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CONSTRUCTION

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ARATHER serious artistic problem has come up in Boston, in relation to the protection of Copley Square from disfigurement by high buildings. Work has been begun on a large apartment-house, very near Trinity Church, which occupies a site at the head of the Square, and people interested in the church, as well as in the other important buildings around it, including the Museum of Fine-Arts and the Public Library, would like to see the height of the apartment-house limited to something less than the one hundred and twenty-five feet which the plans propose. Soon after the erection of a similar apartment-house on Commonwealth Avenue a statute was passed limiting the height of all subsequent buildings on the avenue to eighty feet; and a petition has been laid before the Legislature, with the support of a large number of citizens, asking that the same restriction may be made applicable to Copley Square before the objectionable apartment-house is carried up to the height intended. The most important argument against the imposition of such a restriction is to be found in the fact that Copley Square is a very central point, and the land fronting on it will soon be so valuable for business purposes that it may be a hardship for its owners to be prevented from erecting lofty buildings on their lots. On the other hand, it is represented that more than half of the territory facing the Square is already occupied by public or semi-public buildings, so that the disfigurement of the remaining lots by towering blocks would inflict a direct injury upon the citizens, in consideration of which they are even more justified in asking the intervention of the Legislature than in the case of Commonwealth Avenue. One hearing has already been held by the Legislative Committee in charge of the petition, and, in view of the interest shown by citizens, another has been appointed, to be held on January 31st, at ten o'clock, in the room of the Committee on Cities, at the State-House.

THE reputation of the Massachusetts Bench for equitable rulings is merely heightened by the pronouncement contained in the opinion of Judge Richardson of the Superior Court in a recent case where the City of Boston sought to enforce the employment of Union labor. The learned judge said, in part, that the method adopted "was an unlawful interference with the plaintiffs' rights, and if permitted and continued, would, in the language of the Supreme Court in the discussion of a similar question, 'tend to establish a tyranny of irresponsible persons over labor and mechanical business which would be extremely injurious to both.' There is no authority in law for any officer of the Government, State or Municipal, to force such a discrimination as was attempted in this case between workmen in respect to the privilege of labor on public work paid for by taxes levied upon all, for no reason except that some workmen belong to a certain party, society, or class, and others do not; thus giving labor, and the benefit of it, to one class, and denying it to another, regardless of their rights

needs, qualifications or merits, or the public welfare. Such discrimination, in the employment of labor, is not in accord with our ideas of equal rights, and seems not to be consistent with an impartial administering of public business; and any agreement that such discrimination shall be made is contrary to public policy, and is, in my opinion, void. The Constitution of Massachusetts declares that 'no man, nor corporation, nor association of men has any other title to obtain advantages or particular and exclusive privileges distinct from those of the community than what arises from the consideration of service rendered to the public.' Also that 'government is instituted for the common good—not for the profit, honor or private interest of any one man, family or class of men.'"

IT was Professor Lanciani, we believe, who first suggested that there was something good about the Emperor Nero, and that his celebrated entertainment, which consisted in having the City of Rome set on fire in several places at once, while he and his friends observed the spectacle from his palace on the hill, was really a clever device for clearing away the old streets and buildings of the town, and making room for new constructions, on an improved plan. According to this view, the violin accompaniment which the Emperor is said to have executed while the fire was raging was probably inspired by the visions which he saw of the civic magnificence which was to replace the ugliness of the burning town; and his lofty aestheticism, which reckoned the screams of the citizens, perishing in the flames, or their lamentations over the loss of their friends or their property, as nothing in comparison with the artistic good which they would derive from the occurrence, seems to have endeared him to the present generation of critics. Mr. Frederic Crowninshield, speaking the other day at the dinner of the Reform Club, in New York, while he acknowledged that Nero's method of clearing the ground was somewhat "drastic," described in glowing terms the magnificence of the arcades, porticos and baths of ancient Rome, and bemoaned the appearance of New York, predicting that unless the inhabitants of the latter city soon took measures to make it more beautiful, they would cease to love it.

WITHOUT wishing to say anything to prevent the people of any city from making it as beautiful as possible, we must confess that the connection between marble porticos and love of country seems to us as far from being satisfactorily established as that between Nero's insane and cruel freak and any intelligent design for the improvement of Rome. No one will pretend, we suppose, that the swarms of idlers and parasites who loitered and plotted about the Roman porticos, or sniffed the smell of blood in the Colosseum, loved their city better than the people who stood at the bridge with Horatius to defend their miserable huts; and history indicates that the erection of magnificent public buildings in a city is apt to be the precursor of civil discord, corruption and decay. With private works, the case is different. Mr. Crowninshield says, that in New York there are "individual beautiful things, but individual things spoil general effects." To a certain extent this is true, but the individual beautiful things must exist first, if artistic feeling is to be cultivated among the people, and attempts at magnificence without such feeling are of very little value.

ONE of the sensational New York papers lately published an alarming article, with illustrations and staring headlines, to show that the adoption of the trolley system for running street-cars over the Brooklyn Bridge would lead to the electrolysis of the cables, and the consequent fall of the bridge, with, very likely, loss of life among the people who happened to be walking over it at the time. No one, probably, who knows anything about electrical matters regarded the article as serious, but it seems to have made its intended impression on the public, and experts have been busy ever since in telling reporters their reasons for thinking that no apprehension need be entertained in regard to the matter. Every one knows, of course, that electrolysis has taken place in the vicinity of ordinary trolley lines, through the escape of return current from the rails to neighboring water-pipes or gas-pipes, and its diffusion thence, in the presence of moisture, to some better conductor. This electrolysis is easily prevented by connecting the rails by copper wires, or, if the rail-section is insufficient

for carrying the very large current which may pass through it in times of heavy traffic, by supplementing it by additional conductors; but, even if the bridge engineers should be so careless as to allow the system to be constructed with insufficient provision for return, the surplus current would find an outlet anywhere except through the supporting cables of the bridge, which are anchored in immense masses of concrete, and are thus practically insulated. Although, however, there is no real danger of the destruction of the cables by electrolysis, it will do no harm to have the attention of the public and of engineers drawn to the fact that the life of the bridge, reckoning from experience with other suspension-bridges, is about half spent, and that its vital history will, presumably, be hereafter one of accelerating decline, terminating, somewhere between twenty and thirty years hence, in general break-down. As all suspension-bridges old enough to serve as examples have passed through this course, it seems as if it might be the part of prudence to try whether bridge-physicians, enlightened by the experience of others, might not be able to prolong the life of the great structure which spans the East River. The diagnosis of its present condition would not be easy, for the great cables are wrapped with wire, and then painted; but it is certain that if they are not looked after they will, before many years, be so hopelessly corroded that nothing can be done except to shut the public out from the bridge, and let it fall. It may be asked what benefit there would be in going to the expense of uncovering and examining the cables, as the temporary exposure to the air would only increase the risk of corrosion; but it is to be remembered that it is possible to check rust which has once begun, and to give, so to speak, a new lease of life to a cable in which, if left to itself, a nucleus of corrosion would soon pervade the whole mass. The best method of accomplishing this result would be for chemists to determine; but it would be perfectly feasible, for example, after exposing the wires, to saturate them with a solution of soda, or some other alkali, which would prevent oxidation for a time, followed, after the iron had been thus cleaned, by some sort of oil, to help keep out air and moisture for another twenty years.

SPEAKING of the changes produced in iron by the action of the elements, it is singular that the influence of hot water upon brass, so familiar to plumbers, should not have been more thoroughly studied by scientific men. Every one who has had much to do with plumbing fixtures has observed that the washer-screws and other small parts of brass hot-water cocks and valves become, in the course of years, brittle at the edges. An attempt to take out such a washer-screw with a screw-driver results in crumbling the head away, the metal being apparently crystallized on each side of the slot; while other edges, originally sharp, appear rounded, or become so, by the crumbling of the metal, when handled. We will not attempt to account for this phenomenon, but it would certainly be of advantage to owners of steam-pumps, engines and other machinery in which brass is used, as well as to plumbers, to have an investigation made into the circumstances under which it takes place, and the chemical or physical character of the change involved.

THE Art Museum of Princeton University has been enriched by the gift of a set of casts from the sculptures on the triumphal arch of Trajan, at Benevento, in Italy. The moulds for these casts were mostly made by the members of the American School of Classical Studies, in Rome, under the direction of Professor Frothingham, of Princeton. Naturally, the first complete set has been reserved for that college, but single casts have been duplicated for other museums and universities, and it may be hoped that they will be of assistance in the study of history, if not of art.

THE first examination by the Illinois State Board of Examiners of Architects was held January 15th. Nineteen candidates for licenses to practise were examined, and eighteen were accepted. In addition to these eighteen, however, more than six hundred architects already established have received licenses, under the provision of the law which entitles those who can satisfy the Examiners that they were in actual practice in the State on the first of July, 1897, to a license without examination; and others, making application as practising architects, who have not yet received their papers, will undoubtedly obtain them. So far, seven hundred and

eighty-eight applications have been made. Several of these are from persons residing outside the State, who desire permission to practise within its limits; and it may be well to remind architects in other States, who have clients in Illinois, that they cannot do work for them there without a local license.

