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A RATHER nice question is likely to be raised in New York in relation to the responsibility of insurance companies for neglect to make known to their policy-holders certain circumstances of a risk. It seems that not long ago a fire occurred in a warehouse on Beaver Street, where a large quantity of cotton was stored. Several hundred bales were partly burned, and were thrown out into the street and deluged with water. As our readers will remember, fire has been known to smoulder for weeks in cotton under such circumstances, and the bales were therefore allowed to stand five or six days in the open street before being sold for the benefit of the underwriters. The sale then took place in the usual manner, and the cotton was purchased by several different parties, some of whom took the precaution to have the bales opened and the contents picked over before re-packing, while others stored the cotton just as it was bought. Among these was a Mr. Walsh, a dealer in cotton-waste. No directions in regard to the treatment of the bales were given by the underwriters, nor was any objection made to his storing the cotton without picking it over; but shortly afterwards Mr. Walsh's premises took fire and a loss of some ten thousand dollars was the result. The interesting point is, whether Mr. Walsh unjustifiably increased the risk upon his property by receiving cotton in a condition presumably dangerous, or whether the insurers were responsible for loss caused by their failure to give due warning to the purchasers of the character of the goods sold by them. The underwriters are disposed to claim that it is the business of the insured to investigate the quality of the goods which he buys, and that if he neglects to do so, and endangers his property by his carelessness, they should not have to suffer the loss; but it must be acknowledged that this argument comes rather ungraciously from the parties who originally sold the goods.

THE Cook County Court-House has been the subject of another "revelation," possibly of the same value as those which illustrate the history of most public buildings. Every one remembers the series of misunderstandings and follies which for years gave to the efforts toward the construction of this building the aspect of a huge farce; but according to the Chicago *Times* a tragic element was mingled with the sorry comedy. From the information which its reporters have collected it would appear that a conspiracy was formed, even before the building was commenced, for the purpose of plundering the public treasury. Mr. Egan, the present architect, was put forward for the position on the understanding that if he secured it, the profits, legitimate or otherwise, which could be obtained through his manipulation should be divided among the members of the ring. The account goes on to say that the means devised for obtaining illicit gain was to execute contracts in accordance with a certain set of plans and specifications, and afterwards furnish the contractor with a different set, calling for an inferior quality of work; the difference in value between the two being credited, not to the county, but to the conspirators, who divided the amount among themselves. A certain

John M. Armstrong, who claims to have been one of the original robbers, asserts that Mr. Egan, the architect, failed to keep his part of the agreement, and that he himself, therefore, out of revenge exposed the whole affair.

To say nothing of the suspicious character of such evidence, the whole story has an improbable sound. Why Mr. Egan, if he desired to make money by allowing inferior work to be substituted for that required by the contract, should take upon himself the expense, trouble and risk of making a substitute set of plans and specifications to accomplish what a word, or a timely wink, would have managed infinitely better, it is impossible to imagine; and some other inconsistencies may be detected in the *Times* account. Mr. Armstrong does not say how much his share of the peculations amounted to, but thinks that according to the "books" which the ring, with a commendable regard for business propriety, kept to show their transactions, the others succeeded in pocketing about half a million dollars. But of this amount he claims that Sexton, the contractor, secured more than two hundred and twenty-three thousand, so that the rest of the ring, which is said to have included a granite company, a Mr. Periolat, and several other persons, besides the architect and the twelve Commissioners, seem to have had much the worst end of the bargain. Mr. Periolat, particularly, is reported to have furnished funds at the beginning for corrupting the Commissioners, and unless such officials are remarkably cheap in Chicago, he must still be considerably out of pocket; while Mr. Egan, if the draughtsmen who made the duplicate set of plans are paid, can hardly be much better off.

A RADICAL measure has been adopted by the City Government of Chicago, by which the emission of dense smoke from the smoke-stack of any boat or locomotive, or from any chimney not belonging to a building used exclusively as a private residence, is declared a public nuisance, and the owner and engineer of any boat or locomotive, and the proprietor, lessee and occupant of any building, who shall suffer such dense smoke to be emitted from the chimney under his control, shall be fined not less than five nor more than fifty dollars for each offence. This regulation will go into operation on the first of May, and at the same time another ordinance takes effect, prohibiting the erection of any telegraph-pole, or the stringing of any wires in any street, avenue or alley, under penalty of fifty dollars for each offence; and every day that such wire shall remain in violation of this provision is to be deemed a separate offence. On or before the first day of May, 1883, all telegraph poles and wires existing above ground are to be removed. Wires must henceforth be carried within a space extending four feet from the curbstone, and not exceeding two feet in depth from the street surface. The matter of smoke prevention is pretty well understood now, and practicable devices for attaining the desired end are easily procured; but the same can hardly be said of underground telegraph cables. In Boston, the Telephone Dispatch Company is about laying a cable of fifty wires, enclosed in a lead pipe, to connect two of its principal stations; but the effect of the experiment upon the actual working of the instruments is as yet unknown. Undoubtedly it will be unfavorable; but whether so much so as to render a better insulation imperatively necessary cannot be predicted.

A SOCIETY has been formed in New York for the purpose of preventing street accidents, on the model of that existing in London. The objects of the society are to advance legislation against reckless driving, insecure building operations, and the careless use of streets; to enforce the use of lighted lamps on all vehicles driven after dark, and also of effective brakes; and it proposes to assist injured persons by gifts or loans, and to aid them in prosecuting the persons causing the injuries. For carrying out its aims, it intends to maintain a regular patrol service to see that excavations are properly guarded, that sidewalks are kept free from ice by those responsible for them; and to prevent dangerous driving. It is extremely discreditable to the police of New York that the number of accidents of this kind is greater there than in London. Last year more than four thousand persons were injured, and two hundred and thirty-eight were killed in the streets, while in London the

number of accidents was three thousand nine hundred and sixty-one, two hundred and thirty-seven being fatal.

THE Philadelphia *Bulletin* thinks that it is time for a movement in that city in favor of better street pavements, and makes the assertion, which no one will contradict, that the present cobble-stone pavement is the worst and ugliest that could be constructed. There is certainly in Philadelphia a fine opportunity for displaying the merits of the better kinds of pavement. The grades are easy, and the streets wide enough to prevent the formation of those ruts which quickly ruin a wood or asphalt pavement in a narrow place. It may be said that the day of rough block pavements, whether of large flat stones, after the Roman method, or of small cubes, or slices, like those used in New York, is passing rapidly away, and that uniform surfaces, either of concrete, wood, or asphalt, will soon be regarded as most economical, as well as most satisfactory to all who use or live near them. At present, the streets of Washington far surpass those of any other American city in smoothness and dryness, but the great cost of the asphalt in those wide avenues will tend rather to deter other towns from adopting a similar treatment, and some form of concrete may prove to be the best, all things considered. Very successful pavements have been made in London with Portland cement concrete, made with an aggregate of the hardest granite, and saturated after setting with silicate of soda, and further experiments in the same direction may do much to improve and cheapen the processes and materials used.

NOTHING in the history of the world is more wonderful than the strange movement to which is due the erection of those monuments known as dolmens, cromlechs, stone circles and rocking stones. From the borders of Lapland to the Straits of Gibraltar these objects are scattered over the fertile and pleasant portions of the country, built, to all appearance, after the same model in Britain and the Balearic Islands. Though less known, constructions precisely similar are found in great numbers in Asia, in Syria, in Arabia, and throughout Northern Africa; while a striking evidence that the relation between the tribes which built and used them was something more than that of mere affinity of blood and manners is afforded by the fact that at Stonehenge, the greatest monument of the kind now known, the inner circle is composed of large and heavy blocks of a stone found in no quarry either in Great Britain or the Continent, but only in Africa. A certain number of these so-called megalithic structures still remain in Portugal, and one of the most distinguished of Portuguese architects, the Chevalier da Silva, has devoted his leisure to a careful study of them. The results of his scientific and thorough explorations are given in a paper published by the French Society for the Advancement of Science, illustrated by a map giving the position of all the remains now existing. M. da Silva makes some observations which are to us both new and interesting. Remarking that the dolmens are almost always found either on the summit of hills or near the banks of rivers, he suggests that this indicates the wandering character of their builders, who, like all nomads, or rather invaders, kept close to the courses of the streams; and he thinks it probable that these conspicuous heaps of stone may have served at once as a trophy of their advance, and as an indication of their route to those who might follow them; perhaps also as a memorial of the burial-place of their chiefs. In one case in Portugal two human skulls, with teeth, and knives of white flint, were discovered under the stones of a dolmen, but it seems probable to M. da Silva that the tribes which erected them usually burned the bodies of their dead. He observes also that the tumuli, or barrows, which abound in some districts of Portugal, are in that country never found in the same region as the megalithic monuments, and as these are known to be burial-places, he infers that the two kinds of construction must have been the work either of separate races, or of the same race at diverse epochs. The circumstances in Britain seem to have been different, for Stonehenge is situated in the middle of a plain covered with countless tumuli. Perhaps this shows an amalgamation in the North of races which remained hostile in the South; or more likely, since Stonehenge is evidently of later date than the barrows, some of which are cut through by the circular ditch which encloses it, the Druids, or whoever they may have been, had in Britain acquired a complete predominance over the more ancient race whose kings lay buried on Salisbury Plain, while their brethren in Portugal were still kept at bay by the aboriginal inhabitants.

THE Keely motor has shown signs of returning vitality, and more "exhibitions" have been held, at which experiments were made which proved "in every way successful." What the experiments were, we are not informed, but the spectators seem to have been impressed in much the same way as those of six or eight years ago, when the complexity of the machinery generally proved to have been the source of their wonder, rather than its effectiveness. Commander Gorringer, however, who ought to be a judge of such matters, is said to have "frankly declared" that "the exhibition was a wonderful one." Meanwhile, the mechanical world is waiting impatiently for the invention, whatever its nature, to take a practical form. No one who owns a sewing-machine, or a circular saw, or any other device which requires power for its operation, will be willing to wait much longer for the admirals and railroad presidents who have up to this time monopolized the benefits to be derived from a motor which pretends to surpass a hundred-fold in power any engine now known.

ANOTHER of these ridiculous stories about new inventions is now circulating through the daily papers, no doubt in the interest of some speculator, whose confidence in the ignorance of journalists appears to have been well founded. According to the Cincinnati *Commercial*, "letters patent" have been obtained by "Mr. Edward B. Reynolds," for a new method of lighting, "so simple that the most ardent devotee of science might well doubt its plausibility." The means employed for the purpose are certainly simple enough. An air-tight cylinder is partly filled with a paste "composed of certain properties of gasoline and powdered charcoal," the remaining space being packed with cotton. Through a pipe in one end of the cylinder is forced atmospheric air, "subjected to a greater or less degree of compression according as heat or light is desired," and "the product that results from this combination" is led from the other end of the cylinder into a receiver, with which pipes are connected, which convey the air to burners, in the same way that coal-gas is distributed. So far the description, independent of the chemical portion, which we confess ourselves unable to comprehend, is merely that of a rude sort of gas-machine, such as is used for scores of houses throughout the country; but what follows is of a different character. According to the *Commercial*, the light from the burning vapor is far more intense than that from common gas, while the heat from one jet is sufficient to melt an iron bar a quarter of an inch square in thirty seconds. This remarkable, and somewhat inconvenient quality of the flame is attributed to the fact made known by a "chemical analysis," that the vapor contains under ordinary circumstances eighty per cent of "oxyhydrogen gas," while with extra pressure ninety-five per cent of this novel compound could be obtained. That by forcing air more rapidly than usual into the naphtha cylinder of an ordinary gas-machine the heat of the flame can be increased is a fact sufficiently familiar to those who use them, but the dangerous character of the experiment is sufficient to prevent any intelligent person from attempting it.

ONE of the annual spring discoveries of aboriginal remains, a little belated, however, considering the latitude of the locality, has been made in Georgia. According to press despatches from Rome, in that State, a recent inundation of the Coosa River had the effect of washing away the surface soil from a certain extensive territory, which, when the water subsided, presented to the eyes of the astonished natives the aspect of an antique battle-ground. Mounds, "evidently fortifications," were scattered over the place, having for some unexplained reason escaped the denuding action of the torrent which obligingly excavated the more interesting portions of the area. However, enough of the surface was stripped from the mounds to leave them "strewn with implements of aboriginal warfare, beads, and earthen vessels;" while the plain was "covered thickly with skeletons, all perfectly exposed, and all in good preservation." The interest of this remarkable discovery is enhanced by the light which it throws upon the methods, or rather customs, of warfare among the aboriginal races. The account goes on to say that a "countless number of pipes was found," whether among the skeletons or with the beads is not specified, but, at any rate, enough is now known to determine positively the point whether the ancient red men took their pipes with them into the combat, or left them in a place of safety with their beads. Those desirous of further information can probably obtain it from the hotel-keepers in the neighborhood.

RECENT BUILDING IN NEW YORK.—IV.

DWELLINGS.—II.

FIFTY-SEVENTH STREET, between Fifth and Sixth Avenues, and the region adjoining the Park on the east side and extending from Fifty-ninth Street to Eightieth are the chief scenes of the new movement in which, as I have intimated, it is sometimes difficult to distinguish inspiration from simple dementia. The square named in Fifty-seventh Street, on the south side, looks like a particularly active and acrimonious architectural competition. Among the competitors are Mr. Harney, Mr. Sturges, Messrs. Wheeler & Lamb, Mr. Cady, Mr. Raht, Mr. Wheeler Smith, and an architect under conviction of Gothic whose name I do not know, although I should suspect him of being also the author of what I believe are called the Kemp houses, on the corner of Fifty-sixth Street and Fifth Avenue.

Mr. Harney's work, the Stevens house at the corner of Fifty-seventh Street and Fifth Avenue, is too well known and has been too long built to need description. It has the great advantage over its neighbors of not having been designed in competition, and the further advantage of occupying an ample site at a corner. The only unfavorable criticism which has been made upon it with reason is that it is not a city house. But its general disposition is broad and dignified, and much of its detail is very well studied. It has always been a respectable building, and since the competition set in near it has gained greatly and looks much more distinguished than before it fell into this company. Mr. Sturges's three flat-roofed houses, which are treated in Gothic, are not pretentious, and have no appearance of having been designed in competition; but they cannot be called successful.

The competition is restricted to twenty-five-foot houses, and begins with a gabled front by Messrs. Wheeler & Lamb, in red brick and gray limestone, treated now with Gothic and now with classic detail, and of an uneasy and notoriety-hunting appearance. A bay-window in the second story stands upon stone brackets running through the first, and the angles of the wall under the gable are decorated with Gothic nook-shafts, not engaged, but standing free with complete and spreading capitals. *Ex pede Herculem.* A corner house in Madison Avenue, somewhere above Seventieth Street, by the same architects, in brick and brownstone, is far better than this, and is in general disposition sober and agreeable, although the attic story has an appearance of extreme weakness imparted to it by the introduction of piers half a brick wide to carry the gables of the dormers.

Next to this essay in Fifty-seventh Street comes a twenty-five-foot front, in brick and brownstone, by Mr. Cady. This is at least not a notoriety-hunting performance. On the contrary, the designer has evidently striven for an expression of domestic peace. The color is deep and quiet, and much of the detail is refined, as it could scarcely fail to be. But the lateral division of a flat front so narrow as this into two unequal parts is not favorable to repose. The ground floor is divided between the round-arched entrance and a large bay-window. The next has a narrow, square-headed opening over the entrance, and over the bay a large round-headed window similar in treatment to the doorway. Over the next story is a balustraded balcony crossing the whole front, and over this an arcade also running through. The division of the lower part is not in itself agreeable, and it is nullified and the whole front confused by the disregard of the division shown in the upper story. The detail is throughout classic, and the treatment a mixture of "Old New York" with more orthodox Renaissance. The impost of the arches is marked by capitals, which do not crown pilasters, but simply occur at the angle of the wall, an innovation which is not likely to be imitated. The key-stones of the arches protrude throughout, and the square-headed openings are animated by the pleasing jog (—) in the centre of the lintel which I have already noted in one of Mr. McKim's works. The balcony, which is too shallow to be a practicable balcony, is not supported at intervals, but consists of an unorganized shelf of brownstone, as does also the support of the bay. Of course all this is irrational, and one regrets to see an architect who has done so many good things by the exercise of his reason taking the inspirational view of architecture. But in spite of its irrationalities—not at all, to the best of my belief, because of them—the building has, as I have said, an aspect of quiet and refinement, and is upon the whole the most attractive of the competitive houses, though it is not by any means as good work as Mr. Cady has done before, and as it is to be hoped he may do again.

The next house is by Mr. Raht, and consists of a three-sided bay running from top to bottom, and occupying two-thirds of the front, of which the other third is the flat wall in which the doorway occurs. Except a tin cornice and balustrade, the material is throughout brownstone, and the work, except for some study of detail here and there, would not deserve to be distinguished from the ordinary brownstone front.

