

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. LIII.

Copyright, 1896, by the AMERICAN ARCHITECT AND BUILDING NEWS COMPANY, Boston, Mass.

No. 1078.

Entered at the Post-Office at Boston as second-class matter.

AUGUST 22, 1896.



SUMMARY:—

Death of Olin L. Warner, Sculptor.—Death of Sir J. E. Millais, P. R. A.—His Work and its Influence.—Death of Edward Armitage, R. A.—Deaths of P. C. Keely, J. Foster Ober, George H. Millar and R. G. Russell, Architects.—An Alleged Prehistoric City in Mexico.—Proposed Resumption of Work on the Hudson River Tunnel.—A Revolving Theatre Stage.—Area Railings of Improper Design.—Lien on Sepulchral Monuments held to be Ineffective. 57

FIRST REPORT ON FIREPROOFING TESTS. 59
LETTER FROM LONDON. 62

ILLUSTRATIONS:—

Staircase Detail: the Guaranty Building, Buffalo, N. Y.—A Group of Country Houses.—Fireproofing Tests of Unprotected Columns.—Apparatus used in Conducting the above Tests.—Sketches by Mr. W. T. Partridge.
Sgraffito Decoration, 103 Via Tomacelli, Rome.—Accessories of Landscape Architecture, No. XXVI: Stairway Approach to the Villa d'Este, Tivoli, Italy.—XV Century Sgraffito in Court-yard of the Collegio Penitenzieri, Piazza Scossa Cavalli, Rome, Italy.
Additional: Lower Stories of the Guaranty Building, Buffalo, N. Y.—Corridor in the Same Building—Bits of "Old Berlin" at the Berlin International Exhibition.—Main Building and Main Restaurant and Water-tower, Berlin International Exhibition.—Saloon of the Royal Mail Steamer "Gothic," of the White Star Line. 63

NOTES AND CLIPPINGS. 64

DEATH has been busy among the artists of late, both in this country and abroad. Among Americans, the loss which will be most deeply felt is that of Olin L. Warner, the sculptor, who was not only one of the truest artists that America has ever known, but was ever foremost in the efforts, which have done so much for this country, to unite and encourage artists. Mr. Warner was apparently in the very prime of his useful life. He was fifty-two years old, having been born in Suffield, Connecticut, in 1844. As a boy, he showed remarkable artistic talent. His father, who was a clergyman, gave him a good general education, but he devoted his holidays to modelling in clay, under such instruction as he could get, and, at the age of twenty-two, went to Paris and entered the School of Fine-Arts as a pupil of François Jouffray. After three years in Paris, he returned to this country and began the earnest practice of his profession. It is hardly necessary to say that a sculptor in this country must struggle long and hard for reputation and employment, but Warner's careful work, and the unrivalled delicacy of feeling of some of his small portraits, steadily brought him into favor. Among his more important statues are those of William Lloyd Garrison, in Boston, and of Governor Buckingham in the Connecticut Capitol, at Hartford; and Portland, Oregon, possesses a fountain, adorned with a figure of a nymph from his hands. Mr. Warner's death was the result of an accident. He was riding a bicycle in the street in New York about two weeks ago, when he came into collision with a carriage, and suffered a fracture of the skull. He was taken to a hospital, but the injury proved too serious for surgical skill, and he died there, after an unsuccessful operation for his relief. He had been for nearly twenty years a member of the Society of American Artists and was also an Associate of the National Academy of Design and a member of the Century Club.

ON the other side of the Atlantic, the death of Sir John Everett Millais is, to our mind, the severest loss that English art has sustained for a generation. Curiously enough, while Lord Leighton, whose ancestry was purely English, was rather a Continental than an English painter, and found, perhaps, his most appreciative critics in France, Millais, who belonged to an ancient family of the island of Jersey, and therefore, presumably, was of almost unmixed French descent, was the most English of all artists, more English, even, than Sir Joshua Reynolds himself; for, while a Continental critic is occasionally found who can appreciate the physical charm of Reynolds's Anglo-Saxon beauties, the spiritual attractions of Millais's subjects, the continence and conscientiousness which he made them express so plainly, were totally lost on the pub-

lic beyond the sea, which could discover nothing but rigidity in the noble figures which appealed so strongly to the best sympathies of the English. What the explanation may have been of this intense insularity of Millais, we will not attempt to guess, but it is a satisfaction, in these days of Grosvenor Gallery horrors, to reflect that Millais, and, in a humbler way, John Leech, have preserved in their works enough of the spirit of the good and happy England of the nineteenth century to give pleasure and comfort to future generations of Englishmen, long after the corporeal contortions of the æsthetic school of painters have been forgotten.

IT is hardly necessary to speak of Millais's works, for, whatever politicians may say, nothing which affects English feeling fails to find sympathy in America, and Millais's book and magazine illustrations, which really brought him wider fame than his pictures, are probably as widely known here as in England; while, twenty-five or thirty years ago, there was hardly a house in America, which could boast any pictures at all, which did not have a print or photograph of the "Huguenot Lovers" hung up somewhere. Every one, however, may not know the interesting circumstances of his life. Although his family belonged to the Channel Islands, he was born in England—at Southampton. While a mere child, he was placed in Mr. Sass's Academy, then considered the best private school of drawing in London, and at the age of nine gained the medal of the Society of Arts for his work. At eleven, he was a student at the Royal Academy, winning all the principal prizes for drawing; and at seventeen he had a picture in the Academy Exhibition. After this, he exhibited nearly every year until 1894. Like so many others of the more conscientious young painters of the day, Millais, like Leighton, interested himself in the Pre-Raphaelite movement of 1850 and the succeeding years. Millais followed the movement more faithfully than Leighton did, but, in the end, nature prevailed over formulas. Nothing could be more curious, as showing the divergence, in the development of an artistic principle, between a man of real capacity like Millais, and a doctrinaire like Rossetti, than the contrast between the "Huguenot Lovers," or, perhaps, the still more beautiful "Ophelia," both of which belong, in date, to the period of Millais's Pre-Raphaelite experience, and the "Dante and Beatrice," which is popularly supposed to represent the culmination of Rossetti's art. From the "Huguenots," or "Ophelia," it was an easy step for a true artist to the study of things with his own eyes, undimmed by either Pre-Raphaelite or Classical spectacles; and Millais's eyes were clear enough to need no assistance from theories. He soon became renowned in portraiture, a branch of art which derives little assistance from subjective speculation, and it is probably for his portraits that he will be longest remembered, although he often exhibited ideal compositions. It is hardly necessary to say that he was loaded with every honor that the artistic world of England could bestow, and was chosen last winter President of the Royal Academy, to succeed Lord Leighton. Although his work was little known in France, and probably still less appreciated, the French, with their usual tolerant respect for the notions of other people, bestowed upon the famous English painter the cross of the Legion of Honor, and made him a foreign Associate of their Academy of Fine Arts.

A FEW weeks before the death of Millais there passed away still another artist, whose name is familiar to all who have a knowledge of English art, one who, had he lived at a somewhat later day, would have been likely to be sought out by architects who found their clients willing to entrust the decoration of their public buildings to a capable historical painter. Edward Armitage, who was born in 1817, received his training in Paris under Paul Delaroche, whom he assisted at the time of the painting of the latter's famous allegorical decoration on the walls of the Hémicycle at the École des Beaux Arts. With such a training under such a master it would have been only natural that Armitage should have devoted himself mainly to mural decoration, but, so far as we know, his only work in this line consists of two frescos—so-called—in the Houses of Parliament, London, one of which in the upper waiting-room or Poets' Hall, exhibits his rendering of the "Death of Marmion," which typifies Sir Walter

Scott's standing as a poet. Armitage was elected a full Academician in 1872 and for several years occupied the position of lecturer on painting before the students of the Royal Academy School, and because of his interest in this portion of his life work established the Armitage Prize, which is awarded to the winner in a competition for the best sketch for an historical painting.

AMONG the architects, we have to record the death of several men of note. Of these the best known was probably Mr. Patrick C. Keely, who is said to have designed and built more than six hundred Roman Catholic churches in this country, and to have had plans for fifty of them in preparation in his office at once. Mr. Keely was born in Kilkenny, Ireland, in 1816. His father was an architect, and the son studied and practised with him until he was twenty-five years old, when he came to this country, settling in Brooklyn. He soon found employment, and was thenceforth probably the busiest architect in the United States. He is said to have built every Roman Catholic Cathedral in New York State, except the one in New York City, and he designed many more in New England and Canada, besides a few Protestant churches. Of course, with such an enormous press of work, no architect could devote much time to studying refinement of design, but his work was always skilful and clever, and often very interesting. His best work is probably the Jesuit Church, on Sixteenth Street, New York.

Another architect of much talent, in a different way, who has just died, was Mr. J. Foster Ober, of Boston. Mr. Ober practised for many years successfully in and about Boston, but, his health being delicate, he was obliged to spend much of his time abroad in search of favorable climate, and his keen observation and lively descriptions of his experiences gave him for a time a high reputation as a writer.

Still a third architect whose death should not pass unnoticed is Mr. George H. Millar, Assistant Architect of the Capitol at Washington. Mr. Millar had been attached to the building for forty-four years, only leaving it temporarily, in 1861, to enlist in its defence. He was actively engaged in supervising the erection of Walter's great dome, and was the last man to leave the scaffolding after its completion.

Rufus G. Russell, another architect, one who has been content to pass a useful but quiet life in one of the smaller New England cities, also died August 3d, at the age of seventy-three, having passed thirty years of his life in the practice of his profession in that quiet collegiate town, New Haven. Besides the many houses, churches and other buildings which Mr. Russell designed for New Haven, he also designed and built the Garfield Memorial Church, at Washington, D. C.

A STORY is going about the newspapers, to the effect that "a Boston archaeologist" has discovered "in the wild region of the Sierra Madre Mountains," in Mexico, the remains of a "prehistoric city that must have once had a population of two hundred thousand." How the "Boston archaeologist" ascertained with such precision the population of his "prehistoric city" we are not informed, but his scientific insight in this respect is much less surprising than the idea of the existence, in "prehistoric" times or any other, of a city of such importance in the midst of a region of high mountains. It is true that Mexico occupies an elevated situation, but it is surrounded by a vast and fertile table-land, which gives it something of the nourishment which all large towns need, and without which no town has ever grown to the size attributed to this mysterious settlement of the Sierra Madre. The newspapers give us the further information that "nearly all the buildings" in this ancient city "are of brownstone, and are in a state of almost perfect preservation, and they contain ornaments and utensils of peculiar designs." As Athens in the time of Pericles had a population probably not very far from two hundred thousand, and, notwithstanding the fact that its houses at that age were built of mud, and that its few stone buildings have endured a score of sieges, plunderings and conflagrations, still offers almost inexhaustible treasures to the archaeologist, it may well be assumed that a city of similar size, "nearly all the buildings" which are of stone, and which has been preserved almost intact from a "prehistoric" age, ought to interest a good many people besides archaeologists; but we imagine that the world in general will be disposed to wait for confirmation of the story.

ACCORDING to the New York papers the English portion of the owners of the Hudson River Tunnel are anxious to recommence the work, which was suspended four years ago, and push it to completion. About three-fourths of one tunnel is already done, if we recollect rightly, and the second tunnel is begun, so that it will not be a very expensive matter to finish the work, and it is obviously very desirable for the owners to get the tunnel into use before the completion of the Hudson River bridge, the plans for which have, we believe, already been accepted. Of course, it will be impossible to raise any money in this country for the tunnel, or for any other important public undertaking, in the present politico-financial uncertainty, but a settlement of the currency question would probably be soon followed by the resumption of operations on this great work.

