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NOTWITHSTANDING the apparent energy of the New York Department of Buildings in searching out insecure structures accidents continue to occur which, as it would seem, might have been prevented by due care. The latest of these happened last week in the Bowery, where two failures took place in the same building within twenty-four hours. The edifice was a furniture warehouse and factory, four stories high, just behind which a cellar was being dug. The contractor for the excavation discovered that the walls of the factory had little or no foundation, and informed the owners that he could not continue his work without danger of bringing the building down. They seem to have taken no notice of the warning, and the excavation was finally resumed. Some attempt was made to prop up the structure, but the work, difficult at the best, seems to have been inefficiently performed, and the walls bulged until one evening, about six o'clock, a portion of the upper floor fell in, badly injuring a clerk who was the only person remaining there. The police promptly notified the Building Department, and an inspector was despatched to the scene, who concluded that it was too late for him to do anything about the matter, but promised that it would be "looked into" the next morning. The next morning, however, nothing had been done when the employes of the factory, mostly girls engaged in sewing carpets on the third floor, came as usual to their work. As there was no one to warn them or to take the initiative in refusing to encounter the danger which stared upon them from the ruins of the previous night's crash, the poor girls took their accustomed places with the unreasoning docility characteristic of their class, and began their daily toil. Hardly had they taken up their needles when the building began to sway, and the rear wall fell over with a crash into the new excavation behind it. Fortunately it drew the floor with it, until the beams lost their hold and dropped all at once to the story beneath, forming a slide, down which the occupants of the room were pitched in confusion to a place of safety, while their hats, shawls and other small property, which were put away in a back room adjoining the wall, were hurled into the cellar and buried in rubbish.

On investigation, it proved, as it usually does in such cases, that no one was responsible for an accident which injured four innocent persons, and inflicted loss or pain on many more. About a month ago the building was visited by an inspector from the Building Bureau, and reported as unsafe, by reason of the excavations proceeding on the adjoining lot, and an order was issued to the owners and lessees to make it safe by shoring and underpinning the rear wall, and building a new foundation for it. The lessees, on receipt of this order, replied that their lease did not impose any such duty on them, and referred the department to the owners. A search was accordingly made for the latter, but it appeared that a transfer of the property had recently been made to some person unknown, and one of the lessees, being inquired of, professed to be unable to give any information on the subject. Mr. Woodruff, the contractor for the excavation on the adjoining lot, who seems to have been the only person to show any sense of duty or humanity, offered to take upon himself the responsibility of shoring up the building and putting a proper foundation under the wall, but the lessees refused to allow him

to enter their premises. Meanwhile, as it appears, the lawyers of the actual owner and the lessees were engaged in disputing as to which was the proper party to make the repairs, and on the very day before the building fell one of the lessees, fearing that his business would suffer from the delay, agreed to undertake them. The moral which the Department of Buildings draws from the occurrence is that the public safety requires that it should be armed with power to enforce summarily its requirements. At present it can only act by giving notices, and if these are disregarded it must go through a long process before a court to compel compliance. During the interval defective walls may fall, or weak floors give way, sacrificing precious lives, which might have been saved if more effective action were possible on the part of those best fitted to take the necessary precautions against the danger.

IN accordance with the requirements of a recent State law of Massachusetts, special inspectors are now engaged in visiting the freight and passenger elevators used in Boston to see whether they are provided with proper appliances for preventing the fall of the platform in case of the breaking of a rope. During the first day's tour several safety-catches were practically tested, and although all of them fulfilled their duty of checking the fall of the weight on the disconnection of the rope, there was a wide difference in their operation. The first elevator tested was fitted with the Thayer safety-wedge, a well-known apparatus by which the car in falling drops between two wedges, which force themselves against the guide-posts and gradually bring its movement to a stop. On disconnecting the rope the platform fell sixteen and one-half inches before stopping entirely, but the checking of the motion was so smooth and gradual as to be hardly felt by those in the car. The next experiments were made upon a heavy freight elevator, provided with cam-catches, of a pattern which is not particularly described in the report of the Boston *Herald*, from which we obtain our information. The first test was made without any load on the platform, which when allowed to fall descended nine and one-half inches before it was checked. A weight of fifteen hundred pounds was then placed upon it, and with this addition the platform fell twenty-eight and one-quarter inches before it was arrested. The next two elevators were provided with Merrick and Baldwin's well-known safety-catch, which brought the platform to a stand in the space of about an inch. Another round of visits is to be made soon, and we hope that further experiments will be made upon some of the elevators already inspected. A safety-catch which allows the platform to which it is attached to fall twenty-eight inches before it acts should be rigorously tested, and with heavy loads. Under the law of accelerating velocity, the blow given to the guide-posts by a platform weighted with one or two tons of goods, when brought up by a safety-catch after two or three feet of fall, would be terrific, and there are many buildings where the slender hard-pine timbers used for this purpose would inevitably fail under such an impact, bringing down the whole structure in a heap. There is also another large class of elevators, depending for safety on the multiplication of the suspending ropes, which should be thoroughly tried. So many accidents have occurred where the platform was sustained by two, or even four ropes, as to furnish a strong presumption that on the parting of one, the shock of the sudden transfer of the weight to the others, multiplied perhaps by the impetus acquired through a small fall, is often sufficient to break them successively, and thus release the car entirely; and as platforms of this class are very commonly devoid of any sort of safety-catch, the car in this case inevitably descends to the cellar.

A NOVEL case in insurance law is reported in the *Fireman's Journal*. It seems that the owner of a certain building applied for insurance upon it, and received two policies, of twenty-five hundred dollars each. As it turned out, at or about the time of the delivery of the policies the property intended to be insured was actually on fire, and the question arose whether the insurance companies were liable for the loss. According to the authority quoted in the *Journal*, the decision must turn upon the precise time of the beginning of the fire, which a jury would have to determine according to the evidence. If the contract of insurance was consummated, or, as the lawyers say, "the

minds of the parties had met," before the breaking out of the fire, the companies would be liable, even if the policies had not been delivered; but if at that moment the fire had actually begun, then there was no liability, for the reason that the subject-matter of the contract of insurance—the house—was no longer in the condition in which it was assumed to be, and which formed the basis of the contract, since no one would knowingly insure a burning building. On the other hand, the same authority remarks that if a policy of insurance should expire during the progress of a conflagration in the building covered by it, the company issuing the policy would be held for the whole loss, even though the fire might have just commenced at the hour which terminated the policy, and the main part of the destruction might have occurred subsequently.

THE New York *Times*, in an editorial article referring to the new building for the Produce Exchange in that city, mentions that a process has been discovered for protecting iron from corrosion, which can be applied on a large scale, and is considered to be far superior to that practised under the Bower-Barff patents. The inventors are, it is said, about to make public exhibition of the results attained by them, and it is claimed that a cheap and effectual mode of accomplishing the long-desired end is at last within our reach. We wish we could feel full confidence that this promise would be realized, but hope for the best, and can quite agree with the *Times*, that if such a process should really come into extensive use a new field will be opened to the art of architecture. One of the worst obstacles to the use of iron as a means of decoration or expression in building has always been the necessity for bedaubing it with successive coats of paint, which destroy its apparent character as a metal, without assimilating it to any other class of substances. If this objection can be removed, and iron can be employed in such a way as to exhibit its shining surface and sharp lines, a wide range of novel and beautiful effects will be at the service of architects who know how to use them.

ACCORDING to the *Fireman's Journal*, a singular entertainment is about to be opened to the public in Boston, which will represent with as much vividness as possible the incidents of the great fire in Chicago. The performance is to take place in a certain garden, used during the warm season for open-air concerts. A small lake in the garden is to separate the spectators from a group of structures, one of which is to represent the historic barn in which the conflagration began. A cow, to follow out the story, is to overturn a kerosene lamp in the straw, and the blaze so started will rage until the mimic city is consumed. To give animation to the scene about a hundred and fifty personages, as firemen and citizens, will be seen escaping from the burning buildings, rushing up with engines, and so on, and the local topography is to be reproduced as accurately as possible. By artifices known to theatrical machinists, the houses will be put together in such a way as to be capable of renewal night after night for an indefinite period, and we hope that the drama, or pantomime, or whatever it may be called, will have a long and successful run. The actual sight of an overturned lamp, with the blazing oil spreading through the inflammable straw, ought to produce an indelible impression on the minds of the spectators, and if it should serve to warn any of them against the careless habits in regard to fire, which are now so common, it will have served an excellent purpose.

THE project for completing the Hennepin Canal, which is intended to connect the Mississippi with the navigable waters of the Atlantic slope, has, after engaging the attention of Congress and the country since the beginning of the session, been finally rejected, apparently on the ground of the uncertainty as to the outlay which might be necessary to complete it. The route was, we believe, surveyed some years ago by Government engineers, and an approximate estimate of its cost made, but values change rapidly in the West, and the question of land damages would probably be a much more serious one now than it was then. Judging, however, from the evidence which the friends of the scheme bring forward in its support, there is little doubt that it will ultimately be carried into execution. Of the other engineering projects which have been considered by the present Congress, the work upon the Mississippi seems to have been looked upon most favorably, and a large discretionary power has been given to the River Commission to carry

out needed improvements, together with a liberal appropriation to pay for them. The interoceanic canals, the most important of all these enterprises, have been left to be discussed last, and the prospect is said to be that the Nicaragua canal scheme will receive the approval of the Government.

WE have received a very amiable and sensible letter from Dr. Ephraim Cutter, of New York, who thinks that we did injustice to Dr. Salisbury in some remarks made not long ago upon his system of curing consumption of the lungs. That we may judge for ourselves of Dr. Salisbury's character as a man of science, he sends us a list of his published and unpublished works, which certainly proves him to have been one of the first and most original explorers in the field of microscopic pathology. Among the published papers we find one dated 1862, on "The Influence of the Fungi of Wheat and Rye Straw on the Human System, and some Observations which point to them as the Probable Source of Camp Measles, and perhaps of Measles generally;" and immediately after, with the same date, comes one on "Inoculating the Human System with Straw Fungi to protect against the Contagion of Measles, with Observations on the Influence of Fungoid Growths in producing Disease." In 1868 was published a treatise on "Microscopic Examinations of Blood, and the Vegetations found in Variola, Vaccine, and Typhoid Fever." In 1862 was prepared, but not published, a considerable work on "Microscopic Investigations connected with the Exudation and Expectoration of Angina and Scarlatina, resulting in the Discovery of the Source of the Exudations; and the further Discovery of a Fungus developing in the Sloughs and Membranes, the Spores of which are infectious and produce the Disease, also General Conclusions on the Etiology of Fevers, and the probable way in which the System receives Immunity by one Attack of certain Contagious Diseases against a second Invasion of the same." Twenty years ago this was certainly a novelty in the way of medical science, and we should be sorry to do anything to diminish the credit which such researches deserve.

