and the other attractions of this quarter, in order to usher the foreign critic to the third and main centre of the Exhibition, which was the great playground. A winding canal connects it with the fish-pond — for one of the smart ideas that the designers of the Exhibition had was to transform the playground into a basin, and to flood it with water from the Spree. Very probably the first source of this inspiration was a reminiscence of Chicago; but what of that? In fact, what are old, gone-by fairs good for, save as they serve as models for future and improved ones? The Main Building, standing at the head of the long, broad basin, in this truly imposing new perspective, reminded one, furthermore, of Paris and the Trocadéro, since the profile of its façade consisted also of a dome flanked by towers, that in their turn were flanked, right and left, by low, long wings. But plenty of details introduced into the plan were new, and these detailed features, and especially those that concern the interior disposition of walls and spaces, were likewise good, so that if the Parisians ever should undertake to surpass their own, they would do wisely to start next time from the Berlin version. As for the rest, the color of the building's exterior was white, while the roof was silver gray in hue, the material used for covering it having been aluminium.

With the customary conservatism of German architects in this particular, Bruno Schmitz introduced into his design a vestibule of studied plainness. Who originated the notion and on what it is based I do not know; but it has effect in a great many public buildings that are erected in Munich and North Germany. Goethe recommended it for palaces, and expatiates in his "*Second Swiss Journey*" upon the good taste of leading the eye gradually through a succession of increasingly better-decorated ante-chambers to the full-blown sumptuousness of royal apartments. But how this end mentioned by Goethe can be attained by surprising visitors, who naturally expect something finer, by an entrance-hall no better than a barn, and then restoring their equanimity by a display of adequate splendor, it is hard to say. True taste, I think, would spare the spectator the *bouleversement* of his expectation at the threshold, by affording, at least, something of the magnitude of space and general superiority which the façade suggests and actually promises. Then, elaborateness might go on expanding more and more from one hall to the next. No fault could be found with that: indeed, it was the true Renaissance practice in its best estate.

But here in the Main Building, precisely as in the Glas Palast in Munich, a depressingly plain and insignificant real entrance was placed before a second magnificent one, in theatrical, and consequently unworthy, contrast. With this item, however, adverse criticism came to an abrupt close. Long, airy corridors extended to the right and left, opening into reading-room, telegraph-offices, etc., while in front of the visitor a great main hallway reached to the rear of the building, sending out minor side galleries, like ribs from a central spine; all admirable, all practical.

Outside, at the front (the rear of the building was buried in foliage), lines of gas-lamps overhead in the plane-tree alleys made a kind of trellis archway on both sides of the basin, and conducted to the Grand Restaurant at the opposite end. The main feature of this last-named building was a massive Water-tower, so-called because the archway in its base formed the gateway into the canal between the basin and the fish-pond. Of course, such a bit of ancient military architecture was out of place in a dining-house. Considered as a relic of a town's bulwarks, however, the tower and the close vicinage of drinking guards'-rooms did not appear astonishing.

And here we come upon a fact that is worth paying attention to; the truth, namely, that the custom of introducing upon fair-grounds, copies of picturesque, living old cities, led, first, to the reconstruction of picturesque, historical towns, and finally to a prepossession in favor of the historically picturesque. Well-nigh to an ethnographical museum *en plein air* was the Berlin show. The exhibits of modern fabrications played a minor rôle: what appeared tremendous was, altogether, the wealth of side-shows; and, of these, the prodigious ones were descriptive, as, for instance, the Wendish Village and Old Berlin, which have been mentioned, and the Colonial department, Old Cairo and numerous other settlements of a similar kind, which I have no room to specify.

In Dresden, the general fact came even more to the surface than in Berlin, for the larger half of the whole Exhibition was such a side-show. It went by the vague title of "The Old Town," and was less a copy of Dresden than of an ideal, and perhaps therein lay its extraordinary charm. We have all seen Old London, Old Antwerp, Old Prague, while the Old Berlin of Hoffacker has but just been referred to. Well, they were more or less creations, and the later ones, perhaps, were a little finer than the earlier ones, inasmuch as the mimic buildings were arranged a little less sternly according to historical reality than according to artistic effect. In all, these two

were the main ingredients: artistic effect and historical similitude. For one, I envy the architect whose imaginations were shackled by so few considerations in so large a task. Think of the pleasure of being granted the privilege of rearranging a town's buildings, of blotting out of existence the edifices we hate for their ugliness or



Fig. 2. A Corner of the "Old Town,"
Dresden Exhibition.

their imbecility, and placing at last in their proper relief the gems of architectural inspiration that have too long been kept thrust into the shade by pretentious mediocrities! The acme of pleasure, of course, would be the privilege of choosing one's self the town to be thus reconstructed, for one town has more of our heart than another, and some one town most of all.

But we can be pretty sure that if this favorite town lies outside our native country, it is not to ourselves that a Fair Committee would do well to give a contract. Because only in case our taste coincides with that of our compatriots will our work become popular, and only in so far as it agrees with the set theme will our labor be successful. And herein, I believe, is the secret why in the great Exhibition of Berlin the model town was not successful, whereas that of Dresden was. The taste of Hoffacker is higher than his theme was; it is renescent, Italian, grandiose. His theme of Old Berlin, in consequence, fell out, wanting in traits of homeliness and snugness, although it pictured mediæval homes and shops in plenty; but, on the other hand, the town was nowhere dainty and elegant in aspect, although the seventeenth and eighteenth centuries reappeared in numerous façades. There was no unity in the creation as a whole. And we have got so far as to expect this earnest trait in Exhibition designs, — or will the reader deny the fact?

The creator of the *Alte Stadt* in Dresden, whoever he was, is of quite other stuff than his rival — is Germanic to the core. His theme was a part of the best in himself, coincident with his taste, and he enlivened it with a robust, hardy breath of inspiration. Such repetition of steep roofs, such clumsy ornamentation, such faults of a dozen kinds as come out! He, however, is not aware of them; they are Teutonic, the signs and signals of old houses he loves in Nuremberg, in Halberstadt, in Dantzic, in nameless towns which he has seen and been happy in, and he reconstructs them as a poet who sums up an impression. He minds the repetition of a roof no more than the ballad-writer minds the repetition of a rhyme. And truly ballad-like, mediæval, is the insouciant air of this mimic city.

I can only give two very inadequate illustrations of the place: The first is a photographic view of a part of the old town wall, and shows the bridge constructed over Linné Avenue, to connect it with the permanent exhibition grounds, lying north of the Grosse Garten. Number 2 represents a corner of one of the market-places of the old town. Dresden citizens settled into the place as if it were their own skin; and petition after petition was sent in to the magistracy not to destroy it. But this frail fabric of gypsum and paper is disappearing, wall after wall. Yet its reputation will remain as a creation, embued through and through with architectural life; a small, but worthy German success in the field of exhibitions.

L. VON KROCKOW.

THE PARTHENON AND THE WORK OF M. MAGNE.¹

THERE has recently been published at the "Imprimerie Nationale," in Paris, under the direction of the Minister of Fine Arts, a very interesting book containing the results of observations made by the eminent French architect, M. Magne, on the Parthenon. Two years ago, while on a journey in Greece, M. Magne called attention to the alarming condition of the edifice. The architraves were broken in places, the entablatures had been badly shaken, and it was evident that, sooner or later, the entire building must fall in pieces.

Informed by the French Government of the result of these observations, the Hellenic Government immediately submitted the question of what was to be done to a special commission, formed in part of Greeks, and in part of foreigners resident in Athens. The members of the commission were unable to agree upon any plan. One of them, a German, conceived the idea of fastening together with bolts the detached fragments, and of pouring into all the cracks tons of glue. The difficulties, however, kept increasing. A slight earthquake shock had still further dislocated the entablature and had decided the fall of several fragments of the architrave. There was no time to be lost. The Grecian Government took counsel with a German architect, Herr Durm, and an English architect, Mr. Penrose, both gentlemen artists of ability and well known as archaeologists. While they were on the spot studying the situation, M. Magne, at the instance of the French Minister of Fine Arts, was preparing in Paris a project for consolidation, was drawing up a plan for the necessary supports to underpin the broken or crumbling blocks, and when he returned to Greece last spring, he was able to

present a model of the framework of stagings that would be indispensable to the work.

He expressed his views at a public meeting. It was a question, he believed, not of a restoration, but of preservation. There could be no question of replacing the great work of Ictinus by a modern work: that would, indeed, be a veritable sacrilege.

M. Magne found that his views were sympathized with and, encouraged by his first success, he resumed his studies at the Parthenon and shortly after was able to submit to the Government of Greece a definite plan of work, which was officially adopted. A complement of French carpenters sent to Athens last summer began work at once. The scaffoldings are in place, and the work is going forward with all possible carefulness.

The water-colors, photographs and drawings made of the Parthenon by M. Magne are now on exhibition at the Trocadéro Museum in Paris and, as before stated, the Government has put forth a printed report of the results of M. Magne's studies and observations. Never before has there been published such definite information concerning this marvellous structure, in which are united all the perfections of ancient art. M. Magne has not contented himself with merely describing these noble ruins, and with pointing out in concise terms their beauties. He has corrected, in the course of writing his book, many errors founded upon ancient texts imperfectly understood. He has thrown entirely new light upon the system of construction of the Parthenon, upon the manner of lighting it, and upon the use of color in its decoration.

The building was divided into four parts: the vestibule or pronaos, the sanctuary or naos, a posterior hall, called the opisthodomos, and the opisthion or posterior vestibule. The naos was the largest part. A gallery two stories high, sustained by a double row of columns surrounded it on three sides, and divided it into three naves. At the end of the central nave, which was the largest, was erected the statue of Athena.

The pronaos, from which the naos opened, was not, like the latter, enclosed by a continuous wall. It was a portico of six columns, raised two steps above the peristyle or outer colonnade which surrounded the monument. Along its exterior sides extended the outer walls of the temple or secos, terminated by antæ.

The opisthion was identical in construction with the pronaos. It communicated by a vast doorway with the opisthodomos, where was kept the treasure of Athens. Less deep, but as wide as the naos, and like that entirely enclosed, the opisthodomos was divided into equal bays by four points of support whose trace is still marked in the flagging. In the flagging of the naos, also, were found the spots occupied by the columns of the interior gallery.

So much for the construction of the building: now as to its exterior decoration. The two triangular tympanums of the pediments had, on one the birth of Athene, on the other the dispute between Athene and Poseidon; upon the metopes of the frieze, the combat of the Lapithæ and the Centaurs, and the struggle of the Athenians against the Amazons. Upon the walls of the temple, under the peristyle, was a frieze on which the procession of the Panathenæa, with its long cortège was unrolled. Starting at the posterior façade, the procession followed in two lines the side walls of the secos, meeting at the anterior façade, where a group of divinities, seated, was receiving with the consecrated robe of Athene the homage and the offerings of the multitude.

Of all this, here is what remains at the present time: the posterior part of the secos, including the opisthion with its portico and the posterior façade with its peristyle. But the fronton, since the depredations of Lord Elgin, is bereft of its principal figures, which have been carried to the British Museum. As for the anterior façade, whose fronton has also been despoiled and deprived of its bas-reliefs, it has kept the columns at the corners and in front, and its entablature; but the pronaos has only one column left; and the walls of the naos have long since crumbled. On the east and west, the façades have preserved their metopes, but in sadly mutilated condition. The metopes on the north side have partly disappeared. It is with difficulty that one can distinguish the subjects of those that remain. The best preserved of all — those on the south — have been removed and have gone to rejoin in the British Museum the *Parcæ*, the *Iris*, the *Ilissus* and other sculptures which were formerly the glory of the frontons. The bas-reliefs of the frieze have followed, for the most part, the same route, the only ones remaining being those on the west. The group of seated divinities has found in the Museum of the Acropolis a shelter now inviolable.

The Parthenon is erected upon a massive substructure of carefully matched rocks, rocks covered with a layer of marble, upon which rest three steps. The upper one, forming the stylobate, supports the colonnade and defines the limits of the temple. Its flagged surface measures about sixty-nine by thirty metres.

In order to avoid the effect of concavity that so large a plane surface would have produced, the architect has given to this vast plateau a curvature visible to the naked eye. He has given it a regular curve from east to west. A similar precaution led him to curve the horizontal lines and to incline the vertical lines towards the centre. The entablature follows the curvature of the stylobate, the columns incline regularly towards the interior of the temple and the same direction is followed by the upper courses. Thus is lost the sharpness of straight lines, and the columns do not appear overburdened by too massive and heavy frontons. At the angles, a calculation of a different nature occupied the builder. In order to give to the

¹ From *l'Illustration*, Thiebault-Sisson.

edifice a stability not only apparent but real, he reduced the distance between the columns at the same time that he increased their diameter.

It is known that mortar was not employed by the Greeks even for temples of stone, and, indeed, not an atom of it entered into the joining of the precious materials of which the dwelling of Athena was constructed. The blocks are all cut with sharp edges and united in the same course by cramps of iron, while vertical bolts penetrating into the upper course bind them to that. In order to diminish the burden of the columns upon which, from axis to axis, the architraves extend in thick monoliths, the architect has hollowed out the frieze whose alternating metopes and tryglyphs weigh heavily upon the architrave. Between the inner course around the entire circumference of the building there is an extensive passageway, large enough to give passage to a man. Above the frieze, the blocks which form the cornice, like those of the wall, are horizontally united by clasps of iron, and are also fastened by bolts to the plates of the frieze.

So much for the exterior façade. Passing beneath, we find that equal care has been bestowed upon the peristyle, with its marble ceiling and its interior porch, whose columns, unlike those of the exterior, have all the same diameter, and whose axes are in no way inclined. The proportions of the interior order are, moreover, different from the proportions of the exterior order: they are raised two steps above the flagging of the peristyle.

None of the interior divisions of the temple are remaining, but the site of the galleries which divided the naos into three naves is marked by the traces they have left in the flagging. It is here that rests the question, so many times decided for and against, of lighting through a central opening in the naos. An examination of the flagging alone renders inadmissible the theory of this central opening. The flooring of the central nave is four centimetres below that of the side naves. Now there does not exist in the flagging any traces of underground canalization; the rainwater would consequently have remained here as in a cistern.

It should be remarked, moreover, that the absence of a roof would be little probable in a temple heaped with offerings and ornamented in the middle with the chryselephantine Minerva, a statue as precious from the materials employed as from the genius of Phidias, and decorated on the interior, according to all appearances, with those precious tapestries and rich Oriental stuffs so much sought for at all times by the Greeks. In order to give more weight to his argument, M. Magne strengthens it by noting illustrations borrowed as well from Egyptian architecture as from Byzantine structures. Thus, the hypostyle of the temple of Karnak was lighted only by a few narrow slits, and one sees now in St. Mark's at Venice the mosaics of the northern gallery lighted purely and simply, but sufficiently, through the bronze grillage opening into it.