AN ingenious railway-station has just been completed in Dresden, and is illustrated in the *Deutsche Bauzeitung*. The problem presented to the architect, C. F. Richard Müller, of Dresden, was to arrange an important through station, containing six tracks, in such a way that passengers could reach cars on any of the four tracks designed for their service, without crossing any rails, and without making either the train-room or the passenger-rooms dark or close. As the tracks in this part of the city are elevated, passing over the streets, Herr Müller arranged his passenger-rooms below the tracks, lighting them from the sides of the building, and, by skylights in the platforms, from the great glass roof which spans all the tracks. Stairways, at convenient intervals, lead from the passenger-rooms up to the platforms, and there is plenty of space for refreshment and toilet rooms, and for baggage, besides the different classes of waiting-rooms. The platforms are very wide, so as to give ample space for airing and lighting the rooms below, and are not encumbered by anything except the station-masters' offices and the baggage-lifts, by which trunks are brought from below to the side of the trains. One end of the station opens on a street which crosses the railway below the tracks, so that passengers and baggage are delivered from carriages directly at the foot of the staircases or inclined planes leading to the platforms.

ANOTHER disturbance occurred during the latter days of December at the Paris School of Fine-Arts. This time, the students in the Department of Architecture were the culprits, but, instead of chasing their female fellow-students through the streets, as the painters and sculptors did a little while ago, they contented themselves with raising a tumult at their lectures on Theory of Architecture. The consequence of this performance was the summary closing of the first and second classes in the Department, by order of the Minister of Fine-Arts. The order directed that instruction should be suspended until February 1st, but all the heads of *ateliers* in the School united in an address to the Director of the School, "deploring and reproving the 'tumultuous incidents' which had taken place," and expressing their profound personal regard for M. Gaudet, the professor against whom the "tumultuous incidents" appear to have been directed; and the *massiers* of the *ateliers* visited the Minister in a body to ask for clemency. After some hesitation, he consented to receive them, and, upon their solemn promise to be answerable for any further disturbance, he suspended his order, and directed that the classes should be opened provisionally on the first of January.

THE most important news of the day relating to technical matters is that although the plans of the New York Rapid Transit Commission have been approved by the Appellate Division of the Supreme Court, and that, this being the last sanction required by the statute, there seemed nothing to remain but to contract for the construction of the subway with some one of the syndicate which, it is understood, stand ready to undertake it, the actual beginning of the work is likely to halt indefinitely, owing to the action of the Elevated Railroad, which promises to introduce electro-motive power at once and otherwise promote rapid transit. As finally approved, the Rapid-transit plans provide for a four-track underground railroad from the Post-office, under Park Row to Chambers Street, thence through Elm Street and Fourth Avenue to Forty-second Street; then crossing, under Forty-second Street to Broadway, and under Broadway and the Boulevard to One Hundred and Fourth Street. Here the line divides into two branches, one of which will continue in the same line to King's Bridge, while the other, diverging to the eastward, will cross the Harlem River by a tunnel, and continue thence to Bronx Park. It is estimated that, over this route, express trains can be run from One Hundred and Twenty-fifth Street, which is now the principal thoroughfare of a densely populated district, to the Post-office in less than twenty minutes; and, at that rate, the fourteen miles' distance between King's Bridge and the Battery should be traversed in about half an hour, including stops at eight or nine of the most important points.

THE EVOLUTION OF DECORATIVE MOTIVES.— I.

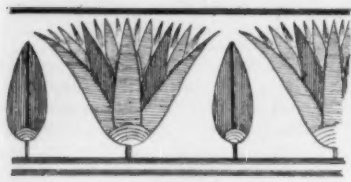


Fig. 1.

who has been defined as "a worshipping animal," is quite as distinctively the one animal that designs decoration. Men of all tribes, tongues and conditions, in all ages, have labored to beautify useful objects by additions to or modifications of their form, color or surface. This superadded beauty—superadded not necessarily in time, but in conception—we call ornament, and the operation of producing it we call decoration. The elementary units of ornament, the forms by whose systematic combination decoration is effected, are called motives.

Now the evolution of ornament-motives has a definite history; a history which may not inappropriately be likened to that of language. Indeed, it is in a certain sense the history of a language, and in some respects much more literally so than many persons imagine. For ornament is a means of expression, not often of definite and concrete ideas, but of emotions and states of mind more or less clearly felt. The development of ornamental art has been not unlike that of literary art, and the principles which control decorative composition are in their essence the same as those underlying musical or literary composition, or any other art, vocal or plastic, by which the sentiments and emotions, the aspirations and wonderings of the soul seek expression. This comparison cannot here be enlarged upon, but certain of these resemblances will become clearer in the development of these studies.

It is not intended to sketch the history of ornament at large, but rather to consider some of the most important phenomena of the evolution and development of certain ornament-motives. I have said that they have a definite and ascertainable history, as do the words of our language. Like words, they have come down to us through successive generations of changing styles, in forms strangely altered from their original guise; not at first sight recognizable perhaps, and yet with an identity which the expert can trace with absolute certainty through all their mutations of outward appearance.

How they originated, how under varying conditions and civilizations they diverged into widely separated forms, how these found their places in the several styles of historic art, in combinations utterly alien to those in which they had figured at first, and with wholly changed spirit and significance; how they have persisted and survived as with a miraculous immortality, springing to new life, like Egyptian wheat after an entombment of centuries; by what strange migrations they have travelled over the earth, and how our modern designers and manufacturers have employed them over and over again in utter unconsciousness of their antiquity and pedigree—such are some of the phenomena which may engage our attention.

The scope of our inquiries I wish to limit to pure ornament; that is, to decoration which is not, primarily, painting, sculpture or inscription. The discussion of these inquiries may be taken up either chronologically or topically. In the first case it would begin with Egyptian ornament, historically the oldest known. I prefer to follow the second course, taking up one by one the motives or classes of motives whose evolution and history are to be studied. With this end in view, we should begin with savage and barbarous ornament, as involving the whole question of the origins of motives in decoration. The study of these motives will be approached from the point-of-view of their form and design as works of art, rather than of their archaeology and ethnology.

The "life history" of a motive (to use Haddon's happy and poetical phrase¹) is, in general, somewhat as follows: In one or another way a tribe, nation or set of people come to use a certain form

THE decorative faculty appears to be a universal endowment of mankind. Among savage and barbarous peoples it seems almost like an instinct. Yet no animal except man produces ornament, or anything that can properly be called decorative design; and man,

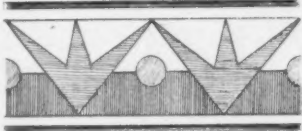


Fig. 2.



Fig. 4.

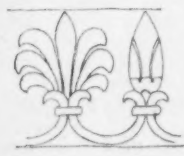


Fig. 5.

habitually in their ornament, either as a fetish, a symbol or a purely conventional decoration. In the progress of generations the motive undergoes gradual modification, in which its original aspect is more or less completely lost, and its primal significance forgotten. Alienated thus from the use and associations for which it was first designed,



Fig. 6.

it is employed in wholly novel combinations, in a more and more arbitrary, or at least purely decorative, manner. Thus the lotus, in Egyptian ornament originally strongly symbolic, and represented with three calyx-leaves enfolding its white or colored petals, is commonly alternated with the bud of the same flower (Fig. 1). In the later evolutions of this motive, the petals have disappeared; the flower has become a trident (Fig. 2) and the decorative function of the bud is filled by a mere dot, or, as in Figure 3, by a nameless and unidentifiable oval form. This transformation of the whole aspect and character of forms derived from nature is most strikingly illustrated by certain absolutely conventional patterns in Brazilian savage ornament, which, as Ehrenreich has demonstrated, "represent neither more nor less than animals or parts of animals."²

After having undergone in its own home some such series of modifications, the motive becomes known to the artists of some other race or civilization through the agency either of commerce or of conquest.

It is carried across seas and lands, and in new hands receives still another dress, in combinations still more incongruous with its original significance. It is no longer a symbol, but an arbitrary ornament, wholly conventional, modified to suit the taste and the arts of the foreigners who have adopted it. In many cases it undergoes modification in two or more directions, resulting in divergent developments which in time produce as many distinct motives, cousins, as it were to each other, each of which runs its own course independently

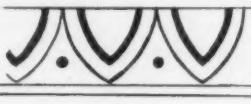


Fig. 8.

of the others. This phenomenon we may call *divergence*. A common cause of divergence is the tendency to assimilate a borrowed motive to some indigenous and familiar form, usually a natural object, thus setting up a new method of treatment quite foreign to the origin of the motive, a treatment which develops simultaneously with that of a more correct version of the motive. Thus in the Assyrian version of the Egyptian lotus-border the bud is sometimes treated as a bud, sometimes assimilated to the pine-cone (Fig. 4). The palmette, derived from the Egyptian combination of a half-rosette with a three-leaved lotus, is assimilated to the palm-tree as represented in Assyrian reliefs; and in this modified form is substituted for the lotus in border-patterns where it alternates with buds and pine-cones (Figs. 5 and 6). This divergent treatment, entering Greek art by way of Asia Minor or Phœnicia, or both, became the Greek anthemion pattern. Meanwhile the original lotus-and-bud motive had been modified by the Egyptians themselves, by the Cypriotes and by the primitive Greeks into a series of developments resulting finally in the familiar egg-and-dart ornament. Figures 7 to 12 illustrate these divergent developments of a single primary motive. Figure 7 is an Egyptian prototype of the Greek egg-and-dart patterns shown in Figures 8, 9, 10. In Figures 1, 4, 5, 6, 11, 12 is illustrated the evolution of the anthemion from the Egyptian lotus-border, 4, 5 and 6 being Assyrian patterns.

