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CONTENTS.

SOME of our readers may remember that we gave in these columns not long ago a little history of the competition for the proposed State Capitol at Denver, including an account of the strange discovery by the Commissioners, after all the designs were in, that the programme drawn up for the guidance of competitors was ill-considered and worthless; with a mention of the subsequent peregrinations of the Commissioners in search of knowledge about the subject, and their return, filled with the consciousness of duty performed, and eager to remedy the error which they had discovered, by calling an extra session of the Legislature to repeal the original programme, and substitute a less objectionable one. As an extra session could only be called by the Governor of the State, the Commissioners appealed to him to carry out their wishes, entertaining no doubt of his compliance, but it seems that he, either considering that the seventy-five hundred dollars which the session would cost was too high a price for the people of the State to pay for correcting an amateur's mistake, or perhaps believing that the Commissioners, having proved themselves so energetic in the acquisition of information, might with advantage continue their efforts for a season, declined to interfere, and the further consideration of the subject is thus necessarily deferred until the next regular meeting of the Legislature, in 1885. Meanwhile, the drawings submitted in competition have been returned to their unfortunate authors, the total result of whose efforts has thus been to advertise themselves as persons of character or attainments so inferior to those of other architects as to induce them to accept terms which all respectable members of the profession rejected at once.

A CORPORATION has just been formed in New York, under the name of the National Sewerage and Sewage Utilization Company, about whose plans and purposes we should like to know more. The capital stock of the company is fixed at three million dollars, so that, unless it should prove to be another of the countless schemes for defrauding innocent people under cover of a few scientific catchwords, the enterprise seems to be intended for operations on a large scale. There can be no question, it seems to us, that ample pecuniary success awaits the person or persons who shall, we cannot say how long hence, undertake, with thorough knowledge and economical administration, the application of animal refuse to the enrichment of land, on a large scale. Hitherto, as every one knows, the experiments in sewage utilization made in England and France have met, as a rule, with only partial success, but their result has at least been such as to encourage the belief that further experience will surely show how to lessen the cost and increase the profits of the business. In order to secure this most desirable end as quickly as possible, it is worth considering whether experiments on a small scale could not with much advantage be carried on by individual proprietors, if the way could be pointed out, and a little public spirit aroused. We acknowledge that, for ourselves, we never see the line of rich, strong vegetation which marks the overflow of a neglected cesspool without thinking of the wealth of blossom and harvest into which the contents of the pit might be converted, if the whole could be used in the same way as the few drops which run over the top. The world hardly yet realizes the significance of that marvellous cycle by which the foul refuse rejected in the necessary purification of the animal economy is transformed again by vegetation into clean and delicious food; but it may at least be remarked that the interruption of this natural course is followed by the heaviest of penalties; the land deprived of nourishment, becoming gradually barren, at the same time that the air, poisoned by the emanations of fertilizers out of place, loses its wholesomeness, and becomes dangerous to breathe.

THE German architects are engaged in a discussion in regard to a revision of their present schedule of charges, which has been in use for fourteen years, and is now found inadequate to its purpose. The Austrian members of the profession have been the first to propose a change, and the modifications suggested by a committee chosen from among them are published in the *Bauzeitung*. As we have never seen a copy of the original schedule, we are unable to compare it with the revision, but its main provisions, which are, we believe, about the same as those in use in all other civilized countries, seem to be unchanged, the variations applying mostly to minor matters, about which the English and American schedules say nothing. For example, the first of the new rules advises that all disputes between architects and their clients should be, by a previous agreement, left to the Court of Arbitration of the Austrian Engineers' and Architects' Association for determination. This suggestion, we imagine, would not commend itself to English-speaking clients, who can generally count upon a curious prejudice against architects on the part of judges and lawyers, and a dense ignorance of the whole subject on the part of juries, to warp justice in their favor; but it has, for all that, a good deal of merit. The provisions which follow prescribe minute directions upon points which are among us left to chance, usually to the detriment of the architect, but sometimes to that of his employer. The eleventh article, for instance, prescribes the fees for office consultations, the price of a question and "simple reply" being two dollars, and the remuneration increasing with the difficulty of the subject on which advice is sought. For business on which the architect has to work after seven o'clock in the evening his fees are doubled; and in measuring or other outside work where the architect is accompanied by an assistant, the services of the latter are charged for at half the price of those of the architect himself. In estimating travelling expenses the architect is to be entitled, when he has to take a carriage, to use one with two horses; and charges also for first-class fare on railway trains and steamboats; but an assistant is expected to travel on land in a one-horse carriage, or a second-class compartment on the railways, although he is entitled to first-class accommodations on steamboats.

A NEW occupation for ladies has been found in England. It seems that the Crystal Palace Company maintains a school for teaching the art of improving estates, and among other branches gives instruction in landscape gardening. One of the students in this department during the past year was a lady, a Miss Wilkinson, who received immediately an appointment to a position as professional adviser in a charitable society which supervises the laying out of church-yards and ornamental grounds of various kinds. It seems not unlikely that this pursuit may be found attractive to many other ladies besides Miss Wilkinson. There is no doubt of the need for educated landscape gardeners in many parts of the world, and nowhere is the want more felt than in this country; and if women should succeed half as well in such work on a large scale as they do with their modest flower beds and borders, they would soon find their services in demand.

THE Duke of Marlborough, in imitation of his Grace of Hamilton, has been endeavoring to raise a little money by selling off his superfluous bric-à-brac. The first articles disposed of were some copper dishes, painted in enamel at Limoges some two hundred years ago. Of these, one, an oval plate, painted with scenes from the Apocalypse by Jean Courtois, was bought by the Duke of Westminster for fifty-three hundred dollars; and the same noble purchaser secured also, for some-

thing over forty-five hundred dollars, a little pitcher, "painted in brilliant colors," by Susanne de Court. Another oval plate was sold to a different collector for the same price, but the rest of the pieces found a comparatively poor market. The furniture, which was to have been sold after the enamels, met with even less success, and finding that no bid above thirty thousand dollars could be obtained for a table inlaid with china plaques, his Grace stopped the sale in disgust. This particular table is said to have belonged to Marie Antoinette, but the unfortunate queen seems to have owned such an enormous quantity of furniture and Sèvres porcelain that her name alone does not add much to the value of any particular piece, and the table itself does not appear to have had the intrinsic merit of the lovely Riesener furniture which was sold with the Hamilton collection.

IN that home of eccentricity, Bedford Park, a house has recently been built which at least deserves mention as a curiosity. It is intended for the residence of a physician, and presents the peculiarity of having no fireplaces, as well as no doors inside the house, and nothing but fixed sashes for light, the kitchen window being the only one made to open. In order to preserve the inmates of the house from suffocation, fresh air is supplied to them from a reservoir in the basement, opening through an area to the exterior atmosphere. A stove placed in the basement reservoir is intended to warm the air in winter, and it is thought that ice can be used to cool it in summer. The basement chamber communicates by means of gratings in the floor with the corridor and staircase hall above, and each room is provided with an exhaust flue, by means of which air is to be drawn in through the door opening, and finally carried into a foul-air shaft, and discharged through the roof. The motive power by which all this circulation is to be maintained is derived from the smoke-pipe of the kitchen range, which is of iron, and passes through the main exhaust shaft. The whole affair seems to be a rather crude attempt to apply to a small house the kind of ventilation which used to be employed in hospitals until experience showed its inefficiency. If any one wishes to understand the condition of a building so constructed after some years of use, he can find an approximation to it in the lower regions of a passenger steamship, which are ventilated in something the same way. We are inclined to think that a single visit would convince him that however preferable a slow artificial ventilation may be to no ventilation at all, the free range of the wind through windows opened two or three times a day has a virtue in refreshing and purifying inhabited rooms which no machine currents have yet been able to emulate.

DEFINITE arrangements have been made for the construction in Vienna of an extensive system of elevated railways on the model of those in New York, to be completed within two years. The estimated expense of the system proposed is twenty-five millions of dollars, and as that sum will pay for a great deal more iron-work and engineering in Austria than in New York it would seem that a very comprehensive undertaking must be in contemplation. The road, or rather net-work of roads, is to have a double track everywhere except over the bridges, where four tracks are thought necessary to accommodate the expected traffic. The road-bed is to be twenty-six feet wide, supported on iron posts set from sixty to seventy feet apart. The whole line is to be raised above the surface, except in a single section, where it is thought best to traverse a hill by a cutting, instead of ascending it. In the city of Paris, where the question of rapid transit has been discussed about as long as in Vienna, a solution has not yet been reached, but the council has already declared the matter to be "urgent," and suggestions for securing the desired end are invited from all persons interested who may be qualified to give useful advice. The inequality of the surface of the ground in and about Paris does much to complicate the problem, as several of the routes included in the general system of communication which has been determined upon would be impracticable for an elevated railway like that in New York, while the general feeling of the Parisians is so strongly averse to underground roads as to make it important to avoid subterraneous lines as far as possible. The result will probably be the adoption of a mixed system of lines above and below the surface; but one can hardly help observing that if the proprietors of the Meigs patents really felt the confidence which they profess in the value of their single-rail elevated railway, they would do well to transfer their activity from Massachusetts to Paris, where they will find, instead of a population somewhat snappishly contented with its present means of locomotion, a people and a government prepared to welcome with enthusiasm anything so admirably adapted to meet all their wants as the Meigs road would be if the expectations of its inventor were reasonably justified.

THE first French grain elevator has just been completed and put in operation at Bordeaux, to the great admiration of all persons interested in transportation, and among others, of a correspondent of *Le Génie Civil*, who writes to that journal a full account of it. According to this correspondent, the success which American grain has met with in competing with the foreign product in European markets is due in great part to the superior skill and economy with which it is handled. While a French vessel loaded with wheat would be discharged by men, slowly carrying the grain in bags on their backs to the pier, to be there, unless carried immediately away in wagons, deposited in a heap on the bare planks, and covered, at most, with an old canvas, until wanted, an American canal-boat or train is simply moved up alongside an elevator and there filled or discharged in a few hours by machinery, the grain remaining clean, dry and cool throughout the process. If there is no immediate call for it, the wheat or corn remains safely stored in the elevator bins until called for, and if any of it should have been badly harvested, or damaged on the voyage, the same machinery which originally handled it will dry it, winnow it, weigh it both before and after the process, and repack it in good condition. All this, according to the French engineer's estimate, costs the American dealer about half what his foreign rival has to pay for work much worse done, and occupying a great deal more time, and the saving so effected is sufficient to pay the cost of nearly five thousand miles transportation and to enable the Minnesota or Manitoba farmer to undersell the French in their own markets. It is not surprising, therefore, that an effort should have been made abroad to meet American competition by imitating American methods, and the Bordeaux elevator is only one of a series to be built under the care of a company formed expressly for the purpose.

WE mentioned some time ago that an improved process had been invented for the extraction of sulphur from the earthy masses with which it is found associated. This process has recently been improved, and is now in operation on a large scale in several mines in Sicily, where it is found to be not only much more wholesome than the old process of burning the ore in close heaps, but much more profitable also, the new method producing nearly twice as much sulphur from a given amount of ore, as well as utilizing the fine dust of the mines, which has hitherto been wasted. The sulphurous acid evolved from the burning kilns of the old process is so injurious to vegetation, as well as to human life, that the work is prohibited throughout Italy from July to January in each year, and many attempts have been made to dissolve out the sulphur by some kind of "wet process," which could be carried on without annoyance throughout the year, but the cost of the superheated steam, or the bisulphide of carbon, hitherto used for the purpose was too great to give commercial success to the improved methods. By the substitution for the more expensive reagents of a solution of chloride of calcium, which is formed as a waste product in the manufacture of soda, and costs in Italy only about one cent a pound, this difficulty is now removed, and the extraction of sulphur by the wet process is a simpler and cheaper method than that by roasting the ore. The apparatus employed is by no means complicated, consisting only of a furnace, kept constantly heated, with two iron tanks so arranged as to be alternately subjected to the action of the fire. The boiling point of a saturated solution of chloride of calcium is above two hundred and fifty degrees Fahrenheit, while the melting point of sulphur is about two hundred and thirty-two degrees, so that by filling the tanks with chloride solution and ore, and raising it nearly to the boiling point, all the sulphur melts out and collects at the bottom of the tank, from which it is drawn off into moulds and cooled. To make the operation continuous, one tank only is charged at a time, and as soon as the ore in it is exhausted the calcium solution is pumped into the other, to operate on a fresh charge, while the one first used is cleared of the earthy residue for renewed use.

FROM BAYREUTH TO RATISBON. — NOTES OF A HASTY TRIP. — XI.

WHEN one enters these ugly Munich buildings of which I have tried to give some faint idea, how different a scene presents itself! How great are the treasures gathered together within them! When Ludwig was still Crown Prince, in the early years of the century, his agents were fortunate enough to secure the Eginetan sculptures together with many other valuable relics of antiquity. To accommodate these the Glyptothek was built, and it gives them capital housing, if one can overlook the gaudy colors with which the vast coffered ceilings are adorned and the tiresome frescoes with which portions of the upper wall are covered. Then in the old Pinakothek is the splendid collection of pictures — in certain points unrivalled among the galleries of Europe. One does not care much for a whole room full of small Van Der Werffs, but the case is different when one comes to a great saloon entirely filled with Rubens's works or to the many rooms in which the old German pictures hang — most of them originally belonging to the famous Boisserée collection. Here one sees Dürer and the elder Holbein and Burkmair, and many another as they are nowhere else to be seen, and farther back in time the Cologne masters, chief among them the great early artist called the "Master of the Lyneburger Passion." And this is the only gallery in the world where one can readily learn to know Adriaen Brauwer, one of the most masterly technicians who ever lived and one who has had a most vital influence on the younger Munich school. Here hang a dozen or more of his splendid little canvases (which show as do none beside how good art can redeem the most commonplace and even vulgar subject-matter), while the galleries of his native land count themselves fortunate if they hold a single specimen. In engravings and drawings the collection is also very rich. And when all these have been studied there remains the vast collection of antiquities at the National Museum, even vaster than the similar one at Nuremberg, though housed in less fascinating fashion. For order, for chronological exactitude, for instructive cataloguing, no museums in the world surpass these, presided over by men endowed with the characteristic painstaking qualities of German scholarship.

The government glass factory we visited in the hope of finding something interesting; we found, indeed, that there had been much improvement since the days of the first revival of the art, the days when, for example, the blindingly crude and hideous new windows at Cologne were made; but nothing more than inoffensive mediocrity of color had been attained, and in design there was little originality. The best pieces were copied from drawings by Holbein or from other time-honored sources. A big window just completed for a Frankfurt church, fortunately showed us the most ambitious work that is undertaken. To compare it in the remotest way with the work done here by Mr. La Farge, for example, was an impossibility; not only were the new aims, the new methods and the new effects which he has compassed quite unthought of, or any others of the slightest novelty desired, but even in what I may call the old modern track there was not the slightest approach to the power over color he displays. If inoffensive and sometimes almost pleasing the color was always cold, formal, inartistic; nor need we take Mr. La Farge as a standard, for there are many other producers of glass in this country with whom the German fabricants are not to be compared either for originality of aim or for success of outcome.

I have said that the government interest in art has declined of late years since the accession of the present king, whose love is all for music and not at all for painting — that, for example, pictures are no longer bought to fill the walls of the New Pinakothek. But the great artistic educational establishment is upheld with undiminished liberality, as I need hardly say to my American readers. Who has not heard of the school at Munich as one of the most seductive goals toward which the Yankee student yearns? The men who are now the chief Munich painters or professors have a world-wide reputation — Piloty, Dietz, Lenbach, Leibl, — it is strange indeed to think that such artists should have grown up here as the successors and under the tuition of such men as I named in a former chapter. No antithesis could be greater — on the one hand the most earnest effort, the most minute and scrupulous care, but the most utter want of artistic endowment either in feeling, in color, or in tone; on the other hand artistic individualities of a force and charm unsurpassed to-day in Europe and of such a freedom in execution as has made the "Munich manner" a by-word of reproach to those among our picture critics who cling to the old traditional hard, labored, shiny, varnishy practice of Düsseldorf and of Munich as she was a generation back. The very sons of some of the most tiresomely Philistine of these old painters are to-day leaders of the newer school, the opposites in every way of the men whose blood and whose art went to make their own. The younger Kaulbach, the younger Zimmermann have indeed little affinity with their fathers — in their case as in others we feel it has been the Old and not the New Pinakothek which has taught them their craft. It is Brauwer, and Rembrandt, and Rubens, not Cornelius, and Overbeck, and Kaulbach who have been their teachers.