Let us pass to the decorations of the building. Here, again, many surprises await us. The unpublished observations that M. Magne has been able to make, thanks to the stagings which he has had erected upon the circumference of the Parthenon, permit him to assert that color played a great rôle, a preponderant rôle. In the same way that the potter in the time of Phidias drew with a point the figures and ornaments of his vases, so at the Parthenon the decorator has marked upon the marble, with a fine engraving, the outlines of his ornaments. In the same way, also, that the potter, after having scratched his design upon the clay, colored the figures, so in the temple of Athena the decorator has put the ornaments in color, after having graven them upon the marble. These colors, it is true, have disappeared almost everywhere, but there remains between the lines a brown coating of the preparation which preceded the application of color, and to which it served without doubt as a foundation.

What were the tints employed? A comparison with the marble statues of the same epoch, all multi-colored, permits M. Magne to respond. It is obvious, in effect, that the decorative principles by which the polychromy of statues was regulated, must have equally guided the artists who colored the ornamental parts of the temples. These statues were colored only partially with a colored coating. The workmen applied just enough encaustic to temper the whiteness of the marble; thus he established between the transparent matter and the partial coloration with which he covered the face and the dress, a harmony of which the effect must have been marvellous. Following the example of the sculptor, the decorator of the Parthenon must have applied color, not indiscriminately on all sides, but have employed it only to make the least lighted parts of the building stand out. He must have reserved its principal effects for the ceilings of the galleries and the mouldings of the frieze, or, still more, for the cornices and the mouldings of the frontons. On the exterior, the columns and the architraves bear no traces of coloration, but traces of blue tints may be found in the channels of the tryglyphs and of red tints on the guttæ.

The use of metals as well as of color is apparent in the decorations. Upon the frieze of the Panathenæa numerous cylindrical holes reveal the existence of metallic ornaments, applied to the sculptures: harnesses and bits, bracelets and crowns, and bronze bucklers and shields.

Such is the information given by M. Magne. One will not be astonished after learning of them at the recognition his labors have gained from the Hellenic Government, and all Frenchmen are grateful to him for this peaceful victory gained by France over a land in which the German influence has been supreme for twenty years.

BOOKS AND PAPERS

EVERY one who has studied or taught the methods of representing shades and shadows in architectural drawing must have had reason to deplore the lack in English of any simple and convenient text-book on the subject. Such text-books as were available have usually treated the matter as a branch of descriptive geometry, interesting to the mathematician, and valuable as a mental exercise; while draughtsmen and students of architecture, far from wishing to use their practice in casting shadows as mental gymnastics, need to have the art made as simple as possible, so as to reach their results with the greatest rapidity, and the least possible thought. In France, the chosen country of common-sense, this view of the subject has long been taken, and good practical text-books, or parts of text-books, treating of shades and shadows, have for many years been available for persons who could read French. The most modern, and the best of these, so far as we know, has been chosen by Professor Millard for translation and presentation to American and English students, with certain modifications to adapt it to different conditions, particularly to the circumstance that descriptive geometry is little studied here by average draughtsmen, so that allusions which would be clear to a French school-boy often need explanation in a work for readers of English.

With these modifications, the work forms an admirable text-book,¹ by far the best that we know for American use. The methods given are of the simplest character, all the examples are such as continually recur in every architectural draughtsman's work; and they are illustrated by admirable illustrations, redrawn from Pillet by Professor Millard himself, in a manner which, although unpretentious enough, can hardly be too highly commended as a model of clearness and precision. Primarily, of course, the book is intended for university classes, like those under Professor Millard's charge; but the home student, and ambitious draughtsman, will find it perfectly clear and easy to follow, and for architects, who often like to have some book of the kind in their offices, for reference on occasion, we know of no work that can compare with it.

It is always a pleasure to architects to read what Mr. William Paul Gerhard writes on matters of sanitation. Alone, almost, among those who treat of such subjects in these days, he writes like an engineer familiar with all methods and appliances in use, judging them with the aid of long experience and thorough theoretical knowledge, and dispassionately choosing what he believes to be the best thing attainable, without any reservations, exaggerations or misrepresentations on behalf of pet theories, or the private interest of himself or his friends. For this reason, it is particularly noteworthy that he should have come out in this little pamphlet² of a dozen pages against the system of indiscriminate trap-venting which is now imposed by law on architects and plumbers in most of our large cities. It has long been understood that Mr. Gerhard did not favor indiscriminate trap-venting, but, like the other professional men concerned with building matters, he has found it best to sacrifice his private opinions, and submit quietly to the law, and it is only a growing conviction of the danger to health involved in the multiplication of pipes and joints which the laws render compulsory, that can have led him to protest publicly against the enforced use of the present "antiquated, costly, and in a good many respects unsafe methods." The reasons which he gives for this protest are convincing enough to all those who have to do with building. As architects know, in the execution of a complicated piece of plumbing work, under the present law, it is almost impossible to avoid such intercommunication of waste-pipes and vent-pipes as to form here and there a "by-pass," or, in other words, an open conduit for leading sewer-air from the waste-pipes directly into the rooms, around the traps. Many a plumbing plan is rejected by Boards of Health, because it provides, of course unintentionally, for such a by-pass at the outset, and many more systems, properly planned, are rendered dangerous by the carelessness of workmen in making connections. The only real reason that has ever existed for back-venting traps was to prevent them from being siphoned out by the suction from a main waste-pipe, discharging water enough nearly to fill it. Twenty years ago, when S-traps were in common use, this was a valid reason; but now, when non-siphoning traps are almost universally employed, there is no advantage in the venting system which cannot be better secured by using a five-inch soil-pipe, in place of a four-inch, carrying up the longer branches to the roof, and placing modern traps under the fixtures. There is, of course, no objection to back-venting a trap, especially if its situation, or other circumstances, should render this desirable; but this ought, as Mr. Gerhard says, to be left to the discretion of the architect or engineer, or, if desirable, to that of the official inspector.

¹ "Shades and Shadows": An Exposition and Demonstration of Short and Convenient Methods for Determining the Shades and Shadows of Objects Illuminated by the Conventional Parallel Rays; The Methods in Use at the École des Beaux-Arts, Paris. Translated and Revised by Julian Millard, Assistant Professor of Architecture at the University of Pennsylvania. Philadelphia: Franklin Printing Company.

² "Plumbing Simplified," by Wm. Paul Gerhard, C. E. New York. 1896.



CONSTRUCTIONAL DAMAGES.

MEASURE of Damages for Faulty Construction of Buildings.—Evidence describing a defect in a building, with opinions of witnesses as to the manner and cost of remedying the defect, furnishes a jury with sufficient data to enable them to make an estimate of the damages to the building by reason of the defect.

It is error, in such a case, to instruct the jury that the measure of damages is the cost of putting in a certain kind of ventilators which the evidence tended to show would remedy the defect.

[Larrimore vs. Comanche County (Ct. Civ. App. Tex.), 32 S. W. Rep. 367.]

Expert Testimony as to Walls.—In an action growing out of the collapse of a wall while being constructed, the opinions of qualified experts may be received in evidence as to the sufficiency of the wall in respect to thickness alone, and whether a wall of the thickness of the one in question was strong enough to resist the pressure which naturally rests upon it.

[Sneda vs. Libera (Supreme Ct. Minn.), 68 Northwestern Rep. 36.]

Damages for Defective Construction of Window.—Damages to goods in a storehouse, caused by rain coming through a defectively constructed window, are not too remote to be recouped in an action for the price of the window; and though the measure of damages for injury to property is generally the value of the goods both before and immediately after, yet testimony may be introduced to show that they were rendered entirely worthless.

[Krebs Manufacturing Co. vs. Brown (Supreme Ct. Ala.), 18 So. Rep. 639.]

Damage by Inevitable Accident the Contractor's Loss.—By the terms of a building contract, a party was to perform certain work and accomplish certain results at a stipulated price. While the work was progressing, an unavoidable accident happened, and a considerable portion of the earth filling was washed away, without fault of any one, in consequence of which it had to be replaced by the contractor. The Supreme Court, —th Department, said: This, undoubtedly, proved a serious matter for the contractor, and put him to trouble and expense not contemplated either by himself or the owner at the time of entering into the contract; but, for this very reason, which probably accounts for the contract being silent on the subject, the law requires that he shall be the sole sufferer.

[Norton vs. Fancher, 36 N. Y. S. Rep. 1032.]

When Contractor is not Liable for Dangerous Premises.—The failure of a contractor, having a building on a street under construction, to protect a runway leading from the sidewalk into the building, and intended for the use of his employes alone, does not render him liable for the death of a trespasser, who, merely to satisfy his curiosity by an inspection of the building, went on the runway, from which he fell into the cellar of the building.

[McNeven vs. Arnett (Supreme Ct. App. Div. 1st Dept.), 38 N. Y. S. Rep. 759.]



NATIONAL SCULPTURE SOCIETY.

THE National Sculpture Society held its annual meeting on January 12, 1897, in the rooms of the Fencers' Club, 37 West 22d Street.

Annual reports were presented by the President and the Treasurer, and an election held for six members of the Council whose term of office expired at this date. The following were elected for the term of three years:

Samuel P. Avery, Karl Bitter, John J. Boyle, I. Wyman Drummond, Jonathan S. Hartley, Thomas Hasting.

The following report was presented by the President, Mr. J. Q. A. Ward:

It becomes the duty of your President to present at each annual meeting a brief report of the actions of the Society and its condition.

Much of our work during the past year consisted in perfecting our organization and strengthening its resources. If I interpret correctly the spirit of our association, it does not consider its mission in the country to be particularly aggressive or revolutionary, but rather evolutionary—that whatever reputation it may attain shall be established by its deeds, not by empty promises.

The Society has promised to hold itself in readiness to extend a helping hand to all who may desire a better art: then it should spread and stimulate the desire, and it should always be preparing itself to give this advice and help. Now, gentlemen, to do this, it is incumbent upon each member of the National Sculpture Society to give his most enthusiastic and zealous efforts to this work, in his studio, in his intercourse with the world and at the meetings of our

Society. The strength of our organization depends upon the earnest action of each member.

It is very satisfactory to notice the large increase in our lay membership, for it indicates that the influence of the Society is spreading itself amongst our citizens in a manner that is encouraging to our undertakings.

The beginning of the year 1896 found the Society still concerned with the Sherman Monument competition. The history of the matter need not be repeated at this time, save to state that the Council addressed an earnest protest to the Monument Committee against its action in disregarding the Society's advice. The Society, in order to verify its sincerity in this work, proposed an exhibition of the models of the second competition in this city and other cities, so that the public might judge of the merits of these works and gauge the correctness of the Society's judgment. Mr. Rohl-Smith was asked to exhibit his model in this connection, and his reply led us to suppose he was willing to do so in the fall. On being approached later, however, he declined to take any action whatever in the matter, writing as follows from Chicago, under date of November 21, 1896:

BARR FERREE, Secretary National Sculpture Society:

Dear Sir,—Upon my return from Washington I find your favor of the 5th inst. Hence, my delay. My last intercourse with the National Sculpture Society was an exchange of telegrams upon the day after my model was chosen by the Sherman Statue Commission, in which I stated that I would exhibit my sketch model together with those of the other competing artists when I returned from Europe in the fall. Since then the action of the National Sculpture Society towards me, a member of the Society, and towards the Sherman Statue Commission, has been such as to make it, under the circumstances, impossible for me to take part in any further exhibition of the models. Very truly yours, C. ROHL-SMITH.

This letter brought the subject to an end, except that, in view of the general interest manifested in this matter, it is due the public that this letter be brought before it with the disclaimer on the part of the Society of any action tending to reflect on Mr. Rohl-Smith, personally or as a sculptor.

My own opinion is that the cause of art is a gainer by this controversy; that it was better to have made the effort and lost, than not to have made it at all. The determined action of the Sherman Monument Committee to override the solicited advice of competent and disinterested experts, and its unfaithfulness towards the competitors, aroused a general indignation throughout the country, and I have no doubt will hasten the passage of a bill by Congress, creating a competent and permanent Board of Art Advisors for the Government.

Early in the year, the proposal of the Municipal Art Society to erect a memorial to the late Richard Morris Hunt was brought before us. While the Society has recorded a tribute to Mr. Hunt in a series of appreciative resolutions, it has not completed its contributions towards the fund for the erection of this monument.

Much of our time during the last year was concerned with the drafting and adoption of a new constitution, and in becoming an incorporated body; the advantages of both these steps will, I am confident, become obvious, as operating under them becomes more familiar to us. The thanks of the Society are due to the committee who undertook the arduous labors in connection with these matters, and especially to the Hon. John DeWitt Warner, who gave most freely of his advice and time.

The Society has considered the subject of an exhibition of sculpture to be held in this city next spring, and a committee has the matter in charge. At this moment it is too early to anticipate the final conclusion, which will depend unquestionably upon the material that is available and the probable cost. The high standard set by the Society in its first exhibition two years ago requires that there shall be no backward step taken. Should it ultimately be deemed inadvisable to hold an exhibition this year there is, however, a way in which the interest in new works might be kept alive that would compensate somewhat for the absence of a large exhibit. At our monthly meetings, in a more permanent home, exhibitions of sketches or finished models might be made with great interest to the authors and to the members of the Society. Exhibitions at studios of completed work, a custom so happily set last year, will, I hope, be continued; and as many of our sculptors are now engaged upon important works which, when completed, must redound to their credit and fame, and push further the standard of sculpture in America towards its proper position, I would urge that it is essential that sculptors preserve the models of their important work for exhibition purposes, as by this means alone is it possible to form an important and representative exhibition of the art of the day.

The negotiations with the American Society of Artists for a joint lease of their rooms in the Fine Arts Building are progressing favorably, and it is not unlikely that within a short time the Society will be able to announce its removal to its new quarters in Fifty-seventh Street.

The Society being deeply concerned in the welfare of the Fine Arts Federation, and having great faith in the influence of such a representative body upon measures of general interest in art throughout the country, always receives the reports of its delegates to the Federation with the closest attention.

In order that the Society might, from time to time, do special honor to distinguished fellow-laborers, as well as honor to itself in including meritorious names on its roll, it has recently established the class of Honorary Fellows, their number not to exceed five at

any one time. Two names, well known to you, have been admitted to this class: Mr. Thomas Ball, of Florence, Italy, and Mr. Erastus D. Palmer, of Albany, N. Y.

