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THE case of Hunt vs. Stevens, just decided in the New York Superior Court, has attracted a good deal of attention. Mr. R. M. Hunt, architect, had built some time ago an apartment house—the Stevens House, at the corner of Fifth Avenue and Twenty-seventh Street—for the late Mr. Paran Stevens. Later, under the orders of Mrs. Stevens, an addition to this house had been built on Fifth Avenue, by Mr. Arthur Gilman, architect. Mr. Gilman had thought it necessary to drive piles for his foundation, and had used the party-wall against Mr. Hunt's part of the building to support his floors. After the building of Mr. Gilman's addition serious dilapidations appeared in the front of Mr. Hunt's building, owing chiefly to settlement at its junction with the addition,—dilapidations which it cost, as was said, a good many thousand dollars to repair. Mr. Stevens, who was on his death-bed when the building was finished, left unpaid one-third of Mr. Hunt's fee, amounting to five thousand dollars. This his executors refused to pay, and Mr. Hunt's suit was to recover it from Mrs. Stevens. The defendant maintained that the commission was not due, because the dilapidation of the building was caused by the plaintiff's negligence in not securing proper material and workmanship; that the water-pipes in the building were badly arranged and had to be replaced, that his plans were faulty and his construction insecure, and that the main arches in the front of the building had failed in consequence of bad construction, for which the plaintiff was responsible.

It was shown on the trial that Mr. Stevens had driven a close bargain with his architect, and had made a contract with him to furnish drawings and specifications with a general oversight of the building for three per cent on an estimated cost of half a million dollars (whereas the building really cost eight hundred thousand); and to save money had given the actual superintendence to a man chosen and paid by himself. The plaintiff contended that this arrangement relieved him from responsibility for the way in which the work was carried out, and that the faults in workmanship and material were due to deviations from his plans ordered by Mr. Stevens, and to the neglect of his superintendent or to the failure of men with whom he had independently contracted. It was further argued that driving piles for the new part of the building, and loading the party-wall with additional floors, had led to the settlement which injured the old part. A good deal of expert testimony more or less conflicting was brought in as to the injury likely to be done by piling close to walls already built, the quality of work and material in the building, and the adequacy of Mr. Hunt's plans; but it was clearly shown that Mr. Stevens had interfered seriously with his architect's intentions, insisting on his trusting to the old foundation of the party-wall instead of building an independent pier on concrete foundation at the end of his façade,

or underpinning the old wall, as he had proposed; that he had himself prescribed the objectionable arrangement of water-pipes; and that when a crack showed itself in the façade, he countermanded Mr. Hunt's proposition to return to his first intention and put in a concrete foundation. The judge (Judge Sanford) charged that unless the architect could show that he had performed his part of his contract properly, the defendant was entitled to a verdict and an award of damages for the failure of the building, and that if it appeared that the arches of the building failed from faults of the design, or from deviations allowed by the architect, he had not fulfilled his contract; whereas, if they failed from bad workmanship or material, and neglect of Mr. Stevens's superintendence, the architect was not responsible. The jury were out but ten minutes, and brought in a verdict for the plaintiff to the full amount of his claim, with interest.

This building appears to have been fruitful in litigation; for it is but a few months since the architect of the addition, Mr. Gilman, brought a suit against Mrs. Stevens for the unpaid balance of his fees. In this case the defendant made the same charge of neglect in superintendence, and brought in a counter claim, for twenty thousand dollars by which, it was argued, the value of the building had suffered in consequence of such neglect. The architect's claim was not only for an unpaid balance (\$832) of commission on the building in question, but also for a commission of two and a half per cent of the estimated cost of another, for which he had made plans, but which had not been built, the whole claim being some ten thousand dollars. The court ruled that an architect was liable for inferiority in labor or material to that required by his specification for work done under his superintendence, provided it could be shown that he neglected to use such care and diligence in supervision as is commonly rendered by men in his profession; but not unless such neglect could be shown; and the jury was charged to decide whether it had been shown. The validity of the claim for the unbuilt house turned on the question whether the plans and specifications were furnished at the request and for the advantage of the defendant. The court ruled that two and one-half per cent was the established fee for such services, the schedule of fees prepared by the Institute being offered in evidence, and accepted as the record of the existing usage in the profession. The jury was charged to decide whether the architect had neglected to use due, that is ordinary, care in superintendence, whether the plans for the unbuilt house had been furnished at the desire of the defendant, and to offset the damages due the defendant, if any, against the claim of the plaintiff. The verdict was for three thousand dollars in favor of the plaintiff. It would be interesting to know, what unfortunately does not appear from the official report of the case, on what ground the jury based their award,—whether the three thousand dollars is the residuum of the architect's claim after deducting a certain allowance for loss by his negligence; or whether, disregarding the ruling of the judge, they decided that this was enough for the service rendered by the architect; or whether they failed, as juries will, to make up their minds on the questions at issue, and pitched upon this as being a round sum which in virtue of all the probabilities it was reasonable to allow as a compromise.

THE labor question is making itself felt again in Massachusetts. For a good while the Crispins, the trades-union of the shoemakers, the most powerful in the State, have been making trouble by interfering between the shoe-manufacturers and their workmen; and the trouble has grown so serious that a short time ago a majority of the manufacturers in Lynn decided to give no more employment to members of the order. This resulted immediately in a general strike, which extended to other towns in which the shoe business is predominant. Most of the manufacturers in Lynn united in an "iron-clad" agreement to stop work altogether, though a few of the smaller factories were still kept running. This was soon followed by the shutting-down of the engine-houses which supplied power to the factories on the principal streets,

and by stoppages in Marlborough and Beverly, so that the whole industry is at a stand-still in the eastern part of the State, except where an effort has been made to import workmen from New Hampshire, and in a few shops that are supplied with hands independent of the Crispins. The cause is the usual one,—the lowering of wages by employers on account of the pressure of the times. There seems to be a determination on the part of both employers and men to make the conflict decisive, and both sides are preparing for a long struggle. It looks as if the result would be a serious injury to the towns whose prosperity depends on the shoe trade. Already some of the manufacturers have resolved to move their factories to Boston. The buyers from other parts of the country have united, it is said, in sustaining the masters, and have declared that they will order no goods of men who employ the Crispins.

MEANWHILE the unemployed working-men of Boston have held a great out-door meeting, after the fashion of their fellows in San Francisco, but in a more peaceful spirit. Some thousands of them marched through the streets to the Common, where they heard speeches, passed resolutions, and sent a committee to the mayor. The resolutions declared that the introduction of labor-saving machines and the creation of monopolies were rendering the future prospects of working-men gloomy in the extreme; that they ought to be taken care of in view of the fact that they had always paid the great bulk of the taxes, an astonishing statement which it was believed "could not be disputed by any sensible individual." The remedies demanded were the undertaking of public work for the sake of furnishing employment; out-door relief for those who were not employed; and an appeal to Congress for transportation and money-loans to those who wished to occupy unsettled public land. The repeal of the poll-tax was also demanded, as well as that of the law disfranchising paupers, and the abolition of the contract system; and all attempts to limit the suffrage were sternly rebuked. The mayor answered with great propriety the delegation that was sent to him, reminding them that he had no power to furnish work for them, since the whole power to appropriate money lay with the City Council, to whom a petition had already been presented in their behalf. He added with commendable frankness that he thought it an unwise policy for a city to undertake work in order to furnish employment, and that whenever it had been attempted it had worked ill to the laboring classes instead of good.

No considerate person is insensible to the hardships which unemployed men have to bear in these times. It is not likely, however, that the men who attended this meeting in Boston and passed these foolish resolutions were any greater sufferers or had any greater need of relief than thousands of others who do not appeal for public help. They are said to have been, on the whole, well-dressed and comfortable looking, and to have borne no mark of a hardship that should justify them in claiming such special relief. Of the constituency of seventy-five thousand whom they claimed to represent, it would probably be difficult to recruit any great number without drawing in a large body of Crispins and others who are out of work simply because they will not work for what wages are offered them. It is to be said to the credit of the Boston meeting that it was entirely orderly, and gave no intimation of a disposition to use violence, in spite of an inflammatory sentence or two on its banners; and in so far it invites sympathy. But the truth is, that there are only two things in the name of which a call for public aid can be made: one is charity, and the other communism. Difficult as is the application of charity on a large scale, there is generally willingness when the need is great. But he who appeals to charity acknowledges that he asks a voluntary gift. This is not the attitude of the men who voted these resolutions, nor of the working-men all over the country who are insisting upon their right to be supported. A right to be supported means a right to take so much of other people's property; a right to take a dollar without reference to its equivalent is a right to take a thousand. This means communism, and communism is an ugly thing.

SUCH inquiry as has already been made into the railway accident at Tariffville, Conn.,—where the breaking of a wooden Howe-truss bridge let a train into the river, killing a dozen people, and wounding nearly fifty more,—seems to be enough to show that simple negligence was at the bottom of it. At first, if we may judge by newspaper comments, it was taken as a perfectly natural thing that the bridge should give way under a heavy passenger-train with two engines; the theory seemed to be quietly accepted that a railway bridge should not be expected to carry two engines together, and that there was no need to look for further explanation. The inquest of the railroad commissioners has not as we write yet taken place; but some examinations which are published indicate that the condition of the bridge was visibly unsafe. We find it reported that the wooden chords of the truss were of poor material weakened by decay, having been seven years in place,—exposed, we are told, to the acids of rusting iron,—and that many of the angle-irons (cast-iron angle-blocks?) had evidently been broken for a good while. The immediate yielding of the truss is thought to be due to the breaking of one of the iron suspension-rods. These were warranted, it is said, to endure a strain of sixty thousand pounds per square inch, and the weight under which they broke is computed at sixteen thousand. We do not know what such a warrant may have meant; but sixty thousand pounds is the breaking weight for the first quality of bar-iron; and though it might be trusted with a third of this, carefully laid on, a prudent engineer does not subject such material to a live load of more than a sixth of its ultimate strength, that is ten thousand pounds per square inch. If the computations are true, the bridge was in truth not fit to carry the weight put upon it, even if it had been in good condition, and all that it claimed to be: in other words, it was inadequate for a railroad traffic, and ought never to have been built. It was inspected a short time ago by the railroad commissioners; that is, they rode over it in a light train, and considered it safe. Since the accident, the president of the road has requested them to inspect his other bridges. But what is to be said of the duty and responsibility of the officers of the road in such a case? If the appointment of railroad commissioners, and their inspection, is to relieve railway officers of the responsibility for the examination and security of their equipment, we should say that the commissioners were of questionable utility.

THE RESPONSIBILITY OF ARCHITECTS.

LAWSUITS entered by two architects of New York have lately brought into notice of the courts questions which are continually at issue between architects and their clients, without having received the careful attention or the formal discrimination which the convenience of practice requires. Of some points of these cases we have spoken elsewhere. Both, however, turn more or less on the vexed and little-understood questions: What is the nature of an architect's superintendence? what kind of work is an architect who superintends a building to require of his builder? how far is he responsible for securing it, and under what penalty?

The question how far an architect is to be held responsible for the quality of work done under his superintendence, involves many points which are but vaguely determined in American practice. There are clients, a good many, we fancy,—and perhaps most other people who have not considered the matter agree with them,—who think that an architect's superintendence ought to include a guaranty of complete excellence in workmanship and material; that unless a builder is so closely watched that he has no chance to slight his work, or scamp his material, or to get any thing wrong at any point, the architect has not done his duty. This is in reality requiring that the client shall be relieved from all risk whatever, and that every such risk shall be borne by the architect. It is a perfectly intelligible requirement, and if all the other conditions are made to conform to it, not to be complained of when once agreed upon. It requires, however, that the architect's eye or his deputy's shall never be off the work that he superintends; and this means, for watching every building of any importance, the whole of a capable man's time.

For the salary of such a man, and the personal care and risk which the architect cannot avoid, the third part of an

architect's fee, which is usually allowed for superintendence, is quite insufficient; in fact, in many cases, the whole fee, as at present rated, is not more than a fair compensation for this kind of supervision. There are, it is known, in some of our cities, certain men who take the whole charge of buildings as superintendents directly from clients, and who charge for their service a fee equivalent to an architect's. It is not rare for them, it is true, to agree to "throw in" plans and specifications; but these they are used to regard as trifling matters and of little value — which indeed in the administration of these gentlemen they usually are.

The minute and incessant supervision which is required from this point of view is not necessary in many cases, and it certainly is not habitual. If one enters into the scramble of general competition it is desirable as a defence against the tricks of many contractors, and possibly money enough may be saved out of cheap builders to make it profitable; but it is nevertheless an unwholesome state of things that makes it necessary, a condition that is best avoided in each case by keeping work out of hands that are not to be trusted. It should be said, too, that the degree of responsibility to be thus secured is compatible only with absolute authority on the part of the architect. It cannot be demanded when the architect is not entirely free in the choice of contractors who shall bid or mechanics who are hired for the work; and any interference of the client with builders or men, or any orders given not through the architect, must be held to vitiate it. In the case of Mr. Hunt, the counter-charges against him of injury to the building from his negligence were rebutted by showing that the client had interfered to set aside his provisions, and had given independent directions to the workmen; which was held to clear the architect of accountability.