In some cases, again, motives of wholly diverse origin, as well as those related by a common ancestry, gradually approach each other, and illustrate the phenomenon of *convergence*, as in Byzantine carving, in which the acanthus is treated so like the anthemion that it is



Fig. 10.

hard to tell which of the two was really intended (Figs. 13, 14), and finally there may be observed in the later history of a motive a curious phenomenon like that which biologists call *reversion to the type*, wherein the development of the motive seems to reverse its direction by approaching once more its original form. Thus in certain Lombard and Byzantine carved bands, the three-pointed form of the simplified Egyptian lotus seems to reappear, after one or two thousand years of variations and transformations (Fig. 15).

These are the most striking phenomena in the life history of decorative motives. It has seemed wise to explain and briefly to illustrate them thus at the outset of these studies.

¹ A. C. Haddon: "Evolution in Art," Scribner's, N. Y. 1895.

² A. C. Haddon: "Evolution in Art," pp. 174, 175, 259.

As yet, however, the question of the birth of motives has not been referred to. Where, when and how, do motives originate? How far back can their history be traced? and what is the relation between the primitive forms of savage and barbarous decoration and those of the historic styles? These are problems to which as yet no final answer is possible. But certain facts are known and analogy points to the probable or possible solution of some of the inquiries raised by these problems and excludes certain other solutions at first sight plausible. The spade of the archaeologist may yet in years to come lay bare the key to others among these questions which are to-day still paradoxes or enigmas. Meanwhile we must content ourselves with presenting the ascertained facts, and acquainting ourselves with the state of the discussion on the chief questions in debate; advancing on our account, with all caution and reserve, such theories as seem justified by our own observation.



Fig. 11.

It is desirable first of all to ascertain the true position of savage and primitive art in the larger field of our inquiries. To do so brings us face-to-face with one of the paradoxes of art history. This paradox is the abyss, thus far impassable, which separates all savage and primitive art from that of the historic styles; from the ornament, that is, of the civilizations whose history is a matter of record, in which dates and names can be assigned with tolerable certainty, and whose legends and traditions are found to rest upon a substratum of historic fact. If the history of art teaches us anything, it is that no historic style has ever been spontaneously generated. Each has been progressively developed from antecedent models by minute and gradual changes. If we examine works widely separated in time, they seem, it is true, to differ fundamentally in style; but the intervening links supply the evidences of an evolution, so gradual that at no point of time can one draw the line absolutely between the two phases of the style or between the two styles. Even those styles which belong to wholly distinct peoples show so many points of contact that they cannot be wholly dissociated. All the historic styles are linked together in a network of related developments.

Now, if we trace back their history from modern times, we find it follows lines which converge towards and finally bring us to two centres from which the whole current of historic art has issued in ramifying streams. These are the valleys of the Nile and of the Tigris-Euphrates, and their art carries us back forty to fifty centuries before the Christian era. Farther in the present state of archaeology we cannot go. But nowhere in these two cradles of civilization do we find the traces of truly primitive art. In both, the very earliest remains give evidence of well-developed industrial arts and an organized civilization. Neither here nor elsewhere in the long catalogue of historic styles do we encounter the gradual transition from the carving and ornament of a truly primitive people to any of those phases of art which belong to historic times or to an organized civilization. Every line we follow seems to lead us back to Egypt and Chaldaea, and then—a precipice! Indeed, there is nowhere any authentic example of the development of civilization itself out of savagery otherwise than by the fertilizing contact with some preëxisting civilization. Barbarous and primitive peoples have been lifted up into a higher and progressive state by the help of other more civilized peoples, never by their own efforts, so far as we can learn from historic or monumental evidence. Between the arts and manner of life of the savage and those of civilization there yawns a great gulf, which archaeology has thus far failed to span by any bridge of indigenous transitional developments.



Fig. 13.

It might be supposed that among the savage and half-savage peoples of modern times we should find examples of this transition in progress. But such is not the fact. The whole trend of modern ethnological research is the other way. It has brought to light countless evidences in savage and half-savage art of unsuspected contact with and importations from civilized art; it has yet to show us an exception to the rule of the absolute sterility and unprogressiveness of savage art and of savage civilization when untouched by such external civilizing influences. This does not mean, of course, that the human race has been



Fig. 15.

civilized from the beginning. We cannot scientifically account for civilization or art except by evolution and development from primitive beginnings. Somewhere, far anterior to the earliest monuments, there must have passed long ages during which men were working their way out of primitive simplicity up to the first levels of progressive civilization. But every vestige of this stage of development has vanished. Who that people or those peoples were, where they lived, whether they were the direct ancestors of the Egyptians or of the Chaldeans, or of neither—to these queries the monuments give us no answer. Neither can this riddle be solved by what we know of modern savage art. We can surmise and speculate as to the possible analogies between the primitive art of the savages of to-day and that of pre-historic man, but we can prove nothing thereby. It seems to me one of the strangest of assumptions to assert that the savages of our day act, think, live and design precisely like those of ten thousand years ago, and that from the ceremonies and arts and beliefs of Hotentots and Maoris and Solomon Islanders we are to infer the intellectual processes and way of life of truly primitive man in past ages. The savages of to-day are examples of arrested development or of degeneracy; the founders of civilization must have been progressive. We cannot even disprove the suspicion that much of the so-called primitive life and art with which we are acquainted is degenerate and not really primitive, and that the occasional symptoms of progressiveness among modern savages are the result of contact with superior peoples.

Such is the enigma of primitive beginnings in art. What they may have been we can only speculate, and for such speculations the little we know of pre-historic primitive art, and all the mass of modern "primitive" and savage art in our museums furnish data which need to be used with the greatest caution and reserve. It is not a question on which any one, however erudite, can afford to dogmatize.

A. D. F. HAMLIN.

[To be continued.]

FIREPROOF BUILDINGS.

IN view of the recent complete destruction by fire, of the whole contents of two protected or encased steel-framed buildings, one in Pittsburgh and one in Detroit, regard may well be given to the very great dangers which are now and will continue to be incurred in the so-called "sky-scrapers," which are also called "fire-proof buildings." I look with many misgivings upon some buildings, of which I have watched the construction, wherein the steel frame is covered only with a thin veneer of incombustible material which I know will be peeled off under the heat even of a moderate quantity of combustible contents. It is probably useless to attempt to stop the construction of these buildings of very many stories. Only the catastrophe which may come at any moment would serve that purpose.

In pursuance of this subject, I send you herewith the report of the destruction, by fire, of a so-called "fireproof" factory in Burnley, England, in some respects of heavier metallic construction than our steel-framed buildings, also containing less wood in the construction than is used in the finish of many of our "fireproof" buildings. The excess of metal, however, may have rendered the destruction of the building more certain, the expansion of such masses of metal under heat exerting a greater force than any which could be exerted by the expansion of the light steel frame. On the other hand, the light steel frame would be very much more liable to be rendered weak and to be crippled by even a moderate heat than the heavy iron frame of this building, and is also much more liable to weaken by rust or oxidation by lapse of time.

Regard must be given to the distinction between destruction by fire and destruction by heat. The loss of this mill is clearly a case of destruction by heat. The quantity of stock in a fine cotton-spinning mill, of which this was an excellent type, is very small (not over 15,000 pounds in the mule-room, where this fire started and gained its destructive force). The weight of machinery and combustible contents were very much less than might often be placed in many steel-framed buildings other than factories, in a mule-room rarely exceeding fifteen pounds per square foot. On the other hand, when we were engaged in testing the action of automatic sprinklers under the influence of different types of fire, we could invent but one which raised heat so quickly to an almost explosive point as to prevent our remaining in a rather small room until the sprinklers operated and made it safe. When we imitated the carding-room of a cotton factory, exposing cotton-batting in due proportion, then igniting that cotton, the heat was brought so quickly to an almost explosive point that we were literally blown out of the doorway within which we were standing, before the sprinklers operated; yet in that and in all the mule-rooms in which fires have originated since the automatic-sprinkler system was adopted for their protection these excessively virulent and rapid cotton fires have been held in check by sprinklers without heavy loss. The quicker the rise in temperature the quicker the sprinklers operate.

The sprinkler service is, however, practically out of the question in many of the "sky-scrapers," or, if not out of the question, the suggestion to put them in would probably be rejected almost with derision. The greatest danger in high steel-frame buildings will come whenever, owing to an excess of offices, the very high buildings become occupied in the lower stories with heavy stocks of combustible goods or fabrics of any kind. What may happen when the heat and



Fig. 14.

smoke developed in the lower stories shall be carried, in the open ways which will make a quick draught, to the upper rooms of the "sky-scrapers," I leave to the imagination of your readers.

I have seen great rooms in so-called fireproof buildings filled with wooden show-cases finished with the most dangerous and combustible varnish, in which the heat developed by the rapid spread of fire on the varnish only would endanger the building, yet more its occupants.

The only building in this city with which I am familiar which can fitly be named fireproof, and which is also heatproof, is the Public Library — a reversion to the age of clay — a few metallic elements being buried deep in the clay surroundings. We may be passing through the age of iron-and-steel construction and coming back to the age of clay as now worked by modern science.

It may be superfluous to sound this warning. On the other hand, architects who are aware of these facts may be able to prevent owners from ordering them to plan dangerous buildings of light steel frames insufficiently veneered with incombustible material and open from basement to roof.