In regard to the Salisbury mode of cure we are glad to express our gratitude to Dr. Cutter for a carefully corrected copy of a pamphlet describing at length a treatment which, even if it should be, as it seems to our uninstructed mind, very inadequate to its purpose, has nothing of charlatanism about it. In the opinion of the author, consumption comes from continued unhealthy alimentation, and must be cured by removing the cause. "This cause," he says, "is fermenting food and the products of this fermentation;" and if the simple directions contained in the book "are faithfully followed out and persisted in, consumption in all its stages becomes a curable disease." As the publication of the treatment makes it common property, there can be no harm in gratifying the curiosity of our readers by a brief description of it. Beginning at the first direction, half a pint of hot water is to be drunk an hour before each meal and on retiring, to wash out the stomach. Tea, coffee or beef tea may be drunk at meals, and hot water or beef tea in the intervals, if desired. For food, broiled beefsteak, without fat or bone, broiled chicken or game, oysters and fish, free from fat, are prescribed, with bread, toast, rice, cracked wheat or oatmeal, in the proportion of one part by bulk to from four to six parts of meat. Soups, vegetables, fruits, pies, cakes and sweets, pickles and preserves, fried edibles generally, and vinegar, are prohibited. Meals are to be taken at regular intervals, and the patient should eat either alone or with others using the same diet, and after the appetite increases, as it soon does, lunches of broiled beefsteak and tea, coffee, beef-tea or hot water, are permitted between the regular breakfast, dinner and supper. In the way of general regimen, two thorough baths with hot water and soap are to be taken every week, oiling the skin all over afterwards, and every night and morning the body is to be sponged with hot water, containing for the evening bath a few teaspoonfuls of ammonia. Flannel is to be worn next the skin, and the clothing frequently changed and aired. This, with as much open-air exercise as can be borne without fatigue, or thorough rubbing and pounding of the body morning and evening for those too weak to take exercise, constitute the substance of the treatment, but simple tonics of oil of peppermint, orange-peel, ginger, witch-hazel and other mild ingredients are to be administered before each meal, with small doses of pepsine afterwards, and hemorrhage is to be checked by inhaling the spray of a weak solution of persulphate of iron.

CAEN, AND A ROMANTIC TRIP.



IF there is anything more enjoyable to a lover of antiquity than a trip in search of an object that has only been seen in sketch form, or about which one has read with interest, we beg leave to ask what it is. That dreamy uncertainty, that sketchy beauty which almost makes one believe the thing only existed in the imagination is what every one loves to follow out and find if it be reality.

Snugly ensconced in our easy-chair one winter evening in dressing-gown and slippers, map and book in hand, we read an account of the little church of Thann, which was bewitchingly set off by a sketch

showing the little church in a ravine, surrounded by its quiet burial ground, over which the trees drooped in heavy festoons. The article and sketch were from the hand of Monsieur Petit, and jotting it down in our book of trips, we resolved to look it up at all hazards should the opportunity ever present itself.

Six months after that evening, leaving Bayeux and on our way to Caen, near which we knew was this little object of interest, we determined to look it up. How to find out exactly where it lay was another question not so easy to determine. Our guide-books simply mentioned the fact of its existence, with the additional invigorating assurance that it was seven miles away, but no compass points given. No one seemed to know of any such place, or any such church, and

as for any information to be obtained from this point, it might have been in the next street for aught the people would have known. This ignorance of their neighborhood was astounding;—they seemed to live in a little world of their own, and totally oblivious to any and all objects of interest near them. We had almost made up our minds to the old way of finding a lost article by throwing

up a stick and blindly following the direction it pointed when it struck the ground, when our guide-book again came to the front by speaking of M. Caumont, a noted archaeologist, who knew every stone in and around Caen. Surely, then, he was the man to find, and we started out in search of him by going to the private Caumont museum. Arrived at the door, a rosy-cheeked French girl opened the portal, and upon our inquiring for the monsieur, she threw up her hands and exclaimed, "*Mon Dieu!* he has been dead three years."

There are times in men's lives when business seems to be so pressing that it is next to impossible to stop and explain things, and this was one of those times. The first convenient corner was the object of our search just then as we hastened away. Next came an ancient specimen who must have been contemporaneous with the object of our search; but no, he didn't know of such a place as Thann, much less of its church. Then came the hotel clerks, always interested in our wants (for a franc), but they knew of no such church; indeed, we always believed their church acquaintance to be limited, at least from their methods of extortion. At last an old stage-driver "thought he knew of the church we were looking for," and agreed to take us to this rather indefinite somewhere for the very definite price of twenty francs.

All this illustrates the difficulty which one often encounters in trying to find little gems of art, which it would seem would be guarded with care, instead of being totally ignored and forgotten. Presently the *voiture* came rumbling along and turned out to be a close covered bus, which had evidently seen long service. No talk would avail to procure an open team: they had no other, so we mounted, and with Yankee cheek stretched out on top, with our feet hanging over the roof, and started off in high good humor, while the little boys, old men and maidens, and an innumerable canine tribe watched us in picturesque garb and attitude, much as a California mining audience watched the prophet of old gold and olive green.

As one goes out through the city of Caen he passes perhaps a half-dozen ruined churches, reminders of other days. Many are very beautiful and finely proportioned, one or two with exceedingly picturesque towers, while all seem to have been given up to the

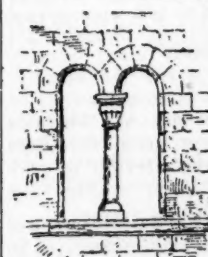
ravages of time, or occupied by cavalry or as hay-lofts. One in particular looked so very attractive as a specimen of demolished picturesqueness that we stepped around to the entrance, and were confronted by an old acquaintance in the form of "a franc admission." This called for other persons altogether, and pretending not to understand the significance of the sign, we slid in while the antiquated porter was showing another party around, and by dint of shadowing the ancient columns managed to get a good look at the inside. Carvings, altars, saints, old seats, and inlaid floor form a grand chaos in the nave, while along the aisles are piled up huge theatre scenes, which are in strange contrast with the sombre old roof, which still clings together in places. Here and there in the clerestory are small bits of broken colored glass through which the sun streams and breaks across arch and column with fantastic form.



Another old church, St. Gilles, struck us as being of superb proportions, and a most enchanting old entrance on the west side found its way into our sketch-books: a richly-ornamented arch with balustrade above, set between two buttresses. The doorway, broken

and battered, still shows its beauty; the door which once swung open to the devout worshipper is no more, but in its place rough boards are nailed up, which testify to the inquisitive small boy with the jack-knife. Thus we might go on with a half-dozen more such scenes, but meanwhile we have left the city and are crossing the fields, passing innumerable peasants who turn to gaze in astonishment at us in our elevated position. Away over on the left, standing alone in the fields, are the ruins of the Abbaye d'Ardenne, a Gothic church and abbey with a huge gate-tower remaining. Partly covered with some creeping vine it looks exceedingly beautiful, yet very lonely. Away from the habitation of man, the excitement of the city, and the

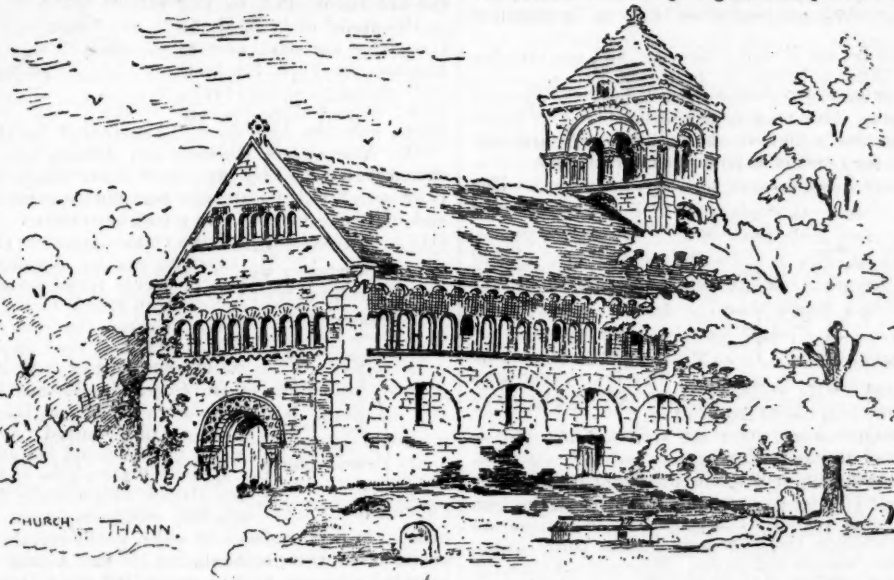
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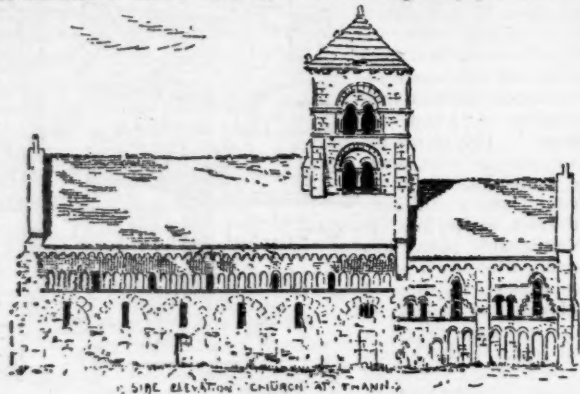
whirl of business,—these were the places the monks chose for their retreats, and a true history of which could no doubt reveal many romantic episodes, but into which we may not delve, although our thoughts keep

pace with the slow movements of our horse.

Soon we come to a hamlet composed of little stone houses and clay huts, with high stone-walls in front, often showing huge flat arches with their peculiar locked voussiors. A postman rides up and deposits a letter in a little stone letter-box on the wall, and passes on; everything is quiet, and only here and there a face appears at the window or door. Thus a couple of hours pass, and the top of our bus is getting exceedingly hard; the old driver has told us all he knows and probably a good deal more, but at last drives up to a little side lane not large enough for a carriage to pass, and leading directly down into the woods: here he stops, and tells us that if we walk down there about a quarter of a mile he thinks we will find the object of our search. Just such a place as imagination had pictured from the little sketch of M. Petit, and so we start ahead, leaving



our old Frenchman to look after the team, under the exhilarating influences of a bunch of cigarettes and a bottle of wine. Down we go into the woods, not a dwelling in sight, and nothing to disturb the stillness of nature save the birds and a ghastly joke now and

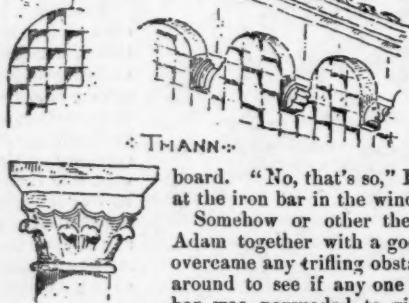


SIDE ELEVATION CHURCH AT THANN.

then by ourselves. Peering here and there through the trees, wondering if we are not on a fool's errand, suddenly on our left, almost hidden by trees, sure enough there lies the little church, surrounded by bog land, and almost impossible to get at by reason of the wet.

I cannot express the beauty of that little view, and our sketches but faintly show it. What a history it could tell if it might but speak for itself. Built away back somewhere before the eleventh century, it certainly must have been near a little village, of which now no vestige remains save in the little churchyard which surrounds it, where no doubt are the remains of its devout worshippers.

My chum with his usual sacrilegious curiosity, suggests the idea of a forced open ses-



THANN.

research. Useless precaution this: the only human being within miles, so far as we knew, was our old driver. My chum not claiming any great degree of rotundity was pushed in first, and I followed, being pulled through by him. What a mite of a church, certainly.