A stringent system which should make an architect thus answerable might perhaps be established here, and would doubtless please some persons. We doubt however, if it is suited to the present habits of our people, and we should say that the English practice of employing a clerk of the works, to be paid by the client and directed by the architect, was a more satisfactory one. At all events no such system exists among us. In ordinary practice, a fair supervision is one which assures that mistakes, or deviations from plans and specifications, shall not be made, and that the general standard of work and material shall be satisfactory. This gives work enough to the faithful architect, and is all that the one and a half per cent allowed for superintendence in his regular commission will pay for. It does not mean such watchfulness that the dishonest contractor can have no chance to smuggle anywhere any bad work or material, or to neglect any detail. The proper security against this is in the choice of a contractor. It does secure that on the whole he shall not put off an inferior piece of work for a good one. For the faults of the builder the architect is not responsible after the exercise of reasonable diligence. In the case of Mr. Gilman the judge charged the jury that "an architect is only required to perform his work with ordinary care, diligence, and skill. Ordinary or due skill means that degree of skill which men engaged in that peculiar art usually employ;" and also that for any delay in the completion of the contract, the architect is not responsible unless it be the result of his own negligence in superintending. The charge to determine, "if the work and material were defective, whether such defects were in consequence of or owing to the negligence of the plaintiff in any regard," implies that in the mind of the court, such defects might occur without being chargeable to the negligence of the architect.

In one respect we have been using the word responsibility and its synonyms somewhat vaguely, without stopping to define what kind of responsibility we meant. The only kind that is of much satisfaction to the client is that which makes the architect pecuniarily liable; and here arises the question, How far shall this liability extend? We have not opportunity to examine cases bearing on this point, but we believe the common understanding here to have been that the architect is liable only to the amount of his commission. In France the law is much stricter, and extends the liability to the whole fortune of the architect. The language of the charge in Mr. Gilman's case is not without obscurity, nor altogether coherent; but certain passages seem to show clearly that the court meant to hold the architect liable, when the faults could be referred to his negligence, for the whole amount

of the damage. Thus the court charged that "for any damage the defendant [the client] has sustained through neglect of the plaintiff, if there be any neglect, . . . the plaintiff is liable, and the amount of such damage should be allowed in this action to her." And again: "If the jury are satisfied that the plaintiff did not exercise ordinary care, diligence, and skill, . . . then the defendant is entitled to such damages as were occasioned thereby, and such damages are the costs of making the work a good job according to the requirements of the contract."

It is to be noticed that on one point the charges of the judges in the two cases were in direct opposition. The judge in the Gilman case charged that "the burden was upon the defendant to establish that the plaintiff did not exercise ordinary care," etc.: the judge in the Hunt case, that the architect must show that he did use proper care, and that the injury to the building was not due to his neglect. We will not venture to touch the question on which side the presumption lies, from the legal point of view. As a matter of equity and reason, it seems at first glance rather severe to say that whenever an architect's work is called in question the presumption shall be that he is wrong, and he must therefore prove himself to be right; as it would be to assume in case of a physician that he was guilty of malpractice till he had proved that he was not. There is, however, something to be said on the other side: that it is difficult to prove neglect except by showing its results; that it is assumed that an architect can by reasonable diligence guard against serious faults in the work which he superintends, and therefore that the existence of such faults in such work is itself a presumption of his neglect. But again, this depends very much upon whether the faults are such as were in the nature of things visible to ordinary scrutiny as the work went on, or, as is oftener the case, faults which developed later in consequence of imperfections which were hidden during its progress. In most cases the question of the presumption would probably be a merely formal one; for an architect accused in court of malpractice would be sure to do his best to show that he had been faithful. It is only in difficult and doubtful cases that the presumption would have any influence; but then these are just the cases for which presumptions are established, and for these the ruling of the judge in the Hunt trial looks a little oppressive.

Another thing that strikes one in comparing the two trials is the absence of all concern for the contractors. Here were two buildings, one of which, according to the owner, had been damaged to the cost of a hundred thousand dollars, and the other to the cost of twenty thousand, by faults which had been committed by the contractor, if they were permitted by the architect; but the only remedy which seems to have occurred to the client was to stop the payment of a fraction of the architect's fees. A loss of a hundred and twenty thousand dollars is a thing to which people are not apt to submit quietly if they can help it, and to which the fees retained were a mere bagatelle. Yet there is no mention of any action to recover from the contractors. It is true that a client, to whom his contract leaves no option but to pay what his architect certifies to, may not unnaturally be roused by anger to turn against the adviser who has led him to pay for what was not worth his money. Nevertheless in such cases the contractor is the chief delinquent, and we have never heard that the certificate of the architect relieved him from responsibility in case his work turned out bad. The architect has his own immediate responsibility, for which we are in favor of holding him to the strictest account, for errors in his plans and construction: in regard to the faults of the builder whom he is to oversee, his position seems to be analogous to that of one who indorses a note for its principal. The architect has his remedy for the loss he may have had to make good, in a suit for damages against the builder who has deceived him as well as the client; but we do not believe it is for the public good to encourage contractors in thinking that if they slight their work to its detriment, the first consequences will fall on the architects who oversee them.

It is greatly to be desired that a consistent usage in all the points that we have been discussing should grow up, and that what usage obtains should be distinctly recorded in the decisions of the courts. We have never been in favor of laxity in the professional dealings of architects. We believe

in such requirements as shall make it necessary for an architect to know his business, and attend to it. But clients who are not satisfied with ordinary precaution, and wish to be sure that their intentions are carried out with exactness, ought to be informed that this requires more minute supervision than belongs to an architect's regular service or is paid for by his usual fee. The introduction of the clerk of the works is meant to meet this want, and it does so sufficiently well; but it adds to the cost of superintendence. Those who want absolute security must pay for it; and those who call for plenary responsibility must in reason be careful that they allow plenary authority.

PAINTING AND SCULPTURE AT THE CENTENNIAL EXHIBITION. — I.

[The report of Mr. John F. Weir in behalf of the judges of Group XXVII., embracing Plastic and Graphic Art.]

No department of the International Exhibition attracted more general attention than that of the Fine Arts, in Memorial Hall and its Annex, nor was any department the subject of more frequent and extended comment in the newspaper press.

This fact is significant; for the marked and general eagerness of the public to view the art-exhibits of the various nations evinced a very decided partiality for the attractions afforded by this display. That this susceptibility to the influence of art exists to a much wider extent with the public than may have been supposed, and that it only awaits opportunity for its proper gratification, is a natural conclusion. Museums and academies of the fine arts have become a prominent feature in our larger cities; and with the increase of facilities thus afforded for study and discipline a very earnest and general desire is manifest on the part of the public for a more intimate knowledge of art than has hitherto been possible, except with those who have been able to seek this knowledge abroad.

These institutions, therefore, are not in advance of the general tendencies of the time, or of the wants of the people. The wealth of the nation is gradually insuring that leisure or repose which follows material development, and which is perhaps essential to the promotion of intellectual pursuits. From this source, also, follows the accumulation of works of art that a far-reaching commerce supplies; and the demand for the more mature and refining fruits of civilized life is becoming select and discriminating. Private collections, comprising in many cases the works of the most distinguished living artists, and in some instances their chief productions, are now by no means unfrequent. The recent exhibition at the National Academy and the Metropolitan Museum of Art, in New York, of the selected works of contemporary art from these private collections, could hardly have been surpassed, within its limits, in any country, in its representative character. Consequently the art-exhibit at Philadelphia afforded few surprises for which the American public were unprepared, nor did it contribute materially to the knowledge we already possessed, through our own collections, of the present state of the fine arts among the different nations of Europe.

But it is through the opportunity for comparison, afforded by international exhibitions, that the marked peculiarities which distinguish styles and schools of art strike the observer with more than usual force. Their merits and demerits, also, are rendered more conspicuous through this severe and uncompromising test of juxtaposition, where they enter into close competition and fill the eye in rapid succession. Passing from one gallery to another, one is not insensible to some such experience as that of encountering a foreign tongue: every successive impression is in turn dominated by certain characteristic forms of expression peculiar to each nation. Thus it may, in some measure, afford a test of true excellence when it is found that the artist rises above the conventional level of local sympathies, and attains the higher plane of sentiments which are general and universal. For art, in its truer forms, is a common language, requiring no other interpretation than that derived from its own inherent powers of expression. Time and distinctions of race are obliterated in its universal aim. When, therefore, the art of any people appears to require some special explanation by reason of its local character or the fashion of a time or place, we may conclude that it is so far mannered or conventional, and consequently inartistic.

In discussing the merits and characteristics of the art-exhibits of the different nations, it is but proper to view them with sympathy, so far as this is consistent with those principles upon which sound judgment is based. It is proper, also, to abstain from that narrow notion of applying a standard of estimate which is derived from a decided predilection for some one form of excellence in art to the exclusion of others. This is a common error in criticism, and one to which national prejudices are apt to contribute. It is quite possible for even the more honest and unsuspecting to be sometimes unconsciously swayed by certain unwarranted preferences, from the influences of which they cannot escape; for art is pre-eminently a question of impulse and feeling, and when these are undisciplined or enlisted in some earnest and concentrated end

it is not generally conducive to wide likings. But it should be remembered that as art has manifold forms of excellence which are rarely united, and then only in the works of very exceptional genius, these forms of excellence vary in all times and countries with the talents displayed in their manifestations.

The following table will show what nations participated in the Exhibition, and to what extent:—

NATIONS.	OIL-PAINTINGS.	PAINTINGS IN WATER-COLORS.	SCULPTURE.
1. England	193	54	14
2. France	302	105	73
3. Austria	123	26	8
4. Germany	145	12	12
5. Belgium	173	3	32
6. Netherlands	160	..	1
7. Spain	141	2	23
8. Italy	126	..	325
9. Russia	63	2	8
10. Denmark	15	..	..
11. Sweden	69	11	2
12. Norway	52	..	5
13. Canada	156	..	..
14. Argentine Republic	34	..	..
15. Brazil	10	3	5
16. Mexico	45	..	5
17. United States	760	186	162
Total	2,567	404	675

Number of galleries and halls, 71.

GREAT BRITAIN.

The exhibit of Great Britain in painting was very complete and satisfactory. Manifestly the desire was to show not merely the present condition and progress of her art to the best advantage, but, by a liberal contribution of the works of many of her deceased artists, the property of the Royal Academy, to express, as well, a generous interest in the success of the International Exhibition of 1876. This friendly disposition deserved and received a most hearty recognition on the part of the people of the United States.

In discussing the merits and characteristics of English art we are naturally led to consider English sentiment and character as manifested in this form of expression; for it may be accepted as a self-evident truth that the art of a nation is a true exponent of the habits of mind and feeling peculiar to that people. And certainly English art is strikingly illustrative of this fact. No such marked contrast is afforded by the art of other countries as that which subsists between France and England. English art is formed by moral ideas, and the subject or story is accorded an importance that is not usually recognized in French art: the emphasis of the latter school is given to treatment rather than to subject, and this distinction lies at the root of the developments in the art of these nations.

The leading sentiment in the art of any people is not peculiar to one form of expression: it pervades all; and their literary issues will be found to be of a similar character with those which distinguish their art. From this fact there arises an important consideration respecting the value of international exhibitions in promoting a knowledge of the more subtle phases of thought and feeling peculiar to each nation; and these exhibitions not only enable us to distinguish points of difference, but they also serve to show wherein the nations lose their individuality, in a measure, in the common aims of broader and more profound views of art. English art-criticism is quite distinct from that of Germany or France. It is not without its prejudices, but these are not more marked, as a general thing, than are those of the other countries: the distinction in this respect is one of kind rather than degree. It has been observed with clearness by a recent English writer that "the poles between which aesthetic criticism has always oscillated, and will continue to oscillate, are those of form and expression,—the objective and the subjective truths involved in art, as in every other production of the human mind;" and French and English art are, in a measure, representative of these two fundamental ideas, which it is well to harmonize, and which are found united in truly great works of art. This exceptional and proper union may be met with in some of the pictures of the English collection; and it is from them we derive a most favorable impression of what is really excellent as well as characteristic in English art. As a general thing, its character is exclusive and affected by insular tastes. This has been partially modified, and we find occasional evidence of outside influences affecting the traditional methods of this school.

Passing in review the English exhibit of oil-paintings, the impression made by the collection, as a whole, is that of lack of technical grasp. The methods are, for the most part, thin and stained in appearance, and the coloring tawny and monotonous. But in delicacy of sentiment, in the expression of ideas and emotions, and in the pure and poetic feeling manifested in many of the pictures, they possess much that demands the highest praise.

"The Summer Moon" and "Interior of a Jew's House," by

Mr. Leighton, are works deserving of special commendation. The former is exquisitely poetic in sentiment, rich and suggestive in tone, and admirable in grace of composition. The "Interior of a Jew's House" is a complete poem from the ancient world. The title is somewhat ambiguous, as it furnishes no clue to the picture, which has the character of ancient Greek civilization in sentiment and surroundings. The figures are painted with rare skill and grace, the drawing is admirable, and the archaeological learning—which seems to be a matter of special pride in art to-day—is most thorough. Few pictures are equally fine in sentiment, and at the same time so thoroughly well rendered with technical skill, as these by Mr. Leighton.

"The Vintage Festival," "The Convalescent," and "The Mummy," by Mr. Alma Tadema,—who, though a Belgian, is classed of late with the English school by reason of his residence in London,—are in a somewhat similar vein, yet with entirely distinct individuality in treatment. In their technical qualities these pictures are no less admirable than for their learning and beautiful conception. It may be said, advisedly, that no pictures of the present day exhibit more thorough qualities of excellence than those by Mr. Tadema. Though, for the most part, Greek and Roman antiquity are the sources from which the inspirations of his art are derived, Mr. Tadema's pictures, as works of art, are never sacrificed to the mere pedantic display of skill and learning. Archaeology and brilliant technique are features prominently displayed in contemporary art, and to a degree that may perhaps be regarded as dangerously subversive of truer aims,—the emotional, the thoughtful, the expressive,—which render art something more than mere manifestations of learned research, skill, or manual dexterity; and it is agreeable to find that in the works of Mr. Leighton and Mr. Tadema they are properly subordinated to these higher aims.

"Trawlers Waiting for the Darkness," by Mr. Hunter, is a picture of very exceptional power, both in sentiment and in the admirable vigor of its treatment. The breezy expanse of sea at twilight, and the fishermen resting in the boat, are rendered with great truth. The picture is full of the solemnity of the hour and of nature.

