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MOST cases of litigation between architects and clients are decided in very unsatisfactory ways. Either from the anxiety of counsel to get their clients out of them by any accidental pleas that they can devise rather than by bringing general principles of law to the test, or from what seems the over-caution of judges in confining their opinions to the narrowest possible lines of legal argument, or from the disposition of juries to shirk their work, and instead of fairly facing and recording the facts in the cases before them to decide by rule of thumb and general average, it happens that case after case is brought forward which seems to involve points of importance in the jurisprudence of architecture, and is in some way disposed of without determining anything of value beyond the moment. The records are written in water: every case leaves the determination of the law just where it finds it, and the whole machinery of trial — courts, counsel, and juries — is wasted in the patching up of petty quarrels, while the jurisprudence of a difficult and increasing province of litigation goes begging for want of attention. Since we are not lawyers, it does not become us to try to decide whose fault all this is, nor to say that it is anybody's fault; but we do feel warranted in saying that it is very unsatisfactory. If architects will be public-spirited enough, when misfortune involves them in legal dispute with their clients, to make their stand upon the principles which concern their profession, and if they can prevail on their counsel to conduct their cases with reference to what is of prominent importance, rather than to momentary advantage, it may be possible to get some things recognized by the courts which have long been matters of usage, and to let the profession and the public know a little more securely how they are expected to stand towards each other.

WE seldom see a less significant termination to a promising lawsuit than that of the suit of Washburn *vs.* Wildes, just decided in the Supreme Court at Boston, Mass. The plaintiff was an architect who sued for an unpaid balance of nine thousand dollars as his fee for professional services in the building of a block of stores for the defendant, the commission being rated at five per cent on the cost of construction. The defendant claimed that the architect had agreed to provide plans and specifications and superintendence for the usual commission on the estimated cost of the building, and that the architect's estimate was ten dollars per square foot of area, whereas the building had actually cost fifteen dollars per foot; also, that the customary architect's commission never exceeded three per cent. The main questions raised were whether there had been any specific agreement as to the rate of compensation, and what the usual rate was. On this last point there was more or less conflicting testimony from architects called on both sides. The essential points of the judge's charge were: that "if the minds of the parties met" on the question of rates, — a phrase which we do not too well understand, — this made an agreement; or if the architect mentioned five per cent and the client told him to go on with the work, that was an agreement, which the client

could not revoke if he afterwards concluded that the usual rate was less; that whatever rate was agreed on should be computed on the actual cost; that if there had been no specific agreement as to rate, it was for the jury to determine from the evidence what was the customary rate. The verdict, as reported, was simply an award of thirty-three hundred dollars for the plaintiff. This leaves out all that most people will care to know. It would be of some interest and value in future cases to learn whether the jury decided that Mr. Washburn was entitled to an extra payment because his fee should have been five per cent instead of three, or simply because it should have been computed on the cost instead of the estimate, and to know their opinion of the prevailing usage; but to hear that they awarded him a sum of money because they concluded that it was about what he ought to have, is of very little interest to any but the plaintiff and defendant. The one point of any value established seems to be that stated by the judge, which is according to usage, that the percentage should be reckoned on the cost and not on the estimate.

THE question of fees is somewhat embarrassed in the case we have considered, and others like it, by the habit which is current among architects in the United States, and is recognized in the schedule published by the American Institute, of considering three per cent a full commission on what are called "stores." These mean business premises containing shops, warehouses, lofts used for storage or light manufacturing, and the like. The commission is lowered on the understanding that they demand less work from the architect in proportion to their cost than most other buildings. This is more or less true of the typical stores, that is, buildings costly because of their materials and solidity, built in blocks, with but one exposed front, simple in interior arrangement, and with little inside detail, so that they do not call for a great deal of study in designing. It is perhaps to be regretted, nevertheless, that such a diminished rate of compensation has been proposed as a rule, for it often happens that commercial buildings require a great deal of work. When they have two or more façades, especially if the façades are of studied and complex design, or when they involve, as they often do, special difficulties of construction, or are elaborately arranged and finished within, three per cent may be a very inadequate payment for their architects, taking account only of the work upon them. But besides this it is to be remembered that, as we have heretofore argued, the architect's fee is not based on any computation, except to a very secondary degree and in the most general way, of the labor of particular services, but on the value of his service to the employer, and on its responsibility. The responsibility of the architect increases with the cost of the building, and so does the importance to his employer of his service, whether his labor does in a particular case or not. The actual amount of his work is so uncertain, so out of the reach of computation beforehand, — if he does it faithfully and zealously, — and even so difficult to measure after it is done, that it is scarcely worth while to try to take it into account in laying down general rates of charges. It would be a much more reasonable system, and could hardly lead to any more disagreement, to maintain the uniformly established rate of five per cent for all kinds of work, and leave it to the individual architect, when there was special reason for it, to make such abatement as he thought the case required.

THE contract which the commissioners for the Indiana State House have made with their chosen architect, Mr. May, ought to go far to console his wounded competitors for their disappointment. He begins by signing away what his profession considers its birthright in agreeing to "prepare, and make over to the State as soon as prepared, all plans, specifications, directions, and estimates that may be made by him." He guarantees that every part of the building shall be perfect and complete in itself and sufficient for its purpose, as shown in his plans; that it shall be completed in every part within the cost fixed by his estimates; and that no extra work or material shall be necessary, or that if any is required, unless called for by changes made in the plan by the commissioners or the legislature, he will pay for it himself. He is to be a supervising architect, but the State is to provide a superintendent while the work is actually going on, whose duties shall be prescribed by the commissioners. If

the architect objects to any materials or work provided in the building, he is to file a written protest against them with the board; otherwise he will be considered to have approved them. His commission is fixed at two per cent on the cost, to an amount of not more than forty thousand dollars. Finally, he agrees "in all cases to submit to and be bound and concluded by the decisions of the board as to what constitutes his duties as architect." For all this he gives bonds in the sum of one hundred thousand dollars. It will be interesting to note the way in which this work goes on. The commissioners seem to be doing their work pretty thoroughly; they have at least reserved the power of making their architect's life a burden to him. It is possible that a more exacting board might have required that he should submit to have his ears cropped and his nose slit in case of any attempt to escape from servitude: excepting this we do not see that there is anything in reason left for them to demand.

THE enterprising people of Providence have had a long and tiresome struggle over their new building law, which has at last passed the state legislature, though it is shorn of a good deal of what promised to make it effective. The bill, as at first prepared, chiefly by the Rhode Island Chapter of the Institute, was studied with a good deal of care, and was in some respects more efficient than any that had been proposed elsewhere in the country. It met with a vigorous and prolonged opposition among the building trades of Providence,—an opposition of which, as well as of the character of the bill, we have from time to time made mention,—till it began to look as if the bill would either be absolutely killed, or so dismembered as not to be worth passing. It has been carried through in a shape that leaves it still a law, if not a very efficient one; but the *disjecta membra* left on the field show the severity of the struggle. For instance, the section which gave the city council power to forbid wooden buildings in any part of the city was struck out, and wooden buildings not over thirty feet high, with shingled roofs, are allowed to be built anywhere. In fact, so contemptuous are the Rhode Islanders of danger from fire that they rejected, as if out of pure bravado, even the provision that wood-work should be kept away one inch from all chimney flues. After this it is not surprising that the modest provisions for testing beams or computing floors and certifying their strength should be done away with, or that the whole efficacy of the bill should be undermined by refusing to require either permits for building or the submission of plans to the building inspector, thus saying in effect to the people of Providence that they may after all build as they please, provided they do not attract attention. There is, however, something gained when a stiff-necked people is persuaded that there is any occasion for regulating building at all by law.

THE seat of the labor-war in England is fairly transferred to Lancashire. The notice of the ten per cent reduction of wages in the cotton mills expired a few days ago, and the promised strike was begun. It is said that twenty-five thousand hands are thrown out in Blackburn alone. The strike district contains nearly half the looms in the kingdom, or nearly a quarter of a million, representing six million spindles. At Preston, we are told, where there are half a million spindles, the operatives have accepted the reduction; but in Blackburn and elsewhere, they are resolved to hold out. There probably never was a more hopeless occasion for a strike, for the English cotton trade is now sadly depressed, even more so than the American, and to such a degree that to many of the masters it may well look like a question between reduction and bankruptcy. It is likely that in many cases the stoppage will give a not wholly unwelcome breathing-time. In fact, it seems as if the operatives were more or less aware that they were playing a losing game. A letter to the *Times* from the secretaries of the Weavers' Unions has rather the sound of a dispirited resistance than the defiant ring to which we are used. It says: "We feel we are struggling in a just cause, but are ready to bow to the decision of a court of arbitration; and although we fear we are unable to cope with the organized power of masters' unions, we shall peacefully and quietly resist until starvation forces submission." In the present case it does not appear that the masters are inclined to arbitration, and it will probably be a question of endurance by the workmen which, with a burden of a hundred and thirty thousand idle operatives on the shoulders of the unions, cannot probably be long maintained.

On the other hand, we find unexpectedly cropping out in our own country a recognition of the fact that at least for the purposes of temporary warfare, the interest of masters and men may after all be the same. The General Marion Council of the Order of United American Mechanics has taken alarm at the introduction of Mr. Wood's Tariff Bill into Congress, and has passed a set of resolutions, declaring that a just and equitable high tariff is "the best safeguard of American industry, and of the welfare of the whole American people," calling upon Congress to "refrain from meddling with our present system," and finally protesting: "We will strenuously oppose any attempts to make the labor of this country appear hostile to capital; they are bound to stand or fall together, and we know it. Those who invest their capital in giving employment to the people of this country are our friends, and we feel in duty bound to protect their interests as well as our own from the meddling of men whose past records everywhere are a silent admonition to us to be watchful in the future." It is an ill wind that blows nobody good.

THE report of the chief engineer of the city of Brooklyn to the common council brings to light a fact that the writer of the articles on "Urban Housing," which we have lately published, could have adduced as proof of the correctness of his inferences. Being one community with New York, it is not strange that Brooklyn adopted the same system of laying out its building-lots, and that the city was divided into building-lots of twenty-five feet frontage. But in time Brooklyn people found that a twenty-foot lot answered their purposes quite as well, and when another part of the city was laid out, the street lots were numbered so as to give five to every one hundred feet. Since the panic of 1873 the citizens have discovered that they can live in houses even narrower than this, which has necessitated giving to the houses built on the surplus land half numbers. This practice has become so serious a nuisance to the post-office and to the business public generally, that the chief engineer now proposes to renumber the city, assigning six numbers to every hundred feet, a course which will reduce the frontage of lots to sixteen feet and eight inches. If this is carried into effect, these narrow-gauge houses may become as typical of Brooklyn as the "back-buildings" are of Philadelphia, or the "one-eyed" houses are of Baltimore. It is possible that the predilection for living in hotels and apartment houses, which almost amounts to a national peculiarity, may be insurmountable, and that if cheap houses of small size are made really comfortable, it will do little to counteract the tendency; yet if it is worth while to get the working man out of his crowded tenement for the sake of his health, there will be many who will think it worth while, for the sake of better living or his morals, to get the man of moderate means out of the hotels.

THE QUALIFYING OF ARCHITECTS.

II.

IN our article of last week we discussed the need of some means of duly qualifying architects in the interest of the public, and the authority by which such qualifying could be established, giving our reasons for concluding that the authority of the state was the only one by which it could be adequately enforced. We come now to the difficult questions: What kind of restrictions can be established, and what kind and degree of acquirement can be insisted upon?

In such a case as this it clearly will not profit to try to do too much. It would be labor thrown away to try to prevent an architect's work being done by anybody but a duly qualified architect; for it would not only enlist the active opposition of the large and influential class which wants to do such work without being hampered by qualifications, and the large class which wants to be at liberty to employ this first class, but would at once put the whole effort under the disguise of a protectionist movement, an endeavor to legalize a trades-union exclusiveness. It is clearly enough for the benefit of the public that none but architects should do architects' work; yet a restriction established for the general welfare must not have the air of a privilege conferred upon a class. If a draughtsman or a builder chooses to undertake an architect's work, it would undoubtedly be impossible, in the present condition of public opinion at least, if it would not be undesirable, to prohibit his doing it. The thing to be ordained is that he should not, by the mere fact of electing to do such work, become an architect, but should con-

tinue to be and to be known as a draughtsman or a builder; and that the person who chose to employ him should employ him as such, knowing and assuming the risk of his competency. In other words, what is to be desired is an authoritative definition of the word "architect;" that the title should be recognized as indicating, not a mere avocation, to be taken and dropped at will, like a commission merchant's or a stock-broker's, but a peculiar professional training, like a lawyer's or a physician's. There ought to be a distinct line of demarcation between the profession and the rest of the world, which a man must visibly cross to enter it; and in crossing it he should be obliged to show some definite degree of preparation for the work of the profession. Then the public may safely be left to get their plans and designs from whomsoever they will,—as they now insist on doing and always will,—but with the knowledge that there is a body of men especially set apart for that kind of service who have undertaken to fit themselves for it by certain recognized methods of preparation. This, we are convinced, is as much as can be looked for in the way of restriction. So much the public ought to see the need of, and to do, for its own protection, but we cannot expect that a discrimination which must rest on the public authority shall be extended beyond this. It would belong to the profession itself to vindicate its superior capability for its own work, and to show that, thus set apart, it deserved confidence.

There are many parts of the country where it would probably be impracticable or idle to fix such legal restrictions as we are hinting at. Where the profession of architecture is not fairly established, it is hardly worth while to provide means of regulating it by law. But in the older and more settled States, especially in those which contain our large cities, it ought to be possible to make people see the advantage of it, and we have no doubt that it may be done, if anybody is earnest enough to take up the work. The obvious, and we think the reasonable way of accomplishing it, is by the passage of a state law requiring that anybody who publicly announces himself as an architect and assumes to practise as such shall be licensed thereto by the state, and that to entitle an architect to a license he must show certain prescribed qualifications. The requirement of a license is not a burdensome one or a new one. It has been laid upon the profession before, during the period of heavy taxes in war time, though there are probably many architects now practising who are not aware of this. It was not found difficult of application, nor was it proved to work hardship, except that of paying a special tax, which is no part of a scheme for professional qualification.

