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VOL. IV.]

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WE should be glad to be excused from entering into the question of the Chicago quarrel, which seems to us neither stimulating nor edifying. It has every aspect of a political feud, and is only the latest phase of the overhauling undertaken last spring by Collector Smith. We gave at that time a pretty full summary of the charges made by the collector against the contractor for the stone-work and the Supervising Architect's office, as well as of the report of Assistant Secretary French of the Treasury Department, exonerating the Supervising Architect and his immediate subordinates. Having failed to make the desired impression in the Department, Mr. Smith has, it appears, brought his accusations before the courts. The result has been the indictment by the grand jury, as our readers have heard, of eight persons, Messrs. Mueller (the contractor for the stone-work of the Chicago Custom House), Mills (his clerk), Hill and Potter (the present Supervising Architect and his predecessor); Burling and Prussing (the late superintendents), Reed and Wheaton (foreman and inspector of stone work). The indictment, of which the text is given in the Chicago papers, charges these persons with having conspired at Chicago on the first of September, 1876, to defraud the Government of eight hundred and fifty thousand dollars, money paid to Mueller on account of his contract for stone, and of having, in pursuance of this conspiracy, committed many acts of specific fraud which are enumerated. The whole thing reads a good deal like a burlesque, especially when one comes to the final presentation of the jury, in which Messrs Mullett (the former Supervising Architect, under whom Mueller's contracts were awarded), Robinson (the Treasury Solicitor who then examined the contracts), Rankin and Montrose (the first superintendent and inspector of the building) are declared to be also guilty, whom, therefore, the jury would like to indict also, were they not bound by the statute of limitations, the discovery of their iniquities being made too late. It is not so strange after all this that some of the papers have got so much "mixed" over the matter, or have so far lent themselves to the pleasantry of it, as to declare soberly that the grand jury aspired to include ex-secretaries Bristow and Morrill in the same indictment, had not the statute of limitations again come in their way.

THE contracts did work badly, and gave an opportunity for the contractor, or his workmen, with or without a common understanding, to make the work extravagantly expensive. The checks provided — the appointment of government time-keepers — proved insufficient, in the case of the Chicago building at least, to control the work. The interest of all the workmen being enlisted (a rare conjuncture) in increasing the contractor's profits by delaying their work, he had nothing to do but to let things go their own way and take advantage of them, while he kept within his legal rights. If he was shrewd enough to so use his advantages as to get the better of the Government, he was, as Secretary French said in his report, entitled (legally) to this, and there was no help for it; as for the purity of his motives and the honor of his dealing, they are not within the jurisdiction of courts of law. The censor of the Department would seem to have been excited by the disastrous result of these contracts to make a headlong attack on whoever was concerned with them. It is quite likely that there was collusion, as Secretary French imagines, between the workmen and those who were

immediately over them; but it is dangerous to infer that the higher officers were participants in abuses which it is pretty evident that they were unable to prevent. Mr. Potter on his accession found the fifteen per cent contracts in force, and protested against them. He objected to the stone used, and opposed the continuation of the building in it. Mr. Hill in his turn protested against the contracts and succeeded in modifying all but two. One of these two was the Chicago contract, which was not abrogated, said Mr. Hill in one of his reports, because the work under it was nearly finished, and because so many alterations had been made under it by order of the Secretaries and in pursuance of the recommendations of commissions, that to have changed the system at that point would in his judgment have opened more leaks than it would have stopped.

THE rather farcical effect of the proceeding is heightened by the fact that at the time specified in the indictment Mr. Potter had been some weeks out of office, and by the statement which comes from Washington that, whereas the eight offenders are charged with conspiring to fraudulently pay Mueller \$850,000, the whole amount paid him since the date named has been less than \$500,000. These slips do not necessarily invalidate the essential part of the charges, but they seem to indicate haste and want of consideration in the preparation of the indictment, which, therefore, is certainly discredited by them, and which really looks much as if it were thrown out to see whom it could bring down, as a boy throws a stick into a tree full of apples. Without assuming to decide in advance of the courts, we say we can see no great likelihood that important evidence has been discovered which was not to be had last spring, or that upon what was then known an impartial court will reverse the decision of the Treasury Department. The whole trouble took its rise in the fifteen per cent contracts — contracts which were expected to be beneficial to the Government, but proved in the end to be in a different way disastrous to it. They were arranged by the then Supervising Architect, Mr. Mullett, an officer who thought more of the quality of his work than of its economy, but were executed by the Secretaries of the Treasury themselves, after due consideration, and after examination by the Solicitors of the Department. If, therefore, they were fraudulent as the indictment declares, the Secretaries must be considered as accomplices to the fraud, and the presentment should logically include them, as certain ambitious newspapers have made it.

GENERAL DI CESNOLA's brother and the successor of his investigating fervor, Major di Cesnola, has not found the way of the excavator so easy under the English protectorate of Cyprus as did his predecessor under Turkish rule. The newspapers have been publishing various accounts of his arrest by the English Commissioner, Colonel White, for excavating without authority. The arrest was under a Turkish law, which was promulgated in 1874, while General di Cesnola's researches were going on, though the General contrived not to be troubled by it, and which forbade anybody from excavating for antiquities without permission both of the authorities and of the proprietor of the excavated land, under penalty of fine or imprisonment, and the confiscation of his findings. A discharged or disaffected servant complained of the Major's digging, which had not the permission of the authorities, now English; and under a recent order of Sir Garnet Wolseley reaffirming the Turkish law, his house was entered and his museum put under seal. He was arrested, sent to the jail, and fined, and his collection declared confiscated. He submitted under protest and was immediately released, and the fine remitted. Major di Cesnola entered a variety of pleas, it appears, some to the point and some not, — that he was an American subject, and not answerable to a tribunal which was neither Turkish nor English; that there was no proof that his digging was not for agricultural purposes, or that his collection was acquired by digging; that the collection was acquired before the issue of Sir Garnet Wolseley's order; and that the proceedings were an outrage; — but the decree of confiscation was upheld, and he has appealed to the protection of the U. S. Consul at Beirut.

WHETHER the law has been enforced against Major di Cesnola in an offensive manner, will doubtless be made known through his appeal to our consul, which will furnish material

for a pretty consular quarrel. That the English in their protectorate should enforce the Turkish laws is, we believe, one of its conditions; and they will probably enforce them better than the Turks themselves. If in this process they are led into offence and trouble "through the overzeal of a subordinate agent," as Mr. Hepworth Dixon writes, this is no more than often happens. It is likely that they will wish to reserve the privilege of digging up treasures for themselves; and not at all likely that the amusing but rather high-handed system of browbeating, which General di Cesnola applied to the Turks with such success, will be found effective with them. The pity is, as this quarrel reminds us, that almost all the territory in the world which is rich in classic remains is in the hands of the Turks, whose policy is that of the dog in the manger. They have a religious contempt for archæology and despise the remains of antiquity, except as metal for the melting-pot, or stone for the lime-kiln or for building. But they see that Christians value these things, and the mere instinct of cupidity prompts them to be tenacious of the things that other people want. Their tenacity and gradually awakening cupidity are of a kind to bring the archæologists to despair; for while they in no wise interfere with their continual destruction of the things that are precious to him, they are an obstinate bar to his getting at them, either for possession or for study.

MR. WALSH, to whose superintendence of the St. Louis Custom House we have more than once alluded, has written to us to complain that in our paper of November 2, wherein we recited the justification of his career which was published in the *Cincinnati Gazette*, and noticed the strong letter of the Missouri judiciary exonerating him from the charges of collusion with contractors which had been brought against him, we nevertheless failed to credit him with having vindicated the quality of his superintendence, as he claimed to have done, and left him under an unjust suspicion of neglect or incompetence. We said at that time as much as we felt justified in saying by the evidence then at our disposal, which seemed to indicate that the work was visibly inferior to what it was intended to be, for which, of course, responsibility lay upon the superintendent. Since Mr. Walsh's letter was received, however, we have taken pains to get information from the Government, and our inquiries have shown that the evidence we had received was misleading. It does not appear that the piers concerning which the accusations were made were required by the specifications to be of solid cut stone, nor that any solid bonding of them was shown by the drawings; but it seems that the superintendent was empowered to have them constructed according to his judgment, and that they were adjudged to be sufficient and satisfactory by the Supervising Architect, after examination by himself and by the inspectors specially appointed for that purpose. So far as we can learn, then, Mr. Walsh has been altogether exonerated from the charges that were brought against his superintendence, and we are sorry to have been misled into implying that he had not.

WE had intended in an earlier number to call the attention of those of our readers who might overlook them, to two articles by Professor Norton in the *Atlantic Monthly* for November and December, entitled "Florence and St. Mary of the Flower." They give, in very interesting form, the chief events of the history of Florence in the fourteenth century, grouped about the story of the building of her cathedral. Their picture of the condition of Florence at that time is very lively, and their account of the building of the cathedral doubtless the best that is to be found. Since they are in great part the fruit of personal research, they contain material that has, we think, never before been brought together. Certainly they give information that is not accessible to Americans in any other form, and that well deserves the reading of whoever is interested in the history of architecture. So far as we know, they are the most important as well as the most interesting contribution to architectural history that has been made on this side of the ocean.

MR. WHISTLER's libel suit against Mr. Ruskin for his savage and contemptuous criticism of his pictures has been decided by an award of one farthing damages without costs. This is variously interpreted by commentators, according to their sympathies, as implying that the criticism was not much more than

the pictures were entitled to, or that Mr. Ruskin's criticism is innocuous. Whichever may have been the view of a British jury, it is clear that they did not consider Mr. Whistler injured, and that he can have got but small comfort out of his lawsuit. The *Philadelphia Telegraph* ingeniously suggests that the effective retaliation of Mr. Whistler would have been to manage to set Mr. Charles Reade upon Mr. Ruskin, by which he would not only have shown the world an edifying combat between two masters of personal abuse, but would probably have made Mr. Ruskin as uncomfortable as Mr. Ruskin had made him.