"God-speed," by Mr. Boughton, though in many respects representative of the excellent qualities of his art, is not thoroughly satisfactory. The composition is scattered and broken into episodes, and the sentiment a little strained. Mr. Boughton is better represented in the exhibit of the United States, where he is claimed as a fellow-countryman by birth. His "New England Puritans going to Church" and "Going to seek his Fortune" are more satisfactory compositions. The sources from which this artist draws his best inspirations are Chaucer and our Puritan forefathers; and no one has entered more thoroughly into the spirit of the time and the customs thus respectively derived, and with a more genuine sympathy, than Mr. Boughton.

"The Lord gave, and the Lord hath taken away," by Mr. Holl, though painful in subject, is rendered with great delicacy and pathos. The expression of sorrow which pervades the figures, and fills the place where death has left a void as with an atmosphere oppressively sad and afflicting, is wrought out with great power and truth. The picture manifests a most penetrating insight of heart-rending grief, yet so delicately and sympathetically depicted, that while we condemn the choice of subject as too painful, we cannot but admire the consummate skill of the artist evinced in this remarkable work. "Betty," by Mr. S. L. Fildes, is fresh and animated, well drawn, full of spirit and hearty grace. It proved one of the most attractive pictures of the Exhibition. Mr. Fildes's "Applicants for Admission to a Casual Ward" is a subject no less painful than that chosen by Mr. Holl. It is, however, a work of great power, and abounds in admirable individualization of character. But it is in such pictures that we find the tendencies of the English school, in moral aim, perhaps carried to excess. It is a question open for discussion, how far the artist may venture in depicting human suffering to accomplish strictly moral ends without endangering the distinctive æsthetic character of art, which is calculated to elevate rather than depress human feeling. This may be effected through sentiment expressed in a minor key; but should there not be a vista of hope through which we may discern some alleviating power at work, which leaves the sensibility in a less morbid state? Even in the tragic drama the feeling of horror and dismay is properly surmounted by sentiments of a loftier and more triumphant character, that redeem the depression and the pain which would otherwise plunge the spectator into a most unhappy mood. He leaves the play, therefore, with his sensibilities gratified, and his emotions are, on the whole, pleasurable. But the very nature of painting, from its immobile character, precludes a similar movement of the moral action in scenes like this depicted by Mr. Fildes. They remain, therefore, transfixed, painful moral lessons rather than true works of art. If the end sought is purely moral, painting is not a legitimate means for its accomplishment, for its manifestations outlive the occasion and become too distressing for permanent contemplation. We do not question the rare skill and profound observation of character evinced in these pictures by Mr. Holl and Mr. Fildes, but we cannot but think their choice of subjects would have been better suited to less labored and less enduring forms of art.

"Circe and the Companions of Ulysses," by Mr. B. Rivière, is conceived and executed with that rare skill which deservedly entitles this artist to the high reputation he enjoys. The humor is admirably rendered, and exhibits a keen appreciation of the possibilities of expression in swinish physiognomy. "The Sick Child," by Mr. J. Clark, is pathetic and tender in feeling,—a sincere representation of that true touch of nature which makes the whole world kin. Few pictures of the English school evince more admirable qualities than this by Mr. Clark. "Baith Faithier and Mither," by Mr. Faed,—who has done for Scottish art what Burns has done for Scottish song,—is thoroughly characteristic of that phase of the British school which is perhaps the most widely popular, and with which its public are most sympathetic. The story of this "mitherless bairn," who, about to set out for school, turns to her father for some little assistance required in her dress, is told with very tender pathos. It is the translation into painting of a subject suited to a poem. It is illustrative and readable, and in technical merit of a certain kind it is in many respects admirable. It is rather poetic than artistic,—if the distinction explains itself. The conspicuous values are in the telling of the story rather than in the pictorial treatment.

In portrait-painting, the most notable examples of the English collection are Mr. Watts's portrait of Millais; portrait of a lady, by Mr. Perugini; Hon. W. E. Forster, by Mr. Wells; "The Three Sisters," by Mr. Archer; and Earl Russell, by Sir Francis Grant. Mr. Watts's head is cleverly painted, unconventional, and spirited. Mr. Perugini's is delicate, sensitive, and refined. Mr. Holman Hunt exhibits a portrait of himself which is rather curious than pleasing. It is thoughtful and serious, as Mr. Hunt's work always is; but the coloring is disagreeable. It is to be regretted that this artist was not more adequately represented: certainly no pictures would have had greater interest for his many friends in this country than those which have made his name so widely and favorably known. Mr. Millais, also, was by no means properly represented in the single portrait-sketch which bore his name. Considering the prominence of these artists, and the very decided originality of their styles, the British collection suffered a serious omission in the absence of characteristic examples of their work. It cannot be said, in reviewing English portrait-painting in the collection at Philadelphia, that we discover in recent work, even remotely, those qualities of excellence evinced in Reynolds's portrait of himself, loaned by the Royal Academy. This portrait is something more than the mere likeness of an extraordinary man; and portrait-painting, to be of interest to the world at large, must have a far higher aim than that of securing a likeness. The portraits of Reynolds and Gainsborough were signally typical of a noble and aristocratic race. Time has wrought no decadence in the type, but it certainly has in the art, and English portrait-painters of the last century preserve a prestige which overshadows their successors of the present day. This may be partially accounted for by the fact that the most talented artists of this school are now altogether absorbed in *genre*.

The two pictures by the late Sir Edwin Landseer, loaned by Lord Northbrook, were specially valuable as illustrating the change of manner—or rather the transition of manner into style—in this artist's work. "The Travelled Monkey," which evidently is an early picture, is one of a series that was etched in Landseer's "Monkeyana," published many years since. The method is hard and dry, and, on the whole, very old-fashioned, but it is not lacking in character, for which his pictures were always remarkable. The later work, "The Sick Monkey," is something more than this: it is rich in color, admirable in technical dexterity, broad and simple in composition. Mr. Frith's "Pamela" is attractive and pleasing, but his "Railway Station" did not gain the attention here that it did in England. Sentiment is preferred to a mere fact, where this latter is an affair of every-day occurrence, and related to our practical needs; and Mr. Fildes's "Betty" had its throng of admirers, while Mr. Frith's picture was somewhat neglected. Mr. Frith understands, on his own ground, that to be popular it is always necessary to get down to the level of popularity. His pictures show an entire lack of mystery; they are crowded with numerous incidents and stories, well told, and calculated to amuse the curious. But this is not art in any high acceptance of the term. The stories once read, we do not return to Mr. Frith's pictures again and again, as we are instinctively drawn by great works of art. His "Marriage of H. R. H. the Prince of Wales" was an object of interest to a continuous throng of spectators, for the reason that whatever pertains to England's sovereign is always a subject of interest, and even affection, to the people of the United States.

Mr. Brett contributed his "Morning among the Granite Boulders," which is in part admirable, particularly in the truth and simplicity of his treatment of the foreground,—an expanse of shore strewn with rocks. The distant sea and sky are painted with less skill, and are crude in color; but, on the whole, the picture is one of exceptional merit. "After the Battle," and "The Siesta," by Mr. Calderon, are both clever: the former tells its story with very decided interest; the latter is probably a more recent work, evincing greater breadth and freedom in execution. "From under the Sea," by Mr. Hook, is a realistic work of decided power, displaying a strong, vigorous sense of nature. "Ce-

lia's Arbor," by Mr. George D. Leslie, is graceful and delicate, though not skilful in its technical qualities. Mr. Poynter's "Ibis Girl" is also a work of decided merit. These pictures are representative of those qualities which constitute excellence in English art. The sentiment is rarely sacrificed to mere technical display; on the contrary, the latter is hardly equal to the standard attained by some other painters of this school.

On the whole, the impression made by the British art-exhibit was a decidedly favorable one. English art, as manifested in the best examples sent to Philadelphia, is poetic, pure, and sincere in character. While it sometimes sinks to the level of mere platitude, it is seldom strained, frivolous, or vulgar. As a school, it does not abound in painters of exceptional merit, but its representative artists are not surpassed in those qualities which constitute true excellence, nor any painters of the present day more learned in the technical requirements of the art.

In landscape-painting the English exhibit gave the impression of a prevailing mannerism that was neither agreeable nor vigorous; but Mr. Hunter's "Trawlers Waiting for the Darkness" is a very marked exception to this criticism, manifesting great individuality. In water-color painting the superiority of the English has been long acknowledged; it is of late, however, very adequately rivalled in France, and perhaps in some cases in this country. Messrs. Tadema, Linton, Jopling, Marks, Callow, and Gilbert were well represented in this branch of art.

The British exhibit in sculpture was slight. The bust of Flaxman by Bailey, and that of West by Chantrey, loaned by the Royal Academy, were of interest, and the Venus, by Gibson, is worthy of his reputation; but these are all deceased sculptors. The large terra-cotta group of "America," from the Albert Memorial, by Mr. John Bell, is not without vigor and merit, though decorative in character. At the present time England possesses no sculptors of more than average ability, nor is a susceptibility to pure form a national characteristic.

APPLICATIONS OF THE EQUILIBRIUM POLYGON TO DETERMINE THE RE-ACTIONS AT THE SUPPORTS OF ROOF-TRUSSES.—I.

BY JAMES R. WILLETT, A. I. A.

[A paper read before the Civil Engineers' Club of the North-West, Chicago, Sept. 4, 1877.]

SEVERAL works have been written on the graphical analysis of roof-trusses; but in none that I know of have the re-actions at the supports been determined graphically, except when the loads were symmetrical and vertical. The purpose of this paper is to explain

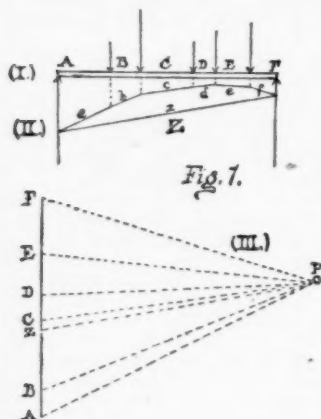


FIGURE 1

Shows the equilibrium polygon as applied to vertical loads: it is similar to that shown in most works on graphical statics, and is given here to introduce the subject, and to exhibit Bow's notation as applied thereto.

The loads are supposed to be applied to a beam shown in (I). The loads A, B, C, etc., are laid off (III) in a straight line, since they are all parallel. This constitutes the load, or force polygon; and its closing line AF overlies all the loads. Now the question is, AF being the sum of both re-actions, how much of it is borne by each support.

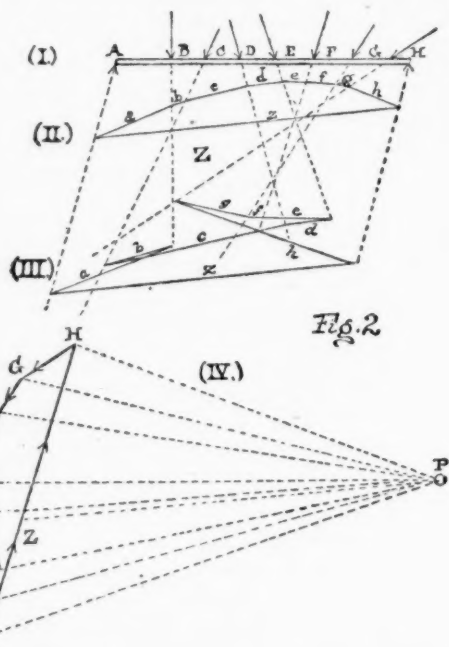
Any point, P, is assumed as a pole; and lines are drawn from this pole to the ends of the several loads, A, B, C, etc. Then, parallel

to these lines, are drawn in (II) the lines a, b, c, etc., cutting the direction of, and being terminated by the prolongation of, the loads A, B, C, D, etc. (I). Thus, from any point on the line AZ, the line a is drawn parallel to the line PA (III) from the pole to A. From the right-hand end of a, b is drawn parallel to PB, and from the right hand of b, c is drawn, and so on, until at last FZ is reached. Then the closing line z is drawn. By drawing from the pole P (III) the line PZ, parallel to z, the point Z is obtained, which is the dividing-point in AF; AZ being the re-action at one support, and ZF the re-action at the other.

One advantage of Bow's notation may here be noted. The line a in (II) crosses the space A (I), and is parallel to the line in (III), from the pole P to A. The line b in (II) crosses the space B (I), and is parallel to the line PB in (III), from the pole to B; and, generally, the line in (II) crossing the space between the directions of any two adjacent loads in (I), denoted by any letter, is parallel to the line in (III) from the pole to that letter. This is of use in keeping track of the corresponding lines.

FIGURE 2

Indicates a beam which is acted on by unequal loads acting in various directions. The load or force polygon is shown in (IV), the loads being there laid off in both direction and amount. HA is the closing line; that is, it gives the sum of the re-actions at both supports: P is taken as the pole. Two equilibrium polygons



are shown. We will first consider that shown in (II). This is drawn exactly as previously described for Fig. 1. A point on the direction of the force AZ is assumed; a is drawn parallel to PA (IV) until it cuts the direction of the next load or force AB. b is drawn parallel to PB, and so on. z is the closing line of the equilibrium polygon; and a line parallel to this, drawn through P, will give the point Z of division in the line AH; AZ being the re-action at one support, and ZH at the other.

When the point of commencement of the line a is assumed lower down, as shown in (III), the equilibrium polygon will assume a different shape; but, if it is correctly drawn, the closing line will be parallel to that found in (II). The only precaution to be taken is to be sure to draw the lines of the polygon from the direction of one load or force to the direction of the load or force which is next adjacent at the beam, although, in so doing, you may cross the direction of other forces.