Most of the artists are out of town in the summer, so it was only at the dealers' that we could get a knowledge of what they had been doing. The showing was most interesting and convinced one that while many other things might best be learned in Paris, an eye for color and tone could be cultivated to the greatest advantage in Munich. To Lenbach's studio we were taken by an American painter, Mr. Rosenthal, long resident in Munich; but, alas! the great master had left town the day before — a double disappointment, since we not only missed seeing him but also a great gallery full of portraits he has painted of many of the chief men of his generation. Of the Americans only two or three were at work, though some sixty had been in Munich during the winter. Among these was Mr. David Neal, working on a picture of Cromwell listening unperceived to Milton as he plays the organ; and Mr. Crone, a young man who has sent several studies to this country but nothing which shows his full promise, especially nothing which shows his real coloristic talent. In his studio was a copy of a Van Dyck at the Pinakothek — the "Descent from the Cross" with half-life-size figures. In color and tone it is the most lovely Van Dyck I have ever seen and the copy was a truly marvellous bit of work — as freely handled, as exquisitely colored as the original itself. I cite it as an interesting and promising *tour de force*, for Mr. Crone told us he had done it from memory only — going to the gallery to look at the picture, coming home to paint what he could remember, and then back again for a fresh impression. Mr. Rosenthal, who is the oldest resident among the Americans, having been in Munich some sixteen years already, is well-known in America through reproductions of his works, though not usually recognized, I think, as a countryman of our own. Elaine floating down the river "steered by the dumb;" the young monk who watches the butterflies in the sunbeam as he sets the convent table; the flock of boarding-school girls hunting ghosts in the garret and finding cats — these are all among the most familiar photographs in every shop. But thanks to his long exile and his German name their author is rarely known to be a native of San Francisco and still a true American at heart. With his long foreign residence, his German wife and a European *clientèle* which keeps him more than busy, he feels no impulse to come home himself; but his advice to his younger fellow workers is not to do as he has done and as he was much more justified in doing fifteen years ago, but to come home as soon as their course is finished, to go to work upon home material, with home sympathies, and home inspiration. At the time of our visit Mr. Rosenthal was working on a large picture — a scene from "Marmion" showing Constance in her boy's dress before her judges. A recent work which technically seems to me the best thing he has done — quite admirable in handling, in color, and in its strong yet not overcharged expression of character — showed a motherless peasant family gathered sadly for their evening meal. It was one of the very best *genre* pictures at the Paris *Salon* of 1882 and was exhibited during the past winter at Schaus's in New York.

One thing that no visitor to Munich should neglect to see is the picture collection of Graf Schack, which may be freely visited, I think, upon any day in the week. Its contents are of various sorts, some of which will be quite novel to the American student. The Swiss painter Böcklin, for example, is quite unknown to us, but is an artistic personality of the utmost originality and interest. His work is always of the most imaginative sort — and though his imagination sometimes runs into extravagance or *bizarrerie*, is sometimes morbid and unhealthy, and sometimes leads him to attempt subjects better suited for literary than for pictorial exposition, yet it often inspires him to work which is thoroughly artistic and wonderfully fascinating. I remember particularly among his many canvases in this collection a life-size group of a mermaid, a merman and an infant lying on a rock in the sea and playing on curiously wrought shell-like instruments of music. In color and handling the work was admirable, but still more remarkable for the imaginative strength displayed in the conception of the figures. They were not the stereotyped human beings with fishy caudal appendages that have so often been painted, but real marine creatures, outlandish, scaly, seaweed covered, yet not unbeautiful. And they were alive with a vivid realism which half-convinced the spectator of the existence of their actual prototypes. Still more attractive was a smaller picture illustrating an idyl of Theocritus, with a shepherd lad piping to the nymph dimly seen in her watery veil within the grotto by the door of which he stands. Over this entrance hangs a heavy garland of pink roses of a bright hue that only a master hand could have harmonized with the delicate tones of the rest of the picture, but which, being thus harmonized, added an enchanting note to the composition; yet the chief interest lay in the figure of the boy — in his beautiful, passionate, dreamy face and the gesture of half-intoxicated longing with which he sang. It is impossible to describe such art in words, for its charm lies in its strong and peculiar feeling, in its revelation of a distinct and very original artistic personality — rarest of things in these prosaic days of art.

A large portion of the gallery is filled with copies from the old Venetian masters — the best I have ever seen exhibited, the only ones which can really give an idea of the great originals to those

who have never seen them. Most of them were executed by artists whom Graf Schack sent to Italy for the purpose. A large number are due to the hand of him whom I have already named as perhaps the greatest of living portrait painters —Lenbach. Discovering his genius at an early age, Graf Schack sent him to study the masters of his art, thus not only securing for himself these unrivalled copies but giving excellent aid toward the development of a wonderful talent. It is undoubtedly to these long and earnest early studies which the wise generosity of his patron made possible, that Lenbach owes to-day his splendid color and his perfect tone. His own portrait hangs next to his beautiful copy of Titian's "Man with the Green Eyes," and together with it reveals the modern master's skill and his claim to be called a true descendant of the great Venetian portraitists. His likeness shows a dreamy, scholarly, most interesting face with a blonde beard and spectacles. M. G. van Rennselaer.

PLUMBERS AND SANITARY ENGINEERS.

Newport, R. I., July 17, 1883.

At the recent convention of the master plumbers, at Masonic Hall, in New York City, an address was read by "Plumber Enoch Remick," of Philadelphia, which was supposed to represent the spirit and aims of the convention. Mr. Remick said: —

"A newly-invented profession is sprung upon the world, called sanitary engineering, which proposes to its confiding patrons to guard and protect them against their insidious enemy, the plumber. Boards of Health, too, lend their aid to these magniloquent braggarts, by publicly setting the seal of their disapproval on practical skill and experience, and their unqualified endorsement of book-taught experts and newspaper scientists. It is a fact to-day that the men whose lives are spent in the solution of, and whose pursuits lie closer to, the sanitary problems of the day than any other, are ostentatiously ignored, and the claims of raw graduates from medical or other schools are as brazenly thrust in the face of the public."

This view of the case is hardly to be regarded as a strictly judicial one, and it would be easy for sanitary engineers to retort in corresponding language with reference to the character and qualifications of a great number of very ordinary mechanics, who, as master-plumbers, do a great deal of demonstrably bad work, and of a still greater number of journeymen who do bad work for which they have no responsibility. Attention might be called, too, to the eagerness with which master-plumbers of a certain class append to their trade-title the now popular one of "sanitary engineer."

It is probably not true that Boards of Health lend their aid to "magniloquent braggarts," nor that they set the seal of their disapproval on "practical skill and experience." So far as I have been able to judge — and my observation has been considerable — Boards of Health are very careful, in establishing regulations and in providing for the inspection of work, to secure the advice and co-operation of really skilful and experienced plumbers. I fancy, too, that they are little influenced by the opinions and advice of engineers to whom Mr. Remick's opprobious epithets could with propriety be applied. "Raw graduates" are hardly thrust in the face of the public save in very rare cases, by their own act. Nevertheless, though Mr. Remick's tirade is hardly worthy of serious consideration, the motive underlying his remarks, in spite of his lack of skill in giving it expression, is a very sound and worthy one; — no more sound and worthy, however, than is the underlying motive of the abuse of the plumbing profession, which finds equally unfortunate expression in the comic papers.

The fact is that there are very few plumbers who are capable of going beyond the practical mechanical details to which they have been trained, and who have a just comprehension of the fundamental principles of sanitary drainage. It is also a fact that a small but obtrusive element among newspaper writers have been much too eager to seize upon defects of the work of merely practical men, and to magnify the wisdom and importance of purely theoretical men. The whole subject of sanitary drainage, when considered as the object of popular interest, is hardly ten years old. The number of professional men who have given attention to house-drainage for more than five years past may almost be counted on the fingers of one hand. Many of those now offering professional advice in the matter are, it is true, scantily equipped for the duty. The demand has created a supply; but it has been a commercial demand, creating a commercial supply from such material as existed for the purpose. Such fault as there is lies largely with that portion of the public which is impatient of the bungling work to which so much of its house-drainage has been subjected, and with young men or with older men, unsuccessful in other fields, who have sought to make money by attempting to supply a newly-felt need. The real interests of the people are not to be served by the assumption of too much influence in drainage matters by master-plumbers, any more than by the worse than useless officiousness of engineers who are not qualified for their special duty. It would have been well had the Master Plumbers' Convention been told, in better temper and in a better spirit, that whatever influence may be obtained over a small fraction of the public by sanitary engineers, nothing can prevent the practical monopoly of the business of house-drainage by master-plumbers themselves, and that no abuse of another profession can relieve their own of the responsibility which rests upon it of accepting and applying with intelligence and care the unmistakeably true lessons of modern investigations. It would have been judicious, also, to have more attention called to the fact that so long as the responsibility for house-drainage is relegated, as it now so largely is, to journeymen, with insufficient supervision, or with the supervision of men not qualified for the duty, so long must it remain the most imperative obligation of the master-plumber to qualify him to meet his serious responsibilities.

It is, and it will always remain, "my plumber" whose advice to the householder, and whose guaranty of satisfactory sanitary conditions will prevail. Not in one case in one hundred will he be overruled by anything that a "sanitary engineer" may say. He should not be slow to heed such saying when it is sound.

Geo. E. Waring, Jr.

THE PREVENTION OF FIRES.

The annual report just presented to the Board of Works by Captain Shaw shows that there were 1926 fires within the metropolis last year: of these 1762 were of slight importance, and 164 ended in serious damage. A tabular statement of the fires in London during the last seventeen years shows that the number has steadily increased, and is now forty per cent greater than it was in 1866. This increment is greater than the increase of population, and would appear to point to growing carelessness in the use of fire. A scrutiny of the classified list of the origins of the fires does not show any preponderating cause that should be more dangerous now than a few years ago. By far the larger number of fires come from domestic causes. We find that last year 29 fires arose from airing linen, 106 from candles, 76 from children playing with fire and matches, 189 from defects in flues, 166 from gas in one way or another, 154 from the use of lamps, and 126 from sparks thrown out of the fire. But while the frequency of fires increases, the proportion of serious fires steadily diminishes. In 1866 one fire in every four was classed as serious, but since that date our power to keep a conflagration within moderate limits has been so greatly enlarged that now only one fire in eleven attains importance. This is probably due mainly to the introduction of steam fire-engines and a better water-service, although the latter is still far from perfect. While in some provincial towns, and notably in Manchester, there are plugs every hundred yards in the streets, from any of which a jet can be thrown over a four-story building at any hour of the day or night, without any appliance beyond a hydrant and a hose-pipe, we find that in London on forty occasions during the last year the operations of the Fire-Brigade were crippled by the water companies; ten times there was a short supply of water, twenty times a late attendance of the turn-cocks, and ten times no attendance at all. The lowness of the water-pressure has no doubt greatly contributed to the increase in the number of steam fire-engines, of which there are three large ones and thirty-eight small ones, as against one hundred and fifteen manual engines. But although the number of the serious fires has been small it is only necessary to recall a few of the leading ones to see that the total loss of property has been immense. A fire in the neighborhood of Cheapside has come to be recognized as one in which the damage is to be reckoned by hundreds of thousands of pounds, if not by millions. In a vicinity in which huge blocks of buildings are crammed from attic to basement with combustible material of every imaginable kind, and are separated from each other only by lanes in which it is a difficulty for two vehicles to pass, it is easy to understand that the Fire-Brigade finds itself almost powerless, and has to be content with confining the flames to the block which they already have seized, until they have consumed everything within it. Few of the city warehouses are fire-proof, and the great majority are not even professedly so. They are filled with wood; wooden floors, wooden staircases, wooden shelves, drawers, counters, stands, and boxes occupy all the space not required for locomotion, and when a fire breaks out, this wood forms a path for the flames and gives forth a heat that effects the destruction of less combustible materials such as woollens, linens, and the like. And what is true of warehouses is still more true of the hundreds of light trades that are carried on in the metropolis. They are all located in

rooms in which a fire needs only a few minutes' start in order to consume the contents, even if the shell of the building escape. It is not usually the actual object of trade or manufactures that offer the greatest danger; often they are of but slightly combustible nature, and are generally so tightly packed that an ordinary fire cannot penetrate beyond the edges, but it is the permanent fittings of the rooms that constitute the danger. These present an ample surface to the air, and generally run all round in a way that favors the rapid extension of the flames. Every one knows the difficulty of lighting an ordinary domestic fire without wood; neither paper nor shavings are sufficient for the purpose alone, and although both blaze up brightly, neither of them inflames the coal. But from wood there is a clear flame of great heat and penetrative effect, which is the cause of the very rapid passage of the fire from the spot on which it starts to staircases and well-holes that afford communication from room to room. If the wooden fittings of a building could be entirely replaced by iron many a calamitous fire would have burnt itself out without extending many feet, and ample time would be afforded for the Fire-Brigade to arrive before the conflagration assumed unmanageable proportions. But in the great majority of cases iron fittings are an impossibility, and there is no alternative to the use of wood.

Many attempts have been made to render wood uninflammable. So long ago as July, 1871, we called attention to an experiment made at the works of Mr. Frederic Ransome, in which a wooden shed partly painted with silicious paint was set on fire; the unpainted portion was completely destroyed, while that which was protected by the silicious covering escaped ignition, and although deeply charred never took fire. The composition of the paint was analogous to that of Ransome's patent stone; it consisted principally of a mixture of pure silex and soluble silica, which was afterwards converted into an insoluble silicious covering by an outer coating of chloride of calcium. Although this invention promised well at the time it never came into extended use. But the idea of covering wood with a fire-resisting surface having been published, it was taken up and improved upon by others. The refractory quality of asbestos has been known since the time of the Romans, who used cloths woven from its fibres upon their funeral pyres, and we find that Mr. Thaddeus Hyatt, who had already spent much pains upon developing the industrial uses of asbestos endeavored to turn it to account in the protection of buildings against fire in the form of a coating of cement. He ground the shorter and less valuable fibres into a slip or paste, analogous to porcelain slip, and combined it with gelatinous silica, either alone or in conjunction with magnesia, baryta, alumina, or lime. Whether he ever put this part of his invention to any practical use or not we do not know, but we never heard that he did; indeed it is scarcely possible that he should have practically worked out all the uses to which he proposed to apply asbestos.

In 1881, Mr. E. G. Erichsen, of Copenhagen, who had been connected with the earlier experiments at the works of Mr. Ransome, brought out a new protective composition in which there is likewise a large per centage of asbestos. When intended for use as a paint or enamel it is composed of a silicious solution, pulverized asbestos, metallic oxides and chalk, the asbestos forming ten to twenty per cent of the whole. Applied as a paint, it forms a fire-proof enamel, capable of resisting a white heat. It is worked upon brickwork and woodwork with an iron trowel or wood plate covered with felt; it can be laid on in a thicker or thinner coat as may be desired, and can be cleaned from time to time with hot water. Mr. Frederic Ransome has acquired the patent for this country, and the paint is now coming rapidly before the public; on the Continent it is already largely in use.

The latest fire-proof paint is the invention of Mr. C. J. Mountford, of Birmingham, whose patents have been acquired by the United Asbestos Company, of 161, Queen Victoria Street, E. C. This is simpler in its composition than the last, and consists of asbestos ground and reground in water, aluminate of potash or soda, and silicite of potash or soda. When it is to be exposed to the weather it is combined with oil, dryers and gummy matters, and in some cases with zinc oxide or barytes. As will be seen from another part of the paper the whole of the buildings of the Fisheries Exhibition in the Horticultural Gardens, are to be painted with this material. In itself this is worth a volume of testimonials. On two sides of the ground are valuable collections of works of art and scientific objects, while on the third side is the Albert Hall. Over the way, too, is the South Kensington Museum, containing the vastest assemblage of objects of decorative art ever amassed, and it requires little acquaintance with Government officials to know that their consent could never have been obtained to the erection of light timber buildings covering 230,000 square feet, if they had not been convinced that there was a method by which they could be rendered fire-proof. On Friday last a public trial was made in the gardens before fifty gentlemen to demonstrate the security of the buildings. Two wooden huts, one of plain timber and one painted with three coats of asbestos paint, were filled with shavings and simultaneously ignited. The first caught fire at once, driving the spectators backwards by its heat and the extent of its flame, while in the second the shavings, after a hearty blaze that scorched and blistered the paint, fell into a heap of red embers. Half a bucketful of petroleum flung into the hut filled the inside with a fierce flame that belched forth in a solid body and curved on to the roof, and for a few minutes it was the opinion of the on-lookers that the confidence of the inventor had overleapt itself. But gradually the petroleum vapor became exhausted and little flame remained beyond that of the gas driven out of the cracks of the wood by the intense heat. The structure was intact and it needed no special skill to see that a slight building filled with combustible material, would, if painted with asbestos paint, be able to retain the fire within itself for sufficient time to allow of the arrival of the firemen. But the reputation of the paint does not rest upon an isolated experiment; not only in London, but also in Birmingham, Manchester, and Liverpool has it been severely tested, and every time successfully. Asbestos has now established its character as a fire-resisting material, and we think that a grave responsibility will attach to all that have the management of buildings in which special risks are run, such as theatres, music-halls, carpenters' and packing-case makers' shops and the like, if they fail to avail themselves of it in some form or other.

But although it may be possible to localize a fire for a time, our experience of the way in which the flame will destroy a building almost entirely of iron and stone forbids the anticipation that the use of fire-proof materials will be of sufficient avail by themselves. Once a structure is fairly alight stones and cement crack and fly, and iron girders twist, and it is not paint alone that will preserve them. The respite that it gives must be turned to good use in extinguishing the flames. Unfortunately, this interval is often lost for want of apparatus, particularly in the country, where it is a long way to the fire-engine station. To supply the necessary means for quickly quenching a fire Mr. Foster, of Bolton, has brought out a portable fire-engine which emits a stream of carbonic acid and water. By this arrangement he is able to keep its apparatus within small limits, as the pressure of the carbonic acid is available for propelling the jet, and, as is well known, it is extremely efficacious in stopping combustion. The same idea has long been before the public in the form of the Extincteur, which is universally known and appreciated. Mr. Foster's engine differs from this in being a pump that can be kept going during the whole progress of the fire, and can be supplied with fresh chemicals from time to time as they become exhausted. In addition to his pumps he has a portable chemicalizing chamber through which water from a high-pressure main can be passed and be impregnated with carbonic acid. On Wednesday last a public trial of Mr. Foster's apparatus was made on a piece of waste land near the City of London Schools. A wooden house had been built, the upper story of which represented a bedroom. This was saturated with tar and petroleum, and when filled with flame was extinguished by a jet from a one-eighth inch nozzle in one minute. The lower story represented a warehouse filled with boxes saturated with petroleum, and when fairly alight was extinguished in little more than a minute. Other experiments followed all of which were successful in demonstrating that a small quantity of water impregnated with carbonic acid will put out a fierce fire, especially in confined situations and in cases where the combustion has not penetrated below the surface of the burning surface. — *Engineering.*

THE ILLUSTRATIONS.