To determine the qualifications which should be prescribed and the tests required for them would be a matter of some difficulty, but need not be considered impracticable. It would of course be necessary that every architect found to be already in practice when such a law went into force should be considered to be qualified *ipso facto*. The application to new cases, then, would be the only one to be considered. The penalty inflicted upon those who should assume to be architects and to practise as such without a license might be nothing more than the loss of protection from the courts, and disability to collect their fees, as is now the case with the law concerning physicians in many States, we believe: or, if it were thought desirable, a more serious penalty might be declared; it being inflicted of course not for undertaking the work of an architect, but for deceiving or attempting to deceive the public by assuming to be one without having complied with the law.

As for the things which an architect should be expected to know, and may be required to have studied,—the things which chiefly concern the public in building are that its lives or its health should not be endangered nor its substance wasted in putting up insecure work or unwholesomely arranged buildings. Therefore an architect should know how to put his material together, and should be able to judge accurately what strains his construction will bear and how it will endure,—should be versed in the theory of construction and the properties of materials, and in the sanitary precautions of good planning. So much is matter of theoretical training. He ought also to have experience enough to know whether his materials are of good quality, and whether the work on them has been thoroughly done and in the best way. This is matter of practical training. Both are things which it is easy to prescribe, and for which it is perhaps not difficult to provide tests,—formal, at least. It is important, also, that an architect should have knowledge and skill for the planning of buildings and fitting them for their uses,—

things of which the public knows the importance, and of which it might know that they do not come by nature. Architects know, too, that the crowning excellence in their profession, and its most difficult attainment, is skill in design, and that this requires longer and harder study than all the others. One might suppose that the public would have an eye to this also, inasmuch as it spends a good many millions every year in mere effort for architectural beauty, and nothing else: but in the first place it considers its own judgment enough, without any other test of qualification, in this as well as in planning; and then it is after all a little ashamed of its liking for what it considers beauty, holding to the accepted doctrine of the day, that the smallest matter of convenience is superior to the highest consideration of art, and although it spends money for beauty pretty freely, it is questionable how ready it would be to give the artistic part of an architect's education the importance of a legal sanction. So that probably success would lie in putting the chief stress upon a proper training in construction, which is the thing most important to public security, if not to good architecture; and in being content with such modest provision for professional and artistic skill as could without umbrage be required in humble companionship to the other. It may be that in those States where instruction in drawing is a recognized part of public education, some advantage may be taken of this fact in securing more regard for an artistic qualification than would otherwise be attainable. We doubt, however, whether it would be practicable, in a system which depended on the public authority, to make any great point of artistic training. This, the highest and really distinguishing attribute of the profession, would have to be left, as it now is left, to natural selection.

As for the manner of qualification required of new practitioners, it would be well to provide alternatives. One might naturally be a certain number of years' study in the office of an accredited architect,—not less than five, we should say. This, however, would scarcely be an adequate preparation, taken alone, for it is not in the nature of a student's ordinary work in offices to give him any such study, for instance, of the theory of construction as it is really necessary that he should have for the problems that an architect is likely to meet. Another would be a regular course of architectural study, certified by a diploma from some accredited architectural school, in which a careful course of theoretical and practical construction should be imperative, and a year's study or two in a practising architect's office. A third might be a certified examination before an official board. In Massachusetts, for example, such a board might consist of the professors of architecture and engineering at the Massachusetts Institute of Technology and at Harvard University, to whom could be added three examiners at large, appointed by the executive,—say an architect, an engineer, and a builder.

In either method of qualification, then, the first point to be insisted on is a knowledge of construction and of building materials. Even in the case of those who had served their full time in architects' offices, it should be imperative that they should go through a suitable course of theoretical construction,—if not in their offices, which is improbable, in some proper school. To this ought to be added a knowledge of geometry, solid and descriptive, of the sanitary arrangement of houses, and, in those who had not served their time in offices, perhaps in those who had, a satisfactory course in some higher-class drawing-school. In the application of tests, particularly at the beginning, it would not be worth while to be too severe. We cannot expect that everybody should really learn to do his work well. This does not happen in any profession. But the public have a right to require that a man shall not propose himself to them as a capable practitioner in a profession which involves the risk of their property, their health, and their lives, without having at least had an opportunity to learn his business, and having exposed himself to what may be considered a fair preparation.

But while, as we have been insisting, it seems necessary that the authority which regulates the qualifying of architects should be the authority of the public, just as the chief interest in their proper qualification is the public interest, it by no means follows that the thing can be done without the coöperation and active concert of the profession; still less that the architects have nothing to gain by it. The time when the individual could afford to be indifferent to the repute of his profession has gone by. It may be hoped that the time when he is willing to be so is passing away. What the welfare of both public and profession requires now is the proper definition of an architect, and some influence to make those who are to be called architects

conform to it. The problem is a new one to Americans. It has been solved more or less satisfactorily in some Continental countries, we are told. It has been talked about a good deal in England and the United States, without coming to any conclusion; but it is quite time, it seems to us, that something should be done for it. We have given such suggestions as we had to offer, and shall be thankful to any one who will offer us his own in his turn. We commend the subject earnestly to all architects who have an interest in the real success of their profession, and to all of the public who are aware of their own interest in being well served by it.

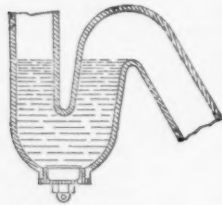
MODERN PLUMBING. III.

WATER-SEAL TRAPS.

INNUMERABLE forms of traps have been invented, of which the greater part, from one defect or another, fall out of use, leaving a small number of standard varieties which have stood the test of experience.

The worst of the common forms is the bell-trap, Fig. 8, so long used for kitchen sinks, but which is fast becoming obsolete as the requirements of a good trap are better understood, on account of the insignificant quantity of water it contains, and the want of head to the flushing water.

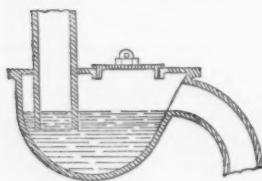
The best known of all traps is the siphon, or S-trap, consisting simply of a length of pipe bent in a reversed curve, with or without a brass screw in the bottom for emptying it, as shown in Fig. 1.



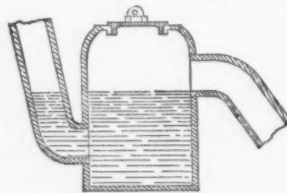
— S TRAP —
Fig. 1.

This form is used for sinks, wash-bowls, water-closets, and drains of every kind, and has the great merit of being easily kept clean, the smooth interior of the tube offering no obstructions to catch paper, hair, or sediment; its defect is its liability to be emptied by the so-called siphon action, or by evaporation of the small quantity of water it contains. The siphon action takes place when a quantity of water passes down a soil-pipe, partly exhausting the air behind it. Air to supply the vacuum is drawn from all communicating pipes,

and where these are trapped by a simple bend, the water is easily sucked out. The S-traps under water-closets often suck themselves out, the body of water thrown down when the closet is used creating a vacuum behind it as it descends the soil-pipe, thus drawing out the water which subsequently runs into the trap. This can be remedied by carrying an air-pipe of sufficient size from the top of the trap to some point communicating freely with the air; then any vacuum below the trapping water is supplied through this pipe, and not through the water; but there are traps which cannot be siphoned, even if not ventilated. Among these the most used are the D-trap, the round, or box-trap, in its various forms, and a number of patented varieties, such as Adee's, Bower's, and other traps, all consisting in substance of a small reservoir, into which both the inlet and outlet pipes are carried, the mouth of the inlet being an inch or so below the surface of the trapping water, which of course stands level with the bottom of the outlet. Fig. 2 shows the D-trap in section; Fig. 3, the box-trap as generally



— D TRAP —
Fig. 2.



— ROUND TRAP —
Fig. 3.

put in, though there are various modifications; and Fig. 4, Adee's patent trap.

Air drawn through these and similar traps to supply a vacuum below simply bubbles through without driving the water before it, and the quantity of water is so large that they are not easily emptied by evaporation.

The size of the reservoir in the box and D-traps admits a large screw, much facilitating the cleaning out, which is also an advantage, but the large quantity of liquid which all these traps contain is less frequently changed than the smaller quantity in the siphon traps, and often gets very foul, while the edges of the inserted pipes and the interior angles of the trap catch the foreign matters in the water, and they thus gradually become obstructed. Hence, they should be used with discretion if at all.

The box-trap is sometimes put in with the outlet pipe inserted through the bottom. This is very objectionable, from the multiplicity of edges and reentrant angles which it presents.

A trap like Fig. 5 would be a good form, if a reservoir trap is to be used.

None of these traps are secured against backward pressure of gas, such as arises from pouring hot water down an unventilated soil-pipe, or from obstruction of the sewers in cities by high tides, heavy rains, or other causes. This cannot be guarded against by the feeble resistance of a column of water an inch high, which is all that ordinary



— ADEE'S PATENT TRAP —
Fig. 4.

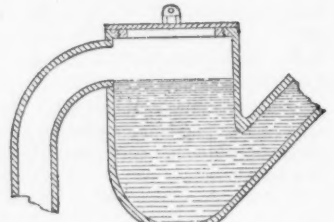
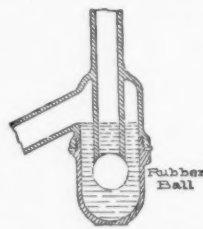


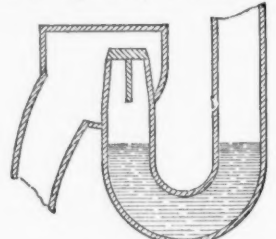
Fig. 5.

traps afford, and where the danger is not avoided by free ventilation of the soil-pipes, the Bower patent trap is very useful.

This (Fig. 6) is a reservoir trap, with the addition of a rubber ball, which floats up against the mouth of the inlet pipe. Any water coming down the pipe displaces the ball for the moment, but pressure from the outside, either of gas or of water, forces the ball firmly against its seat, effectually closing the pipe. This trap is made sometimes with the lower section of glass, screwed to the upper section, so that any obstruction can be seen and removed with facility. One advantage is that the trap is perfectly water-sealed



— BOWER'S PATENT TRAP —
Fig. 6.



WARING'S VALVE
Fig. 7.

whether the ball-valve works or not. A criticism might be made that the course of the water is rather sharply broken, and hair or lint may catch on the lower edge of the inlet pipe, but this is so easily seen and removed that the working of the trap is excellent for washbowls, baths, or other places where a great amount of sediment is not to be feared. Some different forms of valve to resist back pressure have been devised; as, for instance, Colonel Waring's valve, Fig. 7, which caps the top of the water-sealed trap, but the Bower trap is thus far the only one in use to any considerable extent.

In choosing among the different traps regard should be had to the purposes for which they are to be used, as well as to the circumstances of sewerage, ventilation of pipes, etc.

For a wash-bowl the two or two and one half inch S-trap is commonly used, although a small calibre would have advantages, but should in any case always be provided with an air-pipe, otherwise, even though the soil-pipe may be ventilated, the water will sometimes be sucked out and a free passage afforded for foul air into the room.

Where the air-pipe cannot conveniently be used, the trap should be of the reservoir species or one of the patented forms; and if the soil-pipe is unventilated, or ventilated only by an inch pipe, which is little better than nothing, and the drains liable to be locked by the tide, or overflowed, the Bower trap or some equivalent form of valve, although rather more expensive in the first instance, should always be employed, at least where the wash-bowl is in communication with a sleeping-room.

The trap of a wash-bowl should be set a few inches above the floor, so that the screw, which it should always have, may be conveniently reached, for draining the trap in cold weather, and for recovering jewels from rings, and such small articles, which sometimes get in; it should not be directly under the bowl, as is often seen, for the extra head of water obtained by setting it two feet or so lower is of value in keeping the trap clean; and it should never be put under the floor, where it is practically inaccessible.

Where a bowl stands within two or three feet of a water-closet, its waste pipe is often led directly into the water-closet trap, under the surface of the water. This saves some expense, and is not objectionable, except that it renders it impossible to recover lost articles without cutting the work to pieces, since water-closet traps have no screw; but the basin waste should not be carried more than three or four feet for this purpose, as the pipe often gets foul with decomposing soap and slime, and the smell from a considerable untrapped length of it will make itself perceptible in the room.

Bath traps are little liable to be choked with sediment, and may be similar in size and form to those for wash-bowls, under the same

precautions for ventilation and protection against back pressure. The bath waste is very frequently, perhaps usually, carried directly into the water of the water-closet trap, and where back pressure is not to be feared, this is a sufficiently good arrangement. The water in the trap seals both waste-pipes, and having two sources of supply is less likely to get dry from evaporation, and the danger of losing anything down the bath waste is slight. The waste must be connected below the surface of the water in the trap; otherwise, instead of being protected, it will be a mere conduit for leading the foul gases of the water-closet directly into the room. This would seem too obvious for mention, were it not that pipes are often found connected above the trapping water.

Pantry sinks usually have traps of the same size and character as the wash-bowls in the same house.

Bath-tubs, wash-bowls and pantry sinks are always provided with an overflow, in addition to the waste from the bottom. This is usually connected with the waste-pipe above its trap, but is sometimes carried into a different pipe or trap. However it may be arranged, it is of great importance that it should be perfectly water-sealed, as it, in most cases, always remains open, even when the waste is closed by its plug or valve.

For kitchen sinks a very large trap is necessary, for convenience in cleaning out the grease which collects upon the sides in masses so hard as to require a chisel to remove them. An eight inch round trap is a good form, and the screw, which is on the top, is so large that when it is taken off all parts of the trap can be easily reached and thoroughly cleaned.

The little bell trap, consisting of an inverted cup, whose edges dip into a circular trough of water, as shown in Fig. 8 in section, is still found attached to some sinks, often by a hinge, so that it can be turned back and unlimited opportunity given for sewer gas to come up, the waste-pipe and potato parings to go down. Where it is screwed in, the case is slightly better, but it requires such constant cleansing, and the water seal is so slight and so easily removed entirely by evaporation, that the best plumbers always use sinks with a strainer only over the waste-pipe, and depend for the seal upon a large trap below.

For slop-sinks and wash-trays a two and one half inch S-trap, with air-pipe, is perhaps the best form. Water-closets usually have a four inch cast lead S-trap, without screw, and this should have an air pipe, especially with closets using a large quantity of water, or where two or three are situated over each other.

To recapitulate the general principles: S-traps are best, if they are guarded—

- (1.) Against suction, by proper air-pipes.
- (2.) Against back pressure, by the thorough ventilation of the drain and soil-pipe, and
- (3.) Against concretions of filth or grease, by being used only to carry clear liquids.