Whenever the basement and lower story of a steel-frame building

Factory Mutual Underwriters are called to deal; namely, to regard what may be called the vertical hazard as much greater than the horizontal hazard, or hazard of large areas of floor. Since the introduction of automatic sprinklers the large floor-areas have ceased to be the subject of fear of loss on the part of the Mutual Underwriters. The vertical hazard is now met in every well-constructed mill by cutting off the stairways, the belt-chambers, the elevator-shafts and the sanitary apartments in separate fireproof towers, and, where it is possible, constructing them in towers outside the main mill; if not in towers then in separate chambers cut off at each floor with suitable fire-doors, preferably automatic; each of these shafts being surmounted by a skylight glazed with very thin glass, breaking at the first impact of heat, or fitted with valves or traps to open under the impact of heat, thus creating a draught from the upper rooms, but not forcing heat and smoke into them, while relieving the floor on which any fire may occur as quickly as possible from the smoke and heat generated at that point. In some of these very high buildings, chiefly in other cities, the area of ground covered is so small as to admit but one shaft in the building, that shaft being used both for



Wreck of the New Hall Spinning Co.'s Mill, Burnley, Eng.

are to be occupied for the sale of merchandise or the storage of any considerable amount of combustible goods, the upper stories being occupied for entirely different purposes, there ought to be no open way of any kind from basement and first story to the second. The access to the second and upper floors should be distinct, separate and absolutely cut off by fireproof partitions of such a kind that even the heat developed in the combustion of the merchandise or contents of the first story and basement cannot get into the stairway or elevator-shaft which leads to the upper stories. Many other points for preventing danger may be devised. Nothing more hazardous could be imagined than a twenty, or even ten, story building, of light steel frame, with an open way, either for stairway or elevator, from the bottom to the top, creating a draught of great force, the greater the higher the structure, if any considerable quantity of combustible material is permitted in the lower part of such a building.

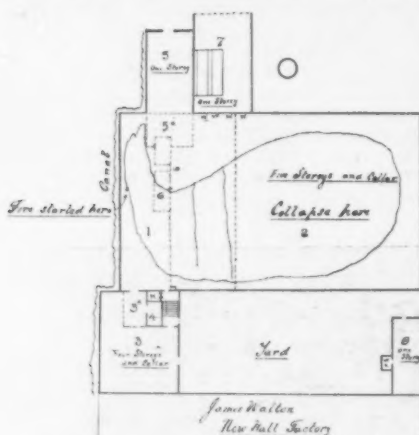
In truth, the construction of such buildings must be slowly and surely brought to what is now the practice in the construction of every large factory or workshop or warehouse with which the

the elevator and the stairway. This shaft or duct ought not to be relied upon to carry the heat and smoke developed in the lower part out through the roof. How can that be prevented in the very high buildings? These shafts create a tremendous draught, and they become flues, exposing all the upper stories to great danger, if the contents of any room below be sufficient to make a considerable amount of smoke and heat, even though the ultimate injury to the building may be small. There is but one way to meet this hazard, and that is by constructing a separate flue for the purpose of making a draught from the stairway and elevator-shaft as well as from the rooms below. This has been a common device in the factories to meet similar conditions. Flues have been built from dry-rooms and from "gauze-rooms," as they were called — formerly used to take loose cotton from pickers — to the end that such rooms might be burned out like an oven without any hazard to other parts of the building, as they have been frequently. These flues were sometimes open, sometimes closed, to prevent draughts, by automatic traps held by fusible solder. When "sky-scrapers" or steel-frame buildings of many stories are

constructed with due regard to right methods of reaching the roof or the upper floors, without open ways from floor to floor, but with a separate flue to carry off heat and smoke, a large part of the existing hazard will have been provided for. EDWARD ATKINSON.

BURNLEY FIRE.¹

"A fire broke out in the so-called fireproof mill, which, at the time, was being worked as an ordinary cotton-spinning factory, by the New Hall Spinning Co., Burnley, with the result that within two and a half hours from the outbreak the whole place was a perfect wreck, notwithstanding that the structure was composed entirely of iron, brick and cement, not a particle of timber being used, except the boards covering the floors, and the window-frames.



"This is the second mill in England within seven years — of fire-proof construction — which has collapsed through the effects of internal fires, the other one

being Messrs. W. Holland & Sons', of Miles Platting, Manchester, on August 17, 1890.

"The Burnley collapse is even more remarkable than the Manchester

spars and slates, whereas the roof at Burnley was of concrete, covered by water, carried upon iron-girders. The Burnley mill consisted of the main block, five stories high and cellar, with small four-story wing on one side, and engine and boiler houses on the other. The main block was 210 feet long by 120 feet wide, divided into bays of about 10 feet 6 inches each, by heavy cast-iron girders, of a section known as 'Hodgkinson,' and spanned the whole width of the mill in practically one continuous girder, formed by bolting together six lengths of about 20 feet each, the end of each length being formed so as to grip round the neck of five columns which formed intermediate supports for the girder across the mill. The extreme ends of the girders rested upon, and were built into, the walls. The 10-foot-6-inches bays formed by the cast-iron girders were spanned by wrought-iron girders of the ordinary 'H' section, placed at distances of about 3 feet apart, and supported by small brackets cast upon the web of the main girders. These spaces were filled-in by brick arches four and a half inches thick, springing from the wrought-iron girders, which, when boarded over, completed the structure of the floors. The roof was formed by running wrought-iron main girders across the mill, each resting upon the five intermediate columns. The 10-foot-6-inches space was spanned by angle-iron embedded in concrete, a covering of asphalt being on the top of this, so as to retain the rain-water which fell upon it, and which remained there to a depth of several inches.

"The mill was built in 1875, and was filled with mules on the three upper floors, and preparation on the lower ones. The fire was of the ordinary mule-room class, struck at headstock, ran along the inside of the carriage, soon setting the whole room alight, the mill not being equipped with sprinklers. The fire commenced at mid-day, so that all the hands were at their places, and were under the best conditions for fighting the fire.

"How the floors of this mill first broke through it is impossible to say, but it was owing to one of three things, or a combination of these: first, the cast-iron columns becoming expanded by heat, and water being played upon them from the hydrants causing sudden contraction, snapped them, a phenomenon well known to fire experts; second, the cast-iron main girders becoming heated, expand, and being prevented from travelling in a straight line by being built into the walls, began to lift up in the middle, similar to railway rails in hot weather, thus causing the bricks to become displaced, and provide an inlet or passage for



Wreck of the New Hall Spinning Co.'s Mill, Burnley, Eng.

one, because Messrs. Hollands' mill was covered with a roof of wooden

¹ Report of experts on the destruction, by fire, of the factory on Elm Street, Burnley, Eng., on October 20, 1897.

the fire to the upper floors. An increase of 9 inches is a very moderate estimate of the increased length of the main girders in the Burnley fire. This lifting is also helped by the expansion of the columns; third,

the wrought-iron girders spanning the 10-foot-6-inches bays, and forming the springing for the brick arches, become weaker as the temperature rises, and thus become unable to sustain the combined weight of brick floor and the heavy mule headstocks. Those conversant with the arrangement of mule-rooms know that a headstock never stands upon the main girders, where arranged as in the present case, with the creels parallel with the main girders, thus throwing the greatest weight upon the weakest part. Which of the above happened first no one can tell, but we know that one or more did occur, and can occur again in any mill where this fireproof structure is adopted. To cover all the iron parts with concrete may retard the collapse, but may not prevent it."

FURTHER DETAILS FURNISHED AT REQUEST.

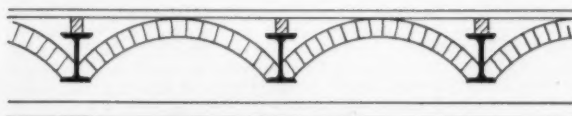
Building.—Five stories and cellar, 210'x120'. Divided into large and small ends on first and second floors only. All upper floors open with exception of belt-race. Built eighteen years ago. Brick built—outer walls.

All floors—cast-iron columns, cast-iron main-beams, tee section. Transverse wrought-iron joists carried upon brackets cast upon beams



at about 3 feet on centres. Space between these filled-in with brick arches 4 1/2-inches deep (brick on edge).

The cast-iron beams were prepared at each end to clip round the column, and bolted together, so as to form practically a continuous girder, spanning 120 feet, supported by five intermediate columns.



The roof was formed of about 8 inches of concrete, strengthened by 1 1/2-inch angle-iron, all supported upon wrought-iron girders 10"x6", upon the columns supporting the lower floors.

Fire.—Fire started about 11.30 A. M., October 20th, at headstock of mule on third floor, near to belt-race, and ran along carriages until all was well alight. The hands fought the fire with what buckets they had available, but were beaten back by smoke to the staircase. The local and other brigades arrived some time after the outbreak. The "mains" pressure was so low as to be almost useless with several hydrants open, and the steamers had to work on the canal side of the mill, playing through the windows on canal side. The water could not be got on to the fire at opposite side of the room, and so it travelled along the whole length of the building and was soon beyond the control of the brigades. Columns and beams were giving way before the steamers got to work, and the fire had practically to be allowed to burn itself out. Considering that the only fuel was the woodwork of mules, and the rovings and bobbins in creels, with the finished yarns, it is incredible how the place became such a complete wreck, for the whole of the floors and roof were broken in.

1. How were the floors constructed? Were they arched with brick, or were they filled-in between the beams with tile?

Ans.—See Report. I might add that some of the spandrils were filled-in between with cement, though I did not see any. Mr. Brocklehurst, loss-assessor to the Insurance Companies, says that such is the case, but those I saw certainly had no cement filling, but simply as in the sketch. Brick arched—4 1/2 inches deep—or "brick on edge."