HANLEY TABERNACLE CHURCH BUILDINGS.

[From the *Builder*.]

THESE buildings have been erected from the designs, and under the superintendence of Messrs. William Sugden & Son, architects, of Leek, whose plans were selected unanimously by the committee in a limited competition.

The High Street façade has as its central feature a tower of considerable size, with octagonal domed stair-turret, and with the belfry stage enriched by traceried openings of the noble proportions which we owe to the English builders of the fifteenth century. From the battlemented parapet of the tower rises a peaked tiled roof, with dormer gablets, to a height of about 150 feet from the street. A stone spire was avoided owing to the nature of the ground, the neighborhood being largely mined. To the right of the tower we have the gable of the lecture-hall, adorned by a traceried window of seven lights flanked by traceried buttresses. To the right of the lecture-hall gable is its entrance-porch, forming also the girls' entrance to the school; and to the left, at the foot of the tower is a spacious carved porch, the main entrance to the chapel. The front gable-end of the chapel, which lies just to the left of the tower, takes an octagonal apsidal form, and has a battlemented parapet in front of a gable panelled by tracery. This octagon has decorated angle buttresses, and a traceried window inserted in each face, that to the centre bay being about 30 feet in height, and 12 feet in width. The front is completed by a south porch, with a doorway and window with moulded and carved tracery, terminating by a parapet, and leads under the gable of the south staircase, which is embellished by a large rose window. All the intricate stone-work of the front is executed in red Hollington stone, except some of the more exposed

parts, where the hard Roche stone (millstone grit) from the Leek district is used. The walls of this front are faced externally with specially-made local thin red bricks, and the roofs are covered with brown Broseley tiles. The tracery of the side windows, including the fine transept lights, is of red terra-cotta.

The following is a summary of the accommodation provided: — Chapel, with north and south transepts and galleries on three sides, containing 1,000 sittings, extreme length, including rostrum apse, 84 feet; width, 48 feet; width across transepts, 69 feet; height in centre, 42 feet. Lecture-hall, containing 200 sittings: length, 43 feet; width, 20 feet: height, 23 feet. Large school-room, with clerestory; library; infants' school-room; mothers' meeting-room; eight boys' class-rooms; five girls' class-rooms; one young women's class-room; and two smaller ones; young men's class-rooms, tea-room, scullery, heating-apparatus, vaults, lavatories (separate for boys and girls), ample corridors, etc. Partly on account of the nature of the ground, the architects have discarded the single span roof, which in buildings of this width militates against permanency through its excessive strain both on itself and the supporting walls, and a very openly arcaded nave and aisle arrangement has been adopted in the chapel; the piers or uprights of which, being of moulded teak wood and widely spaced, do not impede sight, while distributing equally the load of the roof. The warming-apparatus has been provided on the low-pressure hot-water system; and for ventilation, fresh air is admitted at numerous points through upright shafts, with filtering media for the arrest of fog and smoke. The foul air is drawn off by turrets on the ridges, and through the tower roof by means of special flues, whose air is rarefied by fire-clay cones heated to incandescence by gas jets. From some portion of the gas-fittings also, the products of combustion are carried off direct, the waste heat being useful in the ventilation exhaust-flues. Electric bells will probably be provided for general communication, and to call simultaneously together to the large school-room the occupants of the various class-rooms. One of the class-rooms is fitted up as a tea-room, with swing tables for service, and provided with gas-boiler, etc., and hot and cold water is laid on in taps at points to meet fire emergency and to economize labor in cleaning the premises.

The gallery front is varied by being treated as a series of balconies between the teak pillars, with open tracery and linen-fold panels. The rostrum is of similar but more elaborate design, and has under it canopied seats for the officiating deacons; its situation in a domed apse with high wainscoting has favorable acoustic results. The organ-chamber, too, being carried clear through the gallery to a lofty height, adequate space is secured both for the instrument and for the issue of the "concourse of sweet sounds."

GATE-HOUSE, ECCLESTON HALL, NEAR CHESTER, ENGLAND. MR. JOHN DOUGLAS, ARCHITECT.

[From the *Building News.*]

The gate-house and lodge is situated at Eccleston Hill, on the main drive between Chester and Eaton Hall, and forms the entrance to the home or deer park. The lower part is carried out in Manley white and Eccleston Hill red stones, all the dressings being of the former. The walling of the upper part is of small bricks, the diaper being formed out of the hard burnt or brown ended ones. The timber framing of the upper part of the lodge, as well as all the outside timber-work is of oak; and the roofs are covered with red Ruabon tiles, and have lead ridges and finials. The works have been carried out in an admirable manner, by Messrs. George Smith & Co., of London, the architect being Mr. Douglas, of Chester. The illustration is a reproduction of the drawing in the late Academy Exhibition.

INGLE-NOOK, HOLMROOK, CUMBERLAND, ENGLAND. MR. M. E. MACARTNEY, ARCHITECT.

[From the *British Architect.*]

CHIMNEY-PIECE IN THE PICTURE GALLERY, CRAGSIDE. MR. R. NORMAN SHAW, ARCHITECT.

[From the *Architect.*]

RAMBLING SKETCHES, BY MR. T. RAFFLES DAVISON, ARCHITECT. — A DAY IN THE ISLE OF WIGHT.

[From the *British Architect.*]

CHATEAU DE PIERREFONDS, FRANCE. — DETAIL OF THE ENTABLATURE.

[From *Le Moniteur des Architectes.*]

HOUSE ON BEACON ST., BOSTON. MESSRS. ALLEN & KENWAY, ARCHITECTS, BOSTON, MASS.

This house is No. 342 Beacon Street. It is 22′ x 65′. In the rear is a stable. The front is of Nova Scotia sandstone. The drawing we reproduce was made by Mr. T. Raffles Davison from a photograph.

COMPETITIVE DESIGN FOR A MECHANIC'S HOUSE SUBMITTED BY "*Cassius.*"

This design should have been published in our last issue, to which we refer our readers for the remarks of the jury upon it.

COMPETITIVE DESIGN FOR A MECHANIC'S HOUSE SUBMITTED BY "*Cheek.*"

"'*Cheek.*' Good plan, fair exterior, hard and mechanical drawings. Better give up using the drawing-pen so much in perspective, and cultivate free-hand drawing; cross-hatching with the drawing-pen is particularly expressionless." — *Extract from Jury's Report.*

THE COMPETITION FOR A MECHANIC'S HOUSE. — IV.

SPECIFICATION FOR DESIGN SUBMITTED BY "*Cassius.*"

The cellar walls to be 18″ thick, built of field stone, pointed on the inside, and from grade to sill on the outside. Trench for wall under part not excavated. Frame of spruce; boarding and under floors of hemlock. Roofs and gables covered with second quality cedar shingles, laid random widths. Clapboards on walls. Inside and outside finish of pine. Windows and doors, shop sizes. Gutters V-shaped, supported on ogee brackets. Conductors of pine, round, 3″ in diameter. Inside architraves, 5″ wide, beaded; to finish against corner blocks. Bases, simple moulded, 5″ high. Front door glazed with tinted glass. Plaster, two-coat work. Shingles to receive one coat of creosote. Clapboards and outside finish to receive three coats best paint. Inside finish, one coat of stain, selected colors, and one coat of Crockett's Preservative.

ESTIMATE OF QUANTITIES AND PRICES FURNISHED BY MILLER & LADD, BUILDERS, BOSTON.

Excavation, 112 yds., @ 2^c.	$22.40
Cellar wall, 50 perch, @ $2.50	125.00
Bricks, 3,000, @ $2	60.00
Fireplace	20.00
Mantel	10.00
Stairs	60.00
Painting	125.00
Windows, 9 large, @ $5.50	49.50
" 8 small, @ $4.00	32.00
Doors, 21, @ $6.00	126.00
Shingles, 16 M., @ $3.50	56.00
Clapboards, 800, @ 3.00	24.00
Plastering	90.00
Frame, 5½ M., @ 16.00	88.00
Boards, 5 M., @ $13.00	65.00
Plumbing	35.00
Base (inside finish)	25.00
Fitting closets	65.00
Nails and hardware	75.00
Top floors, 2 M. @ $25.00	50.00
Labor	300.00
Total	$1,502.90
Architect's commission	75.00

SPECIFICATION FOR DESIGN SUBMITTED BY "*Cheek.*"

The cellar to be excavated to a depth of 5′ below general level. Cellar walls are of stone, 18″ thick. Frame to be of spruce. Rough boarding of hemlock. No hard-wood finish. All finish very plain. Above first-story windows shingles everywhere. Sills, 4″ x 6″; plates, 4″ x 4″; wall studs, 2″ x 4″, 16″ on centres; corner posts, 4″ x 6″; studs on doors and windows to be 3″ x 4″; floor beams, 4″ x 6″; partition caps, 2″ x 4″; floor timbers, 2″ x 6″, 16″ on centres; rafters, 2″ x 6″, 20″ on centres; ridge board, 2″ x 8″. House to be built in Brighton, Mass., where labor and material are as cheap as anywhere.

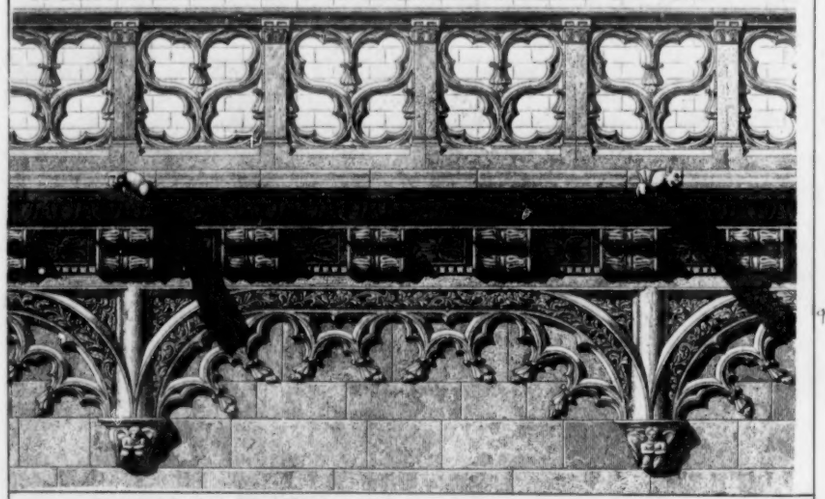
An extra flue is put in the chimney so a furnace can be put in if desired, or it can be used for a ventilating flue. The small room or closet over the hall might be made into a bath-room, all at a small expense.

ESTIMATE OF QUANTITIES AND PRICES AT BRIGHTON, OBTAINED FROM ONE OF THE MOST RELIABLE BUILDERS THERE.

Excavation	$20.00
Dry wall, 30 perches, @ $2.00	60.00
Underpinning, 15 perches, @ $3.00	45.00
4 cellar windows, @ $2.50	10.00
Bulkhead	5.00
4,500 ft. spruce frame, @ 16.00	72.00
4,000 ft. boarding, @ 14.00	56.00
8,000 shingles, @ $4.00	32.00
Gutter and outside finish	50.00
Lead, zinc and paper	10.00
500 yds. plastering, @ 20 c.	100.00
Two flight of stairs	60.00
One chimney and 3 piers	35.00
14 windows, complete, @ $7.00	98.00
One front door, complete	20.00
One back door, complete	12.00
14 doors, @ $6.00	84.00
1,400 ft. floors, @ $28	39.00
500 ft. base, @ 4c.	20.00
Closet finish	10.00
Painting	125.00
Carpenter work	400.00
Nails and closet hardware	20.00
Total	$1,383.00
Builder's profit, @ 5 %	69.15
Architect's commission, 3 %	41.49
Total	$1,493.64

The Longest Bridge in the World. — This is in China, at Sangang, over an arm of the Chinese Sea. It is five miles long; the roadway is seventy feet high and stands upon three hundred arches. The parapet is a balustrade, and each of the pillars, which are seventy-five feet apart, supports a pedestal on which is placed a lion, twenty-one feet long, made of one block of marble.

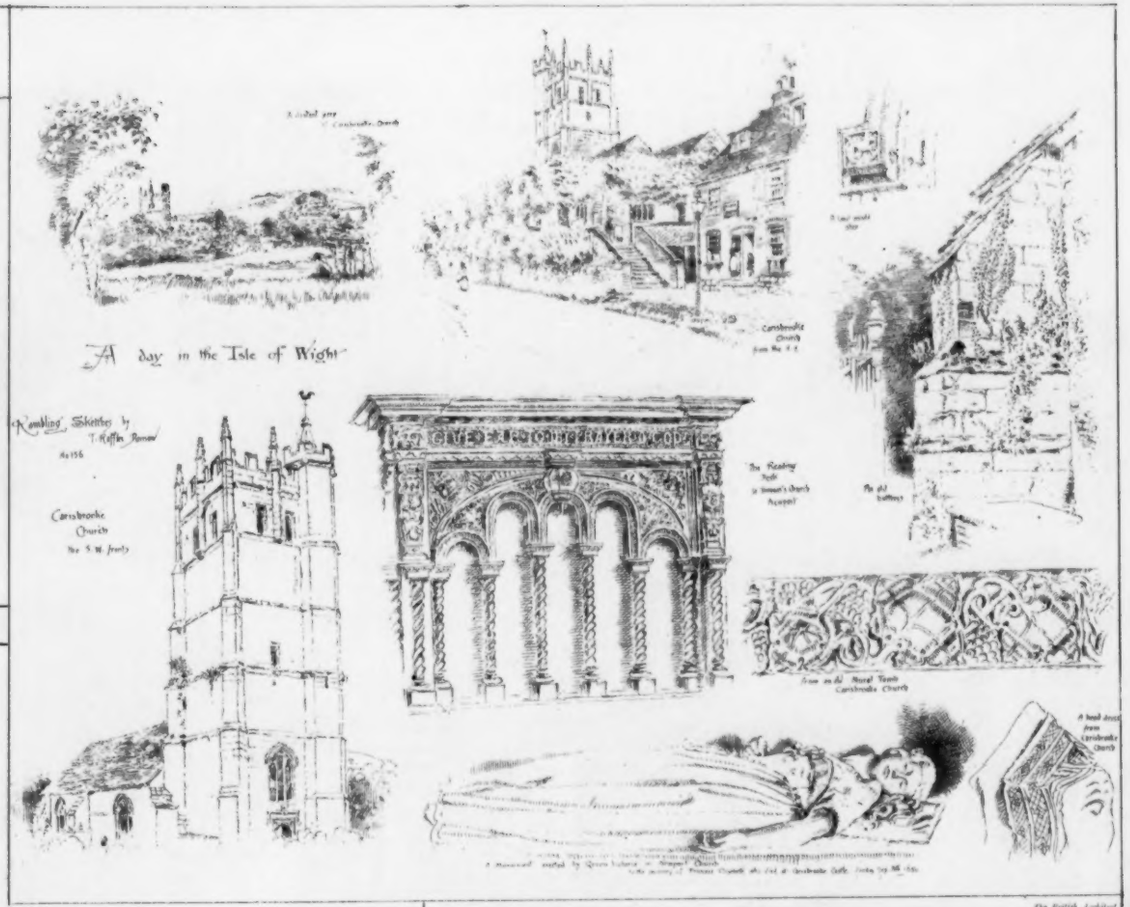
Our Foreign Exchanges. XVII

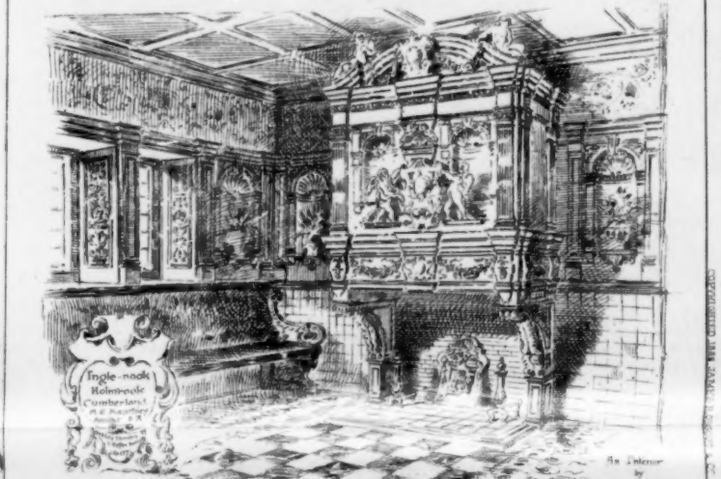


RECONSTRUCTION ET AGRANDISSEMENT DU CHATEAU DE CHATEAUDUN : DETAIL DE L'ENTABLEMENT.
Moniteur des Architectes.

