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THE *Springfield Republican* calls attention to a matter which is much more serious than is generally supposed. In thousands of tenement-houses in that city, as it says, the water does not rise above the second or third story, and cannot be drawn up by ordinary pumps, and the consequence is necessarily seen in all kinds of filth and discomfort in the unwashed domiciles. In most of the other large cities of the country, and particularly in New York, the same evil is experienced in a greater or less degree. The *Springfield Republican* proposes as a remedy for it that owners or landlords should be "constrained through the force of public opinion," to put tanks on the roofs of such houses, to be filled by gas-engines in the cellars, or to put similar tanks in the cellars to be filled from the service-pipes at night, and used to pump water from during the daytime. The idea that the proprietors of the meanest class of tenement-houses will be moved by public opinion alone to put tanks on the roofs of their houses, or to do anything else that costs money, is one which indicates a very limited acquaintance with those persons; and we should be inclined to amend the suggestion by proposing that the laws should strictly forbid the occupation for tenements of any story in any building, in cities, not provided with a regular and sufficient supply of water, either from service-pipes, tanks or pumps. If we are not mistaken, such a measure is to a certain extent enforced in some of our large towns, and it would give but trifling inconvenience, in comparison with the advantages to be gained, to apply it in all.

A FEW statistics quoted by Sir Joseph Bazalgette in his inaugural discourse as President of the Institution of Civil Engineers give a singular idea of the comparative distribution of population in the two greatest cities of Europe. London, which is now certainly the largest city that has ever existed in the world, has about four millions of inhabitants, occupying five hundred thousand houses, which are scattered over an area of one hundred and seventeen square miles. Paris, which has now two million, two hundred and forty thousand inhabitants, packs them all into seventy-seven thousand houses, which occupy an area of thirty square miles. The number of persons to each house is thus in London about eight, while in Paris thirty persons, on an average, dwell under each roof. In the latter city one hundred and sixteen people live on each acre of ground, while the same extent of territory in London contains only fifty-three inhabitants. In consequence, probably, of the greater space around the houses in the newer quarters of London, the city is a remarkably healthy one, the annual death-rate having steadily diminished, since 1870, from twenty-four and four-tenths to the thousand to twenty-one and four-tenths, which is the most favorable rate shown in any large town of the world.

WE gather from the "Jurisprudence" column of *Le Génie Civil* an account of two cases which have a certain interest. The first of these relates to the responsibility of an employer for an accident to one of his workmen. The business

of his establishment was the manufacture of some metallic product, the finishing of which occasioned the dispersion through the air of sharp particles of metal. To save the eyes from injury by these sharp particles, spectacles were provided, to be worn by the workmen, but the latter, finding them unpleasant to wear, frequently took them off and laid them aside. One of the men, while working thus unprotected, was struck in the eye by a bit of cast-iron, and partially lost his sight in consequence. He brought suit against his employer for damages, but, although responsibilities of this kind are very strictly regarded in France, the court of appeal decided that in supplying spectacles for his men, even though they might be inconvenient and imperfect, the manufacturer had satisfied the obligation of reasonable vigilance imposed upon him; and while the wounded man had not exposed himself wantonly to danger, his employer had certainly not placed him in a position of unusual risk, and the occurrence should properly be regarded as a pure accident, involving no responsibility on the part of any one.

THE account of the second case ought to prove gratifying to those persons who, like the editor of *Truth*, cannot conceive of a man's being placed in a position to steal money from his employer without taking advantage of it. In this case, which is very briefly stated, an architect seems to have claimed the usual commission on the cost of works executed under his care, and to have been met with the answer that the commission should be calculated, not on the actual cost of the works, but on his own estimate of the probable cost, which was presumably somewhat less. A curious counter-claim was also set up to the effect that certain sums, alleged to have been paid to the architect by the builder, ought to be deducted from the usual commission, on the ground, we suppose, that the cost of such surreptitious transactions must in the end come out of the owner. In regard to the first claim of the defence, that an architect's fees should be calculated on his own approximate estimates, rather than on the actual cost, the court decided without hesitation that the usual five per cent commission must be reckoned on the total cost of the work comprehended under the various contracts. As to the other claim, that the commission due from the owner should be diminished by the amount of bribes said to have been paid to the architect by the contractor, the court held that however objectionable such a transaction between architect and contractor might be, a proprietor who knew of it could not take advantage of it to obtain a reduction of the price which he was bound to pay the architect for his services.

ANOTHER case of responsibility, also decided in a French court, was that of a mining company, from which damages were demanded by the representatives of certain workmen who were killed through the explosion of a boiler used in the iron manufactory attached to the mine. The report of the expert appointed by the court showed that the boiler gave way on the line of a row of rivets which joined a patch, put on a year before the time of the accident. It was also found that the patch, which was upon one of the sheets exposed to the fire, had been subjected to violent and sudden action from the flame of a reverberatory furnace, which was used to heat the boiler without the intervention of a regulating chamber, and that the explosion was undoubtedly due to the shock occasioned by a sudden intense combustion in the furnace. The question was, of course, whether the bursting of the boiler, which cost the lives of twenty-eight persons, was a mere accident, involving no responsibility on the part of any one, or whether it should be considered as the result of negligence on the part of the company, for the consequences of which it was pecuniarily accountable. The award of the court, which was admirably clear and concise, puts the principle upon which the decision was made in the plainest light. "Considering," the judges said, "that the establishment, care and repair of vertical boilers demand precautions proportionate to the greater danger of explosion in them," "and considering also that the use of such a boiler for twenty-three years, when the life of vertical boilers is usually regarded as being from five to ten years only, with the exposure of the fire-sheets to the unregulated heat of a puddling-furnace, and the partial patching of the worn-out sheets, involves an imprudence and carelessness deserving of condemnation," on these accounts it was evident that the company had

failed to take the precautions which every employer is bound to take for the protection of his workmen; and heavy damages were therefore awarded to the families of the victims of the accident.

THE operations at Hallett's Point, in the East River at New York, by which a part of the reefs which interfere with the navigation of Long Island Sound have already been removed, were interrupted nearly a year ago for lack of money to carry them on. Since the great explosion by which one of the most serious obstructions was removed, a tunnel has been excavated in the heart of another immense ledge, called the Middle Reef. This tunnel is nearly completed, and if money is appropriated for continuing the work it could easily be finished, ready for the final blast, by next autumn. The reef is much larger than the former one, and the excavation has been calculated for an explosive charge of two hundred and twenty-four thousand pounds of dynamite, or about four times the quantity fired in 1876. If the operation of blasting should be as successful as the previous one, about two years will be required for removing the débris, and the passage of Hell Gate will then be practicable for the largest steamers. It has long been expected that with the satisfactory completion of the work the route of Atlantic steamers passing to and from New York would be changed, so that they would go on the outward voyage directly east through the Sound, instead of southward to Sandy Hook, losing nearly half a day of their voyage in consequence; and according to the *New York Mail and Express* the opening of the new passage will come none too soon, the bar off Sandy Hook having increased so much by deposits of refuse from the city as to be impassable to large steamships except at high tide.

A SUBMARINE tunnel only second in importance to that in progress at New York has just been completed in England, connecting the city of Liverpool with the railway system which centres at Birkenhead, on the other side of the river Mersey. The circumstances which led to the construction of the Liverpool tunnel were very similar to those which have made that under the Hudson imperatively necessary. In both places the opposite shores of the stream are lined with busy commercial districts, between which there is constant communication, while at both the river divides the largest centre of population from a great group of railways of which it forms the proper terminus. The width of the Mersey, five-sixths of a mile, is nearly the same as that of the Hudson, and like the people of New York and Jersey City, the inhabitants of Liverpool and Birkenhead have found the ferry-boats, hitherto the only means of transportation, slow, and subject to delay, or even to danger, in bad weather. The citizens of Liverpool seem to have been more enterprising in seeking for means of improving their condition than their Transatlantic rivals, for as long ago as 1868 a company was formed for the purpose of tunnelling the river-bed, although it was nearly twelve years before all difficulties could be overcome, and the work actually commenced.

IN the early part of 1880 operations were begun by sinking immense wells, one hundred and eighty feet deep, at each terminus of the tunnel, these being intended for draining the tunnel by means of powerful pumps, throwing from five to six thousand gallons a minute, and capable of removing the water which might penetrate from a very considerable leak in the submarine portion of the excavation. These being completed the perforation of the tunnel was carried on from each shore with great rapidity. On the southern side a Beaumont boring-machine was employed, similar to that used in working under the English Channel, but the bed of the Mersey being of a rather hard sandstone, the work accomplished by the machine at Liverpool was of course much less than in the soft chalk of the Straits of Dover. However, the boring was effected at the rate of a hundred feet a week, and the tunnel, which is semicircular in section, and twenty-five feet in diameter, advanced quickly from this side. At the Liverpool end the excavation was done by hand-tools, and proceeded more slowly. The whole was lined, as fast as the boring advanced, with brick vaulting. The tunnel being entirely in rock, with a minimum thickness of twenty-two feet between the excavation and the river bottom, there was none of that trouble from the movement of the bed which our engineers encountered so successfully

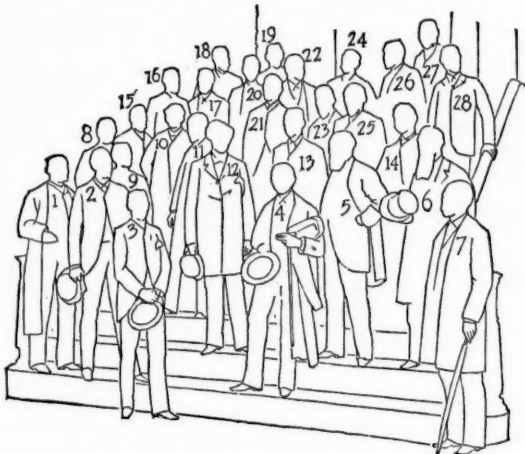
in the soft silt of the Hudson, and the work was prosecuted to completion without accident, the last day's operations, which joined the two portions of the tunnel, being witnessed by a large number of distinguished spectators. According to *Le Génie Civil*, from which we take this account, an immense force is now employed in completing the work, and in constructing the subterranean stations, furnished with elevators, by which passengers are to be transported to and from the surface; so that the most of the travellers of the coming season may expect to pass their first mile of land transit in England at a distance of nearly a hundred feet below the waves of the sea which they have just crossed.

WE learn from the *Scientific American* that the Worshipful Company of Grocers of London has offered a prize of five thousand dollars, open to all the world, for the best original essay on sanitary science. We do not know the other particulars of the offer, but it certainly seems reasonable to say that no persons in the world would have a better prospect of gaining such a prize than the best of the American experts who have done so much to improve the practice of the arts of life. There is no need of mentioning names to suggest at once some of the instances in which American thought and observation have served to advance in a most signal manner the sciences, more particularly, of heating and ventilation, and an adequate description of a few of the most thoroughly warmed, ventilated and drained buildings in the United States would constitute about as interesting and useful a paper on sanitary work as could be imagined.

M. MARCEL DEPREZ, already well known for his successful experiments in conveying power to considerable distances by means of electricity, has just delivered a lecture on his favorite theme, which we find described in *La Semaine des Constructeurs*. In his opinion the art of using electrical force is but just emerging from scientific laboratories into practical use,—his own efforts, it should be said, having done very much to give available form to scientific devices. To impress more forcibly upon the minds of the Parisians the nature of the end to be sought, M. Deprez has arranged a striking experiment, in which a force of a hundred horse-power will be transmitted by wires from Creil to Paris, a distance of thirty miles. If this experiment should prove successful it will certainly have most important results, and every one will await it with interest. Meanwhile, Mr. Daft, the New York electrician, whose rather unsuccessful trial of an electric locomotive at Saratoga a few weeks ago will be remembered by our readers, has invented means for applying electricity in a somewhat easier way, and has taken steps toward the establishment of electrical stations in New York, from which power will be furnished to operate the hoisting-machines of which so many are used in business houses. Already an elevator in a leather store has been fitted up, and works to the entire satisfaction of the proprietors, requiring no attention, and giving no trouble in handling beyond the shifting of a little switch for the purpose of starting or stopping. Some years ago the Edison Company, in describing the advantages offered by its system, included the furnishing of power for hoisting-machinery as a great convenience for its customers, and a source of profit for itself. Hitherto, the anticipations of the Company have not been realized, and we have heard nothing for a long time of the Edison elevator-engines. If Mr. Daft should be first in the field with a successful apparatus, he is likely to reap a good profit from his invention.

THE troubles between the window-glass manufacturers and their men in and about Pittsburgh are at an end, a satisfactory arrangement having been made between the proprietors of the factories and their men. Those who left Pennsylvania for Europe seem to be doing well, and the demand from abroad still continues, the Belgian Government now offering to pay the travelling expenses of the workmen originally from that country who desire to return. The coöperative glass manufactory, from which we hoped much, seems to be carrying on its preparations very quietly, if it has not been altogether abandoned, and we may have to wait until the next great strike for the completion, in this country, of an experiment which at least promises more for the future of workmen than any other yet tried.

A GROUP OF AMERICAN ARCHITECTS.



DURING the first day's session of the last convention of the American Institute of Architects, held at Providence last fall, a photograph of the members in attendance was taken, and as the result was one of the best photographic prints of an out-door group that we have ever seen we have borrowed the negative from the photographers, Messrs. Manchester Bros., and have made use of it in preparing the illustration which is published this week. This is presented as a means of introducing to architects scattered all over the country a considerable number of their fellows who are probably known by name only to the greater number, rather than as an official representation of members of the American Institute of Architects.

We append a few brief facts concerning the gentlemen who compose the group, and a list of a few of the buildings they have designed.

No. 1. Edward H. Kendall (Associate), New York City; age, forty-two; practice, fifteen years.

BUILDINGS:—House for Robert Goellet, Fifth Avenue, corner Forty-eighth Street; house for Ogden Goellet, Fifth Avenue, corner Forty-ninth Street; office-building for Cyrus W. Field, No. 1 Broadway, New York.

No. 2. William G. Preston (Fellow), Boston, Mass.; is about forty years of age and has practised architecture about twenty years. Has built the following buildings:—

BUILDINGS:—Massachusetts Charitable Mechanic Association Building, Mason Building; Boston University Building; Boston Natural History Society's Building; Massachusetts Institute of Technology (central building); all in Boston.

No. 3. George Champlin Mason, Jr. (Fellow), Secretary, A. I. A.; 10 Catherine Street, Newport, R. I.; 290 Fifth Avenue, New York.

Born August 8, 1849; entered the office of his father, September 1, 1865; admitted to partnership, January 1, 1871; Fellow American Institute of Architects, November 4, 1875; Secretary American Institute of Architects, August 30, 1883.

BUILDINGS:—Houses for Col. G. R. Fearing, of Newport, stone and brick, 1873; C. N. Beach, Esq., of Hartford, wood, 1873; A. A. Low, Esq., of Brooklyn, wood, 1876; Thomas Dunn, Esq., of Newport, stone, 1878; Fitch J. Bosworth, Esq., of Milwaukee, stone, 1883.