Where suction or fouling are to be feared, a reservoir trap is necessary; and where unventilated drains give rise to back pressure of gas, the Bower patent, or some similar form, if there be any, is the only trap yet in common use which can be depended upon to resist it.

Over-anxious architects sometimes specify for two traps in the same length of waste-pipe; where this happens, accidentally or otherwise, an air-pipe must be put in between the two traps, and carried to some free outlet, or the air confined in the waste-pipe between the two traps will impede the flow.

Ventilating pipes from traps should be large enough not to get choked with the grease which often spatters into them, and should never be carried into a chimney. They are, of course, always connected on the drain side of the trap, and the gases of the drain constantly fill them and the flue with which they connect, so that the slightest down-draught pours them out into every room which has an opening into the same flue. It is not too much to say that in the majority of chimney flues the draught is, for more than half the year, usually downward, and even where a moderate ascending current can always be kept up, it is seldom rapid enough to withdraw the foul vapor in time to prevent its contaminating the rooms connected with the flue by simple diffusion through the surrounding air.

The best way is to have a special flue in the chimney, next to the kitchen flue, but not communicating either with that or any other, and carry all the vent-pipes into it. The warmth of the neighboring range flue may cause a gentle movement of the air in this flue, but that will be of little consequence, as even a down draught can only blow the gas back into the drain, and not into the rooms, while the main object of the vent-pipes,—that of relieving pressure of gas in the drains, and of preventing siphonage,—is secured.

It cannot be too often repeated, that the most dangerous sewer vapors are nearly or quite odorless, so that the sense of smell may be worthless for detecting whether a drain ventilated into a chimney sends its gases up the flue or into the nearest room, through a fireplace or stove-hole. The probability is, that some gas finds its way through every opening into the flue, and the only means of safety is to keep such a flue entirely closed.

THE ILLUSTRATIONS.

HIGH SCHOOL, LIBRARY, AND READING-ROOM, DEERFIELD, MASS.
MESSRS. PEABODY & STEARNS, ARCHITECTS, BOSTON.

This building is now being put up at Deerfield, in accordance with the will of the late Mrs. Esther Dickinson, of that place. It is arranged so that the public entrance gives access to the library, reading-room, and large hall without disturbing the scholars, for whom there are separate entrances. The building is centrally placed, in this extremely picturesque old town, and near the site of the historical old house that was besieged by the Indians, the remains of which are now preserved in the town.

THE SPRINGER MUSIC HALL AND EXPOSITION BUILDINGS, CINCINNATI, OHIO. MESSRS. HANNAFORD & PROCTER, ARCHITECTS, CINCINNATI.

The drawing shows the Springer Music Hall and proposed Exposition Buildings. The entire group will cover an area of 116,000 square feet. The Music Hall is the central feature of the group, and is now nearly finished, it being the purpose to dedicate it by a Musical Festival, which will begin Tuesday, May 14, 1878, and continue during four nights and three days. The Exposition Buildings are not yet built, but will be in the near future.

The Elm Street façade of the Hall is 182' wide and 150' high, to the apex of the central gable. From a flagged pavement 40' wide a flight of steps leads to a stone terrace 12' wide, on which open nine outer vestibules 15' x 7' 3", of which the entrances are 11' wide, affording clear entrance way of 99'. The grand vestibule is 46' x 112', and is 42' high, with a broad balcony at the level of the gallery in the hall, and the north and south vestibules measure 31' x 46' and are 20' high. From these vestibules solid stone stairways 12' 8" wide lead to the galleries and upper rooms. The auditorium or Music Hall proper is 112' wide, 192' long and 64' high. The stage is 112' x 56'; the organ, however, intrudes upon this space by occupying an area about 15' x 50'. Accommodation is afforded for a chorus of 686 singers and an orchestra of 100 performers. The floor of the auditorium rises from the stage to the entrance 4' 8", the stage level being at its front 4' 4" above the floor, with a rise of 14 inches from front to rear. Three entrance doors, each 10' wide, lead from the grand vestibule to the Hall, while corridors 18' wide, with eight doors each 7' wide, give access to the hall on the sides, thus giving a total of 86' in door-ways. Separate doors lead to the stage. The corridors extend through the building and communicate with Plum Street. A flight of stone steps 9' wide, in each corridor, leads to the upper stories. In emptying the house cross-currents will be avoided. Back of the stage are retiring-rooms for the performers, while water-closets and wash-rooms are amply provided under the several flights of stairs.

An examination of the dimensions of the auditorium, before given, will show that a unit of 16' has been used. A gallery 16' wide extends around three sides of the hall at the second floor level, while an upper gallery of like width extends across the end opposite the stage. The Hall gives promise of being an acoustic success, having been used on two occasions for mass rehearsals of the Festival Chorus; the full proof, however, of this vitally important matter is still to come on the occasion of the opening. In the second and third stories over the several vestibules are rooms for the use of conventions and other large gatherings. Over the grand vestibule in the third story is a small hall, 46' x 112'. It will probably be called Dexter Hall, after Mr. Julius Dexter, a liberal subscriber to the building fund, secretary of the board of trustees, and chairman of the building committee. Dexter Hall is approached by two easy flights of stone stairs, each 7' wide. The Elm Street façade is built of pressed brick, ornamented with black brick in the arches, etc., and relieved with bands and moulded string courses of Ohio River sandstone. The bricks are laid in black mortar, with a sunken joint, $\frac{3}{16}$ " deep. The effect is to give a decided structural appearance to the surface, which in so large a building is an advantage. The Plum Street façade is built of best quality common red brick laid in yellow mortar with flush joints. The effect is to enhance greatly the body color of the building; so that in the glow of an afternoon sun it warms to the intensity of coral.

The entire length of the building is 303' 4". The total number of rooms is 37, exclusive of the Main Hall and Dexter Hall. The walls and ceiling of the Main Hall are lined with wood,—no plastering being used. Under the system of seating adopted for the coming Musical Festival the Hall will accommodate an audience of 4,428.

It is not out of place to state that the entire project is the result of the munificent offer of Mr. Reuben R. Springer, made in May, 1875, immediately following the second Biennial Musical Festival, in which he proposed to contribute \$125,000 for the purpose of building a Music Hall, upon the conditions that (1) a corresponding amount of money be contributed by the citizens, and (2) that the lot at the corner of Elm and Fourteenth streets be given by the city, for the perpetual use of a society to be formed for the purpose. Mr. Springer has since his first gift increased the amount, until it has reached the sum of \$185,000; the remaining sum of a little over \$300,000 (the cost of the building) has been subscribed by the citizens. We published in our issue for September 16, 1876, the other designs for this building submitted in limited competition.

PALERMO.¹

To the casual visitor to Palermo, or to those who stop only a few days to see the "lions" of this interesting and in some respects beautiful town, the view here shown will probably be unknown. The cicerones of the place will not lead the strangers there, nor can it with much justice be asserted that the view can have any claims to be counted amongst the principal sights of the town. But those who are in the habit of dispensing with the services of cicerones, may stroll about and get lost in the out-of-the-way-places in such a curious town as Palermo, and come upon sights, in their perhaps perverted ideas, fully as interesting or characteristic as any of the "lions;" and it was in one such pilgrimage that this view was encountered and noted down. Here you have a glimpse of the old Duomo, and, most prominent in the view, the great belfry crowning a part of the Archbishop's palace. A suggestion is given of the western façade with its flanking towers, and a very small portion of the north side, altogether too slight to show the curiously mixed, but not unpleasing, *tout ensemble* of a building which exhibits externally a strange combination of Saracenic, Norman, Gothic, and modern work. Two towers, similar to those of the west end, flank the east end of the Duomo, which terminates in a semicircular apse. Over the crux rises a dome, and smaller domes cover the chapels of the aisles; these are all modern classic, that over the crux having been constructed at the beginning of this century by Ferdinando Fuga, a Neapolitan architect, who for his work deserves but scant credit, as this dome surely is not a thing of beauty! It is very uncertain how early in Christian times the site was occupied by a church; but no doubt the Byzantines, who under Belisarius conquered the town from the Goths in 535, had erected a cathedral here, which was afterwards either destroyed or converted into a mosque by the Saracens, who in 831 became masters of Palermo. Of this mosque little or nothing remains, except, perhaps, some columns and capitals, such as, for instance, the one with a Cufic inscription, to be seen in the south porch. In the year 1169, after the town had been in the possession of the Normans some ninety-seven years, and the old cathedral or mosque was demolished, the present building was begun by Walter Offamilio, an Englishman, and archbishop of Palermo. The cathedral was consecrated in 1185. Having since undergone many alterations and additions, the only apparent remains from this earlier time are some portions of the south transept, the crypt, and part of the apse, and some of the pointed clerestory windows, with a few minor details here and there. The Saracenic tradition has been retained throughout the Norman work, whether of the earlier period or in later additions, especially as regards the windows, the arches of which have all the broad and shallow mouldings, or rather the successively slightly sunk concentric orders, peculiar to such undoubtedly Moorish buildings as may still be seen in the neighborhood of Palermo. It was a simple and rather refined treatment, and had its hold upon the builders long after the Norman sway was at an end.

The west front, with its two towers, dates from the first half of the fourteenth century, but its great central doorway is a few years later. There are three western doorways, but I could only discern the centre one from my point of view, in consequence of the deep shadow: this centre doorway is large and richly moulded, and the marble which it is composed of has toned down from the original white into a beautiful rich brown. There are two hood moulds or labels, the inner one rectilinear and terminating in a niche, containing a figure of the Madonna; the very lofty outer one contains within its arch at the top a richly decorated pointed window. Above, runs an arcade the whole width between the towers, and uppermost a cresting or battlement of Saracenic form, which continue at their respective levels round nave, aisles, transepts, and choir. The richest feature of the exterior of the Duomo is the south porch, which consists of three wide, pointed arches, stilted as in earlier Norman-Saracenic work and enriched with bold cable mouldings. The middle arch is the broadest and highest, and the three arches spring from two single marble shafts in the centre, with foliated capitals and two columns at the responds, with capitals of Moorish character, one with a Cufic inscription from the Koran. The foliage of the two centre capitals reminds one strongly of that late Gothic foliage which may be seen in good preservation in the ruins of some of the Scotch abbeys, but especially at Melrose; and altogether, although entirely Sicilian in outline, there is in the details of this porch much of northern Gothic character. The spandrels or the spaces between the arches and the broad architrave are adorned with a rich, flowing pattern in low relief, partaking both of arabesque and flamboyant, and the architrave itself contains small Gothic niches with saints. The cornice is richly carved with interlaced work of foliage and animals, and the very flat pediment is enriched with tracery and sculpture of late Gothic type. The corners of the porch are in form of towers, terminating just above the cornice, and crowned at the angles with statues; these towers resemble in their details northern Gothic work. This elaborate porch dates from the middle of the fifteenth century, and is the work of Simon of Bologna, archbishop. The Duomo has undergone modern restoration, and thus in detail lost much of its interest, and especially as to the apse, which is of that Norman-Saracenic character of shallow interlacing arches, with inlaid geometrical ornaments and grotesque animals, arranged regu-

larly and not so varied as similar ornament in northern work. This apse is similar to the unrestored, and therefore historically more interesting, apse of the cathedral of Monreale, which latter is of rather better proportion.

To speak of the interior of the Duomo with even approximate fullness would take up more space than this notice claims, or a very great deal might be said to show how far back in Norman times its history extends. Now the whole is completely modernized and classic in character, not bad perhaps, but surely inferior to the original work which forms the skeleton. Here are marble and porphyry tombs of Norman, Suabian, and Arragonese rulers, and in the old Norman crypt, four-and-twenty tombs of archbishops of Palermo, among them that of Walter Offamilio, who died in 1190. There are some noteworthy pictures by Sicilian masters, among them Pietro Novelli, called Monrealese, a good painter of monks especially, but little known out of Sicily. There is also some clever sculpture by Antonio Gazini, one of a family of Palermitan sculptors which flourished at the end of the sixteenth century and during the century following. In the choir are good Gothic stalls and a bishop's throne of oak, somewhat rudely carved on closer inspection, but at a distance a rather picturesque object.

Two lofty arches, seen in the sketch, span the street separating the Duomo from the archbishop's palace, and correspond nearly with the width of the belfry-tower, which forms part of the palace. A massive building, stretching north and south, forms the base of the tower, which rises from the northern end: the corners of the building terminate in angle-turrets. The pinnacles of the tower above are, similarly to those of the four towers of the Duomo, very curious, and unlike Gothic work. A tower has stood here from very early times, for it is recorded that when in 1169 the Palermitan insurgents pursued the Chancellor Stephen he took refuge in this tower, or its immediate predecessor. It will be remembered that it was in this year that Gualterio Offamilio began the rebuilding of the Duomo. The present form of the tower was given to it by Archbishop Simon, the builder of the south porch, before mentioned, at about the middle of the fifteenth century, but much of its earlier character must have been retained. At the same time the rest of the palace was rebuilt, but of this structure little now remains, except some portions of the walls, and a large traceried Gothic window of some elegance at the southeastern corner of the palace. The churchyard, or Piazza del Duomo, to the south of the cathedral, and separating it from the Corso Vittorio Emanuele, is surrounded by a stone balustrade, at intervals strikingly adorned with statues of saints and bishops, two of which on the western side are indicated in the sketch. The enclosure was prettily laid out and planted in the summer of 1875.

A. H. HAIG.

NOTICE OF THE SECOND COMPETITION IN INTERIOR DECORATION.

WE have prepared the following report upon the twenty-three designs which were sent in for the second competition, of which two have received prizes and two "honorable mention."