In conclusion, gentlemen, I must not forget to tender to you my own grateful thanks for your courteous treatment of the Executive during the past year.

A meeting of the Council of the Society was held immediately after the adjournment of the annual meeting, Mr. George B. Post in the chair. The following officers were elected for the year:

J. Q. A. Ward, *President*; Russell Sturgis, *First Vice-President*; S. P. Avery, *Second Vice-President*; I. Wyman Drummond, *Treasurer*; Barr Ferree, *Secretary*.

WORCESTER CHAPTER AMERICAN INSTITUTE OF ARCHITECTS.

The annual meeting of the above Chapter was held last week and the following officers elected:

Elbridge Boyden, *President*; Stephen C. Earle, *Vice-President*; Geo. H. Clemence, *Secretary and Treasurer*.

Geo. H. CLEMENCE, *Secretary*.

WASHINGTON ARCHITECTURAL CLUB.

The class in architectural research of the Washington Architectural Club held its first meeting Friday, January 15, 1897.

"The Architecture of the Ancient Egyptians" was chosen for the evening's discussion, and after the members had enjoyed looking over a collection of photographs loaned for the occasion, and a number of drawings prepared by some of the members, the following papers were read: "The Pyramids," by W. D. Windom; "Egyptian Religion," by R. G. Graham; "Rock-cut Tombs," by T. I. D. Fuller; "Temples," by E. W. Donn, Jr.; "Temple of Karnak," by H. Huntington; "Domestic Architecture," by W. G. Peter; "Obelisks and Sphinx," by W. J. Marsh; "Columns, Caps and Entablatures," by F. L. Molby; "Sculpture," by F. B. Wheaton; and "Painting," by G. O. Totten. WALTER G. PETER, *Secretary*.



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

THE MARQUETTE BUILDING, CHICAGO, ILL. MESSRS. HOLABIRD & ROCHE, ARCHITECTS, CHICAGO, ILL.

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

A COMPETITIVE DESIGN FOR THE NEW YORK CITY-HALL, SUBMITTED BY MR. EDWARD P. CASEY, ARCHITECT, NEW YORK, N. Y.

NO this design was awarded one of the five equal prizes, the committee of awards saying of it that it offered the "most simple, orderly and well-disposed plan among all those presented."

A COMPETITIVE DESIGN FOR THE NEW YORK CITY-HALL, SUBMITTED BY MESSRS. RANKIN & KELLOGG, ARCHITECTS, PHILADELPHIA, PA.

To the authors of this design was awarded also one of the five prizes.

A COMPETITIVE DESIGN FOR THE NEW YORK CITY-HALL, SUBMITTED BY MR. T. M. CLARK, ARCHITECT, BOSTON, MASS.

APSIDAL TREATMENT, NO. 7: CHURCH OF SAN PIETRO, NEAR PERUGIA, ITALY.

S. PIETRO DE CASINENSI, formerly the church of the Benedictine Monastery outside the Porta Romana of Perugia, is a basilica, probably dating from the VI century, with a Gothic choir added, perhaps in the XIV century. Two rows of nine antique Ionic columns of red granite and gray marble, taken from S. Angelo in Perugia, divide the aisles from the nave, which is 36 feet wide. The choir-stalls are beautifully carved and inlaid by Stefano da Bergamo, 1535, from designs said to be by Raphael.

APSIDAL TREATMENT, NO. 8: BASILICA OF SAN APOLLINARE NUOVO, RAVENNA, ITALY.

S. APOLLINARE NUOVO, one of the two principal basilicas of Ravenna, was built by Theodoric at the beginning of the VI century. The columns of gray marble, with acanthus capitals, came from Constantinople, and the great mosaic frieze above dates also from the VI century. The apse has been modernized in the worst style of the Renaissance.

[The following named illustrations may be found by reference to our advertising pages.]

RUINS OF THE CHÂTEAU DE LA GARAYE, NEAR DINAN, FRANCE.

The ruins of the Château of La Garaye, which dates from the time of Francis I, are situated in the environs of Dinan.

The most notable part of their story is that which tells of the rare and far-reaching beneficence of their last occupant, Claude Toussaint Marot, Comte de la Garaye, and his wife. Born in 1675, the young noble married, in 1701, Mademoiselle Marie-Marguerite de la Motte-Picquet, one of whose relations was the Count de la Motte, a distinguished French naval officer, known to us by his services to our allies in the Revolution. Sorrow, which, says the moralist, visits alike the lordly castle and the lowly cottage, fell, despite of wealth and rank, upon the young couple, and it was in consequence of this¹ that they resolved to devote the rest of their lives to the succor of their afflicted fellow-creatures.

In pursuance of this vow, the Count and his lady journeyed to Paris, where they studied medicine and surgery long and earnestly, the countess becoming specially skilful in treating diseases of the eye, and her husband, in after years, attaining celebrity as a chemist. Returning to La Garaye, they established at the Château a hospital with a staff of doctors and surgeons for the use of the poor, and in various other ways did all that they could to assist the sick and unfortunate. Besides being a generous friend to the Church, the Count founded at Dinan a hospital for incurables, which is still in existence, and in the village of Taden, near by (where his ashes now rest), he instituted a religious house, the *Filles des Ecoles charitables*.

After forty-five years spent in good deeds, La Garaye died in 1755, and in about two years was followed to heaven by his wife. They were a childless pair, and what remained of their fortune after so long a life of unstinted generosity was bequeathed to charitable purposes. After their death, the count being the last of his line, the Château became vacant and was abandoned. The excesses of the Revolution destroyed it at last, but neither time nor change has effaced the memory of the virtues and benevolence of the good count and his spouse.

"Oh! loved and revered long that name shall be,
Though, crumbled on the soil of Brittany,
No stone, at last, of that pale ruin shows."
— *The Lady of La Garaye*, by Mrs. Norton.

SKETCH FOR ENTRANCE TO A PUBLIC PARK.

A GROUP OF STAIRCASES.

[Additional Illustrations in the International Edition.]

COMPETITIVE DESIGNS FOR THE GRAND PALAIS OF THE CHAMPS ÉLYSÉES, SUBMITTED BY M. THOMAS (3D PRIZE) AND M. GIRAULT (4TH PRIZE.)

[Copper-plate Photogravure.]

DETAILS OF THE SAME: TWO PLATES.

[Copper-plate Photogravure.]

THESE plates chance to exhibit also details of M. Girault's design for the Petit Palais and of MM. Deglane & Binet's design for the Grand Palais.

ROMANO'S RESTAURANT, STRAND, LONDON, ENG. MR. WALTER EMDEN, ARCHITECT.

HOUSE AT EASTBOURNE, ENG. MR. LOUIS AMBLER, ARCHITECT.

CATHEDRAL CHURCH OF ST. GEORGE, LIMBURG - ON - LAHN, PRUSSIA.



WM. MORRIS A NON-PRACTISING SOCIALIST. — William Morris left a personal estate that has been officially valued at £55,069. His will, which was made less than a month before the poet's death, appoints as executors, Mrs. Morris, Sydney Carlyle Cockerell and Frederick Start-ridge Ellis. To the latter Morris bequeathed the manuscripts of his published works, and the trustees are to hold and retain as a part of the estate, all copyrights and other interests in books, manuscripts, and things of a like nature, and are to retain or sell as they see fit, all of the testator's library except books selected from it by Mrs. Morris, amounting in value to not more than £500. Not a penny of the fortune goes to charity or to any association for furthering Morris's socialistic doctrines, but all of it, with the exception of two or three inconsequential legacies to friends and relatives, will be divided ultimately between the poet's two daughters, Jane Morris and Mrs. May Sparling. This is a continuation of the singular inconsistency which many observers thought they saw in Morris's whole life. Himself a capitalist and an employer of labor on strictly business principles, he preached in the streets, or anywhere else that he could find an audience, the iniquity of private ownership, and with bitterness and vehemence attacked the class of which, by birth and practice, he was a typical representative. And, dying, he has provided, so far as he could, for the continuance of the system he denounced. Yet, of Morris's absolute sincerity probably no one has any doubt at all. — *N. Y. Times*.

¹ According to the local guide-book, as the count was riding home alone one winter evening, after a day's hunting, he was suddenly confronted on reaching the avenue of beech trees leading to the Château by a mysterious cavalier, "tout en feu," and mounted on a steed likewise of flame, who exhorted him to abandon a life of pleasure, renounce the court, the camp and the chase, and use the riches entrusted to him for the benefit of the poor and suffering.

THE MINERALIZING OF A TREE.—A remarkable discovery is narrated by Professor Carter to the Academy of Sciences of Philadelphia, as being made lately at Threetuns, Montgomery County, Pa. In a sandstone quarry at that place an iron tree has been found embedded in the rock ten feet below the surface. The tree is about eighteen feet long and eighteen inches in diameter, and has been completely turned to iron, or rather to the iron ore known as brown hematite; and Professor Carter accounts for the phenomenon by the fact that the shales and the sandstones in the neighborhood are covered with red oxide of iron and sometimes with brown hematite. It is presumed that the iron ore was reduced by organic matter, and that it was made soluble in water containing carbonic-acid gas; then, as the water holding the iron in solution came in contact with the tree, the iron was precipitated on the latter, and there was an interchange of vegetable and mineral matter, so that the rocks were relieved of their coloring and the tree took it up. — *Boston Transcript*.

EMBARRASSING GIFTS.—Lord Leighton's house is to be presented to the nation, which in turn is to maintain it in its present condition as an artistic monument of its late owner. It is ungracious to discuss such matters too closely, and every one will recognize the good intentions of the ladies who make the generous gift; but some day it will be necessary seriously to discuss this business, now so much in fashion, of keeping up the houses that are associated with the memory of our great men. One day it is Carlyle, another it is Turner, and so on. There is a little "boom," a few of the faithful pour in on the opening day and examine the hat-stand and the walking-stick and the dining-room table, and then they go away and straightway forget all about it. For a year or so stray Americans and provincials keep up a show of interest, and then the thing becomes a mere white elephant, of interest or of use to nobody. Lord Leighton's house is out beyond Holland Park, and as it is not to be either a school, a museum, or a home, who is likely after the first few weeks to take the trouble to go three or four miles to visit it? — *St. James's Gazette*.

EXPLOSION OF ACETYLENE GAS IN BERLIN.—An explosion of acetylene gas, resulting in the death of four persons, took place in the Berlin suburb of Moabit in December. As the use of acetylene gas is prohibited in Germany, owing to its explosive character, a chemist, named Isaac, had for some time past been making experiments with a view to deprive it of that dangerous quality, and had succeeded so well that he was recently in a position to show his invention to several high officials, who were greatly struck by it; while the Emperor, who is keenly interested in all new discoveries and inventions, had intended to hear an account of it from him soon. Herr Thielen, the head of the imperial railways, expressed a desire to see the process in Herr Isaac's laboratory, and the inventor, who had hitherto made experiments only on a small scale, made preparations to show a large quantity of his acetylene gas, the light of which is about three times as brilliant as that of the best incandescent gas. He accordingly compressed it in a large iron or steel tube by the enormous pressure of about one hundred atmospheres, and the tube exploded, blowing him and three of his workmen to pieces, and causing a report which was heard within a wide circuit. — *London Standard Correspondence*.

THE CANAL OF JOSEPH.—How many of the engineering works of the nineteenth century will there be in existence in the year 6000? Very few, we fear, and still less those that will continue in that far-off age to serve a useful purpose. Yet there is, at least, one great undertaking conceived and executed by an engineer which during the space of four thousand years has never ceased its office, on which the life of a fertile province absolutely depends to-day. We refer to the Bahr Jousuf—the canal of Joseph—built, according to tradition, by the son of Jacob, and which constitutes not the least of the many blessings he conferred on Egypt during the years of his prosperous rule. This canal took its rise from the Nile at Asiat, and ran almost parallel with it for nearly two hundred and fifty miles, creeping along under the western cliffs of the Nile valley, with many a bend, and winding, until at length it gained an eminence, as compared with the river-bed, which enabled it to turn westward through a narrow pass and enter a district which was otherwise shut off from the fertilizing floods on which all vegetation in Egypt depends. The northern end stood seventeen feet above low Nile, while at the southern end it was at an equal elevation with the river. Through this cut ran a perennial stream, which watered a province named the Fayoum, endowing it with fertility and supporting a large population. In the time of the annual flood a great part of the canal was under water, and then the river's current would rush in a more direct course into the pass, carrying with it the rich silt which takes the place of manure and keeps the soil in a constant state of productivity. All this, with the exception of the traditions that Joseph built it, can be verified to-day, and it is not mere supposition or rumor. Until eight years ago it was firmly believed that the design has always been limited to an irrigation scheme, larger, no doubt, than that now in operation, as shown by the traces of abandoned canals, and by the slow aggregation of waste water which had accumulated in the Birket el Querum, but still essentially the same in character. Many accounts have been written by Greek and Roman historians, such as Herodotus, Strabo, Mutianus and Pliny, and repeated in monkish legends, or portrayed in the maps of the Middle Ages, which agreed with the folk-lore of the district. These tales explained that the canal dug by the ancient Israelite served to carry the surplus waters of the Nile into an extensive lake lying south of the Fayoum, and so large that it not only modified the climate, tempering the arid winds of the desert and converting them into the balmy airs which nourished the vines and the olives into a fulness and fragrance unknown in any part of the country, but also added to the food supply of the land such immense quantities of fish that the royal prerogative of the right of piscary at the great weir was valued at £250,000 annually. This lake was said to be 450 miles round, and to be navigated by a fleet of vessels, and the whole circumference was the scene of industry and prosperity. — *Engineering*.