2. Were the girders of wrought or cast iron, and how were they protected, if at all?

Ans.—Main girders of cast-iron, small cross-girders of wrought-iron.

3. Were the posts of wrought or cast iron, and how protected, if at all?

Ans.—Cast-iron columns—not protected—being quite exposed to the fire.

4. How were the beams fastened to the girders?

Ans.—The I wrought-iron girder rested upon brackets cast upon the main girder, and bolted to prevent lateral movement.

5. Were there any unprotected openings in the floors?

Ans.—No openings through the floors.

6. Were the stairs and elevator inside the building, or in a tower outside?

Ans.—Outside building, in tower.

7. What was the approximate weight per square foot of floor-area of machinery and stock on each floor?

Ans.—Cannot say weight—ordinary mule spinning-room.

8. How did the fire start, and how did it spread throughout the building?

Ans.—Friction at mule headstock, spread along room from mule to mule, collapse of ceiling and floor allowed fire to spread to upper and lower floors.

9. What was the top flooring? Was it of brick, concrete or stone?

Ans.—Does this refer to roof? See Report.

10. What is the cost of such a building as this per square foot of floor-area?

Ans.—Cannot say.

11. What kind of oil is used for lubricating purposes?

Ans.—Cannot say. Usual in district—spindle oil—principally mineral, about 1s. per gallon.



DETROIT ARCHITECTURAL SKETCH-CLUB.

AT the last regular meeting of the Detroit Architectural Sketch-club, held January 10th, Mr. Emil Lorch, president, gave the members a very interesting and instructive talk on Charcoal Drawing, and illustrated the same by a series of beautiful drawings, the work of the students of the Detroit Museum of Art School. These studies varied in subject from the simple object with flat masses of light and shade, and pieces of ornament, to more difficult drawings from the antique, portrait and nude, showing the possibilities of charcoal as a medium of expression. It was also shown how the drawing from life done by the architect should differ from that by the painter, in whose studies a thorough knowledge of anatomy is necessary.

The summer sketches, numbering about fifty, that were selected from the work done by the Club's class in water-color, were then criticised by Mr. Lorch. The sketches are now being exhibited at the Museum of Art. In conclusion, he congratulated the members upon the progress made by them over the preceding year, praising the work of Messrs. Barnes, Mildner, Ropes, Rosengarten and Burrows.

"Egypt," by Mr. Wm. Reed Hill, the first of the lectures on the History of Architecture, to be given under the auspices of the Club, will take place next Monday evening, in the lecture-room of the Museum. These lectures will be open to the public.

ALEX. BLUMBERG, Secretary.

PHILADELPHIA T-SQUARE CLUB.

A REGULAR meeting of the T-Square Club was held on Wednesday evening, January 19th, the subject for competition being a "Club-house for a Country Club."

Mr. Walter Cope led the criticism on the ten designs submitted.

First Mention was awarded to Mrs. A. M. Githens; Second Mention to Mr. W. P. Trout, and Third mention to Mr. Geo. G. Bassett.

GEO. BISPHAM PAGE, Secretary.



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

DETAIL IN CORRIDOR NORTH OF MAIN STAIRCASE: LIBRARY OF CONGRESS, WASHINGTON, D. C. ARCHITECTS, MESSRS. SMITH-MEYER & PELZ; P. J. PELZ; E. P. CASEY.

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

"HILL CREST": HOUSE OF W. T. HAVEMEYER, ESQ., REDBANK, N. J. MESSRS. BRUNNER & TRYON, ARCHITECTS.

PLANS OF THE SAME.

STAIRCASE HALL OF THE SAME.

PLAN OF THE ESTATE "HILL CREST" AND SUNDRY DETAILS.

HOUSE FOR MAJOR WM. ARTHUR, COHASSET, MASS. MR. C. H. ALDEN, JR., ARCHITECT, BOSTON, MASS.

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

JARDINE HALL: ENTRANCE STAIRS. MR. S. J. MAY, ARCHITECT.

JARDINE HALL: DINING-ROOM. MR. S. J. MAY, ARCHITECT.

This and the preceding plate are copied from the *British Architect*.

A GROUP OF SLAVIC EQUESTRIAN STATUES.

[Additional Illustrations in the International Edition.]

STAIRCASE HALL AND ENTRANCE TO THE ROTUNDA: LIBRARY OF CONGRESS, WASHINGTON, D. C. ARCHITECTS, MESSRS. SMITHMEYER & PELZ; P. J. PELZ; E. P. CASEY.

[Gelatine Print.]

THE LADY CHAPEL: ST. AUGUSTINE'S CHURCH, KILBURN, ENG. J. L. PEARSON, ARCHITECT.

"DEEPDENE": FRIMLEY GREEN, ENG. MESSRS. TREADWELL & MARTIN, ARCHITECTS.



SHAFT SINKING.—The use of iron cylinders as casing in sinking shafts through quicksand and other loose material has found frequent and useful employment. The chief difficulty has been in forcing down the cylinders through any but the softest ground, with any degree of uniformity. Not long ago Herr Simon, the manager of the Neue Hoffnung Colliery, near Pommelte, Ger., devised a plan for overcoming these defects. When sinking a shaft at that pit, he constructed pit lining in such a manner that a heavy ring, with internal bracket projections all round, could be screwed on to a curb set in masonry, and serve as counter-thrust for a number of hydraulic hand-presses, acting on the iron sinking cylinder. By this arrangement it was found possible to always keep the sinking cylinder in advance of the work. Haniel & Lueg then employed this system, with good results, in conjunction with mechanical presses, working in combination and actuated by hydraulic accumulators, notably in the sinking of the No. 3 shaft at the Rheinpreussen colliery at Homberg-on-the-Rhine. However, the means for loosening and removing the material within the sinking cylinder did not keep pace with these improvements. A new method has lately been proposed by Herr Pattberg, manager of the Rheinpreussen colliery, by which the walls of the cast-iron sinking cylinder are provided with a number of pipes through which the loose matter is pumped up. For the disintegration of the quicksand or clay, a revolving cutter is used, which throws the material out toward the circumference of the cylinder. The pipes in the wall of the cylinder debouch in various groups, and it is, therefore, possible to always use one set of pipes, corresponding to the advance of the cutters, for removing the material. The pumps are fitted with india-rubber valves, those being less liable to erosion by the mud constituents than if made of iron. Before the sand enters the pumps it is run into a large settling tank, where the coarser fragments subside. The saving of time effected by this arrangement allows slight defects to be overlooked. Still, lumps as large as a nut can be removed by the pipes; larger pebbles must be caught and got rid of by other means. Any stoppage caused by obstruction of the pipes can be overcome by forcing the mass through in an opposite direction, or, if the obstruction be stubborn, by the aid of a percussion drill. Moreover, since the number of tubes is large it does not greatly matter if one or two of them do get stopped up. It is also claimed that, by using the Pattberg apparatus, the iron sinking cylinder can be brought right through the quicksand down to the water-bearing stratum without decreasing the diameter of the shaft. — *Providence Journal*.

WHAT IS PURE WATER? — Judge White's decision in the water case raises several new questions of equal or greater interest. The decision is that a company must supply pure water to its patrons. What, in the eyes of the law, constitutes pure water? If private water companies owe this duty to those to whom they furnish water, does the same obligation extend to municipal corporations which supply water to their citizens? In the case under consideration the complaint was that the water was unfit for laundry purposes, because it was frequently charged with mud and other filthy matters which deposit a sediment. Such water is manifestly not pure and is tabooed by the Court. But water may be pure enough for laundry purposes and at the same time very unwholesome for drinking. What, then, is the legal standard of pure, potable water? Is it a fluid without visible impurity, or is it permissible to use the microscope and other scientific apparatus in determining its fitness for common use? From the medico-scientific point-of-view muddy water is not essentially unwholesome. It is not strictly pure, of course, but it may not contain anything deleterious to health, while water of crystal clearness may be regarded as very dangerous. Unusual interest would attach to a judicial interpretation of reasonable purity in the sanitary sense. If it is unlawful for corporations, private or municipal, to supply water that is not safe to drink — as it is to furnish a fluid not fit for laundry uses — a judicial decision to that effect would compel a remarkable movement for reform in the matter of water-supply. It might be worth while to take a case to court for an interpretation in the interest of the public health. — *The Pittsburg (Pa.) Dispatch*.

THE FINE-ARTS IN HUNGARY. — In the domain of the Fine-Arts, Hungary may well be proud to have created for herself by hard work within the space of a few decades a public artistic life of her own, which is inspired by the example of the King and encouraged by the annual purchases of works of art made by the Government for the National Museum. The aristocracy and the rich merchants are likewise ready patrons of artistic productions. Her Majesty's Consul-General at Buda-Pesth says that among the works produced during the past twenty-five years are some large and fine frescoes in the Cathedral of Pecs, and in the opera-house and the St. Matthias Church at Buda-Pesth.