Congregational New Tabernacle Church Buildings at Hanley

William Sugden & Son, Architects: Leeds: 1881-2:

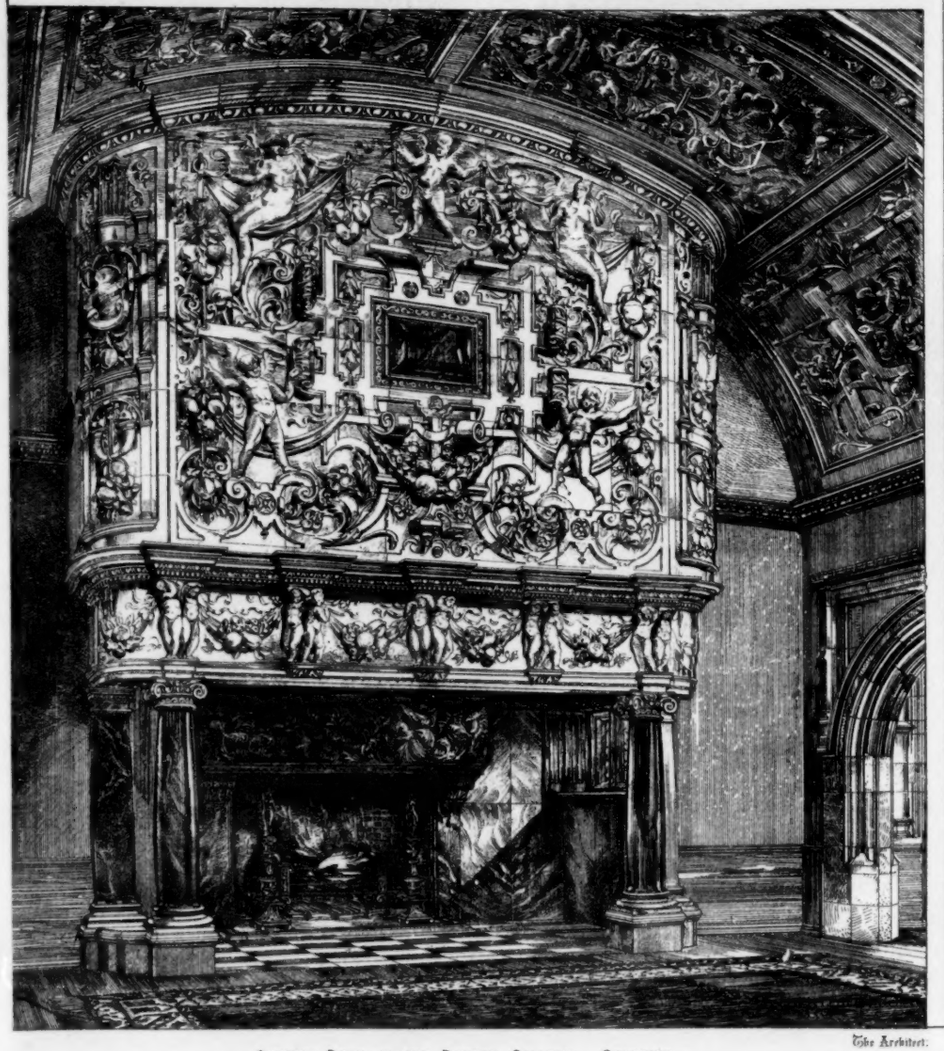




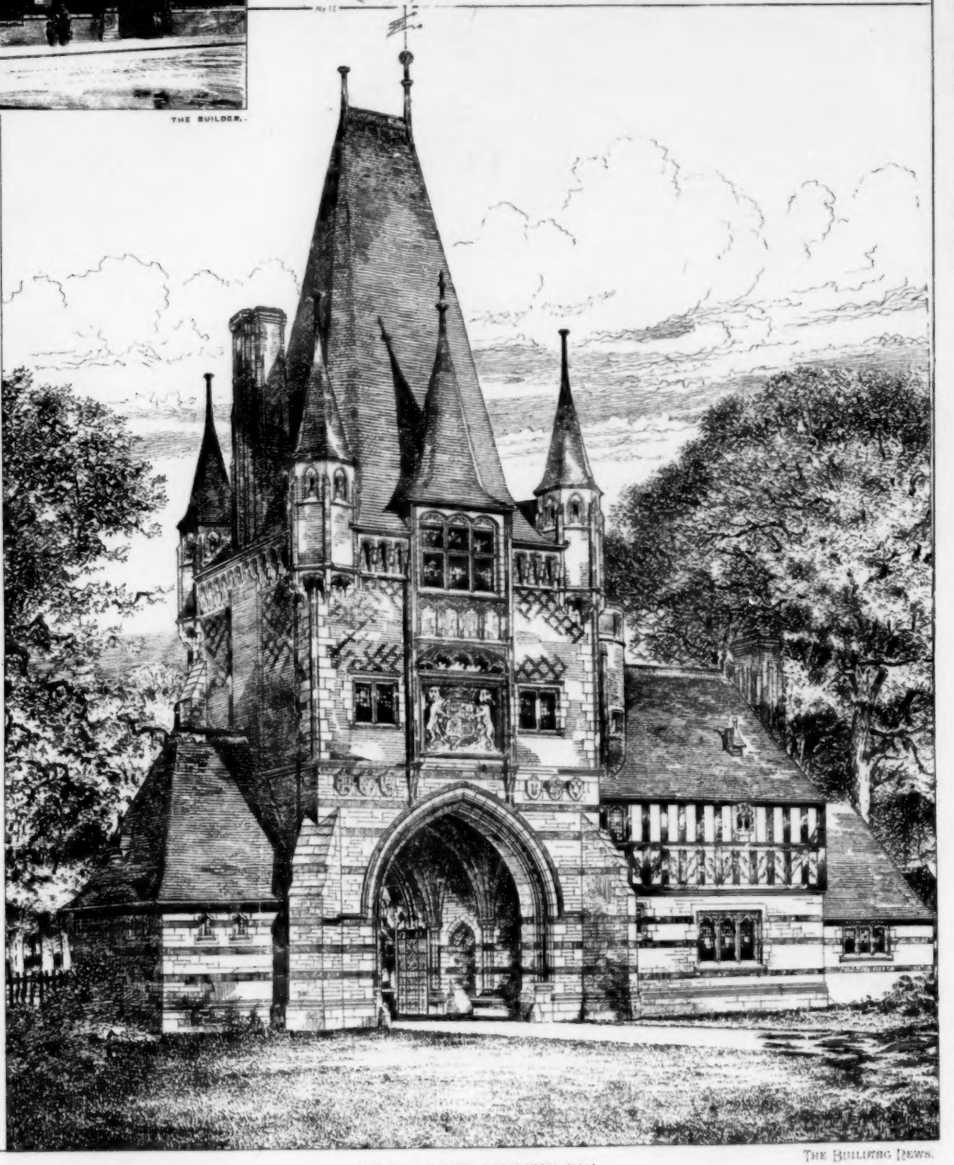
THE BUILDER.

At the Royal Academy 1883

An Interior by Mervyn E. Macartney B.A. The British Architect.



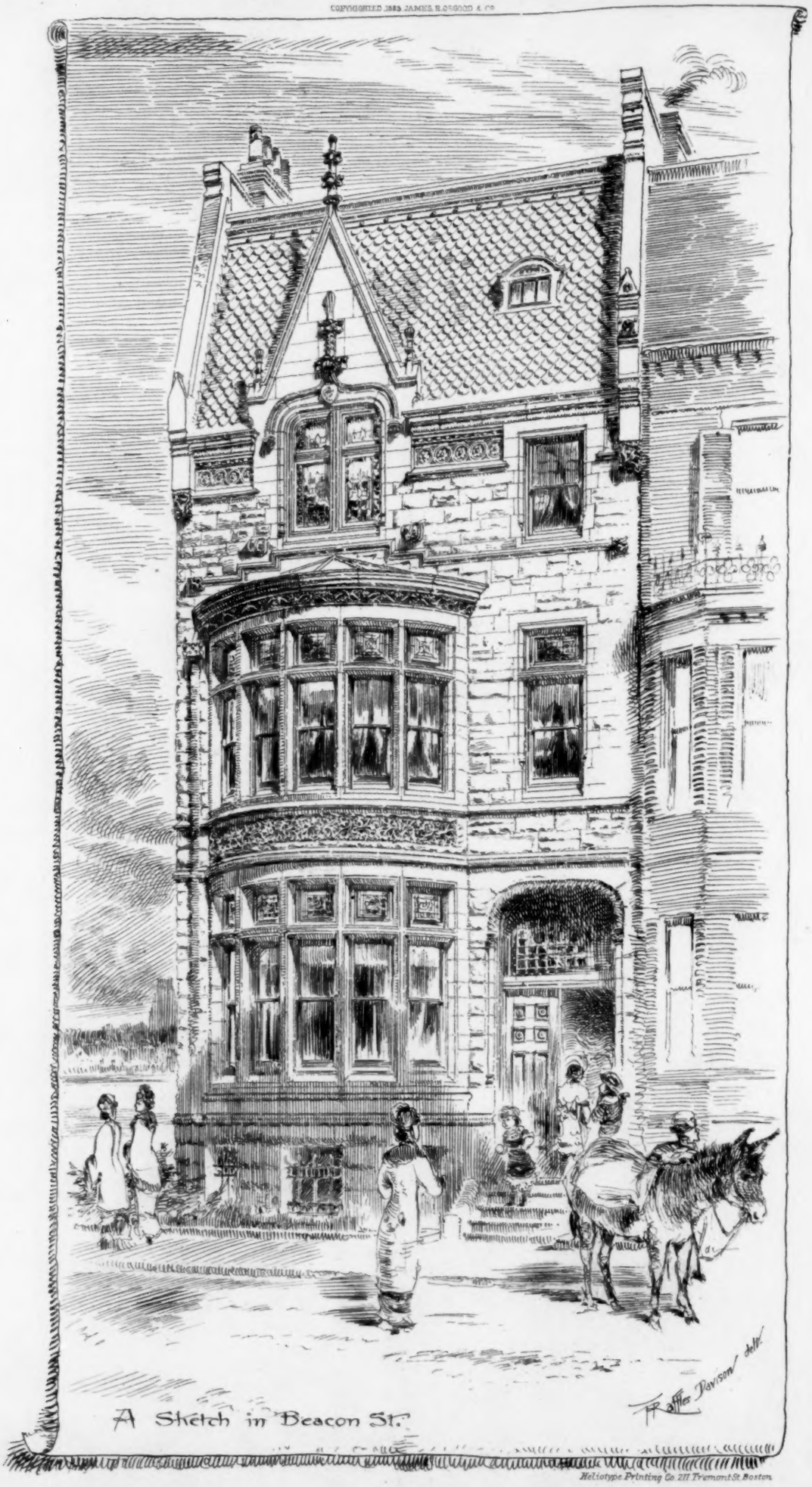
CHIMNEY-PIECE IN THE PICTURE GALLERY, CRAGSIDE.
R. NORMAN SHAW R.A. ARCHITECT



THE GATE-HOUSE ECCLESTON HALL.

THE BUILDING NEWS.

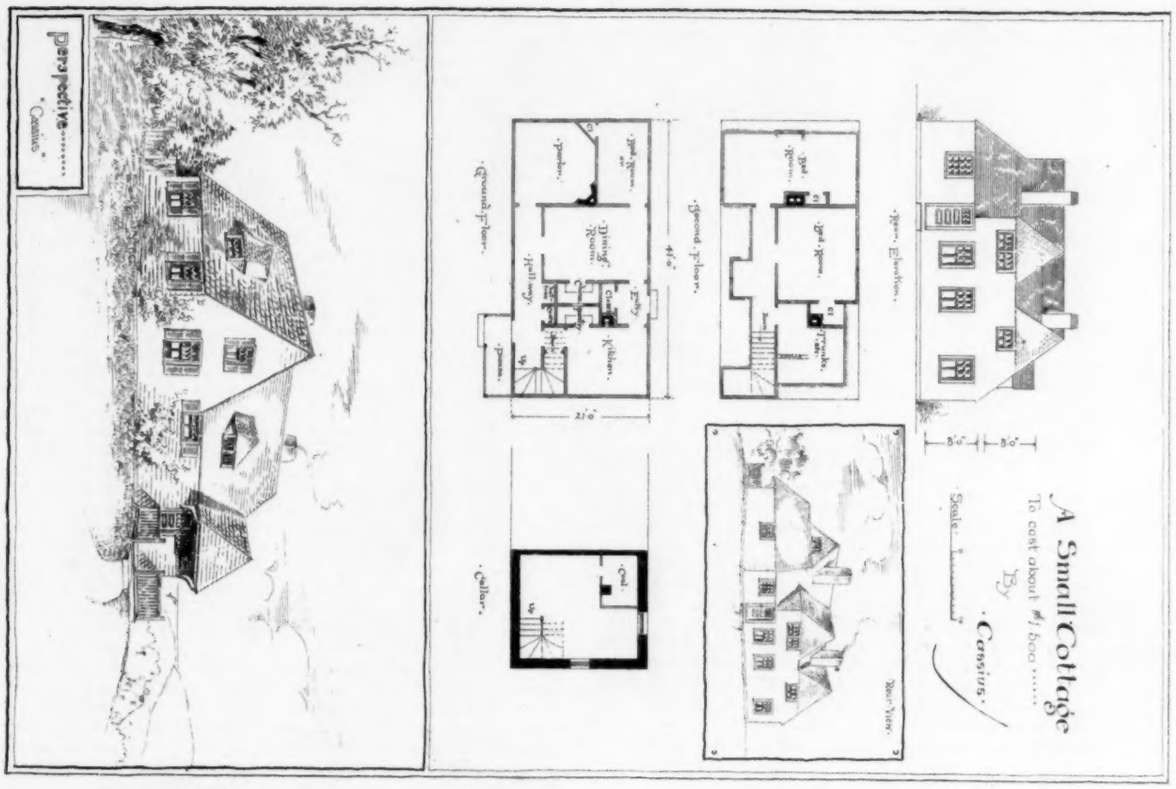
The Architect:
Heliotype Printing Co. 211 Tremont St. Boston

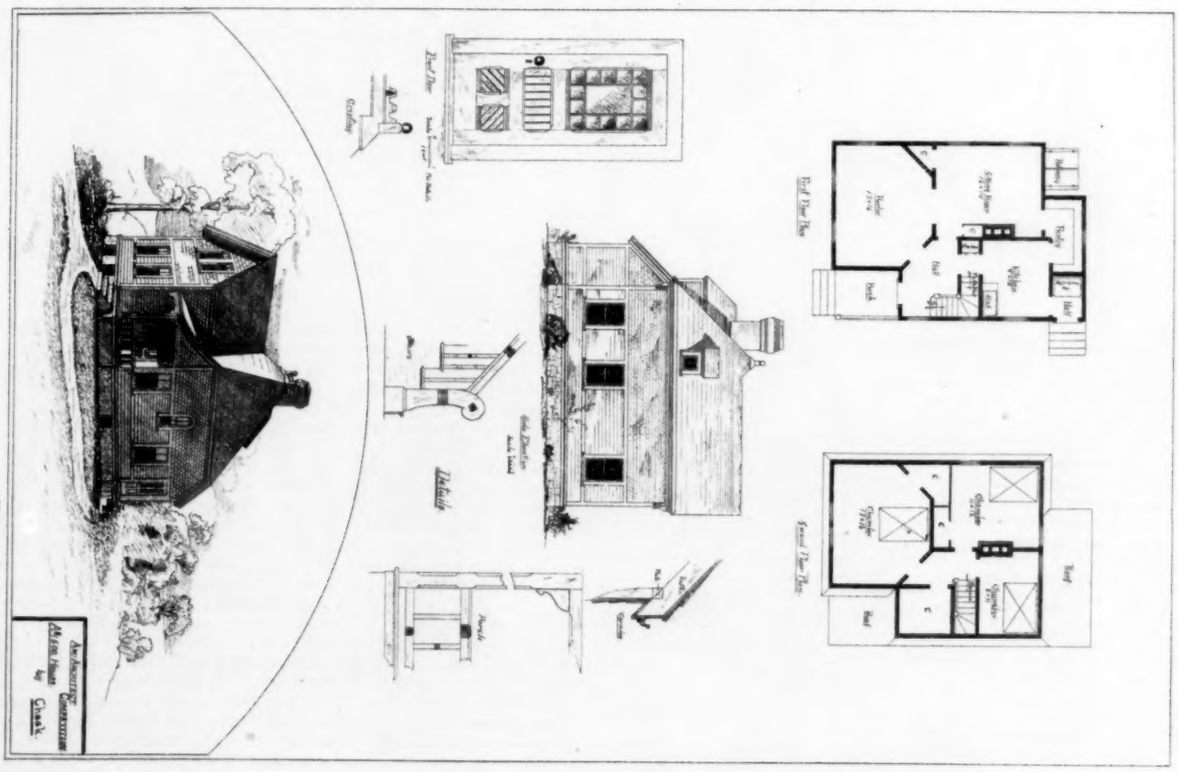


A Sketch in Beacon St.

F. R. Miles Parsons, del.

Heliotype Printing Co. 211 Tremont St. Boston.





Heliotype Printing Co. 211 Tremont St. Boston

RECOLLECTIONS OF FLEMISH ARCHITECTURE.—III.[1]

Fig. 8.

MANY of the stepped gable-ends in this town of Ypres have as their principal features a window surmounted by a well carved cockle-shell in a semicircular-shaped panel, enclosed in an architectural framework in brick, composed of pilasters carried on pedestals, entablature and pediment (see Fig. 8). During our stay we attend service at the Cathedral of St. Martin, which has been modernized to a large extent, the old square tower happily escaping untouched. It is very effective, and shows to advantage from every part of the city, an octagonal turret, with hipped roof, grouping in a pleasing manner with the main structure. Before leaving, we take the opportunity of walking along the top of the old fortifications which extend round the city, and are now laid out in pretty walks and planted with shrubs and trees. At the bottom of the steep walls a wide moat still exists, with bridges at intervals, the surface of the water being almost covered with yellow and white water-lilies in full bloom.

Courtrai was the next place down on our programme, but we find it best to content ourselves with seeing fewer towns, and spending more time at those we visit, and therefore decide to deny ourselves the pleasure this time and proceed to Ghent, merely breaking our journey at Oudenaerde, to see its Hôtel de Ville. This decision we act upon, and passing Courtrai by rail, having a view of its towers and spires as we go by, alight at Oudenaerde. The town is decidedly dull and commonplace, and is not to be compared for a moment to Ypres. The before-mentioned Hôtel de Ville and the Church of Notre Dame de Pameli (now unfortunately being restored) are the only objects worthy of interest, and we are thankful that we have only allowed three hours for our visit. The town-hall, though small, is considered one of the handsomest buildings in the Netherlands. It was erected in 1530, and is built in a very florid Flamboyant style. An arcade runs along the front, supporting a balcony, above which rises an elaborate open traceried tower, somewhat like those of Brussels and Louvain, though smaller and finished with a crown-like termination (Fig. 9). In the interior, the lobby to the council-chamber is enclosed by a magnificent carved oak screen, of early Renaissance character, which is without exception the finest piece of workmanship of its kind I have seen anywhere; it is impossible to do it justice by mere description, and I will not make the attempt. We tried in vain to obtain a good photograph of it, and had finally to content ourselves with an engraving which is a mere travesty of the original.