CAUSES OF LANDSLIPS.—Landslips like that which occurred recently in Ireland are due primarily to the fact, that large masses of earth often rest on layers of rock which lie slantingly, instead of in a horizontal position. Friction between the adjacent and, perhaps, irregular surfaces goes a great way toward overcoming the tendency of the uppermost deposit to slide along the lower one. Cohesion with an adjacent mass, or the buttressing effect of accumulations at the foot of the slope, also serves, at times, to counteract the force of gravitation. But cohesion may be impaired by an unusual soaking; the buttresses may be removed by excavations for railroads or other engineering works, and an accumulation of water or a softening of some intermediate pasty layer may reduce the friction between the two slices of this terrestrial sandwich. One of the most famous of recent landslips was that which occurred on the English side of the Straits of Dover in the night of March 4-5, 1893. The little town of Sandgate was built in terrace down to the edge of a low cliff, and reached back therefrom several hundred feet, while it stretched along the Channel for a mile or more. Without premonition the residents discovered that their houses were shaking as if an earthquake were in progress. Loud rumbling attended the disturbance. Windows burst, doors were thrown out of shape, walls parted, one-half of a house sometimes pulling away from another. Gaslights were extinguished through breakage of the street-mains. There was no one violent shock, but a continuance of trembling, rending and roar for several minutes. When daylight came it was found that the whole town had slid down hill for a distance of eight or nine feet, but the layer of sand on which Sandgate was built moved unevenly during the trip. In consequence, about one hundred and fifty houses were wrecked, to say nothing of barns, conservatories and other buildings. There was no loss of life, but the property damage was estimated at \$500,000. Long continued rains had prevailed for several weeks immediately previous to this occurrence, and it was believed that they rendered a layer of blue clay which intervened between the sand and the rock exceptionally soft and slippery. The undermining influence of the waves may also have contributed to the general result. At any rate, Sandgate was less fortunate than the village of Roccambruna near Nice, on the shores of the Mediterranean, where some years ago a castle, a number of more humble dwellings and a lot of orange and lemon groves moved a considerable distance down the mountain side without receiving any injury whatever. County Kerry, the scene of the recent disaster in Ireland, is a rugged, mountainous region, with rich loam overlying limestone rock, which is not always perfectly level. There must be a number of places in that neighborhood which are predisposed to landslips. The soil near Rathmore was more or less boggy, and, of course, unstable. The damming of the adjacent river by an avalanche of earth from the sides of Boy Hill reminds one of a similar incident up in the White Mountains in 1826. A great landslide of that time so effectually blocked the Saco as to cause a serious flood. — *N. Y. Tribune*.

GREAT TERRESTRIAL GLOBE.—Mr. T. Ruddiman Johnston proposes to construct for exhibition in London, a great terrestrial globe, on the scale of one five-hundred-thousandths of nature, or a globe having a diameter of 84 feet, and showing the earth's surface on a scale of about eight miles to the inch. In order to show the effect of the globe, Mr. Johnston has prepared the following sections to give an idea of the appearance of the surface of the globe: England and France, from Middlesbrough on the north, and Preston on the west, to Paris on the south and east; the Northwestern Frontier of India; Egypt; Gibraltar, etc.; Turkey, etc.; Uganda, etc. The globe will be seen from a spiral gallery running round and round it, to the upper end of which the spectator will be taken by an elevator, and as the globe is slowly revolved, every portion of its surface will come in view. Mr. Johnston thus describes his plan more fully: On the proposed globe every geographical feature of importance will be shown and named, as will also be every city or town having 5,000 inhabitants, and a large section of others with a smaller population. The scale of the globe will not only permit of this being done, but, besides showing towns, according to population, in seven sizes of lettering, it will allow the larger cities to be drawn to scale, which will give a living interest to the globe. London, for instance, will on it cover a space rather larger than that of a penny. Cities with a population of over 100,000 will have their names very boldly lettered, so that any one examining the globe can, by selecting a city known to him, quickly find the smaller places with which he may not be so well acquainted. As all colors and of all strengths can be employed, great clearness can be obtained by showing rivers and lakes in blue, mountains in their natural color, plains in green, deserts in yellow, roads in gray, and railways in red; and the names of these can each also have a distinctive color. The colors again used on the physical features will be kept cold at the poles, and gradually warmer as the tropics are approached. On the oceans there is ample room to show currents, prevailing winds, temperatures, salinity of the sea, the depth and nature of ocean beds, pressure of the atmosphere and variation of the compass; but on the land, though the geographical distribution of plants and animals and even other matter may be indicated, it should not be lost sight of that the globe is not intended to supersede atlases and reference-books, but to encourage their use, and that the general public will visit it more to see where they and others are, or to ascertain quickly from it some desired general information, than for scientific research. Mr. Johnston has also projected a great hollow terrestrial globe, which would be viewed from a platform within the globe, as was the case with Wyld's globe, erected in Leicester Square in 1851. A hollow globe could be produced more cheaply than the other, and as the space used for the spectators on the outside would be dispensed with, it could be planned on a larger scale. — *Journal of the Society of Arts*.

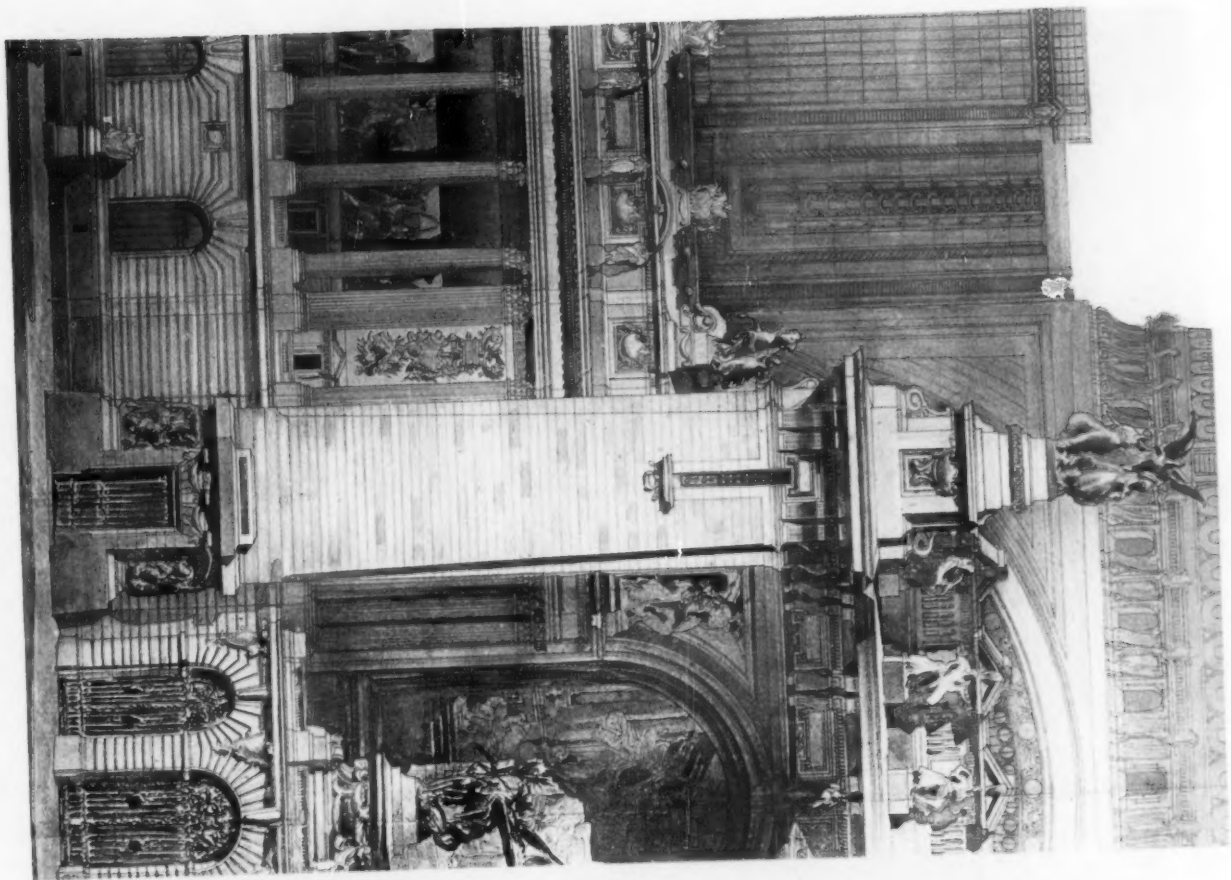
KAISER WILHELM AS AN ARCHITECT.—The correspondent at Berlin of the *Standard* reports that the Emperor William has designed and drawn with his own hand the tower for the German Protestant church at Jerusalem.



THE HELIOTYPE PRINTING CO., BOSTON

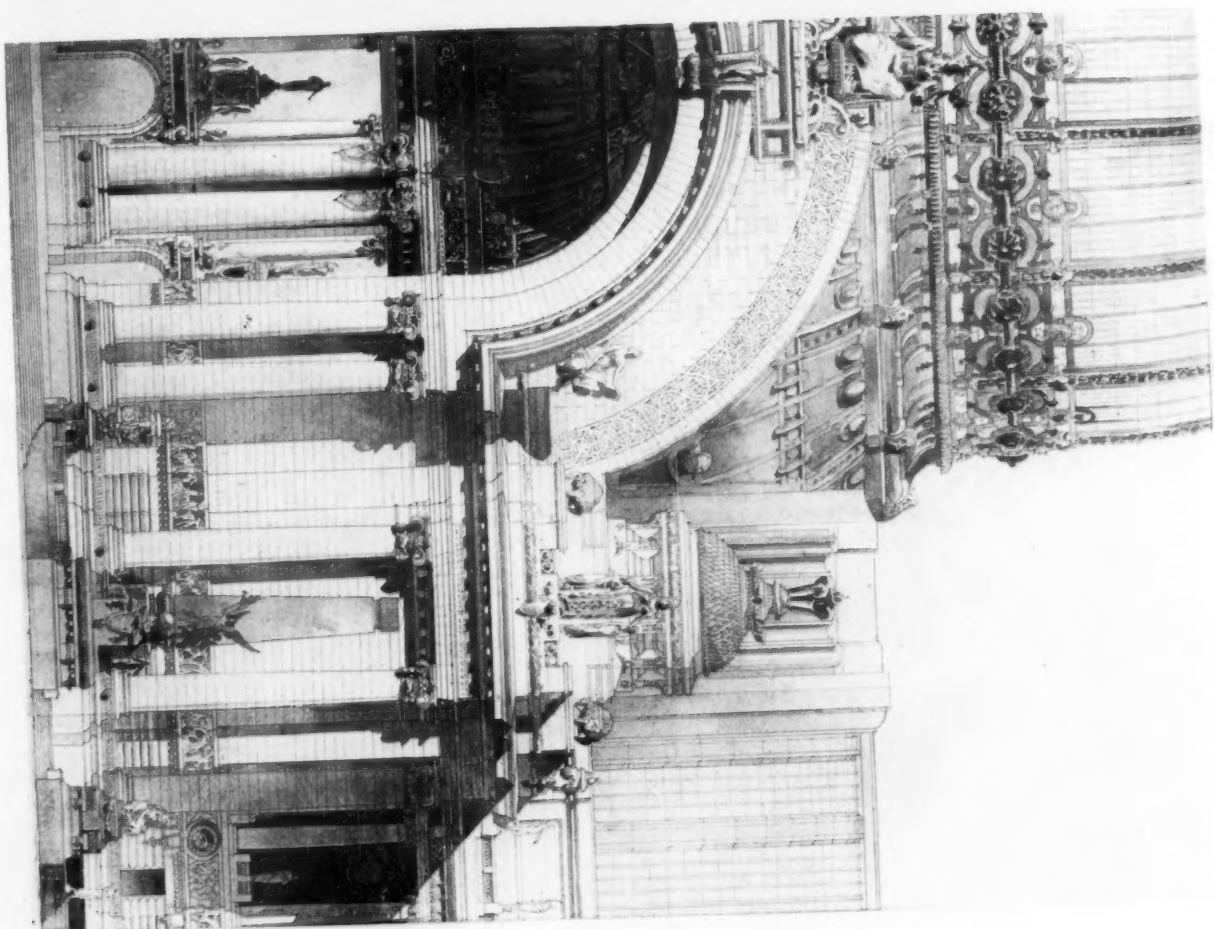
THE MARQUETTE BUILDING, CHICAGO, ILL.

HOLABIRD & ROCHE, Architects.