Thus in (III) the line a is drawn parallel to PA (IV), from the direction of the force AZ to the direction of the force AB, although, in doing so, it crosses the direction of the force BC; because, at the beam, AB is adjacent to AZ. Then b is drawn from the direction of AB to the direction BC, although, in doing so, it is drawn towards the left. Then c is drawn from BC to CD, crossing the direction of several forces; and generally, the letters being placed in alphabetical order between the forces at the beam, the lines of the equilibrium polygon are drawn in the same order from the direction of AZ to the direction of AB, from AB to BC, from BC to CD, and so on.

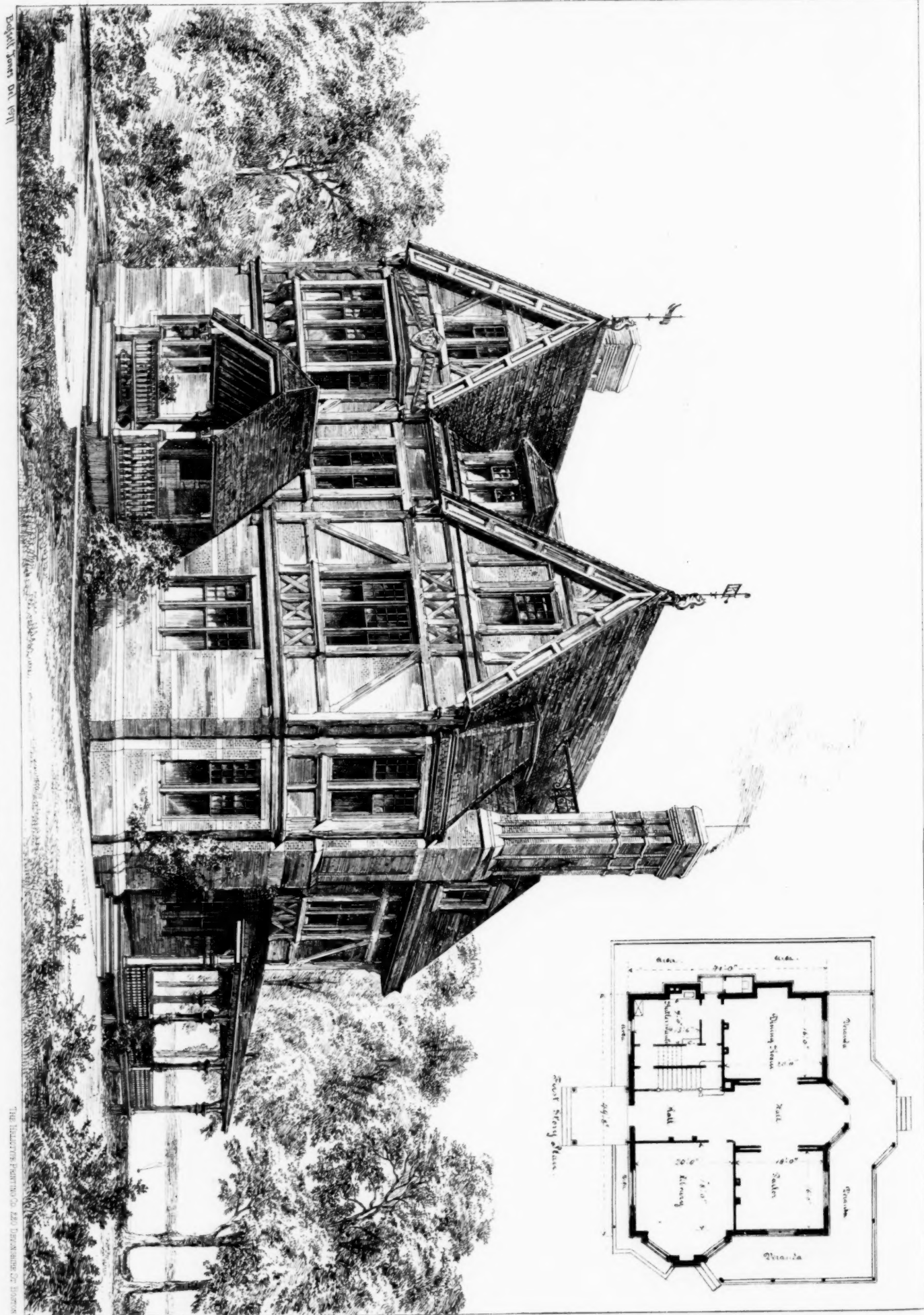
The two equilibrium polygons shown in (II) and (III) are of different shape; but their corresponding lines are parallel, their closing lines included: consequently the line drawn through P, parallel to either closing line, will cut AH in the same point Z.

¹ Economics of Construction in relation to Framed Structures. By Robert H. Bow. London: E. & F. N. Spon.

² The Elements of Graphic Statics. By Karl Van Ott; translated by George E. Clarke. London: E. & F. N. Spon.

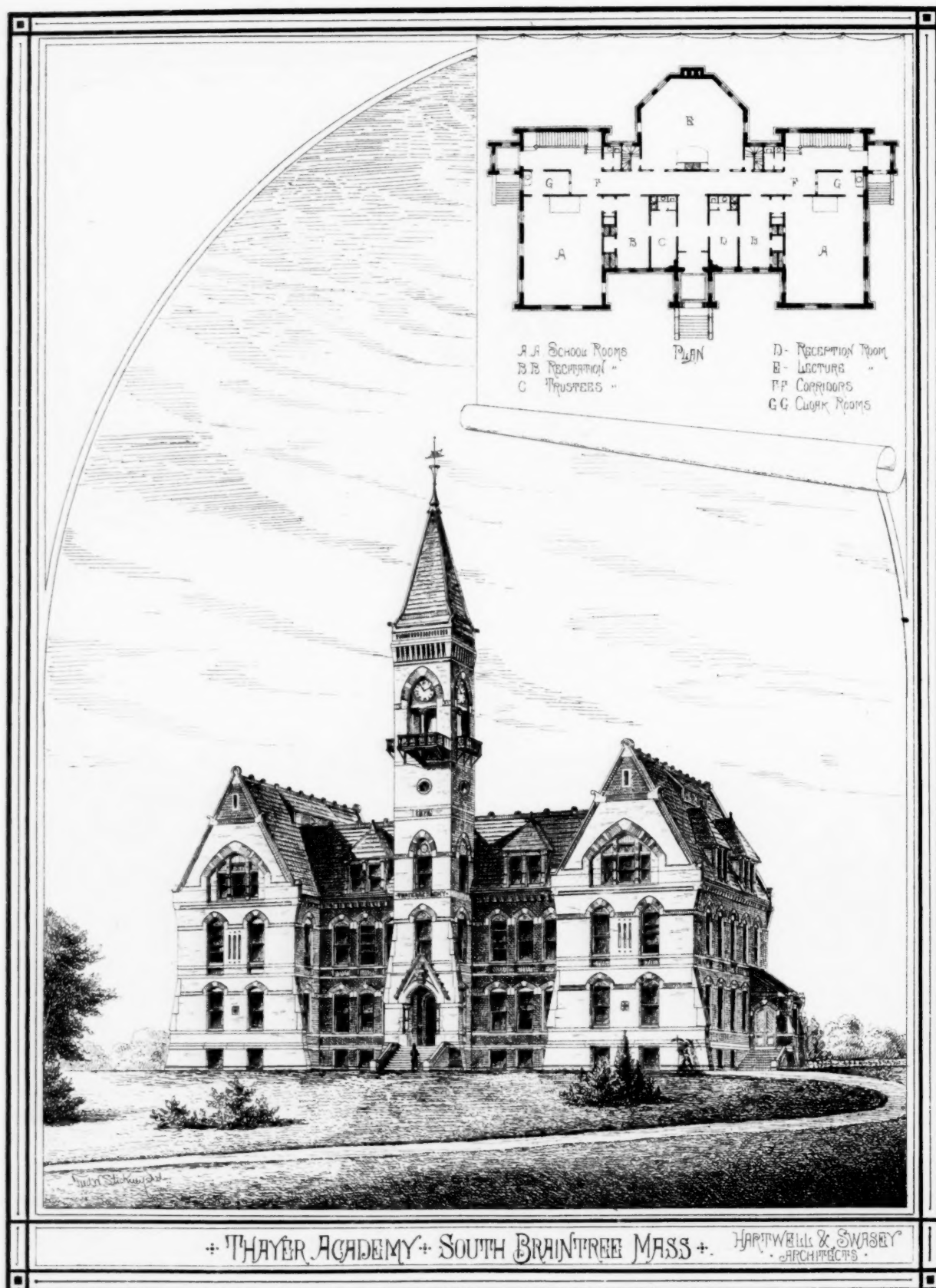
³ Graphical Analysis of Roof-Trusses. By Charles E. Greene. Chicago: George H. Frost.

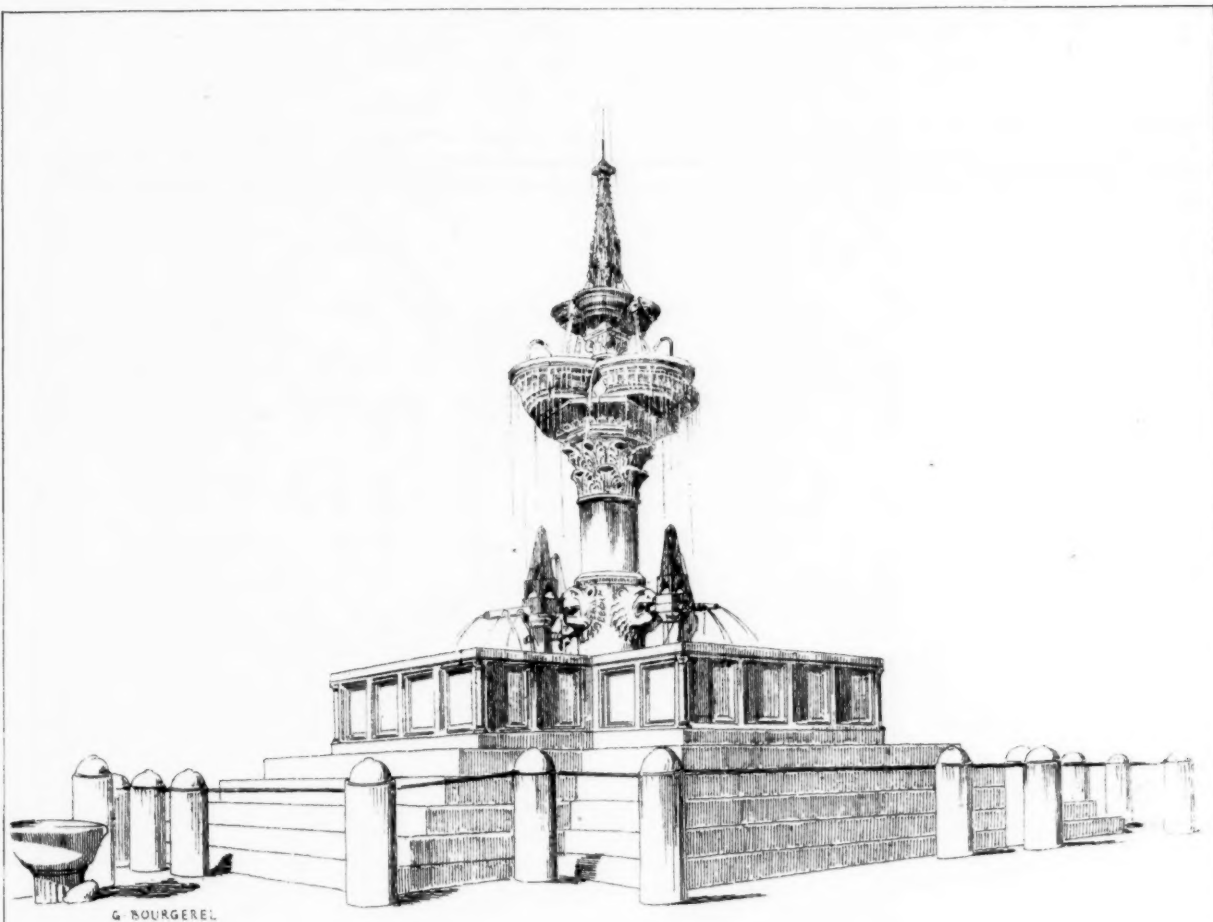
⁴ The Elements of Graphical Statics. By A. J. Du Bois. New York: John Wiley & Son.