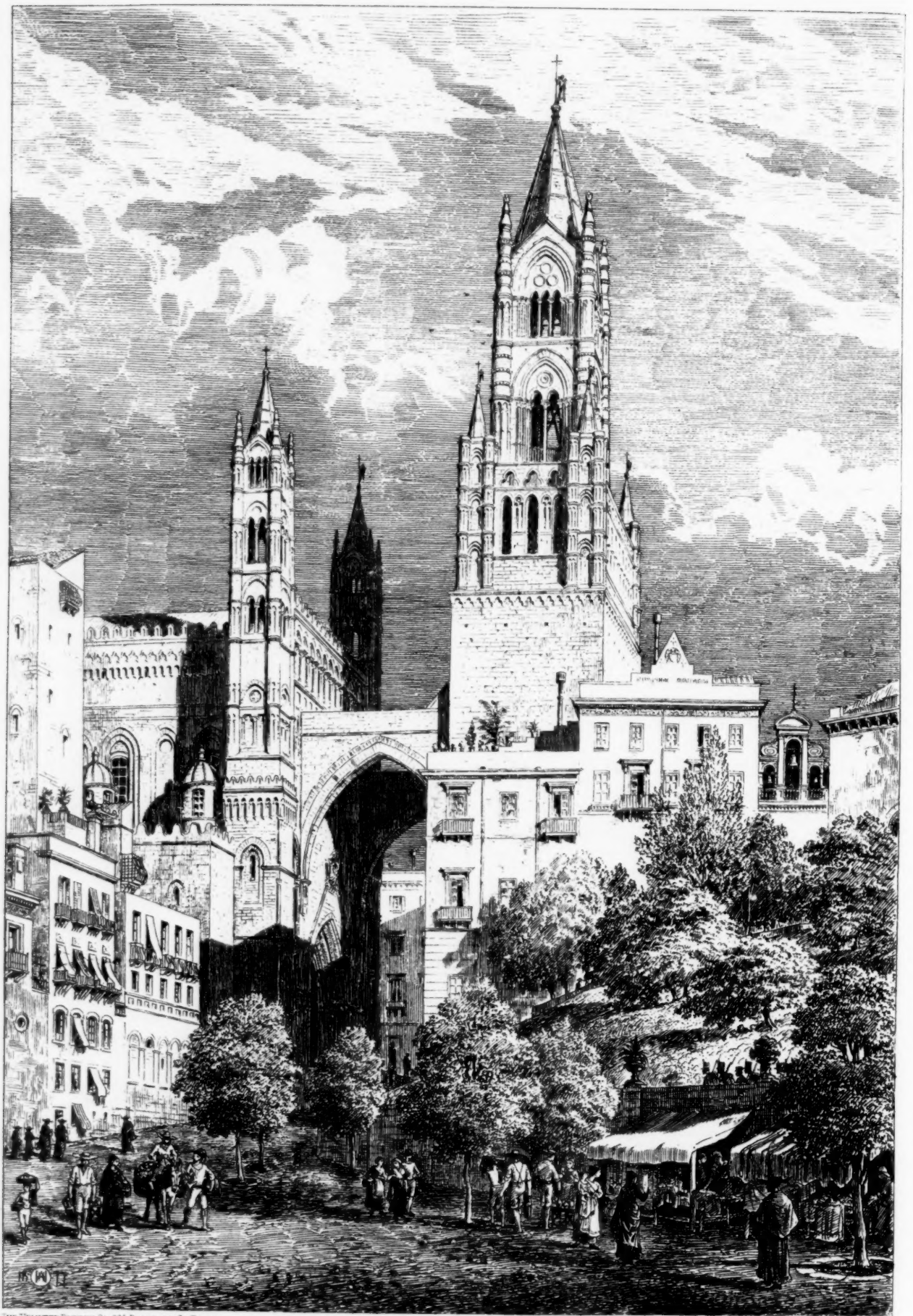
"*Midnight Oil.*" This is a careful design in late English Renaissance, the main feature being the opening of the bay, which is treated with an open screen composed of a wide elliptical arch in the centre, the impost of which is a full entablature forming the lintel over two narrow, square-headed side openings. Having been illustrated in our pages, it does not require description. The design is elegantly conceived in detail, sufficiently original, faithful to style, and well executed. The committee thinks itself justified in awarding to this the first prize. It has the merit of embodying the essential features of the style without its affectations, and gives evidence of academical training in the author.

"*A Rough Sketch.*" This is a design in the prevailing style of the seventeenth century. It is mainly illustrated by an over-furnished interior, the details of which, however, are spirited and well designed. Its chief defect is one shared by much of the best modern work, — a crowding of motifs, and a consequent loss of dignity and repose. Thus, the wall surfaces are divided horizontally into dado, screen, and pictured frieze, the latter having a broad belt below it decorated with china plates, and above it a narrower subordinate frieze highly enriched with architectural details — five distinct belts or features in all, an amount of design which even the height of fourteen feet is insufficient to carry. The opening of the bay is a full arch, and the walls of the bay are filled with the conventional heavy sashes. Considering the limitations of the problem, however, the bay is not of sufficient importance or interest; but the composition is pictorial, and is rendered with a spirit which we should like to see emulated by our draughtsmen. This design is accompanied by an exterior façade, of good effect in its present geometrical shape, but a perspective view would reveal some essential defects: thus the projection of the main cornice is not accounted for where it is stopped by the crowded details which surmount the bay-window, and the bay itself has no apparent support. The committee has awarded a prize to this interesting sheet.

The two compositions which we have thus noted were reproduced in the *American Architect* for April 6th, in which also appeared a design marked "H," enclosed in a circle. The committee has distinguished this with an "honorable mention." This is shown in an effective perspective, in which the opening of the bay is exhibited square, flanked by cabinets built into the walls of the room, the whole occupying the entire end of the apartment, and recalling somewhat too distinctly a study by Talbert. The style is modern Gothic temperately treated, with panelled ceiling, the bay opening being flanked by thin chamfered pilasters and decorated with drapery. The composition, on the whole, is pleasing, but without marked originality. The windows or lights in the bay are separated by thin mullions, which, however, project inward sufficiently to accommodate shutters and fixed seats between, — an arrangement quite too narrow for comfort as regards seats, and quite too thin for good effect as regards depth of mullion, but the difficulty of the device is met with ingenuity. The cabinets call for greater dexterity of detail.

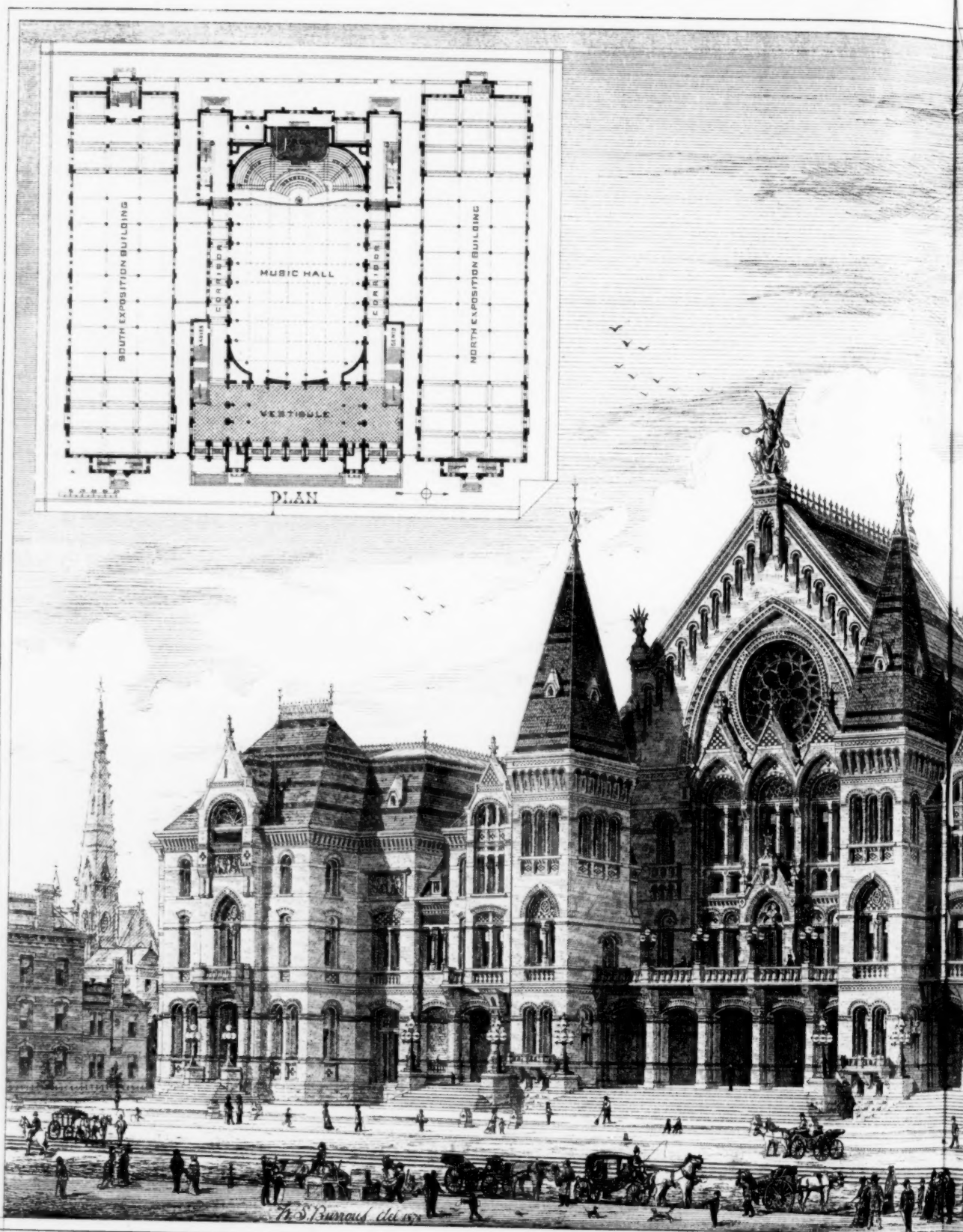
In the same number was also reproduced the composition which appeared under the signature of "*Fan, fan,*" if we interpret aright the somewhat undecipherable script. This is a study, in conventional Gothic, of an octagonal

¹ The illustration and the descriptive article were published in the *Architect* for January 5, 1878.



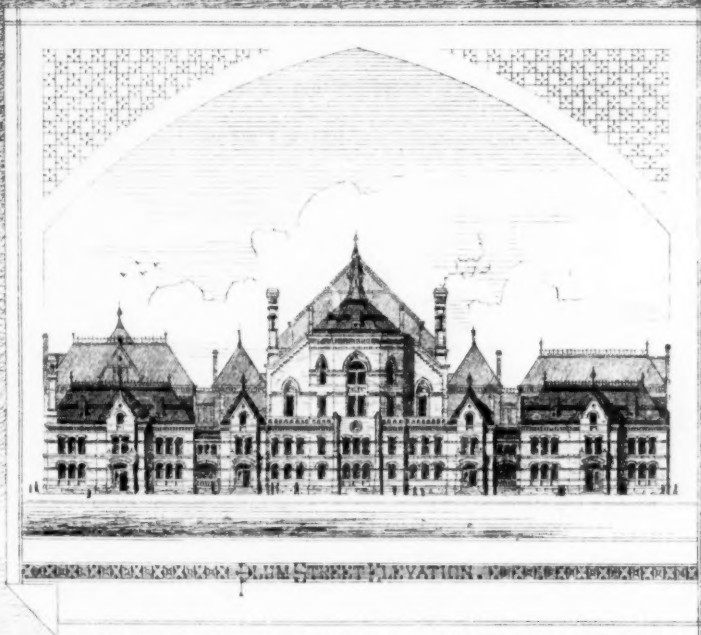
THE HALLIDAY PRINTING CO. 220 DEXTER ST. BOSTON

— VIEW IN PALERMO —



SPRINGER MUSIC HALL AND

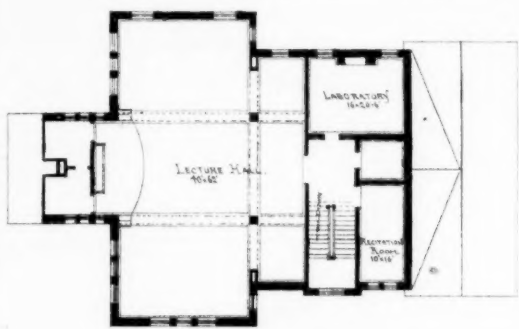
CINCINNATI



ALL AND EXPOSITION BUILDINGS.

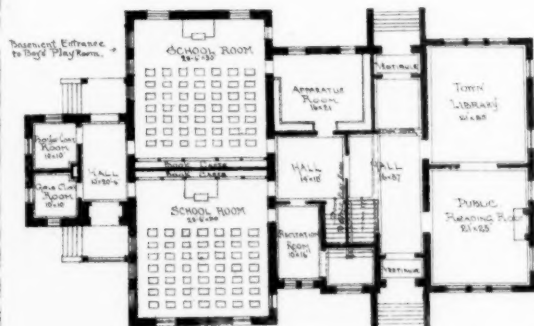
HANNAFORD & PROCTER, ARCH'TS.

CINCINNATI, O.



SECOND STORY PLAN

— DICKINSON SCHOOL —
— DEERFIELD, MASS. —
DESIGNED & SUPERVISED ARCHT.
BOSTON.



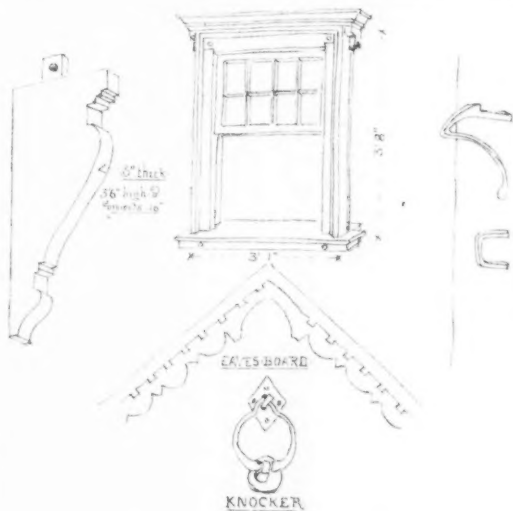
FIRST STORY PLAN

THE RELIATIVE PRINTING CO. 220 DEVENISH ST. BOSTON



Built about 1700
Assaulted by Indians 1704
Taken down 1849.

HOUSE AT DEERFIELD, MASS.
FROM AN OLD SKETCH AND
EXISTING FRAGMENTS



bay, intelligently drawn, the only feature of especial interest and originality being the treatment of the lintel over the opening of the bay, which appears in the form of a light open metal frieze, continuous with the lines of the frieze in the room; but the former is merely a frame for stained glass, and above it is a carved cornice decorated with flying storks. The wall screen is fairly designed, so far as regards the suggestions of the lines, but the exterior is crude and needs study. A full interior elevation would have been more effective, and would have revealed the intentions of the design better.