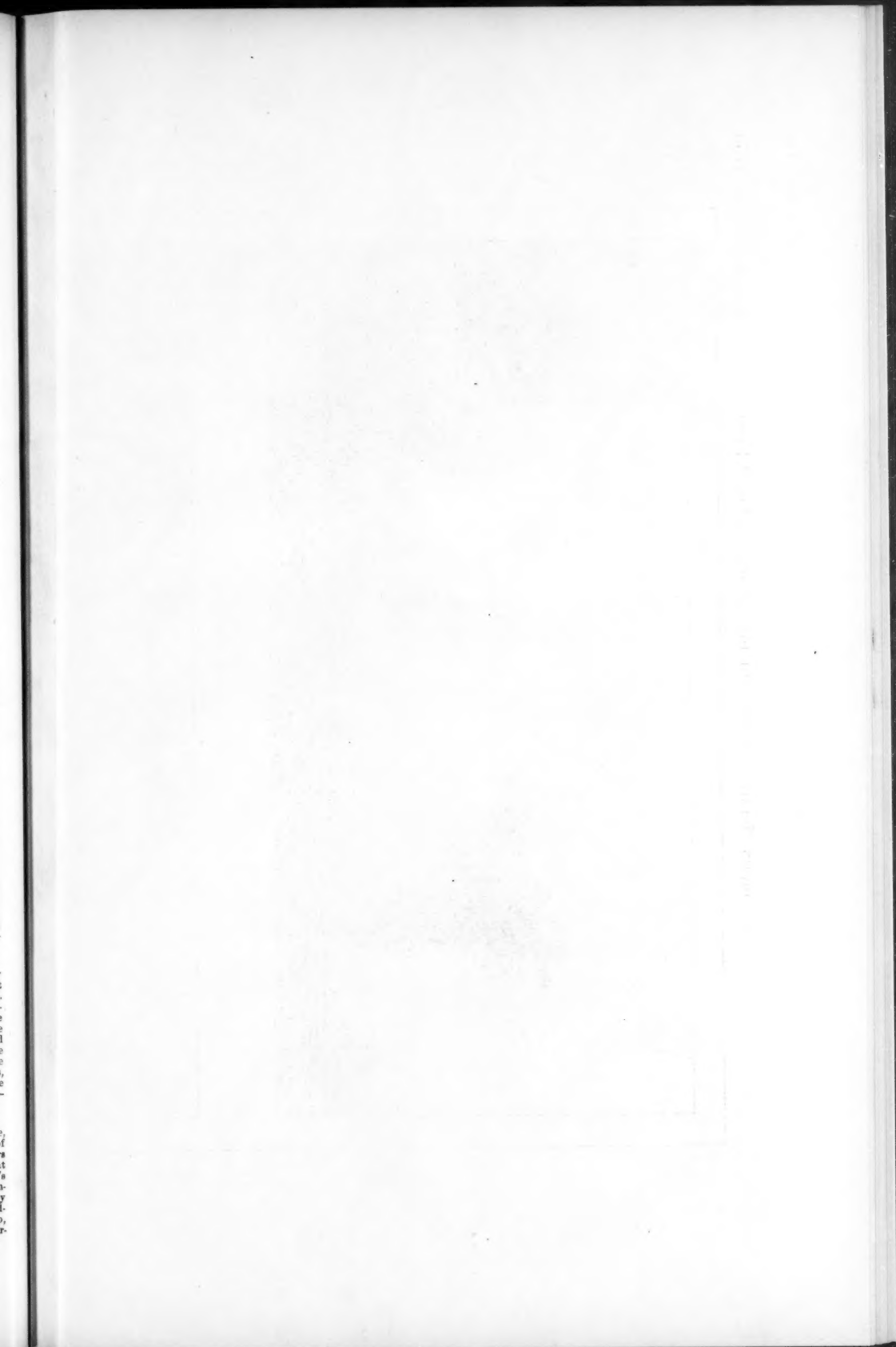
In oil painting it suffices to mention the names of Munkácsy Benczur for portraits and Charles Markó for landscapes. The art of engraving has also several eminent representatives. Sculpture has not as yet attained a very high standard, but architecture is in a flourishing condition. There is indeed a whole generation of sculptors in the service of Hungarian art, and the capital already possesses a series of monumental effigies of martyrs, patriots, archdukes, statesmen, poets, etc., and the King has announced that it is his intention to present ten new statues of former Hungarian celebrities to the city. As a really modern town, Buda-Pesth causes astonishment and admiration by the great quantity of fine public buildings which it contains, and a numerous band of architects find occupation owing to the surprisingly rapid development of the capital. There is no attempt made at uniformity of style or design, but the results are successful in diverse directions, and generally pleasing to the eye. The new Houses of Parliament, by Strindl, now approaching completion, are particularly worthy of notice. Industrial art education is provided for by several institutions, such as the Public Industrial Art School at Buda-Pesth, and the Royal Hungarian Art Industry School, the Technological Museum and the Industrial Art Museum. In the production of porcelain and majolica success has always been gained, and in every branch of industrial art there is a good prospect of future prosperity. — *Journal of the Society of Arts*.

THE MASSACHUSETTS STATE-HOUSE. — In his inaugural address Governor Wolcott spoke as follows of the restoration of Bulfinch's famous building: The work of preserving, restoring and rendering practically fireproof the so-called Bulfinch State-house, provided for by Chapter 531, Acts of 1896, for which the sum of \$375,000 was therein appropriated, is substantially completed. From this appropriation, for purposes not originally intended to be included therein, there will have been expended in furnishing the sum of about \$75,000, and in rebuilding in granite the front terrace and steps, and in reconstructing the terrace wall on Mt. Vernon Street, the further sum of about \$36,000. In spite of these large additional expenditures, it is expected that a substantial part of the original appropriation will remain unexpended. In my judgment, this work, decreed by the Legislature of 1896, has fully justified itself, not only as an example of wise economy but also as preserving for future generations an historic structure valued by the people of the Commonwealth because of its associations and because of its architectural interest. The Governor and Council are now occupying their former rooms, in the westerly portion of the front, and the former chamber of the House of Representatives affords spacious and dignified quarters for the Senate. The old Senate chamber, in all its original beauty of form and dimensions, remains at the disposal of the Senate, and additional space has been assigned to the speaker and to the clerk of the House of Representatives. It is an interesting historical fact, which your honorable bodies may deem worthy of commemorative notice, that the State Government thus resumes the occupancy of this stately building in the month which marks the lapse of a century from its first use as the State-house of the Commonwealth of Massachusetts. The quarters in Memorial Hall, provided for the temporary occupancy of the Senate, having been released from this use, work upon Memorial Hall will now be continued as rapidly as a due regard to its importance and character will permit.