ARCHITECTS' RISKS.

THE subject of the responsibility of architects for the quality of the work done under their direction is one which could hardly be fully discussed in an hour or two of one session of an architectural convention. Nevertheless some of the points which were brought out in the discussions of the Institute were of much interest, and they raise a broad question which, while it is of much importance in determining an architect's relation to his client and to the public, is liable to come up at any moment in practice, and does come up not infrequently in isolated cases, but has never been formally decided as a point of general usage, probably because it has not as a general question been clearly enough and often enough presented. The question is, How far does an architect's responsibility extend? — that is, not to what point of pecuniary or personal liability, but to what assurance of the perfection of the work done under his direction.

It is not the practice of the courts in this country nor the habit of ordinary clients to push this responsibility to an extreme; yet there are many clients who assume that an architect's superintendence implies a warrant for complete excellence in every particular of the work, and there are architects who are ready, in theory at least, to accept a plenary accountability for every detail of work which they supervise, as much as if they had executed it themselves. That a client, who wishes to be sure that his work is well done, and who does not very well understand the conditions under which an architect works, should hold this view until he is otherwise instructed is not unnatural; but in an architect, as business is actually done, it seems to us a little Quixotic, and to require, before it can be safely carried out, a considerable modification of the conditions of ordinary practice.

Where an architect superintends work two theories of his function are possible: one is that he is not only the director, but the absolute and responsible controller of the work to its minutest details; the other, that he is its director and supervisor, but is responsible only for planning it rightly, for giving right and sufficient directions for carrying it out, and for using due care in seeing that the execution of it is satisfactory, without undertaking to warrant it in all particulars. Now either of these views is practicable and intelligible; but they require that the whole of an architect's business management shall be adjusted in harmony with whichever prevails. There doubtless is a certain convenience in having, in any important charge, one person made accountable by law or by agreement for every fault, whether his own or another's, and this person may, for convenience sake, be arbitrarily chosen. Of course an architect may assume such a liability, and the course of the discussion to which we have alluded seemed to indicate that some were disposed to assume it or to think that it ought to be imposed. It is worth while to consider what are the necessary conditions of this liability. Obviously if an architect is to be held liable for every fault of contractor or workman he must be perfectly autocratic and independent in his management of them. He must have the unimpeded selection of his builders, whose work must then be done with no communication from the client except through him. He ought not to be expected to give a contract to a man in whom he has not full confidence, but who is the lowest bidder in a competition; and he should have as minute control through his contractor as the contractor has through his foreman. His supervision must therefore be minute and incessant; one visit a day to a building will by no means do, nor will two. All this is necessary for his own protection if he is to assume such extreme liability, and as a consequence his pay for the amount of work which it demands from him ought to be proportionally increased. The one and a half per cent which ordinary practice allows for superintendence out of the established fee of five per cent is not nearly enough for this sort of supervision; and if it were the actual habit to exact such liability, the architect would have to insist on an increase

of fees, or else simply to run for luck. As a fact, the actual habit is to work on the other theory. The architect assures himself by due diligence that the general character of the work and the execution of the important parts, and of such subordinate parts as he is able by reasonable watchfulness to scrutinize, are satisfactory. He infers that what he has not been able to see is done with like faithfulness, and that he has been able to see enough to make him fairly sure of the rest. This is what he really means when he gives his certificate, and this is as much as the ordinary client is willing to pay for or finds necessary.

The question may be asked, and was asked in the discussion, Who, then, is to guarantee to the owner perfect work? The natural answer is, The man who does the work, — when an absolute guaranty is required. The man who has the power to absolutely control the quality of the work in every particular, and who also has the temptation, if any one has, and the opportunity, to slight or deteriorate it for his own profit, is the man who may in reason be enforced to provide a guaranty for its excellence; the client is foolish, and the architect negligent or dishonorable, who is willing to intrust it to any builder from whom such a guaranty is not to be expected. The architect may be called upon to guaranty his own work; to warrant, that is, the sufficiency and excellence of his design, drawings, and directions, and due diligence in superintendence; what is due diligence, that is, in legal phrase, "ordinary diligence," being a question to be determined by the standard accepted in the ordinary practice of good architects. Though it is often tacitly assumed that ordinary diligence, or due diligence, for which the ordinary fee is paid, will insure work perfect in every detail, this is too much to expect of it. It will secure a good average standard of execution; but to insure that there shall be no fault in any part requires extraordinary diligence, for which an extraordinary fee should be paid; and even that will not always do it, under pressure of the contract system, under which most of our work is done. Builders know this, if their clients do not, and the careful contractor who becomes responsible for the work of his sub-contractors reserves to himself, not a premium of one and a half per cent, the architect's fee for superintendence, but five or ten per cent, to repay him for his necessary trouble and risk.

The truth is that such a guaranty, from any one but the person who actually does the work, is of the nature, not of a professional service or of the duty of an agent, which the architect is, but of an insurance. The architect who offers it simply assumes to insure his client against loss, — takes the risk of the contractor's eluding him at some point, which he may very possibly succeed in doing, in spite of even more than ordinary watchfulness; that is, he takes an insurance risk in addition to assuming the care which he is professionally bound to take of the work, and the liability for his own share of it. It is open to the architect to take this risk if he chooses, but as it is solely a business risk it should be paid for by an insurance premium. If the owner wants such an insurance he may as well get it from a company, or from an individual whose business it is to take risks, as from the architect, who, after he has done his professional work with due care, since he is commonly not a capitalist, had better refrain from such speculative ventures. The view, in fact, which includes such an insurance is a purely commercial view, and not a professional view; and it is best for architectural practice in the long run, as well as for other professional work, to eliminate the commercial element from it as much as is practicable. For an architect to guarantee the work of a contractor because he directs it is scarcely more reasonable than for a physician to guarantee a cure or a lawyer a successful suit, since in each case there is an element in the result that is not under absolute control of the practitioner. The architect, it is true, has an advantage over the lawyer or physician, and excepting under unfavorable conditions can assure that the general standard of his client's work shall be satisfactory and its essential character good. If he does not accomplish this he may be charged with negligence or incompetence, and punished for malpractice; but this is a very different thing from giving a guaranty, which is no guaranty at all unless it is absolute and covers everything.

As for the builder, the effect upon him of knowing that his liability is assumed by some one else can hardly be other than demoralizing. It is one of the worst evils of the contract system to which we are committed that it diverts his efforts from doing his work as well as he can to merely doing in the easiest way what is absolutely exacted of him. If it became the rule

of practice that the architect should be liable for the builder's work, we may be sure that the responsibility would slide from him, the builder's, shoulders altogether, and the architect, unless in exceptional cases, be obliged either to give himself up wholly to watching his contractors, to the sacrifice of his professional attitude and the injury of his proper work, or else do a speculative business in building-risks.

If attention had not been specially called to this view of the question, we might have felt that to argue at length against it was something like beating the air, since the actual practice is unquestionably in favor of leaving the ultimate responsibility where it naturally belongs, holding each man as the first security for his own work; but there is certainly a tendency among many clients to press the doctrine of the plenary liability of architects; and there are architects who, apparently without considering duly where it leads, are tempted to receive it with an encouragement which is more chivalrous than judicious.

THE OPEN FIRE-PLACE. IV.

BRAZIERS AND PORTABLE FIRES.

In milder climates we find the portable brazier without any provision whatever for the outlet of the smoke. This system of heating was generally employed by the Greeks and Romans. It is still used in Spain, Italy, Algeria and other warm countries.

The braziers of the Greeks and Romans formed elegant pieces of furniture, often beautifully sculptured, as in Figs. 7 and 8. The Spanish portable brazier, Fig. 9, in which charcoal is burned, is rolled from room to room, warming each in succession. By this system the entire heat of the fuel is realized, but, on the other hand, the products of combustion, always disagreeable to the occupants, and highly injurious to the paintings and furniture, are extremely dangerous for the health.

The combustion of one kilogram of coal, for instance, converts into carbonic acid all the oxygen contained in nine cubic meters (or yards) of air. This, according to Peclet, renders twenty-seven cubic kilograms of air unfit to breathe, so that the air of our room $20 \times 20 \times 10$ feet, or of about one hundred and ten cubic meters capacity, deducting furniture, would be rendered irrespirable and would suffocate the persons attempting to breathe it, by the combustion of about four kilograms of coal. It is true that the heat generated by this quantity of fuel burned in the middle of a closed chamber, without chimney or other opening, would soon be so excessive as to require the opening of the windows. The four kilogram would raise the temperature of our room to $\frac{4 \times 7000}{110 \text{ m. c.} \times 1.3 \times 0.2377} = 823$ degrees centigrade, or about 1500 degrees Fahrenheit, which would be nearly hot enough to melt brass. (In the equation, 7000 represents the heating power of coal in units; 1.3 the weight of 1 m. c. of air at 0°C. ; and 0.2377 the specific heat of air.)

The real danger results from the production of carbonic oxide, which gives much less heat. It is calculated that a hundredth part of this gas in the air is sufficient to kill warm blooded animals. Hence the danger of using charcoal for fuel as in the Spanish brazier, the products of combustion being largely carbonic oxide. A remarkable instance of death by charcoal fumes is given by the suicide of the son of the celebrated chemist Berthollet. He left us a vivid account of his own destruction by asphyxia in an air-tight chamber. Locking the door of the room and closing up all the cracks which might admit fresh air, he prepared a charcoal fire on a brazier, seated himself at a table with writing materials and a seconds marking-watch, marked the precise hour and then lighted the charcoal on the brazier before him. With all the method and precision of a scientific experiment, he recorded the various sensations he experienced, detailing the approach and rapid progress of delirium, and as suffocation began the language became more and more confused, the writing larger and more illegible, until the writer fell dead upon the floor.

