

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XV.

Copyright, 1884, JAMES R. OSGOOD & Co., Boston, Mass.

No. 426.

FEBRUARY 23, 1884.

Entered at the Post-Office at Boston as second-class matter.

CONTENTS.

SUMMARY:—

A Novel Plan of Payment for Contract Work.—Paying with the Aid of a Priced Schedule.—A Cremation Society formed in Boston.—Inspecting Philadelphia School-Houses.—A Material-man Sues an Owner and Recovers.	85
THE METROPOLITAN OPERA-HOUSE, NEW YORK.—II.	86
THE ILLUSTRATIONS:—	
Roof of the Metropolitan Opera-House, New York, N. Y.—	
Roof of the Eden Theatre, Paris, France.—Proposed Hotel, Manitou, Colo.—The "Aubry," Boston, Mass.—House at Holyoke, Mass.	89
ANCIENT MARBLES IN GREAT BRITAIN.—II.	89
THE DECORATION OF CLOCKS.	92
COMMUNICATIONS:—	
The Toledo Lunatic Asylum Contracts.—An Unprofessional Circular.	93
NOTES AND CLIPPINGS.	93

THE New York *Tribune* mentions a singular plan of making payments for important work under contract, which has been adopted under the agreements for the construction of the new Mutual Life Insurance Company's Building in New York. According to the mode of payment pursued under these agreements, each contractor renders every month a sworn statement of the cost of materials used by him, and the amount which he has paid for wages. The money thus expended is then reimbursed to him, together with interest, and a fixed percentage, ranging from eight per cent upward, as his commission, or recognized profit. By this method, as those interested in the plan claim, efficient work is secured at less than the market rates, the contractor's interest is engaged to furnish material rather better than worse in quality than that called for by the specifications, and, as the *Scientific American* adds, "unless there be collusion between the contractor and seller, the bills represent the actual value of the materials." We have no reason for doubting that the contractors for the Mutual Life Building make out their accounts with perfect honesty, but the innocent fancy of the editor of the *Scientific American*, that the face of bills for builders' materials always indicates the cost of those materials, is rather amusing. To say nothing of the infamous system of collusion by which plumbers and the dealers from whom they buy most of their materials conspire to defraud those who trust them, the tangle of discounts, long prices and short prices, "protection to the trade," and the other devices for intentional deception which surround the purchase and sale of building materials in general is so inextricable that the most honest contractor might find some trouble, we should imagine, in attesting the exact sum which paid his bills, and even if he succeeded in preserving a strict regard for truth, he would be very likely, if we may judge from the expressions which we find in some of the trade journals, to find himself exposed to the serious displeasure of his less scrupulous fellow-contractors, who would not care to see what they are pleased to call the private affairs of their trade thus exposed to the eyes of their customers.

THE best of all ways for conducting such important works is unquestionably that by which each contractor furnishes with his estimate a schedule of the quantities and prices which make up the total of the estimate. In this way the proprietor really gets the benefit of all the discounts which the contractor can secure, since the latter, in order to compete with his rivals, must get his materials at the lowest rate he can, and is likely to include them at the same rate in his schedule; and at any time during the progress of the building the amount due the contractor is easily shown by measuring the amount of each kind of work done, and multiplying this by the schedule price, deducting from the result the reserved percentage which may have been agreed upon. This detailed estimate permits also additions or deduction at fair prices, the usual rule being to allow the contractor, as compensation for his trouble in changing his arrangements, about five per cent above the schedule prices for work added or omitted. The payment by schedule has, moreover, the advantage of permitting a definite, and, if necessary, a graduated reservation to be made in the payments until the completion of the building, while under the

Mutual Life plan, if it is correctly described, any contractor who saw a prospect of more than eight per cent profit elsewhere might, on receiving his month's pay, desert his work, to the great annoyance and loss of the proprietor.

A MEETING was held in Boston, some days ago, to take measures for organizing a "cremation society," which is to proceed forthwith to the collection of funds for building a crematory similar to that constructed by the eccentric Dr. Lemoyne at Washington, Pennsylvania, a few years ago. The enthusiasm of the meeting seems to have run a little ahead of its grammar, and we find among its by-laws a resolution which recites that "To aid in carrying out the objects of the society, there shall be established an incineration fund, to which all subscribers of one dollar and fifty cents-per year, or of twelve dollars in one payment, shall be entitled to cremation at the expense of the society as soon as the society has the necessary appliances." There is some difficulty in fitting the subjects to the verbs in all this, but the sense appears to be that as soon as the "crematory" of the association is built, all the subscribers are to be incontinently incinerated, "to aid in carrying out the objects of the society." By Article Twelve of the by-laws we find, however, that a vote of three-fourths of the members present at any meeting will be competent to alter the rules, and we trust that before the furnace is prepared an amendment may be adopted, providing for a slight respite to unwilling victims. A site has already been selected for the buildings of the society, and it is probable that the enterprise will be actually carried out.

THE pleasant city of Philadelphia is, it seems, about as far behind the age in respect to the construction of school-buildings as most of the other large towns on the Atlantic sea-board. According to the Superintendent of the Board of Education, ninety-five per cent of the rooms in the city schools are imperfectly or improperly lighted, the children being either compelled to strain their eyes by trying to study in a dim light, or dazzled and blinded by being seated with their faces toward the windows. Another officer of the Board has examined the schools with regard to ventilation, visiting seventy-six rooms. In four of these an attempt had been made to supply fresh warmed air in winter, but the remaining seventy-two were completely destitute of any means for furnishing pure air except through open doors or windows. In accordance with the usual official idea of ventilation twenty outlet-shafts had been distributed among the rooms, but as no air came into most of these, of course none could get out, even if the ventilating registers were in the proper place; but in eleven out of the twenty "ventilated" rooms the outlet registers were in the floor, and filled with dirt, which would have effectually prevented the passage of the current, even if any air had so far reversed its natural tendency as to be disposed to dive into them. As with most of the other details of construction, the position of the black-boards was the worst that could be devised, many of them being hung directly between the windows, where the use of them would ruin the strongest sight.

A CASE of some importance to the proprietors of new buildings has just been decided in England. A certain firm of brick-makers delivered bricks to a mason, who was building a row of houses under contract. The contractor was in financial straits, and the brick-makers, learning this after sending their first freight of bricks, refused to send a second unless payment for it were guaranteed them. The contractor thereupon wrote to the owner, requesting him to pay for the bricks, and deduct the cost from the money to be paid him on his contract. The brick-makers were informed of this, and sent the bricks, at the same time calling the proprietor's attention to the contractor's letter. No answer was received, and soon afterward the contractor failed, and the balance due under the contract, about twelve hundred and fifty dollars, was paid to the assignee. The brick-makers then sued the owner for the amount of the bill which the contractor had requested and authorized him to pay on his account. The defence, which was a very lame one, rested on the assertion of the owner that he had not received the letters; but the jury was convinced by the evidence that he had received them, and judgment was given in favor of the brick-makers for the full amount claimed, with costs.

THE METROPOLITAN OPERA-HOUSE, NEW YORK.—II.¹

From the Metropolitan Opera-House.

TWO distinct methods of building large interiors for lyric theatres have recommended themselves to architects, and, though constantly modified, of course, may yet be said to divide the great houses of the world between them. One, which is the usual Italian manner, consists in keeping the auditorium as free from "features" as possible, in leaving its walls to support, actually and apparently also, the weight of the roof, and in sweeping the rows of boxes and galleries around it with as little interruption of their lines as may be. The other, the French plan, followed in both the old and the new Paris houses, makes of the columns which frame the proscenium not only a decorative but a constructive feature, matching them by other corresponding groups toward the back of the auditorium, and spanning across four great arches to support the roof, and give structural unity to the whole. In the great theatre at Bordeaux we have not only these four groups, but other columns introduced at intervals, all supporting a deep entablature from which the vaulting rises. There is much to be said in defence of both methods of construction. The French is certainly more imposing, more architectural, but the columns inevitably interfere with the view from many places, and it is difficult, especially when more than the four main groups are introduced, to bring the middle rows of boxes into harmony with them. The Italian plan, on the other hand, permits greater freedom of sight and more ample accommodation, and while constructively less admirable in some ways, is yet more logical in others, bringing the box tiers into greater prominence (these being after all the true features of a theatre), and leaving their sweep to tell its story in unbroken and possibly most beautiful lines.

But it was not possible for Mr. Cady even to weigh the respective merits of the two methods. The demands which he had to answer positively prescribed the Italian form. La Scala, at Milan, is the most perfect exemplification of this system, and to La Scala his house bears more resemblance than to any other. In the former the sweep is entirely unbroken, even by the royal box so often introduced in Europe at the centre of the curve, and the proscenium boxes are very small. But these and their framing columns do exist, and when they were forbidden, the problem that presented itself to the American architect gained new and difficult factors, not only as to the architectural disposition of his proscenium, but as to the curve of his balconies. These had to be carried directly up to the proscenium, and none of the carefully-calculated curves of former builders could be adopted without essential modifications. Of course the nature of these curves is the most important point to which attention must be paid, not only for architectural effect, but chiefly with regard to the seeing and hearing possibilities of the audience. With all the study that has been given it, the science of acoustics is still a but half-understood thing, and a builder's results, in spite of all possible care, are still largely a matter of chance. This fact Garnier insisted upon from the first, and modestly reiterated when his auditorium had been proved so marvellously successful in acoustic qualities. With regard to seeing, the matter is a little different. Patience and close calculation here serve a better purpose. No architect had been forced to give its claims such prominence as was forced upon Mr. Cady, and, so far as I can judge after seeing most of the houses of the Old World, no one who has built a house with closed boxes has achieved so successful a result. It is humanly impossible, of course, to build any amphitheatre in which the deeply-recessed stage of modern times shall be as perfectly seen from the side as from the middle of the circle. This fact is forgotten by some of Mr. Cady's critics, who, accustomed to the so different plan of the Academy of Music, — which, whatever its architectural faults, is certainly the best house for seeing in the world — and forgetting, also, that the ends of Mr. Cady's tiers run much closer to the stage than do those in any other house whatever, are foolishly disappointed that there should be a single seat in either box or gallery whence the whole of the stage may not be comfortably seen. If they could try the boxes in the new Vienna house, for example, where even a short distance from the middle of the circle only two persons can see at all, they would realize what Mr. Cady has accomplished, though something of the difference

is owing, of course, to the fact that his boxes are not completely enclosed on their sides. From most of them the view is absolutely perfect; in all of them four persons, in almost all five, can see with ease, and even in the worst the sixth seat is much better than the third seat at Vienna. To the galleries the same praise may be given, although, I repeat, they run around so very far toward the proscenium. As to the acoustic properties of the building, opinion is still a little divided. It is difficult to judge immediately of such a matter, when one is used to a much smaller house, when the singers' powers are still unfamiliar, when the qualities of a new orchestra and a new chorus are not understood, and when the musicians themselves, both vocal and instrumental, are afraid of the strange building and unaware of its possibilities and demands. The first night the singers evidently overlooked the fact that the stage was very much wider and deeper, and so more difficult to fill, than those to which they had been accustomed, and did not keep as near as they should have done to the footlights. Since then they have taken their cue with results much more satisfactory. But in spite of all due deference to the decisions which longer experience may give, it is not too soon to say that in this matter, also, Mr. Cady has been successful. It is wonderful, taking all the drawbacks mentioned into consideration, that the popular verdict on the first night should have been so favorable as it was; for, with all their boasted liberality and love of novelty, no people are more conventional in their judgments and more attached to things familiar, simply because of their familiarity, than are New Yorkers. The house was held to have been built by a clique, opposed to the management of the old Academy, dear to the heart of the city for so many years. Many of the hearers were distinctly malcontents in advance, and it may safely be said that the whole audience was in a critical, rather than in an appreciative or congratulatory mood. That so few points were found to which exception could be taken was therefore all the greater triumph for the architect. I heard no complaints of difficulty in hearing save from one or two occupants of boxes just at the inward slope of the curve, to which I shall again refer, whither the sound-waves might naturally not reach so directly as to the others. And the daily papers which we can most safely trust either praised the acoustic properties or laid any deficiency to the fault of the unaccustomed singers.

Seeing that every inch of the house is of solid materials, it was necessary to build the tiers with the greatest exactness, no alterations being possible in the future. The number of diagrams drawn in Mr. Cady's office to test the seeing qualities of each place, and the number of delicate calculations made, show that success was earned by the utmost skill and patience possible.

I have already referred to the size of the house, and it is indeed enormous — larger even than La Scala, hitherto the largest. The auditorium of the latter measures 85' 6" x 87' 9"; of the Grand Opera, in Paris, 79' x 81'; while that of the Metropolitan is 85' 8" x 95' 6". The stage is 90' x 101', and 150' from top to bottom. The seating capacity is three thousand five hundred, a little more than that of La Scala, and nearly one thousand in excess of the new Paris house. Six hundred of these seats are in the parquet, a very large number when we remember that each place is in reality a comfortably wide chair with arms, of which the seat is not movable, plenty of space being left between the rows to permit egress and ingress without disturbing their occupants. The parquet slopes at a considerable angle, thus giving good sight to those in the rear. Where the depression of its floor is sufficient toward the front, "baignoir" boxes are introduced on its level, six on either hand. Above these come three complete rows of boxes, above these again the balcony, and above this the gallery, the seating accommodations of which are largely increased by its being carried up and outward in the centre of the sweep, over the well of the main staircase.