HOUSE OF DE LANEY KANE ESQ NEW ROCHELLE N.Y.
 BY ARTHUR GILMAN ARCHT

THE ILLUSTRATION PART OF THE ARCHITECTURE OF THE HOUSE



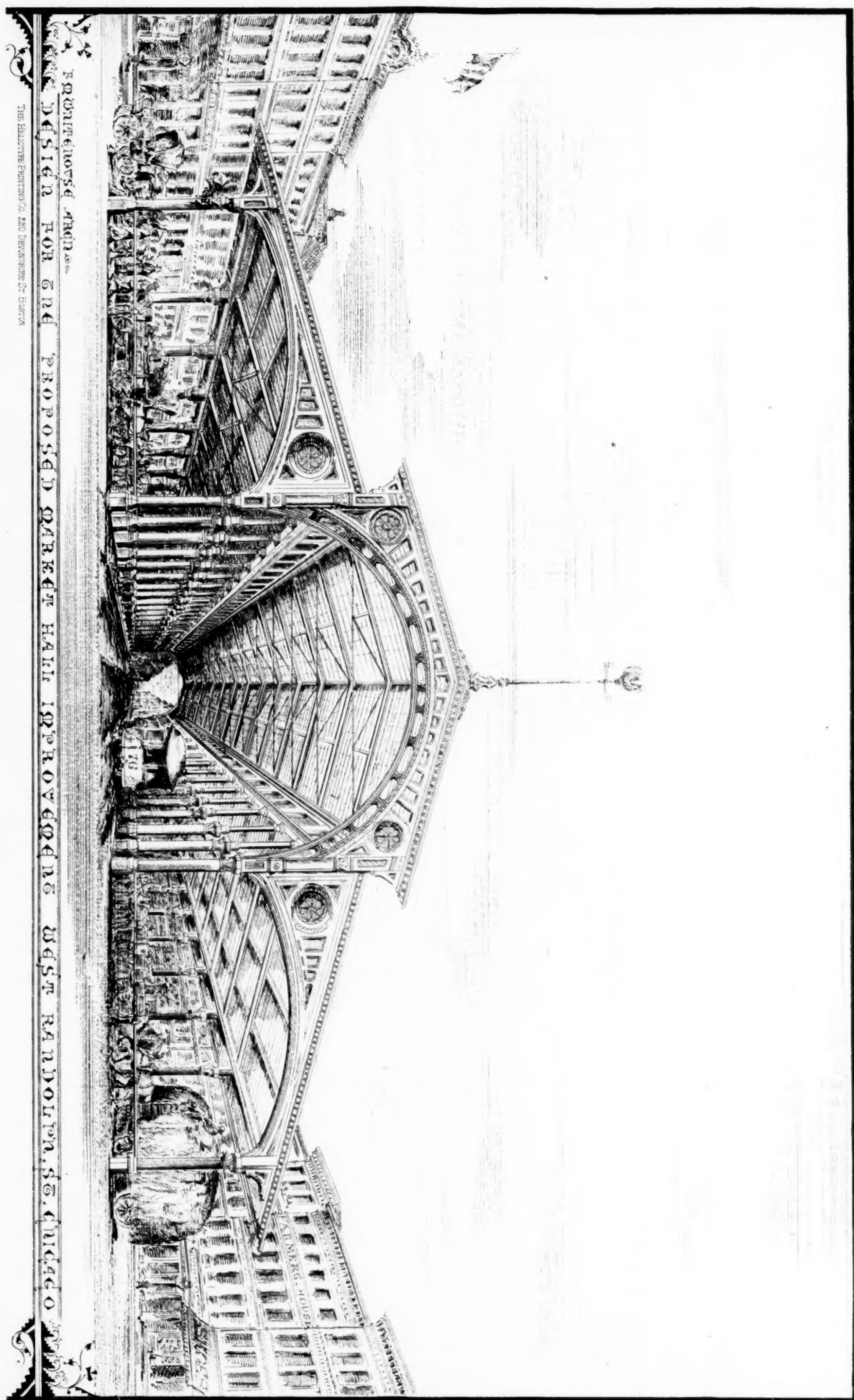


— FOUNTAIN AT VITERBO, ITALY. —



THE HELIOTYPE PRINTING CO. 220 DEVENISH ST. BOSTON

— FOUNTAIN AT GRENOBLE, FRANCE. —
— M. H. RIONDEL, ARCHT. —



As there is no necessity for actually drawing the lines from the pole to the points on the polygon of forces, in future they will not be drawn.

FIGURE 3

Is similar to Fig. 2, except that some of the forces act in an upward direction; but that does not affect the solution.

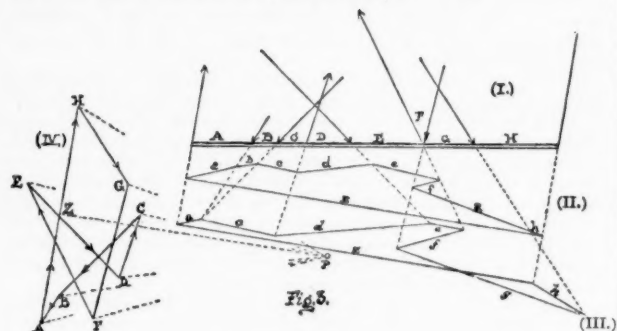
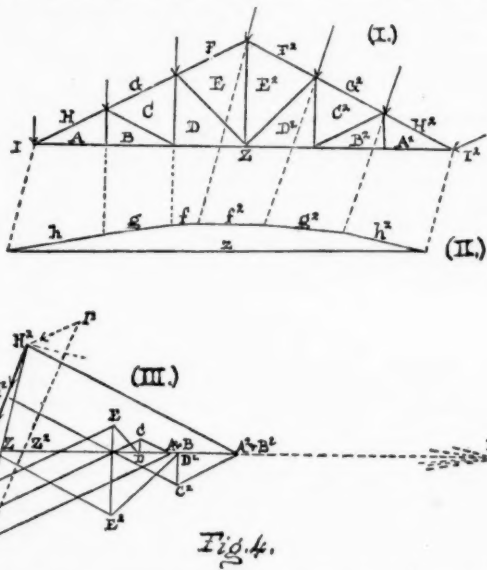


Diagram (iv) is the load, or force polygon; HIA being the closing line, AZ and ZH being the re-actions at the supports. There are two equilibrium polygons (ii) and (iii) for the same set of forces.

It accidentally happens, that, in drawing the line a (iii), it strikes the intersection of the forces AB and BC; that is, the lines a, AB, and BC, all intersect in the same point: consequently the distance, in the equilibrium polygon, from AB to BC equal o; that is to say, the line b = o, or disappears, and we have no line b in (iii) corresponding with b in (ii).

FIGURE 4

Gives a common form of roof-truss. Diagram (iii) is the polygon of forces. Since the tie-beam or lower chord is a straight line, and they act at the points of support, the forces IH and I²H² do not enter into the polygon of forces, as will be shown hereafter. The polygon of forces then is H, G, F, F², G², H², H; the closing line being HH². P is taken as the pole, and the equilibrium polygon (ii) drawn precisely as before described. This gives Z as the



dividing-point in the closing line, the re-actions at the supports being HZ and ZH². The strains in the members of the truss can then be drawn in the usual way as described in Bow's "Economics of Construction," or Greene's "Analysis of Roof-Trusses."

If it is desired to introduce the forces IH and I²H², which act directly on the supports, it can be readily done by drawing them as shown in (iii); then join I and I², which constitutes the closing line of all the forces; and Z² is the dividing-point, the re-actions now being IZ² and Z²I². The only effect of this on the truss will be to alter the strains in the tie-beam, they being now measured from Z², instead of Z; the strains in all the other members remaining the same. This also indicates that two equal amounts of horizontal force might be combined with the re-actions, one added to each, provided such amounts acted in contrary directions, without affecting any other member than the tie-beam. If the work is correctly done, the strain diagram will always close: if it does not do so, it is conclusive evidence that an error has been made in the work.

THE ILLUSTRATIONS.

RESIDENCE OF DE LANCEY KANE, ESQ., NEW ROCHELLE, WEST-CHESTER CO., N.Y. MR. ARTHUR GILMAN, ARCHITECT.

This house has been built during the past year in a charming situation on the shore of Long Island Sound, about seventeen miles distant from the city of New York. Besides a desire to maintain the general expression of the old English domestic style, the owner was unwilling to forego the spaciousness and comfort of the ancient Dutch "stoop," so common in the older houses of the country. To meet this wish, the architect has endeavored to bring this local feature into harmony with the general style of the building. The material of the lower or principal story is of Haverstraw brick, with plinth course and bands of Amherst stone, the upper stories being also of brick, with solid exterior framing and bargeboards of a dark oak color. The rear of the house has a spacious veranda, with a semi-octagonal central pavilion and balcony over, which command a noble view of the Sound, and of the opposite hills of Long Island,—a range of upwards of thirty miles.

THAYER ACADEMY AT SOUTH BRAINTREE, MASS. MESSRS. HARTWELL AND SWASEY, ARCHITECTS.

HUCKSTERS' MARKET, CHICAGO, ILL. MR. F. M. WHITEHOUSE, ARCHITECT.

This explains itself as a covered hucksters' market, or *Halle*. It is designed to stand in one of the principal streets, at a point where the street widens for two squares to a width of about a hundred and fifty feet. Men having small vegetable-gardens, and farmers in the vicinity of the city, come with their wagons in great numbers to this point. Frequently there are as many as two hundred or more to be seen there of a morning, weather permitting. The building is to be erected at the expense of the property-holders in the vicinity.

FOUNTAIN AT VITERBO, ITALY.

We here reproduce from the *Fragments d'Architecture et de Sculpture* of M. G. Bourgerel, one of the numerous fountains at Viterbo which were mentioned by Mr. Peabody in his account of a visit to Viterbo, published lately in this paper.

FOUNTAIN AT GRENOBLE (ISERE) FRANCE. M. H. RIONDEL, ARCHITECT.

This fountain is a notable feature of the façade of the market *Sainte-Claire*, and is here reproduced from an engraving in the *Revue Générale de l'Architecture*.

ON THE EXCLUSION OF SEWER AIR.

[From a paper read by Richard Weaver, C. E., F. C. S., Sanitary Surveyor, and published in the *Journal of the Society of Arts*.]

THERE are various reasons why the more perfect exclusion of sewage emanations from the interior of buildings has not attracted that close attention of sanitary engineers which the national importance of the subject demands. The magnitude and the emoluments of out-door works entirely dwarf the comparatively trifling matter of the internal arrangements of domestic drainage; and the indifference of the public to the subject, combined with the simplicity of faith and unwarranted assumption that things out of sight are right, have certainly not hitherto been very encouraging to the reformer.

I know of no one who is more keenly sensitive than myself to the inconvenience of breathing tainted air or drinking foul water; but I cannot approve of the often-uttered expressions by men, even of experience and influence, such as the "deadly sewer-gases," and "death in the cistern." Their opinions, given with good intentions, defeat their object; for people are apt to think that the shades are drawn deeper than requisite, and if the dangers were so great as presented, there would be fewer of us left to talk about it, considering that we all take our peck of dirt in the form of aerial and solid sewage rather frequently.

There are congregations of populations within my knowledge who regularly consume their own filth, and drink up their fluid refuse with the water; places where the receiving cesspits are in such near juxtaposition with the domestic well, that the water lines become identical, and intermittent exchange is maintained; and yet many of these places are considered healthy, and figure so in the Registrar's returns. An example is within recollection of a small town where nothing more loathsome can well be conceived than the social habits of the inhabitants, where for fourteen years, the community enjoyed good health before an imported epidemic attacked more than a third of the population, of whom many died.

The remedy for prevailing errors lies in a recognition of their existence, less by legislative action than by reform within the bosom of every family without distinction, and it should rightly begin with those who sit in high places; for my range of observation, if limited, is sufficiently wide to enable me to say with some confidence, that the larger and more important residences are

relatively in a worse condition than the humbler abodes of the working classes, causing necessity for a more frequent change of air and locality, due to the foul state of the atmosphere of metropolitan mansions,—a condition of things rarely suspected, but universally existing. If, it may be said, there is not much detriment to health from the present state of dwelling-houses, when viewed from the point presented by reference to the mortality rats, I still venture to think that much of that undefined indisposition of families—headache, nausea, dyspepsia, lassitude, and such small complaints—are often created by breathing the foul atmosphere of the house, a foulness, most likely, not perceived by the usual inmates.

There is no occasion for me to appear rude, and I have no intention of being so, in the following criticisms; but I am induced to submit them, so as to bring home to every one the fact that, notwithstanding we pride ourselves on our decency and cleanliness, and our inclination to set ourselves up as patterns to Continental neighbors, I say, the fact is, we are a dirty and an unclean people.

A few days ago, I made an inspection of a medical gentleman's house,—a man who is a frequent attendant upon social conferences, and well read in matters of hygiene. Well, when I came to the water-cistern, he assured me the waste-pipe delivered into the ground a little below the surface; but as I make it a point to take nothing for granted in my examinations, and must have personal demonstration, we opened out the subsoil, and found the overflow orifice discharged into a drain directly communicating with the sewer up which air of a fetid character arose. In point of fact, the waste-pipe acted as the upcast shaft to ventilate the house drains and public sewer, the delivery taking place in the cistern an inch or two above the water line. Of course, seeing the defect himself—one of many—the fact was confirmative, otherwise I think it would have been difficult to convince this gentleman of the nuisance.

If a guest enters a drawing-room with boots spotted with honest mud, he is, peradventure, looked upon askance; but it is a matter of no moment that the host immediately charges his lungs with abominations vomited forth from the common sewers, through defective closets and scullery sinks, with which the atmosphere of the house is tainted, curiously hidden in vapor of preparing viands ascending from the kitchen, which no mansion, however modern, seems to be without.

It is a singular thing, and perhaps suspected by few minds, that the conditions essential for the enjoyment of sound, robust health, least exist in localities where they are most required; and I put it to you as the fruit of observation, that our hospitals, as types of public institutions, are the most indecent in respect of their sanitary measures; whilst the gin-palaces, as representative of another class, are the best. In the first, I include public buildings, houses, churches, clubs, schools, hotels, and coffee-houses, with many others; and, in the second, the business parts of butchers', bakers', greengrocers', confectioners', with some other shops. Basing the calculation of averages from an examination of several hundred buildings, made within the last year, I am in a position to say that ninety-nine per cent of metropolitan dwellings are polluted very seriously by the admittance of sewage air through the various openings for the removal of liquid refuse.

Before passing on to the practical object of this paper, the means available for effectually avoiding the current nuisances common to all dwellings, I will intrude upon you one more illustration of the indecencies of modern living, taken from the residence of a sagacious, well-informed gentleman of eminence,—who, always interested in social subjects, is not unknown in this hall,—which I was invited to inspect so recently that the evils pointed out still remain unameliorated. In the first place, in the kitchen, as there is no open fire-place, but close stoves and hot plates, the whole of the volatile culinary products are discharged into the basement, the bulk of which ascend to the upper premises. There are no ventilating appliances in this palatial establishment, but a fair amount of air of a sort is procured from outside the building, conducted through the yard grids, and thence by the scullery-pipes to the several passages of the house. Another supply, voluminous in quantity, is emitted from the soil-pipes of the water-closets, another source being through the waste-pipes of the service cisterns. The air of the whole building—of the magnificent chambers of great length and height, and of the upper offices—is singularly stale and unpleasant. Nevertheless the servants express perfect satisfaction, and profess to enjoy excellent health; but, if this is so, are the conditions of living proper—are they decent even?