No. 4. John Moser (Fellow), Anniston, Ala., was born in Baden, Germany, in 1832; landed in America in 1848; lived in Canada from 1850 to 1865, when he removed to Ohio. In 1877 he went South. He began to study architectural form in 1855, while practising fresco painting, until 1868, when he began as architect.

BUILDINGS:—Galveston Cotton-Exchange, Galveston, Tex.; Moore & Marsh Building, Atlanta, Ga.; St. Philip's Church, Atlanta, Ga.

No. 5. James W. McLaughlin (Fellow), Cincinnati, O., was born in that city, November 1, 1834, and has been in active practice of his profession since 1855.

BUILDINGS:—Among the more important buildings he has designed are the Cincinnati Museum, the Public Library, Shillito's store, Wiggin's block, and the Johnston Building; all in Cincinnati.

No. 6. David W. Gibbs (Fellow), Toledo, Ohio. Nativity, Massachusetts; age forty-eight. Time spent in the practice of architecture, twenty years as mechanic, builder, and draughtsman, and ten years last past as architect.

BUILDINGS:—Among his buildings are the Masonic Temple, and Soldiers' and Sailors' Memorial Building, both in Toledo. Mr. Gibbs also has charge of the Government building now going up in Toledo.

No. 7. Theodore M. Clark (Fellow), Boston, Mass. Secretary Foreign Correspondence, A. I. A. Professor of Architecture, Massachusetts Institute of Technology.

No. 8. Emlen Trenchard Littell (Fellow); birth-place, Philadelphia; age, forty-five years; time of practice, twenty-four years. Address, 48 Exchange Place, New York.

BUILDINGS:—Jefferson Market, New York; St. James's Church and School, Philadelphia, Pa.; St. John's Church and School, Ogdensburg, N. Y.; Lawn-Tennis Building, New York.

No. 9. James Fludder (Associate), Newport, R. I., is thirty-seven years of age, and has practised as an architect for thirteen years.

BUILDINGS:—Troy Building, Fall River, Mass., and numerous dwelling-houses in Fall River and Newport.

No. 10. Napoleon Le Brun (Fellow) was born in the city of Philadelphia, Penn., in 1821, where he commenced the practice of architecture in 1842. He now resides in the city of New York, where he continues his practice, in partnership with his son Pierre L., under the firm name of N. Le Brun & Son.

BUILDINGS:—Among his numerous works are the Cathedral of St. Peter and St. Paul, and the American Academy of Music, in Philadelphia, and the Masonic Temple in New York.

No. 11. W. L. B. Jenney (Fellow) was born in Fairhaven, Mass., September 25, 1832; educated in Scientific School, Cambridge, and in l'Ecole Centrale des Arts et Manufactures, Paris, France, (Diploma of 1856); continued studies in Paris 1858-59; during the war was Captain Additional Aide-de-Camp, assigned to engineer duty on the staffs of Generals U. S. Grant and W. T. Sherman; has practised architecture in Chicago for the past sixteen years; in 1872 and 1873 was Professor of Architecture in the University of Michigan.

BUILDINGS:—Grace Episcopal Church; the Leiter Buildings, Portland Block, Sears's Building, Mason Building, etc., Chicago; Blair Lodge, Lake Forest, Ill.; the Fletcher & Sharp Bank Building, the residences of Henry Bates and James O. Woodruff, Boston Block, Indianapolis; the West Chicago Parks, Chicago, and other landscape work.

No. 12. Thomas U. Walter (Fellow), President A. I. A. Mr. Walter is a Philadelphian by birth, and is somewhat beyond middle life, though still ardent in the pursuit of his art; he studied his profession in the office of William Strickland, a celebrated architect of his native city.

BUILDINGS:—He has built extensively throughout the country; the Girard College, of Philadelphia, and the Extension of the United States Capitol in Washington being among his prominent works.

No. 13. C. A. Wallingford (Fellow), Indianapolis, Ind., was born in St. Louis, Mo., 1854; completed his education, 1869, at Naval Academy, Annapolis, Md., and immediately entered his chosen profession, serving an apprenticeship of six years.

BUILDINGS:—Public Libraries of Indianapolis and Lafayette, Ind.; High-School, Danville, Ill.; Public Schools, Lafayette; South Street Baptist Church, and the vast buildings of Kingan & Co. (limited), beef and pork packers.

No. 14. George Keller (Associate), Hartford, Conn., is forty-one years old; was elected an Associate Member of the Institute, February 22, 1869.

BUILDINGS:—Hartford Co. Jail, cost, \$160,000; Hartford Phoenix Bank, cost, \$120,000; Hartford Northam Memorial Chapel, cost, \$40,000; Hartford High-School, cost, \$230,000.

No. 15. Henry W. Hartwell (Fellow), Boston, Mass., is fifty years of age; commenced practice in 1856; during a portion of the time since has been associated with others.

BUILDINGS:—Among the more important buildings which have come from his office are the Borden Block, the Academy of Music, City Hall and Central Church, in Fall River, Mass.; First Baptist Church, Cambridge, Mass.; Bristol County Jail, Taunton; Waltham Music-Hall; Belmont Town-Hall, and the First Spiritual Temple, now building in Boston.

No. 16. Charles Crapsey (Fellow), born November 25, 1849, at Cincinnati, O., and has ever since resided there; began the study of architecture with James K. Wilson, July, 1865; commenced practice on his own account, July, 1875; practice has been local and mostly domestic.

No. 17. Geo. W. Cady (Associate), Providence, R. I., is fifty-eight years old; has practised in Providence from his own office eighteen years; otherwise, for twenty-five.

BUILDINGS:—Infantry Armory Building, South Main Street; Dorrance Building, Westminster Street; Second Police Station, First Ward, all in Providence.

No. 18. Thomas James Gould, Providence, R. I. Born at Providence, R. I., May 23, 1849. Entered the office of Wm. R. Walker, as a student, September, 1868. Made a partner with Wm. R. Walker in January, 1876. Formed a co-partnership with Frank W. Angell in January, 1881.

BUILDINGS by Walker & Gould: Brown University Library, Providence High School, Vaughan Building, Providence, R. I.; Music Hall Building, Danielsonville, Conn.

BUILDINGS by Gould and Angell: Union Block, Putnam, Conn.; Mill Building, Deep River, Conn.; Blackstone Hall Building, Providence, R. I.; Hebronville M. E. Church, Hebronville, Mass.; Auburn F. B. Church, Auburn, R. I.

No. 19. Warren Richard Briggs (Associate), Bridgeport, Conn. Born in Boston, Mass., in 1850. Commenced the study of architecture in the offices of Messrs. Peabody & Stearns and Cummings & Sears; from the latter office, in 1872, went to Paris and entered the Ecole des Beaux-Arts, where for two years was the pupil of M. André. In 1876 went to Bridgeport, Conn., where he has since practised his profession, making a specialty of school-buildings.

BUILDINGS:—His most important commissions have been the Connecticut State Normal School at New Britain, Conn.; the Bridgeport High-School; the Rogers Memorial School at Fairhaven, Mass.; and the Taunton High-School, at Taunton, Mass. The two latter are now in process of erection.

No. 20. Frank W. Angell, Providence, R. I., born 1851; in 1872 commenced the study of architecture in the office of Gen. Wm. R.

Walker, afterwards Walker & Gould; commenced practice with Thos. J. Gould, January, 1881.

BUILDINGS:—See under T. J. Gould, above.

No. 21. *Edward I. Nickerson* (Fellow), Secretary Rhode Island Chapter A. I. A., Providence, R. I., age thirty-eight; commenced practice on return from abroad in 1870; was also abroad 1877 to 1881.

BUILDINGS:—Memorial Chapel, Beneficent Cong. Church; residences of Mrs. C. G. King, Waterman Street; Walter E. White, High Street; S. H. Brownell, Broadway, block of houses for W. E. Chandler, Benefit Street; block of houses for E. S. Aldrich, Barnes Street, all in Providence; Miller Block, Pawtucket, R. I.

No. 22. *Levi T. Scofield* (Fellow), Cleveland, Ohio; age, forty-one; has been in the practice of architecture twenty-six years. Since 1865 has been engaged mostly on public buildings.

BUILDINGS:—Columbus Asylum for the Insane; the North Carolina Penitentiary; the Athens Asylum for the Insane; the Soldiers' and Sailors' Orphan's Home at Xenia, O., and the Cleveland House of Correction.

No. 23. *Stephen C. Earle* (Associate), Worcester, Mass.; age forty-five. In practice eighteen years.

BUILDINGS:—All Saints' Church, Salisbury Building, Technical School, Worcester, Mass.

No. 24. *George H. Young* (Associate), Boston, Mass., was born at Sligo, Ireland, April 7, 1845. After serving an apprenticeship in naval architecture in the U. S. Navy Yard, at Charlestown, Mass., entered the profession of architecture in 1871. Has been for several years instructor of architectural drawing in the Boston Free Evening Schools and is now principal.

BUILDINGS:—Amongst his buildings are: "The School," St. Paul's School, Concord, N. H.; the Novelty (now Windsor) Theatre, Boston, Mass.; and the New Brunswick Cotton Mills, St. John, N. B.

No. 25. *Oliver P. Hatfield* (Fellow); address, No. 31 Pine Street, New York; age sixty-five years. Practice, thirty-five years, in association with the late R. G. Hatfield, and five years since his decease.

BUILDINGS:—House of Refuge, Randall's Island, New York; Westchester County Buildings, White Plains, New York; New York Institution for the Deaf and Dumb; Seamen's Bank for Savings, New York; City Bank-Building, New York; Security Insurance Co. Building, New York; Jansen Apartment-House, New York; Bedford Apartment-House, New York; Dime Savings Bank, Brooklyn, N. Y.

No. 26. *Alfred Stone* (Fellow), Providence, R. I., born July 29, 1834; has been practising architecture, after spending four years as a student, twenty-four years.

BUILDINGS:—The most important buildings which he has had under his partnership care have been the Providence County Court-House; the Rhode Island State Prison; Hotel Dorrance; Pumping Stations of Providence Water-Works.

No. 27. *H. Hudson Holly* (Fellow), New York, N. Y., was born in New York in 1834; began to study architecture in 1854, with Mr. Gervase Wheeler, and after two years went to England to complete his studies; his practice has been confined chiefly to dwelling-houses—in all parts of the country, however; has published two books on country houses and one on churches.

No. 28. *Henry A. Nisbet*, Providence, R. I., Assistant in the office of Stone & Carpenter.

THE METROPOLITAN OPERA-HOUSE, NEW YORK.—I.



From the Metropolitan Opera-House.

public eye able to appreciate for once the merits of a building that is architecturally very good, and this in a most quiet, reserved and unpretentious way.

Even those non-professional critics who most highly approve Mr. Cady's work, however, are usually far from realizing what a success

it is, because far from realizing the novelty and difficulty of the problem that was set before him. The building of theatres of any sort is not a task which often comes in the way of any man, and the building of a lyric theatre of this size and importance scarcely occurs in any country more than once in a generation.

Here in America, of course, the architect was doubly left to his own immediate inspiration, since, however his memory may have been charged with the results of European effort, he did not have them at hand for direct consultation. If Mr. Cady had been set to build an opera-house after the conventional foreign pattern his task would thus have been no easy one; but, in fact, it was rendered still more hard by the novel requirements connected with the work—requirements which were undeniably restrictions in appearance, and which he has sometimes turned into opportunities only by the exercise of much fertility of invention and originality of execution.

The house, as is well known, was planned by a number of persons dissatisfied with the unequal accommodations of the old Academy, and desirous of creating a building in which each and every stockholder should have an equal chance of seeing—and of being seen. No variations of plan were to be allowed the architect in favor of architectural effect which would be at the expense of this perfect equality. All the boxes were to be of the same character and the same size, and, in so far as it was possible to human skill, all were to be equally advantageous as regards seeing the stage, and being seen by the rest of the audience. This demand excluded the introduction of the proscenium *loges*, upon which all former builders, without exception, had chiefly relied for the effect of a large interior. Add to this that the house was to be entirely and literally fire-proof, thus excluding the use of wood, and depriving the architect of its aid either as a means of construction or of decoration; and, further, that the funds at his command were insufficient to allow of the employment of costly stone and marble, and we shall have some idea of the difficulty of the task to which he set himself. The structure was to be of a most monumental class, yet utility and economy were to be his first concerns, and his chief effort was to be given not to the production of a beautiful, but of a fire-proof, convenient, and comparatively inexpensive building. To say that he has succeeded to so great an extent in satisfying these main ends, and also in securing so good an architectural result, is to say that he has achieved a triumph of no mean sort. I must insist once more on the novelty of the task presented to him, since without its clear realization no adequate idea of the worth of his work can be obtained. Of course the aim in all opera-houses is that all spectators shall see and hear as well as possible, but never before had this been insisted upon with so entire a disregard of the requirements of architectural effect. And of course fire-proof houses have often been planned and discoursed about, but, with the exception of M. Viollet-le-Duc's not-too-successful and never-executed design, I know of no house in which this end has been so completely sought.

To speak now of the building in detail. It occupies the block bounded by Broadway and Seventh Avenue, Thirty-ninth and Fortieth Streets, measuring 200' x 260'. The main entrance is in the middle of the Broadway block, but the façade of the house itself only occupies a portion of this front, being a comparatively low structure to be flanked on either hand by taller masses now in process of construction. These are to contain shops below, above large ball-rooms and restaurants, and above these again bachelors' apartments. The carriage entrances are on the side streets, and on Seventh Avenue rises the immense wall which makes the back of the stage. It is impossible as yet to decide what will be the effect of the whole block when completed, but the portions which strictly belong to the opera-house are very satisfactory, if not marked by many specially noteworthy features. The material employed throughout is a light yellow brick, of beautiful quality, though perhaps a trifle paler in tone than might have been desirable—a trifle paler, I think, than the new *Post* building, down town, which shows the most successful employment of the material of which New York as yet can boast. The color is quite unrelieved, since the sparsely-applied ornamentation is of terra-cotta almost identical in tone. The style adopted is that of the Italian Renaissance, and whatever its intrinsic beauty, all will agree, I think, that it is the most appropriate for a theatre devoted to Italian opera. And seeing the refinement and unobtrusive excellence of the work, we may be glad that Mr. Cady chose just the quiet, early type he did. Three large round arches, with a space of plain wall on either hand, form the entrance on the street. Above these come three large window-arches, grouped together with a balustraded balcony of slight projection in front of them, and on each hand a single smaller window. The third floor shows again three smaller grouped round-headed windows, with a square-headed one on either side; and the fourth a closely-set row of openings, all round-arched, the whole being crowned by a free balustrade. Flat pilasters mark the divisions of the front, embracing the second and third rows of windows. The ornamentation is very delicately modelled, and if it does not "carry" very well, and if the clever terra-cotta bas-reliefs of figures are placed too high to be easily perceived, we may at least congratulate ourselves that the general effect is one of extreme quietness, good taste, and reticence, in striking and grateful contrast with the extravagant, showy, confused and scrappy efforts at exterior ornamentation which characterize too many of our other recently erected structures.