The first thing that strikes one, of course, on entering the auditorium, is the novel look of the proscenium. At either extremity of the front line of the stage rises a broad pilaster of slight projection, against which the ends of the tiers abut. Behind these the proscenium is played back at a gentle angle to the curtain-opening, which is framed by smaller pilasters. The cornice which starts from the outer ones rests on these also, and is carried straight across the opening. This abandonment of the conventional arch-shape of the opening seems to me very fortunate; it has been approved in the much smaller stage of the Madison Square Theatre and also in Wagner's great building at Bayreuth. It does away to a large extent with the necessity for that unmotivated drapery which is usually hung in the head of the arch above the scenery, and frames the stage more as a picture is framed. The large outer pilasters carry an attic range of moderate elevation, upon which rests the great girder that supports the front wall of the stage above the roof of the auditorium. The stage-frame proper is thus not only below this by the height of the attic pilasters, but is carried back some distance behind it by the recession of the sides of the proscenium between the two sets of pilasters. The field thus afforded, of which the curtain-opening forms the base, bears, naturally, the chief decorative features of the house, and Mr. Cady has shown no little ability in setting them so well, and especially in boldly introducing so practical a feature as the huge girder and managing that it should greatly aid not only the constructive but also the decorative effect of the proscenium. The architectural details through all this part of the work are necessarily elaborate, since the material might nowhere be exposed, but are kept in very low relief and composed of delicate features. Above the cornice comes the main field, with a segmental space in the centre occupied

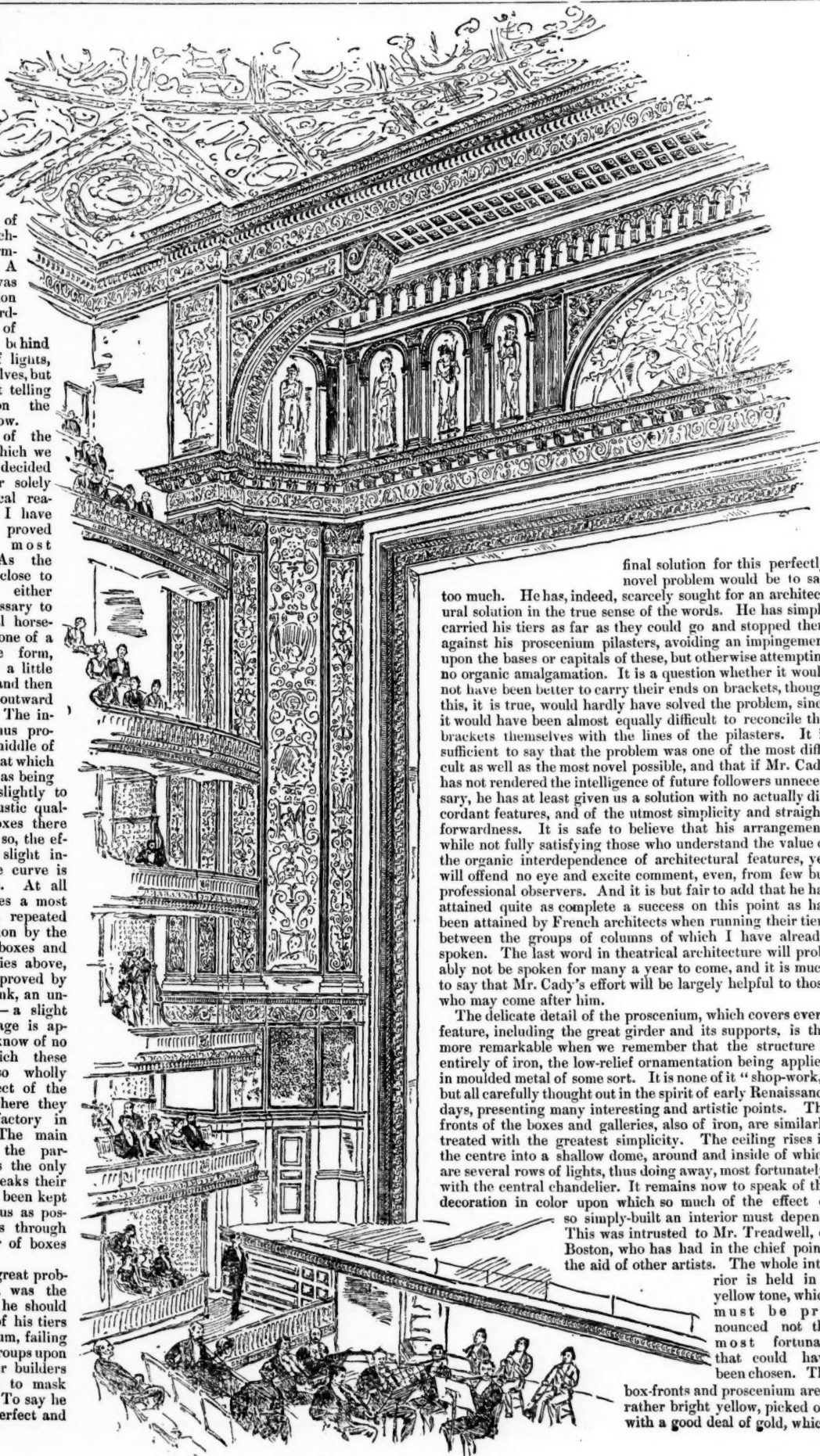
¹ Continued from page 77, No. 425.

by a picture by Mr. Lathrop, and on either hand three niches for statuary, with a fourth in the advancing splay of the side.

Above these runs a blank arcade of small, round arches, very charmingly designed. A fortunate idea was the introduction between the girder and the top of the proscenium behind it, of a row of lights, invisible themselves, but casting a most telling illumination on the decorations below.

The slope of the tiers of seats which we must suppose decided upon chiefly or solely for the practical reasons to which I have referred, has proved architecturally most admirable. As the tiers come so close to the stage at either end, it is necessary to alter the usual horse-shoe line into one of a more lyre-like form, sloping inward a little on either side, and then again a little outward near the end. The inward curve thus produced in the middle of either side is that which I have noticed as being said by some slightly to affect the acoustic qualities of the boxes there placed; but if so, the effect must be slight indeed, since the curve is so very gentle. At all events it makes a most beautiful line, repeated without variation by the three tiers of boxes and the two galleries above, and further improved by what is, I think, an unusual feature—a slight dip as the stage is approached. I know of no house in which these main lines so wholly make the effect of the interior, or where they are so satisfactory in themselves. The main entrance to the parqu岸, which is the only feature that breaks their continuity, has been kept as inconspicuous as possible, and cuts through the lowest tier of boxes only.

Mr. Cady's great problem, however, was the way in which he should join the ends of his tiers to his proscenium, failing the columnar groups upon which all other builders had depended to mask the juncture. To say he has found a perfect and



final solution for this perfectly novel problem would be to say too much. He has, indeed, scarcely sought for an architectural solution in the true sense of the words. He has simply carried his tiers as far as they could go and stopped them against his proscenium pilasters, avoiding an impingement upon the bases or capitals of these, but otherwise attempting no organic amalgamation. It is a question whether it would not have been better to carry their ends on brackets, though this, it is true, would hardly have solved the problem, since it would have been almost equally difficult to reconcile the brackets themselves with the lines of the pilasters. It is sufficient to say that the problem was one of the most difficult as well as the most novel possible, and that if Mr. Cady has not rendered the intelligence of future followers unnecessary, he has at least given us a solution with no actually discordant features, and of the utmost simplicity and straightforwardness. It is safe to believe that his arrangement, while not fully satisfying those who understand the value of the organic interdependence of architectural features, yet will offend no eye and excite comment, even, from few but professional observers. And it is but fair to add that he has attained quite as complete a success on this point as has been attained by French architects when running their tiers between the groups of columns of which I have already spoken. The last word in theatrical architecture will probably not be spoken for many a year to come, and it is much to say that Mr. Cady's effort will be largely helpful to those who may come after him.

The delicate detail of the proscenium, which covers every feature, including the great girder and its supports, is the more remarkable when we remember that the structure is entirely of iron, the low-relief ornamentation being applied in moulded metal of some sort. It is none of it "shop-work," but all carefully thought out in the spirit of early Renaissance days, presenting many interesting and artistic points. The fronts of the boxes and galleries, also of iron, are similarly treated with the greatest simplicity. The ceiling rises in the centre into a shallow dome, around and inside of which are several rows of lights, thus doing away, most fortunately, with the central chandelier. It remains now to speak of the decoration in color upon which so much of the effect of so simply-built an interior must depend. This was intrusted to Mr. Treadwell, of Boston, who has had in the chief points the aid of other artists. The whole interior is held in a

yellow tone, which must be pronounced not the most fortunate that could have been chosen. The

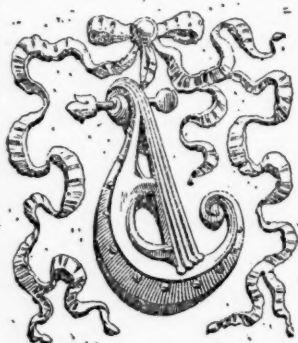
box-fronts and proscenium are a rather bright yellow, picked out with a good deal of gold, which,

however, is so nearly of the same value that it does not give as much accent as might be desired. The walls are of a deep pinkish-orange, and the boxes are lined and their partitions covered with silk in yellow and dull red, the colors amalgamating at a distance into an almost unbroken tone. The general effect as one enters is undeniably festive and brilliant; but the prime end of such decoration is to supply a good background for the audience, and the tone is either too light or too dark for that purpose. We all know the good effect of the deep red traditionally used for theatrical interiors, and a paler house than this would have afforded a contrast at the other end of the scale, while the color Mr. Treadwell has chosen is neither to be called dark nor pale. One virtue the decoration has: it is extremely quiet, refined, and even elegant. This is indeed a virtue in



Proscenium Ornamentation.

these days when nothing is more needed in any place than a protest against the tawdriness, the restlessness, the over-elaboration running into distinct vulgarity, of so much decorative work. Nothing is obtrusive, everything holds well together, and if the decorator, in his desire to avoid loudness, has fallen into over-delicacy and even monotony, one can yet not doubt that his work will have a good effect. Audiences may at first fail to appreciate the reserve and delicacy with which Mr. Cady himself has worked, but after some acquaintance with his house it is easy to predict that they will for the first time see the contrary sins of most others. That Mr. Treadwell's work is as good as his I would not say, or that a more fortunate tone and a little more accentuation in color of the moulded detail would not have shown its excellence more clearly; still, as a whole, we have more to congratulate ourselves upon, even in the decoration, than to complain of. The tone of the house can be easily altered in future if so desired, while Mr. Cady has made it impossible for any decorator to vulgarize or over-accentuate the structure. The ceiling is, I think, the decorator's weakest point. It is of a dull blue, with arabesques in yellow and gold medallions scattered about, which, instead of containing the most important decorative work, are simply metallized and give the whole a rather spotty look. The interior of the dome is better, the pattern chosen being really very delicate and charming. But so immense an expanse of ceiling might well have received a treatment of a more important and intellectual sort. The statuary in the eight niches above the proscenium, and beneath and behind the great girder, is introduced simply for decorative purposes, to break with its arches and its contrasting white color the monotony of the wall, and it answers this end sufficiently well. The figures were modelled by a German artist, I believe, and represent eight of the Muses (one being by structural necessity left out in the cold). They are distinct and not ungraceful in their outlines. Mr. Lathrop's central panel is extremely good, the background being blue and the other tones repeating with sufficient emphasis the main colors of the decoration. The design was entirely altered from that at first made and published, and now shows but three figures, a large Apollo with a lyre in the centre, and a smaller reclining figure at either side. It is strongly and gracefully drawn, and the best piece of work of the kind by far that we have as yet in any theatre—a most successful central point for the eye to rest upon. On either side of the main wall above the topmost gallery is a well-designed figure by Mr. Maynard, one representing The Dance and the other Song. It is a pity, however, that to Mr. Lathrop or Mr. Maynard was not given the decoration of the narrow, tall proscenium-fields which form the ends of the stage, slanting forward from the curtain-opening to the outer pilasters. The artist who decorated these placed seven little medallions containing half-figures playing on musical instruments on either side. The figures are nice in themselves, but not of sufficient dignity for their place, and their excessive number cuts up the space too much. The effect is rather trivial, and, it seems to me, would have been better had these fields been both more simply and more strongly treated. The curtain was embroidered by the Messrs. Kursheedt, and consists of a field of dull blue plush, gathered in close folds at about sixteen feet from the bottom into a wide, delicately-embroidered band. The color effect should be good, when not spoiled as it was the first night by the fact that the scene-painters had introduced above it a sort of lambrequin-like drapery, the tone of which killed that of the curtain. It is a question, however, whether a loosely flowing curtain, draped back as at Bayreuth, if possible, instead of pulled up



Proscenium Ornamentation.

and down, would not have been preferable to this, which is somewhat stiff in effect, though an immense improvement, of course, upon the painted ones to which we have been accustomed.

The boxes are divided from each other by partial partitions and not entirely enclosed. These screens have an iron framework with panels of silk, and are, I think, less successful in outline than Mr. Cady's other features. Behind each box is a small parlor opening on the corridor. This affords, of course, added opportunities of accommodation, since through its doorway a good view of the stage may be had, and is further useful in isolating the occupants of the box proper from all external noises.

Besides the main staircase there are two small ones leading from the side entrances to the boxes, and separate large ones, two each, for the upper galleries.

These last are isolated from the rest of the house and enclosed in brick wells. The ventilating system¹ of the house has been very carefully attended to, and though I cannot speak of its details here, I may mention its results. To say that one could be in a house with 3,500 people from eight o'clock till one and never think of the atmosphere at all, is to say all that is necessary. I may add, however, that a thermometer at the very top of the house showed only 76° after several hours of the performance had passed, although the night was not a cool one out of doors. The well at the top of the dome is arranged as an exhaust to draw off foul air, and the foot-lights, etc., are thoroughly ventilated. Wires are laid by which the house may in future be lighted by electricity, though electric lighting has not yet been introduced into that part of the city. The immense stage roof, supported by its very tall unbroken walls, necessitates a span in its iron beams of over one hundred feet. These are mounted on rollers to allow of expansion and contraction, and the roofs are all of iron and masonry, the slates being fastened to the masonry blocks. The same fire-proof methods of construction have been carried out as far as may be with the stage itself. The supports beneath this are not of wood as has hitherto always been the case, but of iron, ingeniously constructed so that any portion may be removed at pleasure and replaced without delay. A work that has always been clumsily done by the carpenter is here performed by the mere unscrewing of these supports, which are, moreover, arranged in three superimposed stories, descending to a depth of thirty feet, so that any section of the stage, large or small, may readily be sunk to either of three given levels within this limit. Above the rigging-loft is an immense water-tank and beneath this a network of pipes pierced with innumerable openings which are closed by easily fusible solder. It is expected that even a slight fire on the stage would melt this and produce a drenching rain. The boxes are carried on iron beams, bent to the steps in their floors, and anchored in the walls behind. As the shape and angle of each box varies slightly from every other, the shaping of these beams was a work of the nicest calculation and greatest patience, necessitating, I am told, the erection of a special workshop for its accomplishment.

It is not too much to say, I think, that mechanically the work has been carried through from end to end with the utmost skill and conscientiousness, and results in a building as stable and as fire-proof as is possible to modern skill. To remember that to this excellence is joined so high a degree of artistic success, especially when the problem presented so many absolutely novel features, is to give the architect praise of a high kind. His interior is not as beautiful as it might have been made with more precious materials than iron and cement, or as the wider application of decorative talent in its higher pictorial phases might have left it. But architecturally it is a fine creation, imposing not alone by its size but by its dignity, simplicity, and intelligent adaptation to its ends. And if on the exterior we miss the grandeur and beauty which must belong to a building ere it can be called truly monumental, we have a scholarly, quiet, eminently respectable piece of work, in thankful contrast to such showy, erratic and mistaken buildings as, for example, the *Casino* which stands just across the street. With a better site and unhampered by the necessity of combining other buildings with his theatre, Mr. Cady might have given us something finer; but as it is we are eminently grateful for what he has accomplished.

I must note in conclusion the disappointment of the architect at the oversetting—at least for the moment—of one of his most cherished plans. He had sunk his orchestra,—not so deep as the one at Bayreuth, but sufficiently for the performers not to come between the parquet audience and the stage,—and had arranged a large drum beneath this covered with a sounding-board which he believed would greatly enhance the effect of the music. But the Italian players and their chief rebelled at any such innovation, and, undaunted by the citation of Wagner, by the dictates of good sense, or the opposition of architect and building-committee, refused to be heard unless they

¹The Sanitary Engineer has published recently a very full illustrated description of this.

could also be seen. So the orchestra was floored over and it remains still to be known whether, if sunk, it would not have helped the players as well as relieved the audience from the spectacle they offer.