In colder climates, where greater heating power is necessary, the brazier is of course insufficient. In the frigid zones, however, where wood and coal cannot be obtained, the brazier reappears in the form of the smoky lamp of the Laplander and Esquimaux. Here economy approaches its maximum, the heating, lighting, and ventilation being

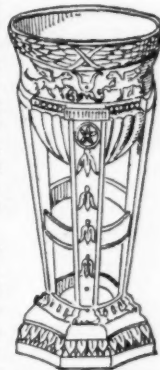


Fig. 7. From Joly.



Fig. 8. From Joly.



Fig. 9.

effected by one and the same inexpensive agent, namely, putrid oil, burned under a hole in the roof of the hut. "The Greenlanders," says Tomlinson, "builds a larger hut and contrives it better, but it is often occupied by half a dozen families, each having a lamp for warmth and cooking, and the effect of this arrangement, according to the remark of a traveller, 'is to create such a smell that it strikes one not accustomed to it to the very heart.' The effect of this great economy, however, is shown in the bleared eyes and the stunted growth of the natives."

Finally, the last degree of economy in warming, if we can call that economy which saves fuel at the expense of health, is reached by the lace makers of Normandy, who work warmed by the natural fires burning in the bodies of their domestic animals. They rent the close sheds of the farmers who have cows in winter quarters. "The cows are tethered in a row on one side of the shed, and the lace makers sit cross-legged on the ground on the other side with their feet buried in straw. The cattle being out in the fields by day, the poor women work all night for the sake of the steaming warmth arising from the animals."¹

We wonder at the backwardness of the civilized Greek and Roman in the use of their tripods, smile at the Spaniard with his barbarous rolling brazier, pity the Esquimaux with his feeble and smoky lamp, and sympathize with the wretched lace makers of Normandy in their close and sickly atmosphere, yet all the time forget that we ourselves allow the air of our rooms to be impoverished in the very same manner, and often to an even greater extent, by the noxious vapors pouring from our unventilated gas burners.

ORIGIN OF THE CHIMNEY.

The idea of building the fire-place against the side wall probably originated in England in the eleventh century, at the time of the

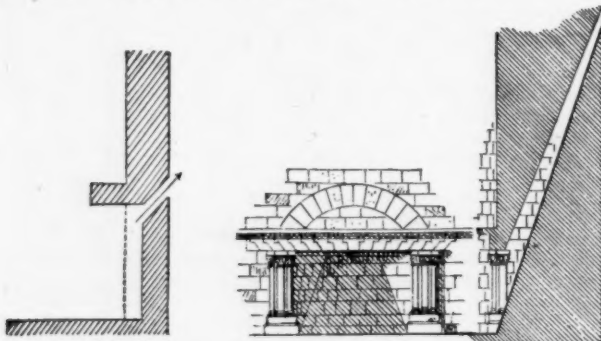


Fig. 10. Origin of the Chimney. From La-barthe.

Figs. 11 and 12. Fire-Place in Conisborough Castle. From Tomlinson.

Norman Conquest. Previously the chimney consisted merely of a hole in the roof, with a small wooden tower above to carry up the smoke. At the time of the Conquest, fortresses were constructed and the roofs used for defence, so that the central opening for smoke was rendered impossible. The fire-place was removed to an outside wall and an opening made in this wall above the fire for the passage of the smoke, as in Fig. 10. The oblique opening in the wall gave place soon after the Conquest to the ordinary chimney-flue. Figs. 11 and 12 represent the fire-place and flue in the great guard room of Conisborough Castle, erected in or near the Anglo-Saxon period.

This form of flue naturally led to the ordinary chimney as it is now constructed. The fire-places and flues were at first very large. In France a royal edict, as late as 1712 and 1723 fixed the size of the flue at three feet wide and deep enough to admit the chimney-sweep. In this country we have seen old-fashioned fire-places eight feet long and three feet deep.

¹ Tomlinson, *Warming and Ventilation*.

These caused such a draught that screens were necessary in the room to protect the inmates from powerful currents of cold air, but, although the waste of heat was enormous, on account of the cooling effect of these strong draughts of outside air, it was nevertheless much less in proportion to the fuel burned than is the case with the smaller



Fig. 14. Fire-place of the Fifteenth Century. From Viollet-le-Duc.

modern fire-place. Provided usually with a large hood projecting boldly into the room, and placed at a considerable height, sometimes six or eight feet, above the hearth, Figs. 13 and 14, they radiated the heat generously into the room, and, although they did not pretend,

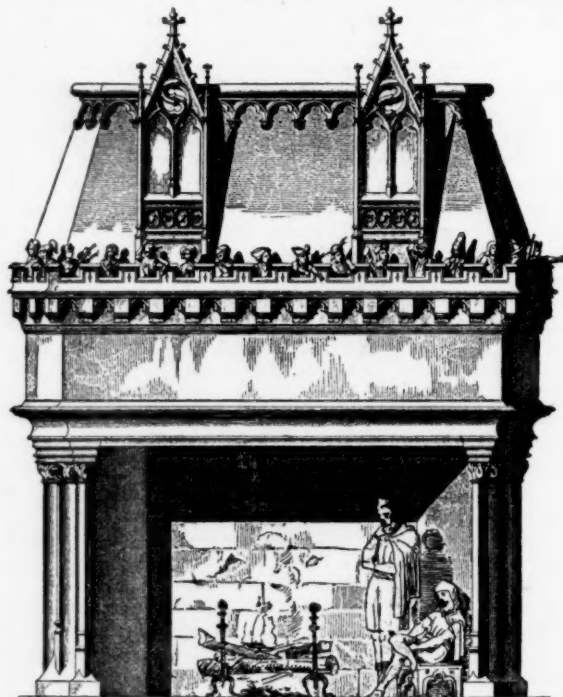
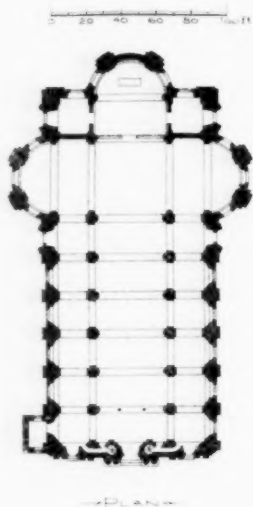


Fig. 15. Fire-place in the House of Jacques Coeur, Bourges. From Gailhabaud.

any more than do our modern fire-places, to heat the air of the apartment, they at least sufficed to warm amply the persons grouped around them or seated on the hospitable benches built upon the hearth itself.

As for smoke, it is undeniable that where but a small fire is required, as is usual in our smaller modern rooms, and the fire-place and flues are large, the hot air current is greatly cooled by the cold air entering above the fire, and the rapidity of the draught is proportionally diminished. It is of course thereby rendered less capable of resisting any impediments to its passage which may be offered in the form of defective construction of the flue or imperfect ventilation of the apartment. But where the flue was perfect, and where sufficient air was brought into the room to supply the place of that drawn up the chimney, and where the hood projected well over the fire, a smoky chimney was found to be a rare occurrence, even with the largest fire-places and with the smallest fires.



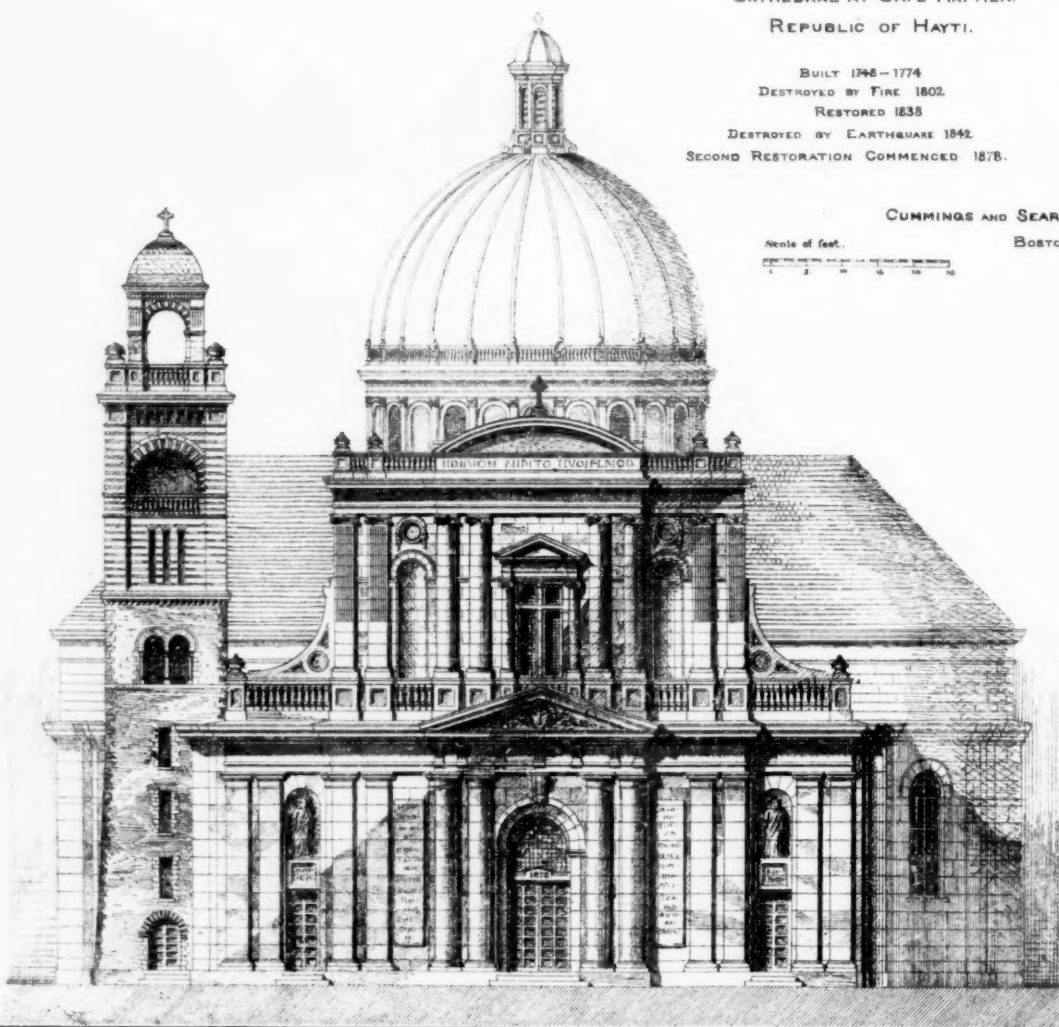
DESIGN FOR THE REBUILDING OF THE
CATHEDRAL AT CAPE HAYTIEN.
REPUBLIC OF HAYTI.