An elevation of this front as it will appear when completed, and one of the Thirty-ninth Street side, are to be found in the November

number of *Harper's Magazine*, which may be referred to for clearer explanation than can be given in words. It is unfortunate, however, that the Fortieth-Street side was not chosen in preference to the other, since it seems to me more interesting because less stiffly conventional in the distribution of its openings. But the most noteworthy part of the exterior, I think, is unquestionably the rear, the part which has naturally been least considered with regard to architectural effect, but which by its simply-told expression of its purpose and its immense size is very impressive and very admirable. Here the proportions of the front are reversed, the side wings, which contain the dressing-rooms, etc., being comparatively low, and the centre rising to a height of over one hundred and fifty feet, supported by two strongly projecting buttresses. Below the cornice of the wings, which is cleverly carried as a string-course across the central division, we find in this division no opening save very low unaccented doors, two little inconspicuous windows, and a great door (which must be forty or fifty feet high) for the introduction of painted scenery. Above the string-course the wall is diversified by blank arches with round heads, scarcely raised above the surface and divided by very flat pilasters, two arches between the buttresses and two on either hand, those at the extreme ends only being pierced by small windows. Above these comes a cornice which runs around the sides as well as the front of the towering mass, and is composed of a rich blank arcade of round-headed arches, placed between prominent and well-designed mouldings. The buttresses are pierced sideways with small arches and crowned with caps, and behind these rises again a low gable, supported by flatter buttresses and pierced with a large and two smaller circular lights. The very tall chimney which rises from somewhere about the centre of the building and groups well with the gable, should not be forgotten, since it shows a successful attempt to grapple architecturally with this usually rebellious feature. If I dwell long on this, which might be supposed the least important and least interesting part of the exterior, it is because the dignity and even beauty which it attains by such simple means seem to me quite remarkable. No factor in architecture is so potent toward producing an effect of grandeur and dignity as mere brute size. Yet such modern buildings as have great size and simple outlines are usually found the most contemptible of all, owing to the manner in which their breadth is frittered away by a multitude of openings or an over-abundance of supposedly ornamental detail, or in which proportion and architectural effect generally have been disregarded. A malt-house or a grain-elevator is not apt to be an imposing sight, and there are persons, I regret to say, who compare the rear of the new opera-house to one of these two things. But it is very different from either, and he who cannot appreciate the peculiar beauty it presents will hardly be able to appreciate in any case two of the chief merits an architectural work can possess: the dignity of quiet size and the force of good structural designing. The immense wall is not like a brewery-wall, even apart from the strength secured by the rarity of its openings, for it is *designed*, and not simply built. The immense buttresses, the rich cornice at the top, and the other minor features to which I have referred, must mark it as a fine and intelligent piece of architectural work in the eyes of any one qualified to judge—all the finer and more intelligent because so simply and unaffectedly expressing its purpose, without any attempt at an "ornamentation" which should relieve its supposed monotony by the introduction of superficial and superfluous features. It does not pretend to be anything but what it is, the *back* of an opera-house, built of such immense size simply for the accommodation of the complex apparatus of modern scenic effects. One cannot judge it as one would a façade planned for architectural effect, but being what it is, it is extremely good—good in the same way that the great mediæval warehouses of Germany, for example, are excellent, and far, far better than most of our structures put up with every ambition after architectural effectiveness. It would be out of place, naturally, on Fifth Avenue, but on Seventh Avenue it is permitted to be less elegant, and in any situation the massive wall would be a more than respectable, an impressive example of the builder's art.

From this imperfect description it will be seen that we have here no building which may be compared with the great new opera-houses of foreign lands: with Semper's house in Dresden, for example, or with Garnier's in Paris. It has the prime disadvantage of not standing in an open square, but of being built flush with unimposing, narrow streets, and the equal disadvantage of having been erected by a company of private citizens, and not by a king or government disposing of the revenues of a state. It is a utilitarian rather than a monumental work, at least on the outside, and should be judged as such alone. This being the case, we cannot but feel that Mr. Cady has acquitted himself of his task with something more than moderate success. Garnier could not have put such a back to his house, for example, without sinning against architectural propriety; but that Mr. Cady had the independence to do it speaks well for his good sense, and that he made it architecturally so good speaks equally well for his talent as a designer.

The same considerations must be borne in mind when we enter the building. If we expect the magnificent *foyers*, stairways and corridors of Paris, Dresden or Vienna, magnificent in size and in material, we shall be grievously disappointed. Space had to be economized as well as money, and there is in this country, moreover, no necessity for the splendid outer rooms and hallways which are appropriate to the pageantry of European courts. There is a *foyer*

of large size, it is true, and there are to be, as I have said, communicating *salons* and restaurants, which will be used when the house is thrown open for balls. But the decoration everywhere is of the simplest. The corridors and lobbies are very ample for convenient access, and well designed to afford rapid exit in case of fire or panic, but not large enough to be imposing architectural features. The main staircase is a broad double flight, but loses vastly in effect by being roofed over at every floor. Whether this was to secure more space or a greater protection in hurried exit I do not know; but in either case the fine effect of a large, open flight of stairs has been sacrificed, it almost seems, without due excuse.

The entire building is, as I have said, of fire-proof materials, of brick, iron, cement and plaster. Not a particle of wood is used, except in the superficial casing of the floors of parquette and boxes, and in the doors of the latter. Even the floors of the corridor are not thus covered. The effect is extremely massive, but, it must be confessed, not exactly elegant, since the plastered walls are not decoratively painted, but merely tinted in plain colors. The columns and balustrades, etc., of the stairways are of iron, cast in a Renaissance pattern that is very solid but not without delicacy. Whether light screens of wrought-iron would not have been better, since iron must be used, is an open question; but at all events there has been no attempt to make the cast-iron look like anything else than what it is. The lobbies and corridors are painted a warm yellow tone, with something of blue in the ceilings, the tone being indeed a little too warm and decided. The details of the decoration in the *foyer*, which are all modelled in plaster, I think, are kept very quiet, but show thought and taste in their designing, and these again are, when completed, to be as simply colored as the corridors. A description of the auditorium and the stage must be left for another chapter. All other parts have been kept strictly subordinate to these, and it is in them that the truly distinctive qualities of Mr. Cady's work will be found.

But since the article in *Harper's* already mentioned is likely to be more widely read than any account of the opera-house which may appear, I would like to add a word with regard to a certain statement therein made. The author says in speaking of its exterior, that "no architect has yet ventured to exhibit upon a large scale the sweep of the auditorium as part of the external architecture of a theatre, although upon a small scale this has been done, and done with striking success, in the north front of the 'Casino,' just opposite the new opera-house." We must take this to mean no architect in any country; but such a statement is very wide of the fact. German architects have long made it the main principle of their theatre building to express the sweep of the auditorium as nearly as possible on the outside. The first theatre erected after this fashion was, I think, the one at Mayence, but the most celebrated, the old Dresden opera-house of Gottfried Semper, burned some dozen years ago. Standing free in a large square, the sweep of the front made a complete semicircle, and it was this fact more than any other, more even than its beauty of detail, which gave the house with many judges the reputation of being the most beautiful theatre in Europe. When the new theatre was built to replace it, this feature was reluctantly surrendered in part, in deference to the demand for larger *foyers* and lobbies, and to the difficulty of reconciling it with the much higher mass at the rear, required by the ever-growing demands of the scene-painter's art. But it was not abandoned altogether, for a segment of a circle makes the centre of the front of the new house, with square wings running out far on either hand. It is useless to multiply examples, but I am tempted to guess that this expressing of the auditorium by the exterior is characteristic of almost as many German theatres as is the neglect to do so. Into the æsthetic virtues or demerits of the plan I need not here inquire, for the choice was not open to Mr. Cady as to what ground plan he should give his structure.

M. G. VAN RENSSLAER.

THE ILLUSTRATIONS.

INTERIOR FITTINGS OF THE SLOOP YACHT *Thetis*, FOR HENRY BRYANT, ESQ. MR. EDGAR C. CURTIS, ARCHITECT, BOSTON, MASS.

THE boat is a centre-board cutter and was designed by the owner, and is now being built at City Point, Boston. Length over all, 72 feet; beam, 19 feet; length on water-line, 64 feet; draught, 8 feet 5 inches; tonnage displacement, 66 tons. There are 21 tons of lead on the keel. Sail area, 4,300 square feet. The inside finish of cabin is of quartered oak. All interior parts, such as shelves, drawers, etc., are of pine, to diminish weight. All state-rooms are finished in pine to paint. A plan is added to show the way in which the yacht is cut up inside.

A GROUP OF AMERICAN ARCHITECTS.

For descriptive notes, see elsewhere in this issue.

THE METROPOLITAN OPERA-HOUSE, NEW YORK, N. Y. MR. J. CLEVELAND CADY, ARCHITECT, NEW YORK, N. Y.

For description, see preceding article.

HOUSE FOR J. F. WARD, ESQ., JERSEY CITY, N. J. MR. F. C. WITHERS, ARCHITECT, NEW YORK, N. Y.

ANCIENT MARBLES IN GREAT BRITAIN.



ST. GEORGE. BY DONATELLO. — FAÇADE OF THE CHURCH OF SAN MICHELE, FIRENCE

profession. We should not overlook the fact that, as we strive to be furtherers of the arts of to-day it devolves upon us to profit to the fullest extent by the artistic experiments of former ages, and especially by the inimitable achievements of classic times. The practical value of such historical studies is perhaps not fully recognized among us, although striking examples to illustrate it have never been lacking. It might, indeed, almost be asserted that the highest professional eminence is unattainable without intimate acquaintance with the great architectural problems of the past, and the manner of their solution. It was by independent study of the ruins of ancient Rome that the great Brunelleschi revolutionized the art of building in his century and in all succeeding ages. Without the journey to classic Italy, made in company with Lord Arundel, the advance of Inigo Jones would not have been possible.

Soufflot and Schinkel similarly raised themselves far above the position of their respective generations; while Semper could not have built the Dresden theatres, and Garnier could not have succeeded so brilliantly with the Grand Opera-House of Paris, without the high training acquired by accurate and extended investigations concerning the monuments of Greece.

Dr. Adolf Michaelis is well known to students of architectural history by his excellent work upon the Parthenon,² and deserves an especially favorable welcome from our countrymen, because of his warm and generous recognition of the investigations lately carried on at Assos by the Archaeological Institute of America. He is justly considered as one of the leading authorities of the day in his special province, and was among those representative professors sent by the newly-created empire, after the Franco-Prussian war, to raise the University of Strasburg to the level of German scholarship.

It must, indeed, be a source of humiliation to British writers on archaeology and art that a work of this kind, so long needed in England, should be left to a foreigner; and it is worthy of note that even the author's acknowledgments of considerable assistance in its preparation have rather to be paid to his countrymen, Drs. Conze and Matz, and to Professor Bernoulli, of Basel, than to the English gentlemen whose courtesy is praised in the preface. The production of catalogues of this kind is generally, and with good right, regarded as an opportunity to be eagerly embraced by those who have the collections in charge—at best, one might suppose that the task would be relinquished only to some native specialist. The fact that a German scholar has won the first laurels in a field hardly to be considered as open to foreign competition may well be the subject of serious consideration on the part of those who have at heart the advancement of learning in the country obliged to pay such tribute.

Dr. Michaelis has, however, certainly accomplished the work with all the zeal and thoroughness characteristic of the school to which he belongs, and the result is an admirable specimen of careful research and sound exegesis. More complete and more accurate information concerning the antique sculptures in Great Britain is given by this

THE title of this book¹ hardly does justice to its scope and general interest. Only four hundred and fifty-eight of its eight hundred and thirty-four pages are taken up with a catalogue raisonné of those ancient marbles of England, Scotland and Wales, which are not lodged in the British Museum, but scattered among the smaller collections of the universities, and the many richly-furnished family-seats of the island. It contains, besides a long appendix, an extremely valuable and interesting introduction: "On the Influx of Antique Sculptures into Great Britain," dealing with this subject in its broadest sense, and giving a synopsis of that growth of archaeological research and cultivated dilettanteism during the last two centuries and a half, which has placed the private cabinets of the United Kingdom far above those of Continental nations.

It is this introduction which is particularly important to members of our

volume than by all its predecessors together. Indeed, no attempt has hitherto been made to give so thorough a review of the subject, and the English book best known in the field: Dallaway's "*Anecdotes of the Arts in England*," published in 1800, although it received the honor of a translation into French by the learned Millin³ was superficial, even for its date, and is now entirely antiquated. Much preliminary work was done, in a disconnected fashion, by Clarac in his elaborate "*Musée de Sculpture*,"⁴ and by the splendid volumes of engravings published by the Society of Dilettanti,⁵ while various French and German travellers of an artistic and methodical turn of mind have afforded valuable information concerning points of detail; still the lack of a real summary and book of reference, like that before us, has been keenly felt by all more particularly interested in the subject.

The author reviews one hundred and one collections, ten of which are in Scotland and one in Wales, and there is only one of all these—that of Castle Howard—which he has not personally inspected. The great number and the important character of these collections justify the statement that no other country can at this day boast of so great a wealth of antique works of art as England, which in this particular Michaelis likens to the Rome of the sixteenth and seventeenth centuries. This wealth is in great part the result of the heyday of classic dilettanteism which England witnessed and profited by a hundred years ago. The collecting of treasures of antique art became at that time not merely a fashion but a real furor among the aristocracy and plutocracy of the realm. Milord could not return from his travels without some statue or other as a demonstration and constant reminder of his "grand tour." The older collections of Rome were bought up at enormous prices; skilful dealers and lamentable restorers acquired princely fortunes, and a wholesale importation into England of statues, reliefs and marble sarcophagi became the order of the day. Antique busts and vases took the place in the English drawing-rooms of that age now less majestically occupied by Japanese screens and bric-à-brac; and as the direction rather than the character of such a fashionable mania for collecting has changed, it need not surprise us that in those times, also, the complacent credulity of self-created connoisseurs was played upon by clever forgers. It is their work which presents the greatest of difficulties to the archaeologist, and it is in humorous recognition of this fact that Dr. Michaelis has chosen as the motto for his catalogue that grim prediction of Casanova: "*In un pajo di secoli li antiquarij avran da faticar molto sopra le antichità uscite dalla manifattura nostra*."⁶

The full and evidently accurate descriptions of the sculptures in the catalogue are supplemented by some discussion of the most noticeable archaeological features presented by them—an individual notice varying in length from a few lines to several pages, according to the importance of the object, and the information obtainable concerning it. We notice, with satisfaction, that the author has restricted the accurate measurements he gives of every stone to the metric system, which is beyond all question destined to supplant the duodecimal foot for scientific work, even in backward and obstructive Great Britain.