M. G. VAN RENSSELAER.

THE ILLUSTRATIONS.

CONSTRUCTION OF ROOF OF THE AUDITORIUM OF THE METROPOLITAN OPERA-HOUSE, NEW YORK, N. Y. MR. J. C. CADY, ARCHITECT, NEW YORK, N. Y.

THE trusses used for roofing the auditorium and stage of the Metropolitan Opera-House are eight panelled Belgian trusses, having a span in great part of one hundred and six feet. They are thirteen feet from centres over the auditorium and eight feet from centres over the stage, where they have to carry the weight of the rigging-loft and the great fire-tank, in addition to the roofing. The feet of the trusses on one side are mounted on carriages to allow for contraction and expansion. They are secured by lines of sway-braces, while purlins of angle-irons running between them receive the building-blocks, which in turn receive the slating. Allusion has been made to the fire-tank; this is of boiler-iron and resembles an ordinary steam-boiler. It is suspended under the ridge of the stage roof (the highest roof of the building) and is seventy-eight feet long. It was built in its position, and tubes were built in at intervals to allow members of the roof-trusses to pass through it. Underneath the whole is a large pan to receive any possible leakage. This tank supplies the automatic sprinklers which guard the whole stage area, and also the various lines of fire-hose. The truss over the proscenium opening has a span of eighty-six feet, and carries a brick wall forty feet in height. This wall is stayed not only by the roof masses, but by a series of compensating braces and ties. The truss on which it rests is about seventy-six feet above the stage.

The stage supports are of iron instead (as usually) of wood. They are made in sections easily taken apart, to admit of any desired change in the stage or space under it. There are over three thousand separate pieces of iron-work in this part of the structure.

As the cost of a building is always a matter of prime interest we subjoin the following statement taken from a report of the directors.

Amount paid for real estate.....	\$622,191 44	
Cost of building—		
Excavation.....	\$54,002 44	
Masonry, plastering, tiling, etc.....	401,664 59	
Iron-work.....	272,539 70	
Carpentering.....	80,271 61	
Roofing.....	11,382 00	
Plumbing.....	15,050 65	
Gas-fitting and fixtures.....	21,694 62	
Terra-cotta.....	16,510 00	
Electric-wiring.....	5,172 38	
Stage, rigging-loft, paint-bridge, and expense of construction.....	28,343 84	
Architect's fees.....	44,690 58	
		951,322 41
Seating.....	\$23,044 75	
Ventilating and heating.....	35,344 31	
Decorating.....	14,349 68	
Carpets.....	8,276 79	
Furniture and fixtures.....	38,804 03	
		119,819 56
Scenery, costumes, properties, music library, etc.....		142,500 00
Cost of property, building, and contents to date.....		\$1,835,833 41
Estimated amount needed for—		
Carpets for corridors.....	\$5,200 00	
Screens in vestibules.....	4,000 00	
Decoration of auditorium.....	15,000 00	
Decoration of foyer and reception room.....	5,000 00	
Furniture for ball-room.....	5,000 00	
		34,200 00

CONSTRUCTION OF THE ROOF OF THE EDEN THEATRE, PARIS, FRANCE. MM. KLEIN & DUCLOS, ARCHITECTS.

ALTHOUGH the description of this roof has not yet reached us, we reprint from *L'Encyclopédie d'Architecture* a view of some details of its construction, as it may be studied to advantage in connection with the roof of the Metropolitan Opera-House, printed on the same page.

PROPOSED HOTEL, IRON UTE SPRINGS, MANITOU, COLO. MESSRS. VARIAN & STERNER, ARCHITECTS, DENVER, COLO.

THE "AUBRY," BOSTON, MASS. MESSRS. W. G. PRESTON & A. C. FERNALD, ARCHITECTS, BOSTON, MASS.

HOUSE FOR W. A. PRENTISS, ESQ., HOLYOKE, MASS. MR. W. B. TUBBY, ARCHITECT, NEW YORK, N. Y.

PROPOSED PLUMBING LAW FOR CINCINNATI.—At a meeting of the Cincinnati Chapter, A. I. A., held January 15, a communication was received from the Master Plumbers' Association, asking the Chapter to unite with them, in earnest endeavor to obtain necessary legislation and other needful agencies, looking toward the better sanitation of houses to be hereafter erected in this city. The Chapter agreed to act with the plumbers for the purpose named, and appointed the following committee to act in the premises: A. C. Nash, James W. McLaughlin, E. Anderson, Chas. Crapsey.

ANCIENT MARBLES IN GREAT BRITAIN.¹—II.



THE second period of growth, termed by the author, "The Golden Age of Classic Dilettanteism," was mainly brought about by the travels of English gentlemen to Italy, which came into general fashion as early as the time of the Stuarts. Its furtherance is almost identified with the history of the famous Society of Dilettanti, founded in 1733, by some gentlemen who had travelled in Italy, "desirous of encouraging a taste for those objects which had contributed so much to their entertainment abroad." The learned and art-loving world is indebted to the liberality of this distinguished body for that splendid succession of publications on the subject of Greek and Roman antiquities, from Stuart and Revett's "Classical Antiquities of Athens," down to the not less important works of Cockerell and Penrose, which have laid the foundation and form the model of all such productions.

In the meantime very favorable opportunities were offered in Italy for the purchase of antique sculptures. Great collections had been made in Rome during the seventeenth century, by the princes and cardinal-nephews, the Barberini, Borghese, Giustiniani, Ludovisi, Odescalchi, Pamfili, Rospigliosi, and others. This high tide in the native love of art was followed, at the beginning of the eighteenth century, by an equally significant ebb, caused by the increasing pecuniary embarrassments of the noble families of Rome. The Giustiniani cabinet led off, and Lord Pembroke availed himself of the opportunity presented by its sale to acquire some of the best pieces now in Wilton House. In the year 1724, the sculptures of the Odescalchi Museum, originally collected by Queen Christina of Sweden, were sold to Spain for the sum of twelve thousand doubloons (about forty-six thousand dollars), and placed in the Palace of San Ildefonso. Four years later Ficoroni negotiated the sale of the Chigi Collection, for thirty-four thousand scudi (about thirty-seven thousand dollars), to the King of Poland at Dresden; and even Cardinal Alessandro Albani, who was a most enthusiastic collector, was obliged, on account of straitened means, to part with thirty statues to the same monarch, for twenty thousand scudi (about twenty-two thousand dollars).

Trade in antiques and excavations in search of them were carried on with great vigor. The fabrication of spurious antiques was not omitted, but was in fact a general custom. In mutual emulation Flavio Sirleti, Anton Pichler, the Costanzo family, and other less skillful hands cut "antique" gems, or provided stones of genuine antiquity with modern inscriptions. So with marbles: sometimes an old appearance was given to new works by an artificial roughening of the surface, or by the use of chemicals. Sometimes insignificant old fragments were restored with more or less skill—that is to say, trimmed into apparent completeness by arbitrary additions; and in this way otherwise worthless specimens were made saleable. The most celebrated virtuoso in this branch was Bartolommeo Cavaceppi, who had invented a regular system of methodical restoration, which in theory was excellent and almost incontrovertible, but in practice was only in so far to be commended as Cavaceppi surpassed most of his contemporaries in taste and execution. Through several decades all the most important discoveries and purchases of antique sculptures passed through Cavaceppi's hands, and were made to submit to his rejuvenating arts. Here and there an individual might object to this or that particular example of the process; yet no one doubted the principle that restorations must be made, and even so fine a connoisseur as Cardinal Albani carried on the business with such enthusiasm that he gained the title of *réparateur en chef de l'antiquité*. The Elgin Marbles were the first to break the spell. Canova pronounced that it would be sacrilege for a modern hand to complete these fragments; and the British Museum has been the first, and unluckily the only institution to abide by the principle thus laid down, and check the unwarrantable introduction of arbitrary interpolations into ancient work.

The fashion for collecting antiques was so general by the middle of the eighteenth century, and so numerous were the marbles carried by the votaries to their northern homes, that the young Roman prince, Bartolommeo Corsini, who was travelling in England as early as 1753, expressed his surprise at the number of fine statues which he often found collected in country houses, even in those which were situated quite far from the high-road, and buried in the wilderness: he spoke of them as "dragged together out of all countries with vast pains and cost."

To meet the large and very miscellaneous demand thus created, there sprang up in Rome a class of English *ciceroni* and professional agents, of which Gavin Hamilton, the painter, is a favorable, and Thomas Jenkins a characteristic, but not over-honest representative. The account of Jenkins, whose influence must have been

¹ *Ancient Marbles in Great Britain*, described by Adolf Michaelis, Ph. D., Professor of Classical Archaeology in the University of Strasburg. Translated from the German by C. A. M. Fennell, M. A., late Fellow of Jesus College, Cambridge. Edited for the Syndics of the University Press, Cambridge; 1882. Continued from page 80, No. 425.

decided upon the English collections of this epoch, is given by Dr. Michaelis according to the testimony of Nollekens. The latter lived in Rome from 1760 to 1770, and was himself actively engaged, now in renovating a small fragment of a terra-cotta relief by extensive additions; now in lending an antique patina to a marble figure, which had been very much mended, by steeping it in tobacco-juice. Nollekens is reported as follows: "I got all the first and best of my money by putting antiques together. Hamilton, and I, and Jenkins generally used to go shares in what we bought, and as I had to match the pieces as well as I could, and clean 'em, I had the best part of the profits. Gavin Hamilton was a good fellow, but as for Jenkins, he followed the trade of supplying the foreign visitors with intaglios and cameos, made by his own people, that he kept in a part of the ruins of the Coliseum, fitted up for 'em to work in slyly by themselves. I saw 'em at work, though, and Jenkins gave a whole handful of 'em to me to say nothing about the matter to any one else but myself. Bless your heart! he sold 'em as fast as they made 'em."¹ Jenkins had assumed something of that theatrical bearing, those affected raptures, by means of which the Italians understand so thoroughly how to impose and force hard bargains upon strangers. No one was a greater master than he of the art of making the best bargain out of his wares; as a rule it was only with great trouble that he could be induced to allow himself to name a price, naturally a very high one; when the purchaser agreed to his figure Jenkins did not tear himself from his darling gem without gestures of extreme emotion, and displayed the greatest grief at parting from it. He would weep, and could even manage to draw tears from the sympathizing purchaser. In fact, to such an extent did he carry his acting that he declared himself ready at any time to take back the work of art he had sold, and this he was actually known to do. The esteem in which he held his fashionable patrons is well illustrated by the contemptuous way in which Jenkins speaks of the conscientious Hamilton, "that he did not understand the taste of English *virtuosi*, who had no value for statues without heads, and that Lord Tavistock would not give him a guinea for the finest torso ever discovered."

In addition to the vast number of antiques which had long been known—some of which had often changed possessors, and now were brought once more into the market—resources yet untouched revealed themselves to the spirit of enterprise that distinguished this band. Jenkins himself undertook excavations in Corneto, and of even first-rate importance were Hamilton's discoveries in Hadrian's Villa, below Tivoli, that inexhaustible mine which, worked at intervals ever since the sixteenth century, had yielded for the Farnese and Este Collections, and more recently for the Capitol and the Villa Albani, an extensive series of their most precious contents. Hamilton might have every confidence that he would surely not dig here in vain. As a first step it was necessary to divert a lake, the so-called Pantanello, in order to come at the desired point. The trouble was richly rewarded by more than sixty marbles, chiefly busts, including some of the first rank, which were buried in deep slime, and, partly on that account, excellently preserved. Two years later (1771) followed an excavation which was richer in statues, though otherwise, perhaps, less productive; this was on the Via Appia, in the so-called *tenuta del columbaro*. The following years were devoted to other undertakings, and there was thus brought to light an abundance of treasures which might more than content the numerous and eager purchasers.

A certain Matthew Brettingham, an architect, was one of the more respectable agents employed by the English nobility in buying antiquities at Rome, and it was mainly through his fortunate purchases that the fine collections of Thomas Coke, Earl of Leicester, and of the Earl of Egremont were formed. Brettingham belonged to a band of young British artists at Rome, who had been pursuing their professional studies there since about 1740, and each of whom lived to render good service in more than one department. Among his friends were the painter James Stuart and the architect Nicholas Revett, whose names are connected by the world-wide renown which they won for themselves by their labors at Athens from 1750 to 1755. The idea of making this expedition had emanated from Gavin Hamilton, who was hindered from taking part in it personally by some circumstance now unknown.

The reign of George III, commencing in 1760, did much to further the fashion of dilettanteism. The King enjoyed the reputation of taking an interest in art, especially ancient art, and though he did not collect marbles, yet he had shown this interest in two ways. Through the agency of James Adam, a younger brother of the royal architect Robert Adam, celebrated for his work on the Palace of Diocletian, at Spalatro, the King purchased from Cardinal Albani his grand collection of drawings and prints at the price of 14,000 scudi (\$15,000). This collection had been commenced in the seventeenth century by the Commendatore Cassiano dal Pozzo, and was particularly valuable as preserving, at least in the form of copies, works of classic art which have since been destroyed or lost to sight. The illustrious Winckelmann, who was librarian to the Cardinal, might protest, but he found his master's need of gold more potent than his own representations.

Of particular interest are the accounts given by Dr. Michaelis of the fine collection of gems made by George Spencer, Duke of Marlborough; of the marbles brought to England by the Marquis of Lansdowne, and of the cabinets of Thomas Hope, of Lyde Browne,

and of Henry Blundell, of Ince. A certain Mr. Thorpe, an agent of the last named of these gentlemen, is spoken of in the present volume as "once a member of the now extinct order of Jesuits." What the author may mean by this surprising phrase it is difficult to say; the text as it now stands may have been corrupted by some error on the part of the translator from a reference in the original German to the dissolution of one of the Jesuitical colleges in France or Italy. The author follows the growth of all the great English collections of this age with a minuteness and accuracy to be fully appreciated only by the specialist, while the clearness and objective character of his presentation has made it attractive even to the general reader.

The history of Sir William Hamilton's famous collection of vases, and the highly-interesting account of the activity of Payne Knight form, as it were, the transition from the second to the third period, which is treated under the general title, the "British Museum and the Private Collections." This section bears also the secondary title, "Greece and England," and the author points out how all concerns relating to antiquity received at the opening of the present century an Hellenic color, or, as he expresses it, "the archaeological magnet was veering strongly in the direction of Greece." When the French domination in Italy made it, if not impossible, yet difficult and disagreeable for the English to travel there, the attraction of Greece became all the stronger, especially taken in connection with the unlimited predominance of English influence in all the quarters of the Turkish empire after the overthrow of the French arms in Egypt.