BUILT 1748-1774
DESTROYED BY FIRE 1802.
RESTORED 1835
DESTROYED BY EARTHQUAKE 1842.
SECOND RESTORATION COMMENCED 1873.

CUMMINGS AND SEARS, ARCHTS.

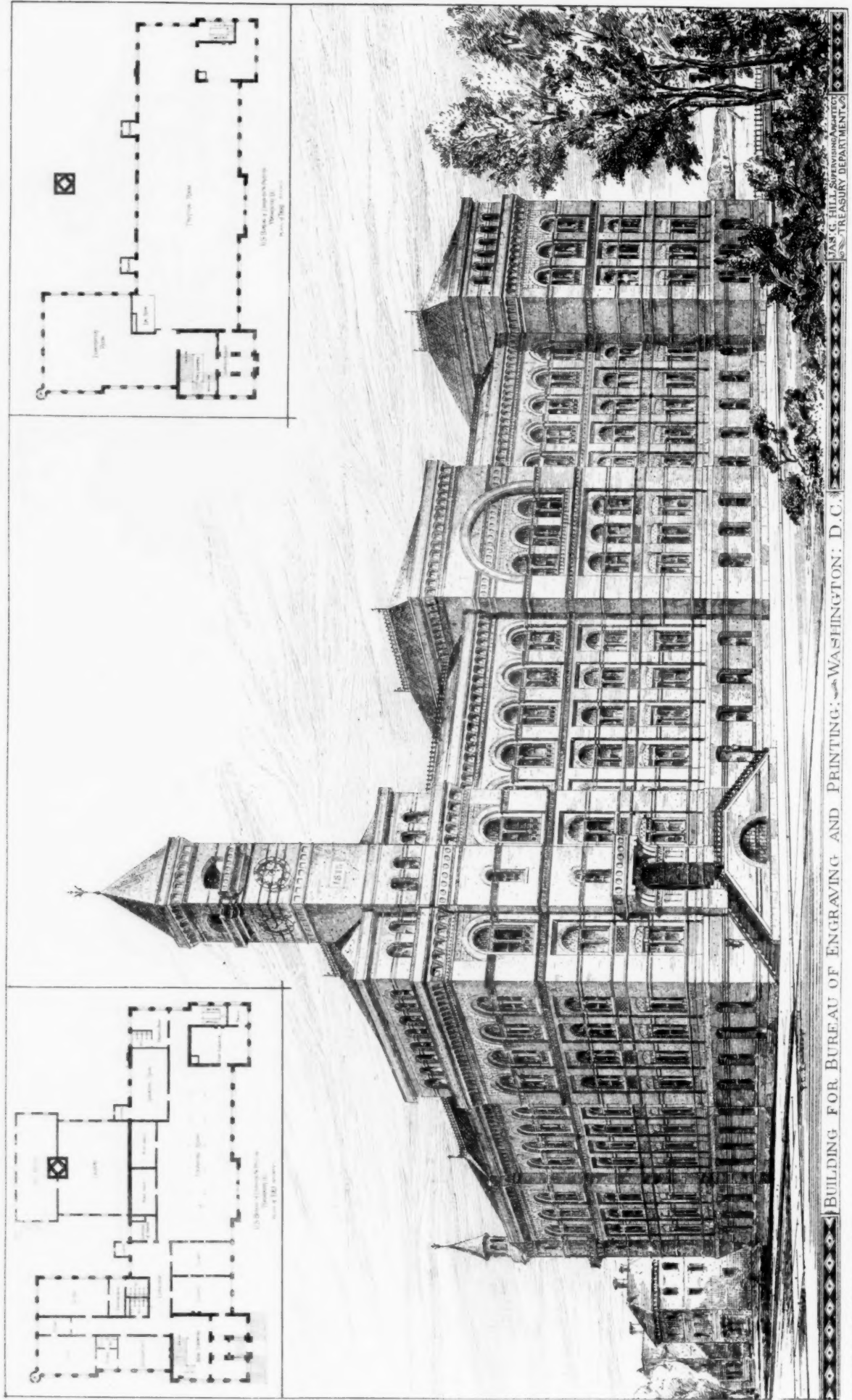
Scale of feet.

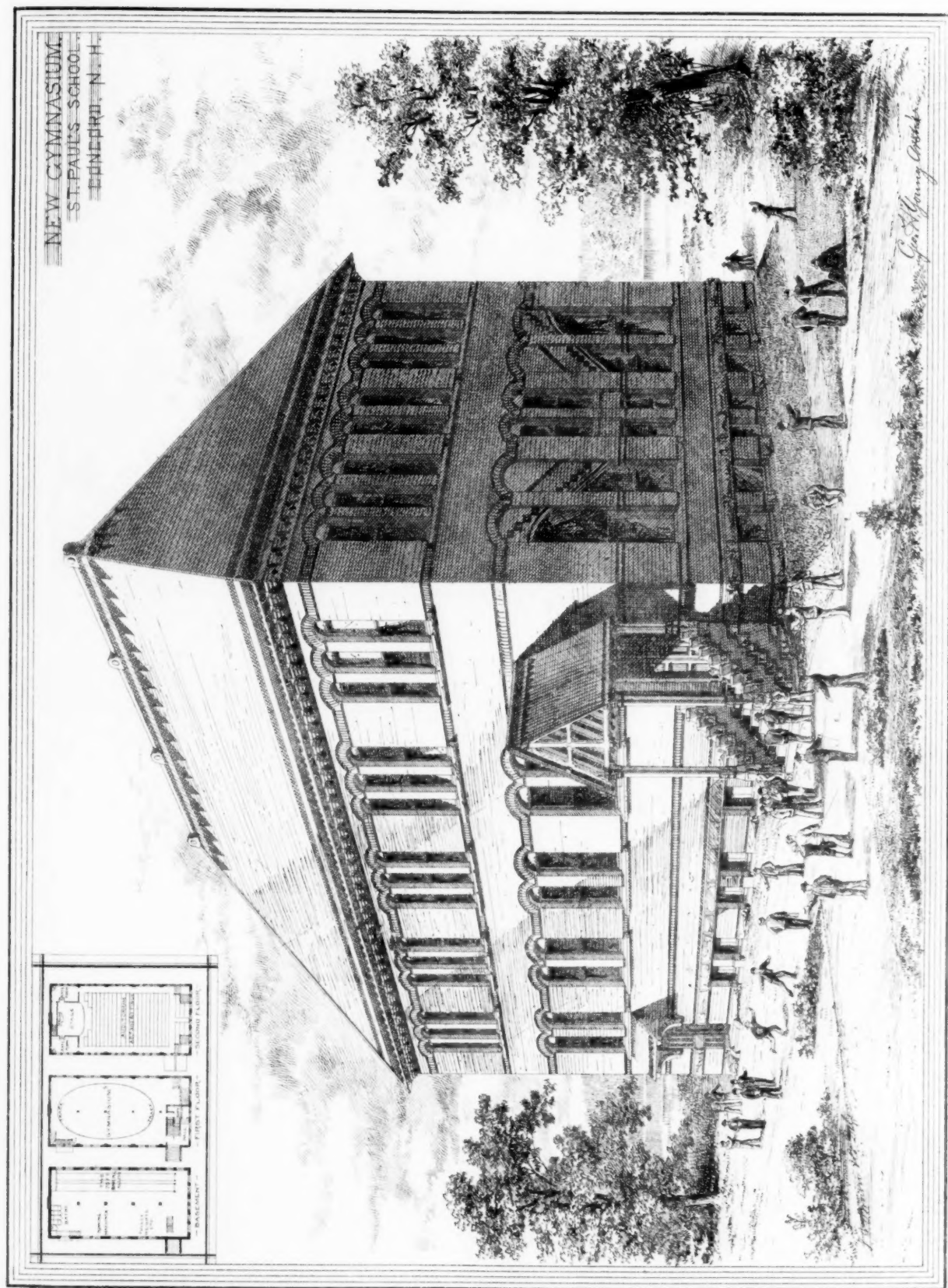
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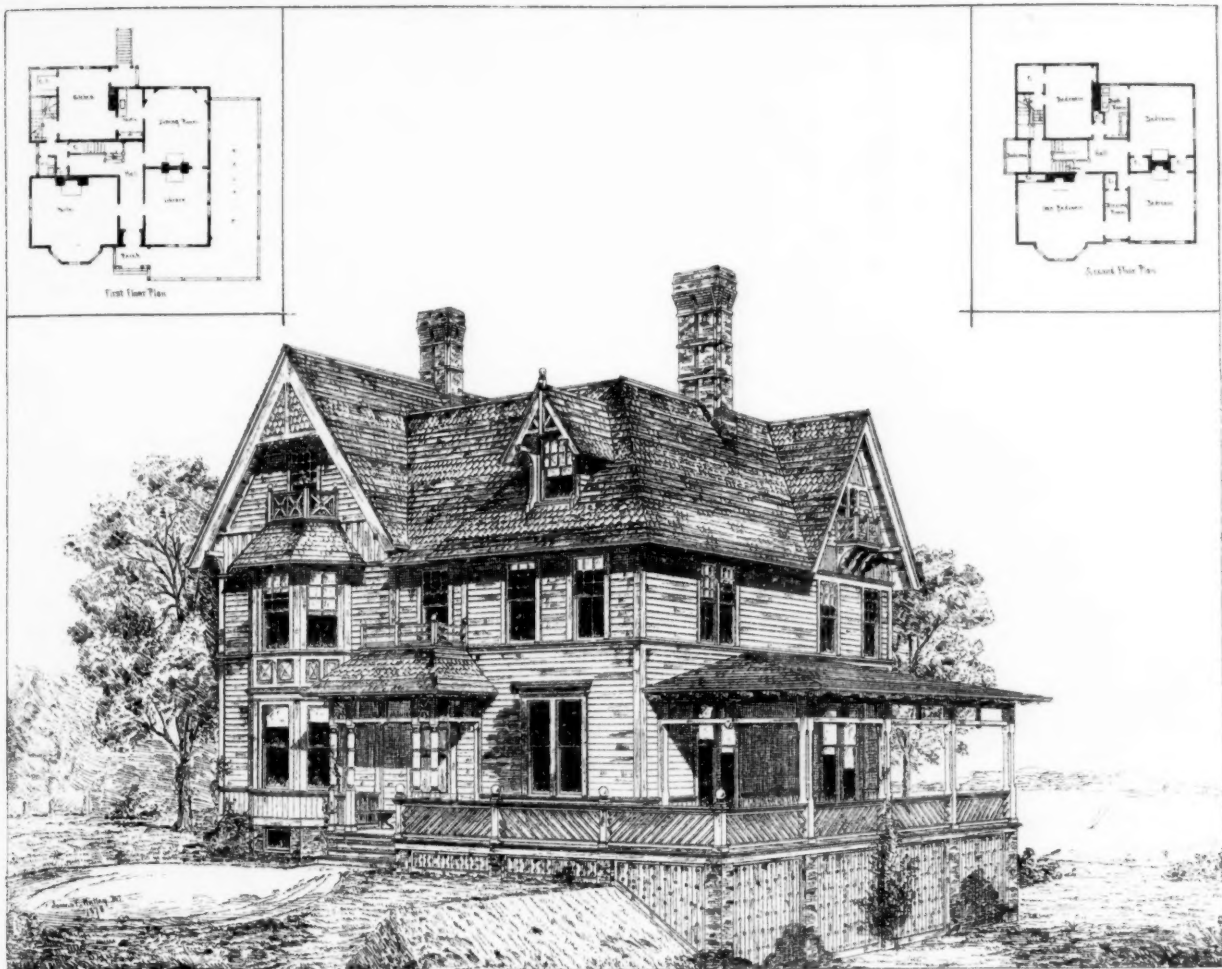