Some of the collections included in the catalogue are very large. There are, for instance, one hundred and fifty-five numbers in the schools of Oxford, not including the important treasures of the Ashmolean Museum, of Christ Church and All Souls' Colleges, and of the Radcliffe Library. One of the Cambridge museums, the Fitzwilliam, is nearly as important. Even these are far surpassed in size by several private collections, notably that of T. W. Blundell, Esq., at Ince Blundell Hall, with four hundred and thirteen numbers—that of the Earl of Pembroke, at Wilton House, with two hundred and thirty-four, etc. An enormous amount of material has thus been brought together, and, regarded merely as a compendium, the work of Dr. Michaelis is of first-class importance, constantly to be referred to by the specialist, and through its breadth of interest well adapted as a guide for every visitor to the private galleries of Great Britain.

A greater number of illustrations would have heightened the value of this part of the volume; there are but ten plates and five small cuts in the catalogue. It seems a pity that in these days of direct reproductions from photographs the unsatisfactory and never quite reliable process of lithography should, in the majority of cases, have been adopted. The book, however, does not profess to be illustrated at all, and the author may have thought that the introduction of the rich assortment of plates which would have been needed to adequately represent the collections under consideration would have unduly extended the scope, and increased the bulk of a volume already elaborate and expensive.

But, as before said, it is not so much to this purely scientific and technical part of the book that we chiefly wish to call attention as to the important and even entertaining account of the growth of English collectorship, given in the introduction. This history Dr. Michaelis broadly divides into three periods: that of the growth of the earliest private collections, especially the acquisition of the famous Arundel Marbles; the golden age of classic dilettanteism in the last century; and, finally, the present stage of archaeological activity and centralization, so brilliantly inaugurated by the addition of the Elgin Marbles to the British Museum.

¹ Under the title: "*Les Beaux-Arts en Angleterre*:" 1807.

² Particularly in the third, fourth and fifth volumes: 1832-1841.

³ *Specimens of Ancient Sculpture*, selected from several collections in Great Britain: 1809 and 1835.

⁴ "After a couple of centuries antiquaries will have much to deal with in the antiques which have come out of our workshops." *Discorso Sopra Gli Antichi*, Lipsia: 1770.

¹ *Ancient Marbles in Great Britain*, described by Adolf Michaelis, Ph. D., Professor of Classical Archaeology in the University of Strasburg. Translated from the German by C. A. M. Fennell, M. A., late Fellow of Jesus College, Cambridge. Edited for the Syndics of the University Press. Cambridge: 1882.

² *Der Parthenon*, Herausgegeben von Adolf Michaelis. Leipzig: 1871.

The account of the accumulation of the Arundel Marbles, and the fate which so rapidly befell them, is the finest possible illustration of the condition of English civilization during the seventeenth century. Thomas Howard, Earl of Arundel and Surrey, born in 1585, lived long in Italy during his early life, the direction of his taste having been determined in great measure through his selection by James I to escort the Princess Elizabeth to her betrothed husband, Frederick, the Elector Palatine, afterwards for one winter King of Bohemia. Sir Edward Walker,¹ who stood in close relations to Arundel and his house, remarks that the noble Lord, when in Italy, "much pleased himself, and either took up or improved his natural disposition of being the great master and favorer of arts, especially of sculpture, design, painting and architecture, which rendered him famous and acceptable to all ingenious spirits both at home and abroad." It deserves notice that Arundel had in his suite no less a person than Inigo Jones, whose artistic taste developed itself for the first time during this journey in the direction of that classical style which characterized his later designs. Certain it is that he had there the best of opportunities to study the works of Palladio, the influence of which is so evident in the Greenwich Hospital, the colonnades of St. Paul and the old London Exchange. Inigo Jones was born in 1572, and was, consequently, thirteen years older than his patron, so that we may fairly conjecture that the Earl's natural taste for art must have been much stimulated by the influence of the practical knowledge and mature judgment of his elder companion.

Some of the schemes entertained by the noble collector were of an extent and an ambition previously unheard of; it is not surprising that his embittered opponent, Lord Clarendon, should have complained that "Arundel's expenses were without any measure, and always exceeded very much his revenue." It was only the difficulty of transportation to the sea which deprived the London of the seventeenth century of the possession of an obelisk then lying, broken in four pieces, in the Circus of Maxentius, a monument quite as famous, withal, as Cleopatra's Needle. What happened instead was that Bernini crowned his fantastic fountain in the Piazza Navona, at Rome, with the shaft in question.

Having ransacked Italy, and carried off from it a great number of statues, the Earl turned his attention to the birthplace of classic art: Greece, Asia Minor and the islands of the Ægean. An opportunity for this purpose was presented by the diplomatic mission to Constantinople of Sir Thomas Roe (1621), who willingly entered into the Earl's views, and declared himself ready "to look back upon antiquity" with the collector's eye. Inquiries were made, official permits obtained, and among the earliest spoils Sir Thomas was able to anticipate the fame of Dr. Schliemann by the acquirement of "a stone taken out of the old Palace of Priam, in Troy, cut in horned-shape." But even this striking discovery could not satisfy Lord Arundel, and in 1624 a new and special agent of his appears on the scene in the person of one William Petty, a Cambridge man and classical scholar of considerable attainments. In him his patron found a zealous and, if his enemies may be believed, not over-scrupulous assistant, who was all the more needed, as Sir Thomas Roe had by this time in part transferred his services to a dangerous competitor, the Duke of Buckingham, who took up the collecting of art treasures with all the energy of his impetuous nature. Petty combined in an exceptional manner all the chief requirements of an Eastern explorer, having, according to the unprejudiced testimony of the ambassador, an unflinching energy, a power of endurance proof against all exertions and privations, and, lastly, a regardlessness in gaining every advantage which Roe was destined soon to learn to his cost. In the appendix to the present volume is a letter from the ambassador in which he writes to Lord Arundel: "There was never man so fitted to an employment, that encounters all accident with so unwearied patience; eats with Greeks on their worst days; lies with fishermen on plankets, at the best; is all things to all men, that he may obteyne his ends, which are your lordships service."

Working at first in good agreement, Roe and Petty launched out into high-flown and quite romantic plans. When in our own generation Ponsoby first conceived the idea of removing the reliefs from the Mausoleum of Halicarnassus out of the walls of the Turkish fortress of Budrum, and acquiring them for England, some regarded this as "an unreasonable request" to the Porte. Yet how modest this wish was compared with the designs of Roe and Petty! They proposed nothing less than to get into their power six out of the twelve large reliefs which adorned the so-called "Porta Aurea," the finest of the gates of Constantinople, erected by Theodosius the Great. Through it the Byzantine emperors used to make their solemn entry into the city. Since the conquest by the Turks it had not been opened, but was built up and enclosed with new strong works of defence, the well-known Seven Towers. Though it had consequently become quite inaccessible, it was still regarded as the principal gate. For about a year this Quixotic plan cuts a grand figure in the correspondence. To get the consent of the sultan to the entire demolition of the golden gate proved to be as impracticable for the agents as the idea of reaching their object by corrupting the highest functionaries of state. A clandestine removal with the help of the soldiers stationed on the spot was impossible on account of the weight of the marble slabs, and the height at which they were built in; so they had recourse to stratagem. It was agreed that a Turkish priest should denounce the figure sculptures, as opposed to the tenets of the Mohammedan religion, and so bring about their removal from their con-

spicuous position. If once they were transferred to another place it would not be difficult to get them out of the way. In fact, a priest was engaged for this purpose, and a sum of six hundred crowns proffered in case of success; a temporary deposit of five hundred dollars being actually made by way of preliminary; but even this hope proved delusive. At last the Grand Treasurer, whose coffers could, in times of war, take advantage of every extra source of supply, promised to take the matter in hand, and to contrive a clandestine removal. By this time, however, the garrison began to get uneasy. A superstitious feeling gained ground that in connection with the removal of the enchanted sculptures a great mischief threatened the city. There was nothing left, unless they would expose themselves to serious danger, but to give up the whole plan. We cannot but regret this, as the reliefs soon afterwards disappeared altogether; only a few of the many visitors to Constantinople ever saw them again: no one has drawn or described them more closely, so that Roe's tolerably full description consequently retains some value.

But, although this bold plan failed, the agents succeeded in many of their undertakings, and acquired a number of sculptures and inscriptions sufficiently great to insure forever the importance and fame of the Earl's collection. Petty left the East in 1627, having dispatched the results of his labors to England, where they arrived safely in the course of that year. Arundel House became for awhile a sort of gathering place for scholars and lovers of art. King Charles and his Queen honored the collection with a visit, during which all the rooms were inspected. It is further related in Tenison's "Baconsiana" (1679), that Sir Francis Bacon "coming into the Earl of Arundel's garden, where there were a great number of ancient statues of naked men and women, made a stand, and as astonished cried out: 'The resurrection.'" Strange that on Easter Sunday, A. D., 1626, it was the great philosopher's own destiny to close his eyes in this very house!

The fate of these magnificent antiques, soon after the death of the Earl, is one of the most discouraging chapters in the history of archæology. Henry Howard, to whom Arundel House with its treasures, was entrusted, had nothing in common with the artistic interests of his grandfather. The derangement of the property and family circumstances explain his paying no heed to a proposal, which came from a thoroughly friendly quarter, to make the statues known to the world by an illustrated publication. The carelessness with which the venerable relics were allowed to perish was inexorable, nay, absolutely criminal. The inscriptions, which Selden's book has made especially famous, were "miserably neglected and scattered up and down about the garden and other parts of Arundel House, exceedingly impaired by the corrosive air of London." Many were destroyed, others stolen; indeed, they were so little regarded that on the repair of the house they were used as building material. In this way the upper half of the very valuable "Marmor Parium" disappeared in a chimney of the palace, and it would have been utterly lost to the learned world had not the diligence of Selden and his friends discovered it betimes.

Under such circumstances it was a veritable deliverance when an old friend of the family, John Evelyn, used his influence with the owner to such purpose that he assigned his treasures to safe hands, more, it is true, in indifference to their value than from high-minded liberality. In the year 1667 the library was, at Evelyn's instance, presented to the Royal Society, which had been founded not long before. The presentation of the marbles to the University of Oxford followed. They comprised "all those stones, coins, altars, etc., and whatever had inscriptions on them that were not statues," inclusive of the slabs let into the garden walls. This collection had once consisted of two hundred and fifty inscribed stones; but of these only one hundred and thirty-six arrived at Oxford; the remainder had been lost in those few decades.

The collection of the Earl of Pembroke, in Wilton House, became one of the most important of this age after the accession of a great part of the famous Mazarin Cabinet, which had once contained nearly four hundred sculptures. Among these were about one hundred and sixty statues, and more than two hundred busts, the latter mostly provided with modern drapery of costly variegated kinds of marble, and placed on correspondingly rich pedestals. The collection of the Palais Mazarin had once been regarded as one of the greatest sights of Paris, and was known as the "merveille de la France." Its fortunes were hardly less varied than those of the contemporary English collections. During the war of the Fronde, when Mazarin was obliged to leave Paris and even France for a time, a part of the sculptures was sold and dispersed (1652); but so great was the dread inspired by the all-powerful Minister that after his return all his scattered property was delivered up to him again. When the Cardinal died the antiques were valued at 150,000 livres. They fell in equal shares, as did the whole palace, to the Duc de Mazarin with his wife, a niece of the Cardinal, and her brother, the Duc de Nevers. The former, a rough and half-crazy man who lived in a perpetual state of quarrel with his wife, took advantage of the absence of the co-heiress to enter the gallery one fine morning armed with a large hammer, and to belabor the undressed statues in a fit of pretended prudery; not content with this, and regardless of all remonstrance, he returned in the evening with five or six attendants all armed in like fashion, and carried on his crack-brained work of destruction till midnight. Whatever was naked, male or female, fell a victim to his mad fury, and he only allowed the draped figures and the busts to remain. This happened in

¹ "Historical Discourses." London: 1705.

the year 1670.¹ The scandalous event made the greatest sensation in Paris. However, the misfortune had occurred, and could not be undone; it was not in the least lessened, but only relegated to the region of the comic, by the nude statues being "frosted" in a sort of drapery of plaster, just as the pope's sense of decency, a hundred years later, enveloped the Aphrodite of Knidos in a cloak of tin. For a long time the antiques in the Palais Mazarin continued to stand in that ridiculous disguise.

Insane prudishness should not be regarded by us as a danger entirely of the past. We would fain say, with a smile of superiority, "*nous avons changé tout cela*," but must be restrained by the thought of recent prosecutions of works of art in the liberal metropolis of New York, which bear in principle a suspiciously similar aspect. There are those—and they have by no means reached the age of Nestor,—who remember that a certain well-known gallery in our enlightened city of Boston itself, when reluctantly exhibiting the nude figures of two cupids, sent here by the eminent sculptor Horatio Greenough, felt it incumbent upon them in the interest of public morals, to appoint separate days for the admission of males and females to its classic halls. The action of the Duc de Mazarin appears rather as an exaggeration of a position still recognizable in modern society, or, to define it more exactly, as the extreme consequence of certain phases of belief still prevalent, than as an inconceivable vagary.

A portion of the Arundel Marbles, which had been bought by Lord Lempster and taken to Easton Neston, were there visited by a fate almost as deplorable. The son of the purchaser, Lord Thomas, afterwards Earl of Pomfret, having been in Rome, conceived the unhappy idea of having the statues restored in the Italian manner. He therefore engaged a scholar of Canillo Rusconi, one Guelfi, whom Lord Burlington had brought over to England, to do the work. It could not easily have been entrusted to more unfortunate hands. Great as has been the blundering perpetrated in all quarters in the shape of so-called "restorations," yet seldom ever have any antiques been so shamefully tampered with as in the tasteless additions made by this shallow botcher. A large number of the sculptures, also, had been set out along the garden front of the house, or in the various parts of the garden itself, and so exposed to all the destructive influence of the damp climate. The sad impression conveyed by this collection is effectively described by the young Horace Walpole: "In an old greenhouse is a wonderfully fine statue of Tully haranguing a numerous assembly of decayed emperors, vestal virgins with new noses, Colossuses, Venuses, headless carcases and carcaseless heads, pieces of tombs, and hieroglyphics. The rest are Scipios, Cincinnatuses, and the Lord knows who, which have lost more of their little value than of their false pretensions by living out of doors."²

But at least the fate of dispersal was spared to this portion of the Arundel collection; for when, after the death of the Earl of Pomfret, his son and successor, being deeply in debt, was obliged to sell the furniture of Easton Neston, the Countess-Dowager Henrietta Louisa bought the statues and presented them to the University of Oxford (1755). The greater number of the Arundel sculptures were thus once more brought together with the inscribed stones of the same collection. The University did honor to the donor in a solemn *actus*, of which Horace Walpole has again given us an ironical description, and made provision for a handsome publication by the learned Hellenist, Richard Chandler. The sculptures themselves, however, have remained in the Schools for more than a century, in a confusion similar to that at Easton Neston. The report which Dr. Michaelis gives of their condition, even to-day, is astonishing. "But the smallest number of specimens are in the well-lighted ground-floor rooms of the magnificent University Galleries; most can only be found after wearisome search in the gloomy cellars of this palatial building, even into their darkest recesses. We hope that this is the last stage of ill-treatment which the famous Arundel Marbles will have to suffer, and that for them there may even yet be at some time a day of final resurrection." It must, as before said, be a humiliation to British scholars that a work like this catalogue and history of English collections is left to a foreigner; but their pride must be humbled in a still greater degree by the fact that such an account of their present condition is possible.