Fig. 9.

We leave Oudenaerde without much regret, and an hour's railway journey brings us to nineteenth-century life and bustle once more, as we enter the busy city of Ghent. It takes a little time to get accustomed to the noise of the traffic in the narrow streets, as we drive to the Hôtel de Vienne in the old Marché aux Grains, after the quiet and sleepy experiences we have lately gone through. The interesting buildings here do not salute you at every footstep, as is the case in Bruges, but are interspersed amongst much modern work, and require a little hunting up; but a brisk ramble through the city reveals to us many interesting studies for our pencils. The chief amongst those of a domestic character is the Skipper's House, called the "Maison des Bateliers," on the Quai aux Herbes, bearing the date 1513. On its gable-end may still be observed the arms of Charles Fifth, and the watermen's insignia, though the carving is much defaced, and before long they will be entirely unrecognizable. Knowing that it had been illustrated before by Ernest George and others, we could not resist the temptation to attempt a drawing of it for ourselves, and transfer a record of its picturesque beauty into our sketch-books. The whole façade is overspread with elaborate detail, and carved work lavished in the utmost profusion. A flight of steps leads up to the entrance, which has a heavy oaken door, framed out of thick boards, moulded on the face like the linen-fold ornament one is accustomed to see in panels. Above the transom, in place of a fan-light, is a panel containing a finely-carved representation of a three-masted vessel of antique build, resembling a Spanish galleon.

The ground-floor windows have Tudor-shaped arches, and are separated, one from another, by well-moulded jambs or mullions, with small attached shafts. The wooden casements are modern. The fenestration of the upper portion of the house is everything one could desire in the way of composition and richness of detail. Between the first and second floor windows is a row of panels containing shields, with other heraldic accompaniments. The window openings in the upper part of the gable, instead of being glazed, are covered with wood shutters. The designer, in breaking his gable-end, has produced a most picturesque and fantastic conception, and there is an artistic *abandon* about it which is charming. The sloping sides are stepped, and a series of ogee-curved moulded weatherings ascend up to the apex, intersected by tall, octagonal pinnacles, which are tied back to the gable midway in their height by curved crocketed arms.

While busy sketching from the opposite side of the canal, we are surrounded by a crowd of youngsters, one or two of them being very uproarious, which makes our work one of considerable difficulty. A waterman who is loitering about without much to do, seeing how we are molested and interrupted, constitutes himself our protector, and by means of threats and gesticulations keeps the enemy at a distance. But not for long; one or two urchins more mischievous than the rest make a dart and try to upset my stool, at the same time saluting our retainer with insulting observations. The attempt is unsuccessful, and one of them in escaping receives a violent blow in the face from our now infuriated friend. His cries bring together a crowd of people from all directions, and one or two *gens d'armes* appear on the scene and proceed to make inquiries. I am the central object of attraction, as one of the officials applies to me for an explanation, a man living near by being introduced as interpreter. An account of the incident is given. Our names and the hotel in which we are staying is entered in a note-book, while our protector, who has worked himself up into a perfect fever of excitement, is marched off to account for his actions. We fully expected to be served with a summons to give evidence in court the following morning, but happily hear nothing more about the affair, and a day or two afterwards recognize the countenance of our former friend as he passes in the street.

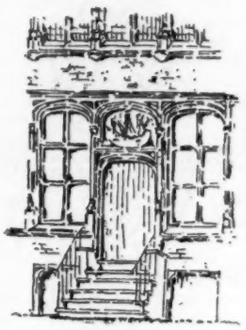


Fig. 10.

Not far from the hotel, and visible from the upper-floor windows, above the roof of the Church of St. Nicholas is the belfry tower, which rises to a considerable height, a fine prospect of the city and surrounding country being obtained from its topmost gallery. The

Fig. 11.

tower was repaired in 1855, and a bell-chamber and low spire, constructed of cast-iron of wretched design added, painted a yellow-drab to resemble stone. Its finial carries a fine dragon of copper, gilt, which was brought as a trophy from Constantinople by the men of Bruges in one of the early Crusades, but it was afterwards taken from them by the Gantirs, after their conquest of Bruges under Philip van Artevelde, in the fourteenth century. Before leaving the tower a surprise awaits us. Taken along a corridor by the concierge, we are suddenly introduced to a *tableau vivant*, which takes us entirely by surprise, and makes us wonder for a moment whether time has not retraced its steps three hundred years, enabling us to witness a scene of olden chivalry and feats of arms. We are in a splendid apartment whose walls are hung with antique gilded and embossed leather hangings. Tapestry is to be seen here and there, its colors faded and subdued with age, while ancient Flemish worthies gaze down from their canvases upon the tragedy taking place below. Two men, one of middle age, the other a mere stripling, appear to be engaged in deadly combat. Their rapiers glitter in the light streaming through the stained-glass windows, and clash together ominously as a violent lunge is skilfully warded off. Their movements exhibit a panther-like grace as the attack is renewed from time to time, and one or other falls back upon the defensive. Their heads are protected by visors with openings in front, covered with a net-work of wire-meshing; their upper garments discarded, and leathern-covered paddings substituted in their place. How will it all end? The affray gradually

Fig. 12.

[1] A paper read before the Leeds Architectural Association, by W. H. Thorp.
Continued from page 34.

gets more desperate, and at last the elder of the duellists, pursuing his advantage, thrusts his weapon into a mortal part of his adversary's body. The conflict is terminated. The wounded man does not fall, but, with a graceful bow to the spectators, the two participants in the struggle retire from the scene. The fact is, as no doubt you will have already surmised, we are in a fencing school and have been witnessing a trial of skill between the master and one of his promising pupils.

Fig. 13.

But time flies, and we must not linger much longer in Ghent. We visit the cathedral of St. Bavon, which externally is not particularly interesting from an architectural point of view, but it contains many valuable paintings, besides other antiquities. Passing the Hôtel de Ville, which has two fronts — one Italian Renaissance in style, and the other Florid Flamboyant Gothic, the latter undergoing restoration, and emerging from its time-honored garments in a brand-new dress — we come across one or two interesting domestic buildings in an adjoining street. Here we see a gable-end, as usual, fronting the street, the upper stories above the first-floor windows projecting over the footway, and carried on moulded corbels supporting low pointed arches. These corbelled-out projections constitute a feature which is often met with both in buildings of Gothic character and others of Early Renaissance style. The effect of light and shade produced is often very effective, and in the gable-end of some offices in Hunslet Lane, for Messrs. H. Conyers & Co., at present being carried out from my designs, this, with other Belgian features, is being adopted in the treatment employed.

Fig. 14.

Some old houses in the Place St. Pharaïldo, near the Fish Market, form a pleasing, picturesque group, and we sketch an old corner building with a tower at the angle in the Marché au Vendredi, once occupied by the Duke of Alva. In our wanderings in search of the Porte de Bruges, an old water-gate with its archway flanked by round towers, we pass the Grand Béquinage, one of the largest nunneries in Europe, and slightly missing our way, we come across the quarters occupied by the workpeople, an industrious and clever race, who live in really good houses, and whose countenances are for the most part agreeable and intelligent in expression. They seem to be cleanly in their habits, the children are healthy-looking and well-clothed, and there is an entire absence of appearances of squalor, poverty and neglect, which we are too much accustomed to see in our own land in similar neighborhoods. These evidences of thrift and comfort in connection with the working classes are very encouraging, and one cannot help wishing that their example should be followed to a larger extent at home.

Fig. 15.

After making a hurried outline of the tower of St. Nicholas, we again pack up our belongings and journey onwards to Brussels, where a day or two are spent looking at the fine public buildings of this gay little Paris in miniature, and taking the customary excursion made by all patriotic Englishmen to the field of Waterloo. The architecture of Brussels, therefore, must be left undescribed, and we must hurry on to Antwerp, passing Mechlin *en route*, regretting that no time can be spent there to make ourselves familiar with its antiquities. The Hôtel des Flandres, in the Place Verte, near the cathedral, is in as central a position as one can desire for its proximity to the lions of the place, and there we take up our abode. One of the first places we turn our footsteps to, after a good night's rest, is the Plantin Museum, which was so ably described to you in Mr. Phéne Spiers's paper read before this society at the conclusion of the session of last year. As the description will still be fresh in your memories, I will not weary you by going over the same ground again. Let it suffice to say that our anticipations are in no way disappointed, and after obtaining the necessary permission to sketch from "Monsieur le Directeur," we fill up our time for the next four days in its delightful rooms, which are filled with objects of interest of every description. The interior court-yard or quadrangle, with the open arcade at the end, its columns and walls festooned with the luxuriant foliage of the vine, makes a charming study for a water-color sketch. The rooms are replete with quaint old hooded open fireplaces, elaborate oaken flights of stairs to get over the different levels, splendid examples of carved oak furniture, paintings by Rubens and Vandyck, stamped and gilded Cordova leather hangings, tapestries, hand-painted tiles of curious and unique design, and, in short, everything to delight the eye of the art connoisseur. The presses, types, wood-blocks, and specimens of books and engravings are still to be seen, the place being left in its original condition. Everything around us bears witness to the truth of the motto of the family, "*Labore et Constantia*" (by labor and by perseverance). Our work here leaves us little time in which to do justice to the remaining objects of architectural interest. The descriptions already given of the characteristics of the domestic architecture in Bruges and Ghent will for the most part apply equally well here. The cathedral, with its lofty, lace-like spire, containing Rubens's masterpieces, the "Raising" and the "Descent from the Cross," is too well known to require special mention. The church of St. Paul is noticeable for its "Calvary" and its remarkably fine Renaissance carved-oak confessionals. Other ecclesiastical edifices too numerous to mention are noted for the masterpieces they contain of the art of Rubens, Vandyck, Teñiers, Jordaens, and others. In the Grande Place are situated the Hôtel de Ville and many fine old gabled buildings belonging to ancient trade guilds. The Hôtel de Ville is a fine specimen of Early Renaissance work designed by Corneille de Vriendt. An elaborate and picturesque composition, with pedimented gable-end, forms the central feature of the façade, the wings on either side being rather formal and academical in treatment. Some splendid frescoes representing historic events in which Antwerp has had a part, painted by the late celebrated artist, Baron Leys, decorate the walls of the great hall; the Salle des Mariages and the Salle de Justice containing elaborately-carved chimney-pieces, an overmantel of one of them framing a panel representing the "Last Supper." The "Steen," near the Fish Market, in a narrow street, once the city jail, an interesting building of the sixteenth century, is now made into a museum of antiquities. A gable-end with a nicely-designed oriel window would have made a capital sketch, but we have not time for it, our energies having been expended over the Plantin Museum and the gable-end of the Hôtel de Ville.

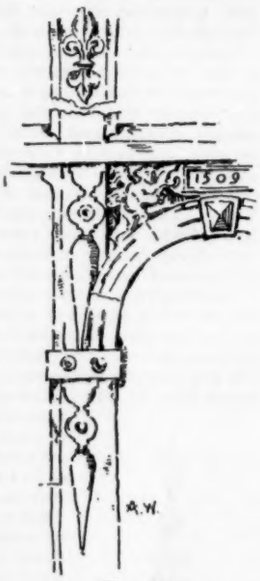


Fig. 16.

It is now time that we were homeward bound. A rapid drive along the quais brings us to the vessel, a fine steamship belonging to the Great Eastern Railway Company, bound for Harwich. Steam is up, the whistle sounds, and we are loosed from our moorings. It is a magnificent evening, the atmosphere is as clear as crystal, a refreshing and invigorating breeze blows in from the sea. As we traverse the windings of the Scheldt, the sun lights up the surrounding country, casting long shadows over the plains. The cathedral spire still rears itself up distinct on the horizon, although it is now miles and miles away. Passing Flushing, where we drop our pilot, the open sea is reached. The wind has now a chilly feel, the night draws on apace, and we turn in below. Snugly ensconced in a comfortable berth, the vibration and noise of the vessel are by degrees forgotten. A feeling of weariness and languor envelopes the wearied frame and a dreamy sensation pervades the senses. Visions of picturesque bits of ancient cities float before my eyes; quaint old gables, tourelles of charming outline, picturesque edifices, whose reflections are mirrored in the unruffled surface of the sluggish canals, charming interiors mellow with the light of bygone years, pass before me in rapid succession. A sweet low-toned melody from the carillons of some ancient belfry is in the air and acts as a lullaby. These pictures of the past are broken in upon by the bustle and confusion going on around me, and I awake to consciousness again, to find that we are nearing Harwich, and before long we plant our footsteps on English soil once more.

Suabian Frescoes Discovered at Augsburg. — While some repairs were being made recently at the Protestant church of St. James, in Augsburg, several very beautiful large frescoes were discovered. They were hidden beneath coats of whitewash. Among the subjects of these frescoes are a figure of the Saviour, figures of St. James and St. Anthony, and the crowning of the Virgin. A stone inscription records that they were executed between 1480 and 1496. It is said that these newly discovered works are precious memorials and specimens of the early Suabian school.

THE SIPHONAGE OF TRAPS.

NEWPORT, R. I., July 17, 1883.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — I have just read Mr. Hellyer's comments on my article on the above subject published in the *American Architect* of October 14, 1882.

Certainly the personal element should find no place in the discussion of an important subject like this, and I pass without comment alike the strictures and the compliments of Mr. Hellyer's paper. The "personal equation" element, however, cannot be entirely left out of consideration, and it seems almost hopeless to carry on a profitable discussion with one who has the quality at which I hinted in using the word "blandly" (not "blindly," as printed) with reference to Mr. Hellyer's deductions concerning the passage of air through Bower's trap. This same quality is peculiarly evidenced in his present paper (*American Architect*, Vol. XIII. p. 308), where he says that my experiments "would have been more valuable had he used almost any other water-closet for his testings than a pan-closet—a water-closet which every sanitarian now condemns and which is fast going out of use." Any one who has followed my writings even casually, must know that I was among the very earliest, and have always been among the most persistent of those who insisted upon the absolute condemnation of the pan-closet. But the point directly at issue and the one that seems to me to demonstrate Mr. Hellyer's limitations in scientific discussion is this: In the illustrated description of the apparatus which I used in making tests I said: "Figure 4 shows the manner in which the water-closet bowl was filled and emptied, discharging at each time about 2½ gallons of water. The pan was drawn quite back and a funnel inserted, kept filled with water, as it was found that a discharge from the bath-tub would draw all the water out of the pan, and would also unseal the 4-inch lead trap in certain experiments with a closed soil-pipe. The discharge was effected by lifting the funnel and allowing all the water to rush out of the bowl. In a number of the experiments, in order to make the test more severe, a large stable-bucket of water was poured into the bowl of the closet while discharging, as fast as the outlet would receive it without overflowing the bowl;" and in the illustration I showed the construction, both description and illustration making it perfectly clear that I used the pan-closet only as a funnel for the rapid introduction of a very large volume of water, greater than is used in any water-closet and delivered much more rapidly, — just as I might have used a Hellyer's hopper-closet or any other vessel which would afford a convenient water-way. The only purpose was to get a hopper full of water supplemented by a stable-pailful of water into the soil-pipe with the greatest velocity and volume, so as to produce the most forcible draught possible on the lateral traps. The effect was so great that when the soil-pipe was closed at the top we could draw out almost every drop of water from a trap several inches deep, and could empty the cup of Bower's trap so as to drop the ball far below the inlet. Therefore, as Mr. Hellyer bases his comments on such an absolute misapprehension of all that I have done and said, it is not worth while to continue a discussion of details with him; neither do I think it is worth while to discuss the influence of his own inventions in overcoming inherent difficulties of water-seal traps. Neither is it worth while to discuss the first paragraph, in which he implies that I have not read all of his books and lectures, and have not based my conclusions on a full consideration of all the experiments that he has made. As I remember my comments on his experiments I expressed the opinion that his conclusions were "inconsequent," basing that opinion only upon the experiments described in the paper to which I was referring. I see nothing in his present comments to influence materially the conclusions given in my October paper.

I believe that the hidden water-seal, whether ventilated or not, is an unsafe reliance;

That the great objection to the ventilating-pipe lies, not in its cost, but in its existence; the fewer pipes we have the better off we are;

That the safe and proper solution of the siphonage question is still to be found; possibly in such an enlargement of mains, soil-pipes, etc., as to prevent too great suction being produced on branches by the stream flowing through them;

That in the present state of the science a good mechanical trap is on the whole less objectionable than a vented water trap; and,

That until this difficulty is properly solved the fewer traps we have so situated as to require venting to protect their seals the better our chances will be.

The above is not a very satisfactory creed, but in my judgment it covers as much as one can to-day safely subscribe to.

Mr. Hellyer confuses, as do nearly all writers on the subject, the venting of traps with the ventilation of long lateral wastes. This latter is always necessary when long laterals are necessary; the former is, I think, only a makeshift and, at least as it is carried out in this country, not a very reliable one, — always an objectionable one. As to Bower's trap, it is by no means a perfect device; at the same time I think that it is, for certain uses, the best we yet have; for certain others I prefer a trap where the ball is held to its place by gravity; for all uses I am hoping to see something better devised. I do not think, as Mr. Hellyer implies, that traps are to be unsealed by air passing *through* them (unless in continued strong currents) but that the unsealing is very likely to occur from the passage of air over the seals, not by "licking up," but by evaporation.