A little further on is the Gothic structure to which I have alluded, which is composed of white-jointed brick and profusely carved brownstone, and which goes far to explain the popular prejudice against Gothic architecture, a prejudice which is even more fully explained and defended by the houses at the corner of Fifty-sixth Street and Fifth Avenue. These latter houses are conspicuous in size and site, restless in composition, and feeble in detail. The carving is profuse, but is so ill designed for its place and function as to aggravate the weakness of the composition. The only thing in the houses which one can contemplate with satisfaction, or even with tol-

erance, is the wood-carving of the doors. The Fifty-seventh Street house has the same character.

Mr. Wheeler Smith is the author of the last house in the competitive series, which has more "things" in it than any one, or perhaps than any two, of the others, and as many, it seems, as could conveniently be put into a twenty-five-foot front. It is equally elaborate in form and in color, which seems a clear error. On the one hand, a front in one color, or in subdued color, might stand elaboration of modelling without losing quietness, and on the other a simply treated wall might be treated with many colors. But to attempt both is almost certainly to produce a fretful building. Certainly that has been the result here. There is a three-sided bay-window running through two stories, there are two unequal dormers, both gabled but differently treated, and the wall is in two planes. The openings are mainly stilted segmental arches. This, it will be seen, would be a difficult scheme to subjugate even if it were to be treated in monochrome. Here, however, we have gray granite, red brick, brownstone in two colors, Ohio-stone, bluestone, orange terra-cotta, and cast-iron. The color is for the most part used constructively, and its combination is generally agreeable, except for the obtrusively raw orange of the terra-cotta.

Even more conspicuous building activity than that shown in the competition in Fifty-seventh Street is that which is going on on the east side of the Park. The bulk of it is done by builders, and multiplies the well-known brownstone front. But enough of it has been done by architects to give the whole quarter an architecturesque character surprising in New York, and upon the whole grateful, whether the individual specimens will bear analysis or not. Among the newest and costliest of the houses are some which repeat the strain sounded by the late Mr. Thomas in lower Fifth Avenue and the side streets twenty-five years ago. One of the new houses, that of Mr. Arnold, was, I believe, designed by Mr. Thomas and might have been transported from Madison Square. It is the good old stupid brownstone cube, with pedimented windows and a pillared portico at the entrance. Another one of the same species, to which the employment of an architect seems to have been equally superfluous, is by Mr. Arthur Gilman. This, however, is a single house, whereas the other is double, and is mainly noteworthy for a distressing arrangement of openings along the side, and for the noble tin cornice and balustrade which belong to the Fifth Avenue Renaissance, and which are rather more gross than usual. Another corner house, by Mr. Jardine, departs from the conventional type of the palatial mansion to the pure Peorian, and more than makes up in restless vulgarity for what it loses in monotony. An ungrammatical essay by Mr. Hatch, upon the adaptation of what he would probably call Gothic to domestic architecture, exhibits the same reckless profusion of things that is shown by Mr. Jardine, and is as distinctly a Peorian version of Gothic as the other is a Peorian version of classic. If anything could make us regret the mere vacuity of mind shown in the houses of Mr. Thomas and Mr. Gilman, it would be the aggressive thoughtlessness which are shown in these Peorian works. A house by Mr. Hardenbergh, at the corner of Eightieth Street and Fifth Avenue, has much detail not ill studied, though not noticeably well studied, perhaps, except for its proximity to these others; but in general effect it is restless and unsatisfactory by reason of the multiplicity of features which the architect has endeavored to introduce.

At Sixty-ninth Street there are two houses which it is not praising very highly to say that they are a great relief after what we have been discussing. One of them is by Herter Brothers, the decorators, and tendency to develop architecture out of furniture, to which my last letter referred, is strikingly illustrated by the employment of decorators as architects. This house is in brick and brownstone—a corner house, with ample frontage on both streets, very simple in composition, and rather affectedly prim and precise in treatment. The first story consists, on the long side, which is the street side, of a pilastered porch in the centre and a bay-window in each end. The ends are very slightly projected from the centre. The shorter front on the avenue has a bay-window near each end also. Over the bays in the second story are large pedimented windows, and over the porch another bay-window. The third story has square-headed openings, with doubled pilasters at the angles and between the openings. Over these is a frieze with a cornice of very slight projection, and over these again a story the openings of which reach to the roof-line and are covered with triangular pediments which break it. The roof is a mansard. The projections throughout are too slight to have any effect in the massing of the building, and the shallowness of the cornice gives the building the aspect of wanting eyebrows of which Mr. Fergusson speaks as weakening the buildings of the Romanesque revival in Germany. The detail is unpretentious and inoffensive for the most part, though the porch is marred by the sudden diminution of its piers at a line above the impost of the arches, which is also marked. The pilasters in the third story, except at the angles, have no constructive significance, and correspond to nothing over or under them, though it has been attempted, without success, to account for them by inserting a block of stone above each in the brick frieze and set flush with the brickwork. From the want of emphasis in the cornice there results an unpleasant uncertainty whether the story above it is an attic or part of the main wall, and the general aspect of the building, though it is not without refinement, is tame and ineffective.

The next house, by Mr. Clinton, is in brownstone; it is only a

street front, though an ample one, and is a well-behaved, correct, and rather rich piece of formal Renaissance. The composition is very simple, an arched doorway flanked by pilasters in the centre and a large square-headed window on each side. Above the openings is a richly carved frieze; over this, openings corresponding to those below, but skilfully varied in treatment; above the central one of these openings is a semicircular shelf forming a balcony; over the third story a wide and rich frieze crowned with an emphatic cornice, above which is a low and simply treated attic. The carving is very profuse, including, besides the friezes already mentioned, the soffit of the balcony and the spandrels of the second-story windows. The designer has followed one of the least admirable peculiarities of the house next him in changing the mullions and jambs of his openings to pilasters above the impost of the arches. Upon the whole, however, this building is one of the most elegant specimens in New York of Renaissance in domestic work; and is distinctly better than its architect's Gothic work in a bank building in Wall Street, or in the Seventh Regiment Armory.

After the nonsense, or supersense, of such houses as that in Fifty-fifth Street, which I described last week, or of most of the competition houses in Fifty-seventh Street, it is a pleasure to come upon such rational, clear, and vigorous design as that of three houses, built of Dorchester-stone, in Sixty-third Street, and designed by Mr. C. L. W. Eidlitz. The scheme was not promising, for the houses are of the kind known here as "high-stoop basement" houses, and the three apparently occupy not more than two lots, so that a look of stilting was almost inevitable, and they have no visible roofs. But the walls are not "sash-frames," but real piers and openings; the modelling is clear and decided, and the decorative detail is designed to further the expression of the masses. An exception to this is in the ornament of the coves under the bay-windows, some of which is purely realistic, and without architectural meaning. But the composition of the oriels, which are carried upon vigorous corbels spreading from dwarf shafts, is very effective, as is the grouping of the openings throughout, and the detail with the exception to which I have referred. Next to the oriels, the feature of the work is a rich and striking cornice, including a frieze bearing an incised ornament. The carving, which is abundant, is very well done, and the design is eminently sane and manly.

Considerably the most successful of all the new twenty-five-foot houses is a tall, gabled, Gothic house in Twenty-first Street, by Mr. Bruce Price. It is a basement house in red brick and Dorchester-stone, divided above the basement into an oriel, segmental in plan, running through three stories, and a tier of square-headed openings flanked by broad and simple piers. Above the oriel, which is on the entrance-side, and which occupies the broader of the two divisions, is a gable; over the other a simply treated dormer. The oriel rises from a vigorously treated corbel attached to a solid shaft, and its outer edges are slightly recessed behind the plane of the wall. The jambs of this recess are emphatically moulded in brick. The whole arrangement has great spirit and picturesqueness, as the details also have, and the exuberances which Mr. Bruce Price's published designs showed some three or four years ago have been chastened in this executed work to a harmonious and artistic result. This frank and spirited design is of quite another order from that which models large doorways with microscopic mouldings and twists constructive features into forms irrelevant to their functions. This has life, the first condition of progress.

The "Vanderbilt houses" are too important to be dismissed at the end of a letter which is already too long.

M. S.

THE DEVELOPMENT OF STYLES OF ARCHITECTURE.¹—II.

BUT if Rome was thus, as before, uninventive, this cannot be said of the city of Constantinople, where Constantine the Great established the seat of government in A.D. 330 — i.e., about fifty years after the erection of Diocletian's Palace. Here the Romans were going back again to the East, and with an architectural result which has been one of the most remarkable in the whole history of development. Greek art had now for some centuries been all but completely thrust on one side by Roman, after the latter people had become the conquerors, and it was not until the foundation of Constantinople that it once more raised its head. The Greeks again exhibited their powers of invention in the Byzantine style, in which we see so many evidences of acquaintance with the architecture of Palestine. The churches (now converted into mosques) still existing in Constantinople are of various dates and of various stages of development. Constantine's first church was a Roman building, like the old Basilica of St. Peter at Rome — a long building, with wooden roofs, an eastern apse, and probably an atrium. All the ornamentation was internal, in place of external. It was burnt down in A.D. 531, in the time of Justinian, and so vigorous was the architect of the new church (Anthemius) that in forty days from the fire he laid the first stone of the new basilica, and completed the whole church in five years and ten months. The cupola is about 104 feet across, about a fourth less than the Pantheon: but, then, it is carried on arches instead of on a continuous wall, and in constructive skill its architect was far before the man who built the Pantheon. At the same time (*circa* A.D. 530), SS. Sergius and Bacchus was built, and this has special interest, see-

ing that San Vitale at Ravenna, consecrated in 547, is on exactly the same plan and design; whilst in the somewhat late Church of St. Theodore we have a plan copied almost exactly in Sta. Fosca Torcello. And here, though it is a little out of place, you must notice how completely Constantinople gave her art to Venice, not only in those early days, but down, at least, to the thirteenth century, when the Venetians attacked and sacked the city, and carried off as spoil most of the exquisite decorative work which we now see there, and, not least among this, the four antique Greek horses which stand over the portico of St. Mark's. Indeed, it is impossible to look at any part of the original work of St. Mark's without realizing that scarcely a feature is indigenous, and that all is absolutely and wholly Byzantine in plan, in elevation, in detail, and in colored ornament and decoration.

The construction of these Constantinopolitan domes is as interesting as their design. The cupolas are ingeniously buttressed and strengthened by semi-domes below the tambour, by cross arches and vaults and domes in the enclosing aisle. And the domes, instead of being constructed of heavy stone-work, were built usually of hollow pots; and in the case of SS. Sergius and Bacchus, with eight great vaulting ribs rising from the centres of the arches to the centre of the dome, the spaces between the ribs being filled in with wagon-vaulting resting on them. This extreme constructive skill would alone deserve our highest respect, even if, at the same time, all the decorative details had not been, as they are, of a very refined character. No merely architectural carving of conventional foliage has ever excelled in effect or in technical skill the best works of this school, in which for some four or five centuries the same detail is very closely adhered to.

Another parallel stream of art must also be noticed — in Syria. The examples of this, dating from the first to the seventh century of our era, are numerous, very perfect, and of the profoundest interest to the student. You will find a full and admirably illustrated description of them in Count de Vogüé's "*Syrie Centrale*," and I advise you to consult it in our library. Here, in part owing to the climate, in part to great solidity of construction, which was wholly of stone, and in part to the absolutely deserted state of most of the sites, time has dealt with a very gentle hand, and an astonishing number of examples of this most interesting period remain all but perfect in most of their details. The earliest are, as might be expected in a Roman province, generally imitations of Roman work. But by the fourth century the influence of the native Eastern art, closely allied to that which is seen in Constantinople soon after, is seen in a well-defined system of design and ornament which prevails in a large number of buildings, and which has so much in common with much later European work as to make one at first almost incredulous as to their great antiquity. This is, however, indubitable. The most interesting and typical examples for my present purpose are the church at Ezra, and the cathedral at Bosra, in the south of Syria, and the vast convent at Kalat Sem'an in the north, between Aleppo and Antioch. An inscription still remaining on the walls of Ezra shows that it was completed in A.D. 515, or about sixteen years before Sta. Sophia's was begun. Its plan is remarkable, as so many of these Syrian plans are, for its admirable arrangement. It is a square building on the outside and octangular inside, the angles being relieved by semicircular recesses covered with semi-domes. A small chancel is projected on one side, and within the octagonal nave eight columns and arches carry a quasi-dome or eight-sided vault of very pointed section, with the important feature of a tambour below it pierced with windows. Here, therefore, we have, though on a small scale, a construction which suggests, in a very definite way, the most advanced constructions of the European builders some centuries later. The plan, simple as it is, is very beautiful, and shows how extremely skilful these Syrian architects were. Even more striking is the cathedral at Bosra. This is on a far larger scale than the church at Ezra; but, unhappily, the central dome and the arcades which supported it have disappeared, and we are left to conjecture that it was the experience obtained in such works as this that led to the more stable construction of the domes in Constantinople. Here you must notice the remarkable love of the plan of a circle enclosed within a square, with a number of sunk semicircular recesses in the walls. The treatment of these, with columns carrying the wall above them, seems to be the connecting link between the recesses in the walls of the Pantheon and the management of the semicircular recesses under the tambours of the Domes of Sta. Sophia and SS. Sergius and Bacchus. Even more remarkable than these churches is the vast convent at Kalat Sem'an, erected in the fifth century. Here, among a vast number of ruins of buildings attached to it, is still left so much of the grand church as enables us to form a fair idea of its general design. The plan is cruciform, with an octagonal centre, the walls of which are buttressed by cross arches contrived with extreme skill so as to be themselves supported by apsidal chapels in the four angles made by the junction of the four arms of the cross. The central octagon stands on eight arches, and there was no central dome, the church here being, in fact, an hypæthral building, built round the column of St. Simeon Stylites, which stood in the centre of the octagon. There is no building of which the date is more certain. St. Simeon died in 459. The base of the column on which he spent thirty-seven years of his life is still in its position. In 560 Evagrius visited the convent, and has left a most exact account of the building, which had been erected directly on St. Simeon's death, and his account agrees in every detail with the existing building. I can hardly express too

¹ Third lecture (*continued*), delivered on Monday, February 21, by G. E. Street, R. A., to the students of the Royal Academy.

strongly my sense of the singular excellence of this plan. Even with the recollections of Arnolfo's work under the dome in the cathedral at Florence, and of our own Alan of Walsingham's octagon at Ely, it is a very open question whether this far earlier treatment of the same problem is not more excellent than either. At Kalat Sem'an there are but few evidences of Roman influence. The long arcades of the four arms of the cross can hardly be said to be certainly derived from the basilica; and the great entrance at the end of the transept, three grand arches each with its own pediment, has no prototype, and is itself more than likely to have suggested the design of the very best French Romanesque, such as we see at St. Trophime at Arles. Then we find here a very regular system of window decoration, of mouldings well adapted to their exact position; and outside the central apse we have a design which might almost be pronounced to be a work of the eleventh century, if we saw it in some so-called Lombard church in the north of Italy or on the borders of the Rhine. It is divided on plan into regular bays by attached columns placed one over the other in two tiers, and in height by a cornice which is already treated as a mere string-course. At the summit, arches, springing from the caps of the columns, support a cornice. These arches are somewhat large, but otherwise there is little to distinguish them from the Lombard corbel-tables of Pavia. Nothing more deserves notice than the really beautiful carved stone-work of these buildings. It is truly Byzantine in character. The acanthus leaf plays still a large part, but is treated with great variety of arrangement, and is supplemented by many charming designs of running ornaments, carved mouldings, and patterns in low relief, which speak well for the skill and taste of their designers. Not less noticeable is the fact that these buildings are almost wholly of stone. Stones of large size were obtainable, and floors are constructed by throwing arches across at intervals of a few feet, and bridging the spaces by long horizontal blocks of stone exactly fitted together. It is about the most undying mode of construction ever seen in arched buildings. Nor are there any buildings in which the semicircular arch is more freely, more honestly used than it is in these.

It is not very difficult to connect this school with buildings in other parts of Europe. It is improbable that a flourishing province of the empire should keep entirely to itself such remarkable powers. M. de Vogüé gives some examples of construction with parallel arches covered with flagstones, such as the Baths of Diana at Nismes, an arch of the bridge at Narni, and a corridor in the arena of Arles. He asserts also that the tomb of Theodoric at Ravenna, built about 500 A.D., is really so akin to them in all its details of ornament and construction that to him it seemed to be almost a Syrian work. And it certainly seems possible to trace a distinct influence of these Syrian buildings on not a few of the Romanesque buildings of the eleventh and twelfth centuries in the south of France, throughout the Rhine provinces, and in the east of Spain. The Syrian buildings, dating mainly from the fifth, sixth and seventh centuries, must at that time have been seen by many in a perfect condition, and were so far in advance of European works of the same age as to make it certain that they would find imitators, who, however, with none but Roman works and traditions before them in their own country, would be likely, as a rule, to graft some of their features onto their own buildings, without wholly abandoning the style of the latter. Doubtless the influence of these Syrian Byzantine architects was largely felt in the Holy Land; and it is incontestable that the influence of the Holy Land—and particularly of the buildings in Jerusalem—on European art was equally great, and too remarkable to be passed over. It was of a twofold kind. Crusaders and pilgrims visited the holy places, and returned knowing somewhat of an art different from their own. Then wherever they formed communities or carried on trade in the East, they erected churches and other buildings for their own use and in their own style, modified by that of the country.