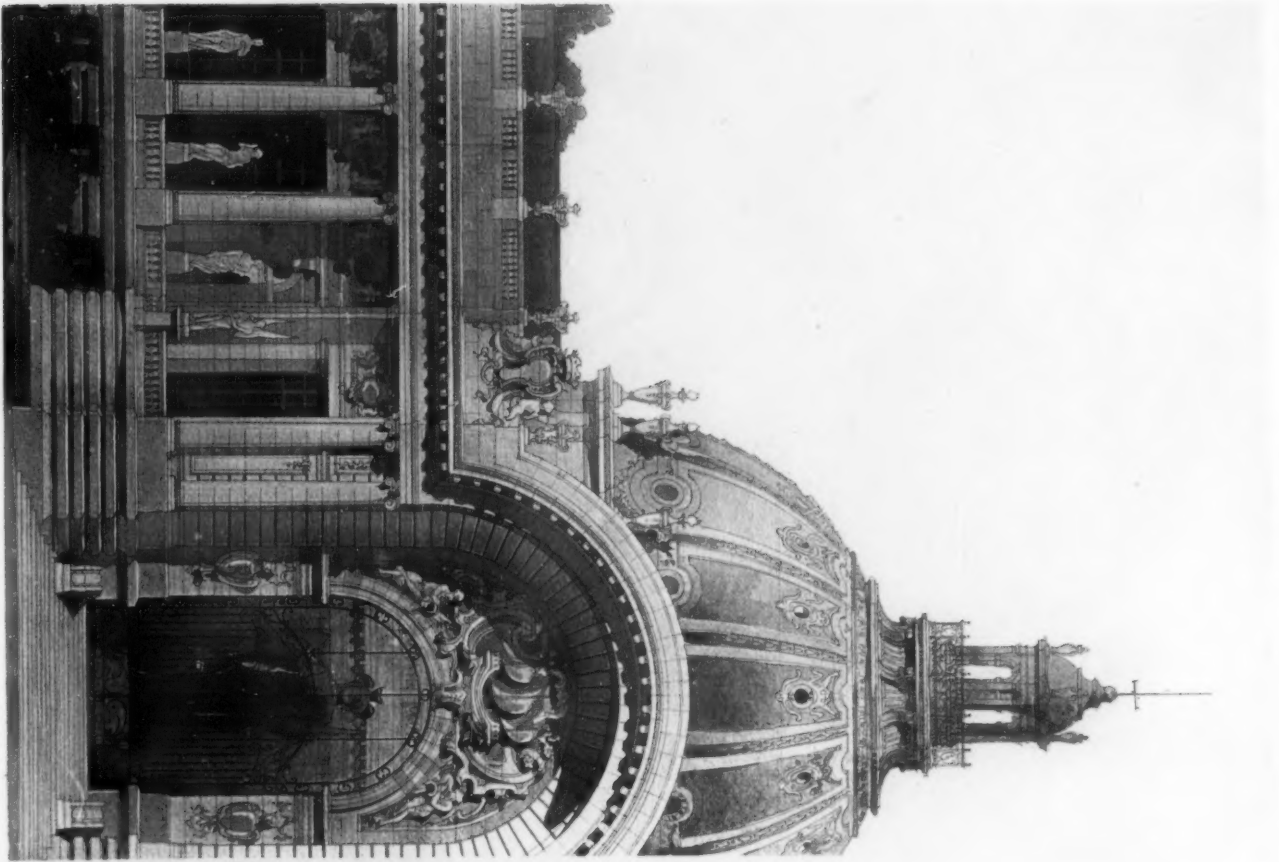


Détail du projet de Mr Thomas

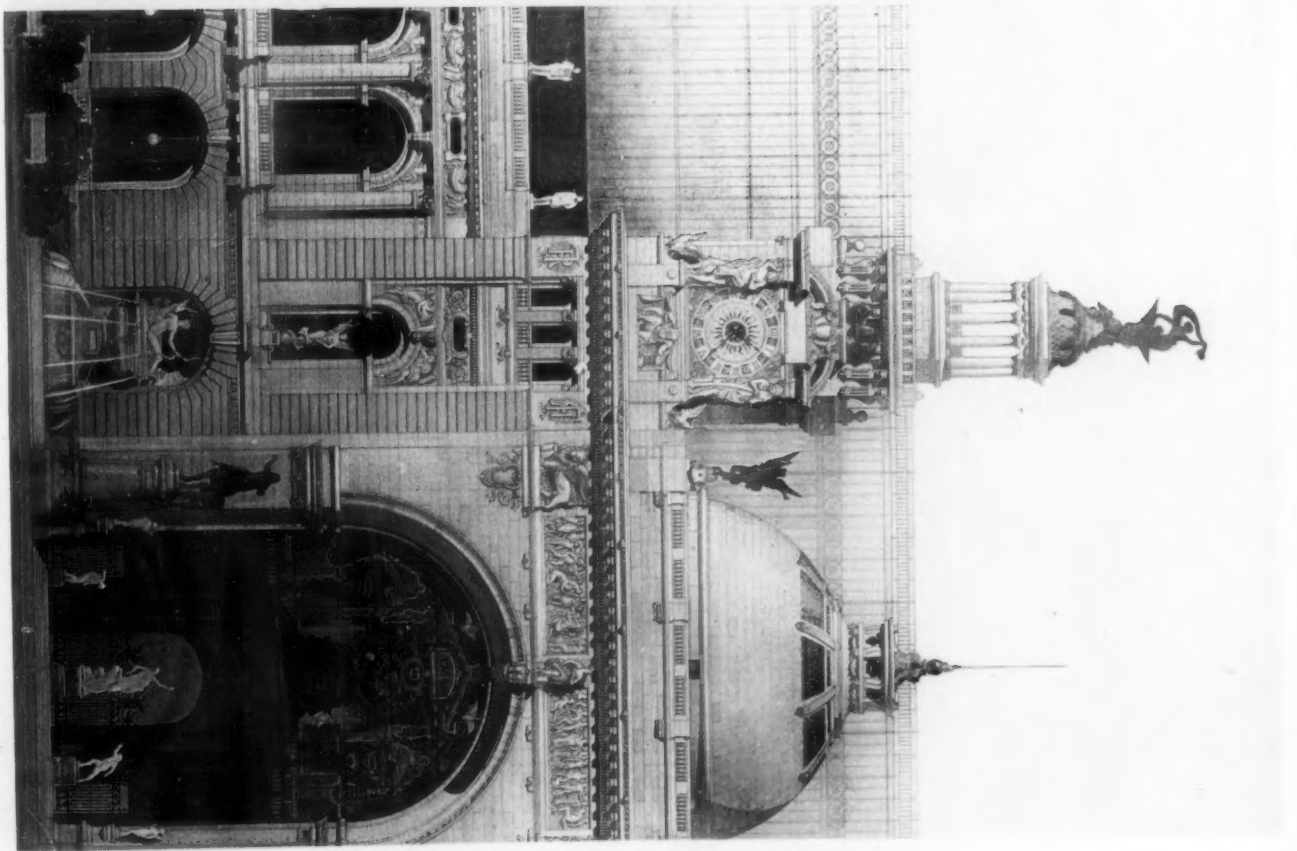
EXPOSITION DE 1900
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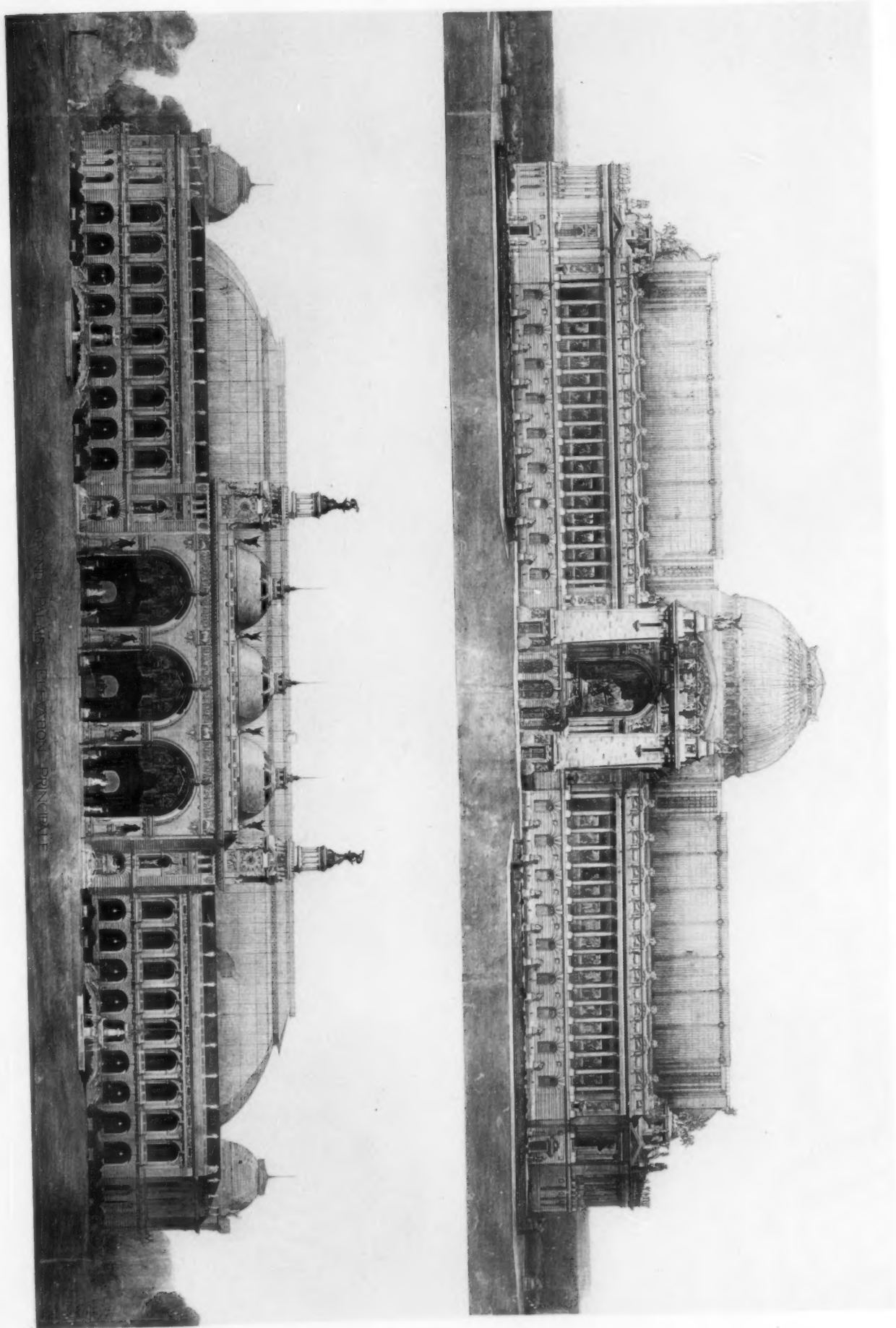


Petit Palais



EXPOSITION DE 1900
Détails des projets de M. Girault

Grand Palais

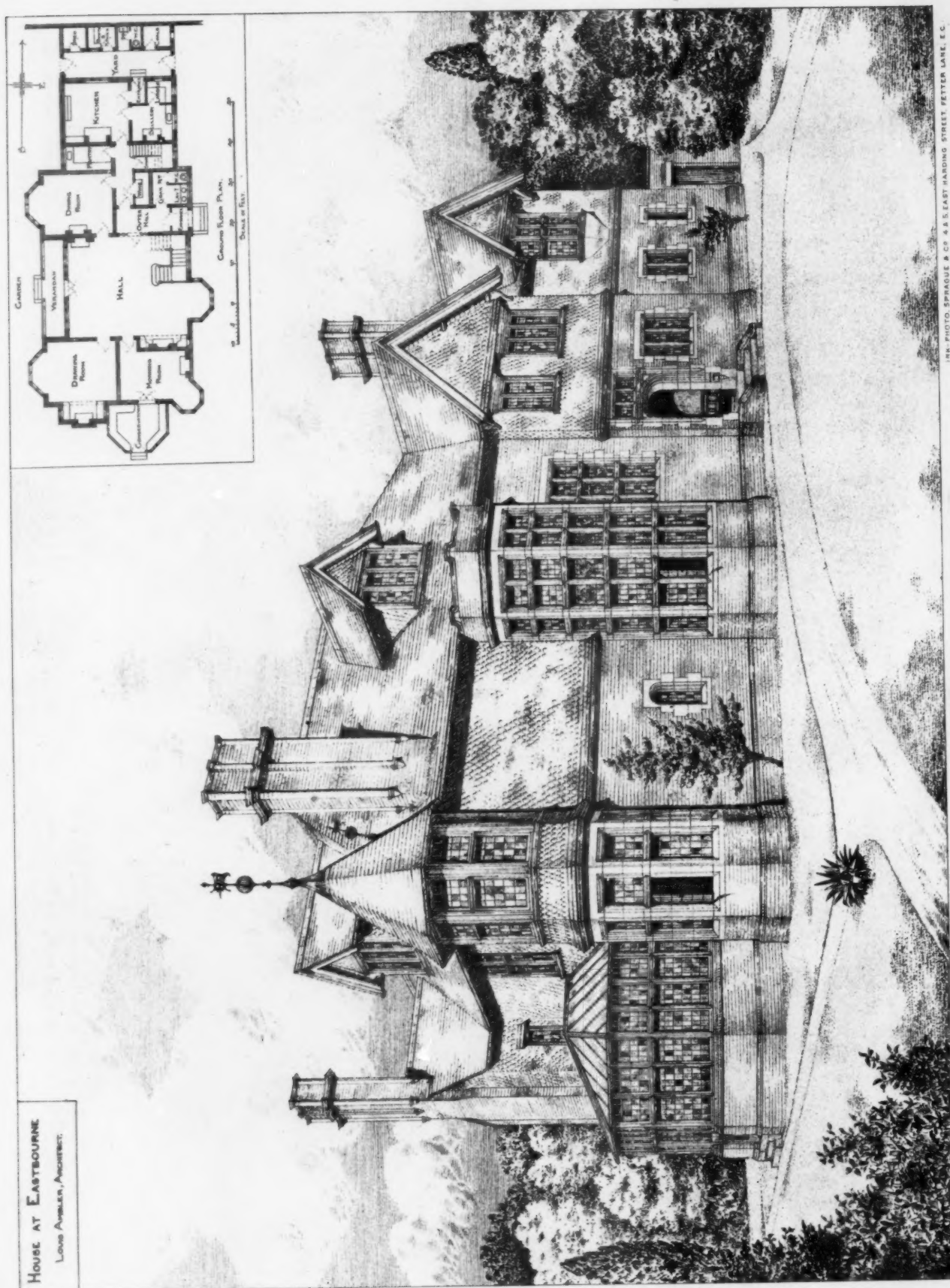


EXPOSITION DE 1900

Concours du Grand Palais

1re Facade du projet de M. Thomas (5e Prime)

2e Facade du projet de M. Groult (4e Prime)