"*Ars longa, vita brevis est.*" This is a square bay, of no especial architectural merit, but notable for a very delicate and effective treatment of decorative detail, which is cleverly adapted from Chinese and Japanese work. The design owes absolutely nothing to its architecture, but its characteristic furnishing is refined and consistent. Oriental work like this is singularly incomplete without color, but of this element the drawing gives no indications. The design was considered worthy of an "honorable mention."

"*At the Eleventh Hour.*" This design, which was reproduced in the *American Architect* of April 13th, is a rather heavy rendering of the domestic architecture of the last century. The bay is square, and its jambs project three or four feet into the room, forming narrow side bays, each having its separate window. The central bay projects outward to about the same extent, and the opening of it is decorated with a full arch with rather clumsy architectural details. This arch, though heavy, has no function of support. There is a chimney and mirror in the centre. The leading idea of the composition is good, and the drawing bold and effective, but the accessories need study. We should have been pleased to see the line of the iron beams, which do all the work of supporting the superstructure, recognized in the ceiling of the bay.

"*Discipulus*" has produced a double bay, — a semi-circular oriel projecting from a square, an arrangement the exterior of which is satisfactorily explained in a small perspective sketch. The interior of the bay is executed in stone; it is covered by a segmental arch supported on each side by carved piers and open columns; under the arch is suspended a little gallery, which facilitates the decoration of the tympanum by plates and pottery. These are the essential features of interest in the design, and in the conception they are features of genuine originality and invention; but they are very crude in detail, and in rendering show want of practice, knowledge, and care. It is to be noted, however, that, in respect both of rendering and of composition, this design exhibits qualities of considerable promise in the author, — more, indeed, than is shown by many of his competitors who have committed fewer technical errors of drawing and design.

"*Auction.*" This is a laboriously executed line drawing, showing a design of exaggerated massiveness and breadth, all the features of which would be better suited for an interior if reduced to at least half of their present relative proportions. A want of scale is no unusual fault in this competition, and the present design is conspicuous in this respect. The natural result is that the detail, which is wanting in invention at best, appears especially impoverished and coarse. The framing-in of the bay opening is particularly amenable to these points of criticism. Nevertheless this design has a certain well-sustained unity of character, which is a real and, we are sorry to say, a not very common merit. It is more like the work of a decorative painter than of an architect.

"*Respite fume*" shows a square bay, the windows of which are occupied by the conventional heavy sashes, but barred into small quarries like a prison, and incapable of opening or shutting. The interest and merit of this design reside in the idea of treating the bay opening like a piece of furniture, flanking it with a couple of projecting square cabinets, each of them supporting a canopy on four open colonnettes, the two canopies being connected by a segmental arch carried over the opening and framing it in. This composition, however meritorious in conception, betrays a want of practice and knowledge in detail. Its cornice, in idea, is not out of style, but the little balustrade above should have been set so as to overhang the substructure, and should have been carried across over the arch. The detail of the room is conventional and immature, wanting in study, and the rendering is scratchy. The prevalence of fixed sofas along the walls of the room is unpleasantly suggestive of railway waiting-rooms. These are not domestic features.

"*Spes*" exhibits perhaps a Venetian Gothic motif, and his design is notable only for the continuation of the broad panelled frieze of the room across the opening of the bay, where the panels are pierced in a pattern showing familiar subjects from *Æsop's* fables. The drawing and composition betray an unpractised hand and mind, though the execution of some of the detail shows fair draughtsmanship. A coarse wood like chestnut should not be associated with fine-grained woods like cherry, ebony, and holly in the dado. In this, as in nearly all the rest of the designs, the want of training is evident.

"*Cæsar's*" design needs more explanation than is vouchsafed in the details, and he has not followed the prescription in respect to size of sheet. The piers of the window and the jambs of the bay-opening are decorated with similar engaged terminal pilasters, in the Jacobean fashion, and the cornice and ceiling of the room are continued in the bay. This is the only design without at some form of lintel or arch over the opening. The pilasters are well designed, but they need sympathetic and congruous accessories.

"*Eudant.*" This study appeared in the *American Architect* of April 13th. It is a polygonal bay with seats all around, a plain segmental arched bay-opening, showing masonry, set in a wall treated with the familiar affluence of dado and superdado, frieze and sub-frieze, with screen surface between. The idea of color is recognized by the note that the room is to be furnished in "peacock blues and greens," and the feathers, eyes, and plumage of this decorative bird are conventionally reproduced in the painted panels of the superdado. The wall design, as it appears in the drawing, is ambitious, and shows thought, but the success of it is vitally dependent on the delicate adjustments of colors. As regards the masonry here shown, it is to be observed that it is extremely difficult to introduce building stones into a decorated interior like this without a certain sense of incongruity, which betrays itself especially where it becomes necessary to stop the stone and begin the wainscoting or wall lining. There are good points in the rendering of this sheet.

"*Observanda.*" whose contribution also appeared in the *American Architect* of April 13th, gives us a square bay, abundantly opened to light, and divided by fluted or channelled mullions and transoms treated with rosettes at the intersections. The opening of the bay into the room is framed in like manner, — square without mouldings. The design is mainly dependent upon some well-drawn but not original drapery, with a fringed valance across the opening. Each light of the windows has a small "glass curtain." The wall surfaces in the room are treated in the vernacular Jacobean, as shown in the English books, the main feature of interest, perhaps, being the decoration of the metopes in the friezes with China plaques. There is some good work with the pen in this design, but the author has not escaped the pitfall that lies in wait for all who work with a fine point, — scratchiness.

"*Henry V.*" makes his appearance in a delicate drawing and a design not without careful points conscientiously met. It is a square bay with transom-lights in color, the opening into the room appearing in the form of the familiar segmental arch of masonry supported on a stone corbel, designed in the manner of the French Neo-Grec. But the difficult point of the jamb treatment is not properly explained in the plan. The transom lights are divided by balusters, and the corners of the bay are occupied by bric-à-brac shelves. The walls of

the room have arras or wall-hangings suspended from a rod, which also is carried across the bay-opening. The exterior is wood of the lightest treatment. This part of the design is especially meagre and timid; but the sheet contains ideas enough to make a formidable competitor in "*Henry V.*" if he had some of the vigor of his namesake.

"*Verges*" gives us a square bay, separated from the room by an over-bold, low-browed, segmental arch, of impossible masonry and monumental proportions. The cornice of the room is congruous with the bay in respect to massiveness, but like the bay quite out of keeping with a domestic interior. The motif of the design is coarse, but masculine and bold. If "*Verges*" and "*Henry V.*" could interchange ideas a little they would be mutually benefited. Where does the former intend to stop in masonry?

"*Disco.*" An octagonal bay, wanting in architectural character, and without invention in respect to constructional design. Like too many of these competitive studies there is more upholstery than architecture displayed in it; but it has some fair bits of rendering. "*Disco*" may study with profit the more academical designs first named in this list. The heavy ceiling-beams, which abut against the wall over the jambs of the bay-opening, should have been provided for in the architectural treatment of this part of the design. A practised designer would have gladly recognized this as a feature in his study.

"*Esseyez*" gives us a study of upholstery in a bad style, with preposterous architectural details, especially in the profiles of the cornices. The drapery is ingeniously contrived and provided for in some respects, but it conceals and denies essential architectural lines, — a fatal error in a study of decoration: thus the cornice of the curtains, with their heavy "shaped" valance and festoons of ropes, is carried around against the windows on the line of the impost, above which arises, incongruous, a certain massive tracery in the heads of the pointed windows; what supports this tracery is unhappily concealed by the drapery. There is a pretty conceit of crowded cherub heads in the glass filling of this tracery, and some of the details are very carefully drawn.

"*Perciale's*" design comprises a bay with canted corners, and a fireplace under the central window. The bay opening is an open screen-work of ecclesiastical design, profuse with quatre-foils and cusp executed in timber, with heavy chamfered timber trusses supporting ceiling-beams; and there is a strangely composed frieze to the room, without any cornice. The composition is immature, but not entirely illiterate, and the drawing, though weak, is careful. The designer needs to study his scale and to compare his work with that of some of his competitors, especially those first named in this list. His accessories are not domestic; his dado is too low and his frieze is too high.

"*Alpha.*" This is a corner bay, contrived with some ingenuity, and executed in mediæval masonry within and without, as if arranged for a castle of the fourteenth century. It is drawn with a vigorous pen, and without enslavement to the fatal straight edge. In this regard we would commend the style of this draughtsman to the careful consideration of the greater part of his competitors, who are afraid of venturing into the sea of free-hand drawing. The design is crude, and abounds in honest errors, but like that of "*Discipulus*," before mentioned, it is fertile in good promise. This wholesome enthusiasm, when directed and controlled by study, will bear fruits.

"*Roger Williams*" gives us a correct and formal design, academic in intention, with studied detail, but, by reason of a certain painful monotony, uninteresting and stiff. It is carefully drawn, with too much of the straight edge, however, and, as a natural consequence, is colorless and wanting in accent. Its effect depends entirely upon the frequent repetition of a pilaster decorated with coupled terminals.

"*Ben Trevato*" and the author of the design distinguished by a trefoil in a circle are evidently too unpractised and too little versed in the rudiments of composition to make a successful struggle for the present with their competitors; but their attempts are brave and commendable, and the studious comparison of their own work with that of their competitors will be more precious to them as an acquisition of knowledge and experience than if they had received civic crowns.

MR. GARDNER'S HOME INTERIORS.¹

THERE is a touch of levity in Mr. Gardner's clever writing which will attract some people, and may offend others as incompatible with a serious practical subject. His positiveness of statement and his unsparing way of putting aside many common notions may also give offence to some, but his lightness of manner defends him from any appearance of arrogance, and tends to disarm serious criticism. The book simply aims, like the author's other two volumes, to give in an off-hand way, under the guise of conversations or correspondence, sensible advice upon a subject which is attracting the attention of innumerable people nowadays, — the finishing of houses. The author's ideas are the accepted ones about a straightforward, common-sense, and natural adaptation of materials to use and convenience, with very little respect for precedent or convention, and little notice of styles, excepting a reference to some which he opposes. One might read his book without imagining that there were any such things as styles of ornament or received rules and traditions in art; in fact, without even suspecting that house decorating was at all a technical matter, or an undertaking that could not be carried on, by the light of nature, as well by one person as another. This, however, may do no great harm, and the architect will simply regard Mr. Gardner's book as familiar letters to help the laity in matters about which they would naturally have a voice, whether or not they were in communication with a professional adviser.

The book deals with most of the interior details of a house: floors, walls, and their coverings, doors and windows, staircases and ceilings, fireplaces and finish. In its treatment, as well as in its manner, it is plain and simple, and suited to the use of people of moderate means; at least it suggests only simple and inexpensive appliances, making no mention of marbles, stained glass, carvings, hangings, inlays, and other costly devices, nor does it go into the mysteries and delights of furniture or bric-à-brac, thus avoiding the dangerous ground on which other recent treatises have ventured. Mr. Gardner's advice is always of a practical kind, touching upon exigencies which are continually occurring, and for which amateurs are not likely to be equipped. He writes with ready in-

¹ Home Interiors. By E. C. Gardner, author of *Homes and How to Make them*, *Illustrated Homes*, etc. With Illustrations. Boston: Houghton, Osgood & Co. 1878.

vention and much fertility in ingenious devices, with a bold, incisive common sense which makes him ready to strike out unhesitatingly from the common path, but keeps him from running into any great extravagances. At the same time he has an eye to picturesqueness and to general effect. He evidently enjoys tilting at notions that are consecrated because they are habitual, and likes to let off his little paradoxes on conventional ways. His tirade against blinds and his chapter on doors give a good idea of his liveliness, his sense, and his excesses. We quote the following:—

"Please to understand and remember this supreme decision: outside blinds have no rights that white folks are bound to respect. They are simply screens to keep out sunlight. They may be nailed up, screwed up, tied up with strings, hinged at the top or bottom, sides or centre, cut in two, doubled up, chassed down the middle, shoved to the right or left on rings or rollers, — anything to accommodate the windows. My advice is to put them only where the summer sun is most intrusive, and if it happens that these will not open conveniently, let them lie in the attic, except during the hot weather, when you do not care to open them fully. If, for the sake of seclusion, you must have shutters for all the windows, hang them inside and provide with boxings into which they will fold when open. I forgot, — you cannot afford inside shutters with boxings. Well, don't hang them without; they would make the room look like a cheap school-house or a restaurant. Venetian blinds are pretty and accommodating; they will slide up out of sight or down over the entire window, the slats will roll and remain at any desired angle, and they never quarrel with the curtains."

And again on doors:—

"If I ever should be sat upon by coroners, I think the verdict will be 'died of doors.' They are my *bête noir*. They worry me beyond measure. The square, stiff, selfish, inhospitable, uncompromising things. Harsh in character, and ugly in design. They always suggest the telegraphic alphabet, — a long panel and a short one, one short and two long, two shorts and one long, three shorts, a short between two longs, a long between two shorts, and so forth *ad infinitum*. Then they are so heavy and obtrusive, if wide enough to allow two persons to pass through abreast, which they seldom are. . . . A swinging door, three or three and a half feet wide, monopolizes thirty or forty square feet of wall space, and from fifteen to twenty square feet of floor room. If it is four, five, or six feet wide, as it often ought to be, how much is there left on the side of a sixteen-foot room for furniture or pictures? If there happen to be two or three such doors, — I have seen small rooms with half a dozen, — 'kept in-doors' describes the condition of the inmates most accurately. To speak mathematically, five three-foot doors opening into a room fifteen feet square, cover, absorb, sequester, and totally demoralize just thirty-three per cent. of the whole apartment."

Of the prevailing craze for sticking tiles about he says:—

"Separate tiles are sometimes very beautiful, well worthy of being set up as ornaments, like vases or other pottery, but there is certainly an incongruity in using them as decorations for wood-work, in situations where their durable quality is of no value. Inserted in the top of a side-board, a heavy table, or a wooden shelf, either to cover the entire surface, or for an ornamental border, at the base of a newel post, next the fire in a chimney-piece made of wood, and in various other locations, their hardness justifies their position; but they should not be set scattered about 'promiscuously like' in pilasters, corners, and prominent places where they have no meaning except by reason of their color and pattern. This is worse than new cloth on an old garment; it is like a cast-iron fence around a country door-yard, a binding of brass on a velvet gown."

It is not to be supposed that all problems and opportunities that will occur in house-fitting can be touched upon in a small book, and those who should look in this one for a *vade-mecum* that would give them complete directions would be disappointed. But the non-professional reader will find in it many suggestions which will give him new light, and clear away, we fancy, a good many unnecessary notions, while the professional will find much of his own experience entertainingly set forth, and perhaps get here and there a hint worth his notice.