The Church of the Holy Sepulchre has been, as you all know, I dare say, a subject of much contention. But hardly any one now believes that there is any room for doubt as to its authenticity and antiquity; and to-night, at any rate, I must speak to you as though there were none. The church, as we now see it, is a collection of additions made from time to time to the original church built by Constantine. This was probably a great basilica, with a long nave and double aisles and transepts; west of these a circular building, open to the air in the centre—very much as in the Church of Kalat Sem'an—where was a shrine over the sepulchre. This central space was divided from the surrounding aisle by a range of piers and columns. In the outer wall of the aisle were three circular projections or chapels. Here we have a most interesting plan, and one of which the outer wall still remains. At the latest it can hardly be a later work than the sixth century, but I see no reason for doubting that it is really the work of Constantine; and though the arrangement is unlike anything that we know of in his time, it is just such a shape as might naturally grow out of the special requirements of the case. Unhappily, in a restoration after a fire in the early part of this century, so much damage was done to this part of the building that it is now a little difficult to realize how venerable it is. The alterations made at various times have been great. First of all the nave was burnt, and in its place was erected, in A.D. 1130, a choir with an eastern chevet and a dome over the crossing. The western side of the transepts then abutted on the circular church round the sepulchre. The architecture of the whole of this late work was thoroughly European. It was the work either of French or Spanish architects, and it is most interesting to see the exterior of its apse

giving back to Jerusalem exactly the same outline as had first of all been there devised. The outline is a specially common one in the centre of France—a great circular apse, with three chapels, and spaces between them for windows.

Close to the Church of the Sepulchre are other churches—St. Helena, St. Mary, and St. Mary of the Latins, all of them evidently built by Europeans in the twelfth and beginning of the thirteenth centuries. At Bethlehem is a church which is probably also of the date of Constantine. It is a great basilica, with transepts, double aisles, and wooden roofs, above a clerestory. The transepts and choir all end in apses, and may well be compared with the little tri-apsal church at the Cemetery of St. Calixtus in Rome, of about the same date. The interest of this church is that it shows us the plan of a Christian church founded upon the Roman basilica before the Greeks had developed the construction of the dome. The Christians, when they had to choose between the form of a basilica and that of the ancient heathen temples, naturally chose the former. The old *cella* of the temple was narrow, dark, and meant only for the functions of the priest, whereas the Christian church had to be large, well lighted, and open to the multitude, and this church at Bethlehem shows so clearly the way in which it was adapted to the purpose as to be well worth study. There is, indeed, a story of the ninth century which attributes the church to Justinian. It goes that when the architect who had been sent by him to build it returned to Constantinople, the emperor was so disgusted with his description of his work that he charged him first of all with malversation, and then finished by having him decapitated. This punishment has been suggested in our own day as a better mode of promoting good art than any other, and perhaps not very undeservedly. I fear, however, that there is no truth in the Justinian story, which only does credit to the originality of the narrator Eutychius. Justinian's principal works are known by contemporary description. They were St. Sophia, St. John at Damascus, and the Church of the Presentation at Jerusalem. They were all varied in design. In the first, everything was sacrificed to the dome; in the second and third, the dome and the basilica had been combined very much in the form in which they are seen throughout Germany and France down to the end of the twelfth century.

I have already told you how much Eastern art affected the art of the rest of Europe. But the Holy Sepulchre buildings had a singular influence. The religious interest in the site and history of the spot led men to wish to copy the elevation of the church, and, accordingly, we find a number of buildings avowedly intended to be repetitions of it. Perhaps the most curious of all these is the group of six churches founded at Bologna in 430, avowedly in imitation of the Holy Sepulchre. They are very small, and it is now difficult to see how they can be called copies, save in the one fact common to both of the cluster of churches in one group. A much closer imitation is the crypt of St. Benigne at Dijon. Here the outline was evidently most closely copied, and there was above it a similarly planned church with a double aisle round the centre, which was open to the sky. The people in the Triforium galleries and on the floor were thus able to look down into the crypt, and in this way a vast number of pilgrims were able to be present at one time.

The various churches of the Templars all over Europe were, in the same way, rough copies of the Holy Sepulchre Church. The Temple Church, and the round churches at Cambridge, Northampton and Maplestead—all have a round church at the west end, corresponding with Constantine's circular church, and the choir projecting to the east, just as the later choir did at Jerusalem. So also have the Templars' Church at Segovia, and the fine Church (not connected with the Templars) of St. Gereon at Köln. In France the Church of Neuvy St. Sepulchre, built by Geoffrey, Viscount of Bourges, after a pilgrimage to the Holy Land, is not the only example of the same influence. The destroyed Church of the Temple in Paris, with its circular nave and long chancel, was probably the most beautiful there; though, on the whole, none can be found that excels our own Temple Church in this city, with which I hope all of you are well acquainted.

In Constantinople, at Jerusalem, and in Syria, we have had the work mainly of the period from the fourth to the eighth century. The next great epoch at which we might pause if time allowed is that which followed the coronation of Charles the Great in the old and completely Romanesque Basilica of St. Peter, in the year 800. But it must suffice to say that constant, though generally hostile and warlike, intercourse with Italy was leading the Northern people to a more thorough realization of what Roman art was than would have been possible from the study of the works which had been executed during the Roman occupation of their own countries. And it is clear that from this time began that stream of mixed Byzantine and Romanesque art which so steadily flowed for some two hundred years from the south northwards, and mainly on the two parallel lines of the Rhone to the centre of France, and the Rhine from the Alps through the centre of Germany.

The various influences which I have been describing had been gradually forming a style which was well defined, greatly advanced in constructive art, and full of variety. At times, as you will have gathered, it was swayed by the Byzantine influence of Venice and the East, at times by more distinctly Roman influence, and sometimes by that of Arab art. But on the whole, I incline to give much more weight to the Byzantine share in the work than it is usually the fashion to give. Charles the Great evidently copied San Vitale and

SS. Sergius and Bacchus in his minster at Aachen, and after its erection there grew up a series of magnificent churches in the Rhine country which had far more connection with the East in their plan and general design than with Rome. In England and in Normandy, on the other hand, the style is more properly called Romanesque than anywhere, for from beginning to end our buildings of the earliest period show no knowledge whatever of Byzantine art, and when compared with the coeval buildings of Italy, of Germany, or of the south and west of France, they illustrate an entirely different phase of development. It can hardly be denied that far more skill and science was shown in those days in the South than in the North. We have grand buildings, but their decorations are coarse and their plans rude compared to those which are seen at Arles, at St. Gilles, at Poitiers, and elsewhere in countless French examples.

Undoubtedly there was an architectural influence at work in Great Britain which was but little connected with Rome. The early British Church was closely connected with that of Ireland. There we still see remains of extremely early churches or oratories, wholly distinct in style from either English or French Romanesque, and the architectural origin of which it is more difficult to account for. One feature, which is perhaps the most remarkable, is the construction of doors and windows with their jambs inclined towards the head, in classic fashion. This is never seen in England, nor, I believe, in France, and certainly suggests a separate knowledge of Egyptian and Greek detail. It is not a little remarkable that this feature is carried on as late as the thirteenth century, and, as we shall see when we have to discuss our English architecture, it is from Ireland, probably, that we obtained our love for the square-ended churches which are so marked a feature in really English architecture, and so opposed to all the traditions of Roman and Byzantine art.

THE ILLUSTRATIONS.

CHURCH TO BE BUILT ON MADISON AVENUE, NEW YORK CITY. MR. R. H. ROBERTSON, ARCHITECT, NEW YORK, N. Y.

The preliminary sketches published to-day were submitted in competition for the Church of the Holy Spirit to be erected on the north-east corner of Madison Avenue and Sixty-sixth Street, and were accepted. With some modifications the work is going on as indicated in these studies. The small amount of money at the disposal of the congregation as well as their desire demanded a cheap and picturesque treatment which would not in any way compete with the more formal and pretentious church architecture in the vicinity. It is proposed to use rock-faced Newark stone for the body of the walls, the finish being of the same, roughly dressed; the clerestory will be faced with dark red vitrified tiles, and the roofs covered with dark blue slate.

HOUSE FOR H. W. PEABODY, ESQ., BEVERLY, MASS. MESSRS. CABOT & CHANDLER, ARCHITECTS, BOSTON, MASS.

THE OLD COLONY HOUSE, HINGHAM, MASS. MESSRS. N. J. BRADLEE & WINSLOW, ARCHITECTS, BOSTON, MASS.

This hotel is building upon the site of the pleasantly remembered Old Colony House, which was destroyed by fire some years since. The natural drainage of the location is perfect. The foundations are upon the solid rock, so constructed as to prevent dampness rising through the walls. A piazza 20 feet wide will occupy three sides of the building. The first floor will contain a large entrance-hall, public parlor, 30x48 feet, two ladies' parlors, 14x19 each, dining-room, 44x100, with large serving, china and store rooms opening from it; and chambers for transient guests. The second, third, and fourth stories will contain 114 chambers, each having a large closet,—39 of them have open fireplaces. They are all arranged to be let in suites if desired. The plumbing-work is to be of the most thorough character, embracing the latest improvements in drainage and ventilation, several bath-rooms, water-closets, and all water conveniences on each story. On the fifth floor will be rooms for private servants; and in the basement, which by the sloping of the land to the rear is entirely out of ground, servants' and nurses' dining-rooms, billiard-rooms, children's play-rooms, etc. The principal rooms and corridors will be heated by steam, rendering the building comfortable at all seasons. Gas will be carried over the entire building.

LETTER FROM NEW YORK.

THE SPRING EXHIBITIONS.—AUCTION SALES.—NEW PICTURES AT THE METROPOLITAN MUSEUM.—MRS. HOLMES'S EMBROIDERIES.

NEW YORK, April 13.

THERE is a wonderful, a most unusual degree of unity among the critics this year with reference to the spring exhibitions. All agree that the fourth exhibition of the "Society of American Artists" is better than any other,—that it is, indeed, the most select and the most striking collection of American pictures ever shown the public. All agree, on the other hand, that the Academy collection is—not worse, perhaps, than it has often been in previous years, but much worse than it should have been this season. As usual, every one rails at the Academy hanging committee, and with somewhat more than the usual amount of justice. They had but very few good pictures offered them, and the larger proportion of these few they have "skied" to give place on the line to the worst atrocities. The public sustains the artists in their loud indignation, and one cannot doubt

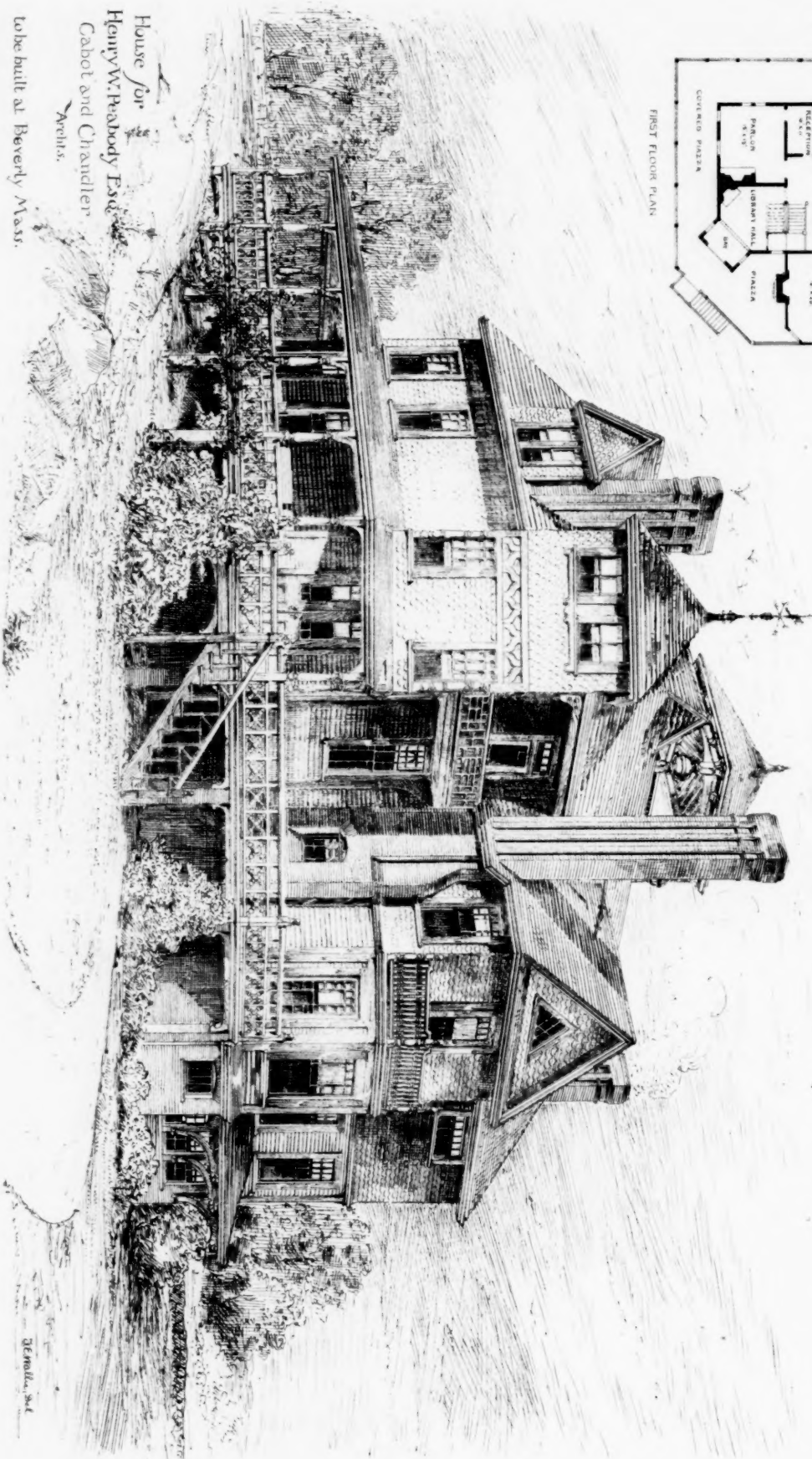
that another year or two must see a considerable change in the management of the institution. The confidence of the artists was lost long ago. If things go as they have gone of late, it will not be a great while before the confidence of the general public, which has always clung so closely to the Academy, will also be destroyed. The "American Artists" have been unusually severe in their proceedings. There will be many painters, doubtless, to complain, but here at least the public should not join in the indictment. We do not know, of course, whether they may not have refused some good works when choosing but one hundred and fifty pictures out of some six hundred offered. But we do know and see that they have not refused such to give place to more unworthy things. There are not half a dozen canvases in the room we could spare from the wall. The jury voted secretly and passed especial judgment on every individual work. Many pictures of the members of the Society, even, were declined, and many that came signed with the most popular names. Whether such a course makes the Society unpopular with the artists at large or not,—it should not, of course, for there has been no favoritism and no exalting of bad work over good,—it ought to make it highly popular with all other classes. The public should be glad that it is shown only the best that could be had to show, and the critics should rejoice that they are spared the hardest and most unthankful part of their labor.