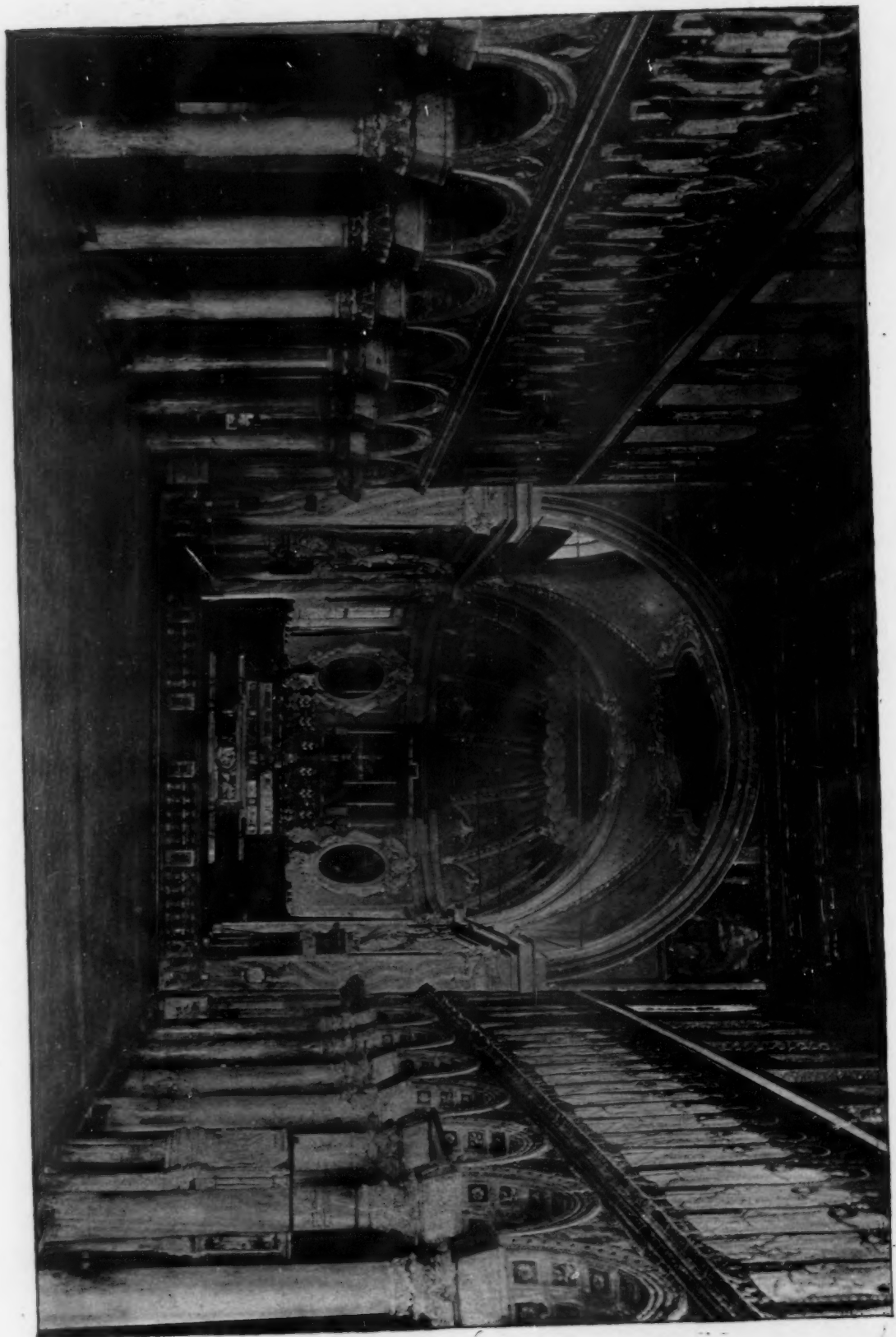




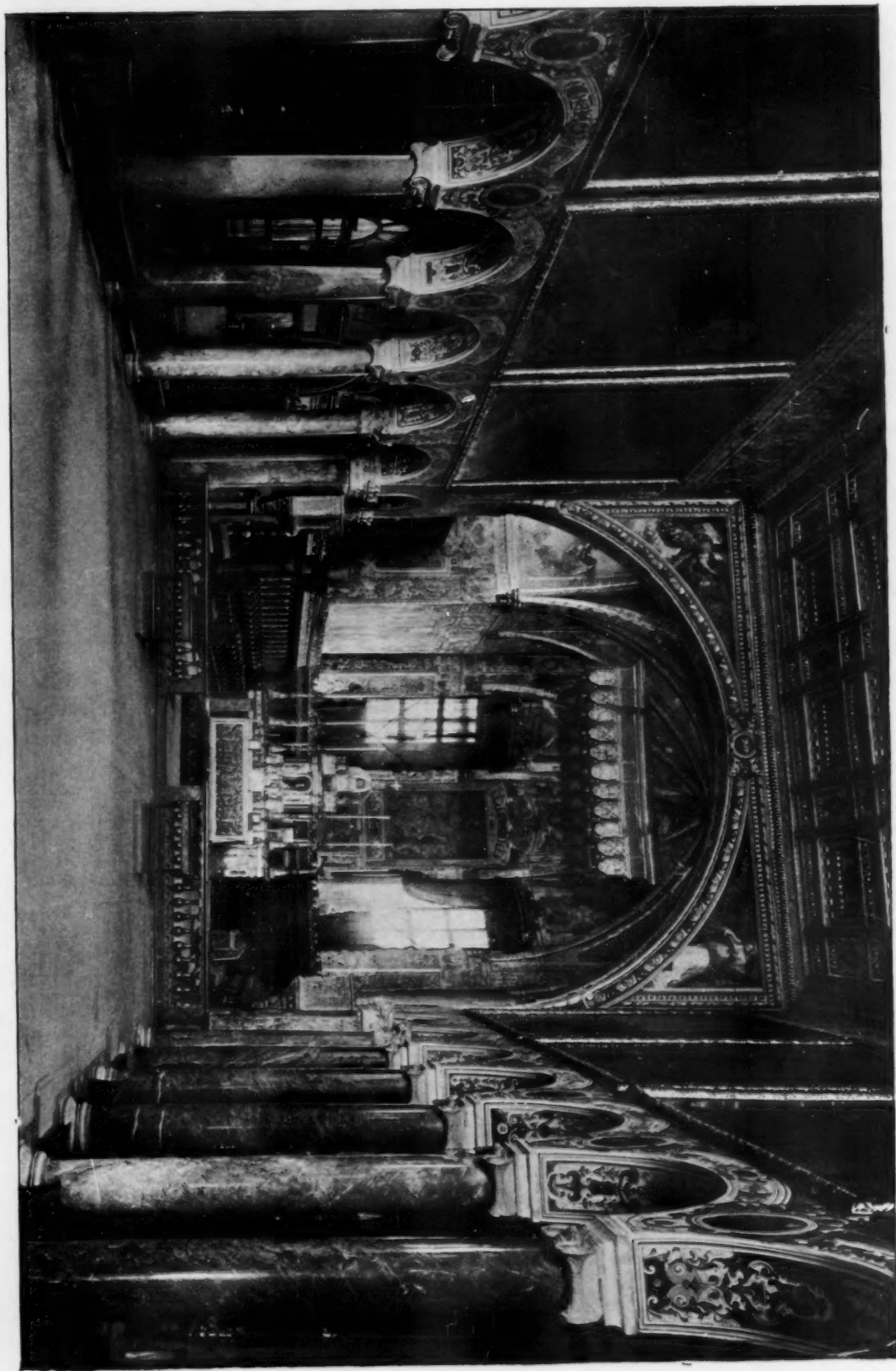
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CATHEDRAL CHURCH OF ST. GEORGE AT LIMBURG-ON-LAHN.

Drawn by W. A. HANSON.

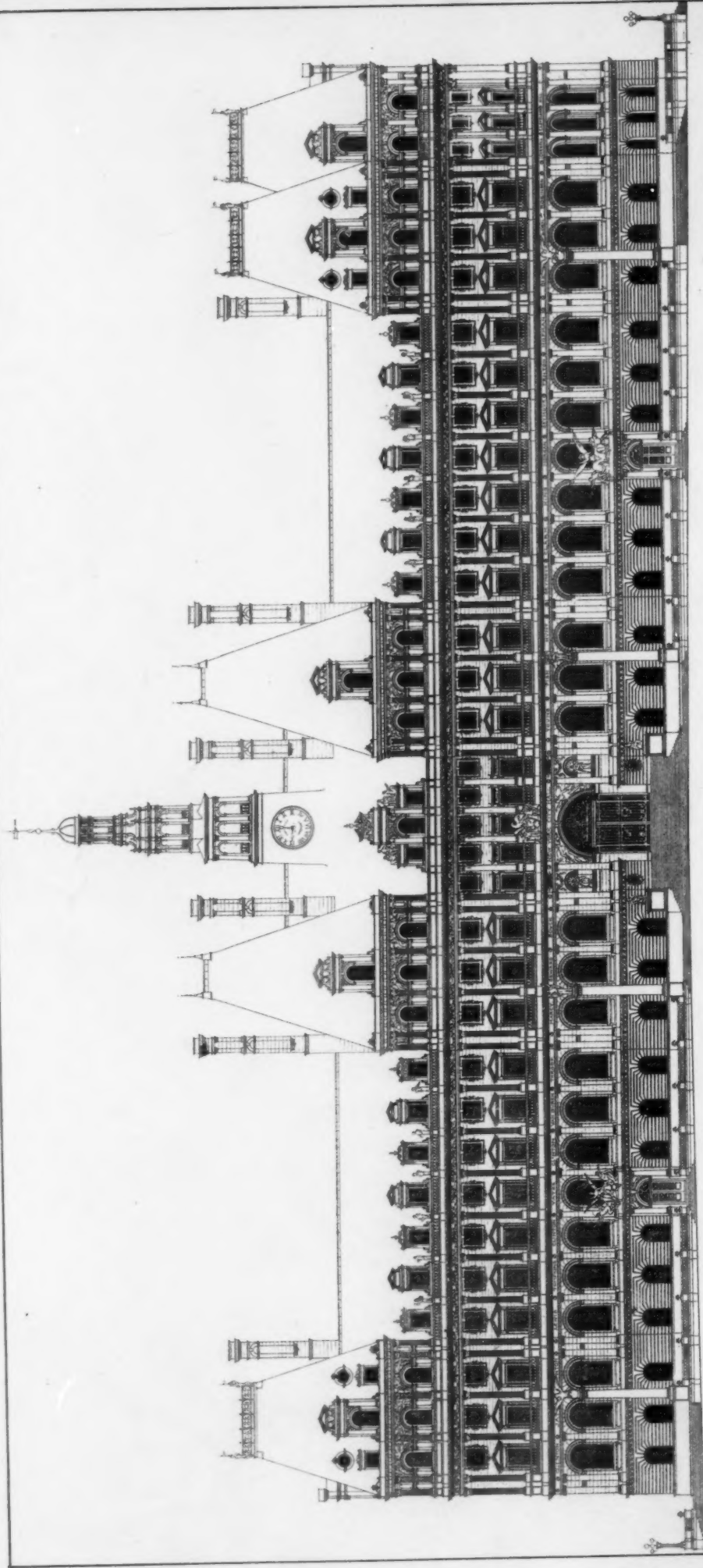


APSIDAL TREATMENT, No. 8:—BASILICA OF SAN APOLLINARE NUOVO, RAVENNA, ITALY.

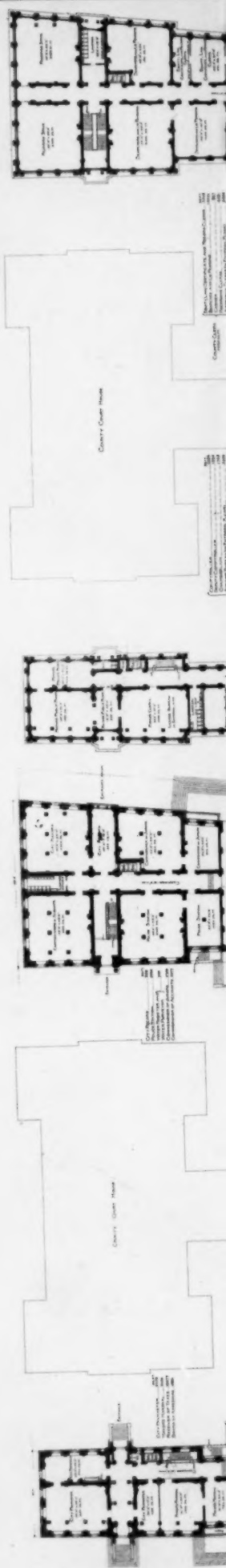


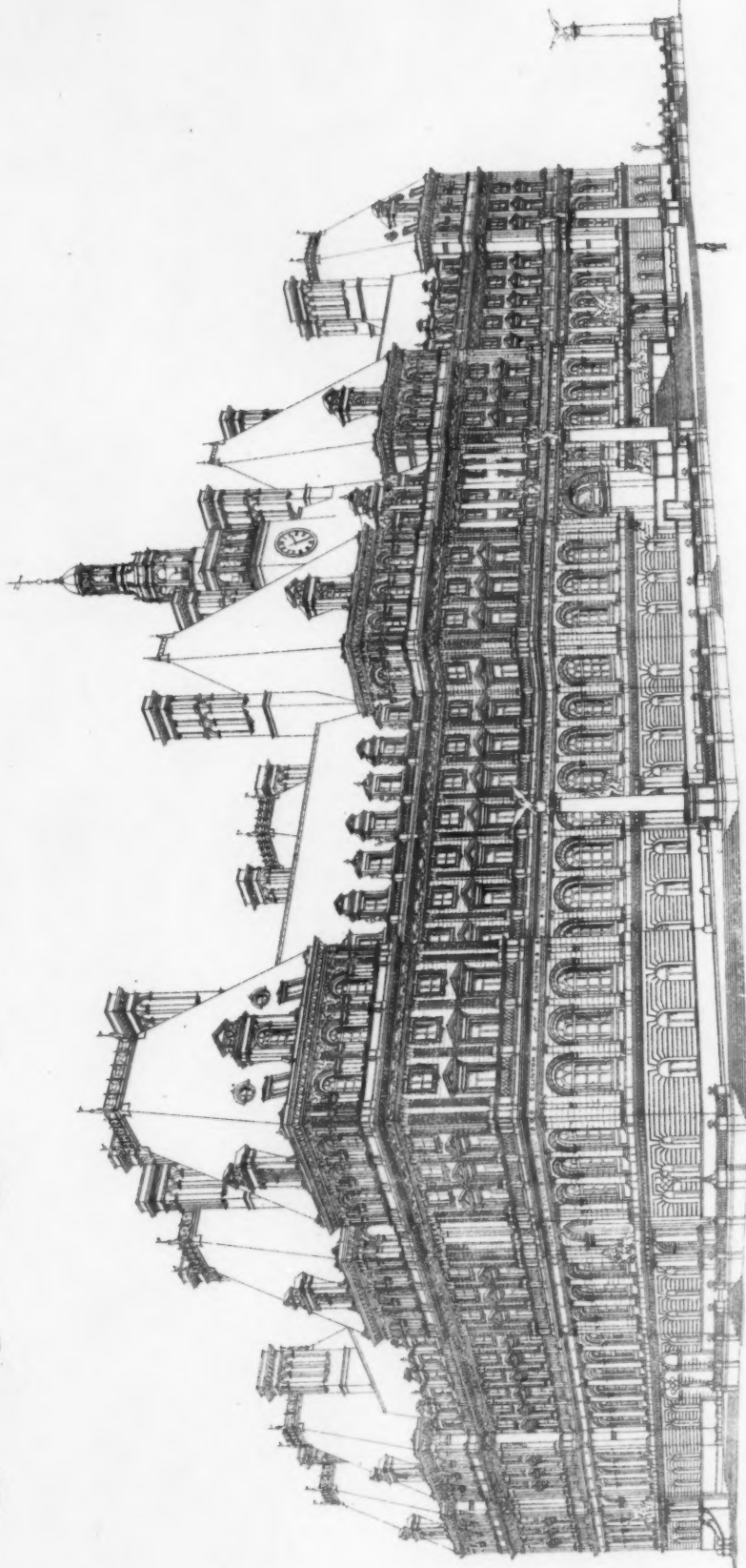
APSIDAL TREATMENT, No. 7:—CHURCH OF SAN PIETRO, NEAR PERUGIA, ITALY.