Mr. Hellyer asks if I am prepared to fix mechanical traps under water-closets. I am not, nor am I prepared to fix *any* trap *under* a water-closet in the ordinary sense. I believe that every water-closet should be trapped only in its bowl and there only with such a volume of water that even if siphoned out so as to take air freely there will still be an ample seal left when the passage of air ceases. Such a trap is always in sight. We see at once whether it is open or closed. We see, too, and this is very important, whether it is clean or foul. I have no numerical record of my observations, but I have had a good deal of experience in the inspection and observation of house drainage works, good and bad, and I think it is safe to say that the cases of bad trapping which I should consider it necessary to relieve by venting have not amounted to more than one per cent of the whole.

Mr. Hellyer thinks that I am "halting in my onward march to put my foot down upon the vent-hole of a trap." Not so; I am asking sanitary authorities and sanitary writers to hold their hands until they are sure they are right, and, as the preponderance of influence is being exerted in the other direction, I try to state as clearly as I can the reasons why I think that a possible *ignis fatuus* should not be followed in this darker part of our journey. Perfection in plumbing work has not yet been reached even in England, neither has a basis for such very confident assertions concerning it as we not unfrequently see both there and here. We shall all of us, if we are wise, be very modest in our assertions, not insisting, even though we have the authority of a dozen Boards of Health for our support, on the infallibility of methods which others question.

GEO. E. WARING, JR.

NOTES AND CLIPPINGS.

THE KINZUA VIADUCT. — For the purpose of correcting certain misapprehensions Mr. C. H. Keefer, assistant engineer of the construction of the Kinzua Viaduct, writes to the Philadelphia *Press* as follows: "There are several cases where chasms very much deeper than the Kinzua Valley, at the point where it is crossed by the Kinzua Viaduct, have been bridged, but in such cases, although the bridge is at a very great height above the bottom of the chasm, the span is sufficiently long to be supported on either side without requiring an intermediate pier or support in the deepest part of the chasm. In the Kinzua Viaduct not only was a valley nearly half a mile in width and over three hundred feet in depth bridged, but as the spans were short (sixty feet), twenty iron towers, which take the place of piers, are required to furnish them with the necessary points of support. Several of these towers are in the deepest part of the valley, and all were built on sections or stays from the ground up, until their requisite height was obtained, each section as it was built furnishing the workmen facilities to hoist the one next above into position; in this way the iron, with the aid of hoisting engines and nearly thirty miles of rope, gradually grew from the ground up until a height of over three hundred feet from the ground, at the base of the highest towers, was attained. From this it will be seen that it was a much more difficult problem to erect a bridge from the ground up to this height than to design and erect bridges over deeper chasms, which could be crossed with a single span, and would furnish good facilities for supporting the bridge on either side without piers or intermediate supports. With regard to the "Kinzua wooden girders," calling them wooden is clearly a mistake, as they are made of the very best quality of wrought-iron, and inspection of them will convince, without the assurance which actual test and knowledge of their strength give, that they are as strong as could be desired, and likely to retain their usefulness for very many years to come. The viaduct has been built in a most substantial and thorough manner, of as imperishable materials as can be obtained, and is a type of the best American engineering practice of the day, as well as an example of modern constructional skill."

SAND-BOX FOR LOWERING THE CENTRES OF ARCHES. — For striking the centres of a four-span bridge over the Tamal River, in the Midnapore district, there was required for holding the sand an entirely closed receptacle, which would gradually collapse as the weight came upon it — bags, open cylindrical or rectangular boxes being unsuitable under the conditions. After considerable thought, it struck the author that empty kerosene-oil tins would answer the purpose, and if so, hardly anything could be cheaper, as they only cost one anna per tin. The weight which the tins filled with sand would sustain without collapsing having been ascertained by experiment, a sufficient number were placed on the top of masonry pillars and were inclosed by masonry in mud-mortar, so as to prevent their being tampered with. This was also needed as a reserve support in case of a tin bursting through faulty construction. The kerosene-oil tin "sand-boxes" were made to carry the centres by templates and pillar-plates, as usual; and to allow of the immediate collapse on the sand being removed, the templates were made of such a size as to lie within the box. In striking the centres, the casing-bricks were first removed. Coolies, armed with short and sharp-pointed pegs of hard wood and ordinary hand-hammers, were stationed at each box. At a given signal every man struck a hole at the side of his box, and on the pegs being simultaneously removed, and another hole made at the top of the tin, the sand ran out. The lowering, which was very easy and gradual, could be arrested at any point by allowing the sand to accumulate in front of the holes. One side could also be lowered quicker than the other by simply driving another hole into the box and increasing the flow of sand. The maximum weight supported by one of the kerosene-oil tins used was, by calculation, 7.7 tons. No bulging or crushing was perceptible before the sand was run out. — *Professional Papers on Indian Engineering.*

Mexican Houses. — A correspondent of the London *Times*, writing from Mexico, says: "Springer, the capital of Colfax County, 716 miles from Kansas City, although surrounded by superior sandstone and some limestone rocks, at present consists of a few frame houses and some log shanties, interspersed with the true Mexican edifice, constructed of adobes, or bricks made of mud and water. The blocks, roughly cast in moulds, are usually about four times the size of an English brick, and are sun-dried. In this almost rainless climate these dried mud-blocks are wonderfully durable; I have seen walls made of them 300 years ago still in good preservation. For the poorer class of Mexican dwelling, often about 12′ x 16′, these adobes are usually placed singly, making a ten to twelve inch wall, held together by a little mud mortar. At an elevation of eight to ten feet, fir poles or rough-sawn timber are laid from the front to the back walls, some of them projecting without any regard to uniformity, two or three feet, and proving useful supports for suspending a pig, tools, drying clothes, or even the baby in its basket. The walls are carried about a foot above the roof-timbers, on which are generally tacked rough boards, covered with a grouting of several inches of mud and gravel, from which rain is run off by a few wooden spouts or merely by holes left in the wall immediately over the rafters. Many of the older adobes are without a window, and the doorway, without the superfluity of a frame, is sometimes closed, as required, by a buffalo hide or other curtain. A fireplace is not always provided, cooking often being done in a small beehive-like oven, placed outside. The internal arrangements of such a dwelling — thousands of which are met with throughout New and Old Mexico — are of the simplest description. In many of the poorer houses in remote localities the beds, if such they can be called, are of hides (laid on the clean-swept dirt floor), conveniently shaken and folded away when the occupants are astir. Many are still without either table or chair, for which a few rough stools are sometimes substituted."

Nobel's Dynamite and Explosives Factory. — The dynamite manufactory of Mr. Nobel is located at Ardeer on the Ayrshire coast, and in regard to it the London *Graphic* speaks as follows: "The works cover nearly a square mile in area, the buildings being scattered about like the shanties in an embryo American city, large structures and small ones, some of brick, and some of wood, but no two are together. There are about two hundred and fifty workers in all, women as well as men being employed. Immediately on passing the policeman at the gate, the workers enter into cottages for the purpose of changing their costumes, and now appear in different colored uniforms, some of the men being clad in bright scarlet, some in blue, but the majority wear clothes of a more sombre color. Once the gates close upon them in the morning, the operatives are shut in for the day. Not until night do they resume their ordinary clothes, and pass outward to their homes. The women are chiefly employed in making the dynamite into cartridges. The place is pervaded by the resolution to minimize the risk of explosion, and, in consequence, not only is every little hut in which the operation is conducted separated from its neighbors, but no more than four women are allowed in each. The distinctive clothing is another precaution, although its use is more obvious in the case of the men than the women. There are grave reasons why the men in red should be separated from the men in blue, and the men in white flannel from either of the other two. The mere cutting up and packing is simple, and comparatively safe, but there are intricate processes connected with the preparation of the explosive portion of the compound, which if not carefully watched are dangerous; and, as the garb he wears is an index to the work he is doing, it is easy to find out a man who strays from his own department into another. Four policemen from the county police force, paid by the company, are constantly on the watch to prevent dereliction of duty. They speak to no one, and are not to be spoken to. At uncertain intervals, also, there comes into the place a Government official, who sees whether the regulations laid down by Act of Parliament are faithfully adhered to. Each department of the place has an overseer, and over all is a manager, whose wide practical knowledge is such that he can be appealed to on every subject connected with the manufacture. That it is a profitable undertaking in which the company is engaged is apparent from the high premium on the original shares, and that the product has become a resource of civilization is shown by the demand for it from all parts of the globe, where man, warring with nature, is uprooting the stumps of trees, levelling the rock that comes between him and a straight path, breaking into the seam of the coal that is to cook his dinner, or making deep and navigable the stream that gives him communication with his neighbor."

The old Albany Capitol. — An advertisement published under authority of Capitol Commissioner Perry, stated that sealed proposals would be received at his office until noon of Wednesday, July 25, for the purchase and removal of the old Capitol building. Parties purchasing the same are to take down the building and remove the materials on or before October 1, 1883. At the beginning of this century, and probably within the memory of men now living, an ordinary four-story stone building, "with dormer windows and the Albanian gable ends," situate on the corner of Hudson Avenue and Broadway, and called the Stadt Haus or City Hall, served to accommodate the municipal bureaus of the city of Albany, the courts of the county, the county jail, and the Legislature of the State. And "in its yard stood the whipping-post and pillory." In 1803, these quarters becoming crowded, the Common Council of the city passed a resolution praying the Legislature to erect a new State and Court house on the public square, which was also called "Pinkster Hill," because of the annual congregation of slaves upon its summit for the celebration of the pinkster festivities in May. After agitation and careful compilations of the probable cost of such an enterprise, the Legislature, on April 3, 1804, passed an act entitled, "An Act making provision for improving Hudson's River below Albany, and for other purposes," one of which "purposes" turned out to be the erection of the Capitol building. By this act John Taylor, Daniel Hale, Philip S. Van Rensselaer, Simeon De Witt, and Nicholas N. Quackenbush were appointed commissioners to erect a building "with sufficient and commodious apartments for the Legislature, the Council of Revision, the courts of justice, and the Common Council of the city of Albany." The act provided for the sale of the Stadt Haus and grounds for the best price and on the best terms, the moneys arising from such sale to be applied to the new enterprise; it also authorized the Supervisors of the city and county of Albany to lay a tax of $3,000 upon the freeholders and the inhabitants of the county of Albany, exclusive of the city, and an additional tax of $3,000 upon the freeholders and inhabitants of the city itself, for the purposes of the new building. It was further enacted "that the managers of the lotteries . . . shall cause to be raised by lottery the further sum of $12,000, which sum when raised the said managers shall pay unto the said commissioners for the purposes aforesaid." Under the lottery system at that time all the public improvements of the State were conducted. In the construction of the old capitol, estimates were made from year to year, and found inadequate. The building was completed in 1814. Its total cost was $110,685.42, of which $73,485.42 was paid by the State, $34,200 by Albany City, and $3,000 by Albany County. The commissioners, in the Supply Bill for 1814, were allowed one per cent of the money expended for their services. Albany held an interest in the grounds and building until 1829, when an act was passed authorizing the payment of $17,500 to the city and county, on condition that all their rights and interests in the Capitol and park should be released, which terms were accepted. When completed, the building was considered one of great magnificence, and it challenged the admiration of travellers and tourists for years. — *Albany Argus.*

Egyptian Discoveries in Rome. — The Via di S. Ignazio is a short, narrow lane, which leads from the Collegio Romano to the tribune of S. Maria sopra Minerva, crossing a portion of the ground formerly occupied by the "Iseum et Serapeum" of the ninth region. Every time excavations have been made on either side of the lane, to build or to restore the houses which line it, some beautiful specimens of Egyptian workmanship have been brought to light. Considering that no excavations had ever been made underneath the public ground, and considering there was no reason why, in the very centre of such promising land, other relics of the famous sanctuary should not exist, I asked the Archæological Municipal Commission to try the experiment, and my proposal was accepted at once. The works began on Monday, the 11th — hard and difficult works, because we had to dig to a depth of twenty feet between houses of very doubtful solidity, propping everything on every side. First to appear, at the end of the third day, was a magnificent sphinx in black basalt, the portrait of King Amasis. It is a chef d'œuvre of the Saïtic period, brought to perfection in the smallest details, and still more interesting for its historical connection with the conquest of Egypt by Cambyses. The cartouches bearing the king's name appear to have been hammered, although not so completely as to render it unintelligible. The nose, likewise, and the *ureus*, the symbol of royalty, were injured at the same time. The explanation of such circumstances is given by Herodotus. When Cambyses occupied Sais, Amasis had just been buried. The conqueror caused the body to be removed from the tomb, to be flogged and otherwise insulted, and finally to be burned, the maximum of profanation from an Egyptian point of view. His name was erased from the monuments which bore it, a natural consequence of the "memoriæ damnatio." This sphinx is the surviving testimonial of that eventful catastrophe. When, six or seven centuries later, a Roman governor of Egypt, or a Roman merchant from the same province, singled out this work of art to be shipped over to Rome as a votive offer to the Iseum Campense, ignorant of the historical value of its mutilations, he had the nose and the *ureus* carefully restored. Now both are gone again; there is no danger of a second restoration. I may remark, as a curious coincidence, that as the name of Amasis is erased from the sphinx, so the name of Hophries, his predecessor, is erased from the obelisk of Minerva found in the same Iseum. In these two monuments we possess a synopsis of Egyptian history between 595 and 526 B. C. The second work, discovered on June 17, is an obelisk of red granite, inscribed with hieroglyphics. The lower portion only appears on the side of the trench, and we are still anxious to ascertain whether it is broken or not. If the monolith is entire, it will be of the same size as the one in the Piazza della Rotonda. The cartouches show the name of Ramses II, the Sesostris of the Greeks. We thought at first that the obelisk, like that of the Pantheon, was a Roman imitation; but Professor Schiaparelli, the eminent Egyptologist, who came over from Florence at the first notice of these extraordinary findings, considers it to be an original work, which would belong, accordingly, to the fourteenth century before the Christian era. — *Rodolfo Lanciani, in the Athenæum, June 30.*

Flooding the Desert of Sahara. — The possible changes in the climate of Europe which may follow the flooding of the Desert of Sahara have been again the subject of discussion since M. de Lesseps's recent and more modest scheme has been announced. There is one aspect of the question which has not yet, so far as I know, been considered. It seems to have been taken for granted that the influx of the waters of the Mediterranean to the regions now dry, parts of which lie fully a thousand feet below the sea level (if recent surveys may be trusted) will take place nearly as quickly and as comfortably as the filling up of the Suez Canal when the barriers which had kept out the waters of the Mediterranean and Red Seas were successively removed. But if we can judge from what is observed in the case of Niagara, it is probable that the inrush will take some time, and be accompanied by some little disturbance. Niagara may be regarded as letting out the waters of Lake Erie into Ontario. Considering the limited amount of work done in this way by Niagara, and the disturbance and uproar accompanying that work, one is disposed to await with interest the effect of letting the waters of the Mediterranean into the lower parts of the Sahara. It may safely be predicted that, whatever inlet is cut by man, a much larger one will be forced by nature before a hundredth part of the work of indraught has been effected. — *Contemporary Review.*

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

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

BUILDING PATENTS.

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

281,235. FIRE-ESCAPE.—Samuel H. Bingham, Laurelton, Pa.

281,247. KEY-FASTENER. — Washington Dewey, Chicago, Ill.

281,252. SAW. — James E. Emerson, Beaver Falls, Pa.

281,255. FOLDING OR CABINET BATH-TUB.—Franklin H. Fickett and John W. Reid, Chicago, Ill.

281,267. ARTIFICER'S LEVELLING-INSTRUMENT. — John W. Harmon, Boston, Mass.

281,291. SASH-FASTENER. — Henry S. Ohl, Jr., Philadelphia, Pa.

281,308. PARLOR-DOOR HANGER.—Samuel Schreffler, Jr., Joliet, Ill.

281,318. WRENCH. — Benjamin F. Stockford, Sturgis, Mich.

281,326. MALT-KILN FLOOR. — Paul Weinig, Hanau, Prussia, Germany.

281,379. WINDOW-SASH. — Theodore F. Lang, Baltimore, Md.

281,395. PLASTER COMPOUND FOR THE MANUFACTURE OF STONE, TILE, ETC. — Emile Pick, Paris, France.

281,418. TOOL-HANDLE. — Sigourney Wales, Cambridge, Mass.

281,431-432. WRENCH. — William Baxter, Jersey City, N. J.

281,433. SLIDING DOOR. — Alvah P. Beard, Horseheads, N. Y.

281,447. SAW-HANDLE. — Frank A. Buell, Brooklyn, N. Y.

281,456. SLIDING-JAW WRENCH. — George J. Cline, Goshen, Ind.

281,458. SASH-HOLDER. — William Conner, Missouri Valley, Iowa.

281,463. VISE. — John C. Coram, Lowell, Mass.

281,467. FIRE-PROOF CEILING. — P. J. Leonard de Rache, New York, N. Y.

281,488. FIRE-ESCAPE. — Emile Gerot, Buffalo, N. Y.

281,504. DOOR-CHECK. — Silas B. Hazen and Geo. L. Van Gorder, Winamac, Ind.

281,537. DOOR-HANGER. — Eugene Mack, Addison, Oakland County, Mich.

281,542. DOOR-CHECK. — George G. Matthews and Rudolph Matthews, Wichita, Kans.

281,546. DOOR-HANGER. — Henry T. Moody, Newburyport, Mass.

281,549. FIRE-ESCAPE. — William Nack, Sheboygan, Wis.

281,559. SAFETY DEVICE FOR ELEVATORS. — Cassius C. Palmer, Oakland, Cal.

281,551. HOT-AIR FURNACE. — Henry J. Pelstring, Philadelphia, Pa.