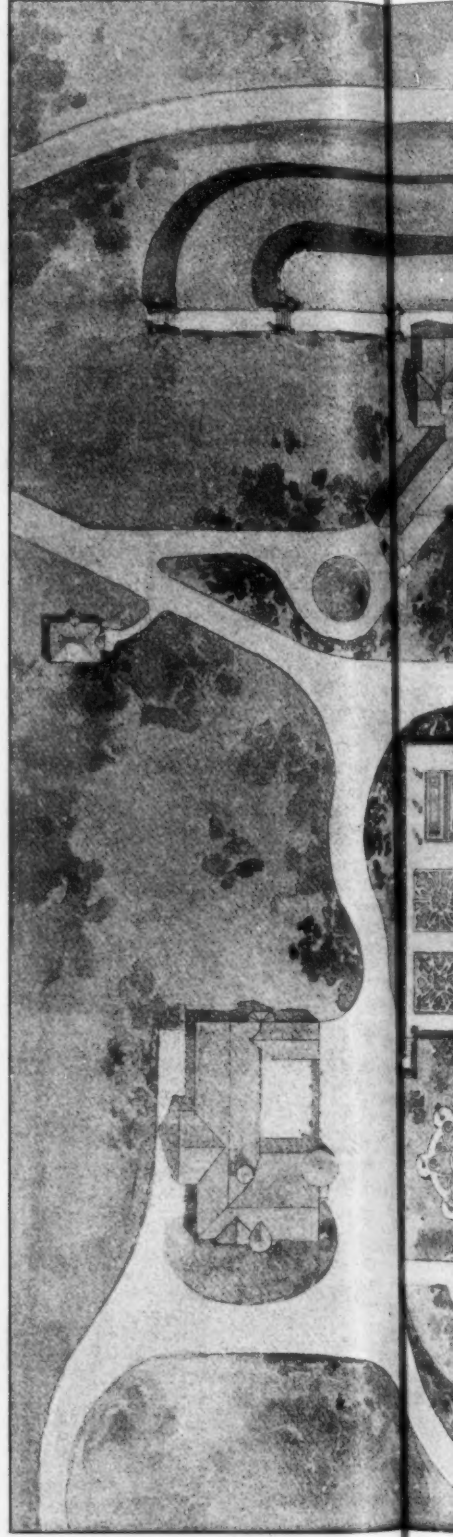
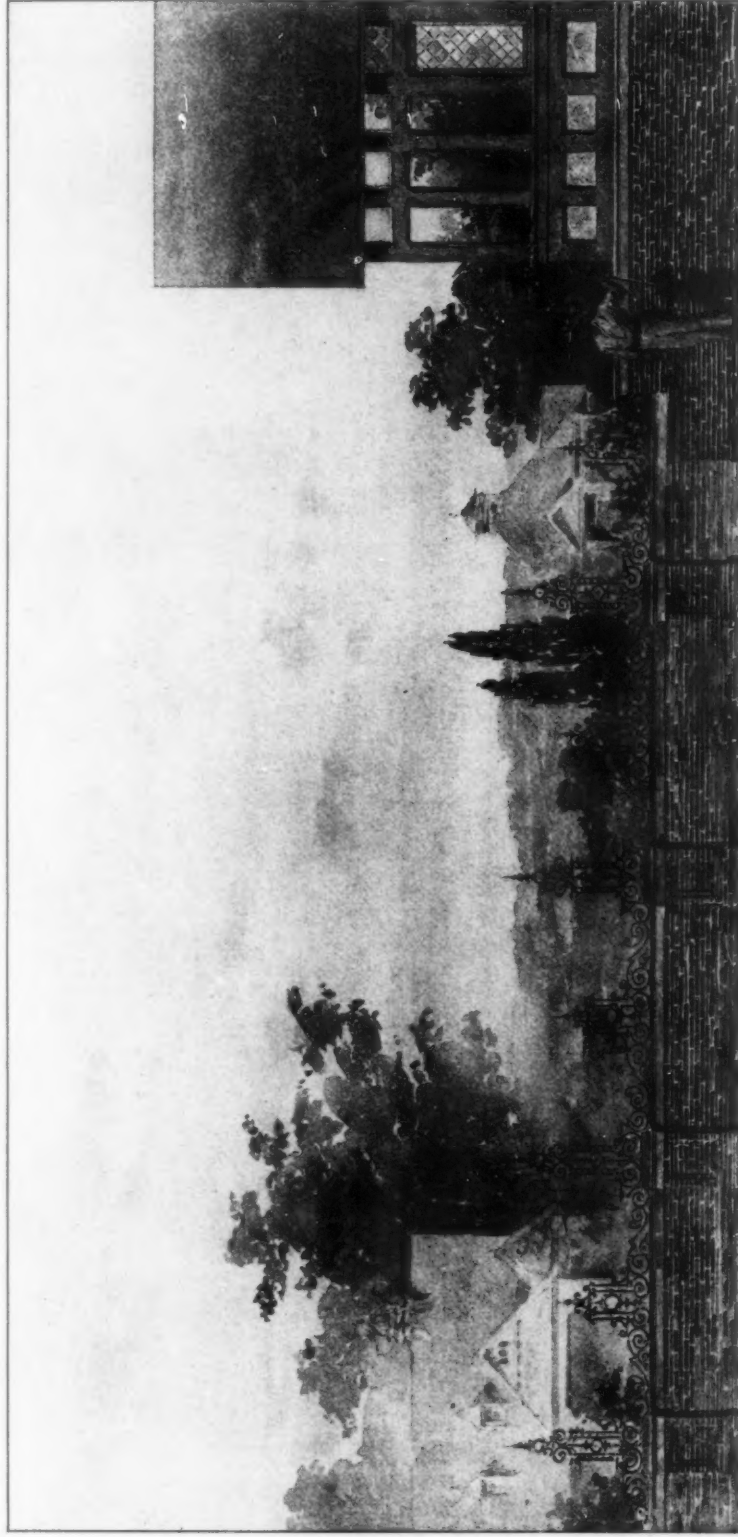
MODERN CATS IN AN ANCIENT HOME. — The Forum of Augustus is the cats' home of Rome. There the superfluous felines are dropped over the wall to join their numerous fellows in the Forum below. Every day charitable people throw scraps of food into this open prison, and, as seen from above, its inhabitants seem to be plump and happy — so happy, indeed, that they make no attempt to escape. A few years ago the Forum of Trajan was also used as a depositing-place for cats which were not wanted, but as it does not present the same facilities of retreat and hiding as the Forum of Augustus, street boys and others took every opportunity of stoning the unfortunate animals. Finally, the authorities, after many complaints, refused to allow any more cats to be thrown there, and, in order to get rid of those already living in the Forum, presented one to each sentry-box on the walls of the city. They all, however, speedily disappeared from their new homes, some returning to the foot of Trajan's Column, where they were either killed by the street boys or transferred to the Forum of Augustus. — *Philadelphia Telegraph*.

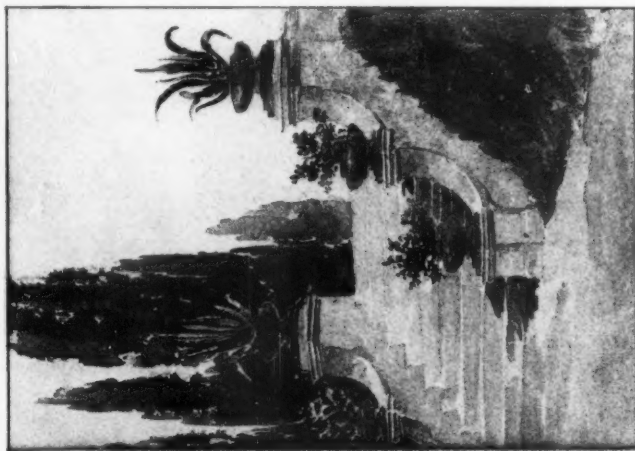
WESTMINSTER ABBEY BURIAL-FEES. — Burial in Westminster Abbey is not, of course, a question of money, but there are, a correspondent states, certain fees charged for interment within that ancient pile. Formerly the fees amounted to £150 or £160. Dean Stanley introduced many reforms in the scale of charges, with the result that the maximum cost is now £111 4s. 2d. It may, however, be £20 less. The variations in cost arise in connection with the contribution demanded for the fabric fund, which is £26, £36, or £46, according to the place of interment. Other items in the bill are £34 2s. 2d. for fees to the dean, cannons, choir, and vergers, and £31 2s. on account of silk scarfs, hatbands, and gloves to the clergy, choir, and vergers, which were formerly provided by the undertaker and charged for his account. — *Westminster Gazette*.

ARC DE TRIOMPHE AGAIN IN DISREPAIR. — The Arc de Triomphe, in Paris, having only recently emerged from its swaddling clothes of scaffolding, is now pronounced to be in imminent danger. It appears that when the scaffolding, which had become so familiar an object that no one ever expected it to be removed, was taken down for the Czar's visit several ominous fissures and slips were discovered. A careful inspection reveals an alarming condition of affairs, for which the remedy is problematical. There seems to be no monument of perennial solidity in Paris. The historic Pont Neuf has been tied and bolstered up, and the Tour Eiffel is said to "breathe," or wave backward and forward. — *N. Y. Tribune*.