The illustrations are less interesting than the text. The lively pencil that relieved Mr. Gardner's earlier volumes with sketches of figures and scenes has not touched this, and apparently the hand which before made the practical designs has here also essayed the jocose ones, but without adding anything to the attractions of the book. These sketches are not germane to the subjects of Mr. Gardner's books, and the only thing which justified their introduction in the others was a certain lively grace and sparkle that was in them. One accepted them as one accepts a guest who has no warrant for coming, but who has a knack at making himself agreeable. In those of this last book this excuse is lacking. The illustrations which have to do with the purpose of the book are a little more simply drawn than before, and perhaps appear to better advantage for being spared the contrast of their cleverer neighbors. They are simple, serviceable diagrams, sometimes of interesting design and sometimes not, generally well enough drawn and to the purpose, though sometimes a little lame, as at p. 251, or at p. 117, where curious blunders in perspective give a queer look to the picture.

We close with one more quotation:—

"Most men are more intimately affected by the character of their homes than by the potions they absorb, whether doctrinal, legal, or medical. It is true, 'houses' and 'homes' are not identical, but the relationship is very close and peculiar. In studying for a plan or for counsel, I confess my inability to draw the line between the material and the spiritual, the economical and the moral, the sanitary and the æsthetic, the useful and the beautiful."

CORRESPONDENCE.

BALTIMORE.

MARYLAND STATE HOUSE.—PUBLIC SQUARES.—SPECULATIVE BUILDING.—PROPOSED BUILDING LAW.

MUCH interest has been felt in the recent controversy concerning the repairs upon the State Capitol at Annapolis. Two years ago the

legislature, after consultation with Mr. G. A. Frederick, architect, of this city, and on the basis of an estimate made by him, after a careful examination of the structure, appropriated \$32,000 for its repair, specifying in detail not only the particular work to be done, but also the several amounts for each item. On the assembling of the present legislature, it was found that not only had the appropriation been exhausted, but extensive repairs, never provided for and costing \$79,000 additional, had been made by the Board of Public Works. New fresco, furniture, and upholstery had cost \$36,000, or \$4,000 more than the appropriation. As an example of the manner in which the building was furnished, the duty alone on the raw silk used for curtains was said to be \$2.00 per pound. Nor was this all. The architect submitted with his report an estimate that \$25,000 is still required to finish the work, making a grand total of \$136,000, for which the citizens of Maryland have the satisfaction of beholding the venerable building, in which Washington resigned his commission, stripped of all that remained dear to the lover of antiquity. Even the gallery in the historic Senate Chamber, where sat Mrs. Washington, and which is represented in the large painting in the rotunda of the United States Capitol, has been removed. The wide, old-fashioned fire-place is closed, and the picture of the resigning of the commission is hung where the mantel formerly came. In gazing on this picture and then on the reality one can readily understand why the faithful old orderly weeps. How much better to have preserved this historic building in its entirety, with only such repairs as age had made necessary. If required, a new building ample for all needs could almost have been built for the sum worse than uselessly expended. Some opposition was made in the legislature to paying the bills thus contracted without warrant of law, and an "investigation" was had, the verdict of "no one to blame" being practically rendered by the majority, and the bills ordered paid, with the exception of \$1,700, the architect's commission on furniture, and one small account. A minority report was made, however, characterizing as "extravagant and unwarranted so large an expenditure of public money."

A radical change has been made in two of the squares at the Washington Monument during the past winter. The work challenges public criticism now that the finishing touches are being put to it. The iron railings are all removed and the squares laid off with a minimum amount of grass plot, and a maximum of "Worl" cement pavement in three colors, much of which, by the way, has been already relaid. A large quantity of cut North River blue stone is used for edgings and curbing, rock-faced brown sandstone and light stone, chisel-dressed, is used in dwarf walls and miniature fortifications, surmounted by wrought-iron railings and lamp standards of the most pronounced Queen Anne design. In one square is a truncated cone of polished white marble, about nine feet high, upside down, and aptly compared to a locomotive smoke-stack. Ornament this with a few sunk beadings and imagine a stork and reeds on either side incised in the stone, and we have the fountain, from the summit of which the water falls with a melancholy drip, discoloring all below it. As a thoroughly incongruous and unmeaning piece of design, and withal very expensive, these squares are thought to bear off the palm.

Another park of sixteen acres near the northern boundary has just been accepted by the city, having been tendered by several public-spirited citizens. It is unrivalled for such a purpose, containing noble forest trees and several fine springs, and will doubtless give an increased impetus to first-class building in that vicinity.

The mania for erecting long rows of poorly planned and miserably constructed houses is perhaps slightly on the wane, though the nearly total absence of any building laws tends to encourage it. For more than two years the Baltimore Chapter of the A. I. A. has labored in vain. It has submitted an ordinance which was subsequently modified by the city council committee, and formed a subject for conference between them and a representation of the architects on Wednesday last. Each section of the proposed new building law was taken up in detail and explained. The matter at present looks more favorable, and though not by any means complete the law is far better than the existing condition of affairs. Its early passage is devoutly hoped for.

CIVIS.

PHILADELPHIA.

BONUS BUILDING.

It had come to be a subject for reasonable hope, owing to an improved temper in business circles, that first-class building would revive, and the speculative operations known locally as "Bonus" would get a start on the downward path. The term requires only the substitution of *g* for *n* to express the real nature of a majority of these operations, which sap the life of legitimate building enterprise. The system, as it now prevails, is born of inflation, and is conducted by those who became capitalists during the war. I presume the method exists under different names in other large cities where there is a fast increasing population, and where an apparent necessity for the increase of homes can easily be argued into a real one. As the plan of proceeding may be different with us, it may not be "coals to Newcastle" for many of your readers. A man may have a vacant lot which he desires improved. If he does not already possess one he need not wait long, he can buy it. He will seek out some impecunious mechanic, who has as little reputation as capital to lose. He will sell him the ground and give a deed, taking a

mortgage for the full value and perhaps beyond. He will also agree to advance money on the prospective houses to be built, generally about one third or one half what a decent, well-built house of the size proposed should cost. The advancer can then retire behind the scenes and watch the movement. The puppet, or accomplice, as the case may be, makes his contracts for work and materials. Often he is an easy man to deal with. He does not higggle long about prices. Why should he? There is margin in the job and he will not beat down the material-men. Their name is legion, and among them many catch at the bait. They must do it. There is nothing else to do. Perhaps the builder is duped; he may wish to deal honestly, he may have thought that the tide has come in his affairs and he honors the benevolent capitalist who holds out the hand to help him. The material-men require the guarantee of the advancer. He is reputed wealthy. The contracts for the first instalment are closed. The builder's order, accepted by the advancer, secures the payments at certain stages of the work. The buildings go on. The first joists are reached, the first advances are paid, and the "operation" is in good credit. The material-men are encouraged and perhaps less vigilant. Further contracts are made, without security, if the victim is fresh; with security, if he is a "burnt child." The next stage is longer in being reached. The builder finds or has known all along that his advances are inadequate to carry the work to a successful termination. He must get out of it in some way. He buys wherever he can, pays for what he absolutely must, but gives the reputation of the advancer for most of it. The further he progresses the more deeply he flounders in the mire. Perhaps he becomes disheartened, and abandons the operation to its fate when one third completed. Orders are out for a great portion of the material yet needed to finish; much of it is delivered and irreclaimable. Where is the advancer? He does not "know anything at all about it. There are orders out, to be sure, but they are payable when so and so is ready. You have your redress, good Mr. Creditor, put on your lien." To indulge in the formality of putting on the lien is generally to find that to bring the ground and half formed buildings to a sheriff's sale would not realize the amount of the first mortgage. Either the heaviest creditor must become the purchaser, or they are knocked off to the capitalist at the amount of his mortgages, and the creditors can go hang; he releases himself from the payment of the orders due when the building has arrived at a certain stage which he never intended it should reach, under the first contractor, and at his leisure he perhaps completes the houses, puts them on the market, sells them at far more than such shells are worth, and gives thanks for a plentiful harvest. Sometimes an understanding exists between builder and advancer by which the former is employed *not* to finish the houses. They are often, however, pushed to completion, and the materials bought as best they may be, but nine times out of ten are not to be paid for. Hundreds — thousands of honest men are suffering in our city to-day from having builded upon these foundations of sand. Hundreds of men, far from honest, are living in luxury upon the wrecked fortunes of the sufferers. Thousands of houses are unoccupied because the market is glutted. The bounds of the city have expanded beyond the needs of the city's population. Men of former wealth are seeking more economical houses, and men of once moderate means are swelling the register-list of hotels and boarding-houses. As far, then, as first-class building may be looked for to supply homes, the chances are small for its immediate revival. J.

NATIONAL ACADEMY OF DESIGN, NEW YORK. FIFTY-THIRD ANNUAL EXHIBITION.

CRITICISM in detail of a picture-show can only be valuable to such as have the pictures at hand. But the general tendency of the year can, perhaps, be marked so as to interest even those at a distance from the National Academy.

More than ever before it merits this year the epithet "national," for its list of names embraces many States. Foreign artists are, on the other hand, in less force than usual, the European addresses which follow so many names denoting almost invariably Americans studying abroad. The catalogue is long, including over seven hundred paintings, while the statues are insignificant in number and — in their entire want of excellence — very significant indeed in quality. Critics of last year's show assert that this is inferior, but to one who has not visited the Academy since the spring of 1874 it seems a great advance. Works of genius, even of very great merit, can hardly be cited, but the average in commonplace is higher and there are fewer canvases which disgrace alike exhibitor and exhibiting committee. Most strongly impressed is one who is a stranger to the work of the last few years by the great number of new names in the catalogue, the strength — numerical at least — of the very youngest generation of American artists. It is to these, not to Academicians nor Associates, that is due the rise in the average of work. If one were asked to point out some of the very worst pictures in the seven hundred, pictures distinguished by lack of every necessary quality, by lack of drawing, color, manipulation, and imagination, even of sense of what can with any propriety be made a subject of art, the major part of the names would be followed by the N. A. of supposed distinction. Not that N. A.s paint worse than any one else, but surely no one else can paint worse than some among them. It is not easy to find

worse pictures than the "Child's Portrait" (No. 432) by Mr. Chapman, or the medley of orange and lilac and pink which Mr. Cropsey calls "Cedar Lake," or the "Sunday Lesson" of Mr. Guy, or "Little Sunshine" by Mr. Whitehouse, or "Leisure Moments" by Mr. Pratt, or the unutterable "Idling" of Homer Martin. All of these are Academicians, as are Mr. Geo. H. Hall, the colors of whose large and pretentious pictures make them look most like the ubiquitous "scrap-picture" many times magnified; and Mr. Baker, whose unnaturally pink flesh tones and staring draperies grow worse year by year and neutralize the good qualities he possesses; and Mr. J. G. Brown, whose large "Pull for the Shore" is glaringly disagreeable and false; and Mr. Ehninger, whose "Twilight at Pau" is curiously unnatural. Mr. Winslow Homer is too well known to need describing, but he has never done anything harder and more unpleasant than his "Shall I tell your Fortune?" — to mention the worst of five or six. Mr. Loop's ideal figures, "Marina" and "Hermia and Helen," are of the feeblest.

To set against such sins as these we have much commonplace work such as the Academicians have given us for years past, — neither better nor worse. And as positively good we may reckon Mr. Huntington's portraits, faithful and gentlemanly, if not strong or especially artistic; some of the works of Mr. Samuel Colman, of Mr. David Johnson, of Mr. William Hart, injured by over-bright color, and of Mr. Magrath. Mr. Geo. Inness's pictures are very startling and will scarcely add to his reputation. Certainly, however, none of these show anything very important. Mr. LaFarge — one at least who has the merit of not allowing himself to be classed with any other man — is so inadequately represented by three small, unfinished studies, that one's curiosity is but whetted. His "Bather" shows such wonderful work in the wet clinging of the semi-transparent drapery, that we rebel at the slurring of the exposed parts of the figure. Much the most marvellous bit of painting in the rooms is still but a bit, a study, not a picture. The curiously fascinating little "Andromeda" shows another study of similar drapery, damp this time, not wet, wind-driven about the limbs, not clinging to them, and is almost as marvellous as the others. I am not the first to say Mr. LaFarge runs danger of being spoiled. One can but pity an artist when a critic describes a sketch of a couple of figures under a pine tree as "indisputably full of religious sentiment," and finds reason to congratulate himself for the vagueness of the "Bather," it being thereby proven that "we have at least one artist who seeks."

If we leave the full-fledged for the callower Academic brood, we shall see the Associates doing some work quite as good as the Academicians proper, and some almost as bad. In the former class we must rank Mr. Eugene Benson's work, Mr. Swain Gifford's, Mr. Van Elton's, and Mr. Gay's; in the latter class Mr. C. G. Thompson's pictures, Mr. Scott's "Meditation," Mr. William Morgan's "At Home," Mr. Story's Portrait (No. 638). These cannot be surpassed by the failures of their seniors. Mr. Reinhart's "Katrina Van Tassel," painted, most unfortunately, in oil "gray on gray," is very poor, as is Mr. Ogilvie's "Mountain Brook," Mr. Powell's Portrait (No. 539), Mr. Pope's "Waiting for Papa," Mr. Lay's "Two Friends," Mr. Scott's "Clemence Lemorville," and Mr. Wood Perry's "Story." The "Star of Bethlehem," by Mr. Chapman, N. A., and "Mother's Goodnight," by Mr. Thompson, A., are two pictures that might have been painted in the very infancy of American — or any — art.

Mr. Tiffany scarcely fulfils the promise of his earlier work. His technique in oils does not improve, and in one picture, "A Laborious Rest," where he leaves his usual subjects and gives us foliage, he seems to be seeking the pale effects and fluffy texture we know in Mr. Boughton.

Passing now to the outsiders, we halt first at the most familiar name to find Mr. Thomas Moran confiding ever more and more in the fact that his pigments are pleasing in themselves, less and less to the way in which he applies them or to their actual existence in such a way in nature. His "Dream of the Orient" is childishly absurd.