The three great travellers, Dodwell, Gell and Leake are spoken of as first in importance in this stage of development, although their collections were less extended than their explorations and itineraries. The museums of Europe profited more directly by the excavation of the Temples of Ægina and Bassæ by a group of explorers of various nations; the archaic gable-groups of the former being acquired for the Munich Glyptothek by Louis I, of Bavaria, then crown prince, while the frieze from within the naos of the latter was bought for the British Museum for the sum of £15,000 sterling.

But the great undertaking of Lord Elgin at the beginning of the new century threw all other acquisitions of original works into the shade. Urged by the architect Harrison, the young lord, when he had been named ambassador to the Porte (1799), resolved to have drawings and casts made of all the Athenian sculptures that were accessible for the purpose. An attempt to interest the British Government failed, and Elgin undertook the work at his own cost. By advice of the experienced Sir William Hamilton, who was then in Sicily, he entrusted the artistic guidance of the enterprise to the Neapolitan painter, Don Tita Lusieri, while his secretary, W. R. Hamilton, engaged the rest of the artists, a draughtsman, two architects, and two *formatori*, in Rome; but the Athenian authorities showed themselves most ingenious in intrigues, evasions, and hindrances of all kinds; entrance to the Acropolis, for example, cost a daily douceur of almost five pounds. Accordingly, for nine months the undertaking had only very small results.

A change then occurred in Egyptian affairs, and the influence of England became again predominant at the Porte. Elgin instantly availed himself of the favorable turn. A new firman at once permitted the erection of scaffolding, and the taking of plaster casts. Work began in good earnest on the Acropolis, entrance to which no longer entailed a daily payment, although there was even now no lack of incivility and vexatiousness on the part of the garrison. A personal visit paid by Lord Elgin to Athens convinced him of these facts, and he consequently applied for further powers. He was soon enabled to arrange for the purchase and demolition of two houses next to the Parthenon. Under one was discovered a rich booty of costly fragments of pediment figures; under the other nothing at all. The Turkish owner pointed with a sardonic smile to the line in the city wall, which had been made from the sculptures that once stood there. Meanwhile Hamilton was engaged in travelling through Asia Minor, Syria and Egypt. The chaplain to the embassy, Dr. Philip Hunt, was the life of the undertakings at Athens; he was more often to be found in that city, and on other classic spots than in Constantinople. At his suggestion Lord Elgin, in 1801, obtained that firman, since become so celebrated, by which full liberty was granted to his work-people "in going in and out of the citadel at Athens; or in fixing scaffolding around the ancient temple of the idols; or in modelling with chalk or gypsum the ornaments and visible figures thereon; or in measuring the fragments and vestiges of other ruined edifices; or in excavating, when they find it necessary, the foundations in search of inscriptions among the rubbish." Finally, it is commanded "that they be not molested, and that no one meddle with their scaffolding or implements, nor hinder them from taking away any pieces of stone (*qualche pezzi di pietra*) with inscriptions or figures." The elastic final clause of this memorable permit was so luminously expounded by Hunt to the Governor of Athens, the interpretation being backed up by an appropriate present of brilliant cut-glass lustres, fire-arms, and other articles of English manufacture, that the Governor at once gave leave for a metope to be taken from the Parthenon. Hunt was prudent enough to have this forthwith put on board ship and sent off to England. "The facility with which this had been obtained induced Lord Elgin to apply for permission to lower other groups of sculpture from the Parthenon, which he did to a considerable extent, not only on the Parthenon, but on edifices in the Acropolis."²

¹J. T. Smith, "*Life of Nollekens*," compare also: Combe, "*Ancient Terra-Cottas in the British Museum*." London: 1810.

²Hunt's own words in the "Report of Committee," *Gentleman's Magazine*, Volume LXXIII.

The result of these labors, which employed between three and four hundred men, is well known. The principal pedimental figures, fifteen metopes and fifty-six slabs of the frieze from the Parthenon (without including numerous fragments), one of the sculptured caryatides from the Erechtheum, four slabs from the frieze of the Temple of Wingless Victory, besides a number of architectural remains, and more than a hundred inscribed stones formed the precious booty!

Dr. Michaelis shows an inclination to excuse if not to ignore the wanton vandalism with which this robbery was carried out, and to pay a laudatory tribute to the deed of Elgin, which must be highly gratifying to the English public for which he now writes. It would be unfair, however, to accuse him of truckling to these interests, for his position in his earlier book, "*The Parthenon*," is substantially the same; still, his views of Lord Elgin's work as an act of preservation alone are not just, and are not those usually held by Continental scholars: and it is not unreasonable to believe his opinion to have been biased by his long intercourse and close sympathy with the nation which so greatly profited by the acquisition of the marbles.

Lord Elgin did, indeed, place the sculptures of the Parthenon in a security much to be desired by every lover of antiquity—but his removal of the figures from the gables, the frieze and metopes of the Parthenon, and the caryatid of the Erechtheum was effected with a destructiveness which can only be fully understood by those who have mourned over his demolition of those incomparable monuments. Every pilgrim to Athens laments with Childe Harold:—

"The walls defaced, the mouldering shrines removed
By British hands, which it had best behoved
To guard those relics ne'er to be restored."

The story of Elgin's return from his post, of his capture and imprisonment by the French, of the shipwreck off Cerigo of the vessel transporting some of the marbles, and of their subsequent recovery, is told by the author in a straightforward and most attractive manner, and many facts new to the general reader have been gleaned from rare publications of the time. The weak strictures of Payne Knight, the negative position of the dilettanti, the warm advocacy of Visconti, Haydon and Canova, the sessions of the Bankes committee, the favorable decision of Parliament, by eighty-two voices against thirty, to pay the sum of £35,000 for the sculptures, and the enthusiasm raised by the final exhibition of these matchless works to the public in the halls of the British Museum, have all been discussed so frequently that it is hardly necessary here to call attention to this new presentation of the subject by any extended notice.

At one stroke the British Museum had become the most distinguished depository of antiquities in the world, with the secure prospect of always remaining such. The splendid publication of the Museum marbles, published by Taylor Combe, Hawkins, and others, under the direction of Planta, was the outward sign that the institution was both conscious and proud of its new position.

A number of other explorations which have largely contributed to this eminence are concisely reviewed by Dr. Michaelis; among them being the investigations of Fellows in Asia Minor, of Layard and Rawlinson in Mesopotamia, of Newton at Halicarnassus, Cnidus and Miletus, and similar undertakings which have materially enriched the British Museum. As the present catalogue does not deal at all with the sculptures in that institution, it is a little strange that so much attention is devoted in the introduction to the history of its growth; the account of the development of private collections of more recent standing seems thereby to have been somewhat curtailed.

Still, enough is related to disprove the statement of Payne Knight before the Commission on the Elgin Marbles that there were then (in 1806) no collectors in England. Chiefly to be mentioned among the cabinets dating in the main to this epoch are the sculptures at Woburn Abbey, belonging to the Duke of Bedford, those of Viscount Strangford, and the well-known museum of the eminent architect Sir John Soane. Great as was the number of amateurs who gathered antiquities during the first half of our century, it is indisputable that only few of them went to work with that magnificence which had so marked the dilettanti of the previous century.

The French Revolution and the Napoleonic wars had caused an immense number of pictures from churches and convents, public and private galleries, to be offered for sale in all the countries of Europe, and the lion's share had fallen to England. For a long period London was continually the scene of extensive sales of pictures from all countries; great collections of Italian and French origin were put under the hammer, not in Paris, but in the English capital. The fact is undoubted: dilettanteism had struck out in a new direction, and had turned from ancient art to modern. The circumstances of the time, as already mentioned, were as favorable to the latter as they were unfavorable to the former; inasmuch as Rome was at the beginning of the century closed to the English, and moreover watched with a new jealousy the export of her antiquities, coveted as they were on every hand; while to make acquisitions in Grecian territory, which was partly under Turkish government and partly in open rebellion, offered to private individuals a still more difficult task.

In spite of the numerous sales at the close of the preceding century, the majority of the antique collections which have been noticed as existing in the most flourishing period of the pursuit, remained fixed in the hands of the families of the collectors.

The introduction closes with a warm appeal for centralization

emphasizing Horace Walpole's melancholy observation: "How insecure is the permanency of heirlooms." We are told¹ of the grave Agrippa, the greatest statesman of the Augustan age, that in a brilliant speech, worthy of Rome's foremost citizen, he urged that all paintings and statues should be handed over to the State, as a far fitter course than that they should remain banished in country villas. "If only some influential politician," says Michaelis, "endowed with the eloquence of a Brougham, would take upon himself the same task in England! He might point to the lofty duties which art-ownership brings with it; to the dangers which threaten private property; to the small sacrifice which would be entailed on many owners if they would forego in favor of the community their private rights in possessions which they regard rather as cumbersome heirlooms and survivals of an obsolete fashion than as a source of real artistic pleasure." The author proclaims that he would "desire nothing better than that his catalogue should soon be pronounced out of date, and should only remain as a kind of sepulchral monument of the private galleries of antiques in Great Britain; that a great part of the collections it enumerates should vanish from its lists, while the names of their owners should be inscribed in letters of gold on the roll of donors to the British Museum." Every scholar will agree indeed that 'tis a consummation devoutly to be wished. It is to be remembered that the bequest of a single collector, in conjunction with a Parliamentary grant, was the origin of the British Museum.

But there is danger as well as advantage to the realm recognizable in this tendency of private collections to be broken up or merged in larger museums. A generation hence might not have required the compilation of a catalogue such as this. A gifted writer on art, Mr. Buerger,² wrote twenty years ago: "England is to works of art what the grave is to the dead; her gates do not open again to let them out." By the light of events like the recent acquirement of large and irretrievable English collections of manuscripts and rare books by Continental nations, this sentence almost reads like a satire. There is the possibility to be considered that statues and bas-reliefs may yet go the way that parchments and *éditions principes* have gone. The unsated appetites and long purses of the *nouveaux riches* are a temptation to which the owners of more than one historic collection or gallery are not unlikely to yield. Our own country may hope to profit largely by the changes thus imminent, and municipal museums, as well as wealthy individuals, should make every exertion to secure treasures of antique art, the value of which as factors of civilization is not to be reckoned in money.

Reference has been made to the rivalry of the Earl of Arundel and the Duke of Buckingham during the first half of the seventeenth century. Much light is thrown on the intrigues of the agents serving these illustrious connoisseurs in the East by the correspondence between the British ambassador of that date at Constantinople, Sir Thomas Roe, and the two noblemen. This correspondence was published as a folio, now rarely met with, in the year 1740.³ Extracts from nineteen of these letters are published in the present volume to illustrate the condition of archaeological research at the time when the Arundel Marbles were being collected.

The manner of dealing with the Turkish Government for antiquities, and getting them out of the country, seems to have been much the same in those days as it is now. Sir Thomas writes, in a letter to Lord Arundel dated 1623: "On Asia side about Troy, Zizicum, and all the way to Aleppo, are innumerable pillars, statues, and tombstones of marble, with inscriptions in Greeke: these may be fetcht at charge and secretly; butt yf wee ask leave it cannot be obtayned; therefore Mr. Markham will use discretion, rather then power, and so the Turks will bring them for their profit." The name of Assos, for which we first look with national interest, is not mentioned, but Petty is reported to have often journeyed over the sea-route from Constantinople to Pergamon, and cannot but have observed the conspicuous site. The ambassador relates: "I haue sent three seruants together to Tassos, Canalla, Philippi, and all the coast of Thrace; followed Mr. Petty to Pergamo, and Troy; am digging in Asya; and to fulfill the prouerb, turning of all stones." These researches in the vicinity of Assos must have had a great effect upon the inhabitants, unfortunately not a favorable one for later investigators. As Sir Thomas Roe elsewhere says: "Our search hath made many poore men industrious to rippe up old ruines."

Thus the appendix, though containing nothing really new, calls timely attention to one of the most interesting documents concerning the diplomatic intercourse between England and the Porte, two hundred and fifty years ago, which makes evident the state of archaeological research at that early date.

The admirable character of the indexes deserves especial recognition; their long lists are complete and accurate. One deals with collectors, collections, the sources from which the statues were derived, etc.; another gives account of all the reproductions of the works of art mentioned, whether in unedited drawings, in engravings or in books; a third refers to all the subjects represented by the marbles, and is particularly serviceable to the student of art; and still a fourth concerns the epigraphical material, naming the edited and unedited Greek, Latin, Etruscan and Egyptian inscriptions contained

¹ Pliny H. N. XXXV. 26.

² W. Buerger, *Les Trésors d'Art en Angleterre*, Brussels and Ostend, 1862.

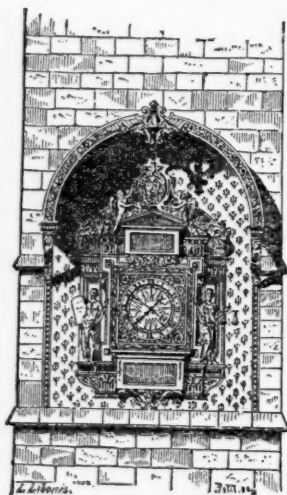
³ *The Negotiations of Sir Thomas Roe, in his Embassy to the Ottoman Porte, from the Year 1621 to 1628 Inclusive*. London: 1740. Folio.

in the collections. Nothing could be of greater practical value, and the volume in this respect is worthy to stand as a model for all similar publications.

As the original text is not published it is impossible to judge the exact merits of the translator's work. Dr. Michaelis usually writes in an exceptionally lucid and fluent style for a German savant, and various awkward and inelegant passages in the language of the present volume seem rather to be attributable to Mr. Fennell than to the author. The book was printed by the Syndics of Cambridge University Press, and Professor Sidney Colvin is mentioned as having revised the translation, and superintended the execution of the illustrations.

J. T. C.

THE DECORATION OF CLOCKS.



Clock on Palais de Justice, Paris.

IF the giving of such and such forms to the clocks which take a place in our dwellings is not a matter of indifference, and if good taste demands that their mounting should be varied to harmonize with the rooms in which they are to be placed, or to suit the taste of the person who has to use them, it is not less necessary to pay the same attention, to bestow the same delicate foresight on the construction of those monumental clocks which ornament the exteriors of public buildings. These have a value and a rôle so perfectly determined, they have in some way a social function so characteristic that it is very evident that architects have no right not to take into consideration how to make them suit the purpose for which they were intended. These clocks, in fact, dependent on the monument of which they form a part, according to the town or the quarter where they sound the hour regularly, have they not a differing importance? Are they not charged, amid the feverish activity which carries away the inhabitants of a city, with regulating the course of the day's work, with indicating for each one his duty, the moment for business, and the moment for repose? Addressing themselves thus indiscriminately to everybody, rendering a service to every one, especially in our modern cities where the value of time is so much insisted on, does it not follow that it is indispensable to well consider the situation which is best adapted to them, the form which they ought to affect, the architectural arrangement which shall be proper to one and not to others, so that they shall be plainly visible, and their decoration in accord with those general ideas which they are destined to evoke?