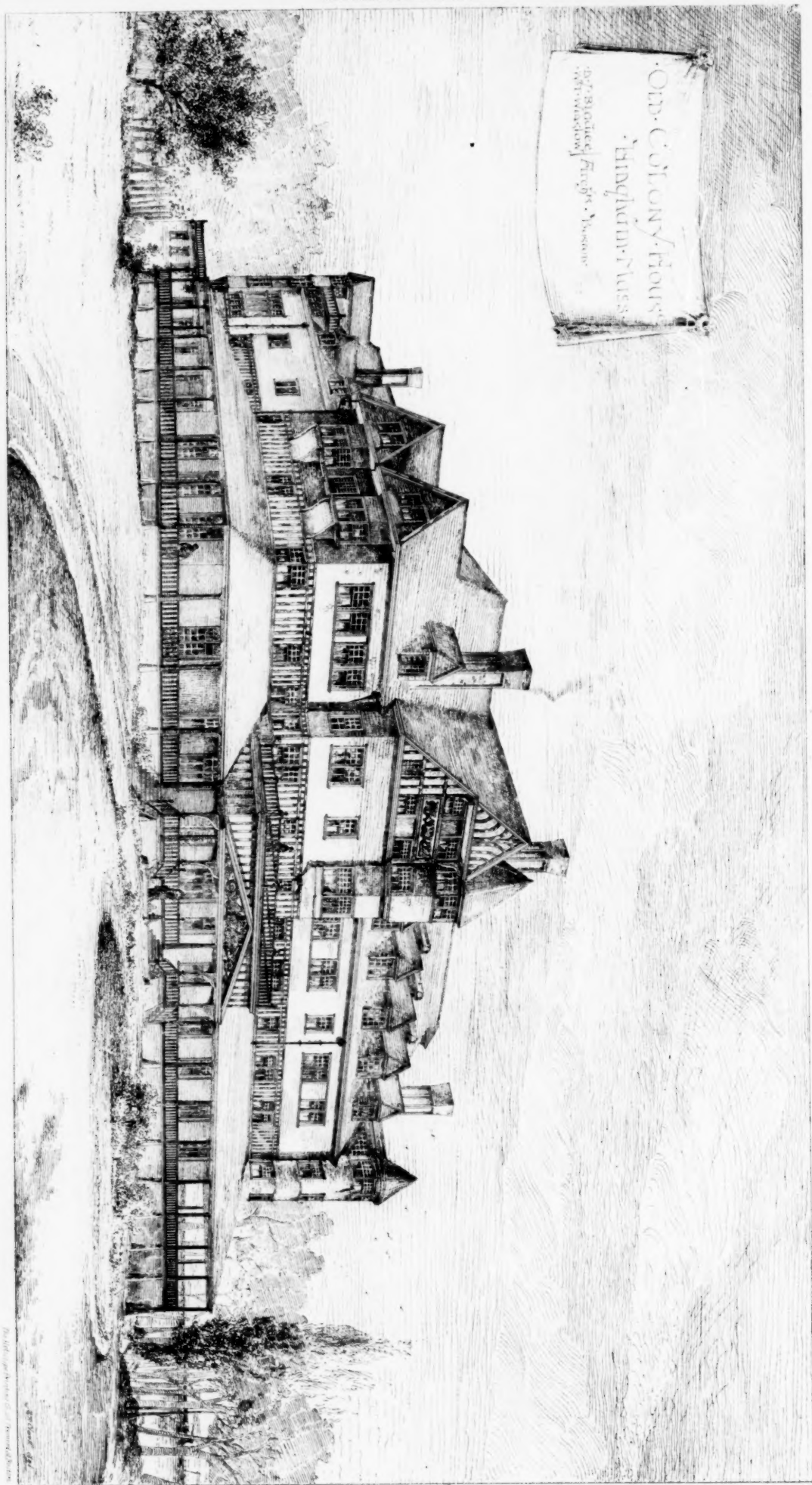
I shall return at another time to the detailed consideration of what both the exhibitions have to offer. Meanwhile I may say a word or so about the minor attractions of the past month. There has never been a time when picture-sales have been so frequent. Every week has seen a number of auctions, sometimes more than one falling upon the same evening. The prices brought have been fair taking the average all through, but excessively arbitrary if one considers the relative amounts brought by good and by mediocre paintings. For example, a superb study-head by Fortuny, pronounced undoubtedly authentic by good judges, and needing no signature at all, by the way, to recommend it to every student of art, brought only about one hundred and sixty dollars. It was a life-size head in profile called The Blind Boy. Its most remarkable point was the marvellous modelling of the thin neck and arm,—a veritable lesson in painting to any one who cared to look. The tone of the picture was delightful, but it brought so low a price, according to the auctioneer, because it was not a "pretty picture" that any one might care to have before his eyes. I do not know who obtained it, but he has gained a treasure in exchange for very little.

Mr. Avery has now on exhibition a Jules Bréton that was at the last Salon. It is a large picture and said to be very fine, though I can give no personal report as yet. However, it can hardly be otherwise.

Mr. Bridgman has returned to Paris with many thousand dollars and with more of honor in the shape of the kind appreciation he was greeted with. It is always pleasant to hear of one contented man, especially if he has been a steady and conscientious worker who has earned his contentment for himself. It was pleasant, therefore, to hear Mr. Bridgman say just before he sailed, "Am I satisfied with my visit home? Should I not be the most ungrateful man in the world if I were not ten times more than satisfied?" It is his belief that an artist needs all the incitement and inspiration he can obtain, and that he gets it best by living, if possible, in the very centre of artistic activity. With this belief he goes back to Paris to live. For his own sake as well as for ours we may regret the fact, I think. We contrast his Gare St. Lazare, and his more recent landscapes and studies, with the Oriental pictures he has painted for so long, and we cannot but feel that he might do more individual work did he turn his attention more entirely to local and contemporary things. Who is to paint for us the vanishing, intensely picturesque civilization of New Mexico, for example, if such men as Mr. Bridgman prefer harem interiors, and the valley of the Nile?

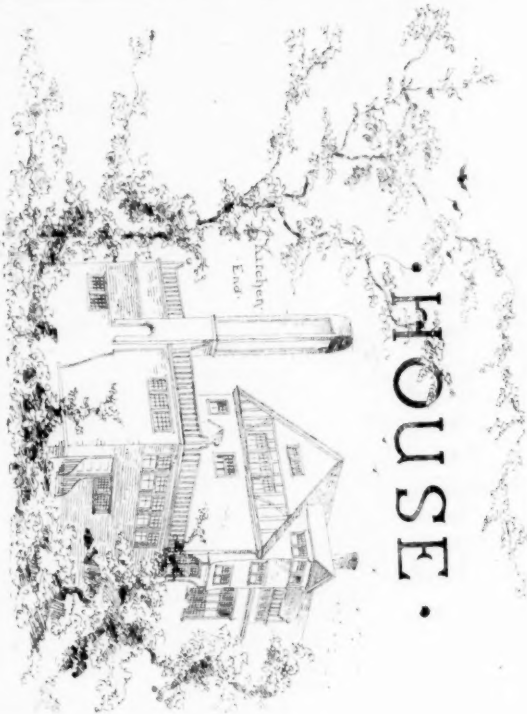
The pictures that were loaned the Metropolitan Museum for its winter exhibition were not, with some few exceptions, of much importance. The summer collection opens shortly and will probably be much finer, occurring at a season when owners are more willing to lend their paintings. The valuable collection of drawings by the old masters presented to the Museum by Mr. Cornelius Vanderbilt will then be shown the public. The most important recent acquisitions that have thus far been exhibited are Bonnat's portrait of Mr. Johnston, the President of the Museum, and Robert Wylie's Scene from the Vendean War, presented by Messrs. Goupil of Paris. No gift could have been more appropriate, and it is very valuable in itself as a specimen of the best art, and as produced by an American painter. The picture, which was scarcely completed at the time of Wylie's death, shows an interior filled with a group of women and peasant soldiers gazing at one of their number who lies dying on the floor. The grouping is admirable, effective and at the same time perfectly spontaneous in appearance. The handling is very broad and strong, the light managed with admirable skill, and the color subdued and good. Above all, there is strong and simple realization of character in the many figures. The only point with which one may perhaps find a fault is the figure of the woman who holds the crucifix before the dying man. The color just here is not quite harmonious, and neither in face nor attitude is she so simply and strongly suggestive of the required emotion. She seems a bit theatrical where all the rest of the canvas is so genuine. One cannot see this picture at its best, however, for the centre of the gallery is filled by a long stand, upon which is displayed a collection of some fifty water-colors, by Mr.





OLD COLONY.

HOUSE.

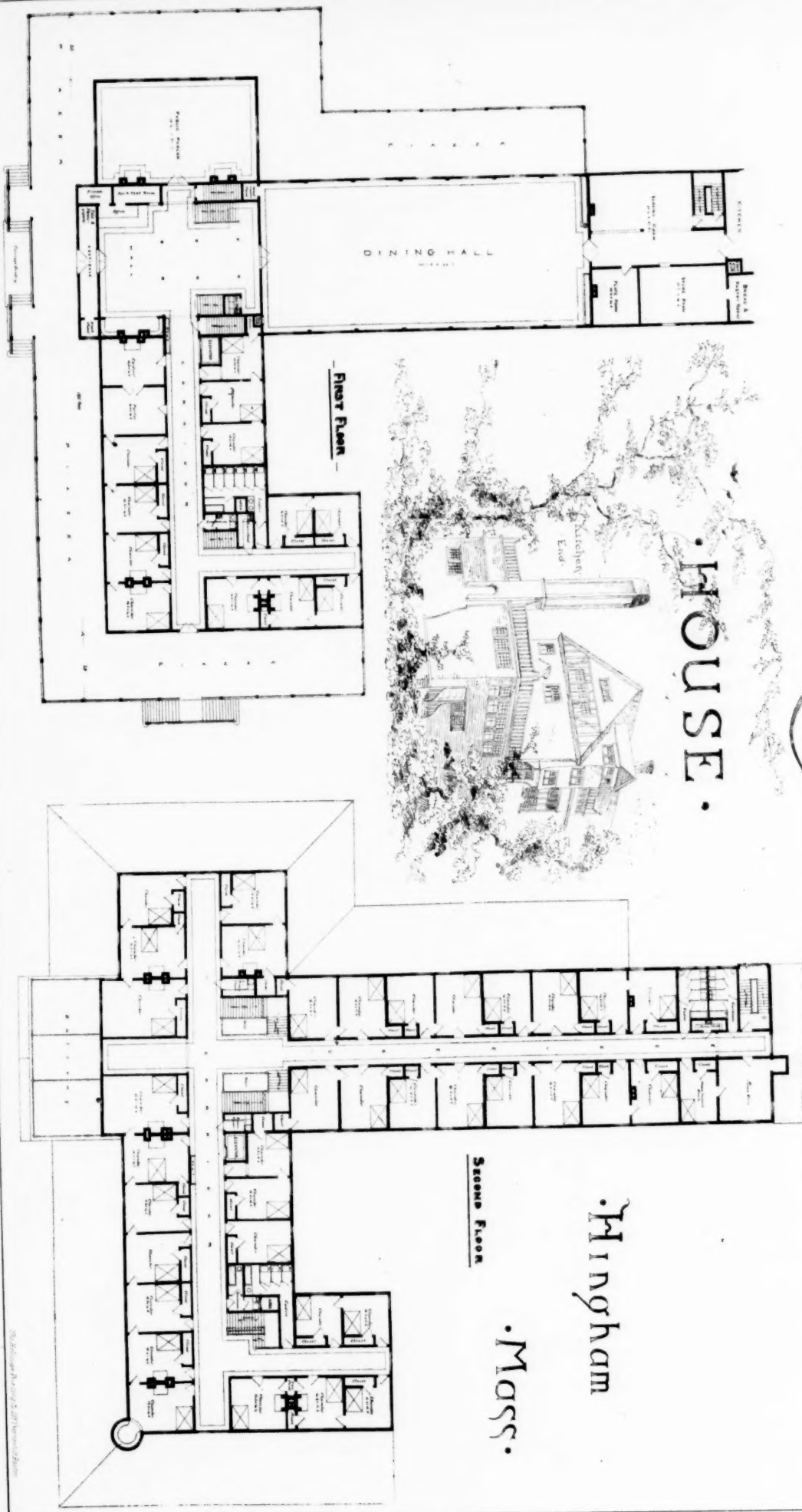


Mingham

Mass.

Second Floor

First Floor

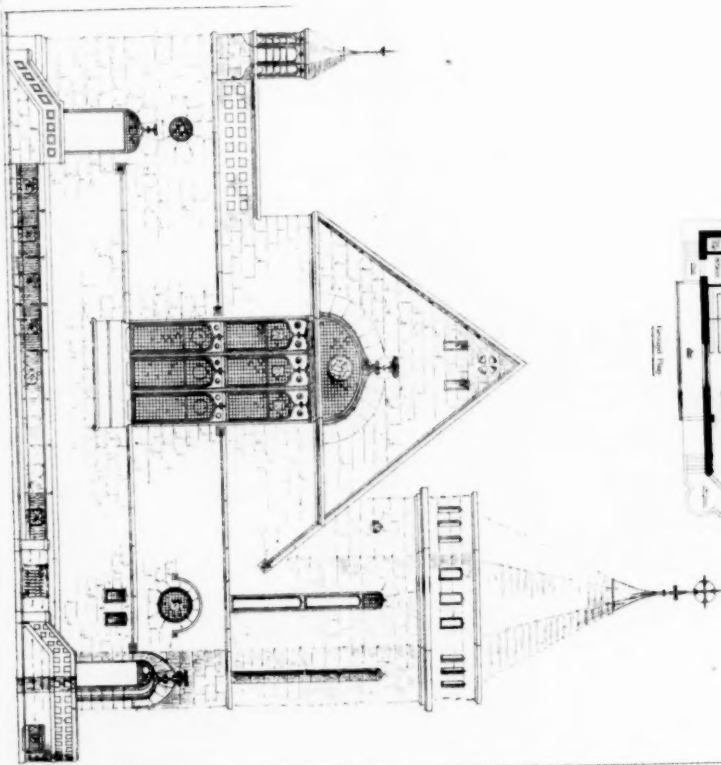
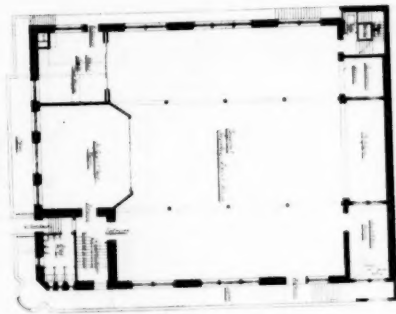
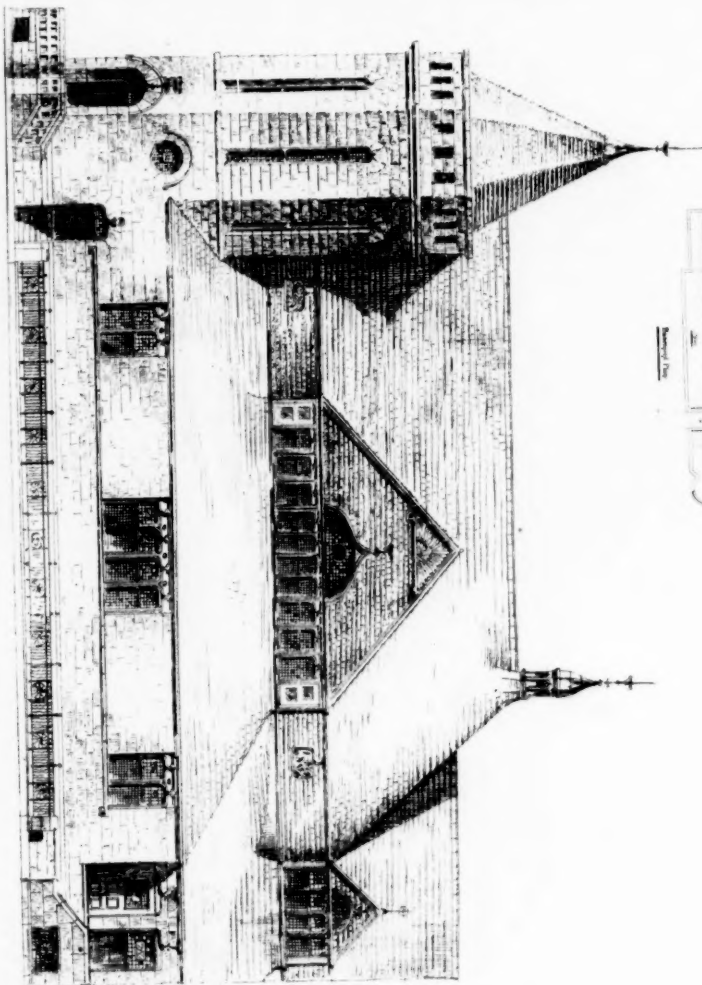


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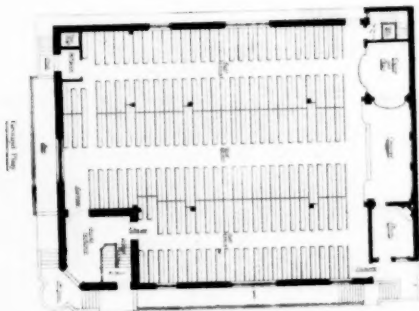
Church to be erected on Madison Ave. New York

Side Elevation

W. A. R. V. S. G. & Co. Architects



Front Elevation



W. R. Richards, recently given to the Museum. They are good, of course, but not especially interesting, and as the stand is too high for one to see over, one is driven too near Wylie's canvas, and can but imagine its best effect.

The late Mr. Gifford's pictures which have filled one of the galleries at the Museum during the winter have been removed, and those belonging to the estate are just about to be sold at auction. They will in all probability bring high prices, as Mr. Gifford was very popular with art-lovers of many grades.