It is with hope for the further future that we look from the elder, titled generation to the newcomers, who give us most of the best work on the walls. Mr. Shirlaw, the president of the new "Society of American Artists," is successful in his portrait of himself, which, if rough, — I mean æsthetically, not technically, — is unaffected, strong, and lifelike. His life-sized "Bather," the most ambitious picture on the walls, but one of the least pretentious, is clever in the outline drawing, though the modelling is not always satisfactory. In spite of its seeming more properly a study of flesh-tints and pose than a picture *per se*, it is heartily welcome as showing we may yet dare to attempt — and perhaps achieve — the highest. Mr. Chase, whose "Ready for the Ride" was the finest picture at the new Society's exhibition a month ago, sends "The Court-Jester," an infinite falling-off, a clever picture, but not a beautiful nor a pleasant nor a powerful one, somewhat coarse both in conception and execution. The effect of the face — in itself too brutal — is detracted from by being so prominently reproduced in the head on the jester's bauble. Mr. Schmitzberger of Munich — whether native or American, I do not know — sends a very clever canvas, still life with dogs, in which the broad, blunt touch, so popular just now in Bavaria, is pushed to the extreme. Mr. Gross and Mr. David Niel, both of Munich, also, send some clever study-heads, Mr. Niel's having much

actual beauty and the promise of an excellent touch. It is one of the best things at the Academy.

In portraiture is prominent a portrait by Mr. B. C. Porter of Boston. The color is attractive and rich, the figure well and simply posed, descending a staircase. The picture's greatest merit is decorative; its greatest fault lies in the manipulation of the flesh and the want of life. Compare it with the great unwieldy canvas over which Mr. Huntington has spread his "Portrait of a Young Lady," and we shall see its superiority as a picture, both in composition and in color. But compare it with Bonnat's portrait (No. 442) and we see its inferiority as a reproduction of live humanity. One feels it, by the way, rather a lucky chance that the Academy shows us Bonnat's picture at all, for it is "skied" over a door. It is defiantly simple in pose and want of color. Dark hair, a severe black dress with a single pale flower and an unvaried blackness of background, from which the face, bust, and arms glow with almost exaggerated whiteness. There is none of the successfully elaborate decoration of Mr. Porter's picture, but there is life, style, force. One who desires "characteristic art" must be amply satisfied with this picture, for if ever the nineteenth century can be incorporated in art it is here so incorporated with the utmost talent, clever, brilliant, practical, hard, and cold. Both subject and treatment are not only of the earth, earthy, — one may be that and still be tender and poetical and sensuously divine, — but of the world, worldly. It is more than trite to rail at hanging-committees, but when one sees such a picture so placed and another, a careful portrait by Henner, in a high, dark corner of the corridor, where it cannot possibly be examined, one doubts the Academy's sense of courtesy to foreign artists of reputation and sense of obligation to the public as well.

Mr. Alden Weir's portrait of his father is well done, but it is a pity his brother consented to paint such a costume as that worn by the young girl in his No. 437. Mr. Anderson's large portrait (No. 139) must lower in any one's eyes the dignity supposed to be conferred by the fact that a canvas has been a "Salon picture." Miss De Kay's head, which she calls a "Young Mother," is meaningless and ugly.

We must go back to the Associates for a moment in order to notice Mr. Fuller's two pictures, — "The Turkey-Pasture" and "By the Wayside," certainly original and clever and as certainly eccentric. One can hardly tell in their present position whether their appearance of cleverness is caused or is diminished by the smoky color and poetically unreal light.

In landscape, Munich again sends what is perhaps the best work in Mr. Macy's pictures, — somewhat crude as yet, but good in style and giving promise of the best. Mr. Quartley's pictures are of very unequal merit. Suffering, once more, by hanging, is a fine study of a moor with running water, by Mr. Widgery Griswold, who gives one a good idea of English landscape art as contrasted with continental methods. Mr. Senat's "Stormy Moonlight" well deserves mention, as does Mr. Harry Chase's "Kullar Point," Mr. Waller's Egyptian scenes, Mr. Bricher's "Low Tide at Scituate," and Mr. W. P. Phelps's pictures owned by the "Lowell Art Association."

M. Gustave Doré's drawing for the "Idyls of the King" helps to a solution of the mystery how one hand accomplishes so much. The plate, which when engraved looks wonderfully elaborate, is done, in India ink apparently, with the most broad and rapid and facile brush-work, and may have easily been finished in an hour or two.

We miss both water-colors and architectural drawings from the Academy, except in one or two weak examples. Most of the sculpture scarcely rises above that which used to be hawked about the streets on the heads of Italians. Mr. Hartley's "Whirlwind" is impossibly inartistic. A bust of his might be fairly good were it not for the attempt again to go outside of the legitimate in the most ingenious and elaborate undercutting and perforating of pupil and iris, with the vain endeavor to vivify the eye. It will go hard with a man when he begins by totally misapprehending the nature and limitations of his art. Mr. Henning's so-called "Titania" — the only large piece of marble — is vulgarity itself.

It is never hard in such a collection as this to judge of the relative excellence of the different works. Most of them are simple, rising not at all into the region of the imagination, and tackling none of the more complex problems of art. But at the end of the long examination one's brain is rather confused as to the actual value of the best of the work, its value, compared not with its surroundings but with the highest standards. Fortunately there are usually means at hand in New York to renew one's memory of the best modern work, and to find the variation produced in one's critical compass by the inspection of seven hundred Academy pictures. Just now the absolute "true North" of landscape art is to be found in Mr. Cottier's collection, embracing the divine "Orpheus" of Corot and specimens of the best of his French and Dutch contemporaries, while figure-painting is represented by Millet in his earlier manner. It seemed at the Academy as if many touches and methods of much ingenuity had been tried with little success. Such a variety was to be seen and the sight was so little pleasing that one began to doubt whether there was satisfaction at all in landscape art, and whether recollections of the Frenchmen's power were not lying memories. It needed but one small and simple Daubigny to set the doubt at rest, — a bit of meadow, a line of trees, a glimpse of river, such a subject as hangs by the score at the Academy, but here no hint of commonplace or insipidity.

This was *technique* where one did not think of the *technique*, but merely that the meadow was summer grass, and the trees trees, and the atmosphere air — not paint ever so carefully laid on. What the elaborate speckiness and complicated touch of Mr. Macy does not realize, what the washy breadth of Mr. Inness only caricatures, was here, and looked as simple as if the first beginner could do it. If Daubigny taught so much of what is possible, what can one say of Dupré and Diaz and Rousseau? Above all, what of the superb ideality of Corot's "Orpheus," as distant as the poles from the downy olive-green one sees most often from his hand in this country? Here is something more than nature, it is inspiration as well as painting. The Millets, especially the "Samson and Delilah" and the "Quarrymen," are a gauge almost as satisfactory of what modern art can produce in figures. One left the Cottier collection, it is true, realizing the deficiencies of our own art. But, *per contra*, one was cured of the desponding thought that perhaps the best was not so very good, and that nature was still far above any possible brush, and that modern art was hopeless of perfection. Our feet might lag, but we had been reassured that the goal was noble and that some had reached it.

M. G. v. R.

A PROBLEM IN ACOUSTICS.

EDITORS AMERICAN ARCHITECT.

Gentlemen: The troubles of your correspondent W. B. A. in regard to the acoustic quality of his church, may perhaps come from echo from the blank wall between the two doors leading to the entrance hall. This would be lessened by hanging cloth against that portion of the wall; the softer and looser the cloth the better. It might be well to experiment with cotton cloth hung temporarily. If this should not prove to be the source of the trouble, it is possible that echo may take place from the mass of air above the gallery, enclosed between the gallery and the ceiling. This would be partly or wholly broken up, if it existed, by stretching wires across the church, one above another, vertically above the gallery front, shifting them a little backwards or forwards till the proper place is found. The wires should not be too small, nor too far apart.

The difficulty is much less likely to proceed from this confined mass of air above the gallery than from the plain wall below, but it is quite possible that it may have some influence. The proportions and section of the room seem not very unfavorable to good acoustic quality. Although if the scale of your correspondent's drawing is correct, a little additional length would have been a great advantage.

In cases of echo from the rear wall, it is often well to experiment with the reading-desk in different positions, forward or backward, or raised a little more or less. The variation in the tension or the angle of the sound-wave at its impact upon the opposite wall thus produced has a considerable influence on the echo.

The manner of heating, I should think, would be rather favorable for sound than otherwise, on account of its uniform distribution. It may comfort your correspondent to know that any echo from plastered walls diminishes as the age of the building increases. Aside from the natural first dampness of the plaster, the gradual change of the lime from hydrate to carbonate under the action of the air sets free moisture in the pores of the plastering, which for some months renders it nearly impervious to air and adds strength to the reverberation from it.

T. M. C.

SIR GILBERT SCOTT.

SIR GILBERT SCOTT was one of those men — and the capricious circumstances of life cause them to be few — in whom a singular and instinctive genius for one particular description of art comes to be encouraged in almost every possible way by the accidents of fortune and marred by no misadventure. He was the son of a country clergyman, inheriting a name held high in literary honor. Educated in pursuance of his bent for architectural work in a plain, respectable London office, where there prevailed neither dulness nor eccentricity, he commenced practice at an early age at a time when two peculiar principles had just taken possession of English architecture — ecclesiasticism and competition. A partner possessed of special aptitudes for competition lent him important aid in that adventurous field; in ecclesiastical art he himself was *facile princeps*; and they were both but about thirty years of age when Messrs. Scott & Moffatt had attained the undisputed position of the most successful competition architects of the day, and notably in the design of churches. Although he had in time to part from the fellow-worker of his youth, Mr. Scott never receded from the position he had thus taken up: to the end of his days he was emphatically a church architect, and the most successful competitor in England.

In modern times there have been three supremely conspicuous architects in England; and, while each of these has manifested a striking individuality, there has been nevertheless a remarkable similarity of essential artistic character in all — Sir Christopher Wren, Sir Charles Barry, and Sir Gilbert Scott. We may even say that the merits of all have been eminently English. In no respect either profoundly cultivated or passionately inspired, in all cases moved by the sober impulses of sound good sense, devoted to hard work, and ever diligent in business, all these three great artists alike have won their fame by the persevering performance of an immense volume of personal handwork, endowed from first to last with inimitable per-

sonal grace. Amongst the three, Scott has had chiefly imposed upon him the task of popularizing neo-medieval ecclesiastical art; and it is as idle to say that he has not equalled Wren and Barry in other provinces of design as it is to speak of those eminent compeers as having ever attained to his supremacy in this.

The precise position occupied by Sir Gilbert Scott for the last twenty years has been a very peculiar one. There has been in architecture, as there is in most other things, a *via media*. It has been followed, as it generally is, by comparatively weak men. Scott followed it persistently; but he was a strong man—a calm, experienced, dispassionate, safe man. While certain of his brethren were wildly and irascibly contending for the faith that was in them, he was ever serene, and, although not at all without his faith and his warm feelings—and very much the same faith and the same feelings as theirs—ever cautious, dignified, and prudent. It is quite superfluous to remark that religious symbolism, and indeed whatever kind of ecclesiastical discipline, is at any time enough to stir up irrepressible controversies and incomprehensible animosities. How much of these ungracious manifestations, even in private life, England has seen during the present generation no one needs to be reminded. It is no less remarkable how much of this unseemliness has entered into such a thing as architectural discussion. Even the weakest of men, acting as earnest votaries of the art, or only as conscientious practitioners of it, have been led away into such unwonted ardor as to astonish the observer, and in not a few cases have exhibited in their very works, almost absurdly, the perturbation of their spirit. It is not enough to say that Scott was never thus led away. The peculiarity of his case was that he acknowledged the same enthusiasm and possessed the same energy, and that it can scarcely be said he restrained himself, because he was constitutionally restrained. Not only in his writings, lectures, and addresses, but in the very products of his pencil, his intellect was full of ardent vitality; but he never permitted himself—or was never permitted by his instinct—to go a single step out of the safest path. He made no enemies, therefore, and indeed made no blunders. Opponents he had, and failures he made, no doubt, but against such a man opposition was at the worst respectfully conducted, and the memory of unsuccessful left no trace.

Gothic architecture was his all in all; and the occupation of his life was church-building. How many new churches he has built, how many old ones he has restored, it is almost impossible to count. Half the cathedrals of England, more or less, he has renovated and improved. Country clergymen were the very companions of his business, and deans and chapters and learned and wise bishops his unfailing friends and admirers. A remarkable gentleness of demeanor secured every one's favor, and his sound judgment and enlarged experience seldom if ever failed to retain it. It is well known that there are those who say his work exhibited a certain mannerism which every year increased, and which must of necessity sooner or later degenerate into feeble commonplace. Experienced observers could tell his style at a glance. Apt pupils could acquire it with prompt facility. Cynical experts could anticipate his opinions and foretell his advice. All this, however, may be perfectly true, while yet it is enough to answer that much exercise had made his judgment both methodical and modest, whilst a vast fund of practical knowledge had enabled him to see the utmost variety in such a subject as religious art passing into uniformity in the end.

But if Sir Gilbert Scott had a mannerism, it was based at least upon very good qualities. Violence—which has its own place in art as in other matters—he carefully avoided. He worked to please, not to offend; to produce the smile of satisfaction rather than either the frown of surprise or the gape of amazement. His architecture was sleek, graceful, gracious; modest and unobtrusive; genial and invariably sensible. No such man could hope to retain what is called the power of original thought through nearly half a century of increasing practical labor and amidst the advancing capabilities of his own pupils and imitators. New brooms sweep clean in architectural progress as in all else, and new men are arising every year in whom new mannerisms and nothing more are the novelties of the moment, sometimes destined to success, oftener to failure. The great mannerism of Sir Gilbert Scott was a certain simple, moderate, permanent graciousness—invaluable in everything ecclesiastical—which met the advancing tide in church affairs five-and-forty years ago, and advanced with it slowly and steadily to fame and fortune. In matters wherein we are all most easily offended Sir Gilbert's churches had the rare merit of offending none of us, and indeed of pleasing all who were willing to be pleased. Some designers succeed only in distressing us by their imbecility; some arouse our indignation and distrust by their misplaced muscularity; some weary us with their fineness; it is no small merit to avoid all this and to gratify us with modest elegance.

To catalogue the achievements and honors of such a man is of itself a most interesting task, and to the ambitious aspirant in art a record of Sir Gilbert Scott's buildings might well be productive of a feeling of no little astonishment. Besides churches by the hundred, ranging from the wayside chapel to the abbey and the cathedral, there are as many ordinary public and private buildings as go to make a lifetime's work for men of common capacity, whilst the noble railway edifices of St. Pancras, the University of Glasgow, the Government Offices at Whitehall, and the splendid Albert Memorial, make up a total that is truly magnificent. It is of course in one sense useless to pretend to think that all this could have been

done by his own pencil; the faculty of utilizing others, and of bending them to his kindly rule, seems to have been his to the utmost degree. Men of no mean powers of their own were attracted permanently to his service—his instinct became their instinct, and his hand their hand.