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J. Cleveland Coffey, Archt.
N.Y.

It is the custom when one of these ample fire-places, built after the old-fashioned style, is found to smoke, to lay the blame to the size of the opening and flue, although nine times out of ten the real fault will be found to be in an insufficient ventilation of the apartment, or in a careless or irregular construction of the flue. Hebrard, in his "Caminologie," wrote in 1756 as follows: "It is surprising that we should allow these old chimneys to be changed in order to follow the fashion of the day, without taking the pains to examine whether the utility is as great as the novelty. It appears that it is not. It has been observed, on the contrary, that of the few old chimneys which have escaped remodelling, there is scarcely one which smokes. Old men testify to the same effect in regard to those which existed in their time, while we have no hesitation in saying of the majority of our new chimneys that they do smoke."

The cause of this change was the suppression of the hood which had been built and recommended as of the utmost importance by Alberti, Philibert Delorme, and others. The hood was dropped partly because it was thought to interfere with the decoration of the apartment and partly on account of the desire for novelty. Figs. 15 and 16. Unfortunately this modification involved a second which had a

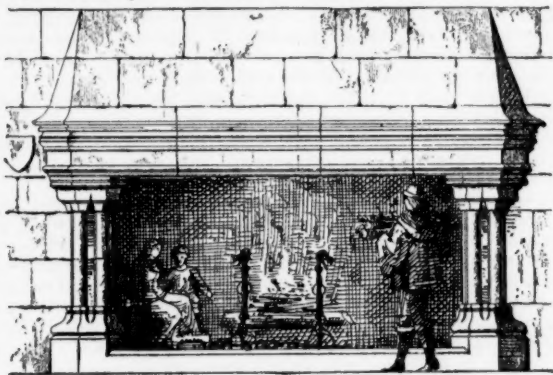


Fig. 16. From "Antient Domestic Architecture."

still more injurious effect upon the heating power of the fire. The smoke being no longer properly conducted to the flue, would under adverse circumstances enter the room, and the device of lowering the mantel was adopted to obviate the difficulty. This was done at first by adding a simple band of leather or of some other material below the mantel shelf, then by movable registers or blowers of metal, and finally by lowering the mantel and shelf itself, which modification, in the course of the eighteenth century brought the fire-place down to the form commonly met with in our day; a form which, objects Labarthe, "utilizes neither the radiant nor the transmitted heat." Still another reason was given for the lowering of the mantel. It was urged by Serlio and Savot that this new disposition had only been introduced to protect the eyes from the heat of the fire. It was, however, argued with all apparent reason, by Hebrard, that the object sought could not in the least degree be obtained by this means, since it would be necessary for the purpose to give up chairs and warm one's self standing up.

I shall endeavor to show in the next chapter in what way these large, old-fashioned chimneys may be constructed, either with or without the hood, so as to render the draught, in all cases, both ample and unailing.

THE ILLUSTRATIONS.

THE CATHEDRAL AT CAPE HAYTIEN, ST. DOMINGO, AS RESTORED BY MESSRS. CUMMINGS AND SEARS, ARCHITECTS, BOSTON.

THE Cathedral of Cape Haytien, in the Island of St. Domingo, has had a checkered history. The first church, built some time prior to 1680, a rude structure of palmetto logs with a thatched roof, was burned by the Spaniards some ten years later; but so rapid is the decay of green timber in that moist climate that it was said to be already half ruined. In the space of thirty years three more churches of similar materials were built and destroyed. At length, in 1715, the corner stone of a more substantial structure was laid, the walls being of masonry. It was consecrated three years later, but after twenty years it was threatening to fall, and was abandoned for a temporary shed built in the public square. From time to time irregular and languid operations were carried on towards its restoration; but it was found impracticable, and in 1748 a new church was commenced, still on the old site. This also had its vicissitudes, being unable to stand up till it could be finished. It was, however, finally consecrated in 1774, with great pomp. Its front was, judging from descriptions and drawings still in existence, substantially that of which a drawing is here given; but there was no dome, and the ceiling was apparently finished with an open roof. This church stood until 1802, when, on the landing of the French expeditionary army, sent out by Napoleon to crush the formidable insurrection, the church, with most of the city of Cape Haytien, was burned by order of Toussaint l'Ouverture. It was restored once more in 1838, only to be

shaken into ruin by the great earthquake of May 7, 1842, which destroyed the entire city. Work has been carried on at intervals by various successive governments with a view to its restoration, but no systematic attempt has been made to put it in a condition to occupy, until the administration of President Canal came into power in 1876, when a commission was appointed "for the reedification and completion of the Cathedral of the Cape." Messrs. Cummings and Sears, of Boston, were instructed to present plans and estimates for the completion of the church; and after sending out an experienced mason, who made a thorough survey of the condition of the walls and piers, with measurements of every part, tenders were invited for the work. That of Mr. H. D. Clement was accepted; but the first contract included only that portion of the church in front of the dome, a temporary but strong wooden framing being erected across the rear end of the nave and side aisles. Mr. Clement went out himself with a strong force of carpenters, Mr. Farquhar with a gang of slaters, Messrs. Michael and Sunter as stone-masons, and Mr. J. W. Oldham as general superintendent or clerk-of-the-works. Mr. Oldham arrived in Cape Haytien on the 23d of December, and left on the 23d of May. Between those dates two of the great piers of the nave, six feet square and twenty-five feet high, were taken down and rebuilt, the wall above being shored; a low clerestory wall above the nave cornice was split and carried up four feet in height, the nave roof, one hundred and fifty feet long and fifty wide, put on and slated, the aisles roofed with hard pine rafters filled in with plaster blocks and covered with Portland cement for a promenade. The pavement of nave and aisles was laid in freestone blocks, the nave roof finished with a barrel vault deeply panelled, the aisle roofs with flat panelled ceilings, all in white pine. The old front of the church still existed as high as the cornice of the first order. Mr. Clement's contract not providing for the completion of this frontispiece, a wall of brick-work, two feet thick, was carried up to fill the opening of the gable, and to serve as a backing for the stone-work when that shall be added. The doors and windows have been sent out since the return of the workmen. Besides all this a great amount of masonry work was done in cleaning and repairing the stone-work of the front and side walls, much of which was broken by the earthquake. These walls, by the way, were faced with a beautifully white and fine sandstone brought from France when the church was first built, and much resembling the Caen stone with which we are familiar.