J. T. C.

A STATUE OF WASHINGTON FOR MILWAUKEE.—Mr. R. H. Park, sculptor, has been given a commission to make a statue of Washington, to be presented to the city. The statue will be of bronze, about eleven feet high, and will stand on a pedestal of Scotch granite of about the same height, and will be placed at the east end of the Grand Avenue Park, facing the east. It will cost \$12,000. The monument will be a gift to the city from an unknown gentleman and his wife, and it is to be completed for dedication on the Fourth of July, 1885.

DRAINING THE CAMPAGNA.—"The draining and replanting of the Campagna," says the *Pall Mall Gazette*, "has been a favorite idea of the Italians since Rome became a capital of United Italy, and now the attempt is going to be made on a large scale. A certain amount of drainage work has been made compulsory on the different land-owners, and no less than eighty irrigation companies under Government control have been set on foot to reclaim the waste of centuries. One or two minor experiments have been fairly successful, and among other things plantations of eucalyptus have made habitable certain long-deserted spots, notably about S. Paolo fuori le Mura."

¹ *Mélange Curieux des Meilleures Pièces Attribuées à Mr. de Saintevremont*, Third edition. Amsterdam: 1726.

² Walpole to G. Montague, 1736; and to H. Mann, 1752.

HOSPITALS.³

THIS volume gives us what we never before had in available form: a clear and able statement of the *principles* which underlie hospital construction and management, together with ample illustrations and description of typical hospitals now in use in various countries, and when the second volume is issued, we shall be in possession of a most valuable book of reference alike for physicians, building-committees, and architects, who may be charged with the duty of planning, building or altering hospitals. The thoroughness which characterizes the volume before us may fairly be expected to give us all we are promised in the second volume, which is to complete the work.



Part I, as the first volume is entitled, is in two "Sections," of which the first is written by a physician and treats of the *principles* which should determine the construction and management of the buildings in question, and is admirable in its clearness and conciseness. It covers but 78 pages, of which 7 are devoted to a general introduction to the subject and 10 to the question of control and management. Dr. Moual has not only studied his subject thoroughly, but has had extensive experience in the management and inspection of hospitals. If he offers little that is new to those who are familiar with the literature of the subject, he has given his results in such shape and connection as to make them very valuable to those best read in this line. He tells again the sad story—too often forgotten by those entrusted with the duty of building hospitals—of great and costly buildings put up for the relief of the sick poor, in which their chance of recovery has been proved to be less than if they had been left in their own wretched homes or even abandoned in the streets. This language, used by the famous obstetrician, Paul Dubois, in 1853, before the Academy of Medicine in Paris, is not the language of exaggeration; it is the simple statement of experience. And recent statistics, we mean the statistics of years within the last decade, raise a strong suspicion that in one at least of the great free lying-in hospitals of the United States, the poor woman has been exposed to more danger than if no philanthropy offered such a harbor of refuge to her in her time of child-birth. A century ago Tenon pointed out the dangers inseparable from wards superimposed one upon the other, and from buildings arranged with a view rather to architectural effect or to ease of administration than to the needs of the sick. His language was vigorous and startling, and the warning has been repeated again and again by independent observers, by committees and commissioners, by reports of the surgical departments of great armies under the pitiless test of actual warfare. And these various witnesses have testified from England, France, Germany, Russia, Italy and the United States as to experience not only in their own countries but also in climates widely varying from their own; and there is such substantial agreement in their results that no fairly informed and candid physician or sanitarian would think of denying their truth. Such was the case twenty years ago, and yet very few of the great hospitals of Europe built within that period conform satisfactorily to the standard agreed on by the recognized authorities. This is especially true with regard to the arrangement of water-closets, urinals and bath-rooms, as appears from the plans of twelve or more hospitals in Mr. Snell's portion of the work.

The most astonishing modern instances of disregard of established principles of hospital construction are the new Hôtel Dieu in Paris and St. Thomas's Hospital in London. Abundant funds were at the disposal of the builders as were also sound advice and plain warnings; yet they persisted in putting up great piles of many-storied buildings with insufficient ground space. And though both these buildings are too new to be saturated with organic deposits from their patients' breath and other exhalations, yet already their percentage of deaths compares very unfavorably with that of hospitals more properly built. It seems but reasonable to hope that no more such mistakes will be made in any civilized country. In Germany, France, England, and most markedly in our own country, the practice is to build for surgical purposes isolated pavilions of but one story, and for medical use similar pavilions of not more than two stories, and quite as often of but one story. It is thus that all the new wards of the Massachusetts General and of the Boston City Hospital have been built, and these furnish fine examples of hospital pavilions.

It would scarcely have been expected that the prolonged investigations and consultations should have failed to lead to an authoritative agreement as to the *aspects* most to be desired for such buildings, but the fact is that among the best examples an axis may be found corresponding to every two points of the compass. Peculiarities of site and climate would of course forbid that there should be one aspect, and but one, admissible for all hospitals; but we should have looked for some nearer approach to common consent in a matter like this, and only the fact that every properly constructed ward has windows on both sides makes it possible that satisfaction should result from such various and even *opposite* aspects. The pavilions of the Johns Hopkins Hospital in Baltimore have their long axes

³ *Hospital Construction and Management*, by Frederic J. Moual, M. D., etc., and H. Saxon Snell, Architect, etc. London: T. A. Churchill & Co., 1882.

north and south. No hospital has been constructed with more thorough and intelligent consideration of every detail than this, and we may take it for granted that the best aspect has been chosen — for that hospital; but it does not follow that the same would hold true for all succeeding hospitals — even in Maryland. The question must be met afresh for each new hospital.

As to the reconstruction of old and faulty hospitals we should be inclined to quote the beggar's reply to Pope, who had refused him a penny with the poet's usual oath: "God mend me!" "Mend you indeed! It would be less trouble to make a new one."

In regard to the management of hospitals the pith of Dr. Moual's remarks is that as hospitals are built solely for the benefit of the sick, the executive head of every hospital should be *medical*.

The work pays a high compliment to the hospitals of the United States, and promises that its second part shall give plans of the most typical among them. The freshness of the whole social environment here makes the problem of construction and management simpler than in the old world; but it is well to bear in mind that *permanence* is not a necessary part of the problem; that the arguments in favor of temporary pavilions, built with a view to disuse and perhaps destruction at the end of a few years, are strong; and that tents can make and have repeatedly made more wholesome hospitals than the buildings of brick and stone which cost vastly more of time and money to put up and to conduct.

The book is a handsome quarto, in paper binding, with beautiful type on thick paper with broad margins.

A CORRECTION.

BOSTON, February 9, 1884.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I am sorry to have to call your attention to a mistake in to-day's issue, which it is quite necessary to correct in some way, in order to avoid misunderstanding. All the matter on page 69 beginning with the words, "Following is a table showing the immediate deflection," etc., and preceding "No. 34" is a part of the test of beam "No. 34," i. e., of the time-test, and should have appeared on page 70 just after the fine print of beam "No. 34," and just before "No. 35."

Yours truly,

GAETANO LANZA.

THE LANCASTER, PA., MARKET-HOUSE ROOF.

LANCASTER, PA.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Gentlemen,—Since I wrote you my last letter in reference to the falling of the public market-building in Lancaster, Pa., I have visited the ruins, and ascertained the proper dimensions of the material used in the roof-truss, and herewith enclose a sketch of same; if there is any fault or defect in the construction of this truss it would be of great interest and benefit to many in our community to have a criticism on same.

Yours, etc.,

S.

[CAN "S" give us the distance apart of the trusses, and the material of roofing?—EDS. AMERICAN ARCHITECT.]

THE FUEL-FORK.

WASHINGTON, D. C., February 5, 1884.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Further experience with my antique fuel-fork has led to making the two points sharp and square, and twisting each of them like the long pikes used by lumber-men in rafting logs. This gives them a better hold in the wood.

M. C. MEIGS.

COMPETITION ETHICS.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Some few months ago a gentleman in this town gave the munificent sum of \$50,000 to build a high-school. He appointed a committee for plans, also for building and finance.

The Committee on Plans invited several architects of this town to prepare plans for same; the instructions were given to me (and I suppose to the others) verbally; amongst them was the "building not to cost more than \$50,000." I put in plans. The award was given in December last, the plans chosen having since been put out for bids, which were received last week; the lowest was \$65,960; the highest \$84,350; to-day I am told the lowest tender has been accepted. I was not the successful one, but it was pronounced the next best; mine could be built for \$50,000.

What I wish to know is this: can I not, for my general drawings, demand two and one-half per cent, as the committee have thought fit to break the most important stipulation. Is it not a breach of contract? Can I not in case they refuse to pay me sue them for breach of contract? Can you refer me to any action of this kind that has taken place, and where I can obtain the particulars? I should be greatly obliged if you would answer this as soon as possible.

Yours very truly,

S.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Can you or some of your readers name a case or cases like the following, or parallel to it, coming before the courts, and give particulars and results: Where dissatisfied competitor in architectural competition sought redress for breach of contract because

the committee saw fit to adopt a design for a building costing \$50,000, and which they knew at the time would cost that amount, while their programme issued to architects distinctly stated that no design could, under any circumstances, be accepted if it would exceed \$30,000 in cost of execution, that being the amount of money at the committee's disposal.

ARCHITECT.

[We know of no adjudicated case of the kind.—EDS. AMERICAN ARCHITECT.]

THE ARCHITECT'S COMMISSION.

February 5, 1884.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Gentlemen,—Will you kindly inform me if the subject of the justice of an architect's charge of five per cent on cost of the building, or the discussion of the reason for his charging a *percentage* rather than a fixed sum, or anything on that subject has ever been printed in the *American Architect* and when? You will thereby much oblige

Yours respectfully,

ALFRED H. THORP.

[THE fullest consideration of the nature of an architect's compensation that has ever appeared in the *American Architect* may be found in its issues for July 21 and 28, 1877.—EDS. AMERICAN ARCHITECT.]

COMMISSIONS ON FIXTURES.

BOSTON, MASS., January 15, 1884.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Will you kindly give me your opinion, on how much of the expense in building a house ready for occupancy the architect is entitled to a commission upon? Supposing the owner should contract himself for the furnace, mantels, gas-fixtures, paper-hangings, and frescoing. A client of mine asked the advice of one of our leading architects on this matter, and he said it was customary to pay a commission on what was contracted for by the architect only. Is he correct? A reply will greatly oblige

Yours respectfully,

J. H. BESARICK.

[It is customary to include the cost of the furnace, with its pipes and registers, in that of the house, when reckoning the architect's commission, as the architect is obliged to expend a very considerable amount of time and skill in arranging his plans so as to provide for them properly. If the owner prefers to relieve his architect entirely of the trouble of designing or choosing the mantels, and tells him so before he expends any time or trouble upon them, we think the architect would generally reckon his commission on the cost without them; but if the owner after making this arrangement should change his mind, and call upon the architect to select or design the mantels, he might fairly be called upon to pay, not what would have been the charge if they had been, as usual, included in the house contracts, but the ordinary commissions for furniture, which would be, for selection merely, ten per cent on the cost, or from ten to twenty-five per cent, or even more, if the architect furnished designs and supervised their execution.

Gas-fixtures, paper-hangings, and decorations, like carpets and curtains, are not generally, and should not, in fairness to either party, be included in the cost of the house as a basis for the usual commission. If the owner prefers to select them without consulting the architect at all, there is no reason why he should pay the architect for the privilege of doing so; and if, on the other hand, he decides to submit the choice to the architect, either wholly, or as an adviser, the latter should certainly be paid the usual ten per cent commission, which barely remunerates him for the time necessarily spent in selecting to the best advantage.—EDS. AMERICAN ARCHITECT.]

THE ARCHITECTURAL LEAGUE OF MINNEAPOLIS.

22 BOSTON BLOCK, MINNEAPOLIS, January 29, 1884.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Gentlemen,—An association of draughtsmen has been organized here, called the *Architectural League of Minneapolis*, with the following officers: President, Geo. E. Bertrand; Vice-President, H. W. Jones; Secretary, Francis W. Fitzpatrick; and Treasurer, Walter S. Parker; and a roll of twenty-four members (Fellows). The association is divided into four classes of members.

1. Fellows: Those who have studied architecture at an Institute of Technology or in an architect's office for at least three years; having all the rights and privileges, voting, holding office, use of rooms, etc.

2. Juniors: Young men not having yet completed the three years' study necessary to admit them to Fellowship.

3. Associates: Practising architects, artists, engravers, engineers, etc.

4. Honorary Members: Parties taking an interest in the society and elected by a three-quarters' vote, who with the Associates and Juniors, enjoy all privileges except those of voting and holding office.

The objects of the Association as set forth by Article 2 of the Constitution are:—

"... To improve the social relations of the students of architecture in the city; to facilitate their study of both the artistic and scientific elements of the profession and to create a more just and elevated public appreciation of art..."

The means that have been taken to secure the above are, according to Article 3:—

"... The providing of a suitable apartment wherein are to be collected designs, models, pictures, casts, specimens, etc. The regular meeting of the members for discussion and interchange of ideas, the forming of clubs among the members for modelling, sketching, etc., or such other means as may be considered the most efficient for the study of architecture and the general culture in art."

FRANCIS W. FITZPATRICK, Secretary.

AMERICAN ARCHITECTURAL FORM OF THE FUTURE.

January 24, 1884.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—In your issue of the 19th inst., you have illustrated studies for an "Architectural Society's Building" laid before the American Institute of Architects at their last meeting, for their criticism.

The publication of such an exhaustive study of eclectic architecture under the title of "American architectural form of the future" lays this subject open to general criticism. Probably the best criticism on the subject would be to republish the design for the store of R. H. White & Co. that appeared September 15, in your paper. No living plant can ever be produced by forming bouquets of dried grasses and autumnal leaves, however full of seeds the grass may be. We must have the planted seed that brings forth root and branch. Europe during her dark ages was for many generations overwhelmed with hordes of Vandals and migrating races, far more difficult to tame than they who swarm into America to-day. In time a living architecture did spring forth; but none can stand before the still unfinished Rheims cathedral, and say, "this is an eclectic architectural medley, the result of mingling races after Rome was overthrown." No! Those races were first curbed and disciplined, their artists trained in monastery cells and architecture rooted to the soil in the simple solid form of the "Style Roman"—the rectangular, round-arched, massive Romanesque. From this root there sprang the wonderful and charming Gothic. A simpler, clearer illustration of this cannot be seen than that of Winchester Cathedral, built before the Conquest in the simple round-arch style, and transformed, with little difficulty, generations after, to the then over-ripened Gothic, just entering its latest English phase.