It is many years since I became acquainted with the inadequacy and insecurity of the usual hydraulic traps applied to house drainage to stop the back flow of sewer air. At the most, and under the best conditions, assuming perfect joints, and with sound materials, they merely obstructed the rush of air; the passage from the drains to the house took place more slowly and insidiously. Well, after laboring for some time for improvement, I adopted a simple device formed out of a siphon glazed-ware pipe, with an opening at the socket, and communicating with the ground surface for the entrance of fresh air, and then, by the aid of openings at the tops of stack, bath, and soil pipes, to keep up a system of natural and self-acting air circulation throughout the drainage;

so that any passage effected through the porous pipes, joints, or traps—very little, perhaps, by reason of the equal tension of the air within and without the pipes—would be robbed of virulence, because the air, being ordinary atmospheric air, and not sewer emanations, is quite harmless. The idea was taken from—and, in fact, was an attempt to adopt underground—the system not much practised in London, but common in provincial towns, of severing connection with the scullery, by delivering the pipe into the air over a trapped grating, but which had never been carried into practice, so far as I know, with water-closets, nor with drains passing through the house.

As the arrangement has become known through the professional press, and by the proceedings of a kindred association, and possibly is known to you, I need not further describe it. I may, however, say that with some years' experience of its working it gives me every satisfaction, as it thoroughly effects complete severance between the house and sewer, preventing the admittance of any foul air and pollution to water, the whole being accomplished at a cost which, I think, is not immoderate considering the substantial benefits derived; and that it does not generally exceed £5 per house in occupied buildings, in new structures practically amounting to nothing extra upon the usual drainage outlay.

Some question has arisen as to the feasibility of implied action of the siphon system of ventilating and trapping drains and sewers, which is best answered by stating the result of many hundred examinations. The air circulation is produced by compound causes; first, we have the currents due to the natural mobility of the air, as exemplified in all vertical shafts open at each extremity, and well illustrated by a chimney-flue without a fire. This motion is accelerated by the passage of water down the pipes, creating a reversed aerial current, and again by the warm discharges from the kitchen. The upward flow is augmented by the heat absorbed from the sun's rays by the ventilating pipes. But the most potent agent in keeping up the circulation is the wind blowing squarely across the mouth of ventilating pipes, creating an exhaust and consequent up-current, for it is old knowledge that the rapid passage of a fluid across the orifice of a tube reduces the tension within that tube.

Under exceptional circumstances and local obstructions, there is occasionally a down draught through the pipes, which act as the long leg of the siphon system of ventilation; but this is of no moment, for the outlet being lower down and outside the building, the aerial discharge takes place there after sweeping through the drain-pipes, and is generally devoid of smell, for I find that, after a few weeks, operation with fairly laid glazed pipes, although they may have been down for years, the oxidizing effect of the continuous body of fresh air passing over the surface deposits within the pipes, entirely consumes the putrid matters. The currents, however, are generally ascendant, and deliver at the roof level. A series of observations conducted under varying conditions and localities determine the average velocity of flow at three to four lineal feet per second in calm weather, which increases to nine feet, and often twelve feet with a strong wind. And it is to this severance of the house from the sewer by the water seal of the siphon trap, in conjunction with the sweeping air currents maintained through every drainage pipe of the house, that I depend for clean air and clean water within the building, and it is most certain in its action.

CORRESPONDENCE.

THE ACCIDENT AT THE ANCHORAGE OF THE BROOKLYN BRIDGE.
—STATIONS FOR THE ELEVATED RAILROAD.—CHANGES AT THE
STEWART MEMORIAL CATHEDRAL.—MISCELLANEOUS NEWS.

NEW YORK.

THE New York and Brooklyn Bridge Company has just been brought in by a coroner's verdict as indirectly responsible for a loss of life by the falling of a pair of brick arches at the Brooklyn Anchorage. The construction is by a series of heavy brick arches turned between stout brick piers. The space between crowns is about eleven feet; and two of these arches had been placed in position, when the top one was felt to be settling. The men sprang to the pier-top, and were all saved but Neil Mullen, a laborer working below the lower arch, who was crushed by the bricks of the two arches; the upper one carrying down the lower in its fall. The testimony shows that in building one of the abutment-piers, a large granite skewback, weighing two tons or more, accidentally swung up against the brick pier, and gave it such a shock as to destroy the "set" of the mortar, and impair the cohesiveness of the pile. This was not observed at the time, and the stone was laid, and the arches turned; and it was not until the pier was taken down after the accident, that its instability and lack of power to withstand the thrust was noted. The jury found that the accident was in some degree caused by the too early knocking-out of the centring; but Mr. C. C. Martin and George W. McNulty, the assistant engineers, placed the blame more particularly upon the weakened pier. The verdict reads:—

"It is the opinion of the jury, that had the 'centres' been allowed to remain a sufficient time to have admitted of the mortar becoming prop-

erly set, the accident might have been avoided; and they are more strongly inclined to this belief, from the testimony that one of the piers which supported the arches in question had sustained an injury during the progress of the work, which was not deemed at the time to be of a very serious character by those in charge of the work, but was, it seems to the jury, of sufficient importance to have called for greater precaution in the construction of the arches, pending the construction of the final pier or abutment, with the completion of which, in our opinion, such an accident would be impossible.

The Gilbert Elevated Railroad Company promises to do some things creditable in the erection of the waiting-stations along the line of their rapid-transit road. Along the artery avenues, the stations span the cross streets; and a plan of one really means a treatment for all. The company have decided to use sheet-iron, and to get at the best way of doing so invited designs from a number of architects, who declined, of course, to enter into such an indefinite competition; and the company finally ordered sketches from a number of prominent architects, including Messrs. Potter & Robertson, C. F. McKim, George Harney, A. J. Bloor, and others. The Board of Directors have not yet decided which, if any, of the plans will be adopted.

Mr. Henry G. Harrison, the architect of the Stewart Memorial Cathedral at Garden City, has decided upon very radical changes in that building. The chancel has now thirteen sides, and the increased depth here, and the addition of a bay to the choir, has secured effects within and without which were painfully wanting in the first design. Work is progressing favorably, and the temporary roof is now on. The gargoyles along the cornice line and at other points have been modelled directly in the clay by Mr. Harrison, and for positive treatment are a valuable series of studies. The crypt in which the bodies of Mr. and Mrs. Stewart are to be laid will now be placed immediately below the chancel, instead of below the vestry-room. The new crypt will be a fourteen-sided room, with triple columns of various-colored marbles at each of the angles. The light will be abundant; and the white marble groining and carving, with pierced screens of the same material cutting the crypt from the Sunday-school room, promise to give a rich effect.

The Long Island Historical Society have not yet decided by the aid of which of the dozen plans submitted they will expend the eighty thousand dollars set apart for their new building. One of the competitors is from Boston, one from Philadelphia, three from Brooklyn; and the rest, some half-dozen in all, are of New York, Mr. Eidlitz taking no part in it. A decision will be probably reached in a few days.

There is a movement on foot to organize a book club for the purchase of works on architecture; the loaning of the volumes to be confined strictly to the members of the club. Mr. Hardenberg is pushing the project vigorously, and the books when secured will be kept in the Institute rooms.

Gen. R. C. McCormick, the United States Commissioner to the Paris Exhibition, is much concerned about the façade which must be provided for the United States section in the main building. With the limited fund at his disposal, nothing very costly at least will be attempted. The section is between the English and Russian sections, so that by immediate comparison at least an excellent opportunity is afforded. Mr. Pettit, who was the engineer architect of the Main Building at Philadelphia in 1876, is now in Europe; and efforts are being made to summon him to Paris, that he may make and carry out a design for this façade.

The Chamber of Commerce here will make a renewed effort this winter to secure from Congress the right to purchase the old Post Office site for the erection of a new Commercial Exchange. The right to buy additional lots in the rear has been secured; and if the project is carried out, a by-street will be run along the rear to obtain light on all sides. Congress can do no more equitable thing than grant the prayer of the New York merchants.

THE NEW WORK. — UNPROFESSIONAL CONDUCT.

ST. JOHN, N.B.

A STRANGER coming to St. John now, nearly seven months after the great fire, would be surprised at the rapid progress which has been made in rebuilding the city; warehouses, stores, and dwellings have sprung up almost in a day. Dock Street where the fire began, and King Street, have been nearly restored, most of the buildings are occupied, and business is going on much as usual. In other parts of the city the work has been quite as rapid, although, the tract of territory burnt being so large, the buildings are somewhat scattered. Nearly nine hundred buildings of all kinds have been erected; of these one-half are of brick, while the others are of wood, there having been as yet but one stone front put up.

Architecturally the buildings may be characterized as mediocre, and it would be difficult to find a city of the size and commercial importance of St. John in which there were not more worthy buildings. If any one is in search of a vernacular American (Canadian?) architecture, he has but to come here. One might travel for weeks and months, and then not meet their equals in point of conception. The use of galvanized iron and colored bricks has done much to assist the development of this vernacular architecture; cornices of three or four feet projection, immense

gables, pediments, towers, etc., of galvanized iron, are innumerable; in fact, there seems to be no limit to the uses to which it has been put. A store on Prince William Street has on its front some ten or twelve hundred dollars worth of this stuff, when for the same amount of money it might have been neatly finished with sandstone. In passing along the street one has but to glance up at a building to see a couple of workmen placing into position an immense cornice, some twenty or thirty feet long, of what appears to be stone, but is really nothing but galvanized iron. The use of enamelled bricks has been quite as extensive as that of iron. I thought when I wrote my last, that the fever had reached its height, — but no, the *Globe* office in Prince William Street, of which Messrs. Dunham & Clarke are the architects, is the climax, or perhaps I might say anti-climax, of this architecture: as an example of polychromatic decoration it stands unexcelled. Besides stone and iron, there are used in this front red, black, buff, white, blue, and I don't know how many other colors of bricks, giving it much the appearance of a kaleidoscopic pattern.

Among the buildings begun or nearly completed, that were not mentioned in my last, are several schools and churches; of the former the rebuilt Victoria School by McKean & Fairweather is perhaps the costliest and best designed. It is of brick with sandstone flush belts and other finish, there being no projecting ornamentation from the basement to the cornice; and consists of three high stories and Mansard roof, while on the front is a tower which rises a story higher. The window-openings have pointed stone and brick arches, with a band of buff enamelled bricks carried around the extrados, detracting somewhat from the otherwise careful design. On the opposite side of Duke Street, a little farther down, is the Central Madras School, one of the several schools of the Madras School Board connected with Trinity parish; the architect is Mr. J. C. Babcock. The Roman Catholics have erected in Carmarthen Street, from the designs of M. Stead, jun., a large building called St. Malachi's Hall, to be used for school and other purposes. There is one other large building which may be classed with the schools, — the Wiggin's Male Orphan Asylum, a Church-of-England institution, richly endowed; it has been rebuilt with the addition of a Mansard roof, giving it much better accommodations. Among the churches may be mentioned St. David's, nearly completed; St. Andrew's, from the designs of Langley, Langley, & Burke of Toronto, of which the Sunday school only has been built; and the Centenary Chapel, Methodist, which has been but lately begun; it is of stone to the top of the spire, while the other churches are almost entirely of brick, and it will cost nearly one hundred thousand dollars; the architect is Mr. John Welch of New York. The Germain Street Baptist Society have their building roofed in, Dumaresq & Dewar of Halifax being the architects. Nearly all the banks will rebuild. The competition for the Bank of New Brunswick has been awarded to H. F. Starbuck of Boston; it will have two stories on Prince William Street, while on Water Street, which is some twenty and odd feet lower, there will be four stories; the dimensions are about 68 feet in the former street and 50 feet in the latter, with a depth of 90 feet. The entire Prince William Street story is used for banking purposes, with stockholders' and janitor's apartments in the second story; the lower stories on Water Street will be rented as stores. The front is that of a classic temple. The Maritime Bank began operations several weeks ago on their lot in King Street, from the plans of Hopkins & Wiley of Montreal. The other banks will probably begin in the spring, when the weather is a little more suitable for building purposes than it is at present.

In the burnt portion of the town the streets are rectangular, so that the lots would be quite easy to build upon if it were not for the dimensions, which are almost universally 40 x 100 feet, thus rendering the planning of a house quite difficult owing to the extreme length; the houses are seldom over two, or two and a half stories high, and for this reason are carried out the full length of the lot. Another difficulty is found in the unusually hilly condition of the city, making it almost impossible, except on certain streets, to build a block of more than two houses.

A number of persons here, acting and practising as architects, have taken upon themselves, besides their own legitimate business, the agency of building materials, such as tiles, enamelled bricks, sash-weights, window-fastenings, etc., while the dishonorable and unprofessional practice of receiving percentages from builders is carried on quite extensively. What with these practices and the cut-throat propensities of some members of the profession in underbidding each other for the sake of a job, architecture as a profession has sunk considerably in the estimation of the people; so that clients run from one architect to another until they find one to suit them, he being not unfrequently the cheapest.

WARRINGTON.

GERMAN PATENTS. — In the recent revision of its patent laws, the German Government has adopted some of the features of the United States patent system; among them that of publishing a periodical containing a description of recent inventions, similar to the United States Patent-Office Gazette. At the opening of the Imperial Patent Office a circular was issued explaining the plan upon which its business is to be conducted, and soliciting suggestions from other countries more conversant with the workings of the system.

THE "LOAN EXHIBITION IN AID OF THE SOCIETY OF DECORATIVE ART."

NEW YORK, Jan. 1878.