Among recent minor exhibitions, one in the decorative-art line has attracted much attention—the collection of embroideries executed by Mrs. Oliver Wendell Holmes, Jr., of Boston. They have been shown in a separate room attached to those of the Decorative Art Society, and it is to be hoped that their display will infuse some fresh ideas into the mind of the average embroiderer. They are a most emphatic protest against the doctrine, so long inculcated, that all decorative art, and especially all that is executed with the needle, must be of a strictly "conventional" kind. Mrs. Holmes uses motives drawn from nature, and uses them—not in the conventionalized Oriental style, faintly copied in so much home work, merely to suggest natural effects—but to actually reproduce those effects in a kindred way to the way in which they are reproduced by pictorial art. It is a difficult enterprise, of course, and one not to be lightly undertaken by a person possessed of less exquisite taste, and less accomplished drawing, and a less pleasing sense of color than are possessed by Mrs. Holmes. Minute rendering is of course not attempted; but natural colors and the natural effects of masses are essayed, with what measure of success will scarcely be suspected by those who have not seen the works in question. As they are simply framed for transportation and exhibition, they display their true beauty less strongly, and challenge more serious comparison with brush-work than will be the case when they are arranged in more appropriate fashion. One panel represents a winter landscape, with evergreen trees and drifts of falling snow. The color is very cleverly carried out; the shading of the snow quite wonderful; the trees are beautifully drawn, and the drifting snow-sheets and the action of the wind admirably rendered. Another is a moonlight on the sea, with some small boats in the foreground. It is white, with the faintest green shadings, and very admirable in effect. A third shows an apple-orchard in bloom, with the brownish grass of spring and a pink-flushed sky. The composition in this panel is as good as it need be in any painting. Another is a simple landscape, with a yellow evening sky; another a field of daisies, with evergreen trees to frame it, as it were, and a high horizon, with a fence that cuts against the sunset. There are other landscapes and sea-views, each different in scheme, and some attempting very difficult problems of color, and there are panels of a more "decorative" kind where there is nothing seen but a tangle of vegetation, most cleverly wrought. Perhaps the most remarkable of all, except the snow-storm, is a large, upright panel, showing a stream with sunset light reflected from its surface and upon the overhanging trees. Not only the beautiful effects of these novel works must attract us, but also the bold and unconventional way in which they have been done. They are as different in treatment from ordinary embroidery as a boldly handled painting is from a "niggled" china plaque. When we look closely, the effect disappears in apparently unmeaning stitches; but at the proper distance it is far more true and striking than it could have been in embroidery of the usual kind. With her bold handling, which partly reveals, but often entirely hides, the material itself, Mrs. Holmes manages to secure effects of texture that are not visible in work where the first thought has been for the surface and texture of the work itself, and not for those of the objects that are to be reproduced. Sometimes the satin itself forms the sky, — gray in the snow scene, or yellow in the sunset views, — shaded, of course, to give gradation. The sheen of the material adds not a little to the effect of light desired; but no material is ever used, as it is in average embroidery where the aim is more conventional, to represent things that it does not look like. Every object not best represented by the untouched ground is elaborated with the needle. Elaborated is perhaps not the right word to use, so free and rapid is Mrs. Holmes's method. It is more like painting with threads than embroidering in the proper sense. Those who have never been initiated into the mysteries of "high-art" needlework are apt to think that the perpetual talk of stitches—valued apparently as such, and not for the effect they are to produce—is rather suggestive of a handicraft than of an art properly so-called. "Crewel stitch" and "Kensington stitch" and all the rest seem to be regarded with a sort of veneration quite inexplicable to an outsider. It is therefore doubly refreshing to see one workwoman who treats her needle as a servant, and not as a master, who makes it do her individual will, and who thinks of the result and not of the stitch itself. I suppose a professional embroiderer would say that there were no stitches at all in Mrs. Holmes's work; nothing but longer or shorter threads, that go and come in the most irresponsible manner. Look, for example, at her field of daisies. A few in the foreground are wrought with moderate distinctness, though in a most unconventional way; but the distance, seen near at hand, becomes a mere mass of indistinguishable threads. But the effect is right, infinitely more right than it could ever have been made in the cast-iron methods to which we are accustomed. In the use of materials Mrs. Holmes is just as unconventional as in the choice of stitches. The whirling snow in the snow-storm panel is worked with every sort of thread, from thick crewel to the finest spool-cotton, in stitches that are eight inches long

very often. It is said, indeed, that Mrs. Holmes works with white hairs when no cotton is fine enough to suit her purpose. The pictorial effect of these embroideries is quite wonderful, and I do not think that, as some few have said, their decorative effect is thereby lessened, or that a partially good result has been attained by an effort to accomplish what brush and color could have done much better. I do not think that Mrs. Holmes is wasting talents that might be better employed with palette and easel. Variety is desirable in art as in all things. If this lady can give us work that is admirable and is also quite new in kind, she does better than she would in painting pictures very much like those of a thousand others. Certain effects are produced in these embroideries, moreover, that cannot be got with colors, while Mrs. Holmes is wise enough to be content to get them broadly, and not try for impossible minuteness. I refer to effects of sheen and light such as we see in some of her skies. This is not, of course, to say that the needle can ever rival the brush; it is only to plead the cause of an art that, as practised by its inventor,—for I think it is safe to say just this sort of work has never been done by any one else,—fills a place that was not filled before. It gives us natural effects in natural, not conventional ways, yet it is more strictly "decorative" in its result than brush-work can ever be, and by its material is fitted for certain uses to which brush-work never could be put. It is not too much to say that Mrs. Holmes's work ought to make a reputation for her that will not be confined to this country alone. Every one here has admired it, although it has gone counter to so many preconceived ideas and to so much popular practice. If ladies will try to imitate, not Mrs. Holmes, but Mrs. Holmes's effort to do something individual, more will be benefited by this exhibition than the artist herself.

We do not, of course, find in the rooms devoted to the Society itself anything to be compared to what we have just considered; but the average of exhibited work seems distinctly higher than it was a couple of years ago.

M. G. VAN RENSSLAER.

LEGAL NOTES AND CASES.

Negligence.—Master and Servant.—Knowledge of Laws of Gravitation.

AN employee of a railway company in moving a mill-stone was injured by reason of some carelessness of his own or of those working with him, and he sued the company for damages. The court decided that every man of common intelligence will be supposed to be informed of the ordinary operations of the laws of gravitation, and that a man whose duty it is to move the freight about a railway station and warehouse must be presumed to know more of weighty bodies and their apparent direction when being handled than ordinary men know. In moving a mill-stone, the form, bulge, and great weight of which are apparent, he must take notice of the ordinary operations of the familiar laws of gravitation, and see that he has all necessary assistance at the work, and if he fails to do this he assumes all risk of injury. *Walsh v. St. Paul and Duluth Railroad Co.* Supreme Court of Minnesota, February, 1881. H. E.

Building Contract.—Change in Beam.—Knowledge of Owner.—Recovery on Contract.

Pine beams were substituted for the spruce beams which were specified in the contract; this change was made because it was unavoidable, and in good faith, and the agent of the owner was aware of it, but made no objection whatever. Upon the completion of the building the owner set up this change to defeat a recovery upon the contract. The court held, that there was no injury to the building, and that as the builder was allowed to proceed with the work without objection, after the change was made to the knowledge of the owner through that of his agent, the recovery of the amount due on the contract could not be defeated by such a defence. *Smidt v. Burgast*, New York Supreme Court, February 4, 1881. H. E.

Mechanics' Lien.—Married Woman.—Intention to charge her Estate.

A married woman endeavored to escape from a lien filed against her property for work done upon a contract made by her husband, upon the allegation that she had never intended to charge her separate estate. The court held that it was not requisite for the purpose of creating the lien that she should have had an intent to charge her estate; if she authorized her husband to act for her, and as her agent to contract for the building of the house, the mechanics' lien attached by operation of law, though she might not have intended to charge the property. *Jones v. Pothast*, Supreme Court of Indiana, February 25, 1881. H. E.

Fixtures "attached to Buildings."—Fixtures of Occupation.

Hamlin sold to Stettauer his leasehold interest in certain property, and "also the buildings erected upon the premises described in said lease, and all the engines, boilers, elevators, machinery and fixtures of every description, attached to said buildings, in said buildings and belonging thereto." And Stettauer claimed, under this assignment, the desks, chairs, counters, trucks, show-cases, and other like articles, some of which were fastened to the buildings, of Hamlin's business. His claim was denied by the court, the opinion stating that "the clause 'attached to the buildings' is clearly a limitation on that which precedes it, and when these are taken together they manifestly mean the same thing as if written, 'fixtures of every description which are attached to the buildings.' It is true, as stated by counsel, that the term 'fixtures' is sometimes applied to articles

not attached to the realty; yet that fact can be of no consequence in arriving at its meaning where the instrument in which it occurs, in express terms, speaks only of 'fixtures attached' to a building."

Stettauer v. Hamlin, Supreme Court of Illinois, February 3, 1881.

H. E.

Lien for Repairs.—Several Articles.—One Contract.

When the contract for repairs is for several articles at a gross sum the tradesman or mechanic has a lien on any or more of the articles in his possession, not only for their proportionate part of the sum agreed upon for repairing the whole, but for such amount as he may be entitled to for labor, materials, care or superintendence bestowed upon all the articles embraced in the contract. *Blake v. Nicholson*, 8 Marsh and Sel, 167; *Chase v. Westmore*, 5 Il., 180; *Hensel v. Reeg*, Supreme Court of Pennsylvania, October 25, 1880.

H. E.

VIENNA.

A CORRESPONDENT writes to the *Nation*: The "city" proper is, in the case of Vienna, only a small portion—about one-twelfth—of the whole city, and is still the nucleus of the whole, containing as it does the principal hotels, the finest shops and cafés, the theatres and aristocratic residences. It is easily accessible to all, on account not only of its central position but of the peculiar plan on which the whole city is built. A comparative anatomist would class Vienna not among the bilateral cities, divided by a broad central street into two equal halves, but with one of the types known as *radiata*—perhaps among the star-fish—for this reason: The whole of the central city is enclosed by the wide and handsome Ring-Strasse, which has almost the shape indicated by its name. Outside the Ring-Strasse lies the main body of the city, divided into nine districts bearing different names, each district having as a main artery a large street which radiates from the Ring-Strasse to another outer circle, the Gürtel-Ring, inside of which lie the suburbs. Communication between the several parts of the city is well provided for by an extensive network of tramways, public carriages, and omnibuses. The latter, however, are the most torturing and bone-shaking contrivances imaginable, as the greater part of the town is roughly plastered with stones; and the tramways are so slow that a good walker can almost keep up with them. Both the street-cars and omnibuses are divided into compartments for smokers and non-smokers,—an arrangement which is here almost a necessity, as in consequence of the high tax on tobacco the quality consumed by the average smoker is so nauseating that it becomes simply intolerable to ladies and to those men who cannot protect their nostrils by lighting a decent cigar of their own.

In its general outward appearance Vienna is gradually becoming one of the most imposing of modern cities. While the central part may for many years yet retain its mediæval characteristics,—its narrow streets, crowded houses, and mysterious short passages leading through inner yards and connecting adjoining streets,—the Ring-Strasse will be of strikingly handsome appearance as soon as the scaffolding has been removed from the various large buildings now approaching their completion. The new opera-house was finished some years ago, and although its exterior gave rise to adverse criticism in some quarters, its interior, with its ingenious contrivance for regulating the temperature, is a model of elegance and comfort. The hints afforded by the builder of the Opéra are doubtless being utilized in the construction of the new royal Burg-Theater for comedy and tragedy, which has long been felt as a necessity, the old house being so small and clumsy that an opportunity to get a decent seat, unless ordered a week ahead, has been for some time the exception rather than the rule. The new university, for which a capital site has been chosen near the lovely Votive-Church, will be, by all odds, the handsomest structure of the kind on the Continent, and will doubtless exert some influence in attracting students, and thus raising the other departments of the university to the popularity and fame now enjoyed by the medical department alone. The new Rath-Haus or court-house, the interior of which will be decorated by several famous artists, including Makart, is, as far as I can judge in its present stage of completion, the finest specimen of modern architecture I have seen, although I do not pretend to be an authority in such matters. These buildings, together with some others that might be mentioned, Prof. Lübke doubtless had in his mind among other things when he asserted in a lecture the other day that within the last few years Vienna has attained a rapid growth in art unequalled anywhere since the days of the Renaissance. The effect of these new buildings is enhanced by the fact that most of them not only have the advantage of the wide space offered by the Ring-Strasse, but are surrounded on several sides by open grounds and gardens. The Viennese magistrates have been wise in time, and saved from the ravages of the architects large tracts of park and breathing-grounds, so necessary for the health and pleasure of the inhabitants of the inner city.

Of the private new buildings which are being erected in various parts of the city the majority seem to be cafés, in spite of the fact that Vienna is said to have already some four hundred of them. It is by these cafés, more than by anything else, that the local color of Vienna is determined. In Berlin there seem to be but a few dozen cafés, and, with the exception of those near the centre of the city, they appear to be doing a poor business. In Munich the cafés play a more important rôle, but not by any means as important as here. The Viennese feel a certain pride in having been the first to introduce them in Europe, and feel bound to keep ahead of other cities,

both in quantity and quality. It is not only the good coffee and bread that attract everybody to them. They are such comfortable loafing-places that few who have a drop of "Bohemian" blood in their veins can resist their charms. Even the smaller ones present a neat appearance, while some of those lately opened are furnished in a most luxurious fashion. The most handsome article of furniture is usually a pretty young girl, who sits behind the counter and seems to be generally engaged in *dolce far niente* when she is not flirting with some officer or student; although once in a while she pretends to read a newspaper. Her ostensible duty is to put into little trays the lumps of sugar which go with the coffee, and keep account of how many cups each waiter has taken away; but it is evident that this is merely a clever dodge, and that in reality she is there for the purpose of attracting the young men by her beauty and smiles. Etiquette prescribes a bow to this charming creature on entering and leaving a café, while the wholesale greetings of the waiters are usually ignored. There is considerable competition in this matter of "cash-girls" among the different *cafetiers*, and, as pretty girls are not at all rare in Vienna, the result is often admirable. Female waiters, on the other hand, are rarely seen in a Viennese café or restaurant, the reason being that the male waiters are so good that they have acquired a European reputation and are in demand all over the Continent. They are not so slow as the Italians, and not so insolent and conceited as the Germans. In Berlin the swallow-tailed waiter is so overbearing that a comic paper could hardly be accused of exaggeration when it made a tourist admonish one of these august individuals not to be too stuck up, for in these uncertain times a reverse of fortune might easily take place and reduce him to the humble position of a guest, and then he would be sorry for his former conduct. Another fault of the Berlin waiter is that he is apt to be too literary, and to monopolize the papers which people want to read.

All things considered, the Wiener-café must be regarded as an admirable institution. If our temperance societies would endeavor to introduce it into American cities, with its good coffee, abundant newspapers, and smiling maidens, they would have better success in weaning men from bar-rooms than can ever attend their present attempts to suppress personal liberty. Of course these cafés are not all of the same physiognomy, but vary considerably in the character of their habitués. Many of them are open at all hours, day and night, although there are certain hours when they are more crowded than at others. At about half-past nine there is a sudden emptying of all the cafés and restaurants (excepting those near the theatres and the night-cafés), the cause of which is the desire to avoid paying the *Sperrkreuzer*. This is a ridiculous sort of personal tax which has grown out of the apparently mediæval custom of closing the portals of all houses precisely at ten o'clock. Any one who gets home after ten has to pay the portier ten kreuzers when he opens the door, while those arriving after twelve give him twenty. Ten kreuzers are only five cents, but when you add them together for a whole year they make up a neat little sum which few Germans are willing to throw away. Hence the emptying of the cafés, and hence also the unusual haste of pedestrians on the street just before the fatal hour. Indeed, the influence which the portier exercises on the habits of life here is quite extraordinary, for it is doubtless in deference to the wishes of the people to avoid paying the door-tax that the theatres all begin as early as seven, and mostly end at half-past nine. As each house, according to Continental custom, contains some dozens of families, the door-tax seems to be a sort of dodge on the part of the house-owners to make the portier a self-supporting institution. The health of these poor creatures always suffers from the continual interruption of their sleep; but when one has occasionally to wait for them ten or fifteen minutes in a bitter cold night all pity for them vanishes. That the custom is an absurd one for a million-city is generally admitted, and there is now an agitation having for its object the introduction of the custom in vogue in Berlin, where the doors are also closed at ten, but where everybody has his own night-key.

THE FRYER GARBAGE DESTRUCTOR.