There was the altar in the chancel thrown down and broken, the carving defaced; there was the little font complete, while the dog-tooth carving around the arches was almost as sharp as of old, and the heavy twelfth-century capitals with their well-known carving nearly all intact.

The aisles had long since disappeared, and been built in between the arches; the arcade of the choir was broken, yet showed its whole contour; only a vestige of the roof remained, of wood, upon which, it seemed, color still showed, whether old or new we could not tell; up through the central tower opening appeared the offset of the staircase turret, on one side of the main tower, and the huge arches supporting the tower stood without a crack.

Outside, however, was the most attractive, so we pushed and pulled each other out again, dropped down from the window, and set to work sketching the exterior with its grotesque cor-

Simple of
Transsept
Abbey and
Quatre Corps.

belled cornice, mosaic spandrels, beautifully proportioned tower, and solid stone spire. Thus passed a couple of hours, after which we walked back, found our old driver napping by the roadside, and after bringing him to life returned to the city.

It is not my intention to describe the city of Caen itself, but a couple of days can well be spent there. Near the centre of the town

stands the Church St. Pierre, with its graceful Gothic towers, which vie in elegance with any in Normandy, having tall lancet windows, with finely-reeded mouldings. We enter and approach the ornamented choir, then pass into the surrounding chapels where the ceiling resembles a honeycomb of pendant fringes, exquisitely beautiful. In the nave are seen the grotesque capitals which puzzle and cause us to wonder why they were ever placed there. What there is especially religious in a fellow mortal with caudal extremity, would certainly puzzle all but Darwin; a knight of old crossing the sea on the edge of his sword is simply harrowing; and Aristotle bridled, and ridden by the mistress of Alexander, although a piece of historical romance, is not especially edifying, sanctifying, or purifying; but so it is in scores of churches, and even worse than this.

Above, on the hill, stands the monument which testifies to the desire of William the Conqueror and his queen to appease the Pope for their matrimonial proclivities, which caused them to contract a marriage contrary to the decrees of the church.

The Abbaye aux Hommes and Abbaye aux Dames are noted churches; let us step into the former, which, with its extremely plain and heavy façade, two west towers, central octagonal tower, and four east towers, forms a striking picture. The interior is severe in the extreme, yet has a certain grandeur of proportion which is very noticeable. A gallery composed of two tiers of arches forms the aisles, and the choir ending in an apse is surrounded by chapels in pointed Gothic. In front of the altar is a flat slab, the tomb of the Conqueror, and here the old warrior hoped to rest after the conflicts of this life. Poor old man! although once a conqueror here, the Huguenots, in 1562, with fiendish hatred violated his resting-place, and scattered his ashes to the winds.¹

Cross the town now and enter the Abbaye aux Dames, with a totally different and lighter interior, containing much of the grotesque element in carving, some of which would certainly cause Matilda to shake in her grave could she but see it. A most beautiful view was afforded us as we walked up the left aisle, and looked over a high screen into the transept, now used as a hospital for the sick. The light streamed through the colored windows, scattering its rays on the walls, breaking around the columns, and filling the arches with a flood of mellow light.

Behind the choir of the nuns is the grave of the queen, but this has fared the same fate as her lord's, being broken into and despoiled by the Calvinists. "Uneasy lies the head that wears a crown," was true then as now, and forms a strange comment on the religious zeal of those times.

On the outskirts of the town stands the beautiful tower of St. Michel, and while endeavoring to get a good view of it for a sketch we saw a group of nuns approaching, with rosy cheeks framed into their black bonnets, and looking certainly as worldly-minded as the rest of us; but they passed on and went into a little school-yard near by, with a high you-can't-look-in-here sort of a fence, while



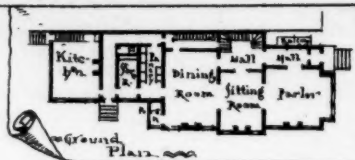
CAEN.

¹ The history of the time of William the Conqueror is one of extreme interest, and sadly interesting when we read of his death and burial. Tortured by the injury he had received at the cruel sack and burning of Mantes, he repaired to the abbey of St. Gervais to die. Deserted by his own sons when the breath was scarcely out of his body, forsaken by friends and courtiers, and plundered by his servants, his body remained stripped and uncared for until an unknown knight in the neighborhood provided the funds necessary for the funeral and

STATE OF NEW YORK
OFFICE OF THE ATTORNEY GENERAL

Proposed Residence - Cor. Franklin and 5th Streets -
Richmond Va.

W. J. Mummock, Architect Richmond.

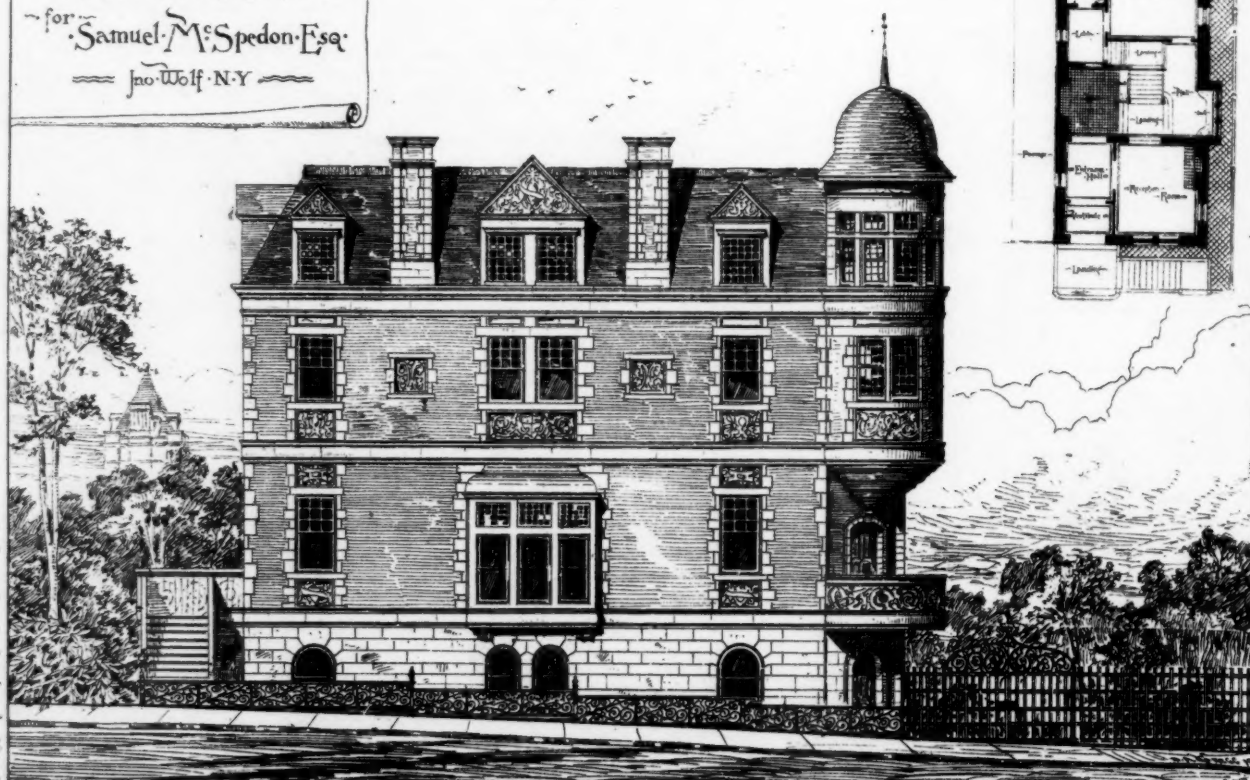
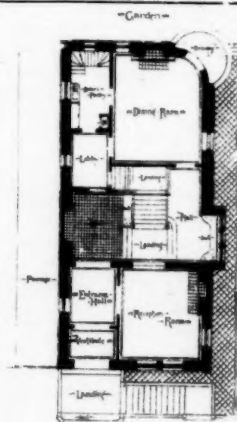


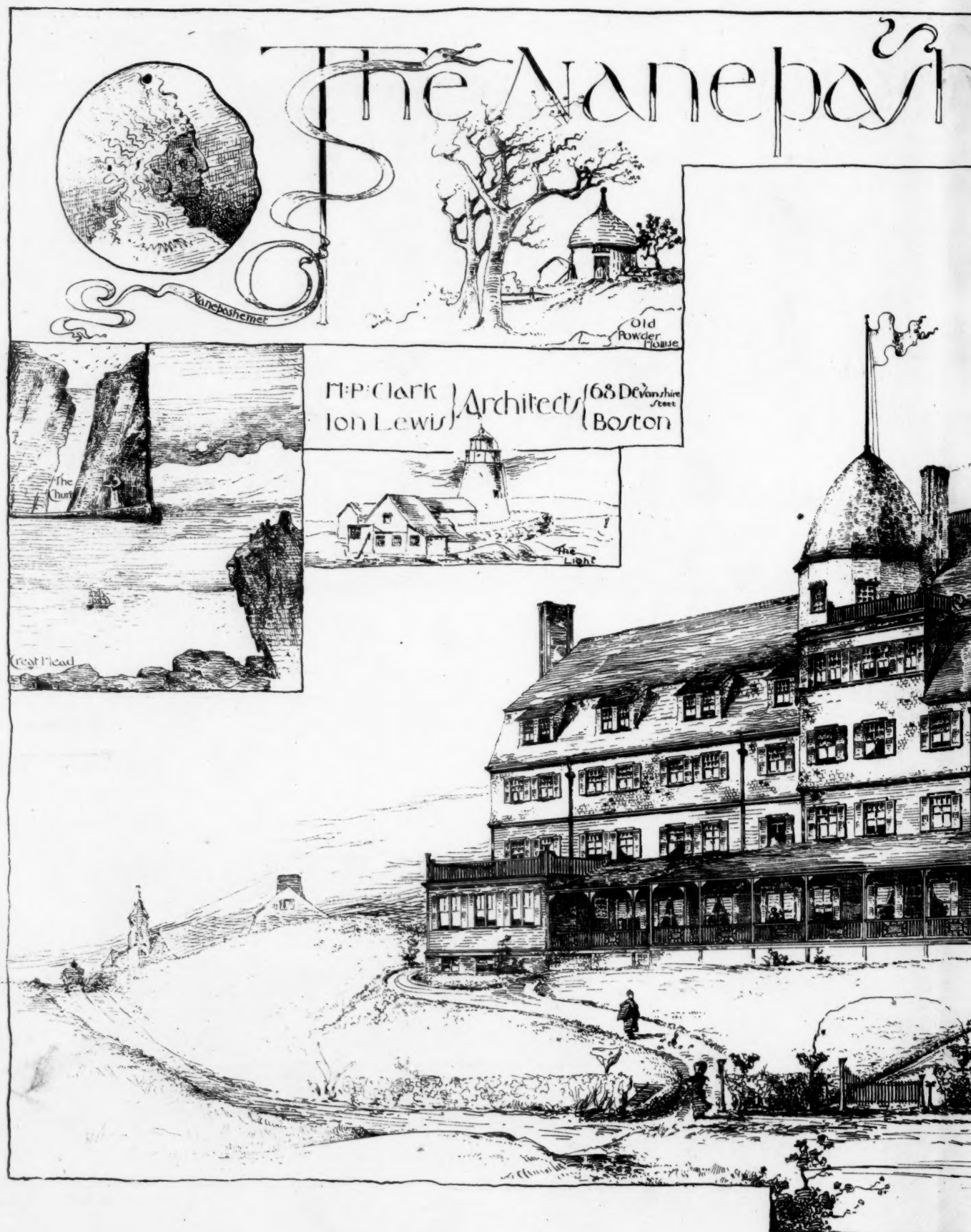
Proposed Dwelling.

at
Taylors Falls Minn.

for
Samuel M. Spedon Esq.