THE "Loan Exhibition" held at the Academy of Design, New York, has closed with most successful pecuniary results. The throngs that have visited it during the past month have unquestionably carried away with them the memory of interesting objects in abundance and of a general *coup d'œil* of brilliant beauty. Whether they have gained much solid information as to the everlasting principles or past practices of decorative art, there is good reason to doubt. The exhibition has professed to be not only a pretty show of what could be gathered—rare, valuable, and curious—from the homes of New York, but also a temporary school of art. Claiming this, it invited criticism of a sort that would be ungracious had its claims been less high. Offering "culture" as well as gratification for the eye, the managers purposely put the price of admission very low, and invited to its rooms those who, as art students or artisans, would come for instruction in their special fields. An exhibition planned with this object, carried out consistently, and employing with discretion the treasures to which it had access, might be followed by very good results; for there is no city where more attention is paid to-day to the decorative arts, where more earnest though sometimes lamentably undirected efforts are being made to understand them and improve their practice. To be as useful as it might, such an exhibition would need to be in competent, and above all in strict hands; it would need to be most carefully arranged in some systematic way,—in sequence chronological, geographical, according to material, or according to style. It would need to be fully and instructively catalogued with reference to a rather low standpoint of knowledge of styles, periods, and handiwork. Nothing inferior should be admitted, nothing vaguely labelled, or carelessly praised. When I say that the past exhibition has not met these requirements, I mean no word of dispraise for the ladies who have expended so great an amount of time and industry, and shown such excellent taste, in its arrangement. One does not blame the exhibition for being no more than it has been,—a wonderfully attractive and "fashionable" *salon*, a confused but eminently picturesque assemblage of interesting bric-à-brac: one only blames it for laying claim to higher merit. It was a pretty show, but in no sense of the word even a temporary "school of art."

The general effect was charming. Large quantities of tapestry and woven and embroidered hangings of all kinds were placed at the managers' disposal, and gave them a means of decoration which they used with unquestionable success. The Bric-à-brac Room, especially its farther end as seen from and framed by the door of the picture-gallery, was very beautiful. It was hard to single out any for especial admiration among the many gorgeous fabrics, yet some almost compelled particular mention. One in the corridor, a "specimen" piece of Japanese embroidery in the most brilliant patterns on a yellow ground, bore witness that no depth or height of color is illegitimate in decorative art, if the hand that weaves it be cunning. Near it hung a Persian embroidery of the well-known "sacred-tree" pattern, subdued in color, and admirable for conventional grace; also two panels of gorgeous Japanese work, one of which, with birds and a mountain, could not well be surpassed for conventional treatment of landscape. It is impossible, again, to overpraise the delicate and refined art of some of the Chinese and Persian needleworked bedspreads, etc. Some of the Japanese work—notably the large and splendid "Japanese Poet's Hanging,"—exhibited the effects possible of production with massive gold lines to accentuate the design. An interesting piece of French tapestry marked A.D. 1599 would have justified an earlier date, and was in excellent preservation, characteristic and beautiful. But even this, how far inferior to Oriental work! Its color was harmonious through reserve; while in Asiatic work the coloring has the higher beauty of being harmonious in spite of—because of—the most daring brilliancy. To the specimens of modern work after good models sent by Messrs. Hertel I give high praise when I say that their close contact with Oriental work did not decolorize and spoil them. On the other hand, there were some hangings with quasi-Oriental designs, the property of a New York artist, that were clever enough as amateur work, but hardly seen to advantage amid their masterly surroundings, and by no means entitled to hang as samples of what decorative art should be.

The furniture in the Mediæval Room was not very remarkable and was carelessly labelled. The most striking object was a Spanish cabinet in gilt-wood and velvet, attributed to the fifteenth century, and very probably of that age, as it seemed to show no traces of the Renaissance. It was more showy than artistic, except in the metal-work of the hinges, etc., and had evidently been regilt and painted at no very distant day. Near it were two very fine chairs which might teach the apostles of the present furniture reform that they have not yet exhausted all the good shapes. In the Bric-à-brac Room, were two more chairs, one in ivory from Delhi said to be six hundred years old. It should have been noted that its ugly covering was a very modern addition. The other, marked "Louis Quinze," was by no means that, but "Louis Seize" or "Empire," and its needlework, I should think, of the present century.

Passing now to the cabinets of the Bric-à-brac Room, we find that their contents were arranged with inimitable grace and effectiveness. But effect had been too exclusively sought, and the articles were not so well arranged, for the purposes of study, as they might have been. As with the hangings, Persian, Chinese, Japanese, modern, mediæval, and Renaissance were inextricably mixed, and study of them almost impossible, so here, pottery of all times and climes, metal, jewelled, and enamelled works, were picturesquely huddled together. The pottery was not very good, but might have been moderately instructive, had one not been obliged to hunt through many cases, and peer into many remote shelf-corners, to be sure whether or no a wished-for specimen was to be found. Those who knew little of styles and specimens, and had no wish to find any particular thing, merely a desire for general information, must have been rather hopelessly bewildered. Several articles claimed to be "Chinese Imperial Yellow," which fact a critic might doubt. If they really are believed to be genuine, their pedigree should at least be shown. Of course there were most exquisite specimens of Satsuma, Kioto, and other Oriental wares; but I did not find a single piece of Persian pottery,—perhaps, if we except the best Greek art, the most perfect product that has ever left the wheel. Various examples of maiolica proved how entirely the value of Italian earthen-ware depends on painting as distinguished from modelling. To the artist it was absolutely of no moment whether or not a certain *grès* jug "came over in the Mayflower," as it was said to have done. It was in any case a sample of true and excellent art, as well as a fine specimen of the combined use of the only three colors—brown, gray, and cobalt—used in this ware. Just what was meant by a label reading "Henri Deux faience ewer, reproduction, eighteenth century," it is hard to say. It was copied from the Oiron pottery, doubtless, though merely painted, not inlaid; but it is new to hear of any reproduction of that ware dating from the last century. In pottery one found also good examples of M. Solon's art. Undeniably beautiful though it is, has it not been almost overpraised of late?

It must be to many lovers of art a matter of regret that the distinction between a work of art *per se* and decorative work of however fine a grade is so often lost sight of. It is very well to hang, even to frame, fine Capo di Monte reliefs, or the masterly paintings of old maiolica; but clever modern plaques, with broad contours and flat tints, like some of Deek's here shown, are, no matter what their correctness of line or harmony of color, decorative merely, and should find their place in the doors of a buffet or the panels of a wainscot, not in frames for independent effect.

In gold and silver work there were some very pretty specimens, especially of the Queen Anne and rococo styles, a few fine Oriental and antique examples, and some characteristic Scandinavian and Russian handiwork. A few samples of contemporary work by Kirke and Tiffany seemed inferior to the older art in both vigor and delicacy of touch. In the Mediæval Room was some good Italian work in copper and *repoussé* brass, and one of the most beautiful objects in the whole collection,—a Byzantine crucifix. The pictures which filled the large north room were not—with a few exceptions—of great excellence. They were chiefly remarkable as expressing the fashion of the day; almost all the artists represented ranking as first favorites with our public.

More interesting than any of these must have been, to the architect, the little specimens of window-reliefs, rather too often at variance with their printed descriptions, but giving some interesting consecutive examples. The best piece was a circular compartment in the first style of mediæval work, catalogued as "very old," and as representing the "Byzantine eagle." Whatever may represent that bird, this medallion certainly does not; for it showed a straight-beaked bird, with its bill open and wings flapping in the midst of flames,—perhaps a phoenix? From the architectural details of the background, the harmonious brilliancy and depth of color, this little gem may very easily date back to the twelfth century. Another bit of later work, "Angel Playing Chimes," was most beautiful. Two pieces attributed to Dürer should rather have been called "painted" than "stained glass," and should by no means have been noted as the "highest style of mediæval art." "Mediæval" art was done with in Dürer's time, and with it the best days of glass. Some of the bits from Mr. Prime's collection were better than others; but all were very late work, fussy and inappropriate. For bold, clever, and simple leading, for what the Germans call "style-ful" conventionalizing of the subject to suit the material, and for depth and perfection of color, we must go back to the two earliest specimens.

A word in conclusion as to the unusual crowds that have visited the exhibition. The final report has not yet been made; but I believe the number of entrance-fees received in about six weeks has been not less than forty thousand,—almost a thousand a day. On "pay-days" the Metropolitan Museum is practically unvisited, though the price is no higher—including admittance to the Castellani Collection—than at the Academy, and the objects of interest—need I say it?—a hundredfold more beautiful and instructive. One can hardly help drawing the rather painful deduction, that fashion, more than the love of art pure and simple, has made the "Loan Exhibition" so popular, and that the true beauty of porcelain and "Venice point" has been less apparent to many visitors than the fact that they were looking at Mrs. A's plates or Mrs.

B's laces. It is for this very reason, — because with us any thing stamped with the *cachet* of "society" becomes at once so prominent, — that it is doubly necessary for enthusiastic and self-sacrificing amateurs, when they desire to assist the art-education of the nation, to go about their work not only with zeal, devotion, and liberality, but with prudence and wise severity, and with the assistance of the best professional experience and the widest professional culture.

M. G. VAN RENSSLAER.

PERSONAL CORRESPONDENCE.

The following letters need no comment from us: —

LOUISVILLE, KY., Jan. 12, 1878.

EDITOR ARCHITECT AND BUILDING NEWS.

Dear Sir, — I enclose herewith a communication I received yesterday.

I think the writer is entitled to the legitimate benefit of this character of enterprise, and hope as his just due you will publish his communication.

Yours, etc.,

H. P. McDONALD.

CLEVELAND, O., Jan. 8, 1878.

HENRY P. McDONALD, ESQ., LOUISVILLE, KY.

Dear Sir, — Will you be kind enough to inform me whether the work-house of which you are the architect is to be heated with steam, and, if so, who has the contract for same? I manufacture direct and indirect radiators, and claim, especially for indirect radiator, that I furnish from twenty-five to forty per cent more heating-surface for same money than can be had with any other pattern. What I want, of course, is to sell the radiators for this job, if any are to be used; and, if you can aid me to that end, I shall be very glad to acknowledge your assistance. My radiators are now going into a new Court House at Newark, O. Both the direct and indirect have been used very largely for past three years, and give very best satisfaction. I should be glad to hear from you with any information you may have.

Very respectfully,

T. H. BROOKS.

COMPETITIONS IN INTERIOR DECORATION.

The editors propose to institute a series of competitions, of which the first subjects will be in interior decoration, upon programmes proposed by themselves; and prizes have been assigned by the publishers, subject to the following regulations: —

1. The programmes will be published in the columns of the paper at least four weeks before the reproduction of the drawings selected for publication. These drawings will be grouped on the page, and will form one of the regular illustrated pages, as often as once a month, — oftener, if the number and excellence of the designs warrant.

2. A first and second prize will be awarded to the best two designs submitted in each competition; the decision resting with a jury of three architects.

3. Each competitor is requested to sign his drawing by a motto or device, and to enclose to the editors his name and address.

4. The designs to which have been awarded the prizes will be announced in the *American Architect*; the authors of the designs being indicated by their devices or mottoes only. The real names of the authors of prize designs will be published at the close of the year.

5. Only those designs which in the eyes of the editors are worthy will be published. The order of the publication of the designs is to be taken as in no way indicative of the decision of the jury.

6. Drawings which are received after the day named in the respective programmes will be thereby excluded from the competition, but not necessarily from publication.

7. In awarding the prizes, heed will be taken of the manner in which the programme has been followed, the excellence and appropriateness of the design, and the execution of the drawing.

8. Drawings may be sent flat or in rolls, by express or by mail. They will be returned to their authors at the close of each competition.

9. The limits of the drawings must in no case exceed 16½ inches in length by 10½ inches in breadth. This space is to be enclosed by a single line only by way of a frame.

10. For instructions as to the manner of preparing drawings for reproduction, competitors are referred to the instructions which are regularly printed on p. viii. or ix. of the advertising pages.

The first prize will be: —

ART FOLIAGE FOR SCULPTURE AND DECORATION, with an analysis of geometric form, and studies from nature of buds, leaves, flowers, and fruit. By James K. Colling, F.R.I.B.A. 72 plates. 1 vol. large 4to . . . \$15

OR, EXAMPLES OF ENGLISH MEDIEVAL FOLIAGE AND COLORED DECORATION, taken from buildings of the twelfth to the fifteenth century, with descriptive letter-press. By James K. Colling, F.R.I.B.A. 76 plates and many woodcuts. 1 vol. large 4to . . . \$15

OR, GOTHIC FORMS, applied to furniture, metal-work, and decoration for domestic purposes. 31 plates. By B. J. Talbert, architect, London. 1 vol. folio . . . \$15

The second prize will be: —

THE STORY OF A HOUSE. Translated from the French of M. Viollet-le-Duc, by George M. Towle. Illustrated by the author.

1 vol. 8vo, bevelled boards, red edges . . . \$5

OR, HABITATIONS OF MAN IN ALL AGES. Translated from the

French of M. Viollet-le-Duc by Benjamin Bucknall, architect.

Fully illustrated. 1 vol. 8vo . . . \$5

OR, ANNALS OF A FORTRESS. Translated from the French of M.

Viollet-le-Duc by Benjamin Bucknall, architect. 85 illustrations, several in color. 1 vol. 8vo . . . \$5

COMPETITION NO. I. — A WOODEN STAIRCASE.

The subject of the first competition is a wooden staircase in the dwelling-house of a person of means. It is to be contained within the walls of an entrance-hall which is 16 feet wide, and is lighted by a window at the end. The height of the story is 13½ feet from floor to floor. The drawings required are the plan, elevation (or section), and details to a larger scale than the principal drawings; in addition to these the designer may at his option exhibit the arrangement by a perspective sketch. All these drawings must be included on the sheet whose dimensions are given above. Drawings must be received at the office of the *American Architect and Building News* on or before Feb. 26, 1878.