281,557. FIRE-ESCAPE.—Henry Redden, New York, N. Y.

281,568. EXTENSION-SHANK FOR BITS.—C. Schoch, Truckee, Cal.

281,594. SPRING-HINGE. — William H. Williams, Brooklyn, N. Y.

281,615. LOCK. — Frank S. Clarkson, Baltimore, Md.

281,630. SHUTTER-WORKER. — Henry J. Hunsicker, Laurelton, Pa.

281,632. AUTOMATIC DOOR FOR ELEVATOR HATCHWAYS. — Michael F. Kidd, Baltimore, Md.

281,645. CHIMNEY-TOP.—Anderson Rosenstar, New York, N. Y.

SUMMARY OF THE WEEK.

Baltimore.

DWELLINGS. — Wm. H. Marriott, architect, has prepared drawings for D. D. Mallory and mother, for 2 two-st'y brick houses, with stone and terra-cotta finish, to be built cor. Eutaw Pl. and Robert St., and to cost $35,000.

Jacob Saum, builder, is to erect 11 three-st'y and basement brick dwells., on the n s Union Sq., cost, $3,500 each, from designs by W. Claude Frederic, architect.

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

Francis White, three-st'y brick building, e s Gay St., between Aisquith and Forrest Sts.

Caspar Folke, three-st'y brick building, w s Charles St., between Hamburg and Cross Sts.

Harrison O. Wilbur, three-st'y brick building, w s Light St., between Cross and Weber Sts.

F. D. Sauerwein, 7 two-st'y brick buildings, e s Fulton St., between Lorman and Presstman Sts., and 9 two-st'y brick buildings, e s Fulton St., between Lorman St. and Patterson Ave.

Dr. C. W. Benson, three-st'y brick building, e s Howard St., between Centre and Franklin Sts.

ADDITION AND ALTERATION. — W. Claude Frederic, architect, has prepared plans for an alteration and addition to the property of Richard Stumpf, Esq., cor. Wolfe and Baltimore Sts., to cost $3,000; Wm. Goldbeck & Son, builders.

Boston.

BUILDING PERMITS. — *Brick.* — *High St., Nos.* 143 *and* 145, Ward 12, for John Goldthwait, mercantile, 30′ x 90′, five-st'y flat; A. Ripley, builder.

Stanhope St., No. 17, Ward 11, for Edward W. Murray, stable, 30′ x 80′, four-st'y flat; Laming & Drisko, builders.

Commercial St., No. 494, Ward 6, for Nathan Robbins, mercantile, 31′ x 80′, four-st'y flat; John Kelley, builder.

Moreland St., cor. Copeland St., Ward 21, for Abbie E. Hoxie, dwell., 41′ x 41′, two-st'y pitch; ell, 20′ x 25′; Rumery & Maxwell, builders.

Western Ave., Ward 25, for Glidden W. Joy & Co., 5 storehouses, 15′ x 35′, 35′ x 35′, 26′ 6″ x 30′, 35′ x 35′, and 30′ x 40′, one-st'y flat.

Wood. — Hampshire St., No. 22, Ward 19, for Solomon Sanborn, dwell., 21′ x 29′ and 14′ x 15′, two-st'y mansard; Solomon Sanborn, builder.

Norfolk St., near Walk Hill St., Ward 24, for Edward F. Chamberlain, two-st'y pitch; John J. McNutt, builder.

Harvard St., cor. Wales St., Ward 24, for Hiram Orcutt, dwell., 31′ 6″ x 31′ 6″ and 15′ x 21′, two-st'y pitch; J. H. Burt & Co., builders.

Fairfax St., near Carruth St., Ward 24; for H. S. Carruth, dwell., 31′ 6″ x 31′ 6″, two-st'y hip.

Beaumont St., near Carruth St., Ward 24, for H. S. Carruth, dwell., 26′ x 33′ and 14′ x 18′ 6″, two-st'y pitch; A. H. Vinal, builder.

Terrace Ave., near Sheridan Ave., Ward 23, for Andrew Cassidy, dwell., 22′ x 30′ and 14′ x 14′, two-st'y pitch; Andrew Cassidy, builder.

Marcella St., No. 18, Ward 21, for Mrs. P. D. Ladd, dwell., 21′ 6″ x 52′, two-st'y pitch; E. F. Brown, builder.

Ruggles St., No. 78, Ward 19, for Lansing Mills, storage, 16′ x 24′, one-st'y pitch; W. S. Mitchell, builder.

Buttonwood St., near Mt. Vernon St., Ward 15, for Morris Welch, stable, 15′ x 15′, one-st'y pitch; Morris Welch, builder.

Decatur Ct., near Decatur St., Ward 3, for Chas. Butler, stable, 27′ x 63′, three-st'y flat; Geo. E. Morrill, builder.

Albion St., near Dudley St., Ward 20, for Edgar A. Neal, dwell., 30′ x 45′, three-st'y mansard; F. J. Portunato, builder.

Wall St., No. 25, Ward 5, for John Donovan, stable, 28′ x 44′, two-st'y flat; John Donovan, builder.

Brooklyn.

BUILDING PERMITS. — *Leonard St.*, s e cor. Withers St., 2 three-st'y frame dwells., tin roofs; cost, each, $3,000; owner, D. Carroll, cor. Leonard and Jackson Sts.; architect, A. Herbert; builders, W. & T. Lamb.

Hart St., s s, 175′ n Stuyvesant Ave., two-st'y and basement frame dwell., tin roof; cost, $3,000; owner and builder, W. A. Schmitthenner, 390 Hart St.; architect, John Herr.

Twelfth St., s s, 75′ s Fifth Ave., two-st'y and basement brick dwell., tin roof, iron cornice; cost, $5,700; owner, J. A. Backman, cor. Twelfth St. and Fifth Ave.; architect, Jno. Platte; builder, John Auer.

Halsey St., s e cor. Reid Ave., three-st'y brick store and dwell., gravel roof; cost, $9,000; owner and builder, M. E. Hall, 63 Patchen Ave.; architect, T. Floyd Thomas.

Union Ave., No. 11, three-st'y brick double tenement, tin roof and cornice; cost, $5,700; owner, Jno. Muryha, 11 Union Ave.; architect, J. Platte; builders, J. Auer and D. Kreusler.

Eckford St., No. 230, e s, 176′ s Meserole Ave., two-st'y frame tenement, gravel roof; cost, $3,000; owner and architect, Jacob Ritschey, on premises; builders, J. Cashman and A. Van Dien.

Berkeley Pl., s s, 190′ e Sixth Ave., 3 three-st'y brownstone front dwells., tin roofs; cost, each, $9,000; owners, architects and builders, Van Voast & Ward, 117 North Portland Ave.

Van Brunt St., No. 362, w s, 100′ n Wolcott St., four-st'y iron and brick store and tenement, tin roof; cost, $10,075; owner, Henry Patterson, 359 Van Brunt St.; architect, P. H. Gilvarry; builders, P. Kelly & Son and Gihrson & Siebrandt.

Fulton St., s s, 135′ e Tompkins Ave., 4 three-st'y brick stores and tenements, gravel roofs, iron cornices in rear; cost, each, $4,000; owner, A. S. Robbins, Sixth Ave., cor. Park Pl.; architect and carpenter, Jos. Platt; masons, J. Demott & Sons.

Pineapple St., Nos. 53 *and* 55, n s, 100′ e Hicks St., seven-st'y brick apartment-house, cement and gravel roof; cost, about $60,000; owner, Edwin D. Phelps, 71 and 73 Orange St.; architect, Samuel Curtiss; builders, E. T. Rutan and Morris & Selover.

ALTERATION. — *Fifth Ave.*, n e cor. Eighteenth St., raised one-st'y and three-st'y brick extension, and altered internally; cost, $5,258; owner, H. Scherloh, 639 Fifth Ave.; architect, W. H. Werth; builder, J. R. Anderson.

Chicago.

APARTMENT-HOUSE. — An apartment-house will be erected on Sedgwick St., by Anthony Hollinger, four-st'y; cost, $15,000.

FLATS. — Jas. G. Gore will build, on State St., near Forty-seventh St., four-st'y building, for store and flats; cost, $25,000.

HOUSES. — Oscar Cobb is architect for Mr. Herman Goldsmith's building on Indiana St., near Dearborn St., three-st'y, of Lemont stone, to cost $25,000.

L. K. Smith is building a two-st'y house, on cor. of State and Schiller Sts., stone and brick; cost, $30,000.

William Jackson will build, on Forest Ave., 3 three-st'y dwells.; cost, $10,000.

William Thomas has made plans for house on Cottage Grove Ave., near Thirty-ninth St.; cost, $7,000.

Same architect has plans ready for two-st'y building for Alderman McAuley, on Halsted St., near Thirty-fifth St.; cost, $8,000.

G. W. Ackermann, architect, has on hand, for Dr. J. Simpson, house to be built on cor. of Hubbard St. and Western Ave., pressed-brick, cut-stone finish, two-st'y.

THEATRE. — Oscar Cobb has prepared plans for theatre, cor. of Halsted and Jackson Sts.; cost, $65,000.

BUILDING PERMITS. — Mr. McGuire, two-st'y and basement dwell., 245 Thirteenth Pl.; cost, $5,000; architect, P. W. Ruehl.

John Busse, two-st'y and basement dwell., 140 Henry St.; cost, $5,000; architect, P. W. Ruehl.

D. W. Jackson, 2 two-st'y dwells., 300 Vernon Ave.; cost, $13,000; architect, O. J. Perice.

C. Walsh, two-st'y barn, 54 and 56 Sherman St.; cost, $4,000.

L. A. Davis, warehouse, cor. Twentieth and Grove Sts.; cost, $8,000; builder, M. Mortimer.

Ogden School, three-st'y and basement schoolhouse; cost, $80,000; architect, Willett; builder, Wm. Crilly.

H. Luders, 6 two-st'y dwells., 581-591 Congress St.; cost, $12,000; architect, Strippleman; builders, B. & Sayer.

J. Voss, two-st'y and basement dwell., 339 West Erie St.; cost, $3,500.

Peter Wohler, two-st'y factory, 521 and 523 Twenty-first St.; cost, $40,000; architect and builder, Aug. Laula.

John Fitzgerald, two-st'y dwell., 3216 South Halsted St.; cost, $3,700.

Jauch & Zeigler, 2 two-st'y dwells., 622 and 624 Sedgwick St.; cost, $5,000; architect, Chas. Uther; builder, Chas. Buttcher.

L. B. Crumb, two-st'y and basement dwell., cor. Adams and Leavitt Sts.; cost, $4,000; architect, J. M. Van Osdel.

Jno. Schmitt, three-st'y and basement stores and flats, 318 Twelfth St.; cost, $8,000; architect, W. Ruhl.

Cathedral of Sts. Peter and Paul, two-st'y attic school and residence, 18 South Peoria St.; cost, $18,000; architects, Burling & Whitehouse.

Jno. Hendricks, two-st'y and basement flats, Twelfth St.; cost, $5,000; architect and builder, Jno. Hendricks.

N. Craig, three-st'y and basement dwell., 94 Ewing St.; cost, $6,000; architect, P. W. Ruehl; builder, B. & Sayer.

Wm. B. Raffe, two-st'y dwell., 527 Twelfth St.; cost, $4,000.

G. G. Bodner, two-st'y dwell., 484 Congress St.; cost, $6,000; architect, Jos. Bodner.

C. H. Sugnersen, two-st'y dwell. and barn, 3748-3750 Forest St.; cost, $10,000; architect, Theo. Karls; builder, B. H. Robinson.

J. B. Coan, two-st'y and basement dwell., 816 Hinman St.; cost, $4,100.

John Slegskal, three-st'y flats, 882 Milwaukee Ave.; cost, $10,000: architect, H. Key.

V. Mlejnek, two-st'y and basement dwell., 92 Farquer St.; cost, $4,500.

M. H. Cavaty, two-st'y and basement dwell., 103 Bunker St.; cost, $4,200.

D. J. Simpson, two-st'y dwell., 548 Hurlbert St.; cost, $3,500.

E. H. Gammon, three-st'y flats, 310 Monroe St.; cost, $10,000; architect, J. M. Van Osdell; builder, Hayden.

Henry Knapp, two-st'y and basement store and dwell., 887 West Chicago Ave.; cost, $6,000; architect, Henry Clay.

S. Cochran, two-st'y and basement dwell., 734 West Chicago Ave.; cost, $4,000.

Aug. Penten, 2 two-st'y dwells., 709-711 Noble St.; cost, $6,000.

G. Park Kenney, four-st'y flats; cost, $14,000.

J. E. French, 2 three-st'y dwells., 3847 and 3849 Michigan Ave.; cost, $17,000; architect, F. L. Charnley.

Peter Surher, two-st'y and basement store and dwells., Cornell St.; cost, $5,000.

Chicago W. D. Railway, two-st'y and basement barn, cor. Leavitt St.; cost, $30,000

Chicago W. D. Railway, two st'y warehouse, Blue Island St., cor. Leavitt St.; cost, $20,000.

Thos. Wilee, dry kiln and barn, Allport St.; cost, $13,000.

John Szymossak, three-st'y flats, 706 Noble St.; cost, $6,000; architect, A. C., by builder, A. W. Rudnick.

Jno. Breeze, two-st'y and basement dwell., 164 Centre St.; cost, $3,000.

E. J. Lehman, four-st'y flats, 206 Sherman St.; cost, $10,000; architects, Treat & Foltz.

J. L. Addison, 2 three-st'y and basement dwells., 191 and 193 Schiller St.; cost, $18,000; architect, J. L. Addison; builder, Jno. Cox.

F. L. Schwerigen, 2 two-st'y dwells., 106 and 108 and 108 Jay St.; cost, $3,000.

H. Anderson, 3 three-st'y and basement stores and dwells., 229-233 West Indiana St.; cost, $18,000; architect, C. O. Hanson; builder, J. C Anderson.

M. Selz, 3 three-st'y and basement dwells.; 1713 Michigan Ave.; cost, $20,000; architects, Adler & Sullivan; builder, H. Elmer.

F. P. Lump, two-st'y and basement flats, 1,000 West Twelfth St.; cost, $4,000.

Helen M. Barbour, three-st'y flats, 302 West Van Buren St.; cost, $8,000; architect, T. J. Queenbosh.

P. Mahimann, two-st'y and basement flats, 338 Larrabee St.; cost, $5,000; architect, R. F. Boss.

Mrs. G. Rothschild, two-st'y and basement dwell., 3216 Michigan Ave.; cost, $8,000; architects, Cobb & Frost; builder, Geo. H. Fox.

R. Rubel, four-st'y and basement flats, 309 Clark St.; cost, $15,000; architects, Adler & Sullivan; builder, Geo. H. Fox.

W. R. Linn, two-st'y dwell., 2705-07 Michigan Ave.; cost, $35,000; architects, Burnham & Root; builder, D. Lane.

W. G. Jackson, 3 cottages, 1399-1407 Jackson St.; cost, $4,000.

Selpp Brewing Co., malt-house and elevator, Johnson St., cor. Twenty-seventh St.; cost, $11,000; architect, F. W. Wolff.

German M. E. Church, church-building, 2801-03 Portland Ave.; cost, $10,000; architect, E. Chapman; builders, Kreig & Demuth.

John Moeller & Sons, three-st'y store and flats, 313-315 Blue Island Ave.; cost, $9,000; architect, Wm. Strippleman; builder, A. Dresser.

P. M. Lagoni, three-st'y store, 690 North Ave.; cost, $10,000; architect, C. O. Hansen; builder, Geo. Peterson.

W. G. Jackson, 7 cottages; cost, each, $8,000; architect, C. L. Palmer.

A. B. Rowley, 2 two-st'y and base't dwells., 3420 Prairie Ave.; cost, $4,000.

J. W. Schmidt, 2 three-st'y flats, 179-181 Lasalle Ave.; cost, $10,000; architect, I. Zittell; builder, Chas. W. Hellman.

Jos. Green, two-st'y and base't shop and dwell., 74 and 76 Larrabee St.; cost, $8,000; architect, S. Otter; builder, A. Carlson.

S. E. Gross, 3 cottages, Ashland Ave.; cost, $3,000.

V. Mayer, two-st'y and base't dwell., 502 Nineteenth St.; cost, $4,000.

Kennedy, four-st'y bakery, 48-50 South Desplanes St.; cost, $16,000; architects, Adler & Sullivan; builder, W. U. Crilly.

Ryan & O'Brien, two-st'y dwell., 248 South Lincoln St.; cost, $3,200; builder, M. Dougherty.

L. Burroughs, three-st'y store and dwell., 500 West Madison St.; cost, $5,000; architect, C. Stiles; builder, J. Rutherford.

Stephen Eireiner, two-st'y dwell. and store, 1025 Thirty-first St.; cost, $8,000; architect, L. H. Heine; builders, Benes & Sayer.

Henry Koeber, three-st'y store and dwell., 456 West Twelfth St.; cost, $7,500; architect, P. W. Ruehl; builders, Benes & Sayer.

F. E. Lowther, 4 cottages, cor. West Adams and California Ave.; cost, $6,000.

Charles Counselman, ten-st'y office-building, cor. Jackson and Lasalle Sts.; cost, $100,000; architects, Burnham & Root; builder, B. E. Sturtevant.

C. B. Holmes, three-st'y and base't stores and dwell., 239-245 Clybourn Ave.: cost, $25,000; architect, M. G. Hallberg; builder, A. Fagerlund.

Frank Gasono, two-st'y store and dwell., 2928 Cottage Grove Ave.; cost, $3,000.

Mrs. Mary Baura, two-st'y dwell., 160 De Koven St.; cost, $3,500.

Mrs. Mary Carroll, two-st'y flats, 523 Taylor St.; cost, $4,000.