The work here mentioned exhausted the means at the disposal of the commission. It is hoped, however, that additional appropriations will be made by the legislature this winter by which the work may be completed. The bell-tower shown in the elevation here given formed no part of the original design, but was one of two flanking towers built at different times and carried to different heights. The architects recommended the removal of both, as detracting from the dignity and consistency of the front. It was, however, determined to retain one of them, and to complete it by the addition of a belfry stage as here shown. The dome is intended to be built of iron, the ever-present danger of earthquakes making it imprudent to carry any work of masonry so high above ground.

The city of Cape Haytien, of which this church is now the only important building, has had a history not less eventful than that of its cathedral. Founded by French colonists in 1670, a hundred years later it was a beautiful capital with a population of some twenty thousand people, with its arsenal, its public baths, its fountains, its theatre, its palace of justice, its hospital, — with a chamber of agriculture, a "Société Royale des Sciences et Arts," and a flourishing trade with France, England, and the American colonies. It was called familiarly "the little Paris." But domestic revolt and foreign invasion sapped the sources of its prosperity; and what these could not do, the convulsions of nature accomplished with extraordinary completeness. During the insurrection of the slaves in 1793, it was given up to the plunder of the troops, and on the landing of the French expeditionary army in 1802, was burned by the native general. Still, as late as 1827, Mr. Charles MacKenzie, the English Consul General, says, "the city is large, the streets spacious and well paved, and the houses chiefly of stone, with handsome squares, large markets, and a copious supply of water from fountains. Upon the whole the city is remarkably beautiful." But in 1842 the island was visited by an earthquake which destroyed the town, and no traces of its former beauty are now to be seen. The extraordinary vigor and luxuriance of vegetation have covered the ruins with verdure; the wild fig-tree, with a trunk twelve to sixteen inches in diameter, is frequently seen growing from the top of a high wall, its strong roots having struck down on either side into the earth. The streets are still encumbered with the ruins of stone buildings, like the streets of Boston after the great fire. The workmen, in clearing away the masses of debris from under the walls of the cathedral, unearthed portions of skeletons, doubtless those of persons who had taken refuge in and around the church during the earthquake and were buried by the falling walls.

HOUSE, AT SNEEDEN'S LANDING, N. Y. — MR. J. C. CADY, ARCHITECT, NEW YORK.

This house is situated near the termination of the Palisades, which are indicated in the background, near a spot which abounds in historic association, Tappan of Revolutionary fame. The house is built of the cream-colored stone which forms a part of the singular formation of the lower part of the Palisades.

BUREAU OF ENGRAVING AND PRINTING, WASHINGTON, D. C., MR. J. G. HILL, SUPERVISING ARCHITECT OF THE TREASURY DEPARTMENT.

This building is to be at the corner of Fourteenth and B Streets and will have a frontage of 139 feet on the first and 234 feet on the second of these streets. It is to be built of common brick, with jambs and other finish of moulded brick. The brickwork will be of two colors, red and brown. The floors and roof will be fire-proof. The arrangement of the rooms is indicated on the plans. The estimated cost is \$300,000. At present the basement walls are building.

GYMNASIUM, FOR ST. PAUL'S SCHOOL, CONCORD, N. H. MR. G. H. YOUNG, ARCHITECT, BOSTON.

THE LEGAL RESPONSIBILITIES OF ARCHITECTS. I.

[A paper read at the twelfth Convention of the American Institute of Architects, by Mr. T. M. Clark, Fellow.]

THERE is a great deal of confusion in the public mind as to the limitations of the responsibility of those who are employed to direct construction, and it is not impossible that architects themselves do something to increase the confusion, not so much from ignorance of what the law requires of them as from the readiness with which some, in their eagerness for employment, bind themselves to terms of excessive harshness, and perhaps also the ambition of some to claim an authority over clients and contractors more absolute than is always necessary or desirable.

There is a popular idea that the architect is somehow responsible, not only for his own work, but for that of all the contractors for a building. He is supposed to be in some way capable of watching at once all the workmen employed in the structure through the whole of their working hours, so that the mechanic who has been astute enough to conceal his bad mortar and rotten timber during the periodical visits of superintendence, passes for having only yielded to the impulses of human nature, while the architect, who failed to find him out, is denounced as incompetent.

Especially is the final certificate supposed to confer a sort of plenary absolution on the contractor who has managed to obtain it, and who thinks himself entitled to keep the profits, whether honest or dishonest, which he may have been able to secure by means of it, on the pretence that the architect's approval supersedes for him the faithful execution of his contract.

But if builders find it convenient to claim such preposterous authority for the acts of the architect, which are profitable to them, the public, on the other hand, seem to find difficulty in holding their agents, in matters of construction, to even moderate accountability, and their attempts to do so result in some cases in gross injustice to their professional adviser, and in others in such extraordinary contracts with architects as that which the Indiana State House commissioners have succeeded in getting one of them to accept.

It would be much to the advantage of the profession and the public if their mutual duties and responsibilities were better understood, and a reference to cases in which the law on such subjects has been established may be interesting, even if very incomplete.

The general rule of law in all cases of employment of professional advice is that the expert shall be bound to use in discharging his trust an ordinary amount of care and diligence, together with an average degree of skill and knowledge of his business. The highest degree of skill is not expected of him; but neither can he satisfy justice, as has been claimed, with such an amount of intelligence as may have been shown by great masters under unfavorable circumstances; what is required of him is a continued exercise of the best skill which, with ordinary talents and opportunities, he could be expected to attain.

Perhaps in practice want of care and diligence is more frequently imputed to architects than want of skill, and courts are stricter in interpreting the law in that respect. In an English case an architect, sued for negligence, replied that he found his instructions were disregarded by the builder with the approval of the owner, and thinking it useless to waste his time in frequent visits, he had only been to see the work about once a month afterwards. That seems not unnatural, at least; but the court did not find it justifiable, and judgment was given against him.

In general, it may be remarked that juries' notion of faithful supervision differs materially from what architects are apt to understand by "superintendence," and he who has a difficult or dangerous piece of construction or alteration to carry out, will consult his own interest, in view of the risk of accident, by being on the ground in person as much as possible, so that want of diligence at least may not be imputed to him.

As to want of due care and skill, there seems to be some variation in the practice of different countries.

The French Code says, section 1792: "If the edifice built at an agreed price perish in whole or in part by faults in its construction, even by defect in its foundation, the architect and the builder are jointly responsible therefor for ten years."

This is the law of France, and, in substance, of England and the United States. The French jurists make some further distinctions. It has been decided that the architect is solely responsible for damage or failure in a building which has been strictly carried out in ac-

cordance with his plans and under his directions, if the workmanship and materials were not defective; and this decision seems to overrule a claim which has been made, that the builder should be supposed to know as much of his own business as the architect, and unless he protested against a faulty design he should share in the responsibility for it.

Another decision extends the responsibility of the architect to all cases of damage which may result from a violation or ignorance on his part of the rules of the art which he professes, or of the laws which it is incumbent on him to know, such as those relating to party-walls, or ancient lights, or the police or municipal regulations of the locality in which he builds; and it has been repeatedly held that the architect could not free himself from this responsibility, even by alleging the consent or the positive orders of the owner.

As to the accountability of the architect for the bad quality of the work done under his supervision, there is no obscurity whatever. The law says: "If the architect is charged with the surveillance of the work of the contractor, he can be held for all the consequences of any negligence in his performance of this duty; so, whether it may be that the plan has not been faithfully followed, and the building is consequently defective, or the contractor has furnished bad materials or workmanship, those who suffer inconvenience from any of these deficiencies have a cause of action against the architect, subject to the limitation of the Code, which says (act 2270) that "after ten years architects and contractors are discharged from the guarantee of work furnished or directed by them in accordance with an agreement as to price," and, of course, provided they can show that the damage or inconvenience could have been prevented by the exercise of due skill and care on the architect's part.

This seems a hard doctrine, considering that the architect has no interest in permitting the use of bad materials, and can wholly prevent it only by extreme watchfulness, if at all, while the builder controls every detail of material and workmanship, and if those furnished are defective, it must be with his knowledge and collusion, and with intent to defraud the owner; and if he succeeds in his fraud the whole profit is his; but there is no doubt that it is the law in France and Great Britain, as well as this country, and a man who suffers from defective work in his house or other building, which might have been detected or prevented by what the court may consider reasonable care on the part of the architect, can recover damages from him. In the English and American practice it would seem that the architect is compelled to make good the whole loss if the owner chooses to require it, while the French courts seem to exercise a discretion in apportioning the indemnity between those to whose fault the loss is due. Thus, in a case where a bridge was washed away by a flood, the municipality sued the engineer to compel him to repair the loss; but the court decided that as, although the flood was an unusual occurrence, answering in part to what our books term an "act of God," still, it was within the reasonable skill that the law expected of the engineer, to provide against such occurrences, and his share of the responsibility was estimated at one fourth, and he was condemned to pay one fourth the damage.

In another case, a town built a hall, and six years after its completion the stone began to flake off. The municipality sued the architect and builder jointly. It was in evidence that some of the stones were placed off their natural bed; and although it appeared that it was difficult to distinguish the beds in that particular stone, the court held that the architect ought to have been able to do so, and that it was one of the rules of his art not to allow such misplacing, and he was obliged to pay one half the damages claimed.

One of the French commentators asserts the existence of an important rule, that if the superintending architect has given the proper direction for the execution of the work, and has, before the work is actually in place, pointed out defects in the materials on hand, he escapes liability. If he has not he is liable, but not as a principal. The principal is the direct cause of the damage, that is, the contractor or workman who by fraud or negligence has badly executed the work which was confided to him. He is the immediate cause of the damage, and should furnish the reparation. The negligence of the architect is only secondary and accessory, and he should only be held as a subsidiary, as a bondman in case of insolvency of his principal.