THE Court Theatre at Munich is said to have been furnished by an inventor named Lautenschläger with a revolving stage, arranged in such a way that two or more scenes can be set upon it, and turned in succession toward the auditorium. Munich is famous for its eccentricities in the way of building, but this sort of stage is, we imagine, not likely to be imitated, at least on a large scale. To say nothing of the difficulty of increasing the dimensions requisite for a theatre of the first class the circular stage which, at Munich, is only about fifty feet in diameter, and would hardly admit a proscenium-opening of more than thirty feet, the difficulties arising from lack of depth, and complicated arrangement of overhead machinery, would be enormous. Few modern theatres of the first rank have a stage less than ninety or a hundred feet deep, and a scene bounded by converging sides ten or twelve feet deep, and a flat only twenty-five feet back from the footlights, would be utterly inadequate to the needs of any modern city theatre in this country, or in England or France.

ARCHITECTS should lay to heart the account of a fatal accident which took place a few days ago in New York. Every one knows that in New York the only entrance to the kitchen is under the front steps, so that a row of ash-barrels, like an avenue of sphinxes, commonly adorns the approach to even the most aristocratic mansions. In order that the vertical distance between the front door above, and the servants' entrance below, may be sufficiently great, it is necessary to excavate a stairway to the latter, and, as this excavation adjoins the sidewalk, a railing is provided to keep the passers-by from falling in. The architect of a new house in Harlem, having in mind the æsthetic, rather than the physical needs of the public, designed for the house a fine area-railing in bronze, so disposed as to present openings more than two feet wide. After the railing was built, a little child, who happened to be playing on the sidewalk near by, crept through one of the openings, and fell on the stone stairway below, and was killed. A coroner's jury was called, which censured the Department of Buildings for having approved the design of the railing, but exonerated the owner, who could, indeed, hardly be considered at fault, and said nothing about the architect, upon whom a part of the blame certainly ought to fall.

WE mentioned not long ago a case where a firm of monument-builders, in New York, attempted to remove a monument from Greenwood Cemetery, under a statute giving to monument-builders a right or a lien on the structures erected by them, if the price is not paid. A temporary injunction was obtained by the owner of the monument, Mr. Brooks, to restrain the builders from carrying out their intention, and the Supreme Court of the State has just made the injunction perpetual, declaring that the statute is unconstitutional and void. According to the newspapers, the Court considered the unconstitutionality of the statute to consist in the fact that it provides for the taking of property without due process of law; but it does not appear clearly in what way it differs from the ordinary mechanics' lien laws in this respect. It is, however, plain that, as the Court said, the forcible removal of such a monument involves a desecration of the resting-place of the dead, and violence to the sentiments of natural affection which legislation has always protected and encouraged; and for this reason, if for no other, such summary proceedings are contrary to the spirit of our laws.

FIRST REPORT ON FIREPROOFING TESTS.

ROOM 104, 22 WILLIAM ST.,
NEW YORK, N. Y., July 27, 1896.

BULLETIN NO. 2.

TO THE TARIFF ASSOCIATION OF NEW YORK; TO THE ARCHITECTURAL LEAGUE OF NEW YORK AND TO THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS:—

Gentlemen,—Your Joint Committee takes pleasure in submitting to you a report of work done to date. As you will remember, we, the undersigned, were appointed a joint committee to investigate and test methods of fireproofing structural metal in buildings and to obtain data for standard specifications.

Your Committee, after having effected its own organization, determined to add to its numbers by the creation of an Advisory Board. This step was taken for the purpose of more widely increasing the interest taken in the experiments, and also to prevent, as far as possible, the impression that the work was of a sectional or local character. The names of the gentlemen who accepted invitations to serve on this Advisory Board, are as follows:

Edward Atkinson, President Boston Manufacturers' Mutual Fire Insurance Co.; Osborne Howes, Secretary Boston Board of Fire Underwriters; Charles A. Hexamer, Secretary Philadelphia Fire Underwriters' Ass'n; H. H. Glidden, Manager Chicago Fire Underwriters' Ass'n; W. Martin Aiken, Supervising Architect United States Treasury Dept., Representative Illinois Chapter, American Institute of Architects; Stevenson Constable, Superintendent of Buildings, New York; George B. Post, New York Chapter, American Institute of Architects; F. H. Kindl, Structural Engineer Carnegie Steel Co.; John R. Freeman, Chief Inspection Dep't, F. M. I. Cos.; Henry Morton, President Stevens Institute of Technology; C. J. H. Woodbury, Member American Society Civil Engineers; H. B. Dwight, Dwight Survey and Protection Bureau, New York; F. C. Moore, Delegate New York Board of Fire Underwriters to Board of Examination of Department of Buildings; Wm. A. Wahl, Secretary Franklin Institute, Philadelphia; John T. Williams.

The Committee also wishes to take this opportunity of publicly thanking the parties mentioned below, for their offers of assistance, namely:

The Continental Iron Works, for permission to use part of their yard and for numerous courtesies which have been extended to the Committee from time to time; the Carnegie Steel Company, Limited, for their offer to furnish all the structural steel that your Committee may need; Messrs. J. B. & J. M. Cornell, for their offer to furnish the cast-iron columns for which your Committee may ask; Messrs. Sinclair & Babson, for their donation of seventy-five barrels of Alsen's cement; the Lorillard Brick Works Company, through Mr. Henry M. Keasbey, for 54,000 common bricks; Mr. Henry A. Maurer, for his donation of 14,000 fire-bricks and fourteen barrels of fire-clay.

During the winter just past, your Committee erected a testing plant as shown in the accompanying illustrations. The gas-producer in the background is 9 feet in diameter, by 12 feet in height, and is equipped with a hopper-valve on top. Gas is generated by means of steam from the boiler as shown, and carried into the furnace through pipes, as clearly indicated in the view (Fig. 0). The foundation shown on the left is ready for the erection upon it, of a furnace for testing beams and floors. Its dimensions are, length 27 feet, width 12 feet, but it can be arranged to take larger beams if so desired. The furnace shown on the right is for testing columns and is 14 feet square, outside measurement.

The arched roof is made of fire-brick and is independent of the side walls, being supported by outside corner posts. The walls are of common brick, but can easily be changed so that the experiments can be made on other materials. One side wall and the end wall with the door are 12½ inches in thickness; the rear wall is 8½ inches and the fourth wall is 4 inches inside, 2 inches air-space and 8½ inches outside, making a total thickness of 14½ inches.

The floor is covered with fire-brick, with openings left for the branch gas-pipes and air-spaces to support the combustion. These branch gas-pipes are 4 inches in diameter, capped with tuyeres reduced to 2 inches. In order to increase the temperature when desired, a barrel of naphtha is connected by means of a small pipe and blown into the gas-pipe at the "Y" branch, by means of a steam-jet.

The column is placed in compression by means of an hydraulic ram underneath, resting on three twenty-four-inch I-beams, the same as those across the top of the furnace shown in the view. In order to keep the entire length of the column within the furnace, filler blocks of cast-iron are placed between the ends of the column and these I-beams. The hydraulic ram is 12 inches in diameter, and the water-pressure can be carried to 2,500 pounds per square inch.

The temperature is measured by means of a Uehling & Steinbart pyrometer. As this pyrometer is in commercial use and has been thoroughly tested and described in various scientific journals, it is not necessary to enter here into a detailed description.

The money to carry out this work has been advanced by various parties, and, together with the Committee's disbursements, is shown in the accompanying treasurer's report.

TREASURER'S REPORT.

COMMITTEE ON FIRE-PROOFING TESTS, July 22, 1896:

SUBSCRIPTIONS RECEIVED.

Boston Board of Fire Underwriters.....	\$ 400.00
Boston Manufacturers' Mutual Fire Ins. Co.	200.00
E. H. Kendall.....	25.00
Carrère & Hastings.....	50.00
R. Magnie.....	50.00
McKim, Mead & White.....	100.00
Sooy-Smith & Co.....	100.00
R. H. Robertson.....	50.00
George B. Post.....	100.00
J. G. Howard.....	5.00
The Tariff Association.....	500.00
Bruce Price.....	100.00
Lamb & Rich.....	25.00
Clinton & Russell.....	100.00
American Sugar Refining Co.....	100.00
Philadelphia Fire Underwriters' Association	400.00
Continental Insurance Co.....	50.00
	\$2,355.00

SUBSCRIPTIONS RECEIVABLE.

The Tariff Association.....	500.00	
Boston Manufacturers' Mutual Fire Ins. Co.	200.00	700.00
		\$3,055.00
Cash on hand.....		18.62
Deficit.....		29.68
		\$3,103.90

EXPENDITURES.

R. A. Bigelow, printing, etc.....	\$ 4.25
Electro Light Engraving Co.....	15.00
Continental Iron Works, furnace, etc.....	1,813.12
W. H. Sturgis, sand.....	19.50
John T. Woodruff, broken stone.....	68.00
William C. Siegert, stationery.....	11.00
Berton & Nichell, setting fire-brick lining..	99.63
Thomas F. Rowland Jr., for masons' wages	
paid.....	275.88
Uehling, Steinbart & Co., two months' rent	
of pyrometer.....	30.00
	\$2,336.38

LIABILITIES.

The Continental Iron Works, labor, etc., on		
furnace and at tests.....	766.92	\$3,103.30

Respectfully submitted,

G. L. HEINS, Treasurer.

Your Committee decided that it would be best to make the tests according to the following programme:—

1st. That a series of tests be made on steel and on cast-iron col-

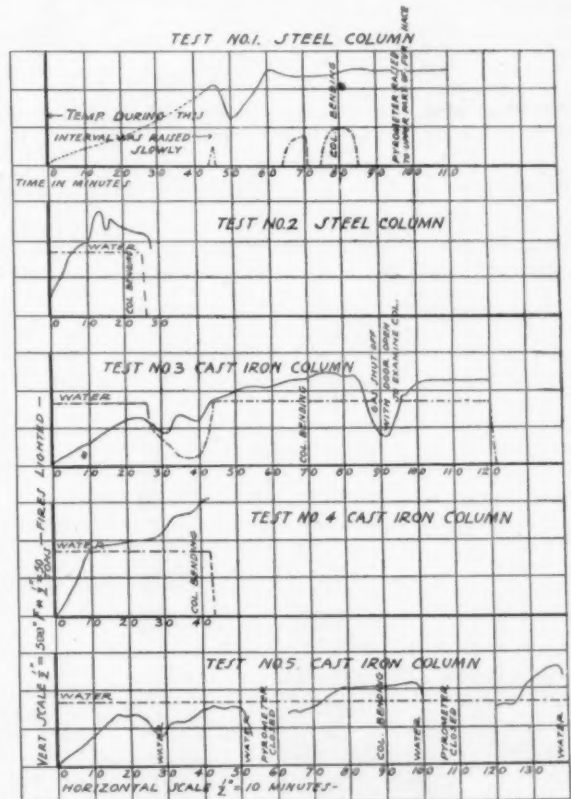


Fig. 1.

umns, without any fire protection whatever. These tests then to be taken as a basis of comparison with those that were to follow.

2d. That a series of tests be made with similar steel and cast-iron columns, protected with different materials and in different manner.

3d. That a series of tests be made on unprotected beams and girders.

4th. That a series of tests be made on protected beams and girders.