The Middle Ages and Renaissance understood so perfectly the function of public clocks that almost all those which were made during those epochs testify to the different preoccupations of those who constructed them. In the twelfth century, when striking clocks began to appear, there was introduced in their decoration a remarkable degree of fantasy, which was yet always logical. In the fourteenth century there were scarcely any cities in Italy, Germany or France where was not seen, either on a public house or on a church, a clock, a veritable *chef-d'œuvre*, which indicated clearly, by its happy forms and the vast dimensions of the dial, often decorated with painting, and by the pleasing ingenuity of the mechanism of the striking parts, the formal intention which had presided over its establishment. Each inhabitant could from a distance distinctly tell the hour.

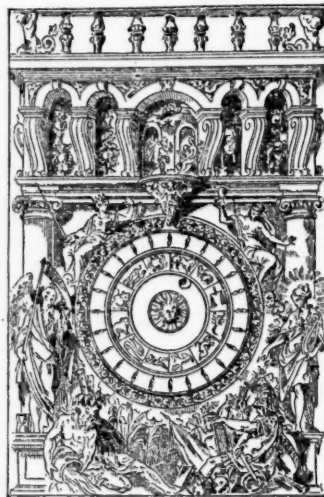
The clock, provided with a complicated peal of bells which sent out its joyous chimes even to the depths of the most dingy dwellings, had its own personality, its own peculiar character, in which were incorporated and incarnated all the diversities of local character. The proverb to-day so much in vogue, which speaks of the love which one has for his clock-tower, does it not come from this, that this venerated clock-tower, ornamented with its ancient clock, records the sorrows and the joys of every hour of life?

Everybody has seen or heard of the celebrated clocks of the cathedrals at Lyons, Strasburg, Caen, Lille, Metz, Auxerre, Sens, Dijon, etc., which were embellished with puppets (*jacquemarts*) which struck the hour with hammers. That at Strasburg is composed of a large wooden disc, on which were painted indications of the principal movable feasts. In the middle is a dial whose hands mark the movement of the sun, the moon, the hours and their subdivisions. It is crowned by a statuette of the Virgin, before which at noon come to prostrate themselves the Magi; a cock crows at the same time and flaps his wings, and a little peal of bells plays tunes at certain hours.

At Berne, in Switzerland, can be seen a clock whose movement is yet more peculiar. At each hour a cock crows, and a clown strikes with two hammers upon two bells, while a personage seated on a throne turns his head, opens his mouth, and with one hand waves a sceptre, and with the other an hour-glass as many times as the ham-

mers strike. Before this king defile bears in every kind of position and costume.

At Lunden, Switzerland, there used to be a clock so artistically arranged that when the hour struck two knights encountered each other, and exchanged as many blows as there were hours to strike. Then a door opened, and at the back appeared a theatre, where the Virgin Mary, seated on a throne and holding the infant Jesus in her arms, received the visit of the Magi, followed by a cavalcade. The kings prostrated themselves and offered their presents, two trumpets sounding during the ceremony, then the spectacle closed abruptly, and recommenced an hour afterward. We give here a fac-simile of a design composed by Nicolo dell' Abate for the sculptural decoration of the clock on the public palace at Bologna. The principal panel, included between two Ionic columns, shows the zodiac, surrounded by six allegorical figures—above, Justice and Faith, below them Apollo and Saturn standing, and below two reclining Rivers, doubtless the Reno and Felsina (Bologna). Behind the rivers are to be seen the two characteristic towers of Bologna, l'Asinelli and la Garisenda, and near the figure Felsina a shield bearing the device "Libertas." We could cite many other examples of such Italian clocks as perfectly equipped and as sumptuously constructed.



Clock at Bologna, designed by Nicolo dell' Abate.



Clock, Hotel de Ville, Paris.

logical in the search of elegance. The new clock of the Hôtel de Ville, Paris, it must be allowed, has been treated by the eminent architect of this fine work with quite a special care. We willingly give him credit, for he has well understood the place which in buildings of this sort should be occupied by the instrument charged with regulating the time, and indicating to the great masses the hours which go by. Situated in the middle of the façade, this clock forms in a certain sense in this vast monument a little building by itself, with its pediments, entablature, pilasters, its sub-basement harmonizing strictly with the general lines, and detaching its fine, rich *silhouette*, without disturbing the unity of the whole. At right and left of the dial, arranged in the break of the lower pediment, are two standing statues, surrounded by infants and divers attributes. These represent Commerce and Industry. Then above, reclining on the consoles, are two figures seemingly personifying the Seine and Marne. Above the dial, in a panel between two pilasters, is the City of Paris, with proud and haughty mien, but who seems ill at ease in the position, for she seems imprisoned in her frame of stone. At the top of all is a triangular pediment, in the midst of which is the coat-of-arms of the city of Paris, surmounted at each side by two female figures, Vigilance and Prudence. It is the most finished morsel in the whole work, is delicate in execution, and elegant and pure in design, conceived in the sentiment of the Renaissance, and carried out with the delicacy of jewel-work. It is the

work of a very able sculptor, M. Charles Gauthier, professor at the Ecole des Arts Décoratifs, and the author of several remarkable works; but there is a shadow over this picture, and it is here that presents itself the problem which we indicated at the outstart. In the midst of these eleven figures magnificently mounted, in this monumental clock, what becomes of the dial, the principal motive about which all the rest should be but accessories? Alas, it disappears humbly and effaces itself before this richness, and it was with difficulty that one could from the ground see the hands, before the architect, in order to remedy this deplorable defect which he only detected after the work was done, attempted to increase their proportions, so that the mind was inevitably seized by the following dilemma: Either the architect had no intention of establishing there a clock, and therefore this minute dial is only an incomprehensible and useless ornament,—a very rebus laid before the eyes of the passers; or, really intending to construct a clock, he has confounded the accessories with the principal, and has committed an unpardonable solecism by crushing the latter under the luxuriousness of the former.

Such is the criticism which has appeared to us worth making. It has already been made in the journal "*De l'Horlogerie*" by a clock-maker, who is likewise an artist, M. Gustav Sandos, whose judgment we find in perfect accord with ours.

To the foregoing criticisms he adds the following reflections, which may be held as excellent advice: "In our epoch," says he, "remarkable efforts are made to attenuate the coldness of stone by employing in construction marble, bronze and faience. It was a unique opportunity to introduce in the central portion a polychromatic decoration, which has been evidently sought by placing men-at-arms sparkling with gold upon the roof. This employment of color would certainly have been there more in place, and would have agreeably drawn the eye by breaking the monotony of the façade."

Surely those grave persons who to-day smile over the antique clocks with their chimes and puppets, whose mythical apparition rejoiced the hearts of our ancestors, cannot find fault that an attempt is made to enliven so monotonous an object as a dial. Art and science have not yet declared war, I imagine, and it is not forbidden to bestow a little grace and harmonious equilibrium upon our public clocks under pretext that these pretend to go with precision.—*Victor Champier in the Revue des Arts Décoratifs.*

THE TOLEDO LUNATIC ASYLUM CONTRACTS.

TOLEDO, February 13, 1884.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—A somewhat novel case in the letting of a contract is pending here. As before announced, bids for the new lunatic asylum on the "cottage plan," to be located at this point, were received up to the 10th of January. The bids were opened at Columbus in the presence of the then existing Asylum Commission composed of State officials. The bid which was alleged to be the lowest accompanied by the required bond, and made out in regulation form, was by Messrs. Miles, Cramer & Horn, of this city, and as the completion of the buildings involved an outlay within the appropriation of \$500,000 the job was declared for them. A contract was drawn up, the necessary bond promptly furnished, and the paper was signed by the Commission, composed of the Governor, Secretary of State, State Auditor and Attorney-General.

The contractors arranged for their materials, and began delivering them upon the grounds. In the meantime a new State administration came into power, when lo! a doubt was expressed as to the legality of the letting of this contract by the old Commission, and the new Attorney-General sustained the doubt, holding that the contract could only be awarded by the new Board of "Asylum Trustees." Why this important legal fact (?) could not have been discovered before so many builders in good faith expended so much time and money in preparing their bids does not transpire. It is stated that high legal authority does not concur in the Attorney-General's opinion. The end is not yet. It is understood that the present contractors have determined to carry the case to the Supreme Court for decision.

One of the most disreputable phases in the whole matter lies in the rumored attempt to disallow payment for the plans, which were duly accepted, on which the architects had expended so much close study and faithful work, as well as a large amount of money in their preparation. The plans are most admirably adapted to all the purposes required.

It is asserted that some of the present officials are "flooded with letters" from aspirants for the nugget which they hope may yet be denied the ones who have so truly earned it. One alleged "prominent architect" is reported as having added to his written application the gratuitous remark that about \$1,000 would be sufficient compensation for the complete plans, specifications and details as now prepared, which, including the five copies of all plans and elevations, and fifty copies of all specifications, have involved the architects already in a cash outlay of over \$3,000, their own experience, time and labor not being taken into account.

Your correspondent is not in the slightest degree, directly or indirectly, interested in this matter or any part thereof, except so far as pertains to simple justice (we might add decency), and the weal of those whose interests are centred in building pursuits and their concomitants. We can recognize the cause for the blush which must

come to any conscientious member of the profession when contemplating such proceedings by some of its members as are alluded to above.

XX.

AN UNPROFESSIONAL CIRCULAR.

February 7, 1884.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—We enclose you, for your edification and that of your readers if you choose, a circular lately issued by one of our brothers here who believes in advertising. A very polite looking young man, stationed there for that purpose, handed it to one of our firm at the entrance to the Hoboken Ferry. It was received under the same silent protest that one allows the agent of the Union News Company to thrust a book in his lap when in the cars; but this circular proved to be of interest. As you may notice, there are some lithograph reproductions on the inside of the circular of a "first-class country dwelling costing \$5,800." Most people would suppose that this design was made by the architect whose name appears on the cover, as no other name appears in connection therewith. We are sorry to report, however, that the design may be found in the *American Architect* of March 5, 1881, Mr. H. W. Hartwell, of Boston, architect. Mr. Hartwell ought to feel complimented. You will also notice a perspective of the hall mantel-piece. For some reason Mr. Hartwell's design for the hall mantel did not please our enterprising friend, and so he has taken one from the "Berkshire" flat; Mr. Carl Pfeiffer, architect, and recently published in the *American Architect*. It seems to us only proper that such an aggravated case of stealing as this is should be known.

Very truly yours,

X & Y.

[Our correspondent is right in styling this an "aggravated case of stealing." It is an extraordinary but, we believe, entirely exceptional case of unprofessional conduct. As there may be some extenuating circumstance, and as we have no proof that the architect who is the ostensible author of this fraud actually had the circular printed and distributed we naturally hesitate to pillory him by stating his name and address—a kind of free advertising which he might not relish. If this individual has himself issued the circular his feelings are probably so obtuse that he would simply smile at any remarks made on his conduct. Such a person as this can only be made to feel through his pocket, and the two architects whom he has wronged have a most excellent opportunity to reach his sense of honor and honesty in this direction, since he has laid himself open to action for damages in that he has infringed the copyright that we place on each issue of the *American Architect* and its illustrations. We may take this occasion to remark that we copyright our illustrations solely that we may be in position to protect their authors' rights, and not because we assume that we have any property-right in designs made for other special purposes, and loaned to us simply for purposes of illustration.—Eds. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS.

WASHINGTON BRICKS.—By an ordinance of 1820 the moulds for brick making must measure in the clear, 9½ x 4½ x 2½ inches, and moulds for stock bricks must be 2½ inches in the clear. This ordinance is to be enforced henceforward under penalty.

AN EXPEDITION TO THE PYRAMIDS.—The New York *Sunday Tribune* gave some particulars of a proposed expedition to Egypt for an examination of the pyramid of Gizeh. A letter from Charles Latimer, C. E., of Cleveland, President of the International Institute for Preserving Weights and Measures, states that a gentleman of that city has agreed to be one of ten to furnish \$10,000 each for the expedition. The New York members of the society are taking steps to assist in raising the \$100,000 estimated as the necessary expense.

THE OILED OCEAN.—The patented system by which Mr. Shields, of Perth, smooths the broken surface of the sea is at the present moment being put upon its trial at the entrance to Folkestone Harbor. The Chairman and Directors of the South Eastern Railway Company have granted the use of their pier to Mr. Shields for his experiments. On the eastern side of the pier, where the entrance to the harbor is situated, a leaden pipe a thousand feet in length has already been laid along the bottom of the sea. The pipe is furnished with a series of iron branches about two feet in length and some seventy feet apart. Each branch terminates in a valve and a brass rose like that of a watering-pot. The main leaden pipe is connected at its shore end with a force-pump placed on the pier. By means of the force-pump oil is driven through the leaden pipe and out of the small perforations in the roses. The oil then rises in minute globules to the surface and rapidly spreads over a wide area. On Monday morning a brisk easterly breeze and a strong tide made it rough enough to cause some hesitation as to sending the patentee's steam-barge out of the harbor. For the first time, therefore, the virtues of the apparatus were tested. Some fifteen or twenty gallons of the cheapest rock oil (6d. per gallon) were speedily pumped into the troubled waters. The effect was magical. In half an hour there was not a sign of broken water between the pier head and Copt Point. The barge came off to the western side of the pier in smooth water. A curious fact was the permanence of the result obtained. Though a very strong tide was running to the eastward, yet this small quantity of oil kept its original position for fully two hours. Mr. Shields is now laying down a shorter length of pipe (100 yards) to the westward of the pier, where the force of the waves is much greater. Experiments will then be tried on a large scale on the next occasion that heavy gales visit the coast. The mortar and oil shells, which are also inventions of Mr. Shields, are ready on the pier for this opportunity. If oil can "make them of a cheerful countenance," those who face the horrors of the Channel passage ought to feel their spirits revive at this intelligence.—*Pall Mall Gazette.*

THE DUOMO OF FLORENCE.—The ceremony of uncovering the façade of the Cathedral of Santa Maria del Fiori, at Florence, took place lately. The scene in the Piazza del Duomo was most picturesque; every window was decorated with gay-colored silks, satins, and damasks of various hues. The whole of the Piazza was crowded. All around the railings of the fine old Baptistery the people were closely packed, but there was no pushing, and not much enthusiasm. At last the great joy-bell (the Martinella), with all the other bells of the cathedral, pealed out, and announced to the city that the draperies which concealed the three great doors of the façade were about to be lowered. At the same moment two royal carriages arrived, in which were Prince Eugenio di Carignano and suite, who were received at the royal stand in front of the Baptistery and facing the cathedral, by the Syndic, the Prefect and all the other dignitaries of the city. The Archbishop of Florence, Monsignor Ceccoli, who had arrived some time before the Prince, conversed with him for a few moments, and then at a signal from the Prince the huge coverings were lowered, and the beautiful façade was exposed to the admiring gaze of the multitude. The work as a whole is very fine; the colored marbles are beautifully arranged; the columns and all the bas-reliefs are in exquisite taste. Over the central door is a noble bas-relief of Our Lord in glory, surrounded by angels, blessing the city. Directly under the great rose-window is a large statue of the Blessed Virgin holding the Infant Saviour in her arms. The niche in which this statue is placed is elegantly decorated with twisted columns, inlaid with mosaics of red, gold and green. On each side are ranged the Twelve Apostles in separate niches. In the arch of the central door is a fine fresco, representing the Virgin receiving oblations, with the lilies symbolical of the city at her feet. This fresco will, eventually, be replaced by a mosaic of the same subject. A provisional model of the two systems for completing the topmost part has been placed over each wing. The tricuspidal, or pointed form, is placed to the right of the great door; and on the left side, nearest to Giotto's tower, is the Basilicata, which is generally considered to be the most in keeping with the character of the edifice. Public opinion is much divided on this question. On the architrave of the central door is the coat-of-arms, carved in the stone-work, of the late Pope Pío Nono, who gave 3,000 francs and a precious mosaic toward the building fund. To the right are the arms of the House of Savoy, which contributed 100,000 francs. To the left those of the House of Lorraine, which gave 42,000 and all the wood-work. Besides these are several other coats-of-arms of the principal donors, also carved on the stone-work, among others those of the Earl of Crawford and Balcarres, Prince Demidoff, Signor Peruzzi, late Syndic of Florence, and the archbishops Limberti and Ceccoli. The entire expense of the façade up to the present time has not exceeded 900,000 francs. In the bank there remains 40,000 francs toward the completion of this grand work, and it is to be hoped that contributions will speedily come in. Among the English spectators in the windows of the Loggia del Bigallo were the Duke and Duchess of Teck, with their family and suite. The architect, Signor de Fabris, has not lived to see his work completed.—*London Standard.*