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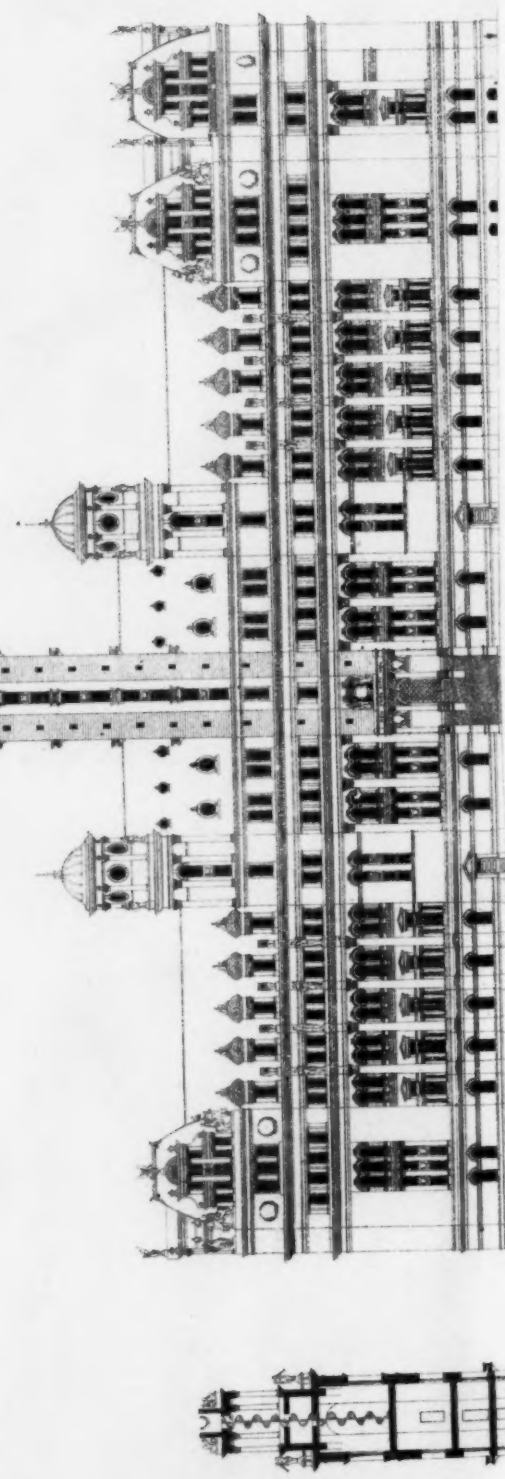
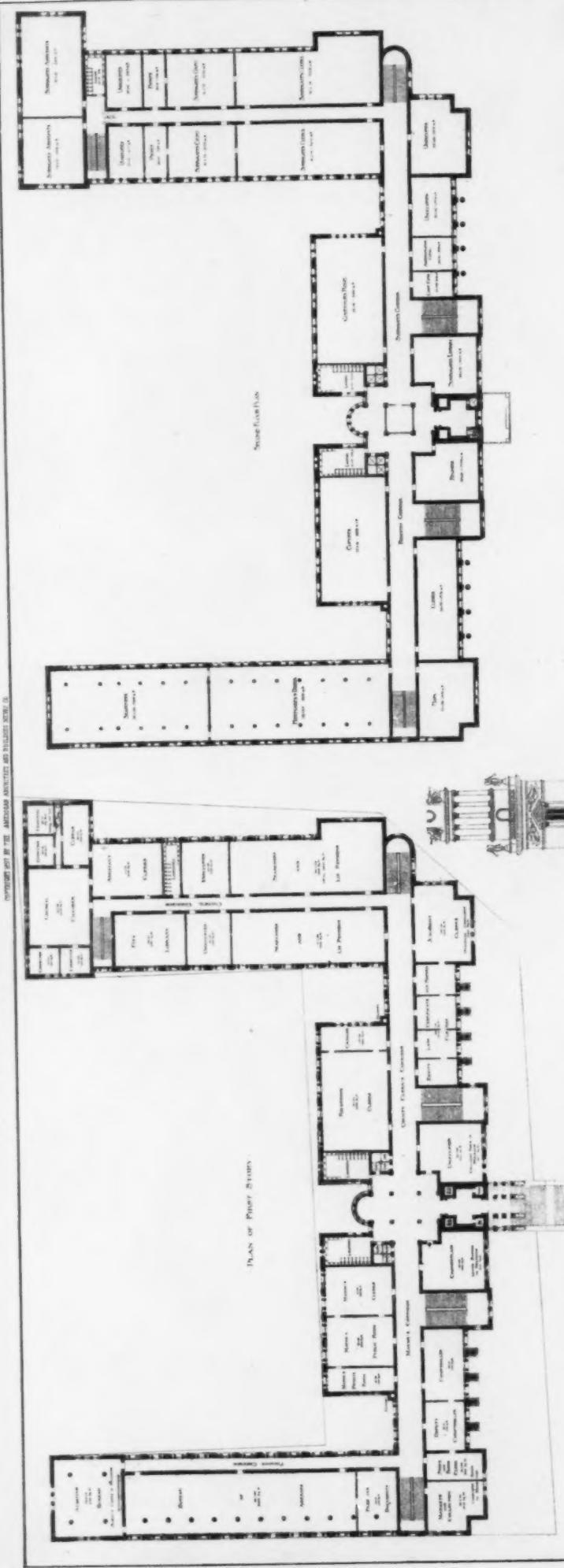
FRONT ELEVATION.

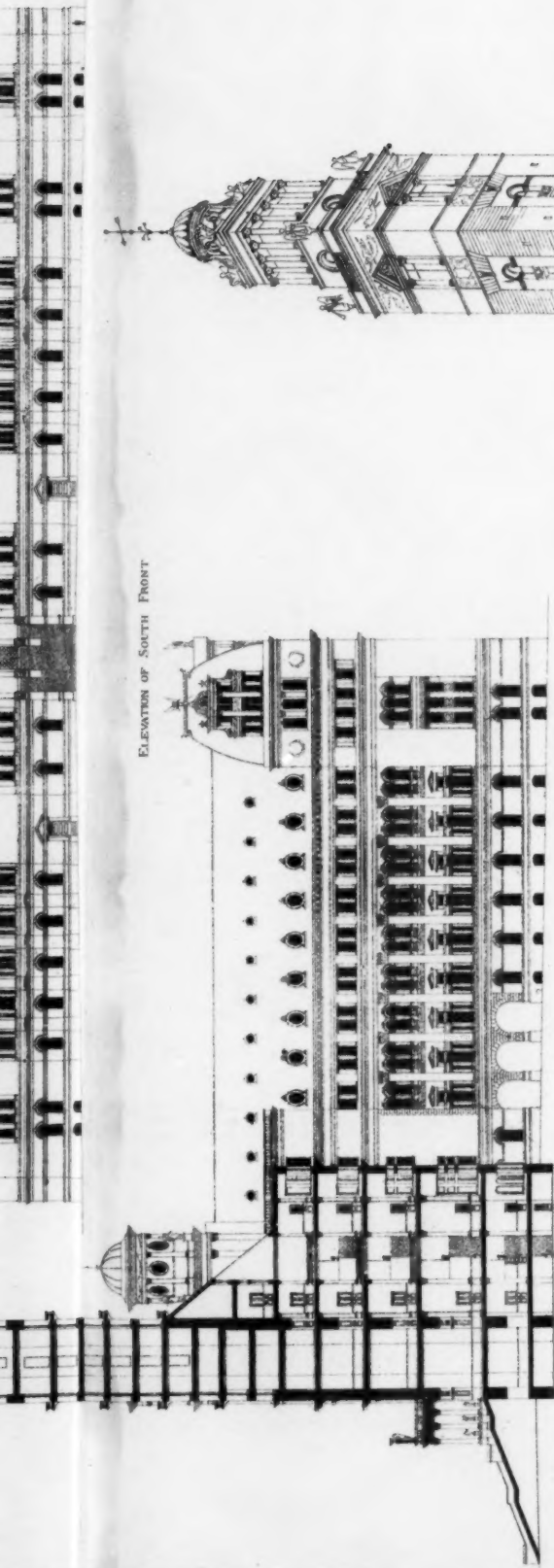




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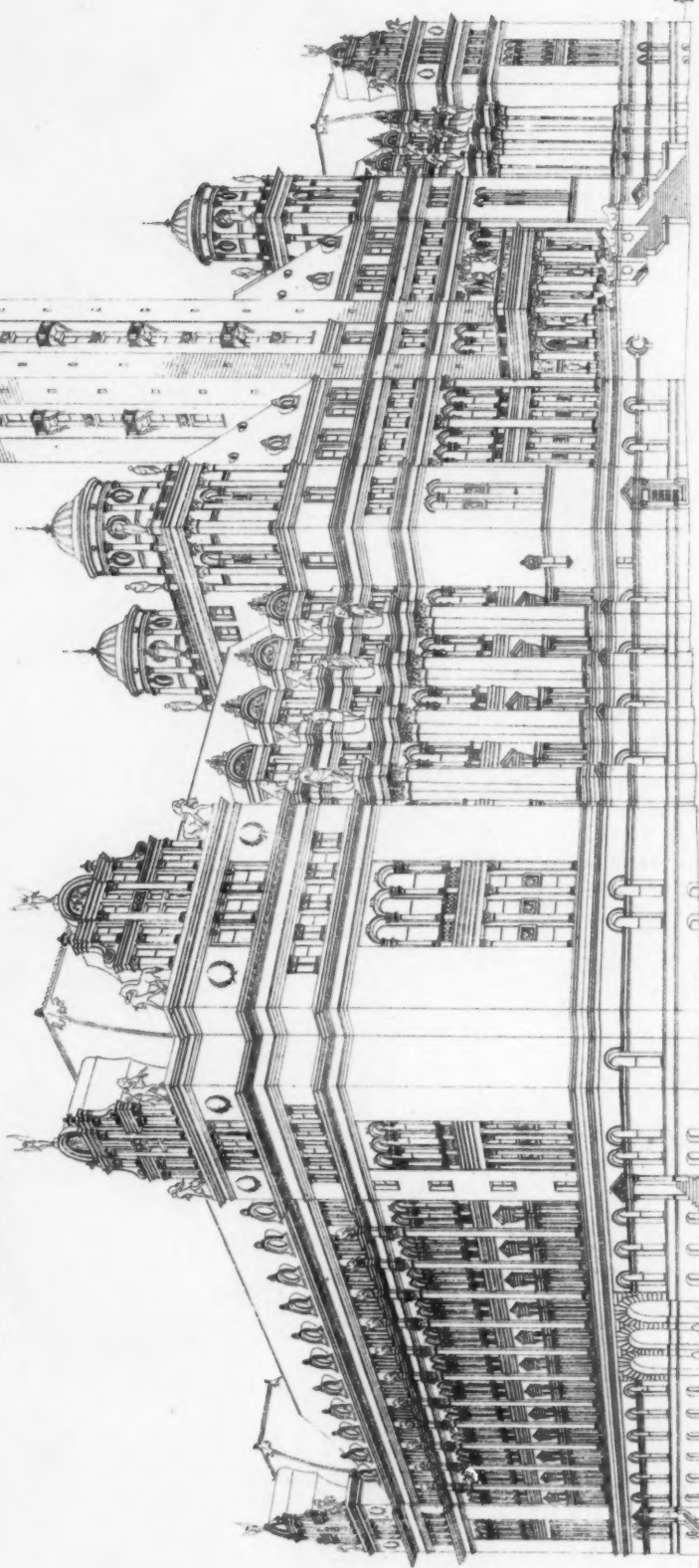
RELATIVE POSITION OF BUILDING





ELEVATION OF SOUTH FRONT

SECTION TAKEN NORTH AND SOUTH

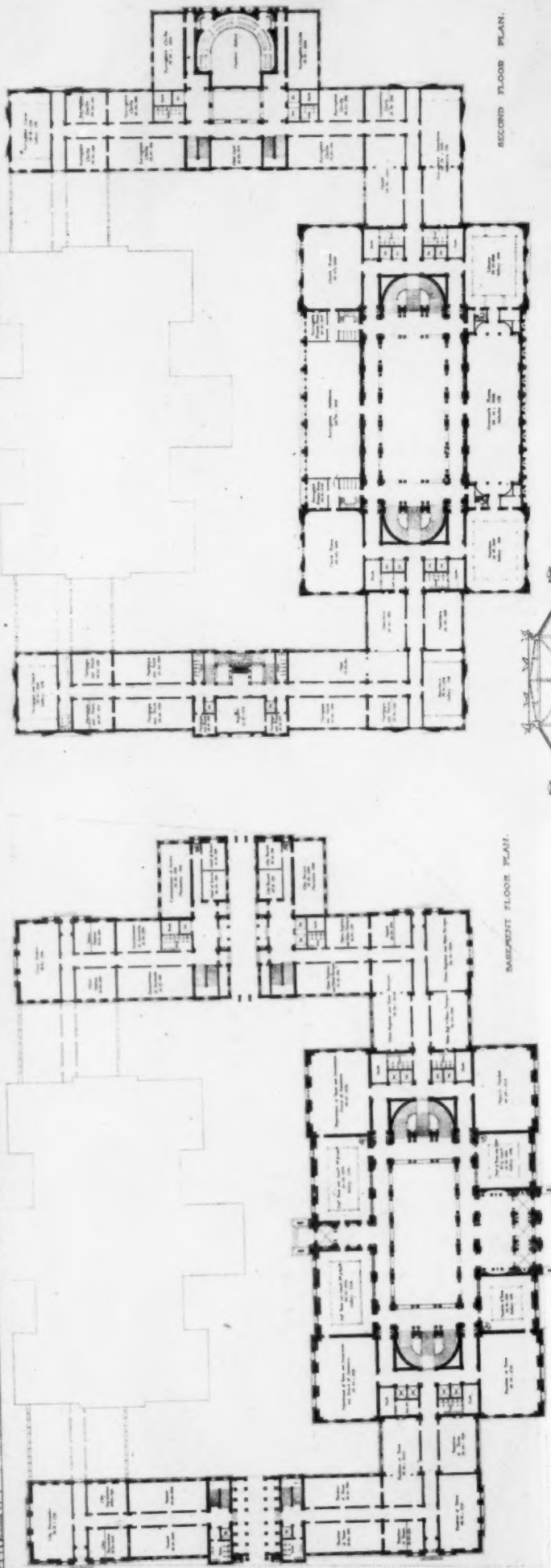
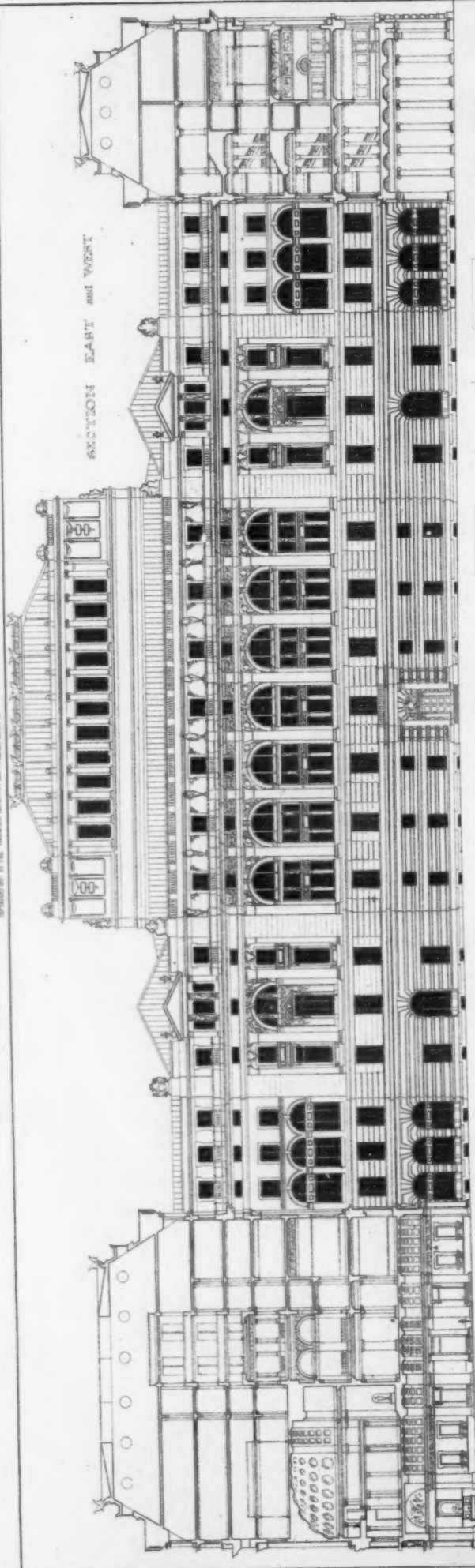


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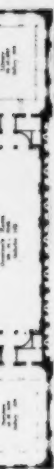
T. M. CLARK, ARCHITECT.