It has also been proposed that each series be divided for test both with and without water.

Your Committee has communicated with many manufacturers of fireproofing materials and has been informed that these manufacturers will submit their materials for purposes of tests.

RESULTS.

The result of this series of tests is shown in the accompanying diagram (Fig. 1), where the solid line represents the temperature and the dotted line the road on the column.

Test No. 1 was made on a steel column, when the temperature was raised rapidly.

Test No. 3 was made on a cast-iron column under similar conditions. Both columns began to fail as soon as they showed "red."

Test No. 2 was made on a steel column, when the temperature was raised more slowly than in the other tests just described.

Test No. 4 was made on a cast-iron column under similar conditions. Both these columns failed when they began to show "red," although the time was longer than in Tests Nos. 1 and 3.

Test No. 5 was made on a cast-iron column, a jet of water being thrown upon it through a 3-inch nozzle. The column was first heated to 675° and then quenched with water without injury. The heat was then slowly raised again to 775° and the column again quenched with water. The heat was then raised slowly to a temperature of 1,075°, and the column, which showed a "dull redness," was again quenched with water. The heat was then raised again to 1,300° and the column, which now showed a "bright red," was again quenched with water. The column was beginning to yield by bending just before the last application of the water. The column was apparently unaffected by water, although it failed by bending under the load, the same as in cases 3 and 4.

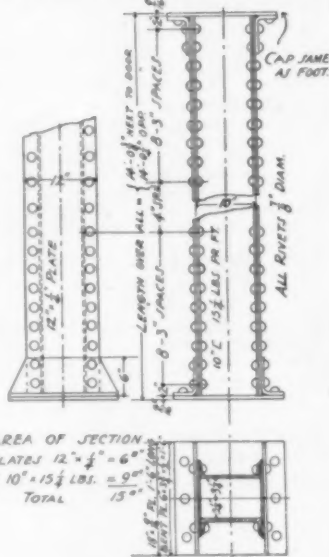


Fig. 2, Test No. 1.

COLUMN TEST NO. 1.—FIRE TEST WITHOUT WATER.—STEEL COLUMN.

MAY 19, 1896.

The walls of the furnace were of common brick, as described, and the door was closed with a double thickness of sheet-iron, which

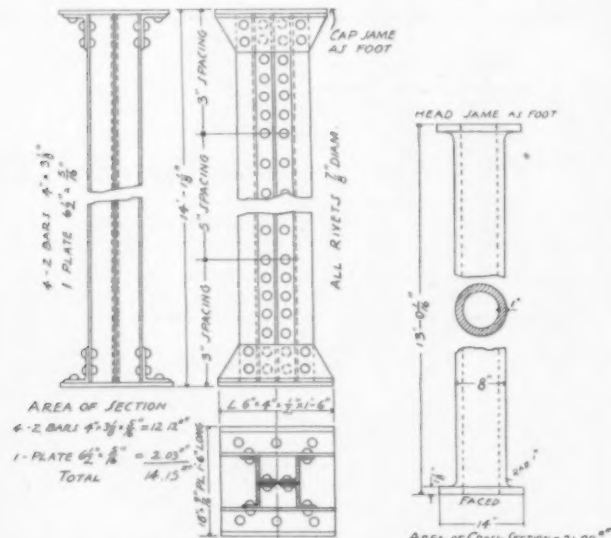


Fig. 6, Test No. 2.

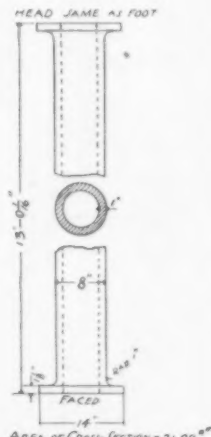


Fig. 9, Test No. 3.

made the opening practically tight. The column was a Carnegie Steel Box-Channel, of the dimensions as shown in the diagram (Fig. 2), and was unprotected.

The weather was clear and warm, with only a slight breeze from

the west. Temperature of the air 80° Fahr., in the shade. The gas-producer was fired the day before, with valve closed against furnace. The packing in the hydraulic cylinder leaked and a fitting of the pipe gave out as test started. These causes delayed the use of the water-pressure.

LOG OF TRIAL.

Time, h. m.	Pyrom-eter, deg. Fahr.	Hyd. Press-ure, Total Load, Tons.	Remarks.
10.35	....	....	Wood fire lit.
10.45	....	....	Gas turned into furnace.
11.02	....	....	Furnace door closed.
11.03	....	....	Naphtha valve slightly open.
11.13	....	....	Pyrometer put in furnace through lower hole, 2 1-2 feet above the furnace floor, with point 12 inches from column.
11.19	1,025	....	Pressure on column. Light load.
11.20	1,050	....	Pyrometer point 24 inches from column.
11.25	600	....	Raking gas-producer; gas shut.
11.28	....	....	Gas turned on again.
11.33	1,025	....	No naphtha.
11.36	1,225	....	Half-faucet of naphtha.
11.38	1,200	....	Water-pressure on.
11.40	1,175	14.13	Quarter-faucet of naphtha.
11.41	1,180	28.26	Pressure off, water-valve repacked.
11.46	1,175	....	Closed all air-openings. Water-pressure on.
11.50	1,175	....	Column began to show "red."
11.55	1,200	48.06	Column began to yield.
11.56	1,210	....	Hydraulic pressure falling fast.
11.59	1,225	42.41	Pyrometer shut off. Pyrometer raised to upper hole, 8 1-2 feet above floor, and point 3 feet from column.
12.10	1,230	....	
12.16	1,230	....	
12.25	1,250	....	Gas shut off.

The column would have failed sooner if the working-load of 80 tons could have been used.

The result of the test is shown in the flashlight photograph (Fig. 3) taken of the column before it was disturbed. After the column was removed from the furnace the photograph (Fig. 4) was taken. The brick walls cracked, as is shown in photograph (Fig. 5), the greatest damage taking place where one wall was bonded into the next and the cracks at these places extended through the bricks. Along the horizontal joints the walls cracked most on the bond courses. All the walls were hot, the eight-inch wall being too hot to hold the hand in contact with it.

Strength by Gordon's Formula:

Breaking strength per square inch. . . 45,630 pounds.
Area of cross-section. 15 square inches.
Breaking load, $15 \times 45,630$ 684,450 pounds, 342 tons.
Actual greatest load, cold, 141.4 tons, with no change of form.

COLUMN TEST NO. 2.—FIRE TEST WITHOUT WATER.—FURNACE SAME AS TEST NO. 1.—STEEL COLUMN.

The column was a Carnegie Steel Z-bar, as shown in the diagram (Fig. 6), and was uncovered. The weather was clear and warm, with a moderate breeze from the northwest. Temperature of air, 80° in the shade.

LOG OF TRIAL.

Time, h. m.	Pyrom-eter, deg. Fahr.	Hyd. Press-ure, Total Load, Tons.	Remarks.
2.23	80	....	Pyrometer point, 3 feet from column.
2.24	200	84.8	Wood fire lit.
2.30	650	....	Gas turned on.
2.33	....	....	Door closed. Full cock of naphtha.
2.35	1,000	....	One-quarter cock of naphtha.
2.36	1,300	....	
2.37	1,350	....	
2.38	1,375	....	Naphtha closed.
2.39	1,300	....	
2.40	1,125	....	One-eighth cock of naphtha.
2.40½	1,300	....	
2.41	1,325	....	
2.42	1,250	....	
2.43	1,200	....	
2.44	1,175	....	Naphtha cock closed to "dropping."
2.45	....	....	Pyrometer moved to 2 feet from column as flame touched point.
2.46	1,125	....	Column began to yield.
2.47	1,125	....	Column yielding fast.
2.49	1,100	....	Impossible to maintain hydraulic pressure.
2.51	1,100	....	Pump and gas stopped.
2.52	900	....	Pyrometer closed.

The result of this test is shown in photographs (Figs. 7 and 8).

Strength by Gordon's Formula:

Breaking strength per square inch. . . 42,820 pounds.
Area of cross-section. 14.15 square inches.
Breaking load, $14.15 \times 42,820$ 605,900 pounds, 303 tons.

COLUMN TEST NO. 3.—FIRE TEST WITHOUT WATER.—FURNACE SAME AS TESTS 1 AND 2.—CAST-IRON COLUMN.

JUNE 30, 1896.

The column was a cast-iron, hollow, round column, with flanges faced on both ends, as shown in a diagram (Fig. 9), and was un-

covered. It was cast horizontally, with a dry sand core, by the Cornell Iron Works, New York.

The weather was clear and warm, with a slight breeze from southwest. Temperature of air, 75° Fahr.

LOG OF TRIAL.

Time, h. m.	Pyrom- eter, deg. Fahr.	Hyd. Press- ure, Total Load, Tons.	Remarks.
2.32		14.1	Wood fire lit.
2.45		84.8	Gas lit, door being closed.
2.50		"	Pyrometer in place, 18 inches from column.
2.51	575	"	"
2.54	625	"	"
2.57	625	"	Gas shut off to poke producer.
2.59	500	"	"
3.00	475	56.5	Removed some loose bricks that interfered with tuyeres.
3.04	425	28.2	"
3.05	450	"	Gas turned on, door closed.
3.06	650	15.5	"
3.08	667	"	Air-openings closed.
3.12	600	11.3	Door down to arrange bricks.
3.13	650	"	Door closed.
3.13½	750	"	Naphtha valve opened one-half.
3.14	750	"	"
3.15	812	42.4	"
3.17	900	84.8	"
3.21	950	"	"
3.23	1,000	"	"
3.25	1,025	"	"
3.28	1,050	"	"
3.30	1,025	"	"
3.32	1,025	"	"
3.36	1,100	"	"
3.37	1,125	"	Slight redness reported by some.
3.40	1,137	"	Column reported bent slightly.
3.43	1,175	"	"
3.44	1,200	"	"
3.47	1,250	"	"
3.50	1,225	"	"
3.52	1,175	"	"
3.55	1,200	"	"
4.04	387	"	Gas shut off. Door down. Column decidedly red and bent.
4.08	925	"	Gas on and door closed.
4.09	925	"	No naphtha.
4.10	1,000	"	Naphtha turned on one-half cock.
4.15	1,112	"	"
4.32	1,125	"	Gas shut off. Stopped pumping.

Strength by Gordon's Formula was as follows:

Breaking strength..... 902,000 pounds.

Safe load 1-5 x 902,000..... 180,400 pounds, 90.2 tons.

The result of Test No. 3 is shown in photographs (Figs. 10 and 11).

COLUMN TEST NO. 4.—FIRE TEST WITHOUT WATER.—FURNACE
SAME AS TESTS NO. 1, 2 AND 3.—CAST-IRON COLUMN.

JULY 6, 1896.

The column was a cast-iron, hollow, round column, with flanges faced on both ends, and was uncovered. It was cast horizontally with a dry sand core, by the Cornell Iron Works, New York. The column was the same as illustrated in diagram (Fig. 9), with the following exceptions: Length over-all, 13 feet 0½ inch; thickness of flanges, 1½ inches; flanges reinforced by four ribs, each ¾ inches thick, reaching from outer end of flange to cylinder at an angle of about 45°.

LOG OF TRIAL.