A little clear knowledge of this subject would greatly encourage the young architects striving to take root in the soil of this new world, and they may do much to aid the rooting of a nation here. The mixed, confused, unbridled architecture of America is but so much rubbish encumbering the development of true art. True knowledge always simplifies and gives encouragement. It is the part of your publication to aid in the diffusion of such knowledge.

Provincial and national architectures of necessity exist; but art, grand art, is greater than a nation. The present century is wonderfully developing the truth and value of such art. Where art is truly cultivated and made use of this is clearly seen; and it is of much value to America to learn what art in truth is and how great achievements it is now accomplishing throughout the world. It is to encourage the young architects in America to undertake the thorough study of art in general during the present century, that I write this criticism. Leave "Queen Anne" to the grandmamas of the profession—it goes well with tea and toast.

The French and Belgians lead the van of all art progress at the present day. Could not the American Institute have sent some of their number to Brussels the past fall, that they might see with their own eyes?

CHARLES TERRELL.

NOTES AND CLIPPINGS.

STATUES OF VESTALS FOUND AT ROME.—The excavations at the House of the Vestals have struck a mine of artistic wealth. The results of to-day's excavation were four statues of vestals, the torso of a fifth, and the draped statue of a Consul, but the six heads were wanting.—*London Times*.

CONCRETE HOUSES A FAILURE.—The *Redwood Gazette* advocates the building of houses of concrete. That experiment was pretty thoroughly tried in Winona several years ago, but it was soon abandoned. One building fell, and the walls of others have crumbled. Some cellar-walls have stood fairly well, but not well enough to justify any enthusiasm for concrete. Any amount of information can be obtained here in regard to it, and while possibly the "ingredients" at Redwood may be more favorable than in Winona, the subject is of so much importance that we should regret to see the people of Redwood or any other enterprising city beguiled into concrete without a full knowledge of such light as Winona could shed upon the subject.—*Winona (Minn.) Republican*.

FERGUSON'S MECHANICAL PARADOX.—In the August number of *Blackwood's Magazine*, is an article called "James Ferguson the Astronomer," giving a short biography of him. At page 262 is an extract of a letter of his to a Scotch minister, giving a detailed account of what Ferguson calls his "Mechanical Paradox." He is at a public-house, and in conversation with a watchmaker on a religious doctrine; not considering the place a fit one for such an argument, he changes the subject thus: "'Sir,' said I, 'I believe you know very well how one wheel must turn another, or how a pinion must turn a wheel, or a wheel a pinion?' 'I hope I do,' he said. 'Then,' said I, 'supposing you make a wheel as thick as other three, and cut teeth in them all, and then put the three thin wheels all loose upon one axis, and set the thick wheel to them so that its teeth may take into those of the three thin ones. Now turn the thick wheel round, how must it turn the others?' Says he, 'Your question is an affront to common sense, for everybody knows that turn the wheel which way you will, all the other three must turn the contrary way to that.' 'Sir,' says I, 'I believe you think so.' 'Think I' says he, 'it is beyond a thought, it is demonstration that they must.' 'Sir,' said I, 'I would not have you be too sure, lest possibly you should be mistaken, and now what would you say if I should say, that turn the thick one whichever way you will it shall turn one of the wheels the same way, the other the contrary way, and the third no

way at all.' Says he, 'I would say there never was anything proposed that could be more absurd as being not only above our reason, but contrary thereto, and also to plain fact.' . . . The watchmaker asked me if I had ever made or seen such a machine. I told him I had not, but I believed I could make it, although I had never thought of it till this instant. 'By—' said he, 'your head must be wrong, for no man on earth could do such a thing.' 'Sir,' said I, 'be my head wrong or right, I believe I can not only do it, but even be able to show the machine if I may be admitted into this company this day se'night.' The company, who with serious faces were very attentive to all this, requested that I would come. So I made the machine all of wood and carried it under my coat to the same room on the day appointed, and there was the watchmaker. 'Well, old friend,' says he, 'have you made your machine?' 'Yes, sir,' said I, 'there it is, let us take it to pieces; are these wheels fairly toothed and fairly pitched into the thick wheel?' 'Yes, they are,' said he. I then turned round the great wheel, whose teeth took into those of the three thin wheels, and asked him whether the uppermost wheel did not turn the same way as the one that turned it, whether the next wheel did not turn the contrary way, and the lowermost thin wheel no way at all? 'They do,' he said, 'but there is a fallacy in the machine.' 'Sir,' said I, 'do you detect the fallacy and expose it to the company?' He looked a long while at it, took it several times to pieces, and put it together again. 'Sir,' said I, 'is there any fallacy in the machine?' 'I confess,' said he, 'I see none.' 'There is none,' said I. 'How the devil is it, then,' he said, 'that the three wheels should be so differently affected? The thing is not only above all reason, but is contrary to mechanical principles.' 'For shame, sir,' said I, 'ask me not how it is, for it is a simpler machine than any clock or watch that you ever made or mended, and if you are so easily nonplussed by so simple a thing in your own way of business no wonder that you should be so about the Trinity!'"

ROMAN REMAINS AT MAYENCE.—Some very interesting Roman sepulchral discoveries have been made lately at Mayence, in the carrying out of some considerable excavations and earth-works required for carrying Ludwigsbahn Railroad around the city. Close to the Neuthor the workmen came upon a place of considerable extent, evidently assigned to the sepulture of civilians. A large number of large and small stone coffins were found at irregular distances from each other, the intervening spaces having been occupied by wooden coffins, as is proved by the fragments and the nails which were found. One stone coffin bore a plate, which seems to have previously served as the "head-stone" of a former grave; and all the indications suggest that the place had been used at successive periods as a place of burial. Most of the graves that were opened contained skeletons of women and children, with which lay bracelets, rings, needles, censers for burning incense, etc. There was one metal coffin, in which lay a woman's skeleton, but without any inscription or ornament. In the children's graves there were toys and other objects, generally of beautiful workmanship, such as little bracelets, glass and earthenware utensils, etc. There was one little polished goblet of singular beauty. One stone coffin (the inscription on which contained some mistakes) held the body of a woman, dressed with lime for the purpose of preservation, having the back hair arranged in a long plait of eight strands, woven with great elegance, and the clearly-discernible remains of a cap. The hair is now red, but most probably was once black. There was in the coffin a stone needle-case, ornamented with gold bands; two bone dice, a wooden casket with bronze mountings, the key of which is in excellent preservation, and a bronze ring. As to other objects found in the place, a small bronze figure of a dancing Bacchante, three black earthenware vases beautifully painted, and bearing the following inscriptions, "vivas mi," "bibe," "dos," were especially deserving of notice. A quantity of silver and bronze coins were found, ranging from the time of Hadrian to the end of the third century.—*London Times*.

"THE HOTEL OF THE FUTURE."—The following is the translation of an article in a Berlin paper which will convey an idea of the German estimates of the coming American hotel: "The latest American progress in building will be the 'mammoth hotel,' soon to be erected on the Shell Road, St. Augustine, Fla. This enormous hotel is to have a frontage of three English miles long, and a depth of six miles; the height of seventy-seven stories; will measure 3,840 feet from the ground floor to the roof. The hotel will have no stairs, but 500 balloons will always be ready to take guests up to their rooms. No room waiters are to be employed, but visitors will be served by a newly-patented automaton, put up in every bed room, which will do all shaving, shampooing, etc., for the guests by a very simple and ingenious mechanism. Supposing the guest requires hot water, the automaton will be able to call down stairs, 'a bucket of water for room No. 13,107,' and the water will be up in seven seconds by a patented elevator. Half an hour before table d'hôte, instead of ringing bells, a gun (twenty-four pounder) will be fired on each floor to call the guests to get ready for their meals. The tables in the dining-rooms will measure four miles each, attendance being performed by twelve waiters on horseback on either side of the table. Music during table d'hôte will be played, gratis, by eight bands of seventy-seven men each. For the convenience of visitors a railway will be built on each floor, as well as telegraph offices. The price of one bed-room will be from \$1 to \$10. The cost of this building is estimated to be \$630,000,000. The billiard-room will contain nine hundred American, ninety-nine French and one English table, and most of the visitors are expected to be Americans. The billiard-room will be fitted out with a spittoon of one hundred feet in circumference."

TREE-PLANTING IN MEXICO.—The Mexican Government has made a contract with Mr. Oscar A. Droege to plant 2,000,000 trees in the Valley of Mexico within four years. The contractor pledges himself to 80,000 ash, 35,000 willows, 120,000 poplars, 60,000 eucalyptus trees, 60,000 trenosjapones, 60,000 mountain cypress cedars, 60,000 acacias, and 120,000 of miscellaneous varieties. The trees must be in plantations of from 50,000 to 100,000 each.

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

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

BUILDING PATENTS.

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

- 292,152. WINDOW AND DOOR BUTTON. — August Arena, New Britain, Conn.
 292,153. WATER-CLOSET VALVE. — John Demarest, New York, N. Y.
 292,160. CISTERN FOR WATER-CLOSETS. — John Demarest, New York, N. Y.
 292,168. COMBINATION-TOOL. — Albert E. Lytle, Chicago, Ill.
 292,176. SAW FASTENING AND FRAME. — Henry L. Pratt, Brooklyn, N. Y.
 292,184. COMBINATION-TOOL. — William G. Thompson, Brooklyn, N. Y.
 292,189. PAINT-DISTRIBUTER. — John P. Whipple, Milwaukee, Wis.
 292,194. CROSSCUT SAW. — Elias C. Atkins, Indianapolis, Ind.
 292,202. FASTENING FOR MEETING-RAILS OF SASHES. — Jas. Chambers, New Britain, Conn.
 292,210. SPRING-HINGE. — Henry B. Dodge, East Somerville, Mass.
 292,225. SHUTTER-WORKER. — William Hawn, Knoxville, Tenn.
 292,251. TILE-MACHINE. — James W. Penfield, Willsborough, O.
 292,265. FIRE-ESCAPE. — Joshua C. Stoddard, Springfield, Mass.
 292,298. SCREW-DRIVER. — George E. Gay and John H. Parsons, Augusta, Me.
 292,321. SCAFFOLD AND FIRE-ESCAPE. — Josef Klein, New York, N. Y.
 292,322. FIRE-ESCAPE. — Cyrus A. Knauer, Pottstown, Pa.
 292,328. FIRE-ESCAPE. — Nicholas Lennards, Harvard, Ill.
 292,342. COMPOUND VISE AND LATHE. — James R. McMillan, Philadelphia, Pa.
 292,347. SHINGLE-SAWING MACHINE. — Patrick O'Connor, Tallman, Mich.
 292,354. SHUTTER-WORKER. — Ronello F. Pratt, Everett, Mass.
 292,361. MACHINE FOR DRESSING STONE. — Henry A. Rife, Timberville, Va.
 292,362. RADIATOR. — Louis C. Rodier, Detroit, Mich.
 292,363. SAW-ENVELOPE. — Frederick Schluchter, East New York, N. Y.
 292,410. WINDOW-SCREEN. — Alfred L. Clark, Dubuque, Iowa.
 292,411. FIRE-ESCAPE. — Alfred L. Clark, Dubuque, Iowa.
 292,413. KILN. — Jacob Pearson Cramp, Finedon, County of Northampton, England.
 292,414. FIRE-ESCAPE. — Augustus S. Currier, Hillsborough, Ill.
 292,416. HINGE. — Joseph Decombe, San Francisco, Cal.
 292,420. CONSTRUCTION OF CISTERNS FROM CONCRETE. — William B. Dorward, Marion, O.
 292,427. BRICK-KILN. — Willis N. Graves, St. Louis, Mo.
 292,458. SHINGLING-BRACKET. — Stephen Woodward, Delano, Minn.

SUMMARY OF THE WEEK.

Baltimore.

- BUILDING PERMITS.** — Since our last report twenty permits have been granted, the more important of which are the following: —
 Louis Anft, 4 two-sty brick buildings, w s Castle St., between Monument and McKelderry Sts.
 H. Gerbode, two-sty brick stable, in rear n s Canton Ave., between Chester and Choptank Sts.
 John Weitzell, 6 two-sty brick buildings, w s Madeira Alley, s of McKelderry St.
 J. E. Bennett, three-sty brick building, s s Baltimore St., between Gilmer and Mount Sts.
 Jas. Floyd, two-sty brick building, rear e s Light St., between Barney and Heath Sts.
 John Crozier, three-sty brick building, in rear No. 109 Eastern Ave., s s.
 Thos. H. Blick, 4 two-sty brick buildings, s s Hoffman St., commencing s e cor. Holbrook St.
 Samuel Hecht, three-sty brick building, e s Bethel St., between Bank St. and Eastern Ave.
 D. & C. S. Strat, two-sty brick warehouse, n s Hiller St., between East and Forrest Sts.
 A. P. Gore, three-sty brick building, n w cor. Madison Ave. and Orchard St.
 Leonard Kline, two-sty brick building, n w cor. Cary St. and Patterson Lane.
 Chas. Warnick, two-sty brick stable, rear w s Alsquith St., n of Biddle St.
- Boston.**
BUILDING PERMITS. — Brick. — Warren Ave., No. 142, Ward 17, for Edwin B. F. Coon, family-hotel, 21' 8" x 72', four-sty flat; Laming & Drisco, builders.
 Wood. — Canterbury St., opposite Huntington St., Ward 23, for Thomas McManus, dwell., 22' x 30', two-sty pitch.
 Centre St., near Grove St., Ward 23, for Henry J. Salmon, dwell., 24' x 32', two-sty pitch; John String, builder.
 Tremont St., near Oak Sq., Ward 25, for Edward

- T. Morey, office, 14' x 21', one-sty; Edward T. Morey, builder.
 Maxwell St., near Capen St., Ward 24, for Wm. H. Jackson, mechanical, 22' x 28', one-sty; Wm. H. Jackson, builder.
 Washington St., near Keyes St., Ward 23, for Boston Thread and Twine Co., coal-storage, 32' x 70' and 70' one-sty flat; Chas. Lewis, builder.
 Lamartine St., near Boylston St., Ward 23, for Lorenz Ernst, 2 dwells. and store, 19' x 36' and 24' x 33', three-sty flat; Jacob Luppold, builder.
 Tremont St., near Oak Sq., Ward 25, for E. V. P. Morey, 4 greenhouses, 21' x 70', one-sty pitch; E. V. P. Morey, builder.
 Dennis St., near Winthrop St., Ward 20, for Benj. F. Bean, 6 dwells., 24' x 42', three-sty flat; C. W. Jefferson, builder.
 Washington St., near Boston & Providence R. R., Ward 23, for P. J. McNulty, dwell., 22' x 30', two-sty pitch; P. J. McNulty, builder.
 Heath St., cor. Heath Ave., Ward 22, for Mrs. A. H. Kneudien, dwell., 16' x 18' and 24' x 30', two-sty pitch; J. L. Lakin, builder.