IN our issue for January 15, 1881, we gave a short account of an apparatus employed by the city of Leeds, England, to destroy all garbage and refuse material produced in the town. We now copy a more detailed description of this furnace from the *Building News*:—

"A system of destroying the noxious properties of refuse, and converting it into more or less useful matter, has now had a fairly extended trial at several towns in England, notably Leeds, Blackburn, Warrington, and Derby, and has been found fairly successful. Leeds has led the way in these improvements, and the municipal authorities are satisfied with the result. The furnaces and other appliances were designed by a Mr. Fryer, of Nottingham, and their first practical trial was made at Burnantofts, about two miles from the town-hall of Leeds, by the erection of a six-celled destructor and a carbonizer. The destructor consists of six (or more) compartments or cells, built in brick, lined with fire-brick, and tied together with iron rods. It occupies a space of 22 ft. by 24 ft., and is 12 ft. in height. An inclined road leads to a platform over the top, and another incline leads from the level of the firing-floor to the adjoining road. Each cell is capable of destroying or carbonizing seven tons of refuse in twenty-four hours, and to secure the greatest economy, the work goes on uninterruptedly. The cells consist of a sloping furnace, with hearth and fire-grate covered by a reverberatory arch of fire-brick, with one opening for the admission of refuse, another for

the escape of the gases, and a furnace-door for the removal of clinkers. The refuse is emptied on the platform, and shovelled into the cell, falling first on the incline, thence reaching the sloping hearth, whence, when sufficiently dry, it is pushed on to the fire, where, owing to the radiant heat of the fire-brick arch, it burns fiercely, the products of combustion being gases, a fine ash, and clinkers. Every other cell is provided with an opening large enough to take in infected bedding, mattresses, etc., as well as diseased meat. The gaseous products of combustion pass through a flue to a boiler, which supplies steam to a horizontal engine driving two mortar-mills. In these mills the clinkers are mixed with lime, and ground into an excellent mortar, which sells readily at 5s. a load; while the tin cans and iron are sold for old metal. No fuel of any kind is required, the cinders and other combustibles found in the refuse supplying all that is needed. During the year 1879 the following is an account of the work performed by the Burmantofts destructor: 14,000 tons rubbish, 190 beds and mattresses, 264 carcasses of pigs attacked by some fever, 1 cow, 10 sheep and lambs, 28 quarters and 13 cwt. of bad meat. The staff required for each "shift" comprises a foreman, who acts as engine-driver, four furnace-men, and one laborer. Besides the destructor there is also a carbonizer, which is necessarily built in a different manner, as it is used to convert street-refuse and vegetable matter into a charcoal, which sells at the rate of 30s. a ton. The carbonizer consists of a group of brick cells, each having a separate furnace. It is 26 ft. long, 12 ft. wide, and 15 ft. 6 in. high. The "chute" is fitted with sloping plates, which project from its sides and form a kind of spiral cave or ledge, which, near the bottom of the cell, takes the form of a fire-block, resting on a wall which divides the contents of the cell from the gases of the fire. The vegetable and other refuse to be converted into charcoal is filled into this chute or well in a solid mass, the eaves, or ledges, forming on their underside a flue, so that the matter is gradually heated as it slips down the well, until, at the bottom, it is surrounded by nearly red-hot fire-brick. The charcoal is withdrawn at the bottom, and is placed in a cooler worked by the steam-engine, and each cell is capable of treating two and one-half tons of vegetable and street refuse in twenty-four hours. The cost of a complete establishment, with a six-celled destructor, an eight-celled carbonizer, boiler, engine, mortar-mills, buildings, etc., is £4,500. No nuisance of any kind is experienced in the vicinity of the depots, and the refuse which might, under other circumstances, be deposited in places where it would become the hotbed of disease, is effectually destroyed or utilized."

THE LANDSLIP AT DOVER, AND THE CHANNEL TUNNEL.

THE continuity of geological action, which was the great doctrine of Lyell, is illustrated to a considerable extent by the occasional landslips in the lofty chalk cliffs near Dover, one of which is forever rendered famous by the magic touch of Shakespeare. A slip near the Abbot's Cliff, which caused the journey of the Prince and Princess of Wales to St. Petersburg to be commenced by the London, Chatham & Dover, instead of by the South-eastern Railway, on the 21st ult., has been the occasion of calling public attention to the peculiarities of this part of the chalk system, and also to the steps now in progress as to preliminary trials respecting the Channel Tunnel.

At Abbot's Cliff a short driftway has now been run from the sea front of the cliff to the commencement of the trial tunnel or heading. This is of a circular section, 7 feet in diameter, and is carried in a direction parallel to that of the railway, and following the natural dip of the strata. The scheme is to follow this dip until a depth of 200 feet below the bed of the Channel is reached, and then to run on a level to a sufficient distance to allow of a corresponding rise towards the French shore.

The driftway is cut by mechanical means. Those who can remember the commencement of the first railway tunnel in England through the chalk (which was made through the property of the Earl of Essex, near Watford, for the London & Birmingham Railway), by the assistants of Mr. Robert Stephenson, are best aware of the value of the appliances which, during the forty-seven years that have elapsed since that date, have been put at the service of the engineer. The Watford tunnel is only about a mile long. Three observatories were built over the line, for the purpose of setting it out. Eight shafts were made, and a headway, at about the level of the centre line of the tunnel, was driven from end to end in the first instance. On the completion of that headway, which was 4 feet 6 inches high, and from 3 feet to 4 feet wide, and which had to be timbered in one or two places, where faults filled with gravel occurred, it took three weeks of continuous labor to run the straight line through. There can be no doubt that the use of the electric telegraph, had it then been available, would have reduced this period to days instead of weeks.

None but a practical miner of old experience can realize the enormous facility given to the construction of a tunnel by the electric telegraph. This was made evident in the construction of Mr. Barlow's small sub-way under the Thames, at Tower Hill, as contrasted with the experience of the Watford driftway. The application of mechanical boring apparatus adds a facility to the actual execution of the labor of this kind of work almost as great as that which is offered by the telegraph to the direction of the labor. In the Dover experiment, which has now been carried on for 300 yards, the chalk is cut by a circular disk furnished with iron cutters, and worked by a com-

pressed-air engine. The disk makes two revolutions per minute, advancing a quarter of an inch in each revolution. Thus the boring advances half an inch per minute, a rate of progress which, if continuous, would give a progress of 25 feet in a day of ten hours, or of 300 feet per week, working for 120 hours out of 168. The double advantage of the use of compressed air is obvious. It performs work without any of the disadvantages attending on the use of steam-power, and at the same time it keeps up the ventilation, and lowers the temperature of the mine.

According to observations on the flow of air through the pipes used to supply the working machinery of the St. Gothard Tunnel, the loss of pressure due to friction through 15,000 feet of 9-inch pipe was about 6.4 per cent. This gives a lower co-efficient of friction than has been before determined. It is probable that the heat of the earth was an important element in raising the pressure within the pipe, and thus counteracting the loss due to friction. The temperature of the air was raised nearly 20° Fahr. during its passage through the tubes. But, even if the amount of friction be thus considerably understated, it is not so great as to form a very serious obstacle in a length of eleven miles.

With regard to the general scheme, we cannot think that, after the publication of the statistics in our columns (*Builder*, February 5, 1881), there will be found persons so unarithmetical as to expect that the capital for such a work can be obtained from the public or from the railway companies. It must be only in expectation of the funds being provided by the Governments of France and of England, we conceive, that any expense is now being incurred. It is, therefore, not as a practical commercial question, but as an interesting scientific inquiry, that we watch all observations that are from time to time made. The geological conditions of the Channel were discussed at length at the Institution of Civil Engineers on the 9th of December, 1873. On that occasion Mr. Prestwich, in speaking of the chalk marl or lower chalk through which the present driftway is to be attempted, admits that it contains so large a proportion of argillaceous matter and silica in a state of fine division that some beds pass almost into a clay through which, when compact, very little water can pass. But the occurrence of fissures in that bed is very uncertain. In some cases the lower chalk is so fissured as to yield very large quantities of water, as in the case of the Tring cutting, where the discharge was at the rate of a million gallons a day; or at Folkestone, where the town water-supply is obtained from the lower chalk of the adjacent downs. Thus, even independently of the yet unsolved question of the existence of a fault in the Channel, the great chances are that the difficulties opposing a tunnel through the gray chalk will prove to be of a very serious nature. All the more gratitude will be due to the men who have the courage to apply to this great physical problem the golden key of practical experiment. Fifty years ago a tunnel under the Channel might have been fairly pronounced impossible. Such is our advance in engineering appliances that this can no longer be boldly stated to be the case. Looking at all the circumstances, the question, as an engineering possibility, may now be said to depend on the physical character of the gray-chalk stratum across the Channel. As to that, opinion, *pro* and *con*, has had abundant utterance. The question is now about to be put to the stratum itself, and we shall watch with all possible interest for the answer. — *The Builder*.

SALTPETRINING OF BRICKWORK.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Sirs,—Can you say if the addition of oil to mortar for the prevention of the white efflorescence on brickwork is free from all objection, and if it can be used with entire safety on ornamental brick fronts? Positive information on this point would be very valuable to
Yours very truly, L.

[So far as our experience goes, the addition of oil to mortar, if well mixed in, cannot be detected by any staining of the brickwork whatever. If, possibly, an unusually porous quality of brick, or careless mixing, should cause staining around the joints, we should advise the immediate washing down and oiling of the whole surface; but such an accident is very unlikely to happen.—EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS.

THE SARATOGA BATTLE MONUMENT.—The Saratoga battle monument will probably be built elsewhere than on the site selected, the owner having advanced his price from eighteen hundred dollars to three thousand dollars, which the association refuses to pay.

THE SAHARAN SEA.—Commandant Roudaire has finished the investigations which were indicated by the commission of the French Academy, in relation to the filling of the Tunisian and Algerian chotts by the sea. His conclusions are entirely favorable to the project, and would lead to the establishment of an interior sea, 400 kilometres (243.55 miles) long and 1000 kilometres (994.2 miles) in circumference.—*Comptes Rendus*.

THE LATEST CONCERNING THE TUILERIES.—On the ruins of the Tuileries it is proposed to erect a museum of modern art. It will be separated by twenty metres from the *Pavillons de Flore* and *de Marsan*, and be the same distance back of their line of façade, and will occupy the space between the Rue de Tuileries and the arch of the Carrousal. This new and immense building is intended to be in style of architecture totally different from the Tuileries. The plan is that of M. Charles Garnier, who was instructed to report to a committee of the Chamber of Deputies.

THE STAINED GLASS OF SALISBURY CATHEDRAL.—Though York Cathedral suffered from the incendiaryism of Martin, the lunatic, the worse visitation of a Wyatt had been spared. That wretched architect's operations at Salisbury Cathedral were at the time pronounced "tasteful, effective, and judicious;" but it was owing to him that the many-hued splendor that once poured through the thirteenth-century windows of Sarum, and damasked the floor like a garden of summer flowers, is now exchanged for a monotonous glare of light that distresses the eye, not only by the sense of what is lost in pictorial charm, but by the exhibition it affords of the other senseless innovations of the same hand. That a bishop and an architect could, so late as the year 1788, step down to the level of an ignorant glazier, and join with him in literally pounding to pieces the saintly windows of one of the most perfect churches in Christendom, and casting them, as is said, by barrow-loads into the town ditch, would seem incredible; but there exists a letter from the glazier himself that shows how unlimited was the havoc and confiscation. This letter was written on 10th June, 1788, by John Berry, glazier, of Harnham, to John Lloyd, Esq., of Conduit Street, Hanover Square, London, who had at least more taste than Bishop Barrington, for he cared to possess the mediæval glass which the prelate thought only worthy of a ditch:—

"Sir,—This day I have sent you a Box full of old Stained and Painted Glass as you desired me to due which I hope it will sute your Purpos it his the best that I can get at Present. But I expet to Beatz to Peceals a great deale very sune as it his of now use to we and we Due it for the lead if you want eney more of the same sorts you may have what thear his, if it will pay for Taking out, as it his a Deal of Truble to what Beating it to Peceals his you will send me a line as sune as Posobl for we are goin to move ore glassing shop to a Nother Place and thin we to save a greatt Deale more of the like sort wich I ham your most Omble Servnt John Berry."

The original of this elegant letter, endorsed "Berry ye Glazier about beating the fine painted Glass Window at Sarum to pieces to save the Lead," is still extant, and was lately printed in the Proceedings of the Wiltshire Archaeological Society. — *The Saturday Review*.

THE DENSITY OF SNOW.—According to Signor G. Bignami Sormani, of Milan, the density of snow, and consequently the weight of it, which roofs, gasholders, etc., may have to carry, varies in a range of as much as eleven times the minimum. A cubic yard of snow from one snow-storm will sometimes weigh 814 pounds, while an equal bulk from another fall will only weigh 71 pounds. This indicates that any flat surface upon which snow may be drifted to the depth of only three feet may be called upon to sustain a weight of snow equal to a pressure of about $814 \div 9 = 90.5$ pounds per square foot; or it may only be loaded under like conditions to the extent of $71 \div 9 = 7.9$ pounds per square foot. The weight of a cubic foot of the densest snow recorded by Signor Bignami Sormani being 30.14 pounds, while a cubic foot of water weighs 62.5 pounds, it therefore appears that, under certain conditions, the density of snow may be almost half that of water. Snow of this character will, however, in all probability be little different from ice, and would be rarely met with in this country, at least in any serious quantity, except on the ground or very near it. If it were otherwise, it is certain that much more destruction than is at all usual would be the consequence of a thick fall of snow on exposed lofty surfaces. The lowest named weight from new-fallen snow, only 2.63 pounds per cubic foot, is abnormally light, being only about one twenty-fourth of the density of water. It is usually assumed that the density of snow is ordinarily about one-eighth that of water, and this allowance, therefore, falls well within the range of Signor Bignami Sormani's figures. — *Scientific News*.

LONG DISTANCE TELEPHONE SYSTEM OF DR. HERZ.—A new system of telephony, invented by Dr. Herz, is attracting a great deal of attention among electricians in Europe, on account of the surprising distances through which telephonic communication has been maintained by it. The first announcement of the invention in the papers of September last stated that conversation had been carried on through the cable connecting Brest and Penzance, a thing generally considered impossible, on account of the comparatively sluggish action of the electric current in submerged cables. The experiment proved sufficiently successful to encourage Dr. Herz to push forward his investigations, and, according to foreign advices, he has been rewarded by being enabled to carry on conversation through an actual distance of over 600 miles over circuits having no special adaptation to telephonic communication. Dr. Herz has apparently solved two difficult problems: that of increasing the amplitude of electrical vibrations, and of neutralizing currents foreign to the telephonic circuit. The first he accomplishes by a microphonic transmitter with multiple contacts, and a system of derived currents; the second by interrupting the line and interposing condensers or confusers. — *Scientific American*.

DAMMING THE NILE.—An English capitalist, Mr. Gaston, proposes to dam the Nile at the cataracts, and subject eight hundred thousand acres of land, which is now desert, to the influence of its fertilizing waters. This is a stupendous undertaking, but it is beyond a doubt that the present rapids are produced by the debris of ancient works of this description which are now strewn on the bed of the stream, and, from an engineering point of view, the work would be perfectly feasible. The inundation would then be under complete control, while the company which should carry out the work would be reimbursed by the lands allotted to it out of nearly a million acres which would now, for the first time, be brought under cultivation. It is said that the preliminary capital has already been raised. — *London Telegraph*.

FILTRATION BY SPONGY IRON.—Messrs. Easton & Anderson are testing the value of spongy iron upon a large scale in the filters of the water-works at Antwerp. The water is first allowed to pass through a mixture of iron and gravel covered with sand, when it passes into a second basin, the bottom of which is covered with sand. The experimental results have been more satisfactory than those from ordinary filters, and there are no indications of any necessity for renewing the iron which serves to oxidize the organic matters suspended in the water. — *Annales des Ponts et Chaussées*.

CARLYLE'S GIFT TO HARVARD.—Having with good reason, ever since my first appearance in literature, a variety of kind feelings, obligations, and regards toward New England, and, indeed, long before that, hearty good will, real and steady, which still continues, to America at large, and recognizing with gratitude how much of friendliness, of actually credible human love, I have had from that country, and what immensities of worth and capability I believe and partly know to be lodged, especially in the silent classes there, I have now, after due consultation as to the feasibilities and the excusabilities of it, decided to fulfil the fond notion that has been hovering in my mind these many years, and I do therefore hereby bequeath the books, whatever of them I could not borrow, but had to buy and gather; that is, in general, whatever of them are still here, which I used in writing *Cromwell* and *Friedrich*, and which shall be accurately searched for and parted from my other books, to the President and Fellows of Harvard College, City of Cambridge, State of Massachusetts, as a poor testimony of my respect for that *alma mater* of so many of my transatlantic friends, and a token of the feelings above indicated toward the great country of which Harvard is the chief school. In which sense I have reason to be confident that the Harvard authorities will please to accept this, my little bequest, and deal with it and order and use it as to their own good judgment and kind fidelity shall seem fittest. A certain symbolical value the bequest may have, but of intrinsic value, as a collection of old books, it can pretend to very little. If there should be doubt as to any books coming within the category of this bequest, my dear brother John, — if left behind me, as I always trust and hope, — who already knows about this Harvard matter, and who possesses a catalogue or list drawn up by me, of which the counterpart is in the possession of the Harvard authorities, will see it for me in all points accurately done in regard to this and to all else. In these final directions of mine I wish him to be regarded as my second self — my surviving self. — *Extract from his Will*.