Time, h. m.	Pyrom- eter, deg. Fahr.	Hyd. Press- ure, Total Load, Tons.	Remarks.
2.22	....	....	Wood fire lighted.
2.25	....	84.8	Gas lighted.
2.28	....	"	Pyrometer placed 18" from column.
2.29	....	"	Door closed.
2.30	675	"	"
2.31	875	"	"
2.33	900	"	"
2.35	912	"	"
2.40	950	"	"
2.43	975	"	"
2.44	1,000	"	"
2.45	1,000	"	"
2.49	1,000	"	Naphtha used, one-fourth cock.
2.51	1,125	"	"
2.52	1,100	"	More naphtha, three-eighths cock.
2.53	1,200	"	More gas.
2.54	1,300	96.1	"
2.54	1,325	84.8	"
2.57	1,350	"	Column bending.
2.59	1,350	"	More naphtha, one-half cock.
3.01	1,375	"	Color reported.
3.03	1,500	"	"
3.03½	1,525	"	Column yielding fast.
3.05	1,550	"	Column broke suddenly.

The result of the test is shown in photographs (Figs. 12 and 13). The fracture occurred at about the centre of the column where the deflection was the greatest. There was a crack about five inches long, about seven inches above the fracture on the convex side of the column, showing that the column first pulled apart on the outside of the bend. No water was thrown on this column during the test.

COLUMN TEST NO. 5.—FIRE TEST WITH WATER.—FURNACE
SAME AS TESTS NO. 1, 2, 3 AND 4.—CAST-IRON COLUMN.

JULY 10, 1896.

The column was a cast-iron, hollow, round column, with flanges faced on both ends, and was uncovered. It was cast horizontally with a dry sand core, by the Cornell Iron Works, New York. The column was the same as illustrated in photograph (Fig. 9) with the following exceptions: flanges were 1½ inches thick, and were reinforced with four ribs as in Test No. 4. There was a slight defect in this casting, there being a porous portion a few inches long on one side about 3 feet 6 inches from the lower end.

The weather was partly cloudy and sultry. There was a strong wind from the southwest. Temperature of the atmosphere was 80° Fahr.

Water was thrown upon the column through about 50 feet of 2½-inch rubber hose and a ¾-inch nozzle. The pressure at the hydrant was fifty pounds.

LOG OF TRIAL.

Time, h. m.	Pyrom- eter, deg. Fahr.	Hyd. Press- ure, Total Load, Tons.	Remarks.
2.16	....	84.8	Wood fire lighted.
2.28	....	"	Gas lighted.
2.29	600	"	Door closed. Pyrometer in place 18" from column.
2.31	625	"	"
2.32	675	"	"
2.33	700	"	"
2.36	675	"	Pyrometer moved back 5 feet from column.
2.40	625	"	"
2.41	675	"	"
2.42	525	"	Water thrown on column one minute.
2.43	450	"	Door open. Fire out.
2.44	400	"	Door open. Fire relighted.
2.46	425	"	Door closed.
2.47	540	"	"
2.49	1,000	"	Heat raising too fast.
2.51	650	"	"
2.52	675	"	"
2.55	700	"	"
2.58	750	"	Pyrometer 3 feet from column.
2.59	800	"	"
3.01	740	"	"
3.02	750	"	Pyrometer 18" from column.
3.05	785	"	Pyrometer moved back 5 feet from column.
3.06	775	"	"
3.09	400	"	Water on column one-half minute. Fire out.
3.16	....	....	Door down.
3.19	675	"	Gas relighted. Door closed.
3.22	700	"	Pyrometer 18" from column.
3.24	725	"	More air admitted.
3.27	775	"	"
3.28	800	"	"
3.30	900	"	"
3.35	1,025	"	"
3.40	1,025	"	"
3.41	1,050	"	"
3.50	1,050	"	Column red.
3.55	1,075	"	Water on column one-half minute. Fire out.
4.13	....	"	Door down. More water on column as it was still red.
4.17	750	"	Gas relighted.
4.21	787	"	Pyrometer 18" from column.
4.23	900	"	Naphtha one-half cock.
4.24	1,025	"	"
4.27	1,150	"	"
4.29	1,200	"	"
4.30	1,250	"	Column getting red.
4.31	1,275	"	Column bending.
4.32	1,280	"	"
4.34	1,300	"	Pyrometer moved back. Water on column one minute.
4.35	....	"	Door down and water on column again two minutes.

The result of this test is shown in photograph, (Fig. 14).

The column was very red when the water was thrown on it the last time. The brick walls and arch roof cracked when water fell on them. The column was badly bent, but otherwise appeared uninjured.

Respectfully submitted,

S. ALBERT REED,
For the Tariff Association of New York.

GEORGE L. HEINS,
For the Architectural League of New York.

H. deB. PARSONS,
THOMAS F. ROWLAND, JR.,
For the American Society of Mechanical Engineers.

The Committee on
Fireproofing Tests.

ROMAN FEVER.—Roman fever is almost a thing of the past. From 650, in 1881, the deaths from malaria ran down to 254 in 1891, while for the last five years the average has been 149, the number in 1895 being 125. These figures are all the more significant in that the population of Rome has increased from 300,000 to 467,000 in fifteen years.—Philadelphia Telegraph.



THE NEW COUNTY-HALL QUESTION. — PROPOSED NEW GOVERNMENT OFFICES ON PARLIAMENT STREET. — INTESTINAL DISTURBANCES IN THE R. I. B. A. — TRINITY ALMSHOUSE.

How many an onlooker it must appear that the London County Council finds the great joy of an action to lie in the conception and contemplation of it. The schemes evolved by the Council are always interesting, if only from their very magnificence, and it has always been pleasant to feel that the Council was content to expend large sums of money on public improvements while the need of a County-hall, an official establishment for themselves, grew year by year more acute. At last, however, there is a serious movement to obtain the accommodation required, and the London County Council has resolved to apply to Parliament for the necessary power to carry out their wishes. In mentioning, in the course of my last letter, the contemplated street improvement which was to consist in the formation of a new thoroughfare from the Strand to Holborn, I stated that it was uncertain whether the scheme suggested by the R. I. B. A. or the Council's own scheme would be finally adopted. At the Strand end of the new street, the R. I. B. A. had proposed the formation of a large triangular space of open ground, some four acres in extent, which it was hoped would eventually prove a satisfactory site for a County-hall. This was an ambitious and magnificent scheme, but appeared likely to involve a greater expense than that of the Council, who proposed to make the streets without appropriating the triangular space. The matter was laid aside for some short time, but interest was quickly revived when the question of a County-hall was discussed in connection with a site quite independent of the street improvement and in a different locality. This site is situated to the south side of Trafalgar Square. There is a small block of houses which stands between that square and that magnificently wide and wooded road, "The Mall." Starting from the bottom of Constitution Hill at Buckingham Palace, this road with a quadruple avenue runs perfectly straight for the length of St. James's Park, and curves to the right at last into the Horse Guards Parade. The first step in the provision of the new site for the County-hall will be the continuance of the Mall in a straight line from its interruption to Trafalgar Square. The Mall, thus continued, will then divide the new Admiralty Offices from a plot of land, some two acres in extent. It is this space which, it is hoped, may be obtained for the purposes of a County-hall. On the morning of the day on which the whole matter was to be discussed, a letter appeared in the columns of the *Times* from T. G. Fardell, Esq., London County Council, deprecating the fact that the question of a County-hall had been again raised while the financial position of the Council was anything but satisfactory. He quoted the late Lord Randolph Churchill:—"The only practical test of the urgency and necessity of public demand for any large expenditure is the willingness of the ratepayers to bear the increased burdens which such expenditure places upon them." He then went on to express a fear that the Council was drifting into a critical financial condition. He showed that since the creation of the London County Council, although the ratable value of London had increased by £4,250,000, the net liabilities were nearly £2,250,000 greater, while the County rate had risen 2½ d. in the pound. A second letter appeared on behalf of the Arts Committee of the R. I. B. A., signed by Alfred Waterhouse, R. A., L.L.D., Chairman, and Edw. Mountford, Esq., F. R. I. B. A., Hon. Sec., respectively, of the Committee. Without questioning from a financial point-of-view the wisdom of embarking immediately upon the scheme, the writers drew attention to the fact that *so far as was ascertainable from the estimates*, an extra expenditure of £653,370 would secure the four acres of ground comprised in the street-improvement scheme. They complained that a great opportunity was being lost in the division of the two enterprises, for, while it was proposed to spend £813,000 upon a site, small and unsuited to the purpose, an expenditure less by £150,000 would obtain a more central site twice as large, where a worthy building might stand to advantage and form a new architectural centre. This letter had no opportunity of influencing the vote, which, it was expected, would be taken that day, as the debate was adjourned. The next day appeared a letter from R. Melville Beachcroft, Esq., London County Council, who was able to cut away the figures which, under a saving clause, Messrs. Waterhouse and Mountford had appeared to include as a base to their argument. He showed that the cost of the bare land contained in this triangular space was not included in the estimate, but that another £1,500,000 would be required to purchase it. He went on to deprecate the combination of the questions of the Strand Improvement and the County-hall into an undertaking involving four millions. The result of such action, he said, would be that neither scheme would receive its due discussion and appreciation. The two plans taken separately could be treated as the

requirements of each admitted. Messrs. Waterhouse and Mountford have since replied, wishing to show that the propositions of the Council and the R. I. B. A., being widely different in scale, render a simple comparative criticism of the matter impossible. They had no wish to appear to advise extravagance; they desired only "that the present proposals should form part of one comprehensive and coherent architectural scheme, which would be gradually worked out and which might ultimately prove less costly and certainly more efficient and worthier of London than the temporary expedients suggested." The reference to temporary expedients is explained by the fact that the Council, in view of the expense of the County-hall, intend at present only to incur an expenditure of half a million upon the Holborn to Strand improvement. This will consist merely of a clearance in the Strand as a preliminary step towards the construction of the thoroughfare at a further cost of £1,500,000. But with the County-hall scheme upon their own site in Trafalgar Square, the London County Council have decided to proceed at once, and are applying to Parliament for powers for the purpose. The site proposed for the County-hall has the merit of being very centrally placed in respect to its work, and is quite close to the existing offices of the London County Council, whose principal establishment once formed the offices of the Metropolitan Board of Works. Other affairs of the London County Council are at present scattered over the immediate district in various houses, a decentralization fraught with the highest public inconvenience. The cost of acquisition of land is estimated at £813,000; the building at £500,000, a total of £1,313,000. And though economy must be studied to a great extent in the building, it may be expected that a structure will be raised worthy of the site and its position as the central municipal offices of a great city.

A year hence, it seems probable, Parliament Street will be a centre of reconstruction. At the Trafalgar Square end the scheme I have just noted will probably be working itself out, while at the Houses of Parliament end there will be taking place the great alterations of which I gave you some intimation in a recent letter. The power of acquiring for the purpose of Government offices the extensive piece of land, which at present is occupied by small houses, was in process of being sought when the late Government was succeeded by the present. There was some fear that the new Government would, perhaps, not follow up the policy of its predecessors in continuing the effort to obtain better office accommodation. But so patent is the need that the scheme is to be proceeded with at once, and it only remains for a few unimportant leases to expire and for the committee just appointed to decide in what way the sites available can be most advantageously utilized. At present there are two blocks of buildings which form the great part of the Government offices. One of these, the smaller of the two, was built partly by Sir John Soane and partly by Sir Charles Barry. It fronts upon Parliament Street and accommodates the Treasury, Privy Council and Education Departments. Separated from it by Downing Street is an enormous block, built by Sir Gilbert Scott. This building contains the Home, Colonial and Foreign Offices, the Local Government Board and the India Office. The Admiralty is the only other Department which has regular accommodation, having lately moved into a new block, built from a design obtained in open competition. The War Office is said to carry on its work in a "rabbit-warren" in Pall Mall, while the Boards of Trade and Agriculture, the Fish and other offices are scattered about quite unaccountably. There are two important sites to be acquired and it is expected that each of them will be utilized for Government offices. Both sites are in Parliament Street and the first occurs at the southern end—a large site, of which a small part will be left unoccupied in order to bring the street to an equal width throughout. Offices for the Board of Trade are likely to be placed here, and room for several small departments will probably be found. The other site is almost half way between Parliament and Trafalgar Squares and was occupied originally by Lord Carrington's House. It faces the Horse Guards on the front, and Inigo Jones's Banqueting Hall (now the United Services Institution) on the side. The site has now for some time been cleared and fenced-in by a hoarding, unlovely and unrelieved by posters, artistic or otherwise. This to the pedestrian. To the observer from the omnibus top the site comes somewhat as a shock, for in the centre of London there he may see banks of bracken and pink-campion, cow-parsely and ragged-robin, growing with extraordinary luxuriance. And the conquest of the site in this way by wild flowers is all the more remarkable, because the house which originally stood here was possessed of little or no garden. This site will probably be given up to the accommodation of the War Department. It is understood that a large amount of money is to be appropriated for these buildings; in fact, the cost of the acquisition of the land is only a little more than the estimated cost of the buildings, each being over £1,250,000. The total expense is estimated at not less than £2,642,000. Nothing has been said, as yet, about the method by which an architect is to be chosen for the work. In all probability it will be by competition. If this be so, it is to be hoped that the conditions will be favorable and with as little restriction as possible, and that in the execution there may be none of the persistent official interference that contributed to hurry Mr. Street into his grave during the building of the Law Courts.

A constitutional difficulty has arisen in connection with the election of Fellows to the R. I. B. A. Some years ago, when the exam-



COTTAGE IN LANARK ROAD NEAR BRIDGE LINE, N.Y.
J. A. SCHWEINFURTH ARCHT.
1 8 9 5



SKETCH FOR HOUSE AT
MILTON, MASS.
J. A. SCHWEINFURTH ARCHT.
1 8 9 6



HOUSE IN SEWELL AVE. BROOKLINE, MASS.



BUNGALOW ON THE
ESTATE OF W. H. LINCOLN, ESQ.
NEWTON CENTRE, MASS.
J. A. SCHWEINFURTH ARCHT.



RESIDENCE OF
JOSEPH HOMER, ESQ.
BROOKLINE, MASS.
J. A. SCHWEINFURTH ARCHT.
1895

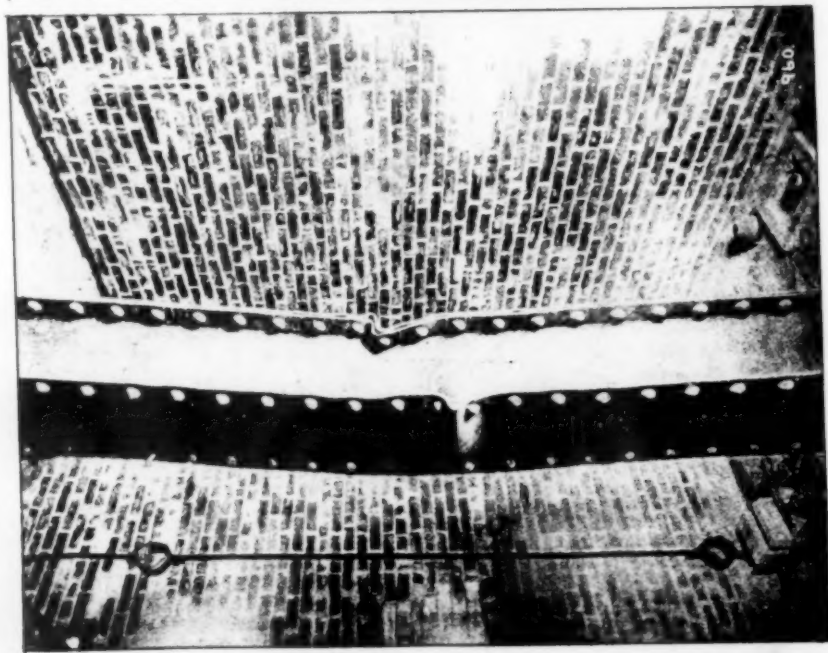


FIG. 3.

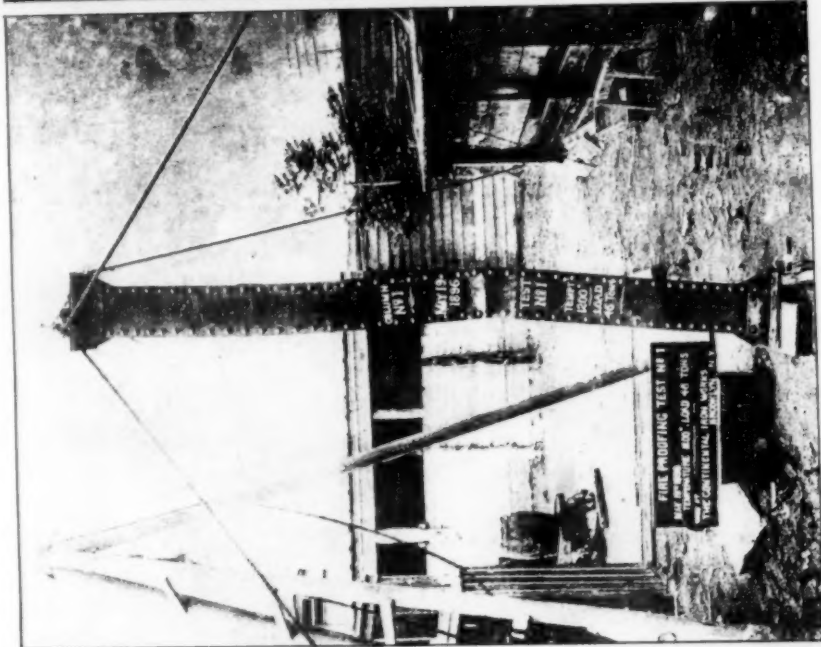


FIG. 4.

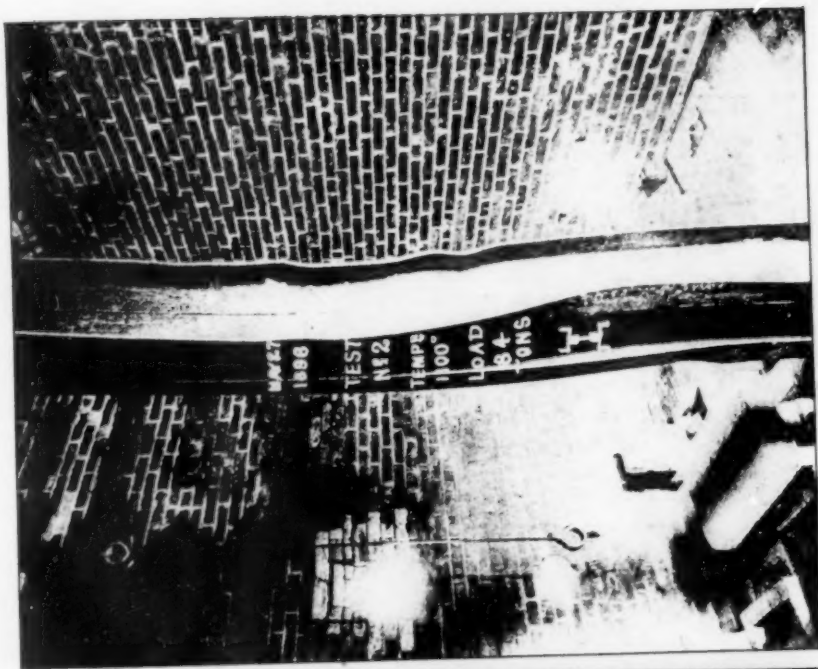


FIG. 7.

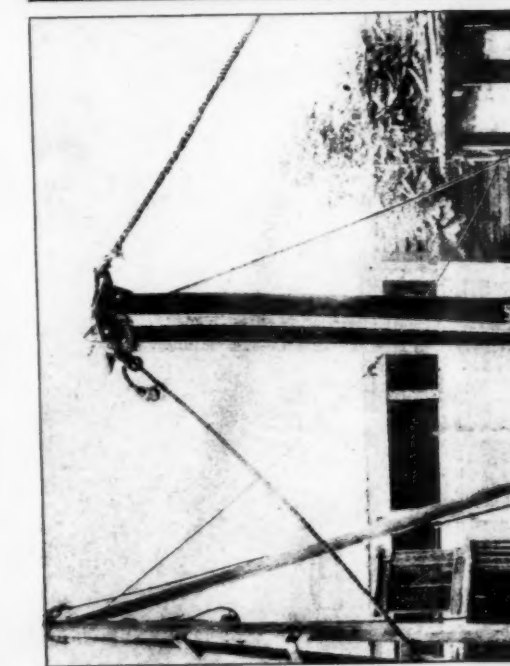
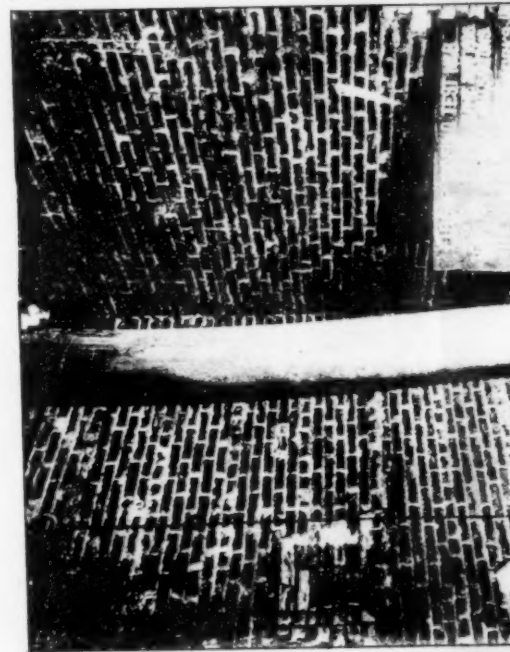




FIG. 8.



FIG. 10.



FIG. 11.

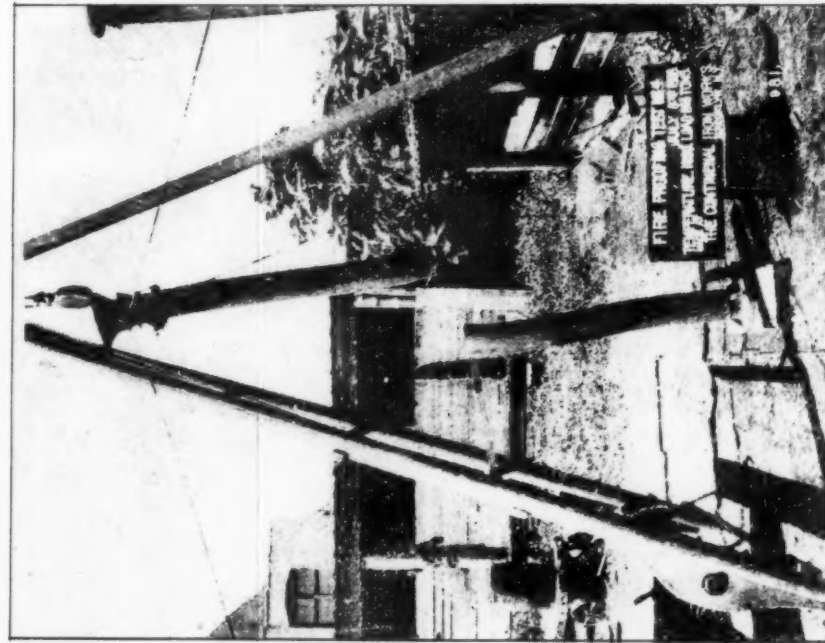


FIG. 12.

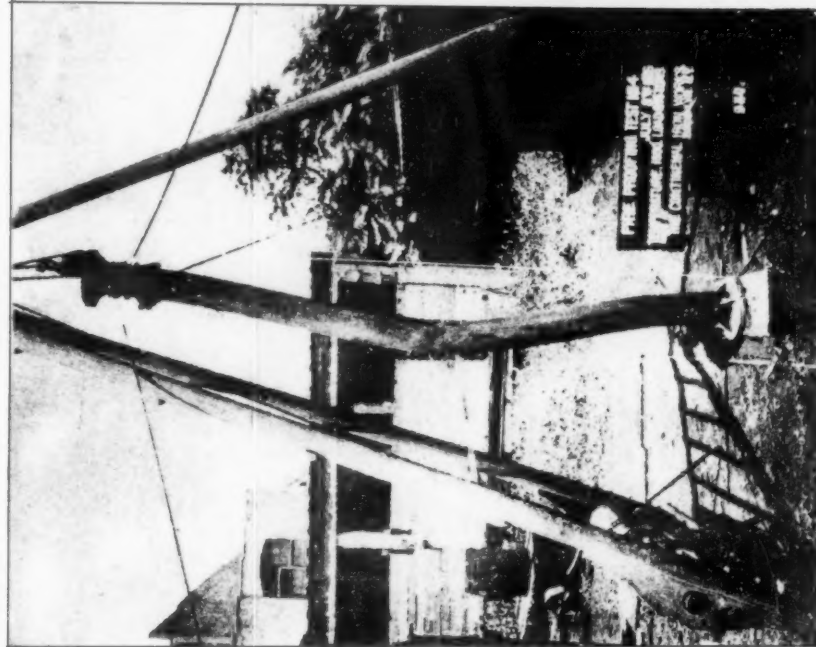


FIG. 13.

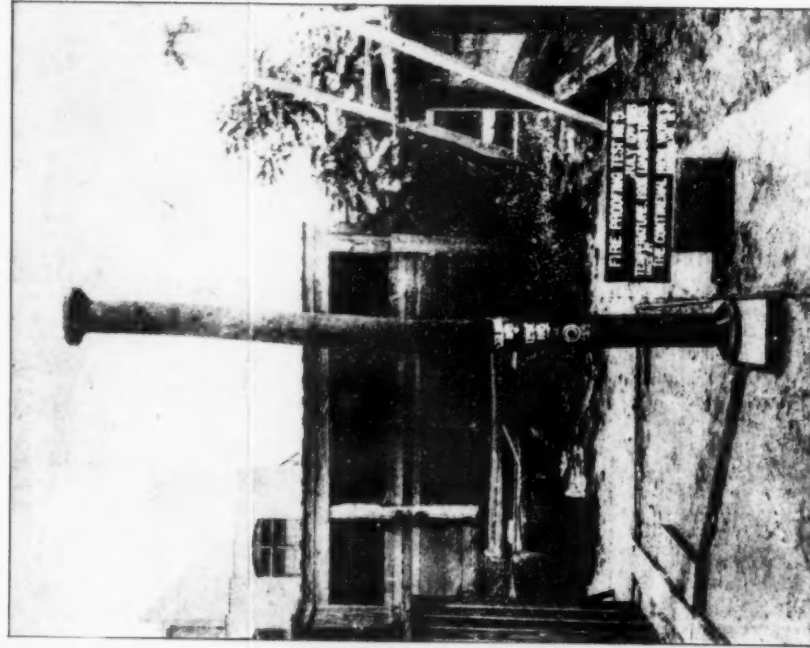
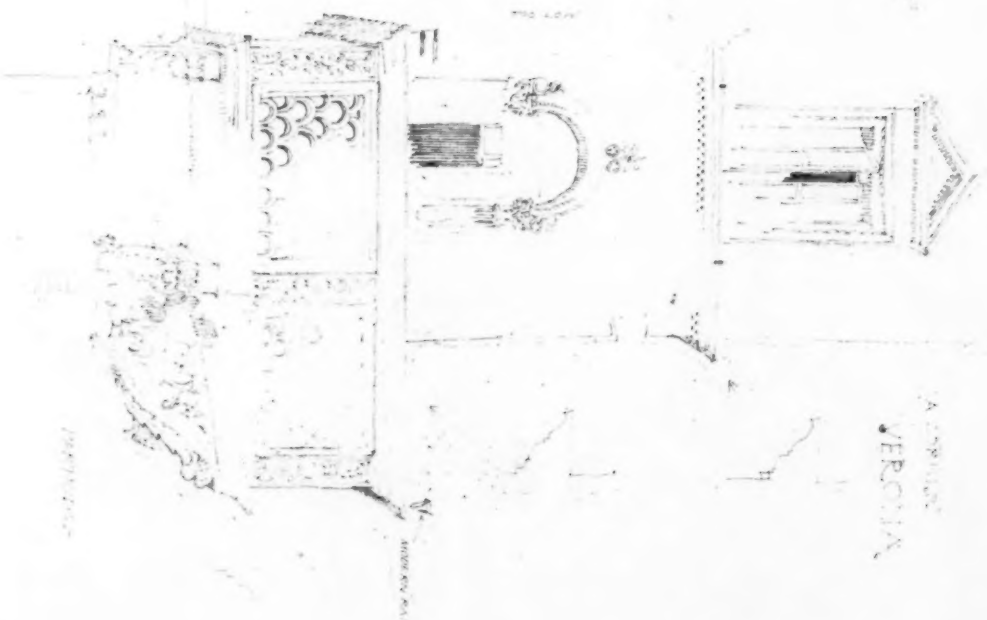
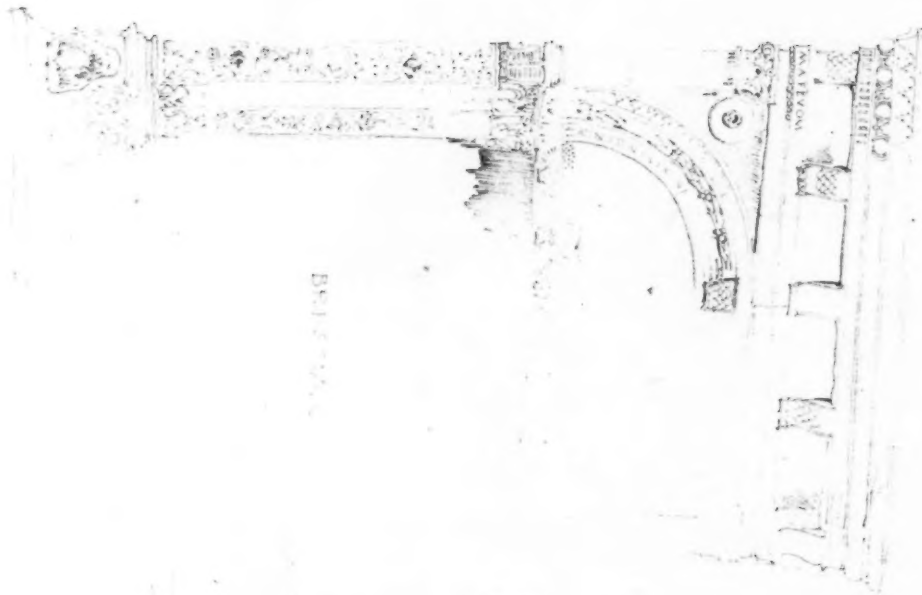
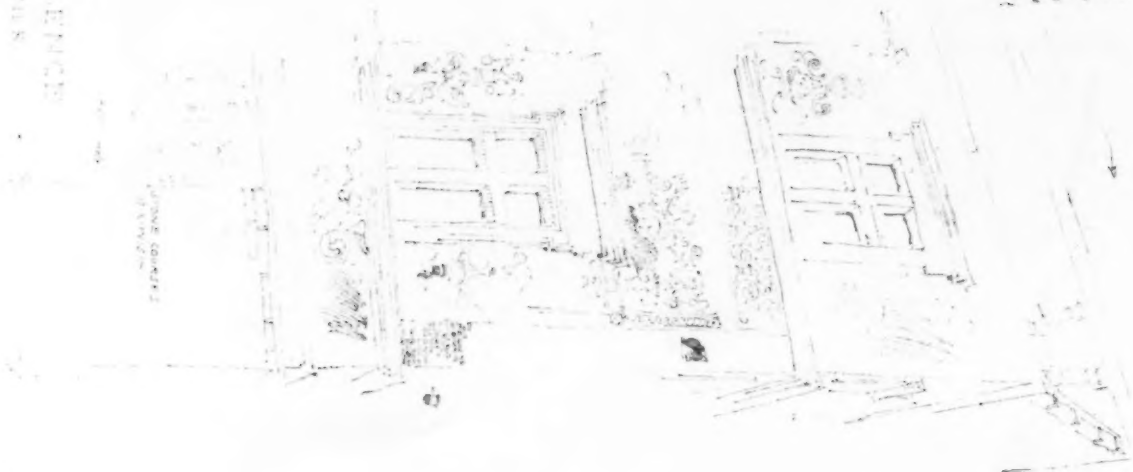


FIG. 14.

RESULTS OBTAINED BY THE COMMITTEE ON FIREPROOFING TESTS.

FLORENCE
A CORNER



A CORNER
VERONA

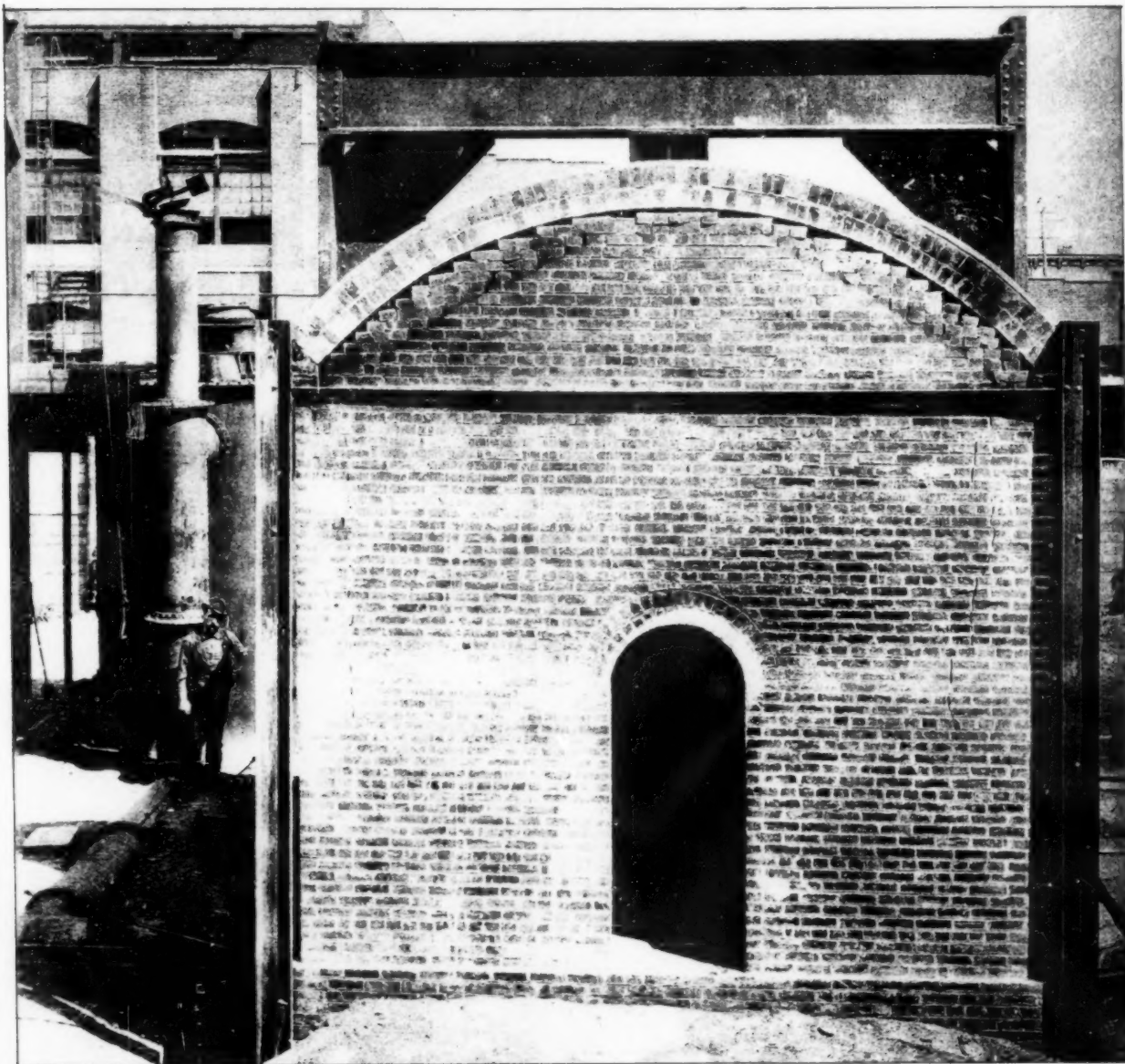
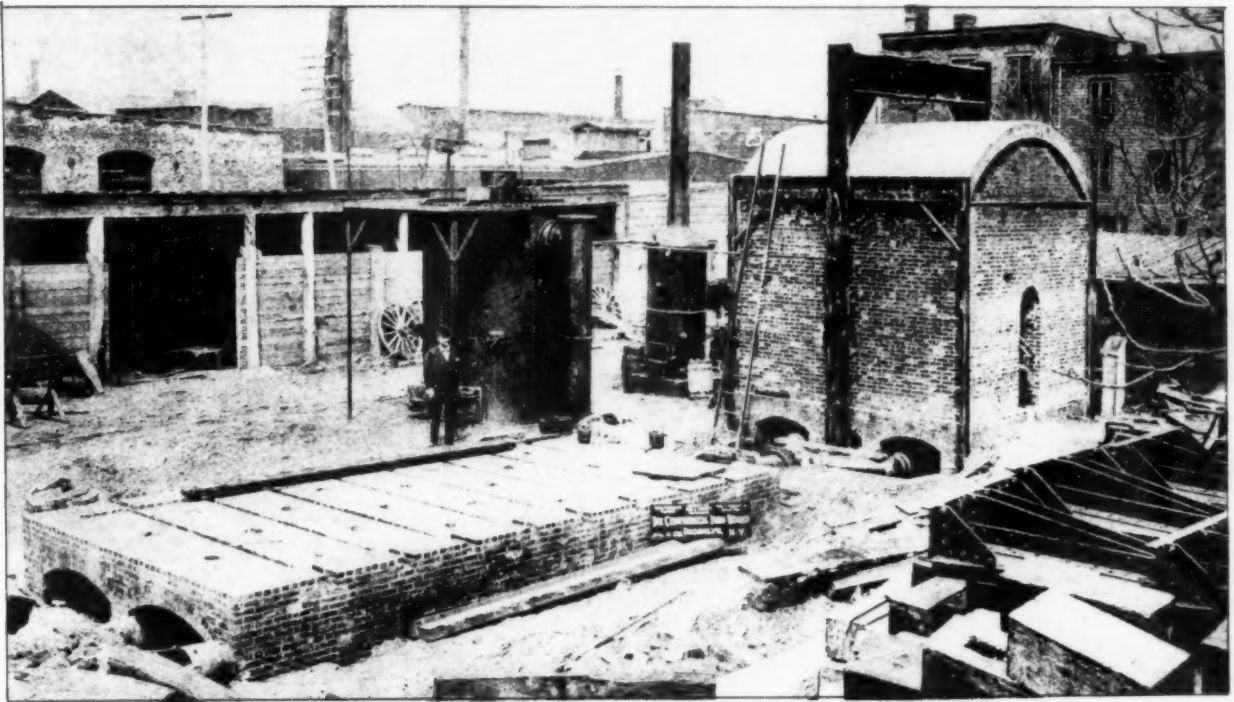


FIG. 11.

FURNACE USED BY THE COMMITTEE ON FIREPROOFING TESTS.

ination system was instituted, a by-law was inserted which stated that none, thereafter, should be qualified to become Associates who had not passed the examinations. No such restriction was placed upon the election of Fellows, the by-law standing that if a poll should be demanded, one adverse vote should cancel four in favor. A year or two ago, it became evident that a large section of the Associates were incensed by the appearance on the list of proposed Fellows, of the names of gentlemen who had unsuccessfully attempted to pass the examinations. A poll was demanded with the result that the candidates were promptly blackballed. The Associates then organized themselves and thenceforth scrutinized very closely the lists of proposed Fellows which from time to time were submitted. Any gentleman who had neither passed the examinations nor in practice had done important work was unlikely to meet with a welcome. The result of this was a falling-off in the numbers of the Fellows, for men of position hesitated to come forward in face of the risk of black-balling—a blemish upon their dignity if not upon their reputation: at the late dinner of the R. I. B. A., held in Manchester, the President of the Liverpool branch, Mr. G. Bradbury, distinctly stated that such were the considerations which had held him back from seeking to become a F. R. I. B. A. He had, he said, been in independent practice for twenty-two years and had been a member of the Liverpool branch of the R. I. B. A. for twenty-four years. The effect of being rejected by a body of Associates who, he could easily imagine, had not heard of his work, was, in view of the position he held, far too serious to warrant the risk. The position of parties upon the Institute roll is as follows: Fellows, 588; Associates, 933. During the eight years ending 1893, the Fellows were increased by 222 members; from 1893-5 a falling-off of twenty-seven was registered. The Associates have increased by 222 members during the ten years ending 1895, but the last two years exhibit the contrary to the decrease amongst the Fellows. The Council of the R. I. B. A. is quickly moved by any action which affects its finances, and it now seeks to remedy the evils. Mr. Penrose has suggested that the elections should be carried out by the Council alone, without appeal to the body of members. This would be a revolutionary step, difficult to justify, and it is certain that the Associates will not abandon their powers without a struggle. A sub-committee recently appointed to consider the matter reports unfavorably upon his scheme, but proposes that each adverse vote shall, in the future, cancel only two votes in favor. There is not a doubt that the Institute numbers among its Fellows gentlemen who have done nothing to attach to them whatever dignity subsists in the Fellowship; nor that from time to time the Council appears to assume a careless attitude towards the Institute's interest in the matter. The difficulty would doubtless be solved if the Council, who nominate their successors, would approach the younger element of Associates in a more liberal spirit, accepting a greater number into the body of the Council and seconding the effort of the Associates to endow the Fellowship with a proper dignity. It is certain that no interest, architectural, educational or social, will be advanced by any attitude of intestine quarrel.

I had occasion in a recent letter to call attention to a proposed piece of vandalism—the destruction of the Trinity Almshouses on the Mile End Road, E. The proposal was met by a storm of popular protest, and it is a pleasure now to notice that the opposition has not been without effect upon the Charity Commissioners who sat to consider the question. They have decided that the destruction is unwarranted. With a view, no doubt, of maintaining the interest which the question has aroused, and, in part, as a memorial of a victory over opportunism, there has appeared an interesting monograph on the subject from the hand of Mr. C. R. Ashbee, M. A. The book deals with the whole question of the Trinity Almshouses and chiefly from an historical aspect. The title indicates its scope—“The Trinity Hospital in Mile End—an Object-Lesson in National History.” After touching upon the status of a mediæval guild, which has survived and developed into the Corporation of Elder Brethren of Trinity House, Mr. Ashbee goes on to state what he has been able to discover in connection with the history of the Hospital. He cannot actually assert that Wren designed the buildings, but he finds strong evidence of Wren's influence, and considers that the houses are, at least, his part creation. Reproduction of some sketches are given, greatly increasing the interest of the book, and the work is completed by the addition of a few of the most important letters included in the recent correspondence upon the proposed demolition. The book is published at the Guild of Handicraft, Mile End, E., of which Mr. Ashbee is Honorable Director. The publication at this particular period is, no doubt, the acceptance of an opportune moment, but the work is only one of a series of illustrated monographs which are to be prepared upon buildings of antiquity in the district of East London and Southwest Essex. The organization which has combined to do this is styled “The Committee for the Survey and Registration of the Old and Interesting Buildings of Greater London and Essex.” The Committee was formed during 1894-5 and contains many well-known names, such as Walter Crane, William Morris, Hamo Thornycroft, R. A., Sir Walter Besant, etc., while the late Lord Leighton held, until his death, the office of President. The objects of the committee are concisely contained in its title. They are: to survey the old buildings of Greater London, with particular reference to the northern and eastern parts, including Southwest Essex; to prepare a series of illustrated monographs of about a dozen of the most interesting buildings contained in those districts, and to enter a protest against

the unnecessary destruction of any building of historical or antiquarian importance. This survey is really only the third part of the work which, at the initiative and under the direction of Mr. Ashbee, is carried on at Essex House, E., a fine old residence in the Mile End Road, Whitechapel. The Guild of Handicraft of Essex House, sprung from a very small gathering of admirers of Ruskin and his teaching, consisted in 1886 of three members. It has since grown into a society of importance with a two-fold work, educational and productive. Originally there was attached a technical school of considerable dimensions, the guiding principle of which was the teaching to young journeymen of design in its application to the several industries in which they were engaged. It was not “the School of a Hobby” but “the School of a Movement,” an enemy to systems, but designed to establish a healthier foundation on which to base the education of the craftsmen. This school, owing to a persistent refusal on the part of the Technical Education Board to assist financially, has been closed; it was found impossible to compete with the State-aided Municipal schools, which have lately sprung up so generally.

The educational side of the work is, however, continued to some extent by the Guild. This latter is a society of craftsmen, who seek the nobility and advancement of English art and handicraft—not on the basis of mastership, but with coöperation as an industrial partnership. At a small profit the Guild carries out all kinds of joinery, cabinet-making, carving, leather-work, decorative painting, wrought-metal work and jewellery. The body is a well known contributor to the arts and crafts and other annual and occasional exhibitors of handicraft. It is situated in a centre wholly adapted to its work, and with such an enthusiast as Mr. Ashbee as director, it may be expected for the future, quite apart from any value it may possess as a social force, to rank very high among the productive educational organizations of the country.



[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

STAIRCASE DETAIL: THE GUARANTY BUILDING, BUFFALO, N. Y.
MESSRS. ADLER & SULLIVAN, ARCHITECTS, CHICAGO, ILL.

[Gelatine Print, issued with the International and Imperial Editions only.]

A GROUP OF COUNTRY HOUSES. MR. J. A. SCHWEINFURTH, ARCHITECT, BOSTON, MASS.

FIREPROOFING TESTS OF UNPROTECTED COLUMNS.

SEE report published elsewhere in this issue.

APPARATUS USED IN CONDUCTING THE ABOVE TESTS.

SKETCHES BY MR. W. T. PARTRIDGE, LATE HOLDER OF THE
ROTCH TRAVELLING-SCHOLARSHIP.

[The following named illustrations may be found by reference to our advertising pages.]

SGRAFFITO DECORATION, 103 VIA TOMACELLI, ROME.

ACCESSORIES OF LANDSCAPE ARCHITECTURE, NO XXVI: STAIRWAY APPROACH TO THE VILLA D'ESTE, TIVOLI, ITALY.

XV CENTURY SGRAFFITO IN COURT-YARD OF THE COLLEGIO PENITENZIERI, PIAZZA SCOSSA CAVALLI, ROME, ITALY.

[Additional Illustrations in the International Edition.]

LOWER STORIES OF THE GUARANTY BUILDING, BUFFALO, N. Y.
MESSRS. ADLER & SULLIVAN, ARCHITECTS, CHICAGO, ILL.

[Gelatine Print.]

CORRIDOR IN THE SAME BUILDING.

[Gelatine Print.]

BITS OF “OLD BERLIN” AT THE BERLIN INTERNATIONAL EXHIBITION. HERR KARL HOFFACKER, ARCHITECT.

THESE and the following illustrations are copied from the *Deutsche Bauzeitung*.

MAIN BUILDING AND MAIN RESTAURANT AND WATER-TOWER,
BERLIN INTERNATIONAL EXHIBITION. HERR BRUNO SCHMITZ,
ARCHITECT.

SALOON OF THE ROYAL MAIL STEAMER "GOTHIC," OF THE
WHITE STAR LINE.

NOTES AND CLIPPINGS

THE HEIGHT OF FACTORY CHIMNEYS.—The notion that the greater the height of a chimney for a boiler plant the greater will be its draught-producing power is responsible for the existence of many chimneys of imposing size and, at the same time, unnecessary expense. A very tall chimney, well proportioned and gracefully outlined, may be a striking architectural adjunct to a factory, but it is also one that costs considerable money without doing any measurable amount of good. Where chimneys are intended to carry off noxious fumes from chemical works, there is, of course, some method in providing for unusual height, since the aim in such a case is to insure as complete as possible a diffusion of the vapors and prevent their mingling with the air of the lower strata; but for boilers simply unusual height, as stated, is rarely based upon a good reason. As a matter of fact, the draught-producing capacities of chimneys having flues of the same size are in proportion to the square-roots of their heights, so that if one were to have double the power, if it may be so called, of the other, it would have to be four times as high, and not merely twice as high as many would suppose. A height of 150 feet may be considered, on good authority, as the maximum necessary in any case for producing the requisite draught, providing, of course, that the area of the flue has been properly proportioned. This latter should be made to bear a pretty nearly direct ratio to the combined areas of the boiler flues connecting with it. A chimney much beyond 150 feet is generally suggestive of misspent money. — *Cassier's Magazine*.

"SAND SUCKERS."—As the steamers pass along St. Clair flats, between Lake Huron and the Detroit River, the passengers see numbers of old hulks anchored off in shallow water, and invariably ask the steward or one of the deck boys what they are there for. The answer always is given in a gruff and contemptuous tone, as if it were a fool's question:

"They're sand-suckers."

"What's a sand-sucker?"

"Old tubs that suck up sand."

"How do they suck up sand?"

Then the oracle looks at you and grins. He doesn't quite know whether you're a farmer yourself or are guying him, and it takes a great deal more questioning to find out the fact that a new industry has been found to utilize ancient and leaky hulks that are not fit to go to sea. The bottom of Lake St. Clair and the flats that surround it are covered with beautiful white sand, and these boats go out every morning, anchor in a favorable place near the channel, and drop overboard large hose-pipes of canvas or rubber, with iron tips, which sink of their own weight. Then they set the pumps going and suck up the sand, which brings a good deal of water with it, and is deposited in the bottom of the boat. The sand sinks, and the water rises to the surface and returns to the river through holes pierced for its accommodation. Thus, before sunset, the hatches are filled with pure, clear sand at a nominal cost, which is unloaded at Detroit and sold for building purposes. Formerly there was a community of Frenchmen who made a business of gathering this sand and hauling it to the city, but they had to work very hard, because of their ignorance of hydraulics and their lack of boats. They poled and rowed up flat boats, which they would fill by jumping overboard in shallow water and shovelling in the sand. They would work a month with the water up to their waists and not get as large a cargo as a modern sand-sucker, operated by two men, can pick up in a single day. — *Chicago Record*.

PAPYROLITH.—An innovation in the construction of floors is the use of a special preparation of paper pulp invented by Otto Kraner, of Chemnitz, Saxony. He calls the new material papyrolith. It comes in the shape of a dry powder which is mixed with water, dries in a short time and may be spread and planed down upon a foundation of either natural or artificial stone, cement or wood. The wearing quality of papyrolith is very remarkable, as are also its qualities of being solid and without a crevice, a bad conductor of heat and deadening all noise. A further advantage is the considerable amount of elasticity which it possesses and perfect safety from fire. Since the mass may be tinted with almost any color, it is possible to lay down several layers in different colors along side of each other, or to lay a floor with a mosaic design. Parquets with vari-colored borders can also be laid down, and the same material may be used for wainscoting and stucco work, as also for panels and other decorative and architectural purposes. Mr. Kraner has also recently succeeded in producing a material similar to Lincrusta-Walton at only one-tenth the cost of that expensive material. — *Scientific American Supplement*.

MUCH ADO ABOUT—NOTHING.—A certain Prince of Orange was Generalissimo of the Austrians at the end of the last century. He fought against the French in Italy, died, and was buried at Padua, (1799). For four years the Dutch Government has been in treaty for the Prince's remains, and after an endless amount of diplomatic negotiations and correspondence, matters were arranged, a Dutch man-of-war arrived in Venice, and, after another three weeks' delay, surmounting the last difficulties raised by the Church and red tape of the

Italian Government, a day was fixed for opening the tomb, and conveying the remains to Venice, to be transported by the man-of-war, and ultimately deposited in the family vault at Delft. It was a most impressive ceremony. A representative of the Queen of Holland came expressly. Admirals, generals, officials galore, special trains, funeral-car, troops lining the way, minute-guns and flags half-mast high, and then the tomb was opened, and contained—nothing. — *London Truth*.

CATHEDRALS IN THE FEN COUNTRY.—The special wealth of the Fen country in churches of the highest class, some of them almost cathedral-like in dimension, far exceeding the needs of the sparse agricultural population now around them, must impress us with something like astonishment when we remember that building-materials, whether stone or timber, were necessarily brought from less watery districts. In the course of some drainage operations in Lincolnshire many years ago, an ancient barge was discovered laden with blocks of stone. Its timbers were black with age and long immersion, like the well-known "Fen oak," and there can be no doubt that it had been accidentally sunk in the "leam" or water-course, dug, perhaps, for the express purpose of conveying heavy materials by water carriage to one of the churches or abbeys in course of construction five or six centuries ago. — *Good Words*.

UTILIZING IRON SANDS.—A way has been found of turning the iron sands of Taranaki, in New Zealand, into commercial iron and steel. The sands extend over 40 miles of beach, many feet deep and stretching out 300 yards below low water. They consist of magnetic iron perfectly free from sulphur, phosphorus and other impurities except a small percentage of titanium. Cheap coal can be had not far away, and lime and clay are near by. Hitherto all attempts to utilize the iron have proved futile. By the new method bricks made of 190 parts of iron sand with fifty parts of yellow clay and 50 parts of blue clay are put in the furnace with briquettes made of coal breeze, raw bituminous coal, slag cement and coal tar. — *Providence Journal*.

ERDMANN ENCKE, SCULPTOR.—Erdmann Encke, the sculptor, who died in July at New-Babelsberg, near Potsdam, was born in Berlin on January 26, 1843, where he studied at the Royal Academy, and afterward in the studio of Albert Wolff. His first noteworthy work was the great bust of Friedrich Ludwig Jahn, in bronze, for the Gymnasium on the Hasenheide, at Berlin. Herr Encke's subsequent works embrace a statue of the Great Elector for the Berlin Town-hall, the splendidly executed marble statue of Queen Louise, which now adorns the Thiergarten, and statues of the Great Elector and Frederick the Great in the Royal Arsenal. In 1881 he was elected a member of the Academy and of the Senate, and in 1883 the title of Professor was conferred upon him in recognition of his eminent qualities. — *N. Y. Times*.

THE NEVER-FINISHED ARUNDEL CASTLE.—Talking of building, there is no one more peculiarly placed than the Duke of Norfolk. Hundreds of years ago one of his ancestors bequeathed in perpetuity a tract of land along the Thames, the revenues of which were to be devoted exclusively to the maintenance, repair and additions to the Ducal Castle of Arundel, in Sussex. This land is now in the centre of London, in the neighborhood of the Strand, covered with houses and yielding such vast rentals that the unfortunate Duke is at a loss how in the world to devote these exclusively to the castle which is already the most magnificent thing of the kind in Great Britain or in Europe, one inconvenience being that the castle is never under any circumstances free from scaffolding, workmen and decorators. — *Marquise de Fontenoy in Philadelphia Press*.

THE PARIS OPERA-HOUSE DANGEROUS.—The discovery has been made that the Opéra is the most dangerous theatre in the French capital. Apart from certain perils attached to the defective arrangement of the electric lighting, none of the regulations ordered after the Opéra Comique disaster has been carried out. It is estimated that there are 20,000 tons of inflammable scenery piled up in such a way that it takes four days to dislodge a scene required. There is no iron curtain, and the dwellers in the building cook their food and light fires in every corner. Parisian opera-goers may well feel some alarm when they hear that there have been no less than 150 outbreaks of fire in ten years. — *New York Times*.

YALE-LOCK COMBINATIONS.—The Yale-lock manufacturers have proved that in a patent lock having six "steps," each capable of being reduced in height twenty times, the number of changes or combinations will be 86,400. Further, that as the drill-pin and the pipes of the keys may be made of three different sizes, the total number of changes will be 2,592,000. In keys of the smallest size the total number of changes through which they can be run is 648,000, while in those of large size the number can be increased to not less than 7,776,000 different changes. — *N. Y. Evening Post*.

THE PORTE DE LA CUNETTE, PARIS.—The excavations recently made in order to make a bridge connecting the foot-bridge at Passy with the Boulevard de Grenelle have just brought to light one of the water-gates which, under Louis XIII, connected the Seine with the ditches round the fortifications. It served for a custom-house station, and small traffic coming down the Seine passed up this tributary into the neighboring districts. The Porte de la Cunette, as it was called, is remarkably well preserved, but will have to be removed. — *Paris Daily Messenger*.

COST TO HAMBURG OF THE CHOLERA IN 1892.—It has taken the Hamburg authorities four years to ascertain the exact cost of the cholera epidemic of 1892 to the city. It is \$1,140,000 in direct expenses. — *Exchange*.