Jno. Wolf N.Y.

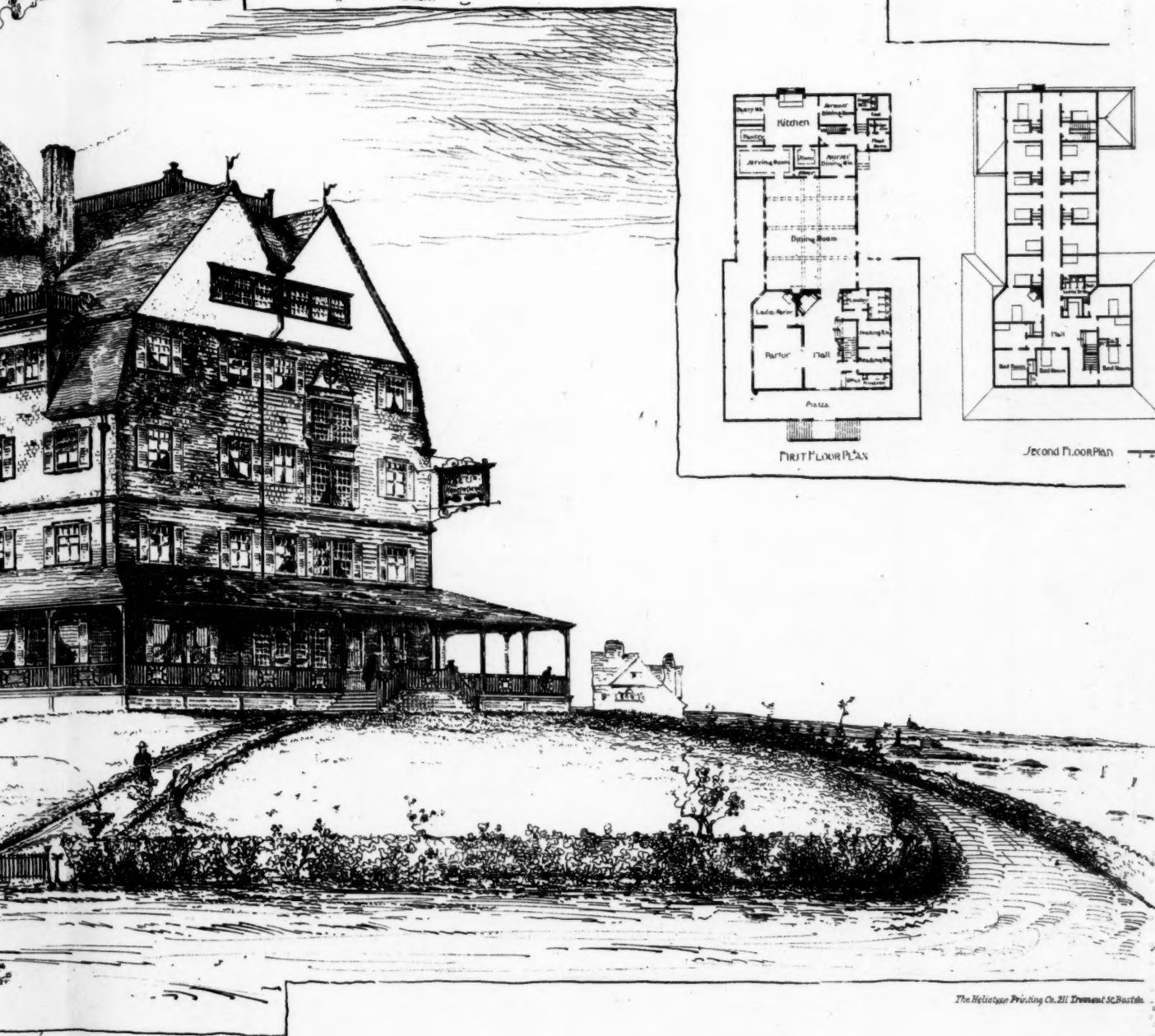




F.P. Clark Architects
Ion Lewis Architects
68 Devonshire Street
Boston

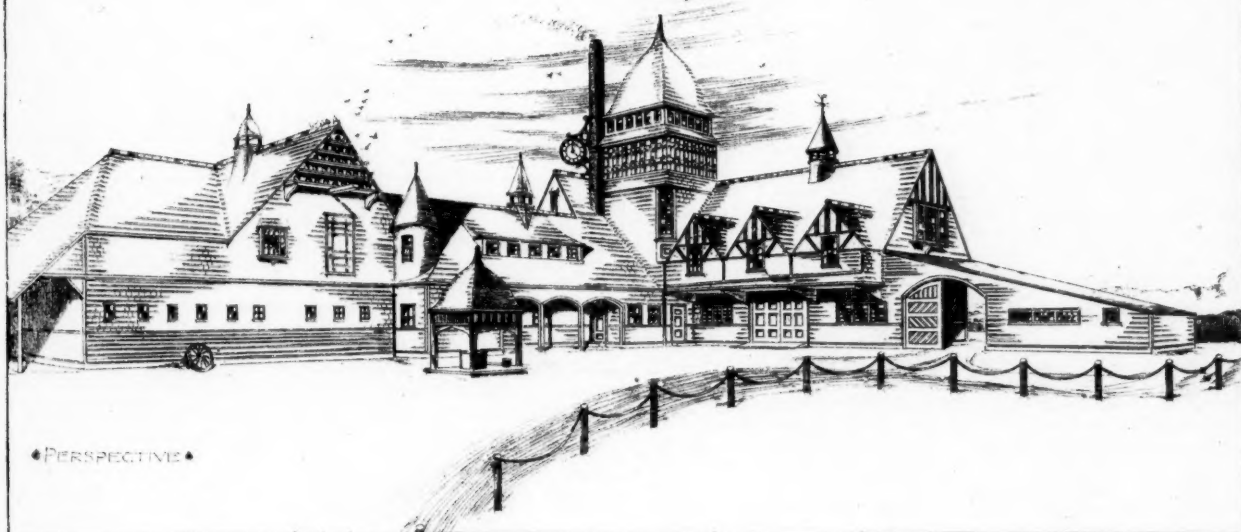


Shemmet: Marblehead: Great Neck:

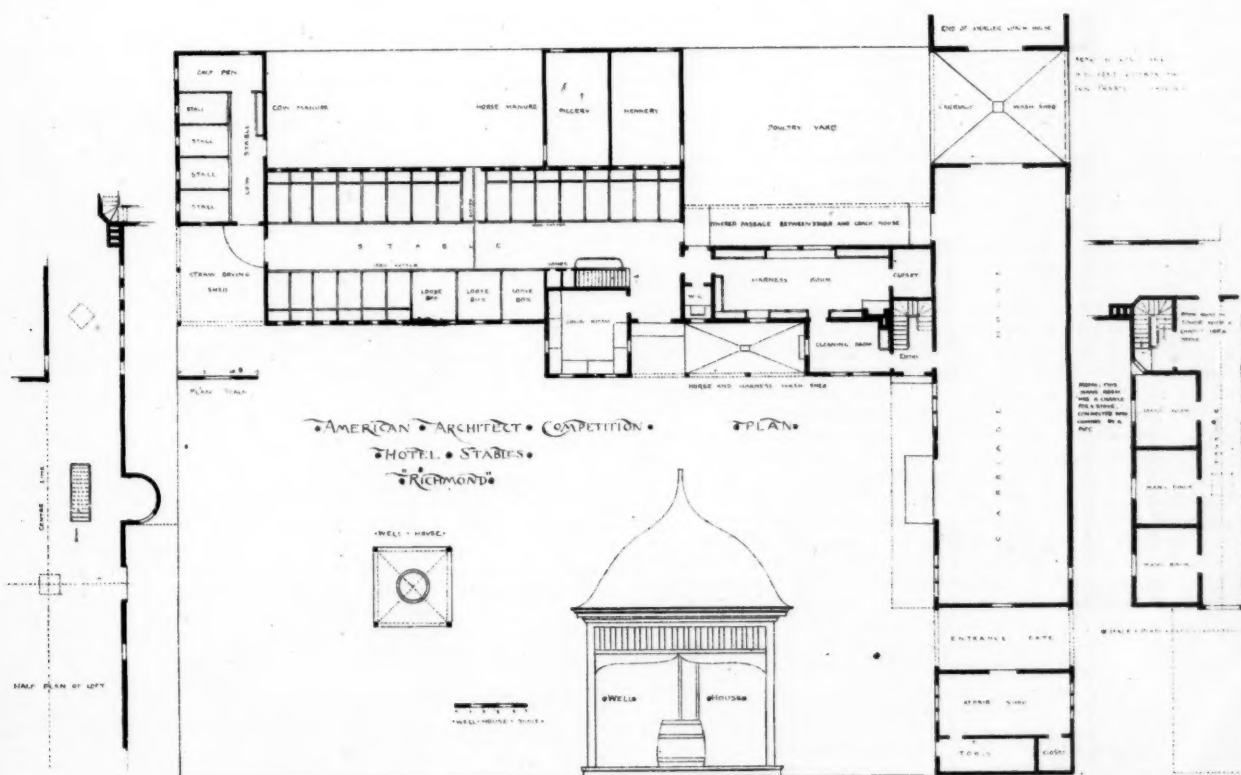


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• AMERICAN • ARCHITECT •
• COUNTRY • HOTEL • STABLES • COMPETITION •
• SUBMITTED BY • RICHMOND •



• PERSPECTIVE •



I restrained my chum from making any outward expression of interest. Curiosity, however, prevailed, and seeing that the yard was almost the only place where a good view could be obtained, we boldly entered, and stole our sketch, while they watched us closely to see that we didn't carry off any of the sacred yard dirt.

The picturesque houses of Caen are fast disappearing, but as we came down the street to the hotel, we hurriedly sketched one with boldly-projecting front stories, filled in with plaster and very low-studded; but this one suffices for any one interested until they stand upon the ground themselves, and enjoy its antiquity, as we did. But simply remember when you are in Caen don't neglect to look up the beautiful little church of Thann.

THE ILLUSTRATIONS.

COMPETITIVE DESIGN FOR A COUNTRY-HOTEL STABLE. BY
"Richmond."