NOTES AND CLIPPINGS.

THE ILLINOIS STATE HOUSE. — Work on the new State House has entirely ceased, as the amount limited by the constitution (\$3,500,000) has been expended, and about \$750,000 more will be required to finish the structure. The last General Assembly made an appropriation of \$38,000 for repairs, which amount was used in finishing the dome. At the November election a proposition was submitted to the people to appropriate \$500,000 for completing the new State House, which was rejected by an overwhelming majority. The building will stand in its unfinished condition for at least ten years before the people of Illinois are ready to expend any more money for this purpose.

ALMOST AN ACCIDENT. — While the vestry of Trinity Methodist Church at Springfield, Mass., was densely crowded at the Murphy temperance prayer-meeting on Jan. 16, it was observed that the floor was settling in one corner; the people in that part of the room were quietly advised to leave, and a panic was thus averted. An examination showed that one of the brick piers supporting the building had been badly cracked by the great weight upon it, and it is thought that the discovery was made just in time to prevent disaster.

BUILDING ACCIDENTS. — While an old building in Providence, R.I., was being pulled down on Jan. 16, numbers of poor people busied themselves in carrying off the refuse sticks and chips, and in spite of the efforts of the police several of them succeeded in getting into the building, where one of them, George Wight by name, pulled out an important stanchion, and immediately the already enfeebled structure fell, and buried the unlucky author of the mishap and four others. Wight was thought to be mortally injured, and all the others are seriously hurt.

A two-story frame house erecting on Bush, near Court Street, Brooklyn, N.Y., fell Saturday evening, Jan. 19. It belonged to Louis Blennell; his loss was \$600.

Three Congregational churches of Deer Isle, Me., were blown down by the gale a few days ago.

THE CHIMES OF ST. MARK'S, PHILADELPHIA. — The Supreme Court has made an order, granting the modification asked on the part of St. Mark's Church for a modification of the decree in the case, with these exceptions, — leave to ring the chimes on every day that had a full service, at all daily services for not more than five minutes, nor earlier than nine, A.M., nor later than eight, P.M., and at Sunday-school services for five minutes, not earlier than nine, A.M., was refused. The modification allowed permits the chimes to be rung on the following days, in addition to the times mentioned in the decree: Washington's Birthday, Fourth of July, New Year's Day, Epiphany, Ash Wednesday, Good Friday, Ascension Day, All-Saints' Day, Thanksgiving Day, Christmas Day, and at weddings and funerals.

THE INFLAMMABILITY OF FLOUR DUST. — An atmosphere surcharged with particles of fine flour is certainly highly inflammable, if not explosive. A week or so ago, the workmen employed in one of the largest flour-mills in Minneapolis, Minn., saw a volume of flame coursing through what is known as the blast-box, a conductor used in carrying fine dust from the burs to the open air. The workmen seized a number of fire-extinguishers, and without excitement or confusion brought the flames under control, but not till the woodwork of the long box had been charred from end to end. The explanation of the origin of this fire is quite simple. The foreman conjectures that one of the burs was revolving without feed, and while the upper stone was raised as usual, a nail or fragment of lime emitted a spark which was enough to ignite the fine dust which was carried through the blast-box. It will not be forgotten that the destruction of the candy-factory in Barclay Street has been ascribed to explosive vapors generated in the process of manufacture of gum-drops; and, moreover, that two of the workmen have stated that a lamp was upset on one of the upper floors where powdered starch was stored. Amongst other substances which become highly explosive when reduced to a finely-divided condition, is said to be cork.

FIRES IN SAN FRANCISCO IN 1877. — The total loss for the year 1877 was \$997,396.98, and the total insurance on property destroyed, \$2,098,679.92.

A REMARKABLE AMERICAN CLOCK.—In Mengel's building is now on exhibition in all probability the most wonderful clock in the world. It was built by Stephen D. Engle, a watchmaker, at Hazleton. He is about forty-five years of age, and was about twenty years in perfecting the clock. Mr. Reid paid Engle \$5,000 for it. Engle never saw the Strasburg clock; in fact, he has not travelled more than two hundred miles from home at any time. The clock stands eleven feet high. At its base it is about four feet wide, and at the top about two. It is about three feet deep at the base, gradually less toward the top. Its colors are dark brown and gold. The Strasburg clock is thirty feet high, yet its mechanism is not so intricate nor has it as many figures as the Hazleton clock. The Strasburg clock's figures are also three feet high, and the American clock about nine inches. Three minutes before the hour a pipe organ inside the clock plays an anthem. It has five tunes. Bells are then rung, and when the hour is struck, double doors in an alcove open, and a figure of Jesus appears. Double doors to the left then open, and the apostles slowly appear, one by one, in procession. As they appear and pass Jesus they turn toward him, Jesus bows, the apostle turns again, and proceeds through the double doors in an alcove on the right. As Peter approaches, Satan looks out of a window above, and tempts him. Five times the Devil appears; and when Peter passes, denying Christ, the cock flaps its wings and crows. When Judas appears, Satan comes down from his window, and follows Judas out in the procession, and then goes back up to his place to watch Judas, appearing on both sides. As the procession has passed, Judas and the three Marys disappear, and the doors are closed. The scene can be repeated seven times in an hour if necessary, and the natural motion of the clock produces it four times an hour, whereas the Strasburg procession is made but once a day, — at twelve o'clock. Below the piazza is the main dial, about thirteen inches in diameter. To its right is a figure of Time, with an hour-glass. Above this is a window, at which appear figures representing Youth, Manhood, and Old Age. To the left of the dial is a skeleton representing Death. When the hour hand approaches the first quarter, Time reverses his hour-glass and strikes one on a bell with his scythe, when another bell inside responds; then Childhood appears instantly. When the hour hand approaches the second quarter or half hour, there are heard the strokes of two bells. Then Youth appears, and the organ plays a hymn. After this, Time strikes two and reverses the hour-glass, when two bells respond inside. One minute after this a chime of bells is heard, when a folding door opens in the upper porch, and one at the right of the court, when the Saviour comes walking out. Then the apostles appear in procession. The clock also tells of the moon's changes, the tides, the seasons, days and day of the month and year, and the signs of the zodiac; and on top a soldier in armor is constantly on guard, walking back and forward. As the hours advance, Manhood, Old Age, and Death take part in the panorama. — *Reading (Penn.) Eagle.*

RAIN-WATER CISTERN.—A Charleston (S. C.) gentleman says of the cisterns in that city, —

"We are almost entirely dependent upon our cisterns for drinking-purposes, more than three-fourths of the population being supplied with water in that way. Great care is therefore taken in the construction of our reservoirs. They are built of brick laid in cement (no lime), and plastered inside and outside with the same. Within there is a double partition, from floor to ceiling, of brick laid in cement; and the space within this double wall (say six inches in width) is filled with fresh-water gravel. This wall is built in one of the corners of the cistern in a semicircle, and the pipe for the pump inserted in the enclosed space. The water is filtered through this wall, and is as pure as crystal. A little charcoal is sometimes thrown into the cistern. You will see, that, by allowing the roof and gutters to be thoroughly washed by the rain before letting water into the cistern, you get rid of all impurities; and, if the cistern is sufficiently large, only the fall and winter rains should be taken in. The impurities that float in the air during spring and summer are thus prevented from getting in. This is not always done, although it is desirable."

REFRIGERATING APPARATUS.—A description of a simple contrivance for the rapid cooling of liquids, invented by M. Toselli, is described in *Les Mondes*. It consists of a cylindrical cup, for holding any liquid, into which may be plunged an inner goblet, shaped like an inverted truncated cone, and having a lid which rests on the outer cup. Putting 150 grammes of nitrate of ammonia in the inner goblet, filling it with cold water, and stirring it so as to hasten the solution, the temperature of the outer liquid is soon reduced at least 12° C. (22° Fah.) The salt may be used for an indefinite period, by spreading it on a plate after each trial, and exposing it to the sun until it crystallizes anew. The inventor prepares a salt which will lower the temperature 28° C. (50° Fah.), in the warmest countries.

TALC AND ITS USES.—The hydrated silicate of magnesium known as talc occurs in foliated masses, has a soapy feeling, is fibrous, but not elastic. Large beds of this mineral are found in various sections of this country. It is quarried, broken into small pieces and ground by means of attrition mills, and bolted like flour. It is used in the manufacture of writing-paper, — fifty per cent of the mineral with fifty per cent of cotton making a fine paper. Being, like asbestos, fire-proof, it is used largely in the manufacture of roofing-paper.

POISONOUS WALL PAPERS.—Mr. Seebold, of Manchester, England, has analyzed not less than 60 or 70 kinds of paper for covering walls, and has found that 10 only were harmless, although the colors were not green, but pink, blue, red, brown, etc.

THE CHURCHES OF ENGLAND.—It is said that the Church of England has 15,000 religious edifices, including 30 cathedrals, 10,000 glebe houses, 31 episcopal palaces, and 1,000,000 acres of land, much of it in good condition for tillage.

DRAPERS AS BUILDING CONTRACTORS.—That the present is an age of development is evident, and the results are seen on every hand. For one thing, we have seen how the tailor has passed from his original trade through that of ecclesiastical furnisher to church decorator-in-general, dealing largely in works of iron, glass, wood, and stone, and even executing some of the most important castings in bronze that the time affords. And, again, one has seen how the dealer in paper-hangings has developed into professional decorator, charging fees, and taking a leading part in a demonstration against the architectural profession, his original employers. These we have seen, and more; but nothing probably is more strikingly novel than the fact now before us in the matter of the Congress Hall at present building at Croydon for the church meeting in that town next week. The work is proceeding in the usual way under the direction of an architect (Mr. Salter, of London); but, strange to relate, although tenders were offered by eminent builders, the contract has been taken by a fashionable West-end draper, who not only is building the hall, but has undertaken to supply the finishings and furnishings, besides the refreshments which will be required for the congress. If these details are correct, we can only remark that the character of the procedure is novel, and we were not surprised to observe the dilatory manner in which the men were working as we passed the building a day or two since. For the sake of the church people it is perhaps a good thing they have got the supervision of an architect. The hall, we understand, is costing about £4,000. — *Building News.*

THE DIFFERENCE BETWEEN A LEGAL AND A SENTIMENTAL NUISANCE. The English chancery judges have recently drawn the line between a legal nuisance and a sentimental grievance. A man in Brighton built a house so as unintentionally to deprive a neighbor of the use of his best bedroom. This room had a bay-window, and the indiscreet neighbor had built his house on such a plan that some of its rooms commanded a full view of this window at a distance of seventeen feet. Ladies could not use the room, and the hospitable owner of the dwelling could not entertain his friends. He brought a suit against the owner of the new mansion as the author of a public nuisance, and the case finally was laid before the chancery judges. But the bench decided that there was only one test of a legal nuisance: Was it injurious to the health of the complainant, or did it interfere materially with the passage of light and air? If not, it was only a sentimental nuisance, and damages could not be claimed.

MOISTENING HOT AIR IN ROOMS.—An effective contrivance has been devised, says the *New York Tribune*, for overcoming the dryness of the air in heated rooms. It is called an "air moistener," and is of additional service by arresting the dust that comes up through hot-air flues. The device consists of a series of pans set in a frame. Each pan has an outlet tube which rises from the bottom to a height less than that of the sides of the pan. Consequently water poured into the top pan overflows through the outlet tube, and fills the pan below it, and so on, through the series. At the top of the frame there is a chamber of just sufficient capacity to hold water enough to fill all the pans; this is filled first; then its outlet-valve is opened, the pans fill, and the contrivance is ready for operation. The frame is to be hooked on in front of hot-air registers or set on top of a stove or furnace. The quantity of water evaporated is large, and the apparatus needs to be filled at least once a day; but where it is inserted in cellar furnaces the filling can be made automatic by connection with the water-supply.

THE NIOBE ON MOUNT SIPYLUS.—The Niobe on Mount Sipylus, which is mentioned in the *Iliad*, is a rude effigy in the valley of the Hermus, near Magnesia. The figure is on the perpendicular face of a rocky cliff which has been hollowed out behind into a niche. A correspondent of the *Daily News*, who visited the valley last spring, and climbed up the heights to make a sketch of the Niobe, is confident that the figure is the result of human labor, and not carved by the hand of Nature. Some of the fingers can still be traced, but not a feature of the face can be distinguished. The effigy is in a sitting position, with the rude representation of a chair. The figure seems to have been well known to the old Greek writers, for a reference to it will be found in the "Antigone" of Sophocles: "I have heard that by a most mournful fate, perished on the promontory of Sipylus the Phrygian stranger, daughter of Tantalus. Her, like the clinging ivy, did the shoots of rock subdue; and her, dissolving away in showers, as the legends of mortals tell, the snow never leaves; and from her eyes, that ever flow with tears, she bedews the cliffs."

HOW A WATER-PIPE MAY BE CLEANS.—A correspondent of the *Forest and Stream* gives a novel method employed to cleanse a two-inch water-pipe which had become choked with mud. A string was passed through a hole punched in the tail of a small eel which was straightway put into the pipe. An occasional jerk reminded the eel that it was incumbent on him to progress, which he did, arriving at the lower end of the pipe with the string. A bunch of rags was tied to the string, and thus the pipe was cleansed.

UTILIZING RAILROAD SIGNS.—The *Railway World* says that the Southern and Eastern railroad companies, of France, have recently acted upon a suggestion of the Lyons Geographical Society, and added to the names of their stations statistics concerning the geographical position, elevation above the sea-level, population, industries, etc., of the towns wherein they are located. To further popularize geographical knowledge, some towns have also erected stone pillars, upon which are placed various meteorological instruments, maps of the town and environs, the bearings and distances of the capitals of Europe, the places of interest in the neighborhood, and other information.

A BAPTIST CHAPEL is to be built at Athens, Greece. Subscriptions are being made in Boston and New York in its behalf.