In literature Sir Gilbert Scott may be said to have certainly not failed to make his mark. Here, as in business, his subject was Gothic architecture. His books and occasional papers, although necessarily not numerous, were characterized by the same sound sense and moderation as his artistic designs; and his lectures as Professor of Architecture in the Royal Academy were at the time pronounced to be in themselves astonishing, for the care manifested in their composition and the profuse liberality of their graphic illustration. It need scarcely be added that his personal address as a speaker was only devoid of brilliancy because devoid of effort and, like all his life, of affectation and assumption.

How wilfully the world turns round upon the best of us was peculiarly manifested in the circumstances which recently brought about, and by no means unfairly, the public attack upon Sir Gilbert Scott for his share in the defacement, as it was unreservedly alleged, of our ancient ecclesiastical monuments by their restoration. In a word, the time had simply come when the critical eye was to be opened to perceive the fact that the love of even such a man as this, absorbing as it was, for the relics of the past, was not carried logically far enough. The particulars of the highly interesting controversy which so much occupied for some little time the attention of architectural, archaeological, and ecclesiastical society are fresh in every one's recollection; and we may no doubt take it for granted that considerable impression was made upon the public mind, and that for the future the treatment of authentic mediæval remains will be placed upon a different footing. The position assumed by Sir Gilbert Scott personally was, however, by no means unsatisfactory. Assuming, as we must probably do, that a very material amount of academical rather than filial restoration had been directed by him, and by his more immediate followers and friends, it is still certain that he was able to point to his own writings of long ago with no little triumph for confirmation of his plea that it was the exigencies of public utility, and not his own want of appreciation or sympathy, which consented to the surrender of the sacred identity.—*The Architect*.

THE HOOGLY FLOATING BRIDGE.

At the meeting, on Tuesday, of the Institution of Civil Engineers, Mr. Bateman, President, in the chair, the paper read was on "The Hooghly Floating Bridge," by Mr. Bradford Leslie, M. Inst. C. E. This bridge connected Calcutta on the left with Howrah on the right bank of the Hooghly, at a short distance north of the East Indian Railway Terminus. Various projects had been from time to time proposed; but ultimately the preference was given to a floating bridge, as it could be more cheaply and expeditiously constructed than a fixed bridge. The design was prepared in 1868, when it was intended to be carried out by a joint-stock company; but, after much delay, in 1872 it was undertaken through the agency of the local government of Bengal. The work was commenced in January, 1873, and the bridge was opened for traffic in October, 1874.

The present structure was the first, and up to this date the only one, of its kind affording headway for river navigation. It divided the port into two sections; the lower part was occupied by sea-going ships and steamers, and the upper part by inland craft and a few coasting vessels. As, however, the graving docks were above bridge, it was necessary that an opening should be provided for the passage of shipping. The extreme rise and fall of the tide during floods was 20 feet, and at certain seasons there was a tidal wave six feet in height. The maximum velocity of the stream was six miles an hour. The depth of the river at the site of the bridge was variable, the greatest depth at low water being six fathoms.

The bridge was 1,530 feet long between the abutments, and the roadway was 48 feet wide, with footpaths each seven feet in width on both sides, so that the total width of the platform was 62 feet. There were four main longitudinal wrought-iron girders, at intervals of 16 feet in the width of the roadway, raised by timber trusses, resting upon pontoons, to a convenient height above the water for accommodating the boat navigation. The platform of the bridge was level for a distance of 384 feet on each side of the centre, at a height of 27 feet above the water. Thence it fell by inclines of 1 in 40 to a distance of 584 feet on each side of the centre line, where there was a length of 20 feet of level platform 22 feet above the water. Between these points and the abutments were the adjusting ways, the shore ends of which were 32 feet above low water. The approach on the adjusting ways was by a descent of 1 in 16 at extreme low water, and by a corresponding ascent at extreme high water; but at ordinary times it was either level, or only slightly inclined. The platforms of the adjusting ways were supported on the lower flanges of three bow-string girders, the roadway being divided into two by the centre girder. The footpaths were carried on cantilevers riveted to the outer girders. The bow-string girders weighed 66 tons each. They were 160 feet long between the end pins on which they were hinged, and had the usual trough-shaped upper and lower members. The shore ends of the bow-string girders were suspended on links, which was preferable to carrying them on rollers, even for fixed bridges, as

being less liable to get out of adjustment, and tending always to restore the girder to its normal position at its mean temperature. The outer floating ends were hinged to pivot bearings, in order to admit of a slight drift up and down stream.

The floating portion of the bridge was carried on 28 pontoons, coupled together in pairs to secure stability. With the exception of the two pairs in the centre, which supported the movable sections of the bridge, each pair carried 100 feet in length of the platform. Each pair was coupled together, at a maximum distance of 48 feet from centre to centre, by four timber sills, bolted to the decks of the pontoons at intervals of 16 feet. These sills constituted the bottom members of the four main longitudinal trusses, the top members being the wrought-iron girders carrying the roadway. With the exception of the upper girders, the whole of these trusses were of teak. The coupled pontoons were further connected by strong horizontal diagonal bracing of bar iron. The timber sills and the bracing being only four feet above the water, the space between the coupled pontoons was not available for navigation, and floating fenders or booms were provided to divert boats from these openings. Ordinarily the main girders overhung the pontoons 21 feet, their ends being supported by the inclined struts of the trusses, leaving a width for navigation of 42 feet, partially obstructed by the raking struts. For the convenience of the country craft, there were two rectangular openings of 60 feet clear span between the fourth and the fifth pairs of pontoons, reckoning from each abutment. The roadway over these openings was carried on eight girders, each 2½ feet deep, and weighing eight tons. They rested on saddles secured to the top of the cross-bearing girders, which were suspended to the ends of the ordinary main truss-girders. All the pontoons were 160 feet long, by 10 feet beam, with holds varying from 8 feet to 11 feet in depth, according to the dead weight to be carried. Each pontoon, excepting those of the movable sections, was accurately anchored by permanent moorings, laid exactly in line with the centre of the pontoon, the distance between the up and the down stream anchors being 900 feet. The strain on the chain cables varied from 5 tons to 25 tons; their great length afforded the necessary "spring" to allow for the rise and fall of the tide, but a few links were taken in during the dry season, and slackened out again during the flood season.

The 200 feet opening for the passage of ships was one of the most difficult problems in designing the bridge. Owing to the strength and irregular set of the stream and eddies, ships could only be moved at or near slack tide; and it was a rule that all vessels of more than 200 tons must be moved by steam against the tide. The bridge was generally opened twice a week at high water, but occasionally at low water. The opening was effected by removing the two centre sections of the bridge bodily. These sections were connected with the fixed portions of the bridge by draw-bridges, which on being run back left a clearance of 20 feet on each side of the platform of the movable sections. By means of steel warps, laid to buoys moored for the purpose, these sections were warped up stream far enough to clear the rest of the bridge. They were then disconnected and sheared over, one on each side, leaving a fair way clear of all obstructions. The bridge was closed by reversing these proceedings. The ordinary time taken in opening the bridge was fifteen minutes, and in closing it twenty minutes.

There was a daily traffic of about 6,000 tons of heavy goods, which were conveyed in bullock carts, besides foot and carriage passengers. The ironwork of the pontoons weighed 1,650 tons, that of the girders 875 tons. The whole of this, as well as the mooring chains, were sent from England, and were erected and riveted up in Calcutta. The teak timber, which weighed 1,500 tons, was procured from Burmah. — *The Building News*.

NOTES AND CLIPPINGS.

MECHANIC'S LIEN. — The following report of a case that came to trial in Philadelphia, April 15, may serve as confirmation of the report that a correspondent gives in another column of the way building is carried on in that city; the suit — that of Nixon & Brother against Lemuel Coffin — involves a point of importance as to what constitutes one an "owner or reputed owner," to make him liable under the mechanic's lien law, for work and labor furnished a building. It appeared that Nixon & Brother furnished ranges and heating apparatus for houses on Spruce Street, west of Twenty-first, and brought this suit for payment for it. They aver that Coffin formerly owned the lot, and conveyed it to S. K. Bye, a builder, who put up the buildings with Coffin's money. The builder gave Coffin a mortgage on the buildings for \$46,000, and thus, although Bye had the title, yet Coffin, it was asserted, was substantially and in fact the owner, and as such liable for the liens; further, that Coffin had it in his power, by suing Bye, who was insolvent, for the interest on the mortgages, to foreclose them, and thus cut out the liens. These circumstances, it was claimed, made Coffin the owner under the law. The defence offered against the suit was, that the circumstances were such as took place in every building operation in this county, and that Mr. Coffin had neither in fact nor in law any title. He was a mortgagee simply. It was also shown that Nixon & Brother had full knowledge of the whole transaction. The case was not concluded.

MEMORIAL HALL, PHILADELPHIA. — The roof of Memorial Hall in Fairmount Park has been leaking badly for six months, and the decorations in the interior and the ceilings are in danger of destruction. The building cost \$1,500,000, of which amount \$500,000 was appropriated by Philadelphia.

A NEW STATUE OF SHAKESPEARE. — On the 23d inst. the bronze statue of Shakespeare, which Mr. Henry Shaw has given to the city of St. Louis, was unveiled at Forest Park. The statue, which is ten feet and a half in height, and stands upon a pedestal six or more feet high, is said to be finely executed. It was cast by Ferdinand Müller, of Munich, Bavaria. Mr. Shaw has given also a statue of Humboldt, as a companion to the Shakespeare, which is expected to arrive shortly from Munich.

ORDNANCE AS ADJUNCTS OF MONUMENTS. — The Chief of Ordnance says that since 1865 there have been delivered under the acts of Congress, for monumental and other purposes, 437 bronze or brass guns and 216 iron guns. There are yet to be delivered under acts definitely fixing the number, 232 projectiles, six brass or bronze guns, sixteen iron guns, and forty-two guns the material of which (iron or brass) has not been designated, making a total of sixty-four guns and 232 projectiles yet to be delivered. The acts in relation to the Rawlins monument and the Gettysburg battlefield monument, and the joint resolution in relation to the Lincoln monument, are indefinite as to the number of guns to be delivered. Twelve light twelve-pounder guns have already been delivered on account of the Lincoln monument, and twenty-seven guns have been sent to Gettysburg, but none have been called for on account of the Rawlins monument. There are still available for delivery, under past and future acts of Congress, about 350 bronze guns and 150 iron guns, principally six and twelve pounders. The value of condemned iron field-guns and projectiles is from 1 to 1½ cents per pound. The value of condemned bronze guns is from 20 to 25 cents per pound. The weight of the field-guns, iron or bronze, is from 900 to 1,300 pounds each, and of the projectiles, from 6 to 42 pounds each. The iron and bronze guns are not used in the manufacture of new guns, but the projectiles are utilized in testing experimental guns.

EMIGRATING WORKMEN. — The United States consul at Buenos Ayres warns American workmen against coming to that city in search of work.

THE BLACKWELL'S ISLAND BRIDGE. — There is no likelihood that work will begin on this bridge at present, and there is even a strong probability that it will not be built at all, as the scheme has not attracted speculators who are willing to invest their capital in such an enterprise.

THE STRIKE AT THE TOPEKA ASYLUM. — An Associated Press report led us in a late issue to say that a strike had taken place at the Insane Asylum at Topeka, Kan. This report has been contradicted by a later despatch.

THE OFFICIAL CATALOGUE OF THE PARIS EXHIBITION. — The catalogue of the Exhibition will be divided as follows: Volume i. will contain the works of art in the French section; ii. and iii. will comprise Algeria and the Colonies; iv., the foreign section; v., agricultural implements, living animals, and horticulture; vi., retrospective art; vii., the anthropology of M. Quatrefages; and viii., the alphabetical tables, and the list of objects exhibited.

OBITUARY. — M. Auguste Rougevin died a short time ago at Paris, at the age of eighty-five. He is perhaps best known as the founder of the Prix Rougevin, an annual prize for competitions in interior decoration, which is open to the students of the École des Beaux-Arts.

MEMORIES OF THE FRANCO-GERMAN WAR. — The *Journal des Débats* states that in view of the decision of the German Emperor to exclude from the German Fine Art Section of the Exhibition any picture recalling the war of 1870, the French Government has resolved to exclude also French pictures commemorating that war.

A COLOSSAL STATUE. — M. Clésinger has received a commission to execute a colossal statue of the Republic, which is to stand at the foot of the Trocadéro opposite the Pont de Jéna. It is to be cast in bronze.

WALL-PAINTING IN SWITZERLAND. — A short time ago at Neunkirch, in the canton of Schaffhausen, the tearing down of a building next the little mountain church disclosed a painting on the outside of the church wall. It represented a mountain landscape with figures, very indistinct, in the foreground, and a city in the background supposed to be Jerusalem. In the church three other paintings have been found on the walls of the choir. From internal evidence afforded by the pictures in the costumes of the figures and the style of work, it is supposed that they date from the beginning of the sixteenth century, just before the Reformation began. The style of drawing is coarse and is as crude as the conception of the subjects or the colors used in portraying them. As in other mural decorations of the period the outlines are marked by thick pencil-marks, black being used for landscape and accessories, and red for flesh. It is assumed that they were made by one or more of the painters, on day wages, who at that time were roaming through the country in large numbers.

ARCHAEOLOGICAL DISCOVERY AT NAPLES. — The necropolis of the ancient city of Suessula has just been brought to light by excavators. Already more than two hundred articles, mostly pottery, have been taken from the five tombs that have been opened, which belong seemingly to the archaic period of Greek art. The modern village built on the ruins of the ancient city is Cancellò.

THE SAND-BLAST. — Mr. W. H. Paine states that at the caisson for the foundation of the Brooklyn Bridge, sand was blown out through a pipe 3½ in. diameter (a short piece at the lower end was only 2½ in. diameter). At the upper end an elbow was necessary to direct properly the stream of sand. The iron in these elbows was ¾ in. thick. Under a pressure of 34½ pounds, the greatest pressure, the stream of sand cut through every kind of iron tried except Franklinitite, in one half hour. Franklinitite stood longer.