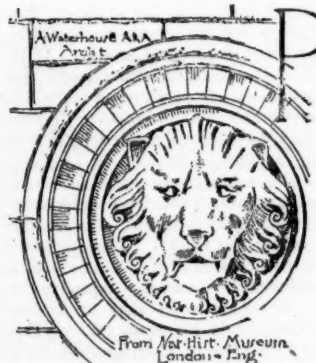
"Richmond" has grouped his buildings about his court-yard, with so evident a determination to make a picturesque composition at any cost, that we are not surprised to find that this noble pile—albeit rather forced in effect—rises from a plan which seems to have received little consideration as far as its general disposition is concerned. The details of the arrangements show no lack of study or skill; but there was an evident lack of preliminary studies to determine the most convenient *parti* or scheme, and therefore all the ingenuity of the author has failed to bring his chief services into proper relation to each other. The sharp turn from the entrance gate to find shelter is awkward for the arrivals, and the covered entrance would have gained in value, as would also the coach-house, had there been a large instead of a small door between them. The communication between the stable and the coach-house is not well managed. When the latter should be filled with vehicles it would be awkward to lead the horses to be attached to vehicles at the end farthest from the exit into the court. The ventilation of six of the horse-stalls into the piggery and hennery is a curious freak, when the size of the poultry-yard adjoining is considered. The water-closet is badly placed at the end of the harness-room. With elevations of such pretensions it was unfortunate to relegate the main gateway to an humble corner of a shed. "Richmond" has too much cleverness to justify these defects in his design.

PROPOSED HOUSE FOR S. MCPEDON, ESQ., TAYLOR'S FALLS, MINN.
DESIGNED BY MR. JOHN WOLF, NEW YORK, N. Y.

"THE NANEPASHMET," MARBLEHEAD NECK, MASS. MESSRS. H. P. CLARK AND I. LEWIS, ARCHITECTS, BOSTON, MASS.

HOUSE AT THE CORNER OF FRANKLIN AND FIFTH STREETS, RICHMOND, VA. MR. M. J. DIMMOCK, ARCHITECT, RICHMOND, VA.

NOTES ON HOUSE-DRAINAGE.¹—I.



PROFESSOR Kerr said, in a recent lecture before the Society of Engineers on "Foul Air in London Houses": "The popular idea of drainage is very simple: you empty the slops into the sink, and they go,—the devil knows where." Popular ideas on the subject have advanced farther in this country. The public here seems to have formulated its convictions somewhat as follows:

1. A house on high ground with a good fall away from it ought to be all right as to its drainage, but,—
2. No house-drainage is really good which has not the approval of the family plumber.
3. There ought to be an open pipe on the roof of the house, or a connection with the chimney.
4. Unlimited expenditure on the plumbing works insures the safety of the house.
5. The public sewer is the root of all evil, and whatever else is neglected, the clean and innocent drains of the house must be securely trapped off from it,—or "disconnected."
6. The master-key of safety in the drainage of a city house lies in the ventilation of the public sewer,—about which we have much theory and little practice.

himself escorted the body to its last resting-place at Caen. The funeral was singularly interrupted even within the precincts of the church, and before the service for the dead was concluded, by a cry from one of the bystanders, a man named Asselin, who claimed the site of the grave, saying it occupied the place of his father's house, that he had been illegally ejected from it, in order to build the church, and he demanded the restitution of his property. This claim, thus boldly made, in the presence of the dead monarch's son Henry, being backed by the assent of the townspeople, who stood by, was not to be denied or rejected, and the bishop was obliged to pay on the spot sixty sous for the place of sepulture for the royal corpse. Even then, it is related, that as the coffin was being lowered into the grave it struck against some obstacle, fell, and was broken into pieces, so that the corpse, ejected from its tenement, diffused so horrible a stench through the church that the rites were hurried to a close and the assembled priests and laity quickly dispersed.

¹ By George E. Waring, Jr., Newport, R. I.

This advance in the popular idea, as will appear later, is not very great. It still remains true as a general rule that "the devil knows" a good deal more than the people do what becomes of the wastes of a house and of the products of their decomposition. Indeed it seems at times doubtful whether the people or the devil have the greater interest in the question.

There is one fundamental principle which an average member of a civilized community ought to be able to comprehend, and the universal comprehension of which is of great importance.

The unceasing production of organic refuse of various kinds is an unavoidable accompaniment of all human life, and it increases with increasing comfort and luxury in the manner of living. This refuse once cast off, its tendency to mischief begins. *Its complete and undelayed removal should be the one great aim of all efforts to deal with it.* The world, after ages of indifference, has for generations made blundering attempts to solve the problem by concealing its factors from sight. During the past few decades, as specific knowledge has increased, and as science has demonstrated the relation between filth as the visible or invisible cause and disease as the obvious effect, efforts toward removal became more earnest; appliances became more efficient; errors were discovered through experience, and, little by little, we groped along until, hardly ten years ago, there began to appear a marked improvement in the art of sanitary drainage, which was quick to take to itself the title "Sanitary Science." Enthusiasm and cupidity, a zealous philanthropy and a shrewd business instinct have all been busy in extending the domain of the new-found science. As the world is by nature impatient of a confession of partial knowledge, and as it is the general tendency of zealots no less than of manufacturers and dealers to jump at ultimate conclusions from incomplete premises, some began at the outset to claim for our new devices and improved methods a complete and final infallibility. Each succeeding year has developed new defects, until those who now attempt to instruct the public in sanitary matters speak with a chastened and modulated voice which is in strong contrast to their earlier positive assertions. We see now that the evils which have perplexed the world since the world began to grapple with them are much greater than we thought, and more elusive of our remedial measures. We are only now beginning fairly to realize the magnitude of the problem which is afforded by the apparently simple duty of disposing safely and completely of the residuum of the vast amount of food and fuel and material which we import into our towns and bring into our houses. We have much yet to learn concerning the exact relations between accumulations of waste matters and the health of the people.

With regard to the serious question of street cleaning and of the removal of dust and garbage, we are still quite at sea. With reference to house-drainage the advance has been much more satisfactory, and from the present point of view it does seem possible to approach something near perfection,—though the ultimate disposal of our foul drainage is still by no means solved.

It is proposed in these short papers to treat only of the removal of what is included under the generic term "House-Drainage."

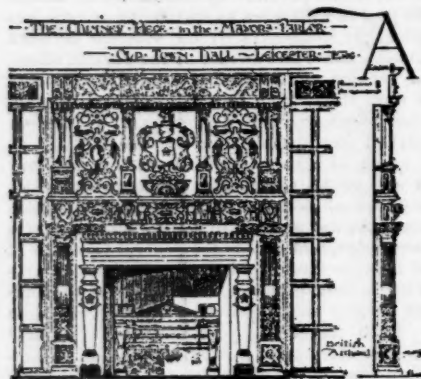
The make-shifts of the art which have appeared under the various forms of the dry-earth closet, the ash closet, Goux's tubs, the English tub-closet, etc., have all had and some still have their valuable uses, but they are none the less make-shifts. The best of these is the dry-earth closet or the ash closet, which are not infrequently, in the case of small buildings with little ground about them, the most available devices. They entail the serious inconvenience of the need for constant intelligent attention, and they have the grave limitation that they make no provision for the disposal of the large amount of liquid waste which even the smallest house produces. Their recommendation for general use has been based on two misapprehensions: one, that fecal matter and urine alone need special preventive treatment, the other that the interests of the community demand that the manurial matters contained in fecal and renal deposits should be preserved for agricultural use.

The first misapprehension is based on fact only in so far as the specific communicative principle of certain diseases is discharged with the evacuations. So far as these substances themselves are concerned, they are composed of the same materials that are contained in the wastes of the kitchen, and the gases resulting from their decomposition are essentially alike. It is impossible to detect by appearance, by odor, or by chemical examination any material difference between the contents of a cesspool filled with the decomposed discharges of a water-closet, and another filled with the decomposed discharges of a kitchen sink; both are alike effective in favoring the multiplication and diffusion of the germs of disease when impregnated therewith. Both are absolutely unfit to be retained within the limits of a town, or in the vicinity of a dwelling-house in the country.

The second misapprehension has been mainly dispelled by the discovery that the decomposition of organic matter in porous material—as in the accumulations of an earth-closet—is rapid and almost absolute. Earth used in the closet ten times over gains thereby very little manurial value. There seem to be but two ways to turn human wastes to account in agriculture: one is to store them in vaults and cesspools until they are needed; the other to deliver them immediately to irrigation fields as fast as they are produced. The latter method is commendable, and the former totally and universally condemnable, as implying storage, during decomposition, in dangerous proximity to habitations.

Cesspools and privy-vaults offer a menace to health compared with which no economical consideration is worthy of a moment's thought. Therefore, while these make-shift methods will be considered in connection with the drainage of isolated houses, they can have no place in the treatment of that part of the subject which is of more vital interest to the general public and which relates to the only complete system of domestic sanitation thus far devised: — the removal by water of everything that is capable of easy transportation in a running stream. Such removal is not only possible but is entirely suitable under all conditions where a proper means for the ultimate disposal of the liquid can be provided, even where there is no public water-supply, and even where only such water is used in the house as is brought into it in buckets.

ARCHITECTS' SUPERINTENDENCE.



CASE of considerable importance to architects and employers came before the Nottingham County Court recently, and is reported in the *Building News*. The simple facts of the case were these: an architect of the above town sued a local physician for the balance of an account, owing for professional services. The defendant instructed the plaintiff to prepare plans for

a house in the "Aesthetic style." A tender was accepted, and the plaintiff informed the defendant that it was necessary to appoint a clerk of works, as it was not expected that an architect could visit the building more than twice or three times a week, and it was the duty of the clerk of works to superintend the minor details. The defendant, however, thought a clerk of works unnecessary. The building was finished, and the plaintiff sent in his account; but the defendant paid only a portion of it, as he contended there were certain details not properly carried out, that the drains were defective, and the house consequently unhealthy. It was contended at the trial that these were details which could not properly come under the architect's notice; but that would have been obviated by the employment of a clerk of works. His honor took this side of the matter, and ultimately a verdict for the plaintiff was given for £25 and costs. The case has more than one point of interest for the architect and the employer: there is a certain amount of supervision expected from the architect, under the ordinary and customary usage of the profession. What does this consist in, and how many visits ought an architect to make a week to a building which he has undertaken to superintend? It so happens there is no written or traditional rule of the profession which defines such attention, and that in point of fact architects have to consult their own time and convenience in superintendence of works under their charge. It is a hard thing to say how much attention an architect ought to give to a work. The answer would necessarily depend on various considerations: the kind of contractor employed, his character for honesty and integrity, the class of building, whether it required more than usual care in details, the size and cost of the building, etc. It would be simply impossible to lay down a hard-and-fast rule: each case must be judged on its merits. Of course, it is no excuse for an architect to plead a large practice, and that, in consequence, he could not make so many visits to a certain building; the cost of the building ought not also to have anything to do with the superintendence, for if an architect, in however extensive a practice, takes a work, he is expected to carry out his engagement as much as any less busy practitioner. And men of large practices can well afford to leave small works to small men. An employer at least expects to receive from his architect such a fair amount of supervision as will guarantee to him that the work has been carried out in accordance with the design and intention of the specification; and yet it is possible to conceive such an amount of supervision inadequate to detect errors in workmanship or scamped work, such as bad drainage details. For example: no ordinary amount of supervision on the part of the architect can obviate such a blunder as giving a drain a deficient fall, of making a clumsy or imperfect junction with the sewer, of seeing that every pipe is sound and well jointed, or that the joints and workmanship of the interior sanitary arrangements are perfect in every detail. These are things likely to be neglected directly after the architect's back is turned. Nor, for the same reason, could an architect be charged for negligence in not detecting every bad brick or piece of timber introduced. It would be clearly out of reason to expect him to be always present on the works and watch everything done or every material brought into the building: so that the superintendence of an architect can only be reasonably understood to mean a general inspection of the works, and this is the opinion the judge of the Nottingham County Court formed upon

the evidence adduced. Referring to the details, he said "these were clearly the duties of a clerk of the works, and if the defendant did not choose to engage one, he must abide by the consequence, for an architect could not be expected to be present to superintend these details."