RAISING THE TEMPERATURE OF BOILING WATER.—As early as 1822 Faraday reported the fact that the bulb of a thermometer when covered with salt and exposed to the steam of boiling water will register more than 212° F. After the publication of this note, a Frenchman stated that it had been known in France for a long time that steam was able to heat salt solutions to a temperature higher than that of boiling water. This last remark has induced Mr. M. Honigman, of Aachen, Germany, to construct a steam boiler composed of two vessels inserted one in the other. The inner cylinder is filled with caustic soda and the outer one with water. Pipes lead the escaping steam to the inner cylinder and the usual steam boiler is represented in the outer portion. For a short while the machinery is fed by a common boiler and the exhaust steam is taken up by the caustic soda, condensed here, and heats the resulting fluid to about 370° F. This is sufficient to heat the water in the outer cylinder. The more steam the engine uses, the more heat is received by the soda, and the machine and boiler enter into mutual regulation. This is demonstrable, and the long-wished-for *perpetuum mobile* could begin its triumphal tour over the earth, but for one little thing. The caustic soda solution becomes thinner and thinner, and its capacity for heat is decreased in the same ratio, so that after a while the temperature of the inner boiler differs so little from that of the outer boiler, that the generation of steam becomes impossible and your machinery stops. Then the inner cylinder has to be emptied and refilled with caustic soda; and then just as much force as had been saved in the machinery, is necessary to again condense the diluted soda and make it available for future use. But in spite of this, these machines are undoubtedly destined to become useful as motors, where the absence of steam and smoke is very desirable, in tunnels or on the streets, and trials made with a small steam yacht, fitted up with this form of boiler, have been very successful. For the generation of five horse-power for five hours, a quantity of about 1,100 lbs. of soda is necessary.—*The Lumber World.*

HOUSE BUILDING ABROAD.—The first part of the promised work of Herr Asmus on the domestic architecture and methods of living in Europe (*"Wie Europa baut und wohnt"*) furnishes some interesting comparisons. London, in the twenty-five years from 1856 to 1882, increased the number of its dwellings from 258,000 to 420,000. In 1882, in round numbers, 20,000 new houses were built with accommodations for 120,000 inhabitants. Berlin, in the same period, had an accession of 175,000 inhabitants, though the number of new buildings is given as only 2,118. While in London the family frequently occupies the whole house, in Berlin the system of flats prevails, and consequently, while the average number of occupants of a London house is only six, in Berlin it is no less than fifty-six. In Paris the average number of occupants is twenty-five and a fraction. In point of architecture the houses of Vienna are the most elaborate, and in their appointments the most luxurious, as well as the most expensive. In Brussels is to be seen the most pleasing variety of architecture, where the Gothic and Flemish Renaissance have been combined with the most artistic results. The greatest

variety, however, is to be found in Hamburg. This, in the opinion of the author, is owing to the habit of the young merchants of spending a year or two in travel and study in England, and in the other parts of Europe or, perhaps, in America. Here are to be found excellent examples of the French, the Italian, the Greek, and the German Renaissance as well as of the English Gothic. In Munich a long rivalry has been carried on between the German and the Italian Renaissance; and both of these orders have been represented by masters of extraordinary merits. In Berlin there is a very marked tendency to break away from the traditional characteristics of the Greek Renaissance, and to adopt the more modern styles. With this tendency sandstone and limestone have come to be so generally used that, in the opinion of Herr Asmus, the appearance of the city will be quite revolutionized within the next ten years.—*Evening Post.*

THE SWEDISH SANCTUM DECALOGUE.—The following version of the "Contributor's Ten Commandments" is taken from a Swedish paper. It would be interesting to collate it with any similar decalogue existing in other countries:—

1. If you wish to send a communication to a paper do it at once. What is new at this moment is no longer so to-morrow.
 2. Be concise in your statement, for thereby you save your own time and that of the reader. Explanations, not words; facts, but no reflections on them.
 3. Be simple; write distinctly; do not talk about to-day or yesterday, but give the name of the day or the date.
 4. Begin frequently a new line, which gladdens the compositor. Write short sentences for the benefit of the reader. Use many stops and commas, and do not forget to put them in.
 5. Do not correct single letters or numbers, but cross the whole word out when a correction is wanted.
 6. First and foremost, write only on one side of the paper. A hundred lines on one side can be cut into ten pieces, and set up by several compositors in ten minutes. If written on both sides, only one compositor can arrange it, which will take some hours.
 7. A MS. paper which takes some hours in getting into type is in danger of not being printed the first day, and is passed over till another day.
 8. What is kept till the next day is no longer new, and may not get in. Each day has its own trouble: yesterday is always in the wrong.
 9. Put your name and address on the back of your copy.
 10. Above all, speak the truth, and nothing but the truth. If you talk about yourself use the third person; say what you have to say without false modesty, but also without conceit.
- Admirable rules these, and if they are obeyed how happy must be the life of an editor in Sweden. But decalogues seem to exist in order to be broken, and it is to be feared that even in Sweden the editorial chair is no bed of roses.—*Pull Mall Gazette.*

THE NATIONAL OPERA-HOUSE.—The report of the architect, Mr. Fowler, upon the proposed completion of the National Opera-House on the Embankment, the first stone of which was laid by the Prince of Wales exactly eight years ago, gives some particulars regarding the structure of the building and the objects to which it is to be dedicated, in the event of the projected completion being accomplished. Fifty thousand pounds, it appears, have already been expended upon it, but the owners have agreed to grant a lease of the building as it stands, and so much of the site as is required for it, for £15,000, to be paid on completion in boxes or stalls. The estimated cost of completion is £55,000, but it is now proposed that the building shall be on a less elaborate scale than was intended, both as regards the interior and exterior, though it is to have the same spacious internal accommodation. It will be larger even than the famous La Scala, but very similar in design. Altogether, it will provide comfortable accommodation for about 3,000 persons, a larger number than can be accommodated in the Grand Opéra in Paris. Of these, one thousand persons will be in the gallery. It is calculated that this great accommodation will permit the lessee to give opera at half the present Italian Opera prices. The structure will be fire-proof, and will comprise a promenade, refreshment rooms, and smoking divan on a grand scale. It is contemplated that access shall be given from the District Railway by a covered way. It is Mr. Mapleson's intention to give Italian, French or German opera during the summer season. During the spring and autumn it will be devoted to English opera, while at Christmas it will pass into the hands of "an English theatrical manager, under whose care the national drama is to be cultivated."—*The Architect.*

"Le Tunnel infernal" THROUGH THE MONT DES CABANES, FRANCE.—A curious narrative of difficult engineering comes to us from France. It appears that the railroad from Montauban to Brive being authorized to run a tunnel through the Mont des Cabanes, a distance of a mile and a half (814 metres), the workmen successfully pierced through all of the distance but eight metres (twenty-six feet) during the year 1881. The two years which have elapsed since that time have been occupied in ineffectual efforts to penetrate the small distance remaining; ineffectual on account of the constant deposits of moistened earth, a sort of red phosphate, which is renewed as fast as it is removed, though fifteen tons per hour have been taken away during the two years. The material appears inexhaustible, and engineers from different parts of Europe have, after careful inspection, given their opinion that the task of completing the tunnel is impossible. The pillars which are used for supporting the roof of the tunnel have to be constantly renewed, as they become twisted and bent from the heavy load upon them, this even being the case with the metallic columns. Several persons have been killed during the progress of the work, and a large number injured. Altogether, the title given to the work of "*Le Tunnel infernal*" would not seem to be misplaced. The cost of removing the mud of the recalcitrant twenty-six feet has already amounted to 3,500,000 francs, and it is impossible to estimate anything as to the future of this melancholy enterprise.—*Telegram.*

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

- 292,462. SAFETY-GATE FOR ELEVATORS.—Frank K. Bartlett, Springfield, Mass.
 292,486. SKYLIGHT.—George Hayes, New York, N. Y.
 292,505. CHIMNEY-TOP.—Nicolai Petersen, Chicago, Ill.
 292,531. FIRE-ESCAPE LADDER.—Andrew J. Bartlett, Elk Flat, Ore.
 292,548. FIRE-ESCAPE.—Henry E. Doren, Grand Rapids, Mich.
 292,559. CONCRETE AND CONCRETED PAVEMENT AND ROOF-PAVEMENT AND SUBSTRUCTURE FOR THE SAME.—Thaddeus Hyatt, New York, N. Y.
 292,567-568. SCREW-JACK.—Edward H. Middleton, Philadelphia, Pa.
 292,571. HINGE.—William Patterson, San Francisco, Cal.
 292,585. METALLIC ROOFING-SHINGLE.—Ephraim B. Repp, New Windsor, Md.
 292,587. BIT AND DRILL-BRACE.—John D. Richardson, Brooklyn, N. Y.
 292,650. SHADING-PENCIL.—Geo. Baptiste Hecklinger, Streator, Ill.
 292,670. SASH-HOLDER.—William A. McDonald, Minneapolis, Minn.
 292,684. ELEVATOR.—Geo. Alexander Saxer, New Brighton, N. Y.
 292,686. ELEVATOR STOP MECHANISM.—Frank Seconnes, Detroit, Mich.
 292,701. CHIMNEY-PROTECTOR.—Ira A. Smith, East Berkshire, Vt.
 292,727. DOOR AND GATE LATCH.—Chas. Worthington, Little Falls, N. Y.
 292,738. SKYLIGHT.—John Ehrhardt, St. Louis, Mo.
 292,767. FIRE-ESCAPE.—Robert Stevenson, Ferrysburg, Mich.
 292,803. FIRE-ESCAPE.—Jas. T. Guthrie, Leesburg, O.
 292,825. FIRE-ESCAPE.—Geo. M. Kim, Allegheny, Pa.
 292,855. FIRE-ESCAPE.—John D. Richberg and Dan Brobst, Chicago, Ill.
 292,874. BENCH-VISE.—John Thomson, Brooklyn, N. Y.
 292,887. TILE OR BLOCK FOR FINISHING INSIDE WALLS.—Jas. Austin, Detroit, Mich.
 292,901. CISTERN FOR WATER-CLOSETS.—John Demarest, New York, N. Y.
 292,918. WATER-CLOSET.—John Kelly, Chicago, Ill.
 292,937. OPEN-FIRE STOVE AND HEATER.—Alonzo R. Morgan, New York, N. Y.
 292,933. CESSPOOL-WELL.—William and John M. Rowbottom, Allegheny, Pa.
 292,981. FIRE-ESCAPE.—Thos. Brooke, Des Moines, Iowa.
 292,989. FIRE-ESCAPE.—Robert P. Clark, Philadelphia, Pa.
 292,995. ELEVATOR.—Riley L. Davis, Mooresville, N. C.
 293,010. BUILDING-WALL COMPOUND.—Levi Haas, Chester, Pa.
 293,025. RADIATOR FOR HOT-AIR FURNACES.—Cyrus S. Hood, Corning, N. Y.
 293,028. VENTILATED SHOW-WINDOW.—Samuel E. Hyndman, Cincinnati, O.
 293,038. ELEVATOR.—August Kleckhefer, Milwaukee, Wis.
 293,040. SCAFFOLDING-BRACKET.—Mark N. Knight, Skowhegan, Me.
 293,043. DRAUGHT-REGULATOR FOR PIPES, FLUES, AND VENTILATORS.—Lewis Young Lenhart, Red Wing, Minn.
 293,045. MIXED PAINT.—Howard Little, Deckerstown, N. J.
 293,050. ELEVATOR.—Thomas McAdoo, New York, N. Y.
 293,058. SCREW-CLAMP.—Frank A. Moore, Louisville, Ky.
 293,072. FIRE-ESCAPE.—Thos. Brower Peacock, Topeka, Kan.
 293,097. DOVETAILING-MACHINE.—John Schmidt, Burlington, Iowa.
 293,099. WINDOW-SASH.—William A. Sinsel, Waukesha, Wis.
 293,100. SASH-CORD FASTENER.—William A. Sinsel, Waukesha, Wis.
 293,128. RATCHET-WRENCH.—Charles Wechsler, Minneapolis, Minn.
 293,137. FIRE-ESCAPE.—Daniel Bennett, Logan, Ohio.
 293,153. FIRE-ESCAPE LADDER.—Arnold M. Downing, Oneida, N. Y.
 293,175. PIPE-WRENCH.—James Jewell, Grandville, Mich.
 293,177. FIRE-ESCAPE.—Samuel J. Joyce, New York, N. Y.
 293,185. HOT-AIR OR GAS ENGINE.—Hiram S. Maxim, Paris, France.
 293,191. FIRE-ESCAPE BRACKET.—Charles Murdoch, New Rochelle, N. Y.
 293,207. MANUFACTURE OF ARTIFICIAL STONE.—Rudolph C. Wittmann, New York, N. Y.

SUMMARY OF THE WEEK.

Baltimore.

STORE AND DWELLINGS.—W. Claude Frederic, architect, has prepared drawings for Lewis H. Robinson, builder, for a three-story store and dwell., 167 7/8 x 60', and 14 three-story dwellings, 16' x 54', to be built on Fulton Ave., commencing cor. Lanvale St., of pressed-brick, stone and terra-cotta, and to cost about \$50,000.

The same architect has prepared drawings for W. S. Booker, Esq., for a Queen Anne house to be built on McCulloh St., near Presstman St., on lot 15' x 150', of brick and terra-cotta, and heated by steam; cost, \$7,000.

BUILDING PERMITS.—Since our last report twenty-one permits have been granted, the more important of which are the following:—

J. B. Irvin, 7 two-story brick buildings w s Etting St., s of Bloom St.; 13 two-story brick buildings, e s Etting St., n of Lorman St.; and 10 two-story brick buildings, w s Etting St., n of Laurens St.