Chicago.

- OPERA-HOUSE.** — Articles of incorporation have been filed at the office of the Secretary of State, for the Chicago Opera-House Company, capital \$800,000, incorporators, Charles Henrotin, Edward Koch, Wm. D. Kerfoot, P. Stanley and Samuel C. Walker.
BUILDING PERMITS. — Albert Crane, 5 cottages, Union St., near Thirty-first St.; cost, \$3,500.
 Peter Simon, three-sty store and dwell., 2316 Wentworth Ave.; cost, \$6,000; architect and builder, L. N. Kees.
 J. Weiner, three-sty store and dwell., 3001 Halsted St.; cost, \$8,000; architect, P. W. Ruehl; builder, P. Kaiser.
 E. J. Lehman, 2 three-sty flats, 2320 and 2322 State St.; cost, \$10,000; architects, Treat & Folz.
 A. McVittie, two-sty shop, 2533 and 2535 State St.; cost, \$3,500.
 Geo. W. Smith, five-sty warehouse, 211 and 213 Michigan St.; cost, \$15,000; architect, E. Baumann; builder, E. Earnshaw.
 E. Heldmaier, 5 two-sty dwells., Wells St., cor. Hillis St.; cost, \$10,000; architect, H. M. Hanson; builders, Geo. Lehman & Son.
 Geo. W. Ackerman, two-sty store and dwells., Western Ave., cor. Polk St.; cost, \$8,000; architect, J. W. Ackerman.
 F. Weber, two-sty dwell., 172 West Fourteenth St.; cost, \$3,500.
 C. & A. Railroad Co., addition to store and house, between Harrison and Van Buren St.; cost, \$2,500.
 Chas. Och, two-sty dwell., 510 North Paulina St.; cost, \$3,000.
 Ernst Bros., four-sty brewery, 59 to 65 Larrabee St.; cost, \$20,000; architect, F. W. Wolff, builder, Seeficker.
 R. Robertson, 8 two-sty stores and dwells., 979 to 993 North Clark St.; cost, \$20,000; architect, H. Boehme.
 John Jansen, 3 cottages, 103 to 107 Coblenz St.; cost, \$3,000.
 S. E. Gross, 25 cottages, Thomas St.; cost, \$30,000.
 S. Steneger, two-sty dwells., 378 Huribut St.; cost, \$4,800; architect, Ira C. Zarbell.
 F. J. Bush, two-sty dwell., 738 Thirty-first St.; cost, \$3,500.
 H. Brelle, three-sty dwell., 1015 North Halsted St.; cost, \$5,500; architect, Adolph Pott.
 Baker Bros., three-sty barn, Ogden Pl.; cost, \$6,000.
 A. Forrest, two-sty dwell., 1133 Adams St.; cost, \$3,500.
 J. L. Campbell, 10 two-sty dwells., Lexington St.; cost, \$25,000; architects, Edbrooke & Burnham.
 J. Becker, three-sty flats, 634 Sedgwick St.; cost, \$5,000; architect, A. F. Boos.
 B. Hagenson, two-sty flats, 357 and 359 Lincoln St.; cost, \$9,000; architect and builder, B. Hagenson.
 E. K. Beach, two-sty store, 223 Wabash Ave.; cost, \$18,000; builder, Leo Kabell.
 H. Kaylor, two-sty store, 27 Fullerton Ave.; cost, \$4,000.
 F. King, two-sty store and dwell., 717 Erie St.; cost, \$2,500.
 M. Robinson, two-sty dwell., 3727 Langley St.; cost, \$4,000.
 E. G. Zeller, two-sty store and dwell., 3007 Wentworth St.; cost, \$2,500.
 John Peters, two-sty store and dwell., 533 Blue Island Ave.; cost, \$4,000.
 F. Klema, two-sty dwell., 705 Loomis St.; cost, \$3,000.
 Mrs. M. E. Sands, 6 two-sty dwells., 605 to 615 Congress St.; cost, \$15,000.
 S. Oleson, two-sty store, 720 Seymour St.; cost, \$2,000.

Cincinnati.

- BUILDING PERMITS.** — From January 1 to February 9 the following building permits have been issued: —
 John Van, 11 three-sty brick dwells., cor. Euclid and Boone Sts.; cost, \$35,000.
 F. Underheide, four-sty brick building, Walnut St., between Canal and Twelfth Sts.; cost, \$6,000.
 Benj. Rollman, three-sty brick store and dwell., State Ave., near Eighth St.; cost, \$6,000.
 Fred Paife, two-sty brick dwell., Pavilion St., near McLean Ave.; cost, \$3,000.
 Eugene Berninghaus, five-sty brick building, Western Ave., near Dayton St.; cost, \$9,000.
 E. M. Patterson, 3 three-sty brick buildings, Grand Ave., near Prince Ave.; cost, \$8,000.
 P. J. Jones, two-sty brick building, 24 Baum St.; cost, \$3,800.
 L. B. Harrison, five-sty brick store, Vine St., near Second St.; cost, \$10,000; J. W. McLaughlin, architect.
 Bernar Fellhause, two-sty frame building, Queen Anne Ave., opposite Church St.; cost, \$2,500.
 Fifteen permits for repairs; cost, \$15,750.
 Total permits, 24.
 Total cost, \$99,000.

New York.

- CHAPEL.** — A chapel, of brick, stone and terra-cotta, 80' x 100', is to be built for the Church of the Sacred

Heart, on the n s of Fifty-first St., between Tenth and Eleventh Avenues, from designs of Messrs. N. Le Brun & Son.

EXCHANGES. — The most important projects this year seem to be in exchanges. The Stock Exchange will build a new edifice should they obtain a suitable site. The Petroleum Exchange also talk of having a building erected. Work on the Mercantile Exchange will commence about May 1, and the Mechanics' and Traders' Exchange are considering the project of the erection of a building to cost, with the land, \$250,000.

HOUSES. — It is said that the dwelling for Mr. John S. Kennedy, the banker, to be built at 995 Fifth Avenue, from designs of Mr. R. H. Robertson, will cost over \$150,000. The lot is 30' x 122'.

Messrs. D. & J. Jardine have drawn plans for a number of brick, brown-stone and terra-cotta four-sty houses, which it is proposed to have built on Sixty-eighth St., between Ninth and Tenth Aves. John D. Crimmins and Edward J. King are interested in the enterprise.

OFFICE BUILDINGS. — On the s e cor. of Wall and New Streets, the Mortimer Estate proposes to build a handsome eight-sty building.

At No. 51 Liberty Street the Brooklyn Life Insurance Company proposes to build a first-class office-building, for which several architects are preparing competitive plans.

BUILDING PERMITS. — Washington Ave., w s, 100' n One Hundred and Sixty-fourth St., 2 two-sty frame dwells., tin roof; cost, each, \$1,700; owner, Susan C. Cooper, 223 East Twenty-third St.; architects and carpenters, Cooper & Weed.

One Hundred and Thirty-fifth St., n s, 150' w Third Ave., four-sty brick tenement, tin roof; cost, \$9,000; owner, A. Schappert, cor. One Hundred and Thirty-fifth St. and Lincoln Ave.; architect, F. S. Barus.

Macomb St., n s, adjoining N. Y. City & N. R. R., three-sty frame dwell. and store, tin roof; cost, \$3,000; owner, Elizabeth Volze, Kingsbridge; architect and builder, G. W. Varian.

Ave. A, n e cor. Eightieth St., five-sty brick tenement and store, tin roof; cost, \$18,000; owner, M. H. Schneider, 1455 Ave. A; architect, Julius Kastner.

Ave. A, e s, 25' 6" n Eightieth St., five-sty brick tenement and store, tin roof; cost, \$13,000; owner and architect, same as last.

Eightieth St., n s, 79' e Ave. A, five-sty brick tenement, tin roof; cost, \$12,000; owner and architect, same as last.

South Fifth Ave., No. 133, five-sty brick store, tin roof; cost, \$18,000; owner, Jas. M. Fitzgerald, 21 Bank St.; architect, Chas. E. Hadden.

One Hundred and Fifty-fifth St., n s, 225 e Cortland St., two-sty frame dwell., tin roof; cost, \$3,800; owner, Constantine Kobel, One Hundred and Forty-eighth St., w of Third Ave.; architect and carpenter, Ed. Stichler; mason, Jno. Frees.

Forty-third St., No. 105, five-sty brick tenement, tin roof; cost, \$11,000; owner, Solomon Jacobs, 195 East Broadway; architect, Wm. Graul.

Ninety-second St., s s, 100' e Ninth Ave., five-sty brick, with first sty brown-stone flat, tin roof; cost, \$20,000; owner, architect and builder, John D. Crimmins, 1037 Third Ave.

East Ninety-second St., No. 209, five-sty brick tenement, tin roof; cost, \$11,500; owner, Chas. Rieger, 1645 Third Ave.; architect, Chas. Kinkel.

Fig. St., No. 10, five-sty brick tenement, tin roof; cost, \$15,500; owner, Anna M. Dotzauer, 134 Second St.; architect, F. W. Klemm.

East Forty-third St., Nos. 332 and 334, 2 five-sty brick and brown-stone tenements, tin roofs; total cost, \$35,000; owners and masons, Joseph and Robert Gordon, Second Ave., s w cor. Thirty-ninth St.; architect, A. Wagner; carpenter, R. Ellis.

North Third Ave., No. 650, near One Hundred and Fifty-first St., four-sty store and tenement; cost, \$9,000; owner, W. Frederick Weber, 135 Division St.; architect, F. Jenith.

One Hundred and Forty-fourth St., s s, 165' e North Third Ave., three-sty frame tenement, tin roof; cost, \$4,500; owner, Magdalena Hoffmann, 607 East One Hundred and Forty-third St.; architect, A. Arcander.

Ninety-second St., n s, 125' e Third Ave., four-sty brick building, tin roof; cost, \$20,000; owner, Jacob Ruppert; architects, A. Pfand & Son.

Pearl St., No. 518, four-sty brick tenement and store, metal roof; cost, \$10,000; owner, John V. Haik, on premises; architect, Bart. Walther.

West Forty-third St., Nos. 542 and 544, five-sty brick factory, tin roof; cost, \$7,000; owners, Ferguson Bros., on premises; architect, L. H. Broome.

ALTERATIONS. — Elizabeth St., Nos. 190 and 192, four-sty brick extension, gravel roof; cost, \$25,000; owners D. Brinkenhoff & Co., on premises; architect, E. Sniffen.

Third Ave., Nos. 798, 800 and 802, internal alterations; cost, \$6,500; owner, Wm. Taylor, 799 Broadway; architects, Hugo Kafka & Co.

West Forty-second St., No. 3, new stone front and a one and basement sty brick extension; cost, \$5,500; lessee, James Slater, 247' w of Forty-fourth St.; architect, Jas. Stroud.

Broadway, No. 625, raise portion of building two stories, etc.; cost, \$20,000; owner, Emma Lawrence Jacob, 6 East Forty-second St.; architects, N. Le Brun & Son; builders, F. & W. E. Bloodgood and James Hardley.

Madison Ave., s e cor. Twenty-sixth St., raise extension one-sty, new staircase; cost, \$5,000; owner, Mrs. Leonard W. Jerome; lessee, University Club, H. H. Anderson, President, 24 Gramercy Park; architect, C. C. Haight.

Grand St., No. 456, add one-sty flat, tin roof, interior alterations; cost, \$3,000; owner, Bernhard Stern, 460 Grand St.; architect, J. M. Farnsworth.

Chryetie St., Nos. 191 and 193, repair damage by fire, rebuild walls, etc.; cost, \$19,000; owner, Henry Well, Mansion House, Brooklyn; architects, Thom & Wilson.

Church St., Nos. 168, 170, 172 and 174, three buildings, raise one story, put in freight and passenger elevators, internal alterations; cost, \$60,000; owner, estate Wm. Watson, by F. A. Watson, exr., 19 Park Pl.; architect, T. M. Clark; mason, Wm. G. Slade; carpenter, not selected.

Houston St., n e cor. Elizabeth St., one-st'y brick extension, tin roof; cost, \$4,500; owner, Benjamin Reinheimer, 118 First St.; architect, Chas. Rentz, Jr.

First Ave., s e cor. One Hundred and Twenty-fourth St., basement front and interior altered for store; cost, \$2,500; owner, Matthew B. Brennan, 2387 First Ave.; architect, L. L. Parsons; builder, W. Chandler.

Grand St., Nos. 405 and 407, cor. Clinton St., repair damage by fire; cost, \$3,745; owner, Ann E. Jones, 132 East Fifty-sixth St.; architect and builder, Henry Wallace.

West Twenty-eighth St., No. 127, repair damage; cost, \$3,000; owner, estate Henry Delafeld, by Chas. B. Fosdick, trustee, 35 West Thirty-sixth St.; builder, J. D. Miner.

Eighth Ave., Nos. 729 and 730, repair damage by fire; cost, \$2,300; owners, W. Traphagan & Co.; architect and builder, J. D. Miner.

Attorney St., No. 86, add one st'y and internal alterations; cost, \$5,000; owner, T. Krakower, 86 Attorney St.; architect, W. Graul.

White St., No. 90, repair damage by fire; cost, \$3,600; owner, The A. H. Hart Co., Wm. Allan, Vice-President, 326 West Forty-sixth St.; builders, Edward Smith & Co.

Chatham Sq., No. 200, and **Doyer St.,** Nos. 5 and 7, internal alterations; lessee, Fred Scharmann, 239 East Eighteenth St.; builder, D. McQuien.

Third Ave., Nos. 889 and 791, raise extensions one story and connect buildings and fit up for business purposes; cost, \$5,000; owner, Isaac Rosenfeld, 65 West Fifty-second St.

Philadelphia.

OFFICE-BUILDING.—Fourth St., below Chestnut St. Wm. Forrest Estate will erect a six-st'y fire-proof building, for offices, 58' x 80', Dorchester stone for front; plans by Addison Hutton, architect.

BUILDING PERMITS.—**Brandywine St.,** between Chatham and Taylor Sts., 7 two-st'y dwell., 15' x 25'; Cornelius Kennedy, owner.

Garrett St., e of Twenty-first St., 14 two-st'y dwell.; one 18' x 24', one 15' x 34', two 15' x 34', ten 14' x 34'; Andrew Rankin, owner.

Clarence St., w of Twenty-seventh St., two-st'y dwell., 14' x 30'; J. Hayne, owner.

North Fourth St., No. 1338, 2 three-st'y dwell., 14' x 28' and 20' x 48'; L. H. Eckard, contractor.

Market St., e of Forty-fifth St., two-st'y dwell., 32' x 38'; H. C. Lowden, contractor.

Delhi St., No. 2234, two-st'y dwell., 16' x 45'; Jno. Weible, owner.

Wain St., rear of, s of Reed St., two-st'y stable, 25' x 60'; C. Hare, owner.

Wilder St., No. 1943, two-st'y dwell., 15' x 38'; Jno. T. Sherman, owner.