The law affecting building contracts is not very explicit with regard to the question of the architect's duties in this respect. The law imposes on an architect, that he should be duly qualified to practise his profession, and that he should use a reasonable amount of care and skill in its practice. In ordinary contracts there is nothing said about what an architect's superintendence means. No case appears to have been decided, which defines the limits of the architect's authority in the general superintendence of works, and in the absence of such terms the duty has to be implied, and the law, indeed, dictates what any prudent man would consider fair. When an architect undertakes to superintend the erection of a building, he is supposed to exercise a reasonable amount of skill and attention, and the law would imply neither more nor less. The case we have quoted, so far defines the limit of the architect's duties, in respect of general superintendence, and, in the absence of an express agreement, the evidence of usage only is admissible. It is to be regretted that we have no decisions or legal authority which define the architect's duties with regard to superintendence, for there is ample evidence in the architect's practice to prove that much of the success of a contract work depends upon the attention given to details. Yet the case decided the other day shows what the legal mind would understand as reasonable in similar cases, and to this extent it will be useful as an authority.

Our readers may ask what is implied by reasonable superintendence. It is quite certain, as we have said, that an architect can only be required to exercise a general supervision over the works. The setting out of the building correctly, the construction of the walls and floors, and roofs, so far at least as they relate to their proper thickness, materials, and strength to resist pressure or weight, are all matters which strictly come within the architect's duty to see properly executed, as these are all matters for which his skill as an architect has been retained. They are matters also which depend upon the proper carrying out of the drawings and specifications, for it is very evident if a wall blew or fell down, or a floor gave way, it would imply a want of due skill in proportioning the thickness of the wall or the beams of the floor; and as these things are shown in drawings the architect is reasonably expected to see that they are carried out. But it may be fairly surmised that he cannot be held responsible for the introduction of inferior materials, or even for the bad workmanship of any part of a building over which he can only give a general supervision. If a wall gives way or a floor breaks down from bad material introduced in the substance of it, or from an imperfect connection or detail, which could not reasonably have been inferred from the specification and intention of the architect, he is clearly not liable, but the builder is the responsible party. Of course, we are supposing no case of negligence on the part of the architect to be proved. By the French code both the architect and the builder are liable during ten years for negligent construction, and a similar code we believe is in force in Lower Canada. With regard to drains, they are generally left to circumstances, and the architect rarely does more than indicate their position on the plan. The levels, joints, and junctions, are points which, however important to be attended to, cannot fairly be said to come within the architect's general superintendence, as usually implied in building contracts. The law, in fact, holds the architect responsible for all relating to design and construction, but cannot require him to exercise the same care as regards workmanship, as it would be unreasonable to suppose he could always be on the works. The question, indeed, is of such vital importance to architects, that it naturally brings to the front another of considerable moment — namely, the employment of a clerk of works. It seems to us that architects whose practice is extensive should require in all cases the employment of clerks of works. In country practice of a moderate kind it is usual to do without their services, yet the saving is dearly purchased, and the demands made on the architect become more onerous. It is to the interest of the architect that a clerk of works be employed, and it is certainly to the interest of the employer. In no building is it possible to see that all the materials and labor are of the nature described in the specification and shown in the drawings, without one; and we think it the duty of the profession to lay down some rule by which they may place themselves in a position of independence. When ought the clerk of works to be employed, and on what kind of work? are questions that might very well be left to an architect's discretion. In the case we have mentioned the plaintiff informed his employer that a clerk of works must be engaged, as an architect could not be expected to visit a building more than twice or three times a week. The defendant refused to have one, and the result was that the drains were defective. The judge observed with much truth that a clerk of works could not be considered merely as an ornamental appendage, for, as a matter of fact, the duties he was expected to perform were of a very important character. If architects desire to maintain their position as general supervisors of buildings, the sooner they come to a decision on these questions the better, and the employment of an efficient clerk of works ought to be considered almost as necessary a condition of good building as the employment of an architect.

STRENGTH OF PORTLAND CEMENT-MORTARS.

NEW YORK, July 10, 1882.

TO THE EDITORS OF THE AMERICAN ARCHITECT:

Dear Sirs,—It would afford me pleasure to leave to Mr. F. E. Kidder, C. E., the last word in the interesting question on Bastard Mortars. Still as he wishes to learn which brand of Portland cement had been taken, in 1878, by Mr. Kuhn for his tests—and finally for the construction of the Albert Bridge in Dresden—I may be excused for informing him and you that "Star" ("Stern") Portland cement was used from the "Star" Portland Cement Works of Messrs. Toepffer, Grawitz & Co., Stettin, Germany, and that the preference was awarded to this brand on account of its superior fineness, strength and well-known uniformity, and after a series of tests made by Mr. Kuhn, with ten German and English Portland cements, to ascertain the strongest, most reliable and economical. The official report of the Board of the Albert Bridge Works, published by the "Zeitschrift des Architekten und Ingenieur Vereins" in Hannover, 1878, Vol. 24, No. 4, runs as follows:

"In comparing the results of tests, and the cost of ten Portland cements the Stettin 'Star' brand proved to be the best and most economical in all stages of mixture and induration. Although prices varied from 12 to 15 marks per barrel, and that of the 'Star' brand was M 14.50 delivered at works, all mortars made of 'Star' Portland cement were the cheapest. The ratio of strength of the different cements was from 1:4.5, the latter allowing of the largest addition of sand, and the formula of cost of the different mortars was as follows:— $1 \times 14.5 : 4.5 \times 12 = 1 : 3.7$."

If Mr. Kidder would read Mr. Henry Reid's book, "A Practical Treatise on Natural and Artificial Concrete, and its Varieties and Constructive Adaptations" (E. & F. N. Spon, 46 Charing Cross, London, and 446 Broome Street, New York), "Chapter XII," "German Portland Cement," he can gather the most reliable information on the merits of the German "Star" brand, if compared with what the above named most prominent English author on the subject considers to be the best of English Portland cements. Mr. Reid shares the opinion of those experts who have known this high-class brand of Portland cement since 1860. I am, dear Sirs,

Yours respectfully, GUSTAV GRAWITZ.

THE ADVANTAGES OF FOREIGN TRAVEL.

PHILADELPHIA, June 27, 1882.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Is travel in Europe a necessary part of an architect's or designer's education?

Is it likely to prove a great benefit to him, or will it not tend to cramp his originality, and would it not be better for him if he stayed at home, endeavored to understand construction, and studied the principles of beauty in nature? Would he not become a really better designer by doing so?

Hoping I shall not intrude too much on your time, I remain

Very respectfully yours, A. T.

[The notion that the art of architecture can be learned by "studying the principles of beauty in nature" is one which we probably owe to a misinterpretation of some of Mr. Ruskin's expressions; but whatever may be its origin, it is a very widespread one, particularly among young architects of the more thoughtful class, who are charmed with the economy and facility which such a mode of instruction presents, as well as fascinated by the romantic freedom which it seems to promise to their aspiring imaginations. Nevertheless, there is no stronger proof of the feeble appreciation of architecture among us than the currency of this very idea. Is there any other art in respect of which such a phrase could be used without exposing its author to deserved ridicule? How does a man learn the art of literature? By studying grammar, frequenting polished society, reading critically the best authors, and correcting his own essays by comparison with their superior elegance, or by spending his time in conversing with the children, and reading the old almanacs of his native town, trusting to "nature" to come and show him how to express his thoughts in pure and noble language? What sort of figure does the painter cut whose passion for the beauties of nature urges him to attempt to depict them from inspiration, without acquainting himself with any of the technical processes by which dalt pigments are contrasted, harmonized, and toned into a suggestion of light, shade, and color? A. T. can answer his own inquiry by supposing himself to be desirous of learning the art of playing the violin, instead of designing buildings. Would he, with that purpose, wait for nature to teach him the notes, the fingerings, and the positions of the bow; or would he go to a good instructor to be taught the scale, practice diligently to train his ear and hand, study Beethoven and Mozart to improve his taste, and learn counterpoint and harmony to enable him to compose with facility? That his love and observation of nature may inspire him afterward with beautiful themes is probable enough, but that has nothing to do with art, which consists in the clear, forcible, and elegant expression of an idea or emotion, not in the idea or emotion itself, which thousands of persons may share without being in any sense artists.

So with the art of architecture, which aims at the expression of a wide range of sentiments by means of materials the least tractable, and under forms the most conventional, of those used in any fine art. To employ such elements with any chance of success it is necessary to fill the mind to the utmost with examples of variations of outline, grouping, color, form, and texture, keeping them there as materials to be drawn upon as needed for producing a given effect, just as a writer searches in his memory for the precise word which will express the idea he wishes to convey. With a vocabulary composed of a few commonplace phrases the most inspired author would fail to convey much meaning; and the architect whose resources are confined to the baldness of American examples often finds his designs haunted by a painful sense of mental poverty, which he either seeks to disguise by obtrusive vulgarity, or acknowledges by a dry propriety, according to his taste.

It is this poverty of resource which travel in Europe is adapted to correct. It would be absurd to say that all the buildings on the other side of the

Atlantic are beautiful, but they are different,—from each other, as well as from those of the New World, and all have a character of their own. The observant architect, whose taste has been purged of the preconceived notions about "frozen music," "the foul flood of the Renaissance," and the rest of the ridiculous clap-trap which passes current among amateurs, will find at every step suggestions of homely beauty, aristocratic reserve, or luxurious elegance, or will be struck by some picturesque mass, or distribution of light and shade. All these effects he will analyze, to discover the relations, form, or arrangement upon which they depend, and will thus lay up little by little a fund of artistic material for future use. If he can sketch what he sees, so much the better; his analysis will be far more minute and successful; but his sketch should be for that, and not as an end in itself, the main object being to store his mind with ideas, which he will assimilate and use as his own, and not to multiply examples, to be collected and used with equal want of thought.

For the study of construction, which, we are glad to see, A. T. considers to be of essential importance, European travel offers particular advantages. Independent of problems involving calculation of stress and resistance, all architects have much to learn in the way of handling the brick, stone, and wood in which their ideas are expressed, and nowhere can this handling, considered both in its practical and artistic aspect, be learned to such advantage as in Europe, where every kind of material may be seen used in an infinity of ways.—EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS.

BUILDING OPERATIONS IN NEW YORK.—The figures compiled by direction of Mr. John J. Gorman, President of the Fire Department, show that in the six months ending on the 30th of June last the Building Bureau of this city approved plans for 1,365 new buildings that are estimated to cost \$26,048,705, and for 1,998 alterations to buildings, to cost \$2,747,532. During the same six months the Brooklyn Building Bureau approved plans for new buildings to cost \$4,831,000, and for alterations to buildings to cost \$446,000.