Wilson & Hunting, 5 three-story brick buildings (square) e s Linden Ave., n of Robert St.

L. Schoenlein, 2 two-story brick buildings, s s Jefferson St., between Washington and Castle Sts.

W. J. E. Diven, 3 three-story brick buildings, e s Stricker St., n of Winchester St.

George Deer, two-story brick building, w s State St., between Saratoga and Mulberry Sts.

Conrad Hill, two-story brick building, w s Stockton St., between Patterson Ave. and Presstman St.

Amelia C. Gilbert, 3 two-story brick buildings, w s Parrish Alley, rear of Gilmer St. and s of Tennant St.

Jos. M. Didust, three-story brick building, n s Biddle St., e of Valley St.

Boston.

BUILDING PERMITS.—Brick.—Dartmouth St., No. 121, Ward 11, for Albion Knowlton, family-hotel, 25' x 63', four-story flat; H. McLaughlin, builder.

Temple St., near Sherman St., Ward 4, for Osgood & Hart, workshop, 33' x 60', two-story pitch.

Ruggles St., No. 95, Ward 19, for Timothy Connelly, dwell., 31' x 30', three-story flat.

Wood.—East Fifth St., near L St., Ward 14, for Wm. T. Eaton, 2 dwellings, 21' 6" x 40', two-story flat; Wm. T. Eaton, builder.

Vale St., near Lowland St., Ward 15, for Choate, Burnham & Co., wagon-shed, 167' x 140', one-story flat; G. W. Rigby, builder.

West Fifth St., No. 98, Ward 13, for Frank Campbell, dwell., 25' x 30', three-story flat; Michael Driscoll, builder.

Carruth St., cor. Van Winkle St., Ward 24, for Frederick L. Pierce, dwell., 17' x 30' and 32' two-story pitch; Frederick L. Pierce, builder.

Commercial Point Wharf, near Union St., Ward 24, for Boston Gas Light Co., coal-elevator, 15' 10" x 15' 10", five-story hip.

Centre St., rear, near Grove St., Ward 23, for Henry H. Salmon, stable and storage, 15' x 20', one-story pitch; John String, builder.

Washington St., rear, near Keyes St., Ward 23, for Hannah Kennedy, mechanical, 14' x 22', one-story pitch; Michael Kennedy, builder.

East First St., near opp. L St., Ward 14, for Harrison Loring, manufg., 57' x 160', one-story flat; J. B. Sears, builder.

Gates St., No. 70, Ward 15, for Mrs. Annie Riley, dwell., 13' x 13' and 20' x 28', two-story pitch; Peter Riley, builder.

Dennis St., No. 98, near Blue Hill Ave., Ward 20, for C. L. Creber, mechanical, 16' x 26', one-story flat; F. C. Creber, builder.

Washington St., No. 42, Ward 5, for H. C. Paige, dwell., 13' x 22' and 24' x 30', three-story flat, James Keenan, builder.

Ruggles St., near Washington St., Ward 19, for Simon Goldsmith, 2 dwellings, 20' x 45', three-story flat; Simon Goldsmith, builder.

Unnamed St., near Clifton St., Ward 20, for E. L. Kaiser, dwell., 24' x 36', two-story flat; J. V. Smith, builder.

Conant St., near Bumstead Lane, Ward 22, for W. Hardestie, dwell., 20' 6" x 47' 6", three-story hip; H. D. Ward, builder.

Brooklyn.

BUILDING PERMITS.—Kosciusko St., n s, 194' e Stuyvesant Ave., two-story dwell., gravel roof; cost, \$3,000; owner, Louis P. Brown, 1345 Fulton St.; architect, B. P. Robbins; builders, E. K. Robbins and John Remsen.

North Eighth St., n s, 175' e Third St., four-story frame tenement, tin roof; cost, \$8,000; owner, Michael O'Connor, 337 Fourth St.; architect, F. Weber; builders, U. Maurer and J. Fallon.

Park Ave., n w cor. Kent Ave., four-story brick store and tenement, tin roof; cost, \$10,000; owner, A. Phillips, Jr., 124 East One Hundred and Twenty-fifth St., New York; architect and carpenter, John G. Hanlon; mason, C. Collins.

Bushwick Ave., w s, 25' n Adams St., 3 three-story brick tenements, tin roofs; cost, each, \$6,000; owner, Jacob Bossert, 101 Harrison Ave.; architect, J. Platte; builder, J. Auer.

Sackett St., n w cor. Gowanus Canal, 2 frame buildings, board roof; total cost, \$5,000; owners, W. H. and J. W. Vanderbilt, 304 Navy St.; architect and builder, Phil Nies.

Graham Ave., No. 354, e s, about 75' n North Second St., three-story brick store and tenement, tin roof; cost, \$6,000; owner, Henry Beales, 626 Greene Ave.; architect and builder, G. H. Garrison.

Elery St., Nos. 319, 321 and 323, n s, 125' e Broadway, 3 three-story frame stores and tenements, tin roofs; cost, each, \$4,000; owner, Louis Stutz, Broadway, cor. Elery St.; architect, Th. Engelhardt; builders, J. Armendinger and Peter Kunze.

Carroll St., n s, 306' w Columbia St., three-story brick tenement, tin roof; cost, \$5,000; owner, John F. Peppard, 128 Hoyt St.; architect, T. E. Lookwood; builders, J. J. Gallagher and J. J. Garaghty.

Mary Ave., e s, 27' 6" s Elery St., 6 three-story frame tenements, tin roofs; cost, each, \$3,700; owner,

architect and builder, Henry Loeffler, 1894 Stockton St.

Eckford St., e s, 90' s Norman Ave., 5 three-story frame tenements, gravel roofs; total cost, \$15,000; owner, architect and carpenter, Samuel Self, 142 Manhattan Ave.; mason, J. Haffner.

Maujer St., Nos. 79, 81 and 83, n s, 120' w Leonard St., 3 three-story frame tenements, tin roofs; cost, each, \$4,500; owner, Robert Kluth, 400 Grand St.; architect, A. Herbert; builders, U. Maurer and L. Kreuder.

Oakland Ave., n w cor. India St., four-story frame store and tenement, tin roof; cost, \$5,800; owners, O'Keefe & Doyle, North Sixth St., cor. Fifth St.; architect, A. Herbert; builder, not selected.

Wilcott St., No. 36, e s, 150' s Richard St., three-story frame tenement, tin roof; cost, \$4,500; owner, John Hickey; architect and builder, C. M. Detlefsen.

Bushwick Ave., s e cor. Adams St., three-story brick store and tenement, tin roof, wooden cornice; cost, \$10,000; owner, Leonard Eppig, Central Ave.; architect, Frank Holmberg.

Lafayette Ave., n s, 100' w Lewis Ave., 6 two-and-one-half-story brown-stone dwellings, tin roofs; cost, each, \$1,500; owner, architect and builder, P. F. O'Brien, 148 Lee Ave.

Central Ave., No. 92, w s, 25' s Jefferson St., three-story frame store and tenement, tin roof; cost, \$4,500; owner, Henry Eppig, Central Ave.; architect, Frank Holmberg.

Fourth St., s e cor. Lorimer St., 4 three-story stores and tenements; total cost, \$8,000; owners, Randall, Miller & Henderson; architects and builders, Randall & Miller.

Meserole St., n s, 125' w Lorimer St., three-story frame tenement, tin roof; cost, \$4,300; owner, Edward Kanets, Bushwick Ave., cor. North Second St.; architect, John Platte; builders, J. Sachs and D. Kreuder.

Decatur St., s s, 275' w Patchen Ave., two-story brick dwell., tin roof, wooden cornice; cost, \$3,000; owner, William Vather, 378 Decatur St.; architect, Isaac D. Reynolds; builder, J. J. Quinn.

St. Andrews Pl., e s, 275' s Herkimer St., 3 two-story brick dwellings, tin roofs; cost, \$2,500 each; owner, E. Nichol, 33 Troy Ave.; architect, W. Williamson; builder, A. Nichol.

Bogart St., e s, 160' n Flushing Ave., 3 two-story frame dwellings, tin roofs; total cost, \$5,000; owner, Edward Barnett, Flushing Ave.; architect, John B. Harned; builder, J. Monzani.

Bergen St., n s, 100' w Franklin Ave., four-story brick ice-house, tin roof; cost, \$18,000; owner, Budwiser Brewing Co. (limited), cor. Franklin Ave. and Dean St.; architect, John Platte; builder, Jacob Rauh.

Grand Ave., s e cor. Willoughby Ave., 2 four-story brown-stone flats, felt and gravel roofs; cost, \$6,000 each; owner, Geo. W. Brown, 128 Fulton St.; builder, L. E. Brown.

Fulton St., No. 432, s s, 200' 1" e Gallatin Pl., five-story iron and brick store, tin roof; cost, \$14,000; owners, Wechsler & Abraham, 287 Fulton St.; architect, G. L. Morse.

Fifth Ave., No. 626, w s, 50' n Eighteenth St., two-story brick store and dwell., tin roof; cost, \$4,000; owner, Abraham Simon, 624 Fifth Ave.; architect, F. Ryan; builder, J. R. Anderson.

Greene Ave., s s, 205' e Patchen Ave., 4 two-story Connecticut brown-stone dwellings, tin roofs; cost, each, \$5,000; owner and builder, Patrick Mullady; architects, Parfitt Bros.

Broadway, s e cor. Locust St., four-story frame store and tenement, tin roof; cost, \$7,500; owner, Frank Nuss, 7 Siegel St.; architect, Th. Engelhardt; builders, Jno. Auer and M. Metzger.

Marcy Ave., n e cor. Floyd St., 2 three-story frame stores and tenements, tin roofs; total cost, \$10,000; owner, H. Ruckelshausen, 36 Tompkins Ave.; architect, Th. Engelhardt; builders, J. Fuchs and H. Eich & Bro.

Saratoga Ave., w s, 197' s Herkimer St., 2 two-story frame dwellings, tin roofs; cost, each, about \$3,000; owner, Wilhelm Almsad, 2130 Atlantic Ave.; architect, Chas. E. Hebbard; builders, A. Sutterline and W. Nitz.

Fulton St., Nos. 422-430, s s, 100' e Gallatin Pl., and rear of No. 13 Gallatin Pl., e s, 113' 6" s Fulton St., five-story iron and brick dry-goods store, tin roof; cost, \$158,000; owners, Wechsler & Abraham, 287 Fulton St.; architect, G. L. Morse.

Chicago.

BUILDING PERMITS.—J. Webb, two-story dwell., 282 Leavitt St.; cost, \$3,000.

J. K. Bigelow, 2 three-story and cellar stores and flats, 653 and 655 Lake St.; cost, \$10,000; architect, H. R. Wilson; builders, Rodgers & Cook.

Phillip Lauer, two-story and basement dwell., 332 Centre Ave.; cost, \$4,000; architect and builder, Phillip Lauer.

A. Karstens, two-story basement and attic dwell., 57 Vedder St.; cost, \$4,000; architect, Bruhns.

Snyder & Co., two-story and basement factory, McGregor St.; cost, \$20,000; architects, Treat & Foltz; builder, J. Cpx.

J. Julien, two-story and basement flats, 510 West Harrison St.; cost, \$3,000.

N. Garten, 2 two-story and basement stores and dwellings, 342 and 344 North Ave.; cost, \$7,000.

E. S. Pike, two-story building, 163 State St.; cost, \$14,000; architect, F. L. Charney.

G. W. Prince, two-story flats, 1034 Adams St.; cost, \$4,000.

H. W. Lemon, 2 three-story dwellings, 449 and 451 Elm St.; cost, \$9,000; architect, L. G. Halberg; builders, Wilkie & Hollman.

J. E. McNichols, 2 two-story flats, 286 and 288 Loomis St.; cost, \$6,000.

D. Milne, two-story flats, 1003 Jackson St.; cost, \$3,500.

E. S. Baldwin, 2 two-story and basement flats, 133 and 135 North LaSalle St.; cost, \$7,000; architect, W. Longhurst.

F. Laux, three-story and basement store and dwell., 383 Centre Ave.; cost, \$6,000; architect, E. Baumann; builders, Mueller & Scheel.

U. F. Smith, three-story stores and flats, 3207 to 3213

Cottage Grove Ave.; cost, \$10,000; architects, Wheelock & Clay; builder, A. H. Lowden.
H. Hasenbein, two-sty and basement store and dwell., 276 West Twenty-first St.; cost, \$3,500.
J. May, three-sty and basement dwell., 504 Wabash Ave.; cost, \$5,000; architects, Frommann & Jensen.
I. Hoerber & Co., three-sty and basement store and dwell., 556 Twelfth St.; cost, \$6,500; architect, Reaul; builder, A. Tressel.

Detroit.

BUILDING PERMITS.—The following are the most important permits granted since our last report:—
Mary Landgskowski, brick store, 778 Riopelle St.; cost, \$4,000.
Aaron Keen, frame dwell., 808 Third St.; cost, \$2,500.
Geo. W. Snover, brick store, 856 Michigan Ave.; cost, \$4,000.
E. H. Green, brick store, 702 Michigan Ave.; cost, \$4,500.
John Boeberitz, brick dwell., 27-31 Macomb St.; cost, \$5,000.
W. G. Vinton, addition to church, cor. Clinton and Campan Aves.; cost, \$10,000.
P. D. Tahant, 2 brick stores, Michigan Ave.; cost, \$5,000.
Dry Dock Engine Works, brick shop, Atwater St.; cost, \$5,200.
A. Chapoton, brick tobacco factory, 53-59 East Larned St.; cost, \$34,000.
W. Y. Wilson, brick dwell., 505 Antoine St.; cost, \$2,500.
A. C. Varney, brick factory, Blaubein St.; cost, \$5,500.
A. C. Varney, brick dwell., 280 West Warren Ave.; cost, \$4,500.
J. W. Granger, frame house, 170 Leland St.; cost, \$2,500.
A. C. Varney, 4 brick houses, 12-28 Caroline St.; cost, \$5,200.
H. S. Peoples, block brick stores, Michigan Ave.; cost, \$5,000.
Margaret Toynton, add. to factory, West Congress St.; cost, \$16,000.
H. Carew, add. to house, 175 Campan Ave.; cost, \$2,700.

New York.

HOUSES.—Mr. Ed. J. King will have built, from designs of Messrs. D. & J. Jardine, 5 four-sty dwells, 20' x 55' each, with extensions, on the south side of Seventy-first St., 350' w of Ninth Ave.
Messrs. Chas. Buek & Co. and Commissioner Crimmins will probably start several houses in the early spring.

OFFICE-BUILDINGS.—It is reported that Mr. C. H. Bliss will erect a large office-building on the site purchased by him adjoining the "Field" Building.
Mr. Geo. B. Post has been appointed architect for the Mortimer Building, s e cor. of Wall and New Streets; and Mr. F. Carlos Merry, for the Brooklyn Life Insurance Co. Building, to be erected at No. 51 Liberty St.