FIRES ABROAD.—"The chief cities of Italy, France, and Germany also afford us some valuable lessons. In Florence, for example, and other towns, there prevails a system of building construction by which even the dwelling-houses of the commonest sort are practically fire-proof. It is the custom there to have no timber in the construction of the floors, but to build light arches of brick, only one and a half inches thick, and cover the same with an incombustible floor. The United States Consul there certifies that in thirty-four years not more than one building had been burned down. When a fire did occur, it usually originated in and was confined to the roof. In Paris, even in the most obscure streets, every part of a house is well constructed. The floors are all water-tight, and the plaster used in them is almost fire-proof, and the loss of life by fire is proportionately less in Paris than in London; besides, a well-devised building act is rigorously enforced. Throughout the cities and large towns in France the tendency of late has been to erect buildings practically fire-proof. Under the Civil Code the legal responsibilities of landlords and tenants have operated in this direction. According to Article 1733 of the Code, the tenant must answer for a fire unless he can prove that it happened by accident or superior force, or by fault of construction, or that the fire has communicated from an adjoining house. By Article 1383 every one is responsible for the damage he has caused, not only by his own act, but by his imprudence or negligence. By the terms of this and similar articles, the landlord or tenant from whose dwelling the fire is communicated is liable to indemnify his neighbors who may have suffered loss by the extension of the fire. In Berlin it is well known that there is a strict building act so rigidly enforced as to form a great protection from fire. It is worthy of remark that in the fire-brigade there the *fire-masters* and other principal officers are generally architects. Another noteworthy point is that the Berlin police inquire judiciously into every case of fire, whether there be any suspicion of fraud or not, and on the police report the Attorney-General decides whether or not to prosecute before a criminal court."

MOULDED CONCRETE SLAG.—The London *Engineer* says that the Airedale Hematite Iron Company, which has introduced this slag as a substitute for stone, has erected new offices at its works in Hunslet, Leeds, in which all the door and window facings, and the ornamental work, are composed of the slag from its own furnaces. A new feature of such an elevation is a display of imitation carved bricks, in various colors, made of the slag, the cost of which is said to be fifty per cent less than the real article of clay, which hitherto has been so much in fashion. The company also supplies the Midland and North-eastern Railroad Companies with slag concrete flags, ready prepared for use, in the laying down of platforms at railroad stations. The Staveley Company has for a long time used slag lumps for building purposes, much of the slowly-cooled massive slag having the appearance of basalt and other rocks.

RAISING A SUNKEN IRONCLAD.—After three months' work one of the most important operations of the kind on record has resulted in floating the ironclad *Richelieu* which took fire on December 29 and was scuttled in Toulon harbor. The vessel was at first lightened by the removal of the iron plating of the turrets, all openings were then closed, the water was pumped out and air was pumped in by means of immense tubes. The re-floating proper then began. Two pumps were placed on the *Sibylle* and a third on the *Tourville* capable of pumping out eight hundred thousand litres an hour. Tackle was fastened to the masts and turrets of the *Richelieu* and connected with the *Andromaque*, so as to equalize the traction; three hundred and sixty barrels, each containing one thousand litres of air, kept the vessel in trim, and on the pumps being set to work the vessel gradually rose. — *New York Tribune*.

A LONG SPAN OF WIRE.—The longest span of telegraph wire in the world is said to be stretched across the Kistnah River from hill to hill, each hill being twelve hundred feet high, between Bezorah and Sectanagrum, in India. The span is a little over six thousand feet in length. The only mechanical contrivance used in stretching this cable across the river was a common windlass.

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 five cents.]

240,217. COMBINED ANVIL AND VISE.—Joseph Allen, Palmyra, N. Y.
240,223. HAND-DRILL.—George D. Belcher, Springfield, Mass.
240,229. HATCHWAY-GUARD.—Victor H. Buschman, Baltimore, Md.
240,245. VENTILATOR.—Christian A. Fredericks, Brooklyn, N. Y.
240,256. MANUFACTURE OF ORNAMENTAL WOOD.—Frederick Koskul, Grand Rapids, Mich.
240,260. BOLT-FASTENER.—Edward Leslie, Orangeville, Ontario, Canada.
240,274. SHUTTER-FASTENER.—Benjamin D. Salisbury, Boston, and Henry A. Wilbur, Somerville, Mass.
240,313. CABINET BATH-TUB.—Franklin H. Fickett, Chicago, Ill.
240,316. HAND-SAWING MACHINE.—William W. Giles, Chicago, Ill.
240,339. SWINGING SAW.—William F. Rothenburg, Lincoln, Ill.
240,397. LATCH.—Rudolph Ehmer, New York, N. Y.
240,403. LATCH.—W. Robert Geissler, Chicago, Ill.
240,457. BRICK-MACHINE.—Henry D. Phillips, Baltimore, Md.
240,458. BORING-MACHINE.—Salmon W. Putnam, Fitchburg, Mass.
240,490. FLOORING-CLAMP.—Orville O. Woodruff, Killingworth, Conn.
240,491. SASH-CORD FASTENER.—Hezekiah R. Young, Meriden, Conn.
9,675. (Re-issue). SLIDING-DOOR.—George R. Kidder, Armada, Mich.
9,679. (Re-issue). MODE OF HANGING AND FASTENING DOORS.—Chas. N. Earl, Los Angeles, Cal.

SUMMARY OF THE WEEK.

Baltimore.

BUILDING PERMITS.—Forty-three building permits have been issued since the last report, the following only being of sufficient importance to be mentioned:—

Messrs. Samuel and Geo. D. Appold, 8 three-story brick buildings, Calvert St., between Lanvale and Townsend Sts.
Bernard Frieseman, 2 three-story brick buildings, William St., between West and Cross Sts.
Chas. Freusch, rebuilt three-story brick warehouse, Thames St., near Broadway, 33' x 135'.
West End Baptist Mission, one-story brick church, n e cor. Baltimore St. and Fulton Ave.
J. M. Cone, 5 three-story brick buildings, Division St., cor. Bloom St.
Daniel Eldman, 3 three-story brick buildings, Pennsylvania Ave., between Baker and Chapel Sts.
J. M. Gerkins, three-story brick building, Boyd St., between Poppleton and Anny Sts.
J. Schrufer, three-story brick building, Forrest St., between Eager and Truxton Sts.
J. W. and J. Q. McAfee, 2 three-story brick buildings, Biddle St., near Aisquith St.
James McLane, 2 three-story brick buildings, Granby St., between Gough St. and Central Ave.
P. Hanson Hiss, five-story brick warehouse, n e cor. Dark Lane and Church Alley.

HOUSES.—Mr. E. G. Lind is preparing drawings for the following buildings:—

Four three-story houses on Maryland Ave., for Messrs. F. Murdoch and John E. Semmes, 18' x 60', of brick and stone; cost, about \$4,000 each.
Nine three-story houses on Lanvale St., for Mr. J. R. Partridge, 16' and 18' x 70', of brick and marble; cost, about \$4,000 each.
Eight three-story dwellings, on Lanvale St., for Mr. H. E. Baltzell, 18' and 20' x 50', of brick with Ohio-stone finish; cost, about \$4,500 each.

FIRE-ESCAPES.—Mr. John S. Hogg, Inspector of Public Buildings, has decided to place iron stairways on the outside of such school-buildings as are not provided with the proper means of egress in case of fire or accident, the City Council having appropriated \$10,000 for that purpose.

HOSPITAL.—A communication has been sent to the City Council asking for an appropriation to make the necessary repairs to the Marine Hospital buildings; but it has been decided to erect new buildings on the site of the new Quarantine at Hawkins Point, and the plans are now being prepared.

Boston.

BUILDING PERMITS.—*Brick.*—Harrison Ave., cor. East Lenox St., for Haywood P. & Thomas Hall, tenement-house, 38' x 170', four stories.

Wood.—Centre St., cor. Weld Ave., for Eben Murray, 24' x 32', two stories; William Keefe, builder.

Fuller St., near Milton Ave., for Chas. B. Fox, 2 stables; Henry P. Oakman, builder.

Savin St., near Tepalo St., for William Barton, dwell., 22' x 31' 6"; Wm. Barton, builder.

No. 426 Meridian St., for David H. Blaney, dwell., 22' x 32', two stories; S. D. Kenney, builder.

Hartford St., near Sargent St., for Alonzo P. Clifford, 25' x 31', two stories; Alonzo P. Clifford, builder.

No. 112 Norfolk Ave., for Pearson Cordage Co., store-house, 25' x 60'; Wm. Morse, builder.

Market St., near Winship Ave., for Butchers' Slaughtering and Smelting Association, store-house, 36' x 36', three stories; Kelley & McKinnon, builders.
Trull St., near Hancock St., for Franklin King, dwell., 30' x 35', two stories; Edw. McKechnie, builder.

Warren St., cor. Gaston St., for Thomas F. Furber, dwell., 42' x 44', two stories; M. Shapleigh, builder.

Hancock St., near Glendale Ave., for S. Parkman Dexter, dwell., 28' x 33', two stories; Edw. McKechnie, builder.

Hancock St., near Glendale Ave., for S. Parkman Dexter, dwell., 32' x 35', two stories; Edw. McKechnie, builder.

Allston St., near Brighton Ave., for John W. Hollis, dwell., 24' x 32', two stories; Jacob W. Berry, builder.

WAGES.—Plasterers' wages have advanced from \$2.67, last year's price, to \$3 a day at present; roofers range from \$2 to \$3.50, composition roofers receiving about \$2.50.

Y. M. C. A. BUILDING.—The new building fund of the Young Men's Christian Association now amounts to over \$145,632.

Brooklyn.

BUILDING PERMITS.—*Eighth Ave.*, w s 75' n Sackett St., three-story brownstone dwell.; cost, \$7,500; owner, Jane Beveridge, 1222 Fulton St.; architect, A. Hill.

Cumberland St., No. 192, e s 395' n De Kalb Ave., four-story Connecticut brownstone dwell.; owner, Chester M. Foster, 320 Cumberland St.; architect, M. J. Morrill; builder, J. Lock.

Hooper St., s s 100' e Bedford Ave., three-story brownstone dwell.; cost, \$5,000; owner, E. M. Rawson, 5 Eighth St.; architect, G. H. Girard; builders, J. H. Whittier and D. W. L. Moore.

Sackett St., n w cor. Sixth Ave., 2 three-story brownstone dwell.; cost, \$8,000 and \$7,000; owner, Isabella Gordon, 2 Willow St.; architect, R. Dixon; builder, J. Gordon.

New York Ave., n w cor. Bergen St., three-story brick dwell.; cost, about \$18,000; owner, Jas. D. Carpenter, Bergen St.; architect, W. B. Ditmars; builders, J. Ashfield & Son and C. L. Johnson.

Gates Ave., n s 125' e Marey Ave., 5 four-story brownstone French flats; owner and builder, Edwin G. Lewis; architect, D. T. Atwood.

De Kalb Ave., s s 250' e Lewis Ave., 2 three-story brick dwell.; owner, E. L. Atwood, 980 De Kalb Ave.; architect, D. Atwood.

President St., s s, between Smith and Hoyt Sts., 6 three-story brownstone dwell.; owner and builder, C. Bedell, 357 Smith St.; architect, The Pearson.

Halsey St., s s, 80' e Arlington Place, 4 three-story brownstone dwell.; cost, each \$6,000; owner and builder, H. Phillips; architect, J. D. Reynolds.

Lee Ave., s w cor. Heves St., 3 three-story brownstone dwell.; cost, each \$6,000; owner, P. F. O'Brien.

Hancock St., n s 350' e Bedford Ave., 6 three-story brownstone dwell.; cost, each \$7,000; owner, S. E. C. Russell, 558 Grand Ave.

Fulton St., No. 861, three-story brick store and dwell.; cost, \$4,000; owner, A. S. Robbins; architect, J. Platte; masons, J. De Mott & Son; carpenter, J. Platte.

ALTERATIONS.—*Columbia Heights*, No. 202, six-story brick extension; cost, \$5,000; owner, R. T. Bush, on premises; builders, H. O'Brien and W. P. Underhill.

Clinton Ave., w s, Vanderbilt Ave., e s, between Atlantic and Fulton Aves., 2 one-story brick extensions; cost, \$4,000; owner, St. Luke's Church; architect, F. C. Withers; builders, J. Locke and W. V. Kae.

HOUSES.—For Mr. T. B. Wilkinson, on Herkimer St., a house to cost about \$18,000, of brick and terra-cotta, is to be built from designs of Mr. J. C. Cady, of New York.

Chicago.

BUILDING PERMITS.—D. Gradt, two-story brick dwell., 22' x 54', 2 Lisle St.; cost, \$3,000.

A. Orlop, two-story brick dwell., 16' 6" x 60', 3148 Groveland Park Ave.; cost, \$3,000.

U. P. Smith, two-story brick dwell., 50' x 62', Lake Park Ave., near Thirty-third St.; cost, \$18,000.

P. Buttrock, two-story brick dwell., 21' x 44', 360 North Paulina St.; cost, \$1,600.

J. F. Davis, three-story brick store and dwell., 60' x 70', 860 West Madison St.; cost, \$10,000.

D. Sauer, three-story brick dwell., 27' x 72', La Salle St., cor. Chicago Ave.; cost, \$9,000.

L. Koltz, three-story brick dwell., 24' x 72', 540 Wells St.; cost, \$7,800.

E. Lange, two-story brick store and dwell., 25' x 68', 3818 State St.; cost, \$3,600.

E. J. Lehman, one-story brick addition, 84' x 110', rear of 199 to 209 Dearborn St.; cost, \$6,000.

Cincinnati.

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

Rochus Rott, two-story frame, n e cor. Court and McLean Sts.; cost, \$3,100.

Henry Hanna, four-story brick, s w cor. Betts St. and Central Ave.; cost, \$12,000.

Henry Hanna, three-story brick, Main St., between Seventh and Eighth Sts.; cost, \$6,000.

Hatherall & Park, 2 two-story brick, Liberty St. and Western Ave.; cost, \$4,000.

Chas. H. Dunhoff, two-story brick dwell.; cost, \$6,000.

Henry Powell, three-story brick dwell., Mt. Auburn; cost, \$10,000.

Cuvier Club-House, three-story pressed brick, on Longworth St., between Vine and Race Sts.; cost, \$25,000.

Eleven permits for repairs; cost, \$2,925.

New York.

BUILDING PERMITS.—*One Hundred and Thirty-third St.*, n s 225' e Eighth Ave., 6 three-story brownstone dwell.; cost, each \$9,000; owners, Sigler & Bradley, 550 First Ave.; architect, Geo. H. Sigler; builder, H. Sigler.

Fifty-eighth St., Nos. 430 and 432 e, 2 five-story brownstone tenements; cost, each \$16,000; owners

and builders, Moran & Armstrong, 439 East Fifty-seventh St.

Houston St., No. 106 w, cor. Thompson St., five-story brick and brownstone store and tenement; cost, \$10,000; owner, Henry Thole, 55 Charles St.; architect, Wm. E. Waring.

Fifty-eighth St., n s 225' e Ninth Ave., 2 five-story brownstone tenements; cost, each \$26,000; owner, F. Maginn, 30 West Sixtieth St.; architect, W. H. Cauvet.

Leonard St., n e cor. West Broadway, six-story iron store; cost, \$125,000; owner, The Central Real Estate Association, 346 Broadway; architect, J. M. Slade; builders, W. G. Slade and J. Sniffin.

Twenty-ninth St., No. 156 e, 2 two-story brick stores and dwell.; cost, each \$7,750; owner, Wm. Hawkins, 692 Broadway; architect, J. M. Dunn; builders, Riker & Barber.

Spring St., s e cor. Greene St., six-story brick store; owner, Wyllie Blackstone, 152 Broadway; architect, H. Fernbach.

Forty-fourth St., Nos. 226 and 228 w, seven-story brick and brownstone tenement; cost, \$60,000; owner, Emilio Buch, 222 West Forty-sixth St.; architect, Jas. Stroud; builders, Wm. Wellington and Wm. Bedell.

Grand St., No. 106, six-story brick and stone warehouse; cost, \$50,000; owner, Stephen T. Hopkins, 104 East Forty-fifth St.; architect, C. C. Haight; builder, D. H. King, Jr.

Grand St., No. 500, four-story brick tenement; cost, \$8,000; owner, George Raab, 804 Lexington Ave.; architect, Wm. Graul.

Grand St., No. 502, cor. Sheriff St., four-story brick tenement; cost, \$9,000; owner, George Raab, 804 Lexington Ave.; architect, Wm. Graul.

Fifth Ave., 75' 5" n Sixty-sixth St., four-story brownstone dwell.; cost, \$40,000; owners, A. J. Johnson and D. & J. Jardine, 1282 Broadway; architects, D. & J. Jardine.

Duane St., n e cor. Caroline St., six-story brick store-house; cost, \$21,000; owner, A. K. Ely, 103 Gold St.; architect, John McIntyre; builder, W. J. O'Connor.

First Ave., s e cor. Eighty-Fifth St., 2 four-story brownstone stores and tenements; cost, each \$17,000; owner, Henry Weiler, 436 East Tenth St.; architect, Jno. Brandt.

Broadway, n e cor. Houston St., six-story iron store; cost, \$275,000; owners, F. Mayer and S. Levy, 30 White St. and 472 Broadway; architects, H. J. Schwarzmann & Co.; builder, J. Sniffin.

First Ave., n w cor. Thirty-eighth St., five-story brick factory; cost, \$40,000; owner, Geo. Ehret, Fourth Ave. and Ninety-fourth St.; architects, H. J. Schwarzmann & Co.; builders, J. & L. Weber and H. Schiffer.