J. Burk, two-st'y dwell., 796 North Mobey St.; cost, $3,000.

Chas. Tarno, two-st'y dwell., 33 Hastings St.; cost, $3,700.

Henry Wederkind, two-st'y store and dwell., 1070 Milwaukee Ave.; cost, $4,500.

John Hollowed, two-st'y store and dwell., 744 Van Buren St.; cost, $5,000: builder, C. P. McKay.

Union Mutual Insurance Co., 5 two-st'y dwells., 501-509 Webster Ave.; cost, $25,000; architect, J. J. Flanders.

Richard Letsche, two-st'y store and dwell., 319 North Avenue; cost, $4,000.

John Gerstetter, three-st'y flats, 871-875 Indiana St.; cost, $18,000; architect, W. Strippleman; builders, Gross & Hoppe.

M. D. Stecher, two-st'y and base't dwell., 74 Lincoln Ave.; cost, $6,000; architect, C. O. Hansen, builder, B. Oleson.

A. W. Cook, three-st'y flats, 545 North Clark St.; cost, $6,000; architect, C. P. Thomas; builder, N. Gerten.

F. Hall, three-st'y dwell., 22 Walton Place; cost, $6,000; architects, W. A. & A. E. Wells.

B. Leger, two-st'y store and dwell., 500 West Chicago Ave.; cost, $3,500.

Wm. Peters, two-st'y flats, 400 Noble St.; cost, $3,500.

C. H. Jordan, three-st'y and basement stores and flats, 744-46 Madison St.; cost, $12,000; architect, A. M. F. Cotton; builder, W. K. Barton.

H. A. Streeter, four-st'y and basement factory, 35-41 East Indiana St.; cost, $14,000; architect, M. L. Beers; builder, T. Nicholson.

Amasa Orelup, 4 three-st'y dwells., 3152-54 Groveland Park Ave.; cost, $20,000; architect, J. N. Tilton; builder, A. Orelup.

H. Grassie, three-st'y brick flats, 663 West Washington St.: cost, $10,000; architect, A. Smith; builder, J. P. Jones.

Mrs. Laura Anderson, three-st'y and base't printing house, 185-187 North Peoria St.; cost, $30,000; architect, H. M. Hansom; builders, Bullock & Son.

Wm. Pauly, three-st'y flats, 43 Goette St.; cost, $3,500.

New York.

Apartment-Houses. — The foundations for the last four of the "Navarro" apartment-houses, on Fifty-eighth and Fifty-ninth Sts., between Sixth and Seventh Aves., are now being laid; the contracts for the buildings are not yet awarded.

Fever Hospital. — At the foot of East Sixteenth St., a fever hospital, 85′ x 125′, of brick, is to be built for the Board of Health, at an expense of about $50,000, from designs of Mr. C. C. Haight.

Hall. — The old St. Francis Xavier Church, on the south side of Sixteenth St., e of Sixth Ave., is to be altered into a building to be known as College Hall, for concerts, lectures, etc. The basement is to be reserved for Sunday-school class-rooms. Messrs. N. Le Brun & Son are the architects.

Hotel. — For Mr. J. P. Earle, a hotel, to cost $250,000, is to be built, from designs of Mr. W. H. Hume.

Theatres. — Preliminary plans have been drawn for Mr. Cheever, by Mr. Bruce Price, for a Vaudeville theatre, which it is proposed to build on the n s of Twenty-seventh St., between Fifth Ave. and Broadway, at an expense of about $60,000.

Mr. John Stetson has had plans prepared by Mr. Geo. Edward Harding, for a new entrance to the Fifth Avenue Theatre.

Building Permits. — *One Hundred and Thirty-fifth St.*, n s, 235′ w Fifth Ave., 3 three-st'y brownstone front dwells., tin roofs; cost, each, $9,500; owner, Charles White, 223 Keep St., Brooklyn; architect, Andrew Spence.

Fifth Ave., s e cor. One Hundred and Twenty-eighth St., 4 four-st'y brownstone front dwells., tin roofs; cost, each, $15,000; owner, Helena M. Edmunstone, 64 Pulaski St., Brooklyn; architect, R. B. Eastman.

Broadway, Nos. 1237 *and* 1239, 2 brick buildings, store, rear theatre, three-st'y metal roofs; cost, each, $30,000; owner, Edward F. James, 832 Seventh Ave.; architects, J. B. McElfatrick & Son; builders, Jno. Mooney and John P. Decker.

One Hundred and Twenty-eighth St., s s, 80′ w Fifth Ave., three-st'y brownstone front dwell., tin roof; cost, $12,000; owner and architect, same as last.

Orchard St., n s, 200′ e Madison Ave. (Fordham), two-st'y frame dwell., shingle roof; cost, $3,850; owner, John J. Jefferson, 278 Alexander Ave.; architect, Edgar P. Hatfield; builder, Louis Falk.

Forty-seventh St., s s, 330′ 6″ w Eighth Ave., 2 five-st'y brownstone front flats, tin roofs; cost, $18,500 and $16,000; owner, Fred. Schuck, 516 East Eighty-fifth St.; architect, John Brandt.

Forty-seventh St., s s, 150′ w Eighth Ave., four-st'y rear brick factory, tin roof; cost, $25,000; owner and architect, same as last.

West Fifty-second St., Nos. 515, 517 *and* 519, 3 five-st'y brick tenements, tin roof; cost, each, $15,500; owner, Elworth L. Striker, 360′ w Fifty-first St.; architect, John Brandt; builders, John A. O'Connor & Co.

Park Row, No. 37, cor. Beekman and Nassau Sts., eleven-st'y brick office-building, tiles or tin roof; cost, $700,000; owner, Orlando B. Potter, 26 Lafayette Pl.; architect, N. G. Starkweather; mason, Thos. Armstrong.

Third Ave., w s, 59′ n One Hundred and Seventh St., 3 five-st'y brick flats and stores, tin roofs; cost, each, $24,000; owner, Catharine Fettrich, 148 West One Hundred and Twenty-fifth St.; architect, G. Robinson, Jr.

Broadway, w s, 300′ s Kingsbridge Ave., two-st'y frame dwell., slate roof; cost, $3,000; owner and builder, Francis M. Varian, Kingsbridge.

Grand St., n w cor. Mercer St., five-st'y brick store, tin roof; cost, $15,000; owner, Jas. S. Bearns, 80′ s Tenth St., Brooklyn; architect, Julius Kastner.

Vanderbilt Ave., s w cor. Forty-fifth St., three-st'y brick office, tin roof; cost, $12,500; lessees, American Express Co., 65 Broadway; architect, Edward H. Kendall.

Waverly Pl., Nos. 188-194, 3 five-st'y brownstone front tenements, tin roofs; cost, each, $8,000; owner, Theresa Schuppart, 508 East Eighty-eighth St.; architect, John C. Burne; builder, John Schuppan.

One Hundred and Thirtieth St., n s, bet. Cliff and Ninth Aves., 6 three-st'y brick dwells., tin roofs; cost, total, $55,000; owner, Female Academy of the Sacred Heart, Madam Sarah Jones, president, 583 Madison Ave.; architect, Wm. Schickel.

East Eighteenth St., Nos. 9, 11, *and* 13, five-st'y and basement brick and iron store, brick roof; cost, $160,000; owners, Richard Arnold and Henrietta Constable, Fifth Ave., cor. Nineteenth St.; architect, Wm. Schickel; builder, Max Eidlitz.

One Hundred and Thirty-ninth St., n s, 150′ w Willis Ave., 3 three-st'y brick dwells., tin roofs; cost, each, $6,000; owner, Wm. T. Onderdonk, One Hundred and Thirty-fifth St., bet. Alexander and Lincoln Aves.; architect, John Rogers.

One Hundred and Sixty-fifth St., n s, 125′ e Tenth Ave., three-st'y brick dwell., tin roof; cost, $3,000; owner, Fred. Schunke, 525 West Fifty-second St.; architect, E. J. Conway; builders, C. R. Terwilliger and E. J. Conway.

Greene St., Nos. 142 *and* 144, six-st'y brick and iron front store, gravel roof; cost, $50,000; owner, John J. Atlhouse, 66 West Forty-ninth St.; architect, Wm. E. Worthen.

Greene St., Nos. 153, 155 *and* 157, *and West Houston St., No.* 55, six-st'y brick store, slate and tin roofs; cost, $80,000; for owner, Hugh N. Camp, agent, 152 Broadway; architect, A. C. Neuman; builders, R. Deevey and Christie & Dykes.

Seventy-eighth St., n s, 300′ w Ave. A, 2 four-st'y brick tenements, tin roofs; cost, each, $16,500; owner, Aug. Schwaizler, 491 West Forty-first St.; architect, John Brandt.

Ninth Ave., s w cor. Twenty-fifth St., six-st'y brick factory, tin roof; owner, Fred N. Du Bois, One Hundred and Fifty-fifth St., cor. St. Nicholas Ave.; architect, M. C. Merritt.

Alteration. — *East Fiftieth St., No.* 307, three-st'y brick extension; cost, $3,000; owner, Fred Sulzberger, on premises; architect, John McIntyre; builder, Robt. Huson.

Philadelphia.

Building Permits. — *Library St.*, above Fourth St., six-st'y hall, 53′ x 120′; Thos. McCarty, contractor.

McClellan St., w of Eleventh St., two-st'y dwell., 16′ x 38′; Chas. McClellan, owner.

Ross St., No. 1025, two-st'y building, 14′ x 30′; Frank Bresling, owner.

Eighth St., n of Thompson St., 2 three-st'y dwells., 17′ x 53′; Geo. Watson, contractor.

Fifteenth St., n w cor. Columbia Ave., laundry building, 22′ x 76′; W. D. Carter, contractor.

Second St., n of Susquehanna Ave., three-st'y dwell., 18′ x 46′; Geo. Kessler, contractor.

Eighth St., cor. Hoffman St., 4 two-st'y dwells., 15′ x 40′; Joseph Stuckey, contractor.

Twenty-third St., n w cor. Race St., two-st'y machine shop, 37′ x 91′; W. L. Atkinson, contractor.

Fourth St., n of Columbia Ave., five-st'y addition to factory, 24′ x 48′; John B. Stetson, owner.

Fountain St., n of Sixteenth St., 13 two-st'y dwells., 14′ x 46′; M. Carey Lee, owner.

Cumberland St., bet. Mill and Coulter Sts., one-st'y saw and planing mill, 50′ x 60′.

Lehigh Ave., s w cor. Edgemont St., second-st'y addition to car-house, 90′ x 119′; W. Holloway, contractor.

Newkirk St., Nos. 1369 *and* 1371, 2 two-st'y dwells., 18′ x 26′; W. Holloway, contractor.

Front St., n of Arch St., second-st'y to store, 28′ x 60′; also on Clementine St., w of Frankford Road, two-st'y dye-house, 16′ x 40′; S. R. Stewart, contractor.

Forty-first St., cor. Spring Garden St., second-st'y addition to church, 50′ x 100′; Philip Rudolph, trustee.

Huntingdon St., n w cor. Sepviva St., 7 two-st'y dwells., 1, with store, 18′ x 23′; 2, 16′ x 33′; 4, 13′ x 33′; Thos. L. Kelly, contractor.

Martha St., s of Lehigh Ave., two-st'y dwell., 16′ x 38′; J. C. Stackhouse.

Reese St., n of Lehigh Ave., 3 two-st'y dwells., 16′ x 42′; also on Fifth St., n of Lehigh Ave., 2 two-st'y dwells., 17′ x 42′; Jacob Ebner, contractor.

Atlantic St., w of Seventeenth St., 6 two-st'y dwells., 13′ x 36′; J. W. Christian, owner.

Locust St., above Thirty-ninth St., second-st'y addition to Sunday-school building, 38′ x 70′; J. W. Leamy, contractor.

Pine St., w of Thirty-sixth St., college building, 22′ x 118′; Jacob Myers, contractor.

Third St., s e cor. Norris St., market house, 77′ x 228′; Eldridge & Stewart, contractors.

Tasker St., Nos. 1008 *and* 1010, 2 two-st'y dwells., 16′ x 46′; Harris & Shurlock, contractors.

East York St., No. 829, three-st'y dwell., 14′ x 46′; Liggett & Watson, contractors.

Albion St., n of Locust St., three-st'y stable, 18′ x 52′; Thos. Little & Son.

Front Ave., n e cor. Fairmount Ave., five-st'y addition to factory, and three add. stories to same; S. Humphries, contractor.

Brandywine St., bet. Eighteenth and Nineteenth Sts., two-st'y stable, 30′ x 36′; W. J. Vankirk, contractor.

Scott St., No. 1933, two-st'y dwell., 16′ x 24′; Jno. Spoer, contractor.

Thirty-sixth St., n of Race St., three-st'y dwell., 33′ x 62′; F. G. Thorn, owner.

Queen St., bet. Morris & Township line, two-st'y dwell., 17′ x 30′; C. Naeman, owner.

Maple Ave., e of Sixty-second St., two-st'y dwell., 16′ x 32′; also, on Pine St., w of Sixty-first St., two-st'y dwell., 16′ x 45′; Jacob Yell, contractor.

Ridge Ave., Nos. 3278, 3280, 3282, 3284, *and* 3286, 5 three-st'y stores and dwells., 20′ x 50′; Chas. Bartle, contractor.

Federal St., e of Fifteenth St., two-st'y store, 18′ x 52′; A. B. Levis, contractor.

Hancock St., s of Norris St., 2 two-st'y dwells., 14′ x 40′; A. M. Hoffman, contractor.

Fourth St., n of Somerset St., three-st'y factory, 32′ x 72′; Albert E. Rau, contractor.

Portland, Oregon.

Labor. — Skilled mechanics are all employed at good wages, and at times bricklayers have been in demand, but of late contractors have not had any trouble securing all the men necessary.

Alteration. — R. R. Thompson is having a third-st'y put on the large brick building, occupied by Hawley, Dodd & Co., hardware dealers; size of building, 50′ x 165′, and facing on three streets; cost of improvements about $15,000; F. W. Lewis, contractor; J. Krumbein, architect for above buildings.

Church. — Plans have been prepared for a Presbyterian Church, costing $4,500; Campbell, contractor.

Houses. — W. Lewis has the contract for 5 cottages for Mr. Corbet; cost, $3,500 each; W. H. Williams, architect.

Parsonage. — The German Methodist Evangelical Society have let the contract for a two-st'y frame parsonage to C. Gardner, at $4,300.

Stores. — C. De Burge & Malarkey are putting up a substantial three-st'y frame building, 50′ frontage for business purposes; cost, $7,500.

St. Louis.

Building Permits. — Famous Shoe & Clothing Co., brick addition; cost, $30,000; J. B. Legg, architect; sub-let.

Peter Oakes, brick dwell.; cost, $4,870; Cameron, architect; C. Linnenkohl, contractor.

Mrs. Martha McNeil, 3 adjacent brick tenements; cost, $6,980; C. Mensinier, architect; C. Linnenkohl, contractor.

I. N. Miller, brick dwell.; cost, $3,500; Mathenes, architect.

David Davis, 3 adjacent dwells.; cost, $5,500; T. S. Argust, architect; David Davis, contractor.

Mrs. Julia Kessel, 3 adjacent dwells.; cost, $9,800; August Beinke, architect; Fred. Offerman, contractor.

Mathias Leopold, 3 adjacent dwells.; cost, $7,000: Woerver, architect; W. M. Riewe, contractor.

Michael Foley, brick dwell.; cost, $4,000; Flanery, architect; John Waters, contractor.

Paul Adam, brick dwell.; cost, $6,200; Jansen, architect; Fred. Offerman, contractor.

S. H. Hoffman, brick dwell.; cost, $6,000; S. H. Hoffman, architect and contractor.

Francis J. Bryan, 2 adjacent brick dwells.; cost, $10,000; Schaper, architect; F. W. Loffhagen, contractor.

Ellen Butler, brick dwell.; cost, $3,300; Jacob Robinson, contractor.

St. Louis Wooden Ware Works, brick wooden ware factory; cost, $7,500; sub-let.

Jacob Michel, brick dwell.; cost, $6,000; H. & S., architects; Herman Schumacher, contractor.

Mary E. Scanlan, brick dwell.; cost, $3,300; Erin, architect; J. H. Egstrat Morrison, contractor.

Washington, D. C.

Building Permits. — The following permits for new buildings worth $3,000 or over, have been issued since last report.

Three-st'y brick dwell., to be built on Sixth St., bet. E and F Sts., n w, for Christian Rupert; cost, $13,000; J. G. Myers, architect; A. Getz, builder.

Two-st'y brick dwell., to be built cor. of Sixth and M Sts., n w, for Wm. Fletcher; cost, $5,000; J. H. Howlett, builder.

Three-st'y brick dwell., to be built cor. of Seventeenth and N Sts., n w, for J. A. Ruff; cost, $7,000; Holtzclaw Bros., builders.

Two-st'y frame dwell., to be built in county for G. F. J. Coburn; cost, $6,000; F. G. Atchinson, architect; Cranford & Degger, builders.

2 three-st'y brick dwells., to be built on Twelfth St., bet. E and F Sts., n w, for M. William; cost, $10,750; C. A. Didden, architect.

Two-st'y brick dwell., to be built on L St., bet. Ninth and Tenth Sts., n w, for H. A. Bailey; cost, $3,000; E. S. Friedrich, architect.

4 three-st'y brick dwells., to be built on Nineteenth St., near S St., n w, for Mrs. P. W. Page; cost, $17,500; Gray & Page, architects; W. J. Kenderdine.

Three-st'y brick dwell., to be built on Twelfth St., near Mass. Ave., for Julius Schneider; cost, $6,100; J. H. Knapp, builder.

7 three-st'y brick dwells., to be built cor. P and Marion St., for W. Z. Partello; cost, $35,000.