The Real Estate Exchange and Auction Room have requested Mr. Stephen D. Hatch to draw plans for the alterations to their recently-acquired premises on Pine Street.

STORES.—Messrs. Robert and Ogden Goellet will have built, at the s e cor. of Leonard and Hanson Sts., 4 seven-sty, 25' front, brick and stone stores, from designs of Mr. Ed. H. Kendall.

At Nos. 25 and 27 West Thirteenth St., a first-class store, 50' x 103' 3", is to be built by Messrs. Jas. A. Hearn & Son.

The New York Steam Company will erect a four-sty fire-proof building, 100' x 100', of brick and iron; cost, about \$250,000.

BUILDING PERMITS.—*Fifth Ave., No. 995*, six-sty brick and stone dwell., slate and copper (fire-proof) roof; cost, \$150,000; owner, John S. Kennedy, 63 William St.; architect, R. H. Robertson; builder, not selected.

Third Ave., s e cor. One Hundred and Fourteenth St., 5 five-sty brown-stone front tenements and stores, tin roofs; cost, each, \$16,000; owner, Ellen Murray, 315 East One Hundred and Sixteenth St.; architect, A. Spence; builder, Joseph Murray.

West Forty-second St., Nos. 309, 311 and 313, 2 five-sty brick tenements, tin roofs; cost, each, \$19,500; owner, Theresa Sigrist, 305 West Forty-second St.; architect, Chas. Reutz, Jr.

Second Ave., Nos. 928 and 930, 2 five-sty brick flats, tin roofs; cost, each, \$19,000; owner, Ernest Von Au, 83 Fulton St., Brooklyn; architect, Jobst Hoffmann.

East Houston St., No. 257, five-sty brick tenement, tin roof; cost, \$12,000; owner, Moses Toch, 232 East Tenth St.; architect, A. B. Ogden.

East Forty-first St., Nos. 206 and 208, 2 five-sty brick tenements, tin roofs; cost, each, \$22,500; owner, Peter Albert, 443 Second Ave.; architects, Thom & Wilson.

One Hundred and Forty-eighth St., n s, 300' Courtland Ave., three-sty frame tenement and store, tin roof; cost, \$4,800; owner, Cyrillus Nitsch, 9 West Fourth St.; architect and carpenter, Ed. Stiehler; mason, John Frees.

West Thirty-fifth St., No. 258, five-sty brick tenement and store, tin roof; cost, \$14,000; owner, Lawrence Curran, 260 West Thirty-ninth St.; architect, Jos. M. Dunn.

Fourth Ave., s e, 44' n One Hundred and Twenty-fourth St., four-sty brick tenement and store, tin roof; cost, \$8,000; owner, Nora Dolan, One Hundred and Twenty-fourth St. and Fourth Ave.; architect, Andrew Spence.

East Houston St., No. 372, five-sty brick workshop and store, tin roof; cost, \$7,500; owners, Ignatz Melrowitz and Samuel Altman, 372 and 374 East Houston St.; architect, F. W. Klem; builder, John Lochmann.

One Hundred and Fifty-eighth St., n s, 150' e Courtland Ave., 2 three-sty frame dwells., tin roofs; cost, \$7,000 and \$3,800; owner, Charles Anstatt, 1518 Sixth Ave.; architect, Adolph Pfeiffer; builders, Charles Haffen and George Mand.

One Hundred and Fourth St., n s, 180' w Fourth Ave., five-sty brown-stone front tenement, tin roof;

cost, \$18,000; owner, Philip Hausman, 522 West Forty-ninth St.; architect, M. Louis Ungrich.
ALTERATIONS.—*Second Ave., No. 104*, front and basement altered and a four-sty brick extension, tin roof; cost, \$11,000; owner, Ferdinand Ehrhart, 28 St. Mark's Pl.; architects, Schwarzmann & Buchman.
Stone St., Nos. 16, 18, and 20, and Nos. 33 and 35 Bridge St., raise two-sty and a four-sty brick extension, gravel roof; cost, \$30,000; owner, John S. Davidson, 246 West Forty-fifth St.; architect, Emilen T. Littell.

Fifth Ave., No. 574, front altered, also interior alterations; cost, \$7,000; owner, Geo. Kemp, 720 Fifth Ave.; architects and builders, Chas. Graham & Sons.
Sixth Ave., s e, 25' s One Hundred and Twenty-fourth St., raise two stories; cost, \$4,500; owner, John R. Kelly, s e cor. Sixth Ave. and One Hundred and Twenty-fourth St.; architect, M. Louis Ungrich.

St. Louis.

BUILDING PERMITS.—Forty-nine permits have been issued since our last report, fourteen of which are for unimportant frame houses. Of the rest those worth \$2,500 are as follows:—

Dan Dailey, two-sty brick dwell.; cost, \$4,000; P. F. Meagher, architect; J. J. McMahon, builder.
Mullanphy Emigrant Relief Fund, 2 two-sty brick dwells.; cost, \$5,450; I. Taylor, architect; J. J. McMahon, builder.

Mullanphy Emigrant Relief Fund, 2 two-sty brick dwells.; cost, \$5,450; I. Taylor, architect; J. J. McMahon, builder.

S. Hain, two-sty brick dwell.; cost, \$3,500; Wm. Riewe, builder.

A. Mueller, 2 adjacent two-sty brick dwells.; cost, \$5,500; Beckmeier & Reithmann, builders.

D. Leitch, two-sty brick dwell.; cost, \$4,000; T. B. Annan, architect; B. F. Stottemeyer, builder.

D. Leitch, two-sty brick dwell.; cost, \$8,000; T. B. Annan, architect; B. F. Stottemeyer.

W. Winnefield, two-sty brick dwell.; cost, \$2,700; Staudte, builder.

F. Flotrun, two-sty brick dwell.; cost, \$3,000; T. H. Florence, builder.

C. A. Spaulding, two-sty brick dwell.; cost, \$6,600; McElfatrik, architect; R. F. McClure, builder.

A. Cooper, 4 adjacent two-sty brick dwells.; cost, \$13,000; H. W. Kirchner, architect; A. Cooper, builder.

Mrs. A. Gray, two-sty brick dwell.; cost, \$2,700; J. Volk, builder.

McDonald, 2 two-sty brick dwells.; cost, \$3,800; C. F. May, architect; H. Drees, builder.

F. Greene, 2 two-sty frame dwells.; cost, \$5,000; F. Greene, builder.

General Notes.

ALBERT LEA, MINN.—Messrs. Naevé & Soth will, as soon as the frost is out of the ground, put up a brick block, 22' x 70', two stories high.

An agent of the Chicago, Milwaukee & St. Paul Railway company was in town a few days since, and thinks of erecting sixty tenement-houses here the coming spring.

R. M. Todd is to finish the building of the steam grist-mill, begun by M. Thompson.

Wm. Morin proposes to build six cottages on Adams Street next spring, each to cost about \$1,000.

BRAINERD, MINN.—The question of building a high-school building, to cost \$40,000, has just been voted upon by the inhabitants, and unanimously carried. The work will commence at once.

CLEVELAND, O.—The Bricklayers' Union has served formal notice on contractors and builders that bricklayers' wages for the coming season will be \$3.50 per day, and nine hours will constitute a day on Saturday.

All the sewer-pipe manufacturing companies of the United States, twenty-four in number, have organized a pool, to date from February 1. The headquarters will be here.

COATSVILLE, PA.—Country house for Wm. Ridgeway, Esq., first sty brick, timber-work above; plans by Hazlehurst & Huckel, architects, Philadelphia.

DES MOINES, IOWA.—A review of the building expenditures in Des Moines the past year shows total expenditures to \$3,868,472, of which \$275,000 was expended by the State on the new capitol-building; \$165,337 by the city for paving, sewerage, etc.; and \$29,200 for school-buildings. The Register figures the wholesale trade of the city at \$30,603,630, and the value of its manufactures at \$18,183,850.

DOYLESTOWN, BUCK'S COUNTY, PA.—A new county jail will be built this year; cost, probably, upwards of \$100,000; plans by Addison Hutton, architect, Philadelphia.

EAST ORANGE, N. J.—Mr. Wm. Doane, of Worth Street, a resident of Arlington Ave., has begun to build a brick row of four stores, immediately opposite the depot. The improvements will cost about \$25,000.

EAU CLAIRE, WIS.—The Congregational Society has decided to build a new edifice on the site of their present place of worship, at a cost of \$30,000 to \$35,000. The building committee, besides the trustees, consists of O. H. Ingram, E. Swift, C. A. Buldar, D. P. Simons, and F. Holman.

ELGIN, MINN.—Elgin is nearly recovered from its terrible calamity of last July. Nearly every business house has been rebuilt, and they now have a much finer school-building than the one destroyed. The church has not been rebuilt yet, but work has begun on the foundation, and if the weather is favorable it will be reconstructed this winter.

ELK RAPIDS, MICH.—C. N. Hurlbut, two-sty wood dwell.; cost, \$2,500; D. S. Hopkins, architect, Grand Rapids, Mich.

EXETER, N. H.—It is expected that a Masonic Temple building will soon be built here. The fraternity have already collected a considerable fund for that object.

FARMINGTON, WIS.—The Catholic congregation at St. Michael's will build a new church next season. The contract for the masonry work has been let for \$2,000.

FREDERICK, MD.—Alfred J. Ritter, Esq., is about to have built a three-sty brick and terra-cotta store-building (Queen Anne), 39' x 53'; cost, \$10,000; from designs by George A. Frederick, architect, Baltimore; Mr. Balsell, builder, Frederick.

GREENBRIER, WHITE SULPHUR SPRINGS, VA.—Geo. A. Frederick, architect, Baltimore, is preparing plans for a Catholic church, to be built here, of brick with stone finish, 36' x 61'; seating capacity, two hundred and thirty; cost, \$8,000.

GUYMAS, MEXICO.—Burnham & Root, architects, of Chicago, planned the hotel at Guymas, Mexico, 200' x 300', two stories and basement; cost, upwards of \$75,000.

HANOVER, N. H.—The time for raising the \$60,000 for a new library-building for Dartmouth College, upon which the bequest of \$30,000 by E. H. Rollins is contingent, has been extended to March 1.

HARTFORD, CONN.—The town of Hartford two years ago appropriated \$60,000 for a soldier's memorial monument, and a committee of citizens that was appointed at that time have at length, after considering many designs, adopted a plan submitted by architect George Keller, of this city. It is to be in the form of a memorial arch, with two round side towers, a frieze of sculptured historical scenes, a parapet, etc., with places for statues on the top and sides. It is to be erected at the south end of the Ford street bridge, the main approach to Bushnell Park, and facing the State Capitol Building.

HELENA, MONTANA TER.—We have had considerable of a building boom throughout the Territory the past season, the little city of Helena taking the lead, having expended about three-quarter million dollars (\$750,000) in substantial building.

Considerable work is projected and plans are being prepared for next season. Among the foremost are the Montana National Bank, W. W. Boyington, architect, Chicago; Masonic Temple, Birkentled Block, T. W. Welter, architect; and numerous other buildings whose plans are not yet prepared.

Scale of mechanics' wages: bricklayers, \$7 per day; carpenters, \$4 per day; plasterers, \$6 per day; painters, \$3.50 per day. Good mechanics of all kinds are in demand.

Brick, good hard-burned, \$9 per M.

Pine lumber, common, \$29 per M; first clear, \$50.

HIGHTSTOWN, N. J.—C. J. Hazard, two-sty wood dwell.; cost, \$3,000; D. S. Hopkins, architect, Grand Rapids, Mich.

HOLBROOK, MASS.—A dwelling is being built for Mr. Geo. L. Spear, from plans of Messrs. Hartwell & Richardson, of Boston. It measures 36' x 53', is two stories high, with pitch roof, McNeal, builder.

HOLYOKE, MASS.—The plans have been prepared for the new quarters of the Home National Bank in Tiley's block, and work will begin on the premises this week.

JAMESTOWN, D. T.—The trustees of the Presbyterian college at Jamestown have organized. The executive committee, consisting of Rev. E. J. Thompson, of Casselton, Rev. D. N. Fanning and O. E. Hewitt, were instructed to look after plans for building, etc.

The North Dakota Bank will erect a brick block on Fifth Avenue.

KANSAS CITY, MO.—Two ordinances have been introduced in the city council, and are now under consideration by the Committee on Public Improvements, looking to the enlargement and improvement of the present city buildings. One of these ordinances proposes to erect a separate structure, two stories high, and to be used chiefly by the Engineering Department. The other proposes to build a story tower on the present building.

LACONIA, N. H.—Mr. E. A. F. Newcomb, of Boston, is the architect of a house for Mr. Jas. H. Tilton; cost, about \$10,000.

LACOTA, D. T.—Nelson County is building a jail in this town.

Two stores are also being built here this winter.

LILLY'S STATION, PA.—It is proposed to build a Catholic convent at Lilly's Station, on the Pennsylvania Railroad, on the top of the Allegheny Mountains.

LONG BRANCH, N. J.—Remodelling house for Simon Sternberger, frame building, new exterior, finished with Boystone's decorated shingles; cost of alterations, \$4,000; J. M. Merriek, architect; Jas. Thompson, builder.

A large hotel is in course of erection on the cor. of Ocean Ave. and Broadway.

MALDEN, MASS.—The proposed new building for public purposes, to be erected on Pleasant Street, would require an outlay of about \$75,000. The following Committee of the Malden Improvement Association has the matter in charge: Messrs. James Pierce, John W. Allen, William A. Wilds, Joshua H. Millet and George W. Walker.

A dwelling, 25' 6" x 51', two stories high, pitch roof, is building for Mr. S. M. Fairfield; L. B. Jordan, contractor; Messrs. Hartwell & Richardson, of Boston, architects.

MARTINSBURG, W. VA.—W. F. Weber, architect, Baltimore, is preparing plans for additions and alterations to the Lutheran church at this place, to cost \$8,000.

MILWAUKEE, WIS.—James Kneeland, owner of the Grand Avenue House, has decided to demolish the present structure and build a new hotel on its site. The plans for the new hotel have been completed and approved. It will be called the Kneeland.

The Merchants' Association has taken formal action in favor of holding the State fair here next season, and of building a new hotel on the East Side.

MT. WASHINGTON, BALTIMORE CO., MD.—Edward A. Robinson, Esq., is about to erect additions to his frame cottage, to cost \$5,000, from designs by Benj. F. Owens, architect, Baltimore; John Burns, builder.

MUSKEGON, MICH.—E. W. Merrill, three-sty brick block; cost, at least \$15,000.

County offices for Muskegon County, one-sty, fire-proof; cost, \$9,000.

Two-sty ward school-house; cost, \$13,000.

Remodelling ward school-house; cost, \$5,000.

D. S. Hopkins, Grand Rapids, Mich., architect for the above.

NIAGARA FALLS, ONT.—R. Furniss, two-sty cottage; cost, \$3,000; D. S. Hopkins, architect, Grand Rapids, Mich.

NORWALK, CONN.—F. H. Peckwel, architect, has prepared drawings for a house for J. H. Buckley, on Maple St., to cost \$5,000.