THE LONGEST FENCE IN THE WORLD.—The longest line of fence in the world will be the wire fence extending from the Indian Territory west across the Texas Pan-handle, and thirty-five miles into New Mexico. We are informed that eighty-five miles of this fence is already under contract. Its course will be in the line of the Canadian River, and its purpose is to stop the drift of the Northern cattle. It is a bold and splendid enterprise, and will pay a large percentage on the investment. The fence will be over 200 miles long.—Clarendon (Tex.) News.

TREES ON THE FRENCH NATIONAL ROADS.—Statistics have been published by the French Department of Public Works relative to the planting of trees along the high-roads of the country. The total length of the Routes Nationales is 30,938,126 metres, of which 23,731,928 metres may be bordered with trees. Of this distance, 14,345,311 metres are planted, while 9,390,617 metres remain to be done. The number of trees used to form the welcome avenues is 2,691,698.—The Architect.

SCARCITY OF IVORY.—It is stated in the *Engineer*, that on May 15th there were only 127 1-2 tons of ivory in stock in London. The smallest stock for many years was in March last, viz.: 107 1-2 tons; the largest in July, 1878, viz.: 301 1-4 tons. At present there are probably in dealers' private warehouses about 40 tons, while at one time the private dealers used to hold over 100 tons in their own warehouses. Eight ivory cutters in Sheffield cut up £124,000 worth of tusks in a year, and the two largest cutlery houses add a value of £16,000 each per annum to that total. One-fourth of all the ivory imported into England is used in Sheffield for cutlery hafting, and other purposes. It does not appear that any really satisfactory substitute for ivory has yet been produced. The material known under various names, but generally called celluloid, has not served more than a limited purpose. The same may be said of vegetable ivory. None of these things will take the peculiar polish of ivory. An enormous trade could be done in a really satisfactory substitute for the elephant's tusks.

ACCIDENT IN A SULPHUR MINE.—The *Gazette Piemontese* reports a terrible accident in one of the sulphur mines at Caltanisetta, in Sicily. The rope by which a wagon heavily laden with sulphur was being drawn up an incline out of the "Tumminelli" pit suddenly snapped. The wagon thereupon commenced descending again, and there being no possibility of stopping it, the wagon rushed at a tremendous speed to the bottom of the pit and was instantly dashed to pieces. Owing to the high friction the brimstone burst into flames, with the most disastrous results to the miners, who were all at work at the time. As soon as the fire was extinguished there were no fewer than thirteen bodies taken out of the pit, the victims having all been suffocated and burned to death. There were, in addition, upwards of thirty miners who had received injuries, chiefly burns of a more or less serious character.

DEFECTIVE BRICK PIERS.—The committee of architects appointed by Kraft, Holmes & Co. to investigate the fall of the building lately occupied by them, in St. Louis, have made their report. It is made on calculations based on standard authorities. No defects were found except in the basement piers. The brick piers in the basement will have to carry the load of all the floors and roof added. This will be 74,100 x 5, equal to 370,500, to which add 7,410, and will have 377,910 pounds, which is 189 tons. The dimension of the brick piers being 1' 10" x 2' 5", will give 4 1-2 square feet as the area of each pier. The average crushing load of first-class brickwork laid in cement-mortar is about sixty tons per square foot, and again taking one-sixth as a factor of safety, we will have ten tons per square foot as the safe load, and if each pier has 4 1-2 square feet, it will give forty-five tons as the safe load to be imposed upon piers of this size. It will be seen from this that the load of 189 tons was four and one-quarter times as great as the pier was reasonably able to carry. It is therefore evident that the brick piers, being the weakest part of the structure, had to give way first, and they caused the disaster. While the above calculations are based upon brick piers of the very best quality of workmanship and materials, the piers in this building were not a fair average of work.—Scientific American.

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

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

Baltimore.

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

Henry Frank estate, three-sty brick building, Lexington St., bet. Eutaw and Howard Sts.
Wm. Frush, 4 three-sty brick buildings, Preestman St., bet. Calhoun and Cary Sts.
Henry Westfall, 12 two-sty brick buildings, Heath St., beginning at the s. e. cor. of Byrd St.
Henry Westfall, 2 two-sty brick buildings, Byrd St., beginning 76' s. of Heath St.

Boston.

BUILDING PERMITS.—*Brick.*—Commonwealth Ave., No. 202, Ward 11, for John J. French, four-sty mansard dwell., 26' x 65'; Leander Greely, builder.
Commonwealth Ave., No. 204, Ward 11, for Sarah H. Stratton, four-sty mansard dwell., 26' x 65'; Leander Greely, builder.

Chauncey St., Essex St., and Harrison Ave., Ward 10, for C. D., G. H. & John Homans, trustees, five-sty warehouse, 40' x 95' and 106'; T. J. Whidden & Co., builders.

Wood.—Jarvis St., rear of No. 630, Ward 21, for Ada W. Phillips, stable, 20' x 21'; J. H. Stevenson, builder.

Walnut Ave., rear of No. 299, Ward 21, for Chas. A. Dean, stable, 25' x 32'; Charles H. Blodgett, builder.

Taylor St., rear of rear Water St., Ward 24, for Albert T. Stearns, dry-house, 26' x 60'; W. G. Blanchard, builder.

Brooklyn.

BUILDING PERMITS.—*Lorimer St., e. s. 200' n Nassau Ave., 3 three-sty frame tenements; cost, each, abt. \$3,000; owner and carpenter, J. J. Raudall, 126 Manhattan Ave.*

Partition St., No. 90, bet. Van Brunt and Richards Sts., three-sty frame tenement; cost, \$2,750; owner, Fr. Grimmer, on premises; architect and builder, John Smith.

Stagg St., No. 250, s. s. 475' w Waterbury St., two-sty frame dwell.; cost, \$2,300; owner, H. Mahmeister, 106 Meserole St.; architect, Th. Engelhardt.

Penn St., n. s. abt. 300' e Lee Ave., 2 three-sty brownstone dwells.; cost, each, \$10,000; owner and carpenter, Thomas B. Saddington, 263 Hewes St.; architect, E. F. Gaylor.

Marcy Ave., n. s. 45' s Hooper St., 2 three-sty brownstone dwells.; cost, each, \$10,000; owner, architect and builder, John F. Ryan, 187 Hewes St.

Bainbridge St., n. s. 275' e Reid Ave., 8 two-sty brick dwells.; cost, each, abt. \$3,500; owner, Kate Acor, 386 Clifton Pl.; architect, Lewis Acor.

Twenty-fifth and Twenty-sixth Sts., 364' s Third Ave., one-sty frame stable and carshed; cost, \$12,000; owner and builder, Brooklyn City Railroad Co., 10 Fulton St.; architect, A. W. Dieckie.

Sixth Ave., s. e. cor. Twenty-first St., 2 two and three-sty frame buildings; cost, \$3,000 and \$4,000 each; owner, architect and builder, E. E. Van Brunt, 179 Skillman St.

Tenth St., n. s. 297' w Eighth Ave., 6 three-sty brownstone flats; cost, each, \$7,000; owner, Daniel Doody, 111 E. Ave., cor. Middle St.

Walcott St., No. 88, e. s. abt. 100' from Van Brunt St., thr. e-sty frame tenement; cost, \$3,000; owner, Mr. Flynn, 80 Walcott St.; architect, I. I. Kelly; builders, I. Kelly and J. Lewis.

Sixteenth St., n. s. 96' s Fifth Ave., 4 three-sty frame tenements; cost, each, \$2,500; owner, Ellen F. Herman, 256 Prospect Ave.; architect, G. Herman; builders, William Thompson and Geo. Herman.

Warren St., n. s. 375' w Third Ave., 15 four-sty brick tenements; cost, each, \$8,000; owner, J. W. Deering, 434 Henry St.; architects, Paritt Bros.; builder, G. B. Leaning.

Summit St., n. s. 125' w Inlay St., three-sty brick shop; cost, \$2,500; owner, H. Van Cleef, 68 Hamilton Ave.; builders, M. Gibbons & Son.

Hull St., n. s. 50' from Hopkinson Ave., 6 two-sty and basement frame dwells.; cost, \$3,000 each; owner, Joseph Peters, 434 East Eighty-first St., New York; architect, George Hildenbrand; builder, John Baur.

Wallabout St., n. s. 50' e Wythe Ave., three-sty brick factory; cost, \$6,000; owner and builder, K. Egan; architect, J. D. Reynolds.

ALTERATIONS.—*Willoughby Ave., s. w. cor. Throop Ave., one-sty frame extension; cost, \$5,000; owner, Throop Ave. Presbyterian Church; architect, John Munford; builders, W. & T. Lamb, Jr., and C. L. Johnson.*

Chicago.

ALTERATIONS.—The First National Bank Building, southwest corner of State and Washington Sts., has been purchased by Lucius G. Fisher, Jr. It is to be re-modelled throughout. Four more stories will be added, making eight stories in all. The cost of changes will be \$70,000.

HOUSES.—L. Willoughby has taken out permit for three-story dwelling, of Massachusetts red sandstone, cor. Eldridge Court and Michigan Ave.; to cost \$20,000. Cobb & Frost, architects.

BUILDING PERMITS.—Wolff Bros., two-sty and basement brick storehouse, 20' x 104', rear 373 Milwaukee Ave.; cost, \$5,500.

Wm. A. Gubbins, two-sty and basement brick flats, 22' x 42', 433 S. Wood St.; cost, \$3,000.
C. O. Hauser, two-sty and basement brick flats, 61' x 124', 331 to 342 Centre St.; cost, \$35,000.

N. Flipel, three-sty brick store and dwell., 27' x 67', 1161 Milwaukee Ave.; cost, \$5,600.

C. O. Hansen, three-sty and basement brick flats, 42' x 48', 447 and 449 Huriburt St.; cost, \$11,000.

Mrs. E. Tobias, two story and basement brick flats, 22' x 45', 920 W. Jackson St.; cost, \$4,600.

Sven Nelson, three-sty and cellar brick dwell., 21' x 48', 312 Webster Ave.; cost, \$5,000.

V. Koesback, 2 two-sty and basement brick stores and dwellings, 46' x 67', 786 to 798 W. Twelfth St.; cost, \$7,500.

T. J. Hawkins, three-sty and basement brick flats, 50' x 6', 3420 S. Park Ave.; cost, \$18,000.

A. Kalousky, two-sty brick dwell., 22' x 54', 157 Blackhawk St.; cost, \$2,800.

H. Muehlhauser, two-sty and basement brick store and dwell., 25' x 75', 321 Blue Island Ave.; cost, \$6,000.

G. F. Schoeppe, three-sty and cellar brick store and dwell., 24' x 85', 625 Blue Island Ave.; cost, \$7,000.

Job Webb, two-sty brick dwell., 40' x 46', 306 and 308 S. Leavitt St.; cost, \$6,000.

A. B. Williams, two-sty and basement brick dwell., 22' x 46', 322 N. Market St.; cost, \$5,000.

F. Lingle, two-sty brick dwell., 20' x 56', Throop St., near Twentieth; cost, \$4,800.

T. Ludas, two-sty brick basement, 20' x 22', 2457 Wentworth Ave.; cost, \$4,000.

Christiann Watrous, three-sty brick dwell. and barn, 50' x 60', 228 N. State St.; cost, \$20,000; J. M. Van Osdel, architect.