There seems to be some comfort in this; but without referring to the decisions on which the opinion was founded, it is impossible to tell how much authority it has. Certainly there appears to be no trace of such a principle in the English or American decisions, so that it is wisest for us to continue to think that a general supervision only is not enough to satisfy the law, and that in case of accident the courts will hold us, as the French say, *solidaires* with the builder in respect of damages, if any lack of due diligence or skill can be proved against us.

CORRESPONDENCE.

A CONTUMACIOUS BUILDER AND THE BUILDING DEPARTMENT.

NEW YORK.

THE Superintendent of Buildings is just now engaged in a lively fight with one of the class known as "speculative builders." They are a numerous and most active company of business men, who know the law in its minutest detail, and who are commonly supposed to be

ready at all times to take advantage of every opportunity by which a dollar may be saved. The stock phrase "in a workmanlike manner" means in their practice that manner which will give the best return at the final sale of the building. Their edifices, be they stores, tenements, flats, or dwellings of the better class, are rushed up and hurriedly sold, while the gloss and varnish are yet fresh, and before the settling walls and general want of stability in the structure are shown in the cracked plaster and sprung wood-work.

Last spring plans were entered for a double apartment house at 37 and 39 West Fifty-third Street, on the north side of the street. It is a fine location, and the original permit was for a four-story structure; subsequently leave was granted to build a five-story building; but now when the case comes into court it is found that the papers have been altered and a figure "6" inserted, while the filed plans and sections show but five stories. Where or how this erasure was committed is not known. But as the plans on file are readily accessible to any inquirer, this alteration is not inexplicable. The law says in § 5, "In all dwelling-houses that may hereafter be erected not more than fifty-five feet in height the walls shall not be less than twelve inches thick, and if above fifty-five feet in height and not more than eighty feet in height the outside walls shall not be less than sixteen inches thick to the top of second-story floor beams, provided the same is twenty feet above the curb-level, and if not, then to under side of the third-story beams; and also provided that portion of the wall that is twelve inches thick shall not exceed forty feet above the said sixteen-inch wall; and in every dwelling-house hereafter erected more than eighty feet in height, four inches shall be added to the thickness of the wall for every fifteen feet or part thereof that is added to the height of the building. All party walls in dwellings over fifty-five feet in height shall not be less than sixteen inches in thickness."

The first violation complained of was the use of the party-wall on the east. It was but a twelve-inch wall above the offset at the level of the first-floor joists, and to make some appearance of complying with the law, and possibly because of some notion that even the strength of a twelve-inch wall is a finite quantity, an eight-inch lining was carried up, though unbonded, and built without any particular regard to the old wall. It contributed no strength to it beyond a slight lateral bracing. Above the second-story floor beams this was discontinued, and beyond that point not the least pretence was made of obeying the law, and the twelve-inch party-wall was carried up and pierced for beams, despite the protests of the adjacent tenant and owner, who happened in this case to be Mr. Wm. A. Beach, the eminent lawyer, whose residence is a five-story one; who carried his objections so far as to seek a temporary injunction. Judge Lawrence after a hurried hearing with the affidavits of the builder and his men that the wall was properly bonded and the delay was a grievous one, removed the injunction. Of course it is evident that the party-wall remains for all structural purposes merely a twelve-inch wall from the offset above mentioned to whatever height the builder may choose to carry it. Its bearing strength is not added to one whit by the wall of eight inches set by the new builders; and what the law never contemplated in any case, and particularly with party-walls, i. e., the erection of a twelve-inch wall over fifty-five feet in height, is carried out.

The opposite or westerly wall exhibits in even stronger light the policy of the builder. The law plainly says that the sixteen-inch portion of the bearing wall shall cease either at the second or third story line of beams, and that from that point, wherever it may be, there shall not be more than forty feet of twelve-inch wall. To fall within this last provision the wall which had ceased to be a sixteen-inch wall at the level of the third-floor joists was continued for a space of a few feet. It was unbonded to the main wall, and was a most farcical pretext for claiming freedom from the penalties of the law. When the injunction was applied for the builder swore that this was a well-bonded and thorough wall; but once the order of dissolution was granted against the injunction, the builder became aware of the possibility that the wall might be examined, and the matter tested, therefore the whole length of four-inch lining wall was thrown down, completely removing, of course, any chance of a contradiction of the testimony. Another injunction was applied for, this time by the Department, but pending its argument the builder went on with his building, and it became evident that something more summary would have to be applied to such an impracticable; and for the first time in the present administration of the Department, or at any time so far as its records show, the section of the law which permits a criminal prosecution was enforced, and the builder with one or two of his associates was taken into custody. The summons served could not identify the papers served by him on the prisoners, and through this oversight a discharge followed. New complaints were at once made out and new papers served, and now the officers stand ready to arrest the first workman who shall attempt to lay a brick. The case is watched with no small interest by builders and property owners, and the Department for once is determined to show that there is such a thing as a building law.

W.

ROMAN REMAINS AT HEIDELBERG. — Since the discoveries of Roman remains reported last year, further evidence has been produced that Heidelberg was an important station for the legions of Rome in the third century of our era.

THE LATE FREDERICK PEPYS COCKERELL.

OUR readers will receive with regret and surprise the announcement of the death of Mr. Frederick Pepys Cockerell, the Honorary Secretary of the Royal Institute of British Architects. We are no less grieved to have to announce this event, which deprives the profession of architecture of one of its best known and most valued members in the very flower of his age, and at a time when there seemed every prospect of a long and honored career before him. The intelligence has reached London so near the time of our going to press that it is impossible to give more than a brief account of a career and a character which would have well merited a longer and more complete notice.

Mr. Cockerell was one of the sons of the late Professor Cockerell, R. A., and a great deal of his professional training was under his father's eye. He also studied in Paris for some time. He became a pupil of Mr. P. C. Hardwick, and was the life and soul of a small group of young men who were being educated for the profession in that office at the same time, several of whom have since made their mark. In the winter of 1855 Mr. Cockerell left Mr. Hardwick and went to the Continent for a prolonged tour of study; he brought home a large number of excellent sketches and finished drawings, for he was a most accomplished draughtsman, and while in Italy he extended and enlarged his knowledge of the works of the great Italian masters of painting and sculpture. It would not have taken much at this time to induce the young enthusiast to lay down the tee-square and take up the brush, but happily his original idea was adhered to.

Soon after his return to England, Mr. Cockerell commenced practice, and he continued it with increasing success up to the date of his untimely death. His best known work was the Freemasons' Tavern, which he rebuilt, and Freemasons' Hall, which he recast. This work he obtained in competition, an early success, and one which led to his appointment to high Masonic office. The building, in Queen Street, Lincoln's Inn, will probably long remain to bear testimony to the refinement of taste and the skill of its architect. From the Catalogue of the British Section of the Paris Exhibition (Fine Art) we may extract a list of the works, photographs of which are there exhibited by him; it includes his best, but by no means all his important commissions: Crawley Court, Manchester; Down Hall, Essex; Borrowdale, Surrey; Freemasons' Hall, London; Lythe Hall, Surrey; Dymchurch; the Water Color Society's Gallery, Pall Mall East; Tombs at Algiers, Kensal Green, and Slough; Memorial Columns at Slough and York; Monument in St. Paul's; Chimney Piece at Cliefden.

Mr. Cockerell had a learned and a practical knowledge of all the fine arts, a cultivated taste, keen perception, and a great fund of energy and good sense. His social qualities were so brilliant and yet so kindly that those who knew him will regret the true friend, the acute critic, the brilliant talker (for, in a silent, newspaper-reading age, Mr. Cockerell was one of the very few men to be met in society whose natural and acquired talents of conversation were remarkable) the bright and cheerful man of business, the genuine artist, more, far more, than the accomplished rising architect. The precept, — one of the many wise and telling maxims which dropped from the lips of the old professor, his father, — "Be an artist among gentlemen, and a gentleman among artists," was the rule of his life, and no more gallant, chivalrous, generous gentleman, no truer, more conscientious artist, within the limits to which his predilections confined him, ever adorned the profession of architecture.

Mr. Cockerell's position and personal qualities years ago pointed him out as the fittest man available to fill the office of Foreign Secretary to the Royal Institute of British Architects, and when the duties of the secretaryship were rearranged, he became Honorary Secretary, his colleague, the Acting Secretary, being his old friend and former fellow-pupil, Mr. Eastlake. Mr. Cockerell acquitted himself well in this position. He discharged the duties, which at times were not always simple, with a fine tact and an easy manner that have helped to steer the Institute through rough water when that has had to be encountered; and his loss will be severely felt by the President and Council and by his present colleague.

Mr. Cockerell died in Paris on the 4th instant, suddenly, at the early age of forty-five. He leaves a widow and a young family. — *The Architect*.

THE OWNERSHIP OF DRAWINGS.

OAKLAND, CAL., November 12, 1878.