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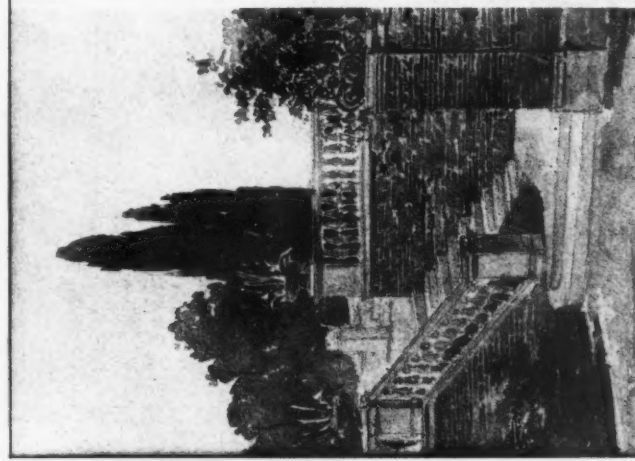
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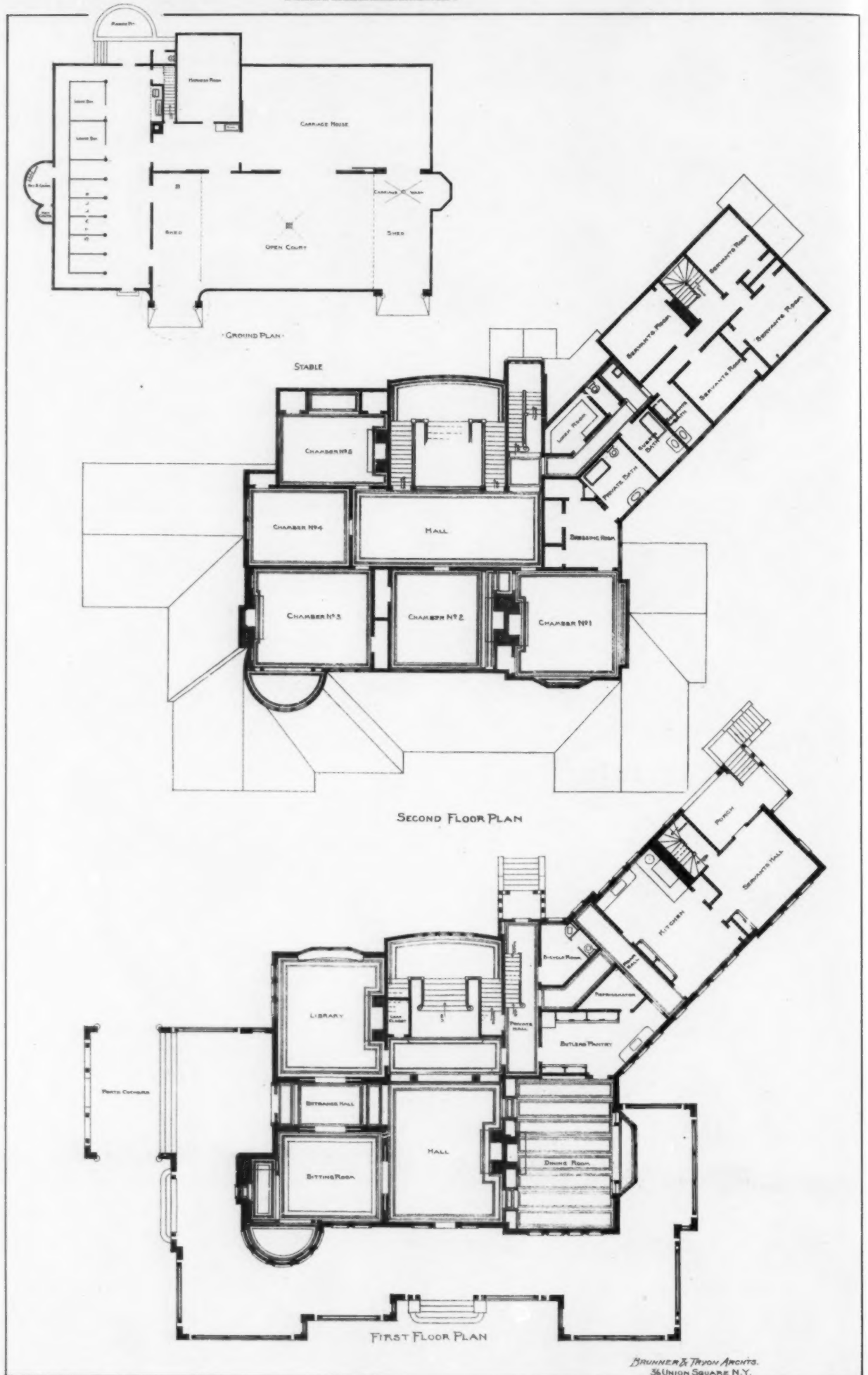
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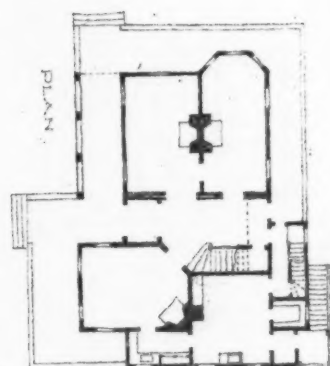
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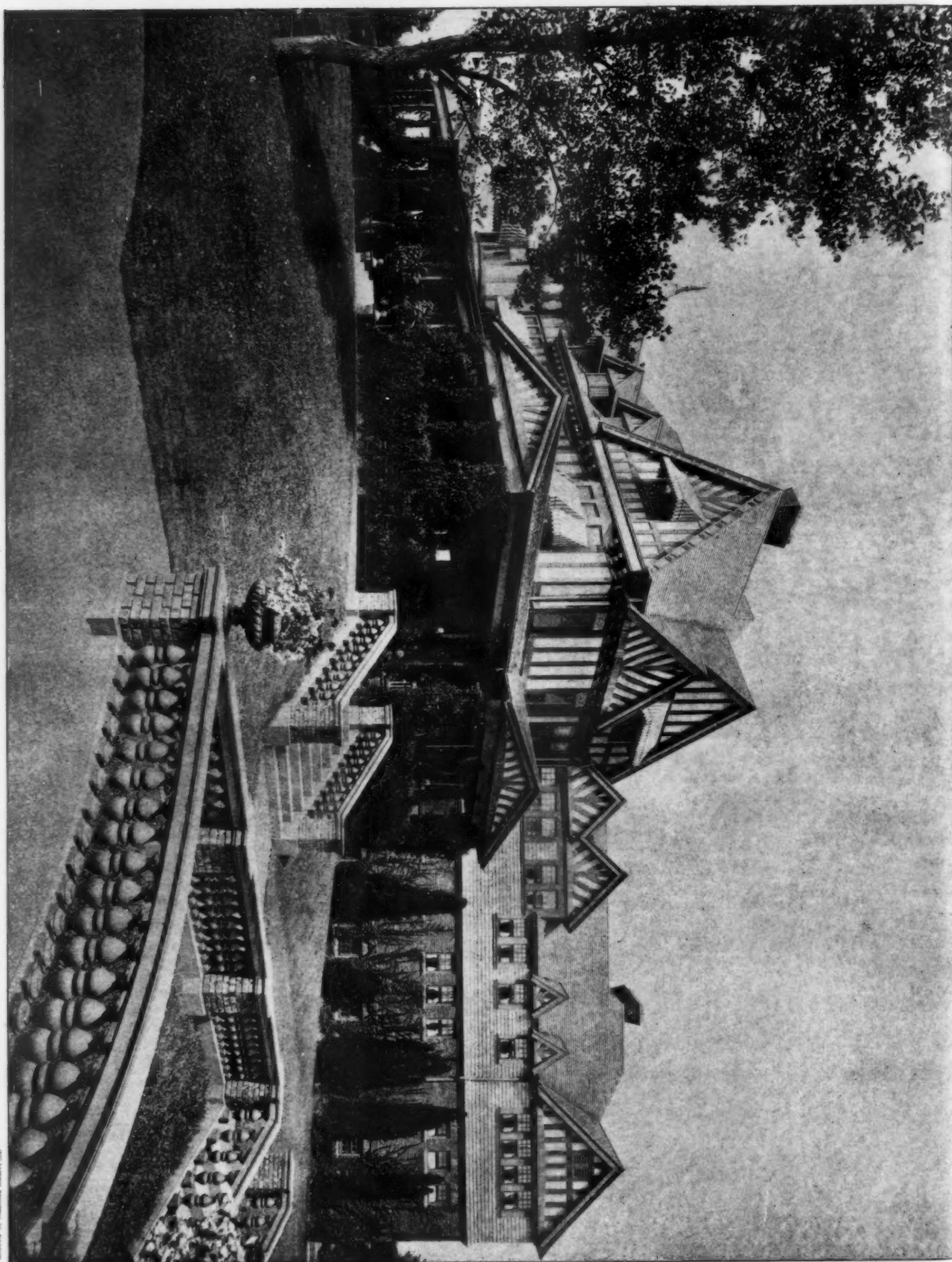
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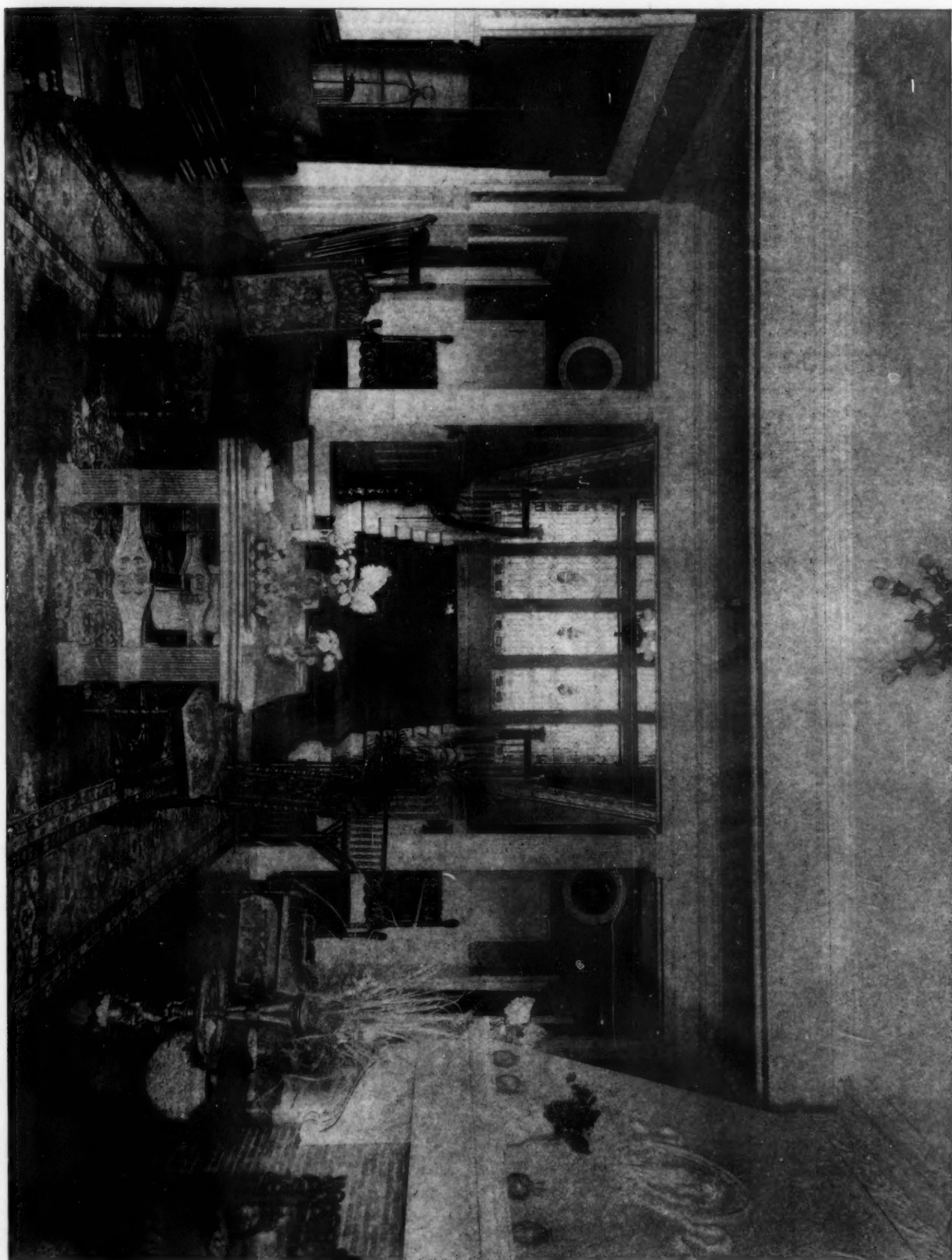
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