AMERICAN ARCHITECT AND BUILDING NEWS, JAN. 30, 1897.

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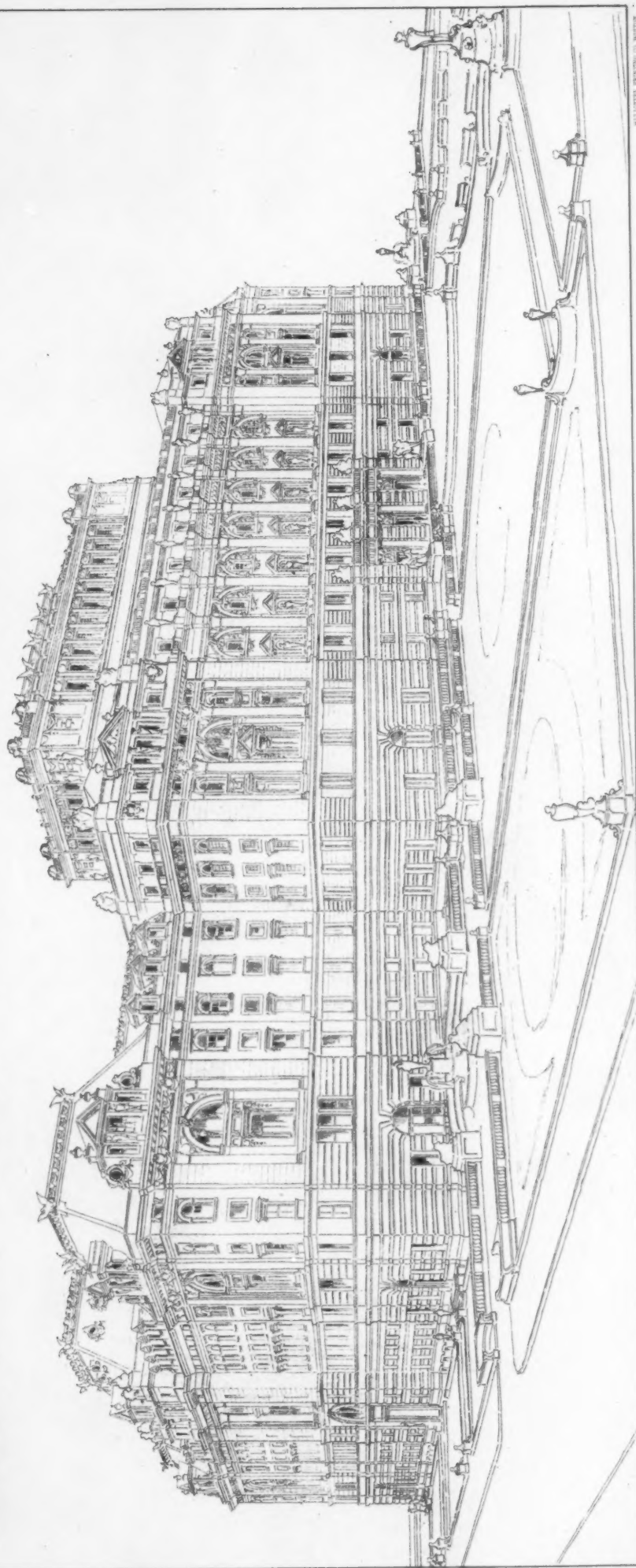
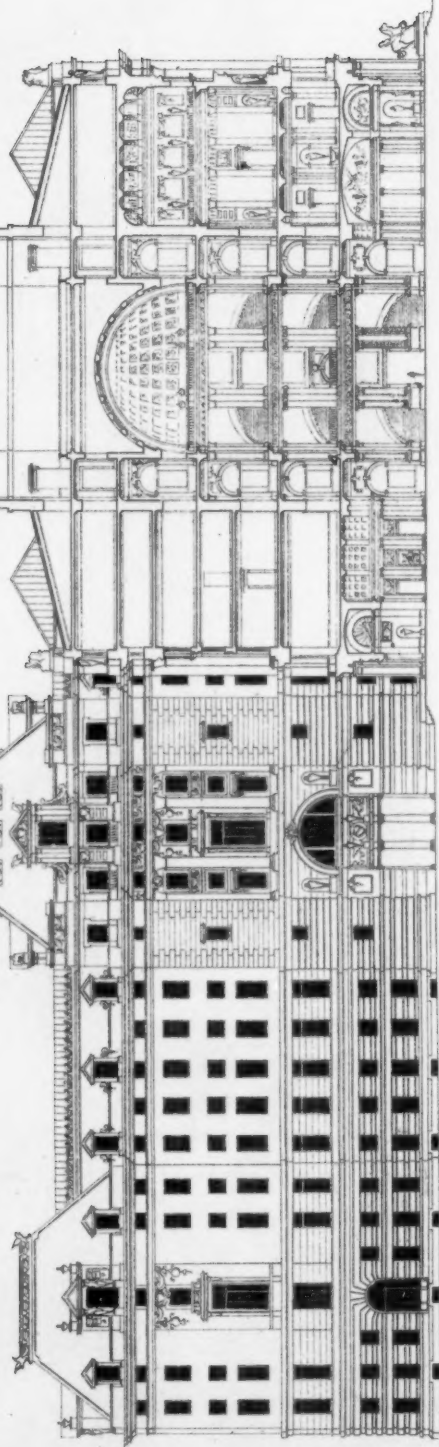
SECOND FLOOR PLAN.



BASEMENT FLOOR PLAN.



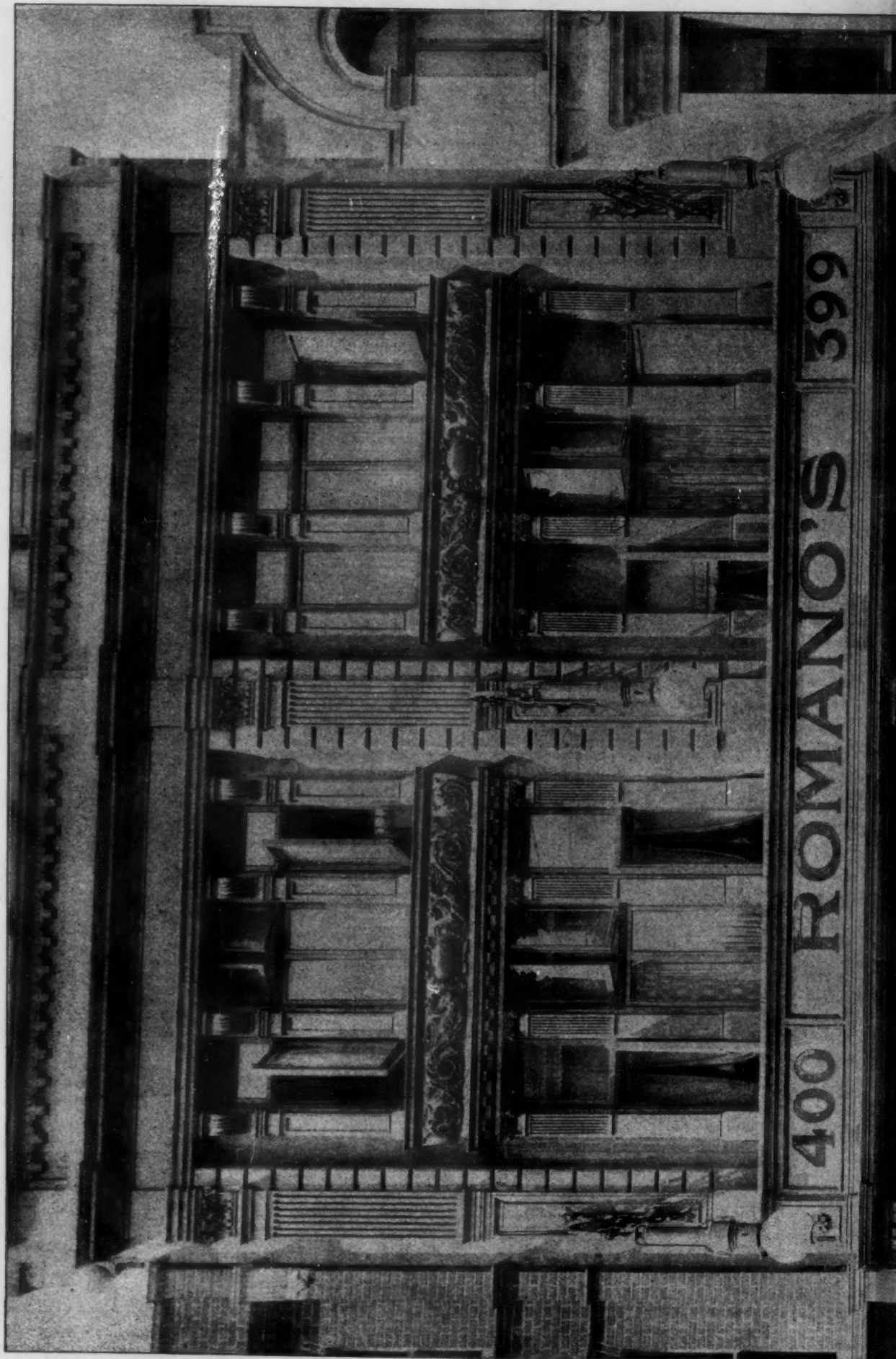
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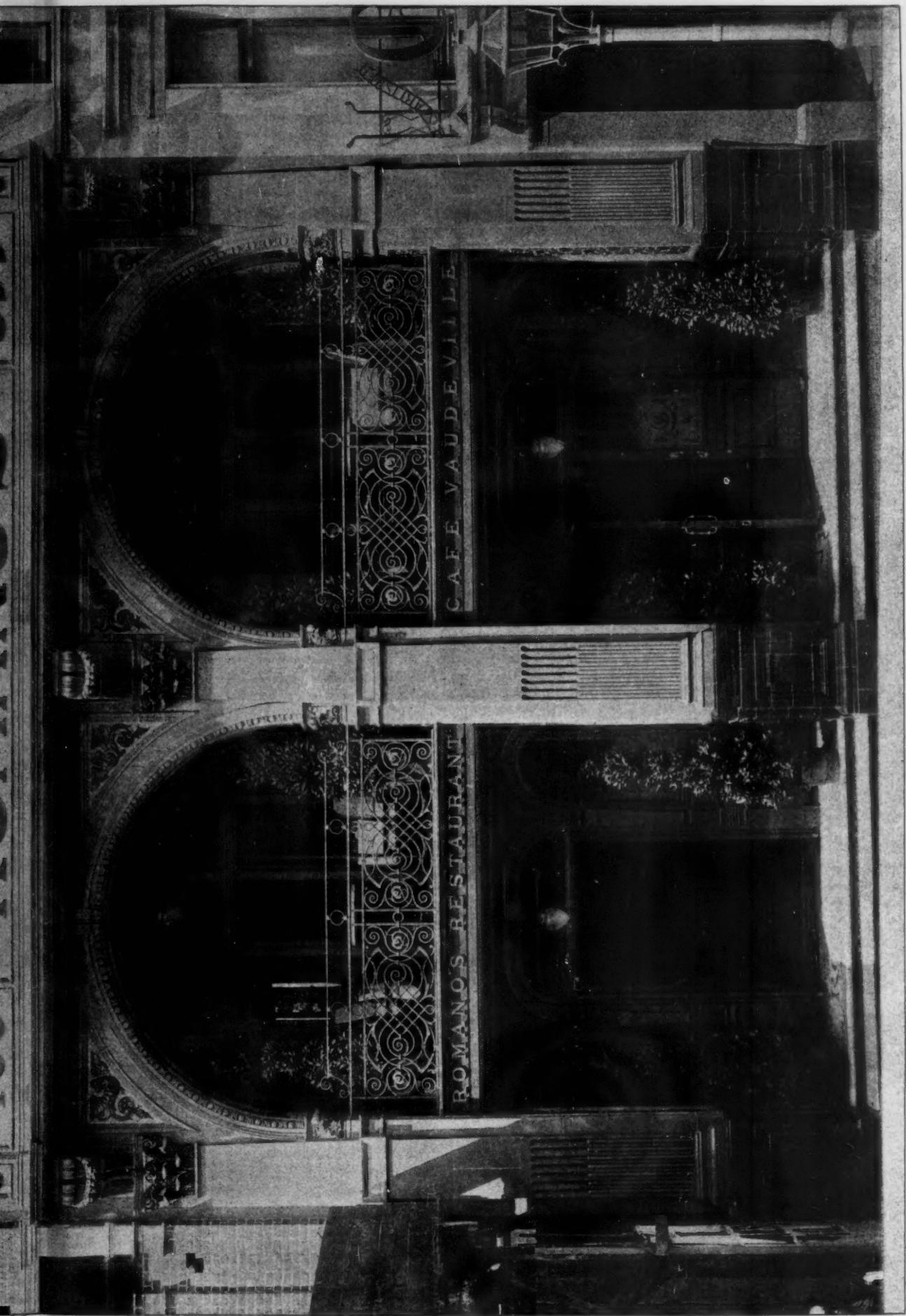


RELATIVE POSITION OF BUILDING

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EDWARD DEARCE CASEY, ARCHITECT





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