TO THE EDITOR OF THE AMERICAN ARCHITECT:

Sir, — Much has been written to show that the ownership of architectural drawings is vested in the architect unless a specific agreement has been made to the contrary. As to the justice of this condition, all in the profession know that it is based on the fact that drawings are simply a part of the architect's instruments, provided by himself to aid him in the accomplishment of certain ends, to wit: the estimate of cost and the construction of the proposed improvements. As to the number of distinct drawings he is to make, he is always his own judge, and he is paid, as the lawyer, not for the amount of paper and ink used in working up his case, but for his experience and knowledge of his work, the difference being that for the lawyer there is no established rate of charges, whilst the architect is governed (or should be) by the scale of commissions recorded

by the Institutes on both sides of the Atlantic. In general practice to require the builder to return the drawings and specifications to the architect's office, previous to the final payment, is part of the contract; and disputes seldom, if ever, occur as to their ownership at this juncture, the client being in haste to occupy or acquire possession of his improvements, and consequently indifferent as to the disposal of the drawings. The difficulty which many architects have to contend with arises when the client gets to the point where he decides to postpone the construction of his building. All the necessary labor on the architect's part has been expended to make a complete set of drawings, which appear to the owner of the proposed improvement the tangible exponent of that labor, and therefore the only legitimate "money's worth," so far as he is concerned, which he can lay hands on. It is at this time, generally, that he is confronted with rules of the Institute. He very naturally claims ignorance as to the proceedings of any such (to him) close corporation, and scorns to be governed by what he considers one-sided laws. Furthermore, "what is usual in such cases is nothing to him, and, since he is not going to build immediately, he will pay for his (?) plans, and take them home." Until the Institute, or the profession aside from the Institute, has educated the building public to a greater knowledge of its rules and usages, there will be the liability to discuss this vexed question. Many architects, prone to leave this matter for settlement when it shall present itself, shun thrusting the necessary information into the client's face at the beginning of their business intercourse, fearing to jar his too sensitive nature, and drive him to the office of a less scrupulous practitioner, who will secure him, regardless of rules and by-laws. The greater proportion of our clients are building their first house, and are very reasonably in the dark as to anything in the premises except that they are to employ an architect who shall see that their wants are supplied. If the architect cares to have smooth sailing from first to last, he will instruct his "owner" in the rules of his office while he is stating to him his terms. The least he can do, is to post in a conspicuous place such circulars of the Institute as pertain to architect and client, in large clear type, with a heading that shall show them to be not only the action of an organized society, but the binding rules of the office in which they are posted. Casually calling attention to these, and, if necessary, discussing their merits before any work is done, is far better than running the risk of making an enemy by allowing your client to remain ignorant till the time when he comes to demand what he very naturally considers only his QUID PRO QUO.

BOARD OF CONSULTING ARCHITECTS AND ENGINEERS FOR PUBLIC WORKS IN INDIANA.

INDIANAPOLIS, IND.

TO THE EDITOR OF THE AMERICAN ARCHITECT:

Dear Sir: A bill is being prepared by some of the architects of Indianapolis, to be presented at the next session of the Indiana legislature, which will provide for a commission of architects and engineers, whose duties will be to examine all drawings and specifications submitted for public works, and to prepare an exhaustive description of each set of drawings; setting forth the merits and demerits of each, so as to enable those having charge of public works to form intelligent conclusions. It is the intention that the gentlemen composing the commission shall be those who stand eminent in their profession, whose integrity and ability will not be questioned. It is hoped by this commission to prevent some of the evils of competitions and virtually exclude pretentious practitioners. Each design having to pass a rigid examination will prevent such from entering the contest, and will give men of ability who enter competition some assurance that merit will be recognized and rewarded.

J. H. STEW.

NOTES AND CLIPPINGS.

WE wish to draw attention to the publishers' advertisement on page vi. of the advertising pages, where it is stated that the numbers of this journal for November and December, 1878, will be given, gratis, to new subscribers who pay their subscription for the ensuing year before December 15, 1878.

ACCIDENT.—On Tuesday, November 26, while two bricklayers were at work on the second floor of the dome of the Capitol at Hartford, a hod-carrier as he unshouldered his load dropped the handle of his hod on the key row of one of the small brick vaults, and as the mortar was still green the brickwork gave way, and the three men were thrown to the floor, all badly hurt.

THE WEATHER-COCK ON NOTRE DAME.—It is said that Notre Dame de Paris has lost an ornament which was, perhaps, her most conspicuous one. Three or four weeks ago high winds swept over Paris, and one of the strongest gusts blew away from the spire of the church the gilded weather-cock which surmounted it. The dethroned bird is nowhere to be found. Whether he plunged headlong into the river, or was picked up from the pavement by some unpatriotic and sacrilegious pedestrian, man knoweth not. Within the outer frame of that bird was concealed a heap of minted metal. The collection included every French piece of money current in France, whether of copper, silver, or gold, from a centime to a hundred-franc piece. There were in addition coins of one denomination or another bearing the faces of all the sovereigns of Europe.

POISONOUS PAINTS AND WALL-PAPERS.—Dr. H. C. Bartlett, in a paper read at the Cheltenham (Eng.) Congress of the Social Science Association, said: Until the autumn of last year, I was unable to form any accurate idea of the frequency of cases of severe illness occasioned by poisonous paints and wall-papers. I had, it is true, within my own professional experience, known of several fearful outbreaks of lead-poisoning among the work-people employed in white-lead works, and among painters and others working in an atmosphere heavily laden with the saturnine vapors given off in the process of applying such paint or during its drying. I had also been consulted in a great many instances respecting wall-papers which were suspected of being colored with arsenic, in consequence of illness of the type recognized as arising from these sources. But, when I was requested by Mr. Jabez Hogg, the well-known surgeon and microscopist, to furnish some particulars of the more striking cases I had investigated, to be laid before Government, I was astonished to find that during the last eleven years I have traced back no less than one hundred and twenty-three cases of illness attributable either to the diffusion of carbonate of lead (common white paint) or to arsenical or antimonial coloring matters in paint or on wall-papers. Others have been working in the same field of observation, and of those who have witnessed the danger of permitting the use of poisonous pigments and wall-papers, I could mention the testimony of eminent medical men, analytical chemists, and others who have recently protested against the employment of such deleterious substances.

RAVENNESE MOSAICS AT BERLIN.—A valuable discovery has just been made in the cellars of the Berlin Museum. Packed in various chests were found some old mosaics which had been bought in Italy during the reign of Frederick William IV. They date from the sixth century, are in the Byzantine style, and originally decorated the eastern apse of the now ruined church of San Michele, in Ravenna, a church contemporary with San Vitale. One of the mosaics represents a concert of angels, all playing on different instruments; another shows a frieze ornament set with garlands of laurel, on which doves sway to and fro. These mosaics arrived in Berlin just at the first outbreak of the March Revolution, and were stowed away in the cellars and forgotten. They are now being restored by Signor Radini, one of the assistants of the well-known mosaicist, Dr. Salviati, and are destined ultimately to decorate the crypt of the Imperial Mausoleum.

MAKING A FIRST-CLASS LIGHTHOUSE FROM AN INFERIOR LIGHT.—There is a lighthouse near the Isle of Skye which stands in a peculiar situation. Just before it is the width of a narrow channel; to the left the channel stretches away for a short distance; on the right, it extends indefinitely. A lantern sufficient for the short distances would avail nothing at the longer ones, while such a light as would be seen at the longer range would be needlessly and wastefully bright for the shorter ones. Recourse has therefore been had to a lantern which unaided will light the narrow channel, while two series of prisms concentrate and deflect a beam equal to a first-class light over the longer distances. The saving is from £400 to £500 a year.

NEW ARCHITECTURAL MONOGRAPHS.—The Parisian publishing firm, Veuve A. Morel & Cie., have announced the immediate publication in ten or twelve parts of a superbly illustrated monograph, "Le Vatican et la Basilique de Saint Pierre de Rome." The greater part of the work was done by the late M. Paul Letarouilly, whose "Edifices de Rome moderne" is well known, and has been edited and completed by M. Alphonse Simil. Each part will contain twenty-two engravings and two chromo-lithographs which will make a total of about two hundred and fifty engravings, and twenty-five chromo-lithographs. Those who know the splendor of the illustrations usually issued by this publishing house will need no other assurance of the value of this new and most complete work.

ARCHITECTURAL PHOTOGRAPHS.—The Arundel Society is now ready to supply the whole series of photographs, the "Sepulchral Monuments in Italy," which were made by Mr. Stephen Thompson. The series is made up of forty-nine large photographs and can be obtained in parts containing seven each. They will be issued shortly in chronological order, with descriptions and histories written by Mr. Thompson himself, and introduced by a preface by Mr. G. E. Street, R. A. Mr. Thompson is at present engaged in photographing the architectural remains to be found on the Island of Cyprus.

NEW EXPLORATION OF ASSYRIA.—Mr. Hormuzd Rassam, who was a companion of Sir Austen Layard's earliest discoveries in the Euphrates and Tigris Valleys, has succeeded in obtaining from the Porte a most extensive firman for the exploration of the whole of Mesopotamia, Assyrian and Babylonian. Mr. Rassam will resume his explorations in the Nineveh districts, at Koyunjik, in the palaces of Sardanapalus, Sennacherib, and Esarhaddon, and at Nimroud. The excavations in the mound of Nebby-Yunus, close by Koyunjik, if carried out, may lead to the discovery of some accounts, however meagre, of Sennacherib's second campaign against Hezekiah, from the Assyrian point of view, as this is the site of that king's later palace. In Babylonia, Mr. Rassam will make it a special point to discover the site of the royal record office, which has been kept secret by the Arab and Jewish dealers, through whom we have obtained so many of the tablets, representing every branch of commercial and fiscal transaction found therein, and now in the British Museum. The mounds of Tel Ibrahim, the site of the city of Kutha, the great sacred university of Babylon, whence Assurbanipal obtained the originals of the creation tablets, are also within the scope of the new firman. Mr. Rassam has also obtained a special firman for the exploration of Northeastern Syria, and Carchemish, on the Euphrates, the capital of the ancient Hittite Kingdom. This is altogether new ground.—*The Spectator.*

THE VIA SACRA.—The Via Sacra of ancient Rome has been entirely uncovered from the Arch of Titus to the Temple of Romulus. Several structures have come to light, some of which are of the old Roman period, and some of the mediæval epoch, but all of intense interest to historians and archaeologists; and besides these, there are fragments of architecture and marble decorations, which will be studied by antiquarians. Three of these are dated 339, 341, and 356.