Adams St., w of Edward St., 2 two-st'y dwell., 16' x 50'; W. H. Yelland, owner.

Locust St., No. 518, addition to factory, 32' x 69'; two-st'y stable, 28' x 49'; E. C. Diehl, trustee.

Proctor Pl., e of Thirty-eighth St., 2 two-st'y stables, 22' x 44'; Wendell & Smith, contractors.

Fifth St., s of Indiana Ave., 9 two-st'y dwell. (three with stores), eight 14' x 42', one 16' x 42'; Thos. L. Kelly, owner.

Third St., cor. Reed St., three-st'y dwell., 16' x 25'; J. E. Johnson, rector.

Forty-first St., cor. Haverford St., one-st'y boiler-house, 24' x 65'; West Philadelphia Passenger Railway Co., owners.

Nineteenth St., cor. Fernon St., two-st'y factory, 16' x 31'; H. Ryan, owner.

St. Louis.

BUILDING PERMITS.—One hundred and thirty-one permits have been issued since our last report, forty-three of which are for unimportant frame houses. Of the rest, those worth \$2,500 and over are as follows:—

Jeremiah Murphy, two-st'y brick packing-house; cost, \$4,900; Thomas W. Brady, architect; Bryan Brady, contractor.

H. H. Wernse, two-st'y brick dwell.; cost, \$4,500; A. Beinke, architect; J. H. Frye, contractor.

C. Gebert, three-st'y brick dwell.; cost, \$4,000; P. Sauerwein, contractor.

B. Howard, three-st'y brick dwell.; cost, \$5,000; E. Mortimer, architect; contract sublet.

Cavanaugh & Son, two-st'y brick dwell.; cost, \$4,100; Jno. Cairns, architect; Cavanaugh & Sons, contractors.

F. Flentjo, two-st'y brick dwell.; cost, \$3,500; P. Sauerwein, contractor.

John Flag, three-st'y brick dwell.; cost, \$3,000; Meagher & Sons, architects; contract sublet.

St. Luke's Hospital, one and one-half st'y chapel-building; cost, \$10,000; Eidlitz, of New York, architect; D. Davis, contractor.

J. Bruno, two-st'y brick dwell.; cost, \$5,000; G. W. Pipe, architect; contract sublet.

Dr. G. W. Gerling, two-st'y brick dwell.; cost, \$6,200; J. B. Legg, architect; F. H. Goss, contractor.

J. Stuckenburg, 3 adjacent two-st'y brick dwell.; cost, \$9,000; A. Uri, contractor.

J. Slupsky, two-st'y brick dwell.; cost, \$3,000; Kirchuer, architect; G. Neumeister, contractor.

J. G. Chontean, two-st'y brick dwell.; cost, \$2,500; Gugerty, contractor.

H. Kerl, two-st'y brick dwell.; cost, \$3,500; H. Kerl, contractor.

C. Kellermann, two-st'y brick dwell.; cost, \$2,800; C. Kellermann, contractor.

Dr. Chas. Diggers, two-st'y brick dwell.; cost, \$4,800; J. H. McNamara, architect; J. K. Ahern, contractor.

Lynam Bros., 3 adjacent two-st'y brick dwell., cost, \$5,000; W. C. Schaper, architect; H. Heitmann, contractor.

Mrs. W. Patterson, 2 separate two-st'y brick dwell.; cost, \$5,500 each; Gugerty, contractor.

W. H. Watters, two-st'y brick dwell.; cost, \$3,000; Smiley & Smiley, contractors.

F. W. Lenneward, two-st'y brick dwell.; cost, \$4,000; W. C. Popp, contractor.

Wm. Beilley, two-st'y brick dwell.; cost, \$4,800; McNamara, architect; M. E. Scanlon, contractor.

L. Lolleaux, two-st'y brick dwell.; cost, \$3,400; W. A. Bormans, contractor.

J. M. Henderson, two-st'y brick dwell.; cost, \$2,500; J. M. Henderson, contractor.

St. Louis & San Francisco R. R., two-st'y brick freight-depot; cost, \$75,000; A. P. Man, architect; contra sublet.

L. Cary, two-st'y brick dwell.; cost, \$31,000; F. Remick, architect; Wm. Damon, contractor.

John Vogel, alter three-st'y brick store and offices; cost, \$7,500; C. K. Ramsey, architect; Wm. Damon, contractor.

Washington, D. C.

BUILDING PERMITS.—The following permits for new buildings valued at \$3,000 or over have been issued since last report:—

F St., between Twenty-second and Twenty-third Sts., n w, 2 two-st'y brick dwell., for Jno. White; cost, \$6,000; W. H. Gernain, builder.

Fifth St., between A and B Sts., n e, two-st'y brick dwell., for W. T. Hutchinson; cost, \$3,000; C. C. Meads, builder.

B St., between Fifth and Sixth Sts., n e, 6 two-st'y brick dwell., for S. H. Walker; cost, \$15,000.

Pennsylvania Ave., cor. Ninth St., n w, four-st'y office-building and stores, for Ed. Temple, agent; cost, \$45,000; Hornblower & Marshall, architects.

Twenty-second St., between L and M Sts., n w, 3 three-st'y brick dwell., for C. J. Hill; cost, \$9,000.

Alley, between Q, R, Twentieth and Twenty-first Sts., two-st'y brick stable for L. Z. Leiter; cost, \$3,600; R. L. Fleming, builder.

Fifth St., cor. 1st St., n w, two-st'y brick dwell., for Jos. Burden; cost, \$3,000.

General Notes.

ALBERT LEA, MINN.—C. P. Hedenstad will build a house next spring near Spring Lake, to cost about \$5,000.

ATLANTA, GA.—Mr. H. I. Kimball, the hotel proprietor, has a scheme on hand for building a suburban city near Atlanta, Ga. His idea is to get a million of capital and spend half of it in paying for 400 acres of land and certain improvements thereon, \$50,000 for a park, \$150,000 for a mile of street paved and graded, \$50,000 for a central stand-pipe for water-works, electric-light and heater, and to build fifteen houses for \$10,000 each. Men of capital are willing to invest in the scheme. Pullman, Ill., is his model.

ATLANTIC CITY, N. J.—Mrs. Mercer's Old Women's Home has begun to rise above the foundations, on the cor. of Ohio and Pacific Aves.

The erection of the Conventual School of the Sisters of the Sacred Heart, on Park Place, between Pacific Ave. and the ocean, is assured.

Charles McGrade is adding an additional story to his Mansion House, and building an entirely new wing.

ATTLEBORO', MASS.—The total number of buildings erected during the past year was 55, and the total cost was \$210,000. During the preceding year 48 buildings were erected at a cost of \$150,850.

BAR HARBOR, ME.—Mrs. Hunt, of New York, is to build a house near the Howard villa, says the Bangor Commercial. The stable alone will cost between \$5,000 and \$6,000. The entire cost of the buildings will be about \$50,000.

The same contractor is building a fine cottage for a Mr. Cain, of New York.

BLUNT, DAKOTA.—F. G. Kinwan, two-st'y wood house; cost, \$3,500; D. S. Hopkins, architect, Grand Rapids, Mich.

CENTRAL FALLS, R. I.—Messrs. Fales & Beatty, grocers, have leased the land at the cor. of Central and Illinois Sts., and intend building a large store.

CHEROKEE, IO.—Cherokee will replace its burned school-house with a \$3,000 structure.

CONCORD, MASS.—A house is now building for Mr. H. J. Hosmer, from plans of Messrs. Hartwell & Richardson, of Boston. It measures 35' x 59', and is a two stories and a half high.

GREENVILLE, N. C.—Episcopal church, to be built from plans by Wilson Bros. & Co., architects, Philadelphia, Pa.

SEYMOUR, CONN.—Seymour has only one school district and a dilapidated school-house, but has just bought a \$3,000 lot, and will put up a \$20,000 house.

SIoux CITY, IO.—Sioux City's building improvement amounted to \$660,949 last year.

SIoux FALLS, D. T.—The new Commercial Hotel is to be 70' x 100', three stories and basement.

TOLEDO, O.—Bids for building the Insane Asylum were received January 10.

TOPEKA, KANS.—General office-building for the Atchison, Topeka & Santa Fe Railway Co., 68' x 180', five-st'y, pressed-brick, terra-cotta trimmings; cost, \$150,000; Messrs. Burnham & Root, architects, Chicago; Jas. A. McGonigle, contractor and builder, Leavenworth, Kans.

TUNKHANNOCK, PA.—Theodore Streeter, two-st'y wood dwell.; cost, \$3,500; D. S. Hopkins, architect, Grand Rapids, Mich.

WASHBURN, MINN.—Mr. Fred Swain is building a hotel, 48' x 80', two stories and a half high.

WASHINGTON, D. C.—The Washington Light Infantry Corps has adopted a resolution authorizing the appointment of a building committee of five, and also of five trustees. An offer from Messrs. Gray & Page, architects, to design and superintend the construction of the new armory, free of cost, was accepted.

Ex-Senator Yulee, of Florida, is building a house here.

WINONA, MINN.—E. A. Gerdtsen is arranging to build a two-st'y brick store on East Third St., between Centre and Lafayette Sts. The building will be 80' in length.

Bids and Contracts.

ALBANY, N. Y.—The following is a synopsis of bids for elevators for the custom-house:—

Crane Bros. Manufacturing Company, passenger-elevator, \$3,087; two mail elevators, each \$675; boiler, tank, etc., \$3,745; total amount of bid, \$8,182.

Howard Iron Works, passenger elevator, \$4,035; two mail elevators, each \$645; boiler, tank, etc., \$5,530; total amount of bid, \$6,235.

Otis Bros. & Co., passenger elevator, \$4,500; two mail elevators, each \$1,200; boiler, tank, etc., \$6,500; total amount of bid, \$10,500.

W. E. Hale & Co. submitted a bid, amounting to \$6,724, which was not received until six minutes after 1 o'clock, January 23, 1884.

CARLISLE, PA.—The bids for the erection of the new Scientific School for Dickinson College were opened December 20. N. J. Wetzel, of Carlisle, was the successful bidder, he contracting to erect the building for a little less than \$23,000. Its dimensions will be 60' x 180', with a height of 40'.

CLEVELAND, O.—The following is a synopsis of bids for hydraulic passenger elevator for the custom-house:—

Crane Brothers & Co., \$5,330 (accepted).

W. E. Hale & Co., \$7,564.

DELAWARE BAY.—Schedule of proposals for the metal-work of the foundation cylinder for the Fourteen-foot Bank Light-House, Delaware Bay, opened January 10, 1884:—

Johnson Foundry Machine Co., New York City, \$14,974.

Camden Iron Works, Camden, N. J., \$17,190.

G. W. & F. Smith Iron Co., Boston, Mass., \$17,200.

Tanner & Delaney Engine Co., Richmond, Va., \$19,900.

Colwell Iron Works, New York City, \$19,950.

Phoenix Iron Company, Trenton, N. J., \$21,287.

J. B. & J. M. Cornell, New York City, \$22,817.

Wallis Iron Works, Jersey City, N. J., \$23,283.

Delamater Iron Works, New York City, \$24,700.

Rust & Coolidge, Chicago, Ill., \$28,700.

Hillies & Jones, Wilmington, Del., \$28,947.

Lord, Bowler & Co., Cleveland, O., \$31,920.

Henry G. Morris, Philadelphia, Pa., \$39,170.

King Iron Bridge and Manufacturing Co., Cleveland, O., \$43,700.

ST. LOUIS, MO.—The following bids for furniture for the Government Building were received:—

Stotz, Woltz & Co., Chicago No. 1, \$6,129.

A. H. Andrews & Co., Chicago No. 1, \$4,957 (awarded contract); No. 2, \$16,966; No. 3, \$23,256.75 (awarded contract).

Robert Mitchell Furniture Company, Cincinnati, Ohio, No. 1, \$5,711; No. 2, \$15,147.75 (awarded contract); No. 3, \$25,735.75.

Potter & Syms Manufacturing Company, New York, No. 1, \$9,546; No. 2, \$22,338; No. 3, \$40,453.75.

Seidel & Schoenle, No. 1, \$5,626; No. 2, \$17,130; No. 3, \$19,892.

PROPOSALS.

IRON LIGHT-STATIONS. [Near Detroit, Mich.]

OFFICE OF THE LIGHT-HOUSE ENGINEER,
TENTH AND ELEVENTH DISTRICTS,
NO. 311 WOODWARD AVE.,
DETROIT, MICH., February 7, 1884.

Sealed proposals will be received at this office until 12 o'clock, m., of Saturday, the 1st day of March, 1884, for furnishing the material and labor of all kinds necessary for the metal-work of two towers for Sand Beach and Detroit River light-stations respectively.

Plans, specifications, forms of proposal, and other information may be obtained on application to this office.

The right is reserved to reject any or all bids and to waive any defects.

CHAS. E. L. B. DAVIS,
Captain of Engineers, U. S. A. Light-House Engineer,
426 Tenth and Eleventh Districts.

MARINE HOSPITAL. [At Cincinnati, O.]

OFFICE OF SUPERINTENDENT,
CUSTOM-HOUSE AND POST-OFFICE,
CINCINNATI, O., February 2, 1884.

Sealed proposals will be received at this office until 12 m., on the 25th day of February, 1884, for all the labor and materials required in the erection of the marine hospital-buildings at Cincinnati, O., in accordance with drawing and specification, copies of which and any additional information may be had on application at this office of the office of the Supervising Architect.

SAMUEL HANNAFORD,
425 Superintendent.

MUSIC-HALL. [At Crawfordsville, Ind.]

CRAWFORDSVILLE, IND.

Sealed proposals will be received by the Building Committee of the Crawfordsville Music-Hall Association for the erection of a brick music-hall building, according to plans and specifications prepared by Reid Bros., architects, to be on file at the office of Wright & Wilbrite, Crawfordsville, Ind., on and after February 4, 1884.

Separate proposals will be received for the brick and stone work, or for the job complete.

A bond for equal amount with the contract will be required of the successful bidder.

The Committee reserves the right to reject any or all bids.

Proposals will be received until 12 o'clock, m., Monday, February 25, 1884. Address,

426 W. P. HERRON, Chairman.

STONE AND STONEWORK. [At New York, N. Y.]

NEW YORK, January 28, 1884.

Sealed proposals will be received by the undersigned, at the office of the American Committee of the Statue of Liberty, 171 Broadway, Room 11, until noon, on Wednesday, the 20th day of February, 1884, for the furnishing of the stone and stone-work necessary for the construction of the pedestal of the Statue of Liberty Enlightening the World, on Bedloe's Island.

The quantity of stone required will be 5,656 cubic yards, more or less.

Each bid will be accompanied by a sample of the stone offered, showing one face rough, one face hammered, and one face polished.

Plans and specifications can be seen in the office daily, between the hours of 11 and 3 p. m., after February 1, prox.

The Committee reserves the right to reject any or all bids.

CHARLES P. STONE,
425 Engineer-in-Chief.