Thirty-eighth St., n s 65' w First Ave., 2 five-story brick stores and tenements; cost, each \$10,000; owner, Geo. Ehret, Fourth Ave. and Ninety-fourth St.; architects, H. J. Schwarzmann & Co.; builders, J. & L. Weber and H. Schiffer.

Leonard St., No. 128, five-story brick tenement; cost, \$15,000; owner, Lawrence O'Brien, 83 Barclay St.; architect, Wm. Kuhles; builder, J. L. Murtha.

Beekman St., s w cor. Nassau St., nine-story brick and granite and fire-stone office-building; cost, \$40,000; owner, Eugene Kelly, 33 West Fifty-first St.; architects, Silliman & Farnsworth; builder, Richard Deeves.

Twenty-second St., s s 200' w Seventh Ave., seven-story brick and stone apartment-house; cost, about \$550,000; owner, J. G. Hyatt, 356 West Twenty-third St.; architect, H. J. Dudley.

Sixtieth St., s s 250' w Broadway, 2 five or six story brick tenements; cost, \$25,000 and \$65,000; owner, Margaret Crawford, Wakefield, N. Y.; architect, A. B. Ogden.

Washington St., Nos. 674 and 676, five-story brick refrigerating building; cost, \$50,000; owners, Beadleston & Woerz, 295 West Tenth St.; architect, A. Pfund.

Eighteenth St., Nos. 334 and 338 w, 2 five-story brownstone tenements; cost, each \$20,000; owner, Walter F. Shibley, 20 Nassau St.; architect, W. H. Hume.

One Hundred and Thirty-fourth St., n s 126' e Alexander Ave., three-story brick dwell., cost, \$4,000; owner, James Maguire, Room 18, Cooper Institute; architect, J. M. Dunn.

Pearl St., No. 369, cor. Hague St., six-story iron and brick factory; cost, \$10,000; owner, Edward B. Cobb, Tarrytown; architect, Mr. Ostrander; builder, W. A. Carsey.

Lexington Ave., Nos. 436 and 438, five-story brick and brownstone tenements; cost, \$60,000; owner, Michael O'Reilly, 110 East Forty-fifth St.; architect, C. O'Reilly; builders, O'Reilly Bros.

Fifty-ninth St., s s 325' w Sixth Ave., seven-story brick and Bedford-stone tenement; cost, \$80,000; owners, Sarah J. Nadal and others, 152 West Forty-ninth St.; architects, Hubert, Pirson & Co.

Ace. A., n w cor. One Hundred and Twenty-second St., three-story brownstone dwell.; cost, \$10,000; owner, John H. Gault, 210 West Fifty-third St.; architect, J. H. Valentine; builder, C. Johnson.

Ace. A., w s 17' 10" n One Hundred and Twenty-second St., 3 three-story brownstone dwell.; cost, each \$9,500; owner, John H. Gault, 210 West Fifty-third St.; architect, J. H. Valentine; builder, C. Johnson.

Ace. A., w s 65' 10" n One Hundred and Twenty-second St., 4 three-story brownstone dwell.; cost, each \$9,500; owner, John H. Gault, 210 West Fifty-third St.; architect, J. H. Valentine; builder, C. Johnson.

One Hundred and Twenty-second St., n s 68' 10" w Ave. A., 2 three-story brownstone dwell.; cost, each \$9,500; owner, John H. Gault, 210 West Fifty-third St.; architect, J. H. Valentine; builder, C. Johnson.

One Hundred and Eleventh St., s s 100' e Lexington Ave., 3 three-story brick dwell.; cost, each \$9,000; owner, Ann M. Jenny, 220 East One Hundred and Fourth St.; architect, J. H. Valentine.

One Hundred and Thirtieth St., n s 125' e Third Ave., 3 four-story brick flats; cost, each \$9,000; owner, Ann M. Jenny, 220 East One Hundred and Fourth St.; architect, J. H. Valentine.

(Continued on next page.)

Publishers' Department.

The American Architect
and Building News.

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WANTS: Architectural Draughtsman. — Managing
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favor on the Publishers by mentioning "The
American Architect and Building News" when
sending for circulars or corresponding with
parties advertising in these columns.

WALL-PAPER DESIGNS.

The firm of Warren, Fuller & Co., New York,
offer five prizes, amounting to \$2,200, for the best
designs for wall-papers and a ceiling. The exhibi-
tion will be held and the awards will be made at
the American Art Gallery in October. The money
is divided as follows: First prize, \$1,000; second
prize, \$500; third prize, \$300; fourth prize, \$200.
all for wall-paper designs; and a special prize of
\$200 for a design for a ceiling decoration.

BUILDING INTELLIGENCE.

Seventieth St., s s, 105' w First Ave., 2 four-st'y
brownstone tenements; cost, each \$17,000; owner,
A. W. Fraser, One Hundred and Forty-fourth St.,
near Third Ave.; architect, W. F. Burroughs.

East Houston St., Nos. 197 to 201, 2 five-st'y brick
stores and tenements; cost, each \$9,000; owner,
Helen S. Folson, 22 Ave. A; architect, Julius Boe-
keil.

Fourth Ave., n e cor. Eighty-eighth St., four-st'y
brick tenement; cost, \$6,000; owner, John Prigge,
Forty-ninth St. and Sixth Ave.; architect, M. C.
Merritt.

ALTERATIONS. — Leonard St., No. 116, three-st'y brick
extension, etc.; cost, \$7,500; owner, City New York;
architects, N. Le Brun & Son.

Twenty-ninth St., No. 165 w, one-st'y brick exten-
sion, etc.; cost, \$10,000; owner, City New York; ar-
chitects, N. Le Brun & Son.

Eighteenth St., No. 327 w, raised one story, also
four-st'y brick extension, altered for apartment-
house; cost, \$6,000; owner, A. Neil, 160 Fulton St.;
architect, J. I. Howard.

Madison Ave., No. 300, three-st'y brick extension;
cost, \$10,000; owner, Jas. M. Harishorne, on prem-
ises; architects, D. & J. Jardine.

Fifty-first St., n s, 110' w Eleventh Ave., rear, two-
st'y brick extension; cost, \$7,000; owner, D. F.
Deikes, 603 West Fifty-second St.; architect, W. H.
Cauvel.

Fifth Ave., No. 511, rear Forty-third St., two-st'y
brick extension and bay-windows on rear; cost, \$15,-
000; owner, R. T. Wilson, 845 Fifth Ave.; architect,
E. H. Kendall; builder, M. Elditz.

Fifty-seventh St., No. 10 w, two-st'y brick exten-
sion, interior alterations, etc.; cost, \$5,000; owner,
Anthony Mowbray, 104 East Eighty-fifth St.; archi-
tects, Lamb & Wheeler; builder, J. J. Brown.

Mott Ave. and One Hundred and Sixty-fifth St.,
three-st'y stone extension; cost, about \$8,000; owner,
Eliz. L. Bailey; architect, W. H. Ramsar; builders,
The Inmates of the Home.

Seventh Ave., s w cor. Fifteenth St., raised one-
half story, also four-st'y brick extension, interior
and front alterations, iron-work, etc.; cost, \$7,500;
owner, G. Buschmeyer, 729 Second Ave.; architect,
W. José.

Washington Place, No. 22, five-st'y brick extension,
interior improvements; cost, \$12,000; owner, Lucius
Tuckerman, 18 Wall St.; architects, McKim, Mead
& White; builders, F. Lyon and P. K. Reed.

Broadway, Nos. 902 to 908, and Nos. 17 and 19 East
Twentieth St., altered for hotel; cost, \$10,000; lessee,
E. L. Merrifield, 902 Broadway; builder, E. Smith.

St. Mark's Place, No. 48, raised one story; cost,
\$5,000; owner, Henry Barden, 226 East Forty-first
St.; architect, Chas. Sturtzkoher.

Broad St., No. 52, and No. 50 New St., new brick
front and interior alterations for offices; cost, \$24,-
000; owners, B. C. Wetmore & Bros., 19 Nassau St.;
architect, W. A. Mundell; builder, Isaac B. Jacobs.

Irring Place, No. 43, one-st'y brick extension, 24' x
28' 6", etc.; cost, \$7,000; lessee, W. G. Schenck,
lessee Westminster Hotel; builders, N. H. Andrus
and A. C. Hoe & Co.

THEATRE. — On the site of the "Aquarium," cor.
Broadway and Thirty-fifth St., a new theatre is to
be built for Mr. Chanfrau.

WANTED.

ARCHITECTURAL DRAUGHTSMAN. — One hav-
ing practical experience with foundations, and
thoroughly capable of taking charge of erection. Ad-
dress, with reference and terms, "WAREHOUSE," care
of American Architect. 280

WANTED.

MANAGING DRAUGHTSMAN. — To Architects:
A young architect, at present practising, wish-
ing to change his place of residence, would like to
correspond with some established member of the pro-
fession who may wish a managing draughtsman in his
office. Address, until June 15, 1881, S. P. K., Office
American Architect, Boston. 282

WANTED.

DRAUGHTSMEN. — Two competent draughtsmen
and designers. One to be versed in interior de-
signing. Address, stating terms, experience, reference,
etc., GEO. J. METZGER, Architect, 402 Main Street,
Buffalo, N. Y. 279

WANTED.

PARTNER. — A thorough draughtsman and designer,
of eight years' experience, desires to correspond
with an experienced architect in good standing, with
a view to partnership. Address PARTNER, Architect
and Building News. 281

WANTED.

COMMUNICATIONS from parties in towns of the
South and West, having a population of 10,000
and over, who keep themselves posted on build-
ing operations in their respective towns. Address-
stating present occupation, "Opportunity," in care of
the Editors of the AMERICAN ARCHITECT, 211 Tre-
mont St., Boston, Mass.

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BUILDING INTELLIGENCE.

PUBLIC BUILDING. — At the cor. of Fifty-third St.
and Madison Ave., a building, 27' x 100', of brick
and terra cotta, is to be erected for Mr. T. Ambrose,
at a cost of \$8,000, from designs of Mr. J. C. Cady.

MARKET. — Manhattan Market is to be rebuilt.
ADDITION. — The residence of Mr. C. R. Robert, No. 1
Washington Square, is undergoing extensive im-
provements, to cost about \$30,000, from designs of
Mr. H. E. Ficken. The interior finish, particularly
the ceilings, will be very elaborate.

Philadelphia.

BUILDING PERMITS. — Cor. Seventh and Dickinson
Sts., one-st'y school-house, 25' x 34'; P. H. Somerset,
contractor.

Twentieth St., n Oxford St., three-st'y store and
dwelling, 16' x 30'; W. Kutz, contractor.

Twenty-seventh St., n Jefferson St., three-st'y
dwelling, 18' x 52'; E. Weadley, owner.

Cor. Sixteenth and Becket Sts., 4 three-st'y dwellings,
16' x 68'; G. R. Creeley, owner.

Swanson St., s Catharine St., two-st'y store-house,
34' x 60'; Thos. Tunis, owner.

Cor. Nineteenth and Oxford Sts., two-st'y church,
76' x 90'; W. Sterley.

Twenty-third St., n Spring Garden St., three-st'y
dwelling, 14' x 56'; D. C. Cleaver.

Pennell Ave., between Thirty-second and Thirty-
third Sts., 2 three-st'y dwellings, 17' x 55'; W. S. Kim-
ball, owner.

Baring St., e Thirty-fourth St., 2 three-st'y dwellings,
34' x 60'; J. E. & A. L. Pennock.

Delaware Ave., n Laurel St., three-st'y factory and
office, 50' x 60'; J. W. Paxson & Co., owners.

Frankland Road, n Hart Lane, three-st'y dwelling,
18' x 60'; Jas. McCartney, contractor.

Kirkbride St., s Ash St., 2 two-st'y dwellings, 16' x
30'; Crosta & Plouher, contractors.

John St., w Cresson St., three-st'y dwelling, 18' x 50';
Staley & Davis, contractors.

Broad and Spruce Sts., one-st'y church-building,
63' x 115'; A. Catanach, contractor.

Second St., n Greenwich St., 2 two-st'y dwellings, 16'
x 28'; Chas. H. Clark, owner.

Carlton St., No. 1606, three-st'y dwelling, 14' x 30'; L.
Healy.

Bainbridge St., No. 1345, three-st'y dwelling, 18' x
42'; M. Carey, owner.

Dunton St., No. 1126, three-st'y dwelling, 18' x 32';
W. Culbertson, owner.

Collins St., n Huntington St., three-st'y dwelling, 18'
x 110'; W. Steele, contractor.

Sergeant St., between Emerald and Coral Sts., two-
st'y dwelling, 14' x 32'; Jno. Cunningham, contractor.

Jasper St., n Somerset St., two-st'y dwelling and
stable, 18' x 46'; Jno. Cunningham, contractor.

Cor. Ninth and Spruce Sts., three-st'y building, 42'
x 94'; B. Ketcham & Son, contractors.

Cor. Eighteenth and Rittenhouse Sts., three-st'y
dwelling, 50' x 70'; F. Furness.

Cor. Forty-first and Kingsessing Sts., three-st'y
dwelling, 21' x 30'; J. Y. Fine.

Seventh St., s Norris St., three-st'y dwelling, 20' x 64';
Jno. Enoch, contractor.

Shackamaxon St., between Girard Ave. and Wilkey
St., three-st'y dwelling, 18' x 68'; Jno. S. Gill, con-
tractor.

WANTED.

DRAUGHTSMAN. — A competent Architectural
Draughtsman; must be versed in general office
work and perspective. Address, stating terms, ex-
perience, reference, etc., ARCHITECT, P. O. Box No.
145, Allegheny, Pa. 279

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BUILDING INTELLIGENCE.

South Second St., No. 1640, three-st'y store and
dwelling, 13' x 24'; J. M. Lutz, owner.

Cor. Forty-second and Locust Sts., three-st'y brick
building and one-st'y library, 32' x 40'; S. K. Hop-
kins, contractor.

Winfield Place, e Eighth St., five-st'y building, 54'
x 69'; Yarnall & Cooper, contractors.

Tilton St., n Lehigh Ave., three-st'y warehouse,
30' x 76'; J. Jeffers & Co., owners.

Dauphin St., between Coral and Amber Sts., three-
st'y dwelling, 16' x 43'; Geo. Kessler, contractor.

Cor. Coral and Dauphin Sts., three-st'y factory,
24' x 57'; Geo. Kessler, contractor.

Cor. Dauphin and American Sts., two-st'y store,
16' x 60'; H. Curtis, owner.

Patheorp St., n Cumberland St., two-st'y ware-
house, 16' x 30'; F. X. Berkle, contractor.

Locust St., No. 1624, three-st'y dwelling, 35' x 60'; J.
H. Erickson, contractor.

Pastorius and Osceola Sts., four-st'y warehouse,
16' x 60'; Jno. Cunningham, contractor.

Cor. Fourth and Greenwich Sts., three-st'y store
and dwelling, 16' x 62'; H. W. Maloy, contractor.

St. Louis.

BUILDING PERMITS. — Fifty-five permits have been
issued since our last report, 11 of which are for
frame structures of slight importance. Of the rest,
those worth \$2,500 and over are as follows:—

OWNERS' NAME.	USE.	W	L	Cost.
C. & H. L. Nerderinghaus,	Store,	3	3	\$6,000
W. A. Hargadino,	Dwell.,	3	10	8,000
J. H. Lightner,	Dwell.,	3	10	8,000
J. W. Noble,	Dwell.,	3	11	7,000
J. W. Noble,	Dwell.,	3	11	6,500
J. W. Noble,	Dwell.,	3	11	6,500
P. Wagner,	Wagon factory	2	4	4,500
J. Nerhaus,	Store & dwell.,	2	4	4,000
H. B. Turner,	Store & dwell.,	3	9	6,900
Anheuser Burch Brew. Ass.	Refrig.-house,	3	3	20,000
Chas. Ehlermann & Co.,	Malt-house & Elevator,	4	5	20,000
Eliza A. Wilson,	Dwell.,	2	14	10,000
H. Edler,	Store,	1	5	5,000
Boehmer & Straughoefer,	Store,	3	6	8,000
Anthony & Kuhn,	Warehouse,	2	2	4,000
Mrs. E. Ewing,	Dwell.,	2	6	3,500

Washington, D. C.

BUILDING PERMITS. — Charles E. Foster, three-st'y
brick dwelling, 25' x 65', Rhode Island Ave., between
Ninth and Tenth Sts., n w; cost, \$6,500.

Henry Franc, 2 three-st'y brick dwellings, 15' x 40',
Massachusetts Ave., between Fourth and Fifth Sts.,
n w; cost, \$3,000.

Mathew Kuppert, three-st'y brick dwelling, 20' x 61',
New York Ave. and Seventh St., n w; cost, \$3,000.

Col. Roger Jones, three-st'y brick dwelling, 24' x 50',
K St., between Sixteenth and Seventeenth Sts., n w;
cost, \$5,000.

Gen. A. C. Myers, three-st'y brick dwelling, 24' x 50',
K St., between Sixteenth and Seventeenth Sts.,
n w; cost, \$10,000.

(Continued on next page.)