F. G. Whiting, two-sty brick dwell., 23' x 51', 3148 Lake Park Ave.; cost, \$6,000.

E. Lederer, two-sty and basement brick dwell., 20' x 76', S. Park Ave. and Thirty-second St.; cost, \$7,000.

F. Doorak, three-sty brick dwell., 22' x 58', 207 Taylor St.; cost, \$5,000.

F. Kovarik, two-sty and basement brick dwell., 20' x 52', 504 Twentieth St.; cost, \$3,800.

H. Bergeler, two-sty and basement brick dwell., 21' x 50', 572 Warren Ave.; cost, \$4,000.

John Reichwein, three-sty and basement brick store and dwell., 1067 Milwaukee Ave.; cost, \$8,000.

Geo. Errison, two-sty brick dwell., 20' x 40', 252 N. Sangamon St.; cost, \$2,500.

Mary Mooney, two-sty brick dwell., 22' x 50', 84 Johnson St.; cost, \$3,800.

M. O. Flaherty, two-sty and basement brick dwell., 24' x 65', 498 Thirty-first St.; cost, \$5,000.

Cincinnati.

BUILDING PERMITS.—Since our last report the following building permits have been issued:—

Arbater Hall Stock Co., addition to three-sty brick building, 468 Walnut St.; cost, \$6,800.

Dr. Geo. K. Taylor, two-sty brick dwell., 317 Linn St.; cost, \$6,000.

John Robinson, repair Robinson's Opera-House, Ninth and Plum Sts.; cost, \$4,000.

Rev. J. Kossiter, two-sty frame dwell., Vine St., near Elm St., Walnut Hills; cost, \$4,000.

F. Muller, two-sty brick dwell., Liberty St., near Denman St.; cost, \$4,500.

Louis Nepper, two-sty brick dwell., Hammond St., near Vine St.; cost, \$3,500.

John Wessling, repair two-sty brick dwell., Michael St., near Burns St.; cost, \$2,000.

Geo. Enger & Co., four-sty brick carriage-factory, cor. of Geet and Summer Sts.; Chas. Crapey, architect; cost, \$31,000.

C. Massand, two-sty frame dwell., Vine St., near Park Ave., Walnut Hills; cost, \$2,500.

A. Hasselbrock, three-sty brick dwell., Third St., near Pike St.; cost, \$2,100.

Wm. E. Foy, two-sty frame dwell., Hawthorne Ave., near Warsaw Pike; cost, \$3,000.

M. Lucky, two-sty brick dwell., Bodsworth Ave., opposite Dive St.; cost, \$2,000.

Nine permits for repairs; cost, \$7,600.

Total permits to date, 394.

Total cost to date, \$1,016,300.

Cleveland.

STORES.—A brick block on St. Clair St., for George Johnson; cost, \$4,500; Cudell and Richardson, architects.

A brick block on St. Clair St., for J. B. Perkins; cost, \$61,000; John Edelman, architect. Built by the day's work; F. H. Norton, superintendent.

A brick block on River St., for J. B. Perkins; cost, \$59,000; Coburn & Barnum, architects. Built by day's work; E. Smith, superintendent.

A brick block on the Public Square, for Brainard Sons; cost, \$5,000; Walter Blythe, architect.

A brick block on Canal St., for Sherwin Williams; cost, \$15,000; C. Griese, architect; F. A. Ceburn, superintendent.

FREIGHT DEPOT.—Freight depot for the N. Y. C. & St. L. Railway, on Broadway; cost, \$28,000; L. Cowles, architect; W. J. Scott, builder.

HOUSE.—A frame dwelling on Osborn St., for F. H. Norton; cost, \$3,000; F. H. Norton, architect and builder.

New York.

CHURCH.—A Methodist Episcopal Church with Parsonage and Sunday School is to be built at the cor. of Eighty-sixth St. and Park Ave. The buildings which are to be of Belleville stone will cover a lot 102' x 100'. The cost will be about \$60,000; Messrs. J. C. Cady & Co. are the architects.

STORE.—Nos. 134 and 136 Beekman St., are to be built up with a double store of brick with stone finish 15' x 40', at a cost of \$15,000; from designs of Messrs. D. & J. Jardine, for Mrs. Jno. Stewart.

APARTMENT-HOUSE.—A model apartment-house is to be built at the n. e. cor. of Fifth Ave. and Ninth St., 53' x 109', for Gen. Daniel E. Sickles.

BUILDING PERMITS.—*One Hundred and Fifty-second St., s. s. 52' w Eleventh Ave., three-sty brick and frame tenement; cost, \$4,500; owner, Geo. F. Gantz, 345 West Fifty-eighth St.; architect and builder, J. B. Smith.*

Forty-second St., s. s. 153' w Fourth Ave., seven-sty fire-proof brick and stone safe deposit and storage building; cost, \$33,000; owners, Lincoln Safe Deposit Co., Thos. L. James, Pres., No. 5 Vanderbilt Ave.; architect, John B. Snook; builder, Sam'l Lowden.

One Hundred and Forty-fourth St., n. e. cor. College Ave., 5 three-sty brick buildings, 3 dwells.; cost, three, \$4,000 each, two, \$2,000 each; owner, Chas. Van Riper, 415 North Third Ave.; architect, H. S. Baker.

Fifty-seventh St., s. s. 275' w Eighth Ave., 2 seven-

sty brick apartment-houses; cost, \$98,000 each; owner, James A. Frame, 105 East Seventieth St.; architects, Thom & Wilson.

One Hundred and Seventh St., n. s. 100' w First Ave., three-sty brick store; cost, \$7,000; owner, John Cullen, 274 East One Hundred and Sixth St.; architects, Cleverdon & Putzel; builder, M. Reiley.

ALTERATIONS.—*West Twenty-fifth St., No. 165, five-sty brick extension; cost, \$3,000; owner, Amelia Pfetschinger, on premises; architects, Thom & Wilson.*

Sixth Ave., No. 319, new store fronts on Ave. and Twentieth St., and interior alterations; cost, \$10,000; lessee, H. C. F. Koch, 133 West Twentieth St.; architect, Wm. F. Hume; builder, not decided.

East Sixty-first St., Nos. 306 and 308, to be raised five stories and a three-sty brick extension; cost, \$20,000; owners, Rosenheim & Co., 906 to 314 East Sixty-first St.; architects, Lederle & Co.

Fifty-sixth St., n. s. 320' w First Ave., to be raised one sty and a three-sty brick extension; cost, \$5,000; owner, Walter Shriver, on premises; architect, A. B. Ogden; builder, Geo. T. Dollinger.

East Thirty-fifth St., No. 161, rear, to be raised one sty; cost, \$3,000; owner, Chas. Lanier, 30 East Thirty-seventh St.; builder, Geo. Mulligan.

West Twenty-fourth St., No. 115, rear, to be raised one sty; cost, \$3,000; owner, Henry Maillard, 53 W. Twenty-fifth St.; architect and builder, Thomas Joyce.

East Tenth St., No. 220, one-sty brick extension, fitted up for Turkish bath; cost, \$7,000; lessee, Dr. Chas. Waechter, on premises; architect, Paul F. Schoen; builders, C. Huebner and C. Lehmann.

Sixth St., Nos. 727 and 729, one-sty brick extension; cost, \$4,400; owners, Trustees of the Presbyterian Church on University Pl.; architects, J. C. Cady & Co.; builders, Sinclair & Wille and Guy Culgin.

Cedar St., No. 13, to be raised one sty and laid out for offices; cost, \$6,000; owner, Edward H. Kellogg, 17 Cedar St.; architect, A. Bernhauser; builders, Fellows & Craig and A. Bernhauser.

West Forty-ninth St., No. 26, two-sty brick extension; cost, \$6,000; owner, Joseph Cornell on premises; architect, Chas. H. Atwood; builders, Wm. Haigh and A. J. Wells & Co.

Philadelphia.

BUILDING PERMITS.—*Jefferson St., n. s. be. Bailey and Twenty-seventh Sts., three-sty shop, 24' x 35'; J. McArthur.*

Seppia St., n. of Toga, 2 two-sty dwells., 14' x 30'; W. D. Hefferman.

Cayuga St., 100' e of Seventeenth St., 2 two-sty dwells., 17' x 58'; McLaughlin & McNamera.

Thirty-fifth St., e. s. bet. Ridge Ave. and Clearfield St., 3 two-sty dwells., 17' x 45'; McLaughlin & McNamera.

Hazard St., No. 125, s. s. 4 two-sty dwells., 13' x 36'; J. F. Bradfield, contractor.

Green St., No. 181, four-sty dwell., 23' x 106'; Nutz & Worthington, contractors.

St. Louis.

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

Sam Sacks, two-story store with living-rooms above; cost, \$2,500; G. W. Pipe, architect; M. Laine, contractor.

M. Kirkwood, two-sty dwell.; cost, \$8,000; M. Kirkwood, contractor.

Mrs. Charlotte Diedrich, three-sty furniture-factory; cost, \$7,000; A. Beinke, contractor.

Mary Habackie, two-sty dwell.; cost, \$3,300; Beckmeier & Rietmann, contractors.

Charles Brenner, two-sty dwell.; cost, \$8,500; A. Beinke, architect; H. Schulte, contractor.

G. Ande, two-sty dwell.; cost, \$2,800; F. Mueller, contractor.

W. D. Barter, 3 two-sty dwells.; cost, \$5,000; W. D. Barter, contractor.

Mrs. Eliza KeKee, 3 two-sty dwells.; cost, \$6,400; Jas. Stewart & Co., architects and contractors.

Michael Fox, two-sty dwell.; cost, \$3,100; Brady, architect; H. Sudholter, contractor.

Washington.

B. Beallo, Trustee, brick dwell., 25' x 84', three-sty and cellar, 806 Market Space, n. w.; cost, \$9,000.

Henry C. Coburn, 2 brick dwells., 22' x 30', two-sty and cellar, G. bet. Twenty-first and Twenty-second Sts., n. w.; cost, \$8,000.

W. E. Chandler, remodel dwell., I. bet. Fourteenth and Fifteenth Sts., n. w.; cost, \$6,000.

Clark & Mason, 2 bri k dwells., Vermont Ave., bet. K and L Sts., n. w., 27' 7" x 49', three-sty and basement; cost, \$20,000.

Maj. Geo. Elliott, brick dwell., 24' x 34', three-sty and basement, O. bet. Sixteenth and Seventeenth Sts., n. w.; cost, \$5,000.

PROPOSALS.

ELECTRIC-LIGHT.

[At Chicago, Ill.]

Sealed proposals will be received by the Board of Commissioners of Cook County for putting in the necessary power, machinery, lamps, etc., complete for the proper lighting of the Cook County Court-House by electricity.

All bids must be indorsed Proposals for Lighting Court-House, and accompanied by a bond in the penal sum of \$1,000, and also Certified Check for \$200.

All bids must be delivered at Room 35, Court-House, on or before 12 o'clock, M., July 17, 1882. No bids will be considered if handed in after that time.

E. F. C. KLOCKE, Clerk.

HOSPITAL.

[At Chicago, Ill.]

Sealed proposals will be received by the Board of Commissioners of Cook County until 12 o'clock, M., July 24, 1882, for the erection three additional buildings to the Cook County Hospital.

For Blanks, Full Instructions, and Plans call at Room 35, Court-House. E. F. C. KLOCKE, Clerk.