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DECORATION

TICKNOR & COMPANY

CONSTRUCTION

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NOVEMBER 11, 1893.



SUMMARY:—

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tion rooms, in place of the few, though beautiful examples of sculptural work which have usually been shown in the bric-a-brac rooms, is a long step in advance in the path which the League has followed so steadily and successfully. We hope that our readers will remember that the exhibition begins December 18, and continues until January 9, and that it has always been worth a journey of a good many hundred miles to see, and will be worth it this year more than ever.

WE are quite inclined, after all the discussion on the subject of English and German Portland cements, to come to the rescue of the English manufacturers, who have been, as we think, rather more hardly treated by our correspondents than they deserve. Our original point, that the *Builder* was very much mistaken in thinking that English Portland cements were too good for the American market, and that its advice to the English manufacturers, to debase the quality of their product, in order to extend its sale here, was about the worst that could be given, has certainly been sustained; but the fact that English cements in general are very commonly regarded by our architects and engineers as inferior in quality to the German does not prove that some English brands are not now made of very excellent quality. Notwithstanding the opinion of Candlot, and of certain other authorities who have been mentioned, no one can have followed the current history of the cement manufacture, as shown in the foreign technical journals, without observing that, in recent years, some of the English manufacturers have endeavored earnestly, and, no doubt, successfully, to produce a material which should rival the German cement in fineness, uniformity and scientific preparation. Mr. Fleming himself, although he modestly refrains from saying so, has, we are convinced, had a considerable part in promoting this improvement, as he certainly has in securing improved packing, and we are quite ready to believe that he can tell where English Portland cement of the very highest class can be obtained; but early impressions are very lasting, particularly among architects who have an almost infinite variety of materials to deal with, and we think it likely that he has found his efforts hampered to no small extent by the fact that while the English manufacturers threw away their American market by doing exactly what the *Builder* advises them to do, with the idea that the Americans did not know bad cement from good, the Germans, by sending us the best they had, and, for a time, at least, only the best, gained at the outset friends and reputation which will last them for many years to come. Ultimately, no doubt, the first-class brands will be impartially recognized here, whether they come from England, Germany or Pennsylvania, and the more rigidly architects and engineers reject everything that is not of the highest quality, the more encouragement they will give to the manufacturers and dealers who are trying to improve this most important material.

AS for the nice man of whom Mr. Fleming speaks, who "overcomes" the prejudice against his American goods by sending to the retailers forged English or German labels, to be pasted on the heads of the barrels, we would as individuals coöperate with all honest dealers, and lovers of fair play in general, in having him shown in his true colors. Few things are more exasperating to an architect than attempts to palm off vile counterfeits upon him as genuine goods, yet hardly anything is more common in building practice in this country. Judging from the multitudes of warnings to "Beware of imitations," or "Éviter les contrefaçons," in English and French advertisements of building appliances, the case is much the same abroad, but the trick of pasting a forged foreign label on a barrel of inferior cement is so difficult to detect, and so injurious to the reputation of the manufacturer whose name is stolen, that decent members of the building brotherhood ought to combine against it. We are not sure that there is any trade-mark treaty between the United States and foreign countries, such as exists between European nations, which makes it a penal offence for a person in one country to forge or imitate a trade-mark registered in another. If not, one of the most effectual methods of protecting ourselves and the better class of manufacturers against fraud is beyond our reach, but it might perhaps be possible to establish a sort of "counterfeit detector," describing fictitious cement or other labels, as the

AN important decision was rendered in New York a few days ago, defining the rights of owners of property abutting on streets in process of improvement. Mr. Albert Tilt owns a four-story frame house, used as a hotel, on the Macomb's Dam road, near the bridge across the Harlem River. The old bridge at that point is being replaced by another one, at a much higher level, so that it is necessary to raise the grade of the approaches by an amount varying from ten to thirty feet. The contractor for the work proceeded with his grading operations without reference to the convenience of the neighbors, but when Mr. Tilt saw rock, gravel and loam being filled-in against his house, he objected. The contractor coolly replied that if he did not like the dirt against his building, he had better build a retaining-wall, as otherwise the grading would bury the front of the building as high as the second story windows. Mr. Tilt suggested that the contractor ought to build the retaining-wall, if it was necessary to prevent the filling material from encroaching on private property, but the contractor declined to do anything of the kind, and Mr. Tilt applied for an injunction to restrain the contractor from doing any more filling in such a way as to damage his property. At the hearing on the injunction, the judge expressed the opinion that the city was not strictly liable for the trespass of the contractor on private property, but that, in carrying out a public improvement, it ought to provide for having the work done in such a way as to prevent unnecessary encroachment on the abutting premises, and that therefore the city should build the retaining-wall required, even though the cost of the improvement would be thereby increased.

THE joint exhibition of the Architectural League and the Sculpture Society promises to be one of the most notable artistic events of the year in New York. Not only will each portion of the exhibition enhance the interest and value of the other, but the association of the two is a sort of announcement of betrothal of the two arts represented, which should have important consequences. Few persons in the profession can realize, without looking back in recollection to the days before the League existed, how much it has done to establish architecture in this country as one of the fine arts, and to promote the connection between it and the other arts; and the introduction of a complete display of sculpture into the exhibi-

publications used by banks describe new counterfeit bills as fast as they appear. The persons who live by stealing other people's reputation are not usually very intelligent or very careful, and often make curious slips in their forgeries, like the Japanese dealer, who exposed bottles in his shop, labelled "Fine Glasgow Wine"; and even where the variation from the original was not so glaring as to be immediately apparent, close examination would generally detect discrepancies, which could be pointed out to those interested.

THE Massachusetts Legislature passed an act last winter, authorizing the inhabitants of Boston, by vote, to accept a plan, prepared by a committee of the Legislature, for a "rapid-transit" railroad, consisting essentially of an elevated line, running through private property, nearly parallel with Washington Street and about midway between that and Tremont Street. The Legislative committee spent a great deal of time and trouble on this scheme, which, like anything discussed in such a committee, was the result of innumerable compromises between conflicting interests. The committee estimated the cost of carrying out its plan at nine million dollars, which would be quite enough for a line four miles long, but this estimate was confessedly a hasty one, the time for preparing it having been limited. Since the adjournment of the Legislature, the City Engineer of Boston, under the direction of the Mayor, has laid out the route proposed by the Legislature with great minuteness, and has made estimates of the cost, which, with a very moderate allowance for consequential damages to private property, amounts to seventeen million dollars, and there are contingent expenses, which would probably bring the total to twenty millions. Of course the idea of spending twenty million dollars on a railway four miles long is preposterous, and the Mayor took the rather unusual step of announcing publicly that he, as a citizen, would vote against the acceptance of the act, and that he hoped his fellow-citizens would do the same, which a majority of them did on Tuesday.

INDEPENDENT of the folly of building a rapid-transit line in Boston at a cost per mile about eight times as great as that of the New York Elevated road, it is by no means certain that the line projected by the Legislative committee would be the best possible. The idea of the committee, like that of a great many other people, seems to have been to look on the map, see what streets were most crowded, and then draw the line of the railway parallel to those streets, and as near them as possible, as if there were some mysterious advantage to the passengers on the rapid-transit line in being drawn along at the rate of thirty miles an hour over a route from which they could look into Washington Street. This notion completely ignores the fact that on a rapid-transit line it would be impracticable to have stations within a quarter of a mile of each other, and it would be better to have them half a mile apart, so, if stations were placed, say, at or near the junctions of Boylston, Winter and Court Streets with Washington Street, which is as near together as they could be placed on a line parallel with Washington Street, these stations could be reached just as well, probably at less expense, and with infinitely greater convenience to the public, by a road running from the Boylston Street station eastward to the Albany and Old Colony stations on Kneeland Street, thence around through a cheap neighborhood to the New York & New England station, back near the line of Summer Street to the station on the corner of Washington and Winter Streets; thence under Park Street to Bowdoin Square and back to the corner of Washington and Court Streets. Although the actual railway on this line would be much longer than by a straight route between Washington and Tremont Streets, the extra cost of construction of the railway itself would be much more than offset by the saving in land damages; and, keeping the distance between stations at about a quarter of a mile, the line would have the inestimable advantage of transporting passengers to the Albany, Old Colony and New England stations, and to a connection with the Cambridge cars at Bowdoin Square, as well as to all the points on Washington Street that it would be practicable to reach with a direct line. To the objection that the serpentine course, even if more convenient, and not more expensive, than the other, would take longer to traverse, it may be replied that the total time required in going over it from Boylston to Court Street would probably not be

more than seven minutes, exclusive of the stops, and the three minutes necessary for the three extra stops would be nothing in comparison with the advantages secured. Of course, it is understood that this is simply suggested to show the vast difference, in the conditions, between a surface road, with slow-moving cars, taking and leaving passengers all along the route, and an elevated or sunk line, with cars moving at the rate of half a mile a minute, and with the minimum distance between stations limited to a quarter or a third of a mile. With the former, a saving of distance means a great saving of time, and convenience must to a certain extent be sacrificed to save time; while, with a rapid-transit road, distance is practically nothing, in comparison with convenience, and an increase in distance often promotes not only convenience but economy.

A RECENT letter to the *Nation*, from Mr. C. Meriwether, gives an interesting illustration of the process which is converting North and South Carolina into a desert, in the same way that a large part of Virginia has already been depopulated, and that Kansas is approaching ruin. Every one knows that the Carolinas consist of a low sandy strip along the coast, rising to chains of hills, or even mountains, inland. The fertile part of both states, if we leave out the rice-swamps and Sea Islands of South Carolina, is chiefly found on the slopes of the hills. On these slopes cotton was once raised in large quantities, and is still extensively cultivated, but the acreage is diminishing, and it will not be long before the hill country will cease to be of any agricultural value. In its natural condition, the hill region is covered with forest, and, in order to bring it under cultivation, the trees are cleared away. This is done in the usual reckless manner, with axe and fire, leaving the ground bare. After the stumps have been pulled out, or have rotted away, the ground is ploughed, and, with incredible folly, the furrows are generally ploughed straight down the hill. The next rain forms a brook in every furrow, which carries with it some of the precious virgin loam, and deposits it in the bed of some stream in the valley, and the process is repeated with every rain, until all the arable soil from the slope, the accumulation of many thousand years, is washed into the brooks and rivers, which it chokes up, converting the meadows into pools and marshes, and leaving the hill farms barren. Mr. Meriwether says that fields which, fifteen years ago, produced a bale of cotton to the acre, are now absolutely sterile, and, on some of the plantations, out of a thousand acres of land once fertile, five hundred are now worthless. There is still forest land left, which, as the old fields are abandoned, is cleared and planted, but the available territory diminishes year by year, and the inhabitants, tired of trying to get a living out of bare gullies, move away, so that it is estimated that the population of the hill counties is only about three-fifths of what it once was. Of course, every one knows, except, apparently, those most interested, that if the forests had been judiciously thinned, instead of being exterminated, and if reasonably scientific methods of treating the cleared land had been pursued, the North Carolina hill country would now be of immense value; but the mischief has been done, and cannot be undone, and, according to the best authority, even if the growth of timber could be started again, it would be a thousand years before the barren hard-pan would accumulate a new coating of soil.

IT is strange that, after the experience of two hundred years in other parts of the United States, this suicidal system of treating land should still be the rule wherever new tracts are brought under cultivation. In many, perhaps most cases, the timber standing on a piece of virgin land in any State east of the Mississippi is worth more than all the crops that the owner will ever raise from it, yet the latter, after coming into possession, knows no peace until he has cleared the timber all away, and burned it up. That it would be not only possible, but easy, to save the timber, or, at least, the salable part of it, and have the crops too, never seems to enter the head of farmers in such regions. One old Carolina planter, the owner of a tract of thirteen hundred acres, confessed that the timber which he found standing on his farm, and which he spent forty years in clearing away, would, if he had let it alone, be worth more now than all the crops put together that were ever raised on the farm. This is exactly the experience of many an Ohio and Indiana farmer, besides those of Virginia and the Carolinas, yet nobody seems to learn wisdom from their lamentations.

TOWN-HALLS.¹—II.

FROM the Renaissance, town-halls gradually lost their primitive characteristics. Usually the campanile was the only feature retained, although the balcony was occasionally preserved, as at Rheims (1627) shown in Figure 10. But the battlements and porticos disappeared. Frequently, however,

essential apartments, the council-chamber and the mayor's office. The council-chamber can be used at the same time for the celebration of marriages. Clearly, the ground-floor of a small structure will suffice for these needs. Such is the town-hall of Beaumont-la-Ronce (Figs. 14, 15). Usually, however, when the inhabitants of a commune decide to build such a structure, they prefer to include in it all the



Fig. 10. Rheims.

in the modern period we shall find the mediæval arcades recalled by a porch or by arched entrances. As an example of a communal building with no antique stamp about it, we call attention to the small town-hall of Beaucaire, the disposition and details of which are charming (Fig. 11). Abroad, the same path was followed as with us. It is hardly the rudiments of a campanile that we see in the Ayuntamiento of Madrid (Fig. 12), or in the Guildhall of London (Fig. 13).

THE MODERN PERIOD.

As we have already remarked, the present period has wit-

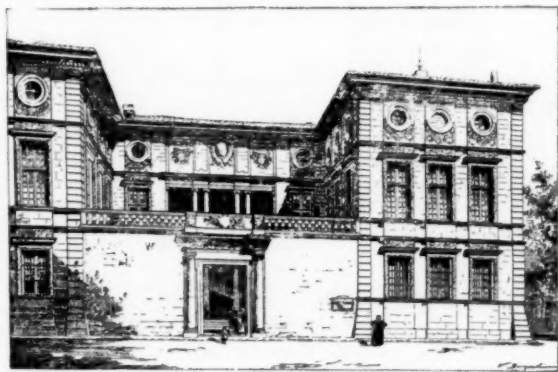


Fig. 11. Beaucaire.

nessed the advent of the *mairie*, or municipal edifice of small districts.

Reduced to its simplest form, the *mairie* comprises only two

services under communal control. For example, the school is often attached to the *mairie*; sometimes we find combined, as at Coulommiers, the municipal building, savings-bank, guard-house, engine-house, library and police accommodations (Figs. 16, 17). In this group of buildings are comprised, on the side facing the square, the savings-bank on the ground-floor of the central pavilion, with quarters for the cashier in the first story;



Fig. 12. Madrid.

on the ground-floor of the right wing, the fire-engine rooms (10) and in the first story a music-hall. In the left wing are the guard-house (6) and strong-rooms (8), the office of the captain of the post, and quarters for the sheriff. The savings-bank has a waiting-room (2) and a vestibule (2a) fenced off

¹From the French of E. Rümmler, in Planat's *Encyclopédie de l'Architecture et de la Construction*. Continued from No. 932, page 57.

from one another and covered by a glass roof; the counting-room (3) is back of these and the exit (4) is on a garden. A small court has been contrived in the rear of the left wing and opening on it, under a shed, are urinals and a water-closet, as well as lock-up rooms. The commissary of police has an office (15)

room, for the accommodation of the municipal library (16) to which access is had by a grand stairway. Depositors find entrance to the savings-bank from the square by means of a staircase with two flights of steps, one of which leads to the vestibule of the cashier's quarters; the exit is through the garden to a side street. Crowds and obstructions are thus avoided.

As an example of *mairies* of medium importance recently constructed, we will take that of Maison-Laffitte. The distri-



Fig. 13. Guildhall, London.



Fig. 14. Beaumont-la-Ronce.

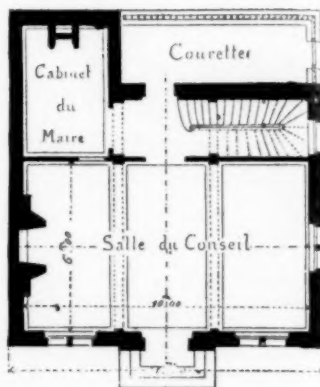


Fig. 15. Beaumont-la-Ronce.

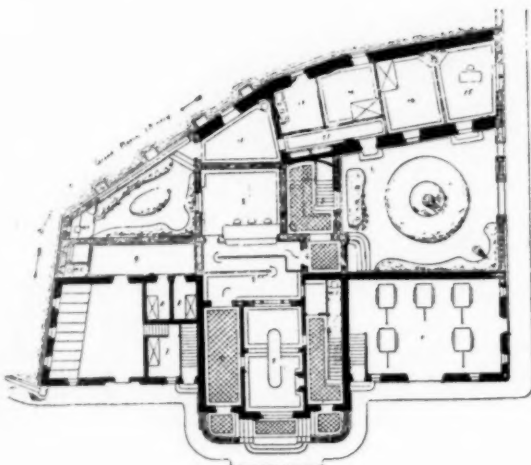


Fig. 16. Coulommiers.

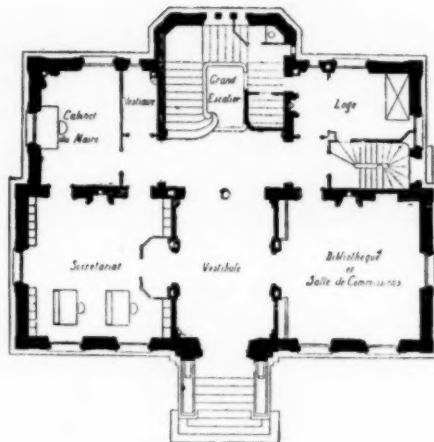


Fig. 18. Maison-Laffitte.

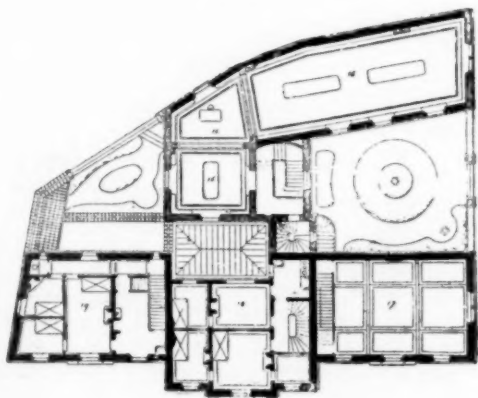


Fig. 17. Coulommiers.

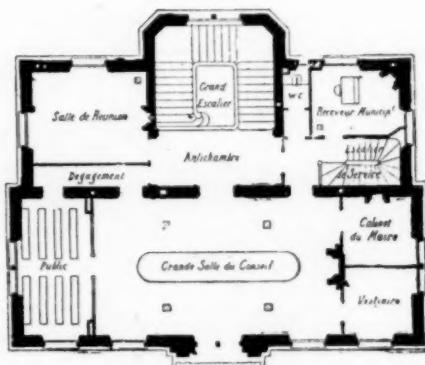


Fig. 19. Maison-Laffitte.

Figs. 15 to 19 inclusive. Municipal Buildings in France.

on the ground-floor and apartments consisting of two rooms, kitchen and dining-room (14, 13, 12). There is a separate corridor (11) communicating with these. The commissary has a small private garden at his disposal. The rooms above these apartments are designed, with the part over the counting-

buton of the interior space is simple, and is made on the principle of grouping the public rooms so as to be able to throw them together, as far as possible, at a moment's notice, for a festival or any unusually large gathering (Figs. 18, 19).

[To be continued.]

MODERN ASYLUMS FOR THE INSANE.¹—VI.

IN arranging the position of the boiler and engine houses for an asylum, care must be taken by the architect to keep them rather in the rear of the main buildings, but for all that in a central position, so as to command a flow of hot water or steam to all parts of the asylum for heating or lavatory purposes. The buildings or rooms containing the boilers and engines should for obvious reasons be situated in close proximity to the kitchens and laundry, but at a sufficient distance from the parts occupied by the patients so as not to cause them any annoyance or disturbance.

The boiler-house should be spacious, and room should be allowed for a space for an extra boiler to meet unforeseen difficulties that might at any time arise or to satisfy any future demands. There should be ample room left in front of the boiler for stoking purposes and free use of the stoking tools as well as for the removal, resetting or repair of the boilers, flues, etc.

For very similar reasons the engine-room should not be curtailed in size, but sufficient space should be provided for around the engine, pumps, etc. In ordinary asylums where electric-light is used, the dynamos may very properly be placed in the engine-room, for it affords an economical arrangement whereby one man may easily manage the engines as well as a limited number of dynamos. The engine-room should be well lighted, both by daylight in the day-time, and by artificial light at night. A moderate amount of architectural and decorative dignity should be given to this block of buildings, the reasons for which will recommend themselves to the minds of those who appreciate the important part the engine and boiler-house plays in an asylum.

The engineer must, of course, be provided with an office or room *en suite* with the engine-house; there must also be a fitter's shop near, in which to do all odd jobs.

In connection with the fire-protection of the asylum it is necessary to have a steam fire-pump, and its location should be in the engine-room, where a prominent notice-board should be displayed, setting forth the manner in which the pump can be brought into play in the absence of the engineer.

We will assume for the sake of illustration, that the boiler and engine power is required in an asylum which accommodates eight hundred patients, and that it is desired to provide power for driving the laundry machinery, the ventilation-fans, the pump for water-supply, the hot-water mains for the baths and lavatories throughout the buildings, some of which would be at great distances, as well as a supply of steam for the coils and heating pipes and ventilating extractor, coils in the roof, or elsewhere. In addition to this let us further assume that the power is also required for an ample supply of steam and hot water for kitchen purposes as well as scullery use, for steam cooking and washing-up.

Now what may be considered a fair provision for the above would be to set up six improved high-class steel single-tube Cornish boilers, each, say, twenty-five feet by five feet six inches, and furnished with furnace front-door, fire-bars, bearers, dead-plates and frames, safety-valve, steam-valve, feed-valve, water-gauge, glass-rings, test-tap, blow-off cock, steam-gauge, etc. The architect who undertakes asylum work and receives his commission for certifying accounts for such matters as these should surely, in order to do justice to his clients, make himself acquainted with such details of engineering as are requisite for the due perfection of the work, and he should also become well-versed in what are the customary charges for cartage, setting, fixing-up, both as to labor and material; as to the best mode of forming the flues to the main shaft; the construction of the inspection and cleaning pits, and the laying of the engine-beds and foundations.

For feeding this number of boilers, there should be two double-action donkey-pumps, each capable of feeding at the rate of about two thousand two hundred gallons of water per hour.

It is necessary that the boilers should be connected with separate stop or regulating valves, and copper expansion joints to main steam-supply, and the steam-pipe be properly connected with the engine. In addition to these appliances there would also be required a fourteen horse-power horizontal engine of thoroughly good make, which should be erected on a stone bed, with all necessary holding-down bolts; we have already mentioned the fire-pump, which should be fitted with all necessary gearing for instantaneous use.

The approximate cost in Great Britain for the works and materials in connection with the foregoing provisions for an asylum accommodating eight hundred patients, with all necessary shafting, rigger-pulleys and gearing for engines to run machinery in laundry, etc., as above described with all boilers, engines, etc., would be about four thousand pounds sterling (\$20,000) but this amount would, of course, be greatly governed by the situation of the asylum and its proximity to railway, river or canal, and by other local considerations.

For a further sum of about fifteen hundred pounds the whole of the buildings may be heated from the same boilers by means of steam supply, with open wrought-iron radiators finished with ornamental tops. These radiators should have separate stop and regulating valves and air-regulators; in addition to which each block of buildings should have separate stop-valves and a steam-trap for expansion, which should work automatically. The waste from the steam-trap should be carried by means of wrought-iron pipes to an underground

reservoir and the water thus saved would be available for laundry purposes or for feeding the boilers; in this manner the architect would secure economy of administration, which he should ever have in view.

In connection with the administrative block of an asylum for eight hundred patients, a cast-iron tank to hold at least seventy-five thousand gallons of water should be provided, either in a water-tower over the boiler-house, or in some other suitable position. If a special water-tower is not erected, the architect must carefully provide for the elevation of the tank over other buildings, remembering that a tank to contain this quantity of water must be fifty feet by sixty feet by four feet deep (or the equivalent) which would weigh when filled four hundred and ten tons *i. e.*, seventy-two-and-a-half tons for the tank and three hundred and thirty-five tons for the water. Therefore great care must be exercised by the architect in providing foundations and supports, and the height to which the tank must be elevated must be sufficient to secure a supply by gravitation for the whole asylum and its out-buildings. The probable cost of such a tank and iron-work on supports would be two thousand pounds (\$10,000).

There are several other items under the division of our subject which we are now considering, in connection with the administrative building, which should not be overlooked, such as the arrangement for the water-main, valves and hydrants.

For the interior of the buildings (still supposing the asylum to be for eight hundred patients), there should be twelve or more three-inch gun-metal hydrants for the extinction of fire, located in suitable and conspicuous positions; in addition to these, there should be twenty-four or more hydrants fitted about the grounds, and, in arranging the positions for these, the architect, however skilled he may be, would do well to obtain the advice of a fire-brigade expert. Each and every hydrant should be provided with a sixty-foot length of good canvas hose kept ready "married" to the hydrant, and fitted with gun-metal couplings, leather straps, copper branch-pipe, keys, wrenches, etc. Below each hydrant should be fitted a small bib-cock for filling buckets from, and it is frequently of great service in small fires to be able to fix a one-inch hose and nozzle to this bib-cock, as the great force with which the water is delivered from so small a nozzle off the three-inch main may at any time be of great service.

Hydrants should always, where possible, be fitted to the high-pressure, constant-supply main of the water-company of the district in which the asylum is located. As such a supply is not always available, it will be seen how necessary it is to elevate the tank sufficiently to obtain the force required to beat out a fire. Assuming, therefore, that the source of water is other than from the constant supply of a company, and that the water is otherwise brought to a suitable point on the site, a four-inch sluice-valve and cover should be provided and continued with a four-inch cast-iron main to the tank, and be connected with the same by a rising main fitted with a flange ball-valve, and the main of the same size should be connected with the steam fire-pump; but the fire-mains to the various blocks may be reduced to three inches, or even to two-and-a-half inches, provided an ample force of water is always obtainable in sufficient quantities.

The fittings for the hydrants, the fire-keys, hatchets, axes, cutting-hooks, helmets, etc., should be kept on a board fixed to the wall above the hydrant, and spare lengths of hose and additional nozzles should be kept close at hand in glazed cupboards, where they can be easily found. Two or three hundred fire-buckets, or even more, should be kept in all parts of the building, always three-parts full of water, and hung on pegs let into the wall just within reach; fire-buckets are the most useful fire-appliances for extinction of fire when used promptly at the early stages of the outbreak. Corridor-engines, hand-pumps, bucket-pumps, wet blankets and other recognized material for the extinction of fire should never be absent from any part or block of an asylum for the insane.

Roughly speaking, the necessary works we have now enumerated would cost from one thousand three hundred pounds to one thousand four hundred pounds (\$7,000).

The approximate cost of the hot and cold water-supply, with all necessary cisterns, tanks, water-waste-preventing apparatus, water-closets, lavatories, baths, slop-sinks, scullery-sinks, urinals, pail-service, etc., would be, in an asylum of this size, four thousand pounds (\$20,000).

In all the blocks of buildings there should be auxiliary water-storage, giving a separate supply. This storage should be in tanks or cisterns containing about one thousand gallons each. The capacity for the hot-water cisterns need not exceed two hundred gallons, and these might very well be heated by the steam-coils.

Although it would be somewhat out of the order of description adopted in these papers to deal here with the pattern of the fittings of the sanitary fixtures, we may mention here the number of some of the items requisite for an asylum of eight hundred patients.

There should be about one hundred and sixty water-closets, sixty-five baths, three hundred lavatory basins, seventy or eighty urinals, and a sufficient number of slop-sinks and scullery-sinks.

The machinery and apparatus required in the laundry, to which we have already referred, would probably cost fifteen hundred pounds (\$7,500) for eight hundred patients, their attendants and nurses. This amount would include all gearing, shafting, etc., for the machinery, but, if trough-washing were largely adopted, the cost

¹ By George H. Bibby, F. R. I. B. A., F. R. Hist. S., and Ernest A. E. Woodrow, A. R. I. B. A. Continued from No. 924, page 159.

would, of course, be materially reduced. The above estimate would include hot and cold water supply-tanks, boiling-pans and all necessities.

In the *American Architect* for June 24, 1893, a ground-plan of the Hanwell Asylum was presented. This asylum, on the 21st of May, 1891, contained 1,882 patients, 758 males and 1,124 females. On that day the Commissioners in Lunacy found 88 male patients and 122 female patients confined to bed, while 503 male and 787 female were engaged in some form of useful employment, being, respectively, 67 and 70 per cent of the total number of patients then in the asylum; but of the women, 465 are designated in the official return "ward-cleaners and bed-makers" only. About 550 were returned as attending the services in the chapel, and about 450 the associated entertainments in the hall. So far as we can understand, therefore, at Hanwell about 357 males are in daily employment upon various useful works on the farm, in the grounds and in the workshops.

MALES.

	BANSTEAD, 1892. March 31.	CASE HILL, 1892. March 31.	COLNEY HATCH, 1892. March 31.	HANWELL, 1892. March 31.
In Grounds, Garden, Farm, etc...	63	286	147	103
In Kitchen	122	2	22	6
In Bakehouse	5	9	15	6
In Painters' Shop	2	4	17	1
In Tailors' Shop	13	11	13	33
In Upholsterers' Shop	86	14	29	56
In Shoemakers' Shop	8	9	12	10
In Carpenters' Shop	2	4	3	3
As Coal-carriers and Wood-chop-	6	10	30	85
pers.				
In Gas-house, Engine and Boiler	4	5	2	8
Houses				
As Helpers in Wards	129	34	119	133
In Store-room and Other Offices	24	5	5	11
In Hall	4	29	4	4
In Corridors	6	20	1	
In Mess-room	6	2	6	
Assisting Bricklayer	1	2		
In Laundry			10	9
Tinsmith				1
Basket-makers				14
Painters in Wards				1
Firemen				2
Bookbinders				4
Flower-makers				
Total Employed	381	446	435	494
Unemployed	98	94	301	186
Sick, Infirm and Old Age	237	59	184	80
Absent on Trial		1	2	1
Total in Asylum	716	600	922	761

FEMALES.

	BANSTEAD, 1892. March 31.	CASE HILL, 1892. March 31.	COLNEY HATCH, 1892. March 31.	HANWELL, 1892. March 31.
At Needlework in Wards and				
Workroom	247	220	222	234
In Kitchen and Vegetable-room	62	34		
In Laundry	14	88	119	64
At Officers' Apartments	243	124	363	460
As Helpers in Wards	4	2	10	
In Mess-room				
Total Employed	579	475	719	761
Unemployed	476	216	392	271
Sick, Infirm and Old Age	247	106	215	104
Absent on Trial		2	7	4
Total in Asylum	1,293	799	1,333	1,140

Upon statistics gathered from sources such as these, the architect must base his calculations for provision of space allotted to workshops. It is calculated that about forty superficial feet of space is required per patient in each of the workshops. Reference has frequently been made in these papers to the four great asylums of London. Following up the description of these institutions, the tables we now give, showing the number of persons employed in various works, must be of great service to the architect in enabling him to form his judgment upon a reliable basis of the number and size of the rooms he must provide to meet the many demands of the asylum. A rough-and-ready rule for ascertaining the size of the work-rooms is to multiply the number of working patients employed in the rooms by forty; this will give the superficial area in feet. It must, of course, be borne in mind that in a country asylum a greater proportion would be employed on the farm or in other out-door work than in the workshops. From these tables, it will be seen that a greater area is required for upholsterers' workshops for male patients than for any other pursuits, exclusive, of course, of out-door employment on the farm or in the garden.

It is advisable as a general rule that the workshop buildings should not be more than one story in height, and that there should

be sufficient store-rooms adjacent for manufactured goods as well as the raw materials used in the manufacture. The windows should be on both sides of the various apartments, which should always be light, bright and clean and as cheerful as possible for the patients' sake. There should be special arrangement for water-closets and lavatories in the workshop block so that the patients need not return to their own wards and thereby waste time and go beyond the observation of the attendants.

The articles chiefly manufactured by the patients in the upholsterers' shops are mattresses, paillasses, mattress-cases, pillows, carpets, blinds, feather-beds, chaff-beds, hassocks, chair-cushions, sofas, etc., etc.

In the shoemaker's shop not only boots and shoes are made, but also harness, firemen's leather helmets and belts, attendants' belts, sewing-machine bands, pouches and leather articles for various use.

Of course, considerable employment is found for the patients in and about the farm buildings and grounds. At Hanwell Asylum in 1892 the live-stock for 1,900 patients consisted of eight horses, thirty cows, one bull, ten heifers, three calves, eighty-nine pigs, two hundred and six fowls and eleven ducks.

The farm buildings for an asylum would closely resemble those for any ordinary farm and the extent must depend upon various circumstances. A large proportion of the produce of the farm would, of course, be used in the asylum itself. At Hanwell in 1892 we find there was produced and consumed

	£ s. d.
29,580 gallons of milk, valued at	1,183 19 10
14,316 eggs	59 13 0
2,892 bushels of potatoes	275 6 10
7,847 " " cabbage	326 19 2
837 " " carrots	83 15 0
986 " " parsnips	73 19 9
552 " " onions	69 4 3
653 " " turnips	27 4 7
1,599 " " beans and peas	159 19 0
Fruit, salad and herbs	220 5 7

These items may serve to indicate to the architect an approximate estimate of the accommodation to be provided in the various farm buildings, the size of the stables, cow-houses, piggeries, cart-houses, provender-stores and dairy-buildings, all of which should be of such proportions as to be ample for the required purposes.

The bath-houses should be placed in such a central position that they may be easily approached by the patients located in the chronic wards; the best arrangement is, perhaps, a long room with divisions or cubicles for each bath. The bath should be arranged so that the attendant could if necessary stand on either side of it, so as to be able to control the violent patient, or be able to attend to one requiring special care. It need hardly be pointed out to the architect, that he should provide such arrangements of valves, that it would be impossible for the patients to be scalded, either by their own interference with the taps or by reason of possible carelessness of the attendants or nurses: there have been many instances where patients have been severely injured or even scalded to death in this manner.

Near the bath-room there should be a room for towels and linen, and there should also be sufficient water-closet and urinal accommodation in connection with the bath-house.

Instead of separate cottages for the attendants, it is sometimes preferable to build their apartments in a small block opening off the main-building corridor. Figures 1 and 2 illustrate this system. In connection with these apartments there should be arranged a billiard-room and reading-room as shown in the plan, this is especially necessary in large asylums, where in addition there may be also club or recreation-rooms, for the special benefit of the attendants and doctors, as well as a music-room for band practice or any use of a kindred nature.

The nurses and attendants must, of course, have separate sitting-rooms and mess-rooms for each sex, where they could associate and enjoy themselves when off duty. Suitable bedroom accommodation must also be provided for those who sleep in, or adjacent to, the wards.

In large asylums, an isolated block should be provided suitable for the purposes of removing thereto sick attendants and nurses, or any suspected of fever or infectious sickness, or who are in need of rest and quiet to recruit their strength.

A dispensary is absolutely necessary in all asylums, and, in connection with it, there should be accommodation for drugs and instruments in a small room or closet. Unless the asylum is of very considerable extent, an operating-room need not always be added to this department; but, where such is required, the architect should arrange his plan so as to secure for this room a top and north light, so as to give a perfect means of throwing all possible light upon the patient when strapped to the operating-table. Near to the operating-room there should be accommodation for sleeping apartments into which to remove the patient immediately after an operation. These should be closed by double doors, to exclude all sound, so as not to risk alarm or distress to either the attendants or the patients. The floor of the operating-room should be covered with lead.

An isolation hospital for patients attacked with fever, etc., should be placed in such a position that all people, whether patients or attendants, need not approach it nearer than absolutely necessary. However good the general drainage system of the asylum may be, it

is most desirable to have a distinct and separate system for the hospital. For this reason, it should be erected in such a position that its sewage need not pass into the drainage flowing from the asylum.

There should be dormitories for each sex, with one or two single rooms for males and females. It is a good plan to arrange the

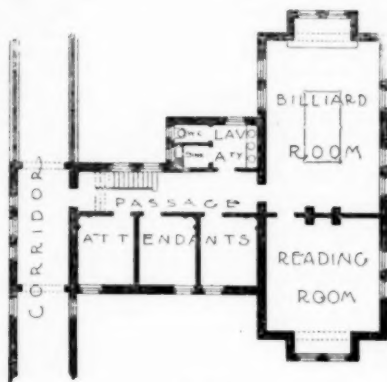
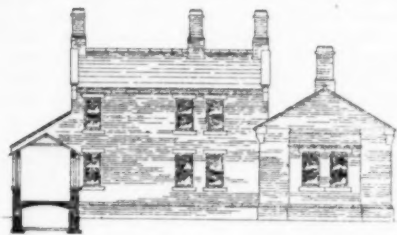


Fig. 1.

nurses' rooms with inspection - windows that command a view of a dormitory as well as the single rooms. The water-closets, lavatories, slop-sinks, baths, etc., should be in one annex, separated by a short open-air passage.

There must also be a kitchen and a separate laundry with means of disinfecting clothing and bedding. The whole block should be railed or fenced off, to prevent too near an approach of all except those immediately concerned with the administration of the building.

The church or chapel in an English asylum, and the patients' library should be placed in a most important position in relation to the whole scheme of the asylum and surroundings. The duties

of an asylum chaplain are little understood by the general public, and they are much more onerous than is probably imagined. Although to many of the unfortunate patients his services are of little or no avail, yet his opportunities of usefulness to many of the inmates are often found to be of great benefit, not only in religious matters, but also in the direction of their attention to books, and in persuading them to take notice of newspapers or other literary amusements whereby beneficial and healthful occupation is obtained for the mind. This is often the means of destroying melancholia and commencing the first steps towards convalescence. The chaplain includes in his duties the visitation of the sick and infirm patients and the administration of all religious offices to the attendants and nurses, and to those who attend as visitors the funerals of patients to whom they

in our opinion, be certainly in direct connection with the asylum by a corridor or covered way. The church should be planned and arranged, as far as means will allow, in all respects like an ordinary church, and there should be nothing in the design to destroy this idea. There should be ample means of exit, the doors opening outward, and a separate means of entrance for males and females.

In connection with the church there should be provided two rooms about ten feet square for each sex, that would at all times be available for the immediate and prompt removal of any patients taken ill, or having fits, during the service; this obviates the necessity of a long journey to the wards and delay in attending to the patient, a most important matter. Sometimes it may be found necessary to provide a room to be used as a separate chapel for the use of the Roman Catholics. In an English asylum containing 2,000 patients, it has been found that 240 were Roman Catholics of which number 100 might attend mass.

The library, which is under the control of the chaplain, might with advantage have attached to it a smaller room, to be used as an office, private or reception room, by the chaplain. The selection of books should not usually be left entirely to the chaplain, as he may have too narrow a view in this matter. The Commissioners in

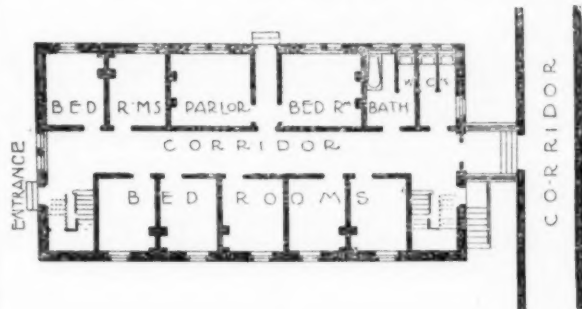


Fig. 2.

Lunacy in a recent report drew attention to the scarcity of books of an amusing nature in asylums, and the plentiful supply of bibles and prayer-books. Newspapers and periodicals should be provided in variety and numbers.

In arranging the various buildings appertaining to an asylum and which we have so far endeavored to describe, there had been much inclination upon the part of architects in recent years to adopt the same system for the general arrangement. The scheme of the second Gloucester Asylum (Fig. 3) has been more or less repeated at Menton Asylum in the West Riding of Yorkshire and at Claybury Asylum in the County of London, a block-plan of which appeared in the *American Architect* in the issue of June 24, 1893. The angles

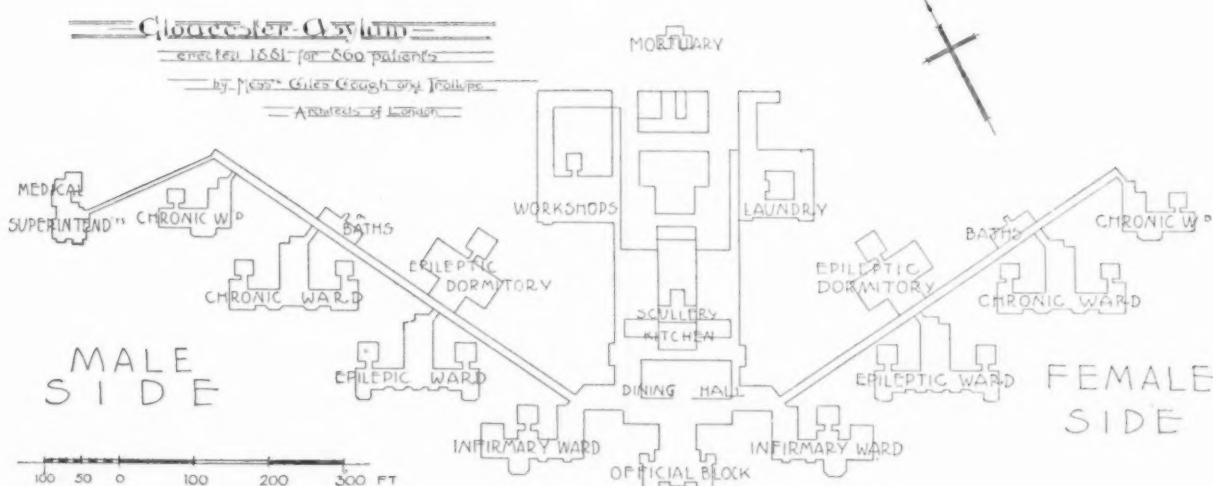


Fig. 3.

may be related or on terms of friendship before the mind had become unbinged.

At Cane Hill Asylum, where there were 1,112 patients in residence, it was found that the Sunday services were attended by as large an average as seven hundred persons, which probably included some of the officers off duty. It will, therefore, be perceived that the architect must provide of necessity for a church of considerable capacity.

The best position for the church, with respect to the general buildings and wards of an asylum, is a disputed question, but it should,

at which the corridors are placed vary considerably in these asylums, but the motive is very much the same in all cases.

The second Gloucester Asylum, of which Messrs. Giles and Gough are the architects, is built upon what has been described in England as the "broad arrow form of the pavilion system." Since the appearance of this design, the arrangement has been frequently adopted in England; it is a very suitable form also for a general or fever hospital. In this example the entrance-hall is particularly good, and well arranged; beyond are the kitchen, dining-hall and steward's department. The dining-hall is a room of good proportion,

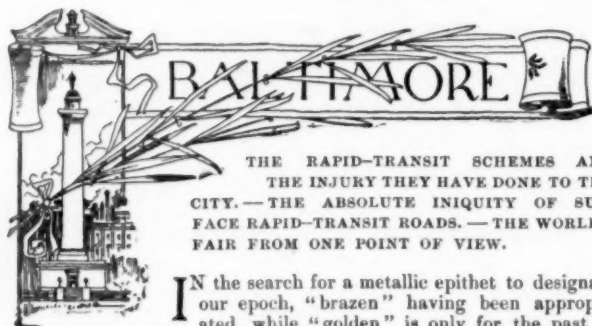
well-lighted and ventilated by dormers. The artificial lighting-system is by electricity. At one end of the hall is the stage, as described in general terms in a former number of these articles. In the kitchen gas only is used, and it is manufactured by a means of decomposition of water, and produced at three pence per 1,000 feet.

It will be seen from the plan that at either side of the administrative blocks are the infirmary-wards, the ground-floors of which consist of day-room space, single rooms and dormitory accommodation. This asylum is for 900 patients and since its erection the authors of the plan have made many further improvements upon the old system of arrangement. They have designed the Imbecile Asylum, Caterham, for 2,000 patients; the Kent County Lunatic Asylum for 900 patients; the County Lunatic Asylum, Glamorgan, for 900 patients; the Abergavenny Asylum for 300 patients; the Suffolk County Asylum at Melton, for 160 patients; Joint Asylum at Carmarthen, for 120 patients; the Somerset County Asylum for 700 patients and the Cheddleton Asylum (in Staffordshire) for 800 patients.

In a later paper we propose to give a list of a large number of asylums, with prices per patient, but in the first instance we propose to deal with some further details connected with the buildings, etc.

E. A. E. WOODROW.

[To be continued.]



IN the search for a metallic epithet to designate our epoch, "brazen" having been appropriated, while "golden" is only for the past or the future, the last resort was a compromise on "wire." Has one never suggested the "bell-and-button?" It certainly seems that, if by some decree these all-pervading little factors should suddenly be eliminated from our modern civilization, the wheels of nineteenth-century progress must cease to move—and individual human life probably be prolonged. Hitherto it was presumed that average humanity wished to remain on this pleasant earth as long, as agreeably and as restfully as might be. Now it would appear that the chief end of man is to traverse its surface as rapidly and leave it as soon as possible, having once "gotten there," to that all-to-be-desired bourn, the end of the route—and all "rapid-transit" routes must sooner or later be exhausted. But already the faint murmur of the inevitable reaction is being heard in the land. "Almost I am persuaded to wish that electricity had never been discovered," we hear exclaimed by the weary man who has no stock in any of the successful corporations and who begins to remember the former days of comparative repose and the despised horse-car.

When we saw it published a few days ago that within the last three years Baltimore has spent ten millions of dollars in developing within its limits and suburbs two hundred and fifty miles of various kinds of rapid-transit railroads, and we noted the total transformation this has wrought in the character of a large number of the city's principal streets, we could but feel that this conservative individual is not altogether in the wrong; and as day by day the streets become more and more occupied and obstructed by the electric and cable cars, with all the numerous sources of danger and annoyance they bring in their train, one of the most conspicuous features of this recent rapid-transit development in Baltimore, in all seriousness, is its object lesson of "what not to do." The necessity for some form of rapid transit in and around all large cities, connecting certain important points, is now universally admitted. That the indiscriminate use and practical control of a majority of a city's chief thoroughfare by rival companies with their various systems of cable and electric cars, quite needlessly paralleling each others' lines in close proximity, is not the proper way to solve the problem for the best advantage of the public, must also be admitted, and indeed is no longer denied by a vast number of much-suffering citizens. It is just this thing that has been done in Baltimore. In the first enthusiasm for progress and development every new scheme of rapid transit was welcomed and extolled, and the franchise readily granted, heedless of a few warning voices raised here and there, and with scarcely any intelligent consideration of what the final result to the whole city would be in the danger, noise, dust and disfigurements of streets that inevitably must follow.

The especially objectionable features of this condition of things in Baltimore is that the eight important north and south streets, excepting only Cathedral Street, lying together directly through the centre of the city, are all occupied, either in whole or part, by some line of double-tracked railroad; this is also the case with a majority of the east and west streets. Many of these streets are those upon which are located the most attractive residences and many churches and other buildings for which a comparatively quiet, well-paved and

unobstructed street is essentially desirable. The rapid-transit lines have totally destroyed these important features, and in addition have made things hideous to look upon with their poles and wires. A remarkable fact in regard to all this, making things more unfortunate for our city than for most others, is that the pleasant former things are all disappearing, rapidly and entirely, with nothing in immediate view to take their place, no street remaining at present capable of any extensive development for handsome and costly improvement in any direction, except to the most limited extent, being already impeded by buildings of inferior character. Mt. Vernon Place and its immediate neighborhood remains unmolested and is still most attractive, and those who consider Eutaw Place a desirable location for residences may claim it also as an exception. This condition of things and the specific injury done to the best streets—and hence to the whole city—is a present-existing, indisputable fact, severely felt by the citizens, and observed with unfavorable comment by strangers, a fact as evident and important as anything that is asserted by those who, taking another point of view, claim that they are converting Baltimore into a great commercial and manufacturing centre. But if in doing this they are at the same time destroying it as a social, literary, artistic and educational centre, and are ignoring the fact that general beauty, comfort, elegance and carefully preserved points of monumental and architectural interest are universally regarded as highly important factors in the making of all really great cities, we emphatically assert that they are doing to Baltimore a great and lasting injury.

Such considerations lead us to ask seriously whether any form of rapid transit can really exist through the streets and on the surface in any large city and be anything but a name or an absurdity, if at all restricted by such regulations as are eminently necessary for the safety and comfort of the people, the amount of time gained being not very many minutes in the half hour, while the dangers and annoyances are excessive. The two ways of solving the problem—beneath the surface, as in London, above it, as in New York—have their advantages from many points of view, but have also many remaining objections. There seems to be only one scheme offering really satisfactory results, namely, to frankly condemn several already existing thoroughfares, or to create other new ones, directly through a city in the directions most needed and connecting the most important points; to appropriate these thoroughfares, in whole or part, solely to the purpose and to concentrate all rapid transit upon them, either on the surface or above it, or both, as one would for a through-line of steam railroad, with all possible arrangements for safety and comfort surrounding them, involving large expense and labor at the outset, but satisfactory and permanent in its results. Largely owing to a partial development of such a scheme for its rapid transit, Chicago, with all its vast area, population and traffic, is now, beyond its chief avenues, a quieter city than Baltimore.

Speaking of Chicago, one cannot do so to-day except in the same breath with her marvellous offspring, "the Fair." Chicago has had "her day"—the newspapers of the whole world are this morning telling the story of the seven hundred thousand "head of people" she crowded through her big Fair gates—with the natural attendants of crush and injury and death—in order to make the proud boast of having done the "biggest thing on record" for one day's work, with no other ultimate object in view or apparently desirable results accomplished.

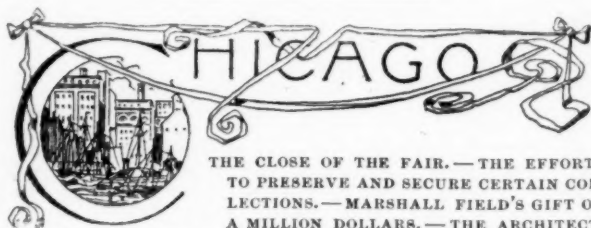
While we pause to take breath after hearing of this multitude, one may, almost at the end of the great World's Exhibition, and in the natural reaction after the somewhat superlative and indiscriminate admiration, enthusiasm and patriotic self-applause, somewhat intelligently review one's impressions and distinguish more accurately between the many features of extraordinary merit, and the many others of comparatively far less value or importance.

In the first place one involuntarily asks if, from the point-of-view of international interest and attendance, this big thing in our land, in the year eighteen hundred and ninety-three, is not rather a marvellous and magnificent Western-American and Chicago Fair than a great World's Exhibition, in comparison with Paris of 1889, or even with London of 1851, and whether among the twenty millions that will make the total attendance, one man in a thousand is a foreigner or one in a hundred from our own Eastern States? We may possibly console ourselves with the reflection that this is the foreigner's loss rather than ours.

We leave unquestioned the conspicuous facts of the exceptional facilities of the site for grand effects—the exceptional artistic skill of Mr. Frederic Law Olmsted in his development of architectural landscape—the wise selection of the architects for the buildings, and the wonderfully beautiful results (in most instances) of their labors, together with the liberal, patriotic, confident public spirit of Chicago in its contributions of money. These things are in the thoughts of every one over the whole country, with only words of praise.

We are dealing now with only the general and architectural aspect, and one may safely say that, standing in the Court of Honor—particularly at the memorial Column, and viewing the Agriculture and Machinery Halls on either side of the lagoon, one receives an impression of monumental grandeur, elegance and beauty, probably never attained at any one spot in the past, and that possibly may never be again in the future; and as we go to the northern extremity of the grounds, once again we are excited to enthusiasm by the Greek

Classic façade of the Fine Arts Building reflected in the waters of the lagoon at its foot. Future criticism will regard these as the preëminent points of merit in the Chicago Exhibition. Will it not also say this?—that beyond these great "*pièces de resistance*" there was too much space covered, too much variety on the ground, a total lack of system or consistent arrangement of the minor buildings, an inadequate and inconvenient means of transportation to the grounds and of intercommunication between the important points, while such things as the half-real, half-sham exhibits of the Midway Plaisance will be relegated to a list of mere shows to satisfy an idle, often a vulgar, curiosity. And one other thing a calm criticism must truthfully record, that the grand buildings are not buildings of architecture at all, but professedly—and with unparalleled success—merely perishable screens, built around the exhibits, with the purpose only of producing great architectural impressions and object-lessons upon the exterior. For real architecture, as fittingly applied to its purpose and for the best systematic and comprehensive arrangements of the whole scheme must we not rather turn to the Exhibition buildings of Paris, and, as education for the public, ought we not emphasize the fact in all unprejudiced criticism?



THE CLOSE OF THE FAIR.—THE EFFORTS TO PRESERVE AND SECURE CERTAIN COLLECTIONS.—MARSHALL FIELD'S GIFT OF A MILLION DOLLARS.—THE ARCHITECTURAL CHARACTER OF FOREIGN AND DOMESTIC PAVILIONS.—AMERICAN VS. FOREIGN STAINED-GLASS.—AWARD OF MEDALS TO THE ARCHITECTS.

THE first of November has arrived and with it the closing time of our great and beautiful Fair, only a few of our citizens experiencing that pleasing sensation which according to the old adage is said to come on Saturday night after a whole week of exemplary conduct. We have indeed "tried to be good," not only for "all the week" but for six months, doing our part, we feel, well in the great undertaking; but, still, that all this wonderful Fair is to pass away from us forever brings a feeling of actual sadness, and it has not been hard to imagine that around the Court of Honor and grand buildings, that were so gay and radiant in the June and July sunshine, a certain melancholy beauty has hung, on these cold afternoons of the closing days, when gray skies and leafless trees, and gray white-capped lake were their only background. The local papers have not failed to applaud us for all we have accomplished in this month alone, and astonishing have been the comparisons made in figures over the results accomplished in the mere matter of attendance. As all the world knows, if a little modest repeating of the fact could spread the intelligence, on Chicago day we mustered 716,881 souls to celebrate the anniversary of our great fire twenty-two years ago. The greatest day at the Paris Exposition shows the figures 397,150, while the Quaker city considered 217,526 as a brave showing for her most crowded day. The papers admit that Xerxes's army did outnumber our vast concourse, but that such a crowd was well handled by the railroads, boats, etc., with so few serious accidents does give us cause for self-congratulation over the careful thought that must have been put into the management. We fully realize that the Fair has closed when the Director of the Works, Daniel H. Burnham, sends in his resignation. To him this season must come as a time of well-earned rest, and must be to him an especially pleasant one, as there can be so few regrets on his part over any desirable result which he has failed to accomplish in connection with the great undertaking in which he was so important a factor.

So we realize our "day after" has arrived and we give up with great reluctance our Fair to which all the world has contributed.

That all may not depart from us forever, all sorts of enterprises are on foot to secure first this and then that collection as the nucleus for museums of different kinds. Chief amongst these is that to create what would be known as the Columbian Museum. It was first proposed to erect for this purpose a building in one of the parks, but it is about fully decided to preserve for the use of such a collection the Art Palace in Jackson. The Directors are willing to sell to the Park Commissioners for a merely nominal sum the Art Palace, and now Mr. Marshall Field has made an offer of one million of dollars toward a museum fund provided five hundred thousand be subscribed by others interested in the project. Mr. George M. Pullman has been the first to subscribe one hundred thousand dollars toward the five hundred thousand desired, so that it is to be hoped the fund will not be long in being raised. The idea seems not to make the collection one of fine arts, but of a similar character to that of the National Museum in Philadelphia, which was the outgrowth of the Centennial. It is hoped it will be possible to obtain the fine collection of woods in the Forestry Building, as well as much of interest from the Mines and Mining exhibit. The chief points of interest will be drawn from the Ethnological collection, which it is to be hoped it will be possible to purchase nearly as it stands.

Several valuable collections have already been presented to the museum. The idea seems to be to preserve the Art Palace in its present state as long as possible, and then to gradually replace with terra-cotta the staff coating which covers the brick. At the present writing nothing has been reduced to a certainty, but it is to be hoped that before many weeks the museum will have become more of an assured fact and the preservation of the Art Building definitely determined upon. Doubtless this scheme if carried out will somewhat interfere with the modest project mentioned in the last letter, which originated in the Illinois Chapter of the American Institute of Architects, of starting the nucleus for a collection which should be of strictly architectural interest. This collection would doubtless contain a good many things which would not be deemed suitable for any other museum, so in a measure the Chapter's scheme may still be carried out.

The Armour Institute is being especially active in collecting the nucleus for a museum of its own. This will be probably more of the nature of the collection of the Academy of Science, which has just laid the corner-stone of its new home which is located in Lincoln Park. This society, it is reported, expects to add to its present collection much of interest from the scientific displays at the Fair. The society has been looked upon by the Smithsonian as the repository for duplicates of its own collection, so this institution has already made to the younger society valuable gifts. The building of the Academy, as the published prints show, is to be of Classic style, which we can now expect will blossom forth over the whole land after its so successful use at the Fair.

The Art Institute, beside the superb collection of casts from the Trocadéro, is in hopes of obtaining some of the valuable art treasures of the Fair. At present there is housed here the very curious collection of old Egyptian portraits which has through the summer been seen in "Old Vienna." Most of the pictures, so the description says, were brought from the neighborhood of Rubaijas near the ancient capital Faiyum. They are of Greek workmanship, and date from about the first century before Christ, belonging to the Greco-Roman period of Egyptian history. They are painted on thin panels of wood, apparently in oil, and were used to put over the faces of mummies instead of the old plastic masks of the older epochs. They were supposed to be portraits of the deceased and the amount of realism in the work is curious as well as surprising. Even the costumes and the dressing of the hair, especially of the females, does not strike one as anything strange or unfamiliar. Certain aristocratic old ladies it is possible to have an actual intimate feeling with, so like they are to old ladies of our own times. There are several pretty girls in the collection who would not in the least look curious in any modern ball-room. The men seem to have adhered more to the customs of the ancient Egyptians and in several we see the "lock of youth," though the cut is a little changed since the days of the Pharaohs. The whole collection is certainly most suggestive.

One feature of the Fair, full of architectural interest has been the treatment of the pavilions and booths in different large buildings. It is to be regretted that this subject was given apparently so little thought by the exhibitors and that men of so little ability, in many cases, were chosen to make the designs. Some of the booths were poor enough to attract attention to themselves, a much larger number were perfectly unnoticeable one way or the other, and compared to the large number of the whole, a few stood forth marked by careful thought and study as successful creations in their line. The American exhibit, naturally as being a very large one, was not grouped in any one grand pavilion as were most of the foreign nations, but was comprised of entirely distinct booths, which in the Manufactures Building, in their close proximity to each other often lessened the effect of what might otherwise have been good work. An example of this was seen in the booth used by the Adams & Westlake Co., which in itself was a very successful little Greek structure, but which by being placed under the gallery, side by side with booths of different heights and hues and a quite indifferent character, lost much of its charm.

The Andrews Furniture Company had, not far from this, their booth of rich and expensive wood, but so designed as to lose much of its charm to many eyes. The fine ironwork and mahogany could have worked-up into a most pleasing composition, but the Classic details of the frieze combined with Romanesque ornamentation on the lower part of the work, with unsatisfactory proportions of what were intended to be Classic columns, did much to mar the good general effect. It is to be regretted that in this American section of this Liberal Arts Building were many booths of the large and loud description, poor in material and with ornamentation of the jig-saw variety which decidedly lowered the general average of excellence. The Montana fossilized-wood exhibit had a characteristic booth in which tree-trunks and bark were everywhere used to the exclusion of finished wood.

One very charming little exhibit was that made by the Northwestern Terra-cotta Company. The exhibit was in the form of a small Gothic structure, consisting of eight arches and eight dividing columns, on which rested an open-work ribbed roof. Curiously enough, though the little structure was Gothic—though not the Gothic of our century—the designer introduced as ornamental detail a modified Renaissance in which Gothic foliage was adapted to Renaissance outlines. The result was most satisfactory because well done.

¹ At this moment this collection is on exhibition at the Boston Museum of Fine Arts.—Eds.

Above each column small Gothic arches were introduced, in the niches of which stood little figures quite in keeping with the spirit of the whole, each bearing in his arms some ornamental bit of terracotta, a vase, a small bust, an architectural ornament or what not. The only weak point was some female heads quite modern in feeling used in the interior on the brackets from which the ribs spring. The outsides of the Gorham and Tiffany exhibits, which stood side by side, were decidedly disappointing. The Tiffany section was less aggressively bad, but anything more meaningless than the Gorham design it would be hard to find in the whole building.

England's exhibit was the only one among those of foreign nations which was made like the Americans in detached booths, with apparently little or no plan for a general whole. In the earlier days of the Fair many of the exhibitors in this section imitated that exclusive spirit displayed so successfully in the Victoria House, and which is so eminently appropriate to be found among the displays at a World's Fair. It was for weeks the custom to protect one of the fine jewelry exhibits with ropes stretched around the whole, so that the too curious public could be kept several feet from the cases. Every one knows that this is a very satisfactory way of viewing the fine work of the gold and silver smith. Public opinion or common-sense finally broke down this barrier, but the Royal Commissioners have to the very end enjoyed their pleasant seclusion in the Victoria House on the Lake Shore, only allowing the too curious visitor to inspect their retreat for three hours in the day, and at this time moreover to have their steps guided by a path laid out between ropes. Had all the foreign exhibitors evinced this same spirit, the possibility of seeing the Fair rapidly and successfully would have been greatly increased and the tempers of the average American guest have been decidedly improved. Next to England, Canada had her pavilion which in point of any studied whole excels that of the mother country.

Germany had for the central feature of her pavilion the iron gates before alluded to, while at the corners were very pronounced compositions in the German Renaissance.

The pavilion of France, like all the work of that nation, was most carefully studied and showed the usual marks of education. There was a certain pretentiousness about the central entrance not entirely to be desired. But the interior arrangement was most satisfactory. The whole was divided into rooms, all having some sort of ceiling or canopy, and by not leaving the exhibit open to the roof, as in most cases among foreign displays, gave a much more finished and elegant appearance to the divisions, though perhaps this was done at the expense of a little light. In the room where were placed the specimens from the national factories, tapestry formed the walls and frieze. In many of the sections names of men and of places particularly celebrated in that especial department were introduced as an element of decoration in the friezes. In the room where the laces and textiles were shown a very successful ceiling was made of canvas, in which patterns had been cut out in excellent designs. Over the central lace exhibit a large square of such work was stretched, while around it the space was filled by a coarse lace-like net which softened but did not exclude the light.

Russia, Norway and Denmark in the main building have all been spoken of in these letters as being most satisfactory and interesting. Italy from her place under the gallery was hardly given a chance to make an attempt at any architectural feature in her pavilion. Where the beams, however, did not crowd too much upon her, she made a very attractive entrance, and one which in any other position would stand out distinguished by a good deal of elegance. Siam, India and Ceylon have all been previously mentioned and, though small compared with the exhibits of the larger nations, were some of them extremely interesting, and contained some very beautiful features. Spain in the Liberal Arts Building made a very poor showing both in her exhibit and in her pavilion, which was simply an indefinite repetition of heavy wooden Moorish arches supposed to suggest to the eye of the spectator the beauties of the Alhambra.

The booths or pavilions in the Electricity Building were, as a rule, extremely simple and from the nature of the exhibit hardly capable of any architectural treatment, being most of them arranged simply for the evening electrical display. There were two notable exceptions to this rule, however, in the pavilion of the Bell Telephone Company, wherein was located the central telephone station of the Fair, and in that of the Western Electrical Company.

The Bell pavilion was in the form of a very excellent little Greek structure, good in form and detail, through which visitors passed and in which, on one side not too conspicuous from the outside, were hidden away the telephone girls.

The pavilion of the Western Electric Company was a near neighbor to the Bell, and was entirely unique in its character. It took the form of an Egyptian temple. The simple mouldings, the winged symbol over the door were all in pure Egyptian style and the colored figures at first glance seemed as purely Egyptian as Pharaoh himself, and it was only on closer inspection that you saw the element of humor as well as of careful study that had entered into the composition. Above the door were two seated female figures apparently of as purely Egyptian type as the wife of Ti herself. They were, however, employed in the unusual occupation of putting pegs in place at the central office of a telephone station. At each side of the door hanging down as a graceful bit of decoration were the telephone wires, while at the base a matron, evidently of high degree, sat with her ear to the receiver, while a slave stood at her side

fanning her. This was only the introduction to a whole series of caricatures running around the whole frieze of the building and down the sides. Egyptians in characteristic dress are employed in laying the wires; in telegraphing; in presenting the invention to the king, while the dog-headed and eagle-headed gods stand on either side of him as is often seen in the old decorations, as the accompaniment to royalty; in telephoning in hot haste for the patrol, which comes in a chariot with prancing white steeds; in telephoning for the fire-department, the call being answered by men bearing between them the hand-pump, similar to that used by some of the Oriental nations to-day. Thus the designs ran on, and while they, in their coloring and good drawing made a very charming decoration, afforded an amusing subject for study and gave evidence of decided inventive faculty, besides the technical skill displayed. The interior display of the pavilion was chiefly that of electric lights and those used in combination with stained glass. The ceilings of the two small rooms were of glass in very good Egyptian designs, while the columns were of hollow glass illuminated from within. The shafts of the columns were of green glass simulating the lotus stems while the capitals were both of the bud and blossom form.

Another very charming bit of decoration from the hands of this same designer was to be found, not in a pavilion, in fact, but in the Children's Building, a building erected for the temporary home of the children whose parents were obliged to bring them to the Fair. The exterior decoration of the structure was very simple but very satisfactory and suitable for the place which it ornamented. A broad frieze in bright and delicate colors passes quite around the building, while underneath the frieze were medallions in oil of the different babies of all nations, from the little negro with her sunflower to the esquimau with his furs. The medallions were enclosed in conventionalized borders, which made them a more decorative feature than without, as the children themselves were not strictly decorative in treatment.

Returning to the pavilions: the Agriculture Building afforded us several excellent examples of them, surrounded on all sides by the generally much-admired productions in corn and grain. This use of grain and corn was in many cases ingenious, though it may have fallen short of reaching a high artistic standard.

Denmark's agricultural exhibit was housed in a pavilion whose entrance was through a small farm-house of open-timber construction with thatched roof. A stuffed stork on the ridge-pole gave a realistic touch to the whole. Japan kept the same spirit of rural construction, enclosing her exhibit in not much more than a high fence, but which had a decided suggestion of a Japanese farm building. The lower part of the fence, if so it can be called, was of bright green rushes braided into a solid surface, while above a row of latticed windows looked out from a low-eaved roof of common pine boards, but which were laid in such a manner as to give a very Japanese effect. Gates made of the ordinary fish-pole bamboo completed and carried out the general scheme. One curious little pavilion, that of Jehore, which actually consisted of nothing but a picket fence with a slightly more elaborate gate-way, had in the same manner caught the national spirit and by certain combinations of form and coloring become harmonious with the exhibit which it enclosed.

A Louisiana molasses exhibitor had a very successful booth of sugar cane. The sugar cane was fastened to wooden forms, whose shape and outline followed the Egyptian style.

By far the most attractive pavilion in the building was that of Algeria. It simulated stucco and the characteristic blue and green tiles. It was in the form of a little cloister, around an open central court, in which was a small white fountain. The exterior walls at the four corners were blank walls, containing one small latticed window each, while Moorish arches opened both on the inside and out of the cloister, in the inside, quite to the ground of the court, but on the outside, only half-way down. The exterior of the pavilion was extremely plain while all the staff sculpture is reserved for the inner court. The severe whiteness of the outside was relieved by the introduction of the tiles above referred to, which were also plentifully used in the interior. Brass and colored-glass lanterns hung in the arches and the whole spirit of the place was decidedly Oriental.

Spain had a booth in the Agriculture Building which was more successful than any of her others. Without there being any especial reason for it, it was quite ecclesiastical in character, its *motif* being seemingly some old mediæval cloister, the tracery-work of the openings being filled with stained-glass.

Another excellent pavilion was that of Cochin China and some of the French colonies quite by itself in the southern part of the grounds. Here national characteristics were most successfully impressed upon the work, and made a successful pavilion quite in harmony with the exhibits which it held.

One very interesting exhibit was that made by the stained-glass firms of the various nations. When we look at the productions of Germany, England and France and then at our own, it is quite impossible for us not to imitate one of the notorious acts of "Sir Joseph Porter, K. C. B." for involuntarily we feel "our bosoms swell with pride." To compare the different schools and see wherein lie the qualities which lift our own work so much above that of other nations is very interesting. The chief point seems to be that our painted-glass is not painted in the sense that foreign glass is. Germany paints her figures, her draperies, her background, with the

most brilliant and often inharmonious of colors. France and England treat their glass in much the same way, while we simply paint in clear brilliant coloring the flesh-tints and hair, having stained-glass to fulfil the mission of background and drapery to a very great extent. The foreign treatment of glass would naturally lead to the result that all the material should be of equal surface and thickness, while in our stained-glass there is great diversity of surface as well as thickness which leads to much more artistic results. Turning back to the early Gothic work when the use of painted and colored glass reached such a high state of perfection, we have drawn our inspiration from that work and use the leads with much more boldness and greater artistic effect than do the other nations. There is in this one point great chance for difference of excellence in the use of the leads and among our own firms the results vary greatly. Of the work displayed at the Fair, Tiffany's was noticeably the most artistic produced. It is to be regretted that the exhibit of glass as actual works of art was not larger, as it could not have failed to be exceedingly interesting. It certainly would have proved attractive to a great many people if one might judge by the crowds that even in the early part of the Fair season filled to more than overflowing Tiffany's pavilion. There was quite an extensive exhibit of what would more properly be called glass-mosaics which though having much beauty in themselves could not come under the exact head of painted or stained glass. Tiffany was the only firm that gave its glass any artistic setting. The ecclesiastic glass either for windows or lamps was placed in a Romanesque chapel so perfect in its appointments that it was not an uncommon sight to see men remove their hats upon entering the "sacred" precincts. With the glass exhibit shown here the firm made a display of church-furnishings, giving up to the altar and chancel nearly half of the space of the chapel. The Byzantine glass-lamps exhibited were very effective, but there seemed so strong a tendency to draw inspiration from the mediæval work that one step more would carry the designs into the realms of the extreme and give an effect savoring of exaggeration and affectation, charming as this work at present is.

It is much to be regretted that J. & R. Lamb made no more elaborate display. There were a few pieces of their work exhibited in the Woman's Building among the designs made by women, that made one wish heartily there were more of such work to be seen.

The list of architects of buildings in the grounds who received medals is interesting although it is somewhat of a surprise to see such work was open to competition, and at the same time it seems a little incongruous to see the Columbian Exposition awarding prizes to its own salaried officers. Without knowing the exact basis upon which the awards were made, it is difficult to understand why some architects were so honored, but the list as published in the daily papers is as follows:

Daniel H. Burnham, a medal in recognition of his services as Director of Works.

Frank D. Millet, a medal for his services as Director of Decorations.

George B. Post received a medal for Manufactures Hall; Charles B. Atwood for his large buildings; McKim, Mead & White for the Agriculture Building, the New York State Building, the White Star Building and the Puck structure; Peabody & Stearns for Machinery Hall, the Massachusetts House and the Colonnade and Obelisk; Richard M. Hunt for the Administration Building; Henry Ives Cobb for the Fisheries; Jenney & Mundie for Horticultural Hall; Adler & Sullivan for the Transportation Building; S. S. Beman for the Mines and Mining and F. M. Whitehouse for Festival Hall; Van Brunt & Howe received a medal for the Electricity Building; Miss Sophia Hayden for the Woman's Building and F. L. Olmsted & Co. for the landscape-gardening work.

The architects of the following State buildings received recognition: Charles E. Frost for Indiana; Mortimer S. Smith & Sons for Michigan; J. Riely Gordon, Texas; A. Page Brown, California; H. T. E. Wendell, Colorado; Thomas Lonsdale, Pennsylvania; James W. McLaughlin, Ohio; Davis Laymon, Kansas; William Waters, Wisconsin; Cutter & Poetz, Idaho.

Besides these, medals were awarded to the Virginia Building, the Waukesha Mineral Spring Building of Van Brunt & Howe, the New York Central Railroad headquarters of L. Gilbert Bradford, the Pennsylvania Railway Building of Henry Bacon McKim, the Van Houten Chocolate House of F. S. Weber.

THE ARCHITECTURE OF CHICAGO.

A SPECIAL correspondent of the *Melbourne Argus* writes as follows:—

The Royal Institute of British Architects have recently conferred their gold medal on Mr. Hunt, who, though actually the architect of only one of the World's Fair buildings, is regarded as the representative architect of the Fair, and as generally responsible for it in its architectural aspect. Mr. Hunt is the first American who has ever received this distinction, for hitherto Americans have developed no original architectural genius, but have been content to copy, and for the most part to spoil in the copying, familiar types of European architecture. This servile imitation, without any regard to the fitness of things, is one of the main causes of the grotesque and discordant ugliness of American cities. A remarkable instance of this is the tower of the Madison Square Garden in New York,

one of the most conspicuous buildings in the central part of that city. This is said to be an exact reproduction, measure for measure, of the Giralda of Seville. That statement is probably untrue, but undoubtedly the Madison Square tower is a pretty close imitation of the Giralda. Yet, what is the result? The Giralda, rising slenderly from a group of ancient buildings in perfect harmony with it, crowning the rocky scarf on the bank of the river, is one of the most beautiful structures ever reared by man. The Madison Square Tower, standing out of a quadrangular block of circuses and theatres and beer-gardens, right on the pavement of a shabby quarter of a modern town, and dwarfed on all sides by enormous piles of vulgar apartment-houses and still more vulgar office-buildings, only attracts attention by its oddity. It is utterly incongruous and meaningless, and neither has any beauty of its own nor adds any beauty to a totally unbeautiful locality. The average American architect cannot understand how that can be, and he gets angry with any one who says it is so. He argues very simply: "The Giralda of Seville is admitted to be surpassingly beautiful. Our tower is exactly like the Giralda of Seville. Therefore our tower must be surpassingly beautiful." This is very funny. . . .

The dear old sleepy southern towns or New England villages, which never move with the times, have their own old-fashioned architecture, which at least is simple and suitable and free from vulgarity because void of all affectation. They know nothing of the new iniquities. . . .

This custom of making Chinese copies prevails as much in details as in general design. Many American architects, when they go to Europe, spend their time "picking up details," as they call it; that is, getting photographs or drawings of windows and doors and cornices and entablatures, and even grilles and lamps and knockers, and any other minor features in stone or terra-cotta or iron. These they reproduce here, and clap on to buildings of their own designing or stolen from others, without the smallest consideration for appropriateness. Thus, in the long, gloomy, unpicturesque streets of New York, or the narrow, untidy by-ways of Philadelphia, one is often struck by some bit of stone or metal-work that recalls Antwerp or Brussels, or Florence or Rouen, or more often, perhaps, some quiet little town in Holland. . . .

Chicago is notoriously the worst sinner of all in this respect, for there is here a blatant defiance of all rules of art and a colossal vulgarity in outward show which make even the Eastern Americans shudder, and furnish an unfailing theme for the comic papers. Bigness and expensiveness form the only standard. Twenty stories high and costing millions of dollars—that is the idea for street architecture; mere walls with holes cut in them for windows, and as much marble and onyx and silver and glass as can be made to stick on to their inside. As for private houses, the miles and miles of truly gorgeous structures in which the millionaire pork-packers and grain speculators and dry-goods dealers luxuriate, are enough to drive an architect with any respect for his art to drink or suicide. I suppose there is no other spot on the surface of the globe where so much bad taste is displayed to the square mile. The Mediæval castle, with battlements and turrets, seems to be the peculiar vanity of the pork-packers, while the dry-goods men's fancy runs rather to the Doge's Palace at Venice, and the saloon-keepers and gambling-men like something light and airy and Frenchy, so to speak, with a sort of Tuileries touch about it. The gaudiness and queerness of the materials is not easy to describe. Stones of all colors, white, black, gray, pink, yellow, green, blue, red, and all these in combination, are seen everywhere. Then there is a particularly hideous kind of stone that is much in vogue, which has a white or light gray ground, with black petroleum oozing from it in patches or blotches, suggesting defective drainage or some such nastiness. This is considered very tasty and high-toned. In addition to these, bricks and terra-cotta of every shade and every kind of mottle are freely used, either alone or in combination with "rock," as building stone is called here. Some of the effects thus produced are curiously gruesome, and the impression formed by driving through seven or eight miles of such edifices must be experienced in order to be realized.

All this being so, it is no wonder the conferring of the highest architectural distinction in the world on a Western [sic] American has created a profound sensation, especially as the President of the Royal Institute, in conveying the Gold Medal to Mr. Hunt, emphatically and specifically commended the World's Fair architecture, which he declared marked a new era in the history of the art. He did not hesitate, in fact, to place Mr. Hunt in the front rank of architectural genius, or to class the works now to be seen on the shore of Lake Michigan among the grandest creations of this or any age.

The people here are uproariously jubilant over this, which they vaunt as a complete and final answer to the strictures of envious Eastern critics or prejudiced visitors from abroad. Of course it is not a final answer. Many of the greatest architects living totally deny and repudiate the authority of the Royal Institute, and some of them protest that to receive a distinction at its hand is a sure mark of a man of low degree in art. A writer of great force in one of the leading English magazines roundly accuses the Royal Institute of degrading architecture from an art to a trade by its persistent practice of rewarding shoppiness and cheap decorativeness in design, whilst ignoring every development of high originality or purely artistic genius. The same writer disposes of the World's Fair architecture in one indignant phrase, as "a preposterous piece of nonsense" not worthy of the name of architecture at all. When there

are such diametrical differences among those who ought to know all about it, perhaps an impartial, if uninstructed, observer may be allowed to offer an independent opinion.

My opinion is this. Any sweeping judgment on the World's Fair architecture, or any judgment formed from pictures or from a single visit is bound to be a wrong one, whether favorable or unfavorable. The World's Fair buildings have no parallel and no precedent. They are entirely different from anything ever seen before, and they cannot with any justice or right reason be considered from the same standpoint as buildings designed for a wholly different purpose and under wholly different circumstances. No Roman emperor in the wildest flights of the building fever ever dreamt of spending nearly four millions sterling upon a group of palaces that were only to stand for six months and were then to be torn down and sold for rubbish. That is really the whole point. The question is not whether the World's Fair buildings are fine models of architecture compared with the great permanent monuments of old countries, but whether they are fine models of architecture regarded as exhibition buildings, begun and finished within eighteen months, and so constructed as to be capable of removal within a few weeks after they shall have served their purpose. Viewed in that light—and it is obviously the only fair light in which to view them—they must surely be considered as marking a great advance in this particular kind of architecture at all events. What is more, as has been well pointed out by some of the papers here, there are millions of people to whose mind the very conception of architecture has hitherto been impossible, but to whom the existence of such an art will now for the first time be manifested in a very striking and instructive way. It is not too much to say, I think, that among the final results of this gigantic enterprise the greatest will be its influence on the future of American architecture.

My own feeling about it is that the buildings vary from a very high order of merit to a very low one, and that the best of them, and not the worst, are the most likely to impress the minds of those who see them and frequent them daily. Two of them are so good that either would constitute a notable ornament to any city in the world. These are the Agriculture Building and the Fine Arts Building. Each stands on the quay of a broad sheet of water, with the whole unbroken façade visible from the opposite shore, and the best advantage has been taken of this situation by bold treatment and the use of large columns and other principal features. Of the two the Fine Arts Building is the more pleasing to me, and I fancy, to most other uninstructed persons. Viewed across the water from the rear of the Illinois Building it is wonderfully beautiful and stately, and seems to present nothing but refreshment and contentment to the eyes. It is quite curious to observe the effect it has on unsophisticated spectators when they suddenly come in full sight of it in the course of their wanderings. It is common to see a whole group of people stop suddenly and give a simultaneous exclamation of surprise and pleasure, and there is always quite a crowd of men, women and children sitting on the shady side of the Illinois Building, merely gazing at the lovely structure opposite, and feeling perfectly happy, not knowing why. If that is not a sign of good architecture I do not know what is. Architects and artists, nevertheless, tell me that the Agriculture Building is the finest in the Fair, and I dare say they are right. It resembles the Fine Arts in general outline, but has more detail and is more directly suggestive of its purpose. It has the advantage, too, of presenting two elevations to points-of-view across the water, each of which is exceedingly handsome. The groups of sculpture, which are a decided feature of the Agriculture Building, though almost colossal, are in just proportion and strikingly true to nature.

I cannot imagine what the critics expect, or what sort of buildings would satisfy them, if they object to either of these. The Grecian peristyle, which extends along the water from the Manufactures and Liberal Arts to the Agriculture, and is one of the most unexpected features of the Fair, has been very severely criticised, mainly, it seems, on the ground that the statuary is over-sized and grotesque. There is truth in that, when the peristyle is viewed from the back at close quarters. But that is just where it is not intended to be viewed from. It is in reality the screen of the main entrance to the Fair from the Lake and viewed from its proper place, namely, the deck of a steamer or a yacht approaching the landing-stage, it is unquestionably the most picturesque water-gate in existence. The statues are diminished and refined by distance, while the columns are elongated by reflection, with a result that at any rate has given a keen sensation of joyful surprise to multitudes of worthy folks who don't know what a peristyle from a pagoda.

The stupendous hall of Manufactures and Liberal Arts is simply a glorified exhibition building without any pretention to fine architecture. It is not so beautiful as the Crystal Palace, but it is a great deal more serviceable and it has beauty enough and to spare in its unequalled spring of arch, its magnificent distances affording never-failing relief to tired eyes, and its strange effect of lightness and comfort combined with strength. The Administration Building is something like a four-square front of the Grand Opera at Paris, considerably elevated as to the columns and dome and thrown into really fine relief by the terrace and fountains in front. The interior with a clear overhead space of 276 feet, is imposing and grows greatly upon you after a while. Many Americans, possibly the majority, consider the Administration Building the noblest of all; but I must say

myself I think the architect might easily have made the exterior handsomer and more harmonious without sacrificing his main object, namely, to furnish the whole group of buildings with a crowning dome, visible for many miles and especially effective when lighted up at night.

All the other main buildings belong more or less distinctly to the exhibition order of architecture, and one or two of them are almost aggressively ugly, for the very reason that they try to pass themselves off for something which they are not. The Transportation Building is the worst of all, and a doubt may well be held whether it has not purposely been made as hideous as possible in order to be a foil to the others. It is really nothing but a shed—large, spacious and well-lit, as it ought to be; but the architect has tried to make it present externally some new and original type of architecture, with a result that can only be described as a nightmare of bad taste and wasted ingenuity. It is painted dark red, with scrolls and twirligigs in all sorts of other colors, and this *bizarre* effect is aggravated instead of relieved by huge figures of flat and lanky females with wings, plastered on the walls at regular intervals, all exactly alike, as if done with a stencil-plate, and each bearing in her pallid hands a tablet inscribed with the name of somebody or other, who is supposed to have furthered the arts of transportation. The entrance consists of an enormously heavy archway, surmounted by a kind of slab or cap, the object of which is a mystery; the whole arabesqued in a bewildering pattern, and entirely covered with very brassy-looking silver. I have never met anybody who could explain what it all means, or how such a sanguinary-looking blot was allowed to be placed on the White City. I believe it is a piece of native Chicago talent; but every Chicago man I have ever spoken to about it either laughs at it or swears at it, so there is reason to hope it by no means represents the Western-American architecture of the future. Luckily, it is not very conspicuous, and nothing but wilful malice could make any one condemn the whole World's Fair on account of that one shocking example of what American architecture ought not to be.

As a thorough-going Britisher, and a lover of art in any enjoyable form, I vote that Mr. Hunt is well entitled to his gold medal, and that the Royal Institute have shown right judgment as well as a liberal mind in awarding it to him. I may be a Philistine, but, if so, I am in very numerous and respectable company.

INTRODUCTION OF BUILDING SPECIALITIES.

THE prejudice against any new invention or appliance is to be attributed mainly to use and habit. To instance a common door fastening: people from their earliest years are accustomed to a certain kind of lock or fastening. Sight and tactical experience become early habituated to a certain method of opening of a door by lifting a latch or turning a handle or knob, the very touch or movement of the hand becomes a habit, and any new mode imposes a labor. Those, for instance, who have been long in the habit of opening a door one way, find it hard to substitute a pull for a push. In banks and public offices, the usual swing-doors are convenient, as they allow either method to be adopted in opening. A person can pull the door towards him on going out, or push it outwards; but the substitution of certain kinds of spring-hinges has led to the alteration of the mode of opening, the door being drawn or pulled towards one when leaving the building or apartment, a stop preventing the door being pushed out. This alteration has been found necessary when the door is hung between a room and a corridor through which people are continually passing, as a door pushed suddenly out would be liable to cause personal inconvenience and injury to those walking along the outer corridor, and some unfortunate knocks on the head or scalp-wounds might be inflicted. But the change in opening is not so easily taken to. Persons in the habit of opening such a door by a push become vexed when they find their effort has been fruitless, and the alternative pull becomes a trouble. The same vexation is experienced when the usual bell-pull has been replaced by a button to be pressed, as in the case of a pneumatic or electric bell; or when a lever to be pressed down or lifted takes the place of the ordinary knob or handle on a shop or railway-carriage door. A certain amount of irritation is experienced when we encounter resistance to our usual habits. These sudden changes in our door furniture are aggravating, especially to elderly people, and hence the prejudice against the substitution of new and untried inventions. We must remember also that in such things as door furniture, window fastenings and openings, locks and bolts, and of all domestic appliances, we have to consider the strong conservative prejudices of women. Both the lady of a house and her servants have to be instructed in the use and management of these fittings, and we know that any complicated contrivance like a bolt or a new sash window will puzzle a woman-servant and become inoperative in consequence. Anything mechanical or a little difficult to handle will be neglected. Habit, in fact, is so deeply rooted, that it takes a long time to rid ourselves of any old methods and tastes, a fact which the architect knows better than most men, and for this reason he is inclined to look rather suspiciously at many new inventions in building that are brought to his notice. The architect has first to study and consider the idiosyncrasies and tastes of his client, his convenience and comfort, and he knows how unwise it will be to introduce new fittings in a house to be occupied

by people who have certain prejudices. It takes a long time to eradicate them, or to prove that a certain type of fastening, for instance, is clumsy and imperfect in its action. How tenaciously the ordinary householder, for example, clings to the old sash-fastener, with all its defects and its unscientific construction. No invention for securing two vertical sliding sashes can be more defective in all the requirements. The resistance it offers to a forcible raising of the lower sash is ludicrously small, because the lever sustains not a direct but a cross strain, and any thief or burglar would laugh at it. Yet how seldom any improved fastening is seen. The old one is cheap, is more popular, and for these reasons the builder and architect continue to specify it. We may take as another instance the double-hung sash window. It has been in use for nearly three hundred years, and although its rival, the French casement, has occasionally "run it hard," it still maintains its position as the popular English mode of opening windows. The history of this invention is rather obscure: at first the under sash was kept at various heights by a series of notches and a catch; the Dutch subsequently introduced the suspension of the sash by a weight and line over a pulley, and one example is found as early as James I, in Wickham Court, Kent. But the double or sash window, as we see it, was not generally introduced till the time of William III. The sash window, at any rate, was introduced in England in the 17th century. "Shas frames and shas lights" are spoken of in Moxon's "*Mechanick Exercises*" (1700) since which time they have continued to be used, in spite of many ingenious attempts to improve upon them. During the last 20 years numerous patents have been taken out for hanging sashes in such a manner that they may be easily removed from the frames for cleaning, and to prevent accident. A few of these inventions are particularly ingenious: one kind allows of the sashes being hinged or pivoted, that they may be pulled inwards for cleaning without disarranging the lines and weights, or removing the inside beads. Many sash pockets and fittings have also been invented, but it shows the strong conservative feeling existing among the building fraternity and the public, that these improvements, as some of them undoubtedly are, should be so slow in supplanting the old arrangements. How slow, too, has been the introduction of new forms of closing and rendering weather-tight the French casement. The market is full of patented meeting-stiles, water-bars for the sill and bottom rails, bolts for closing the casements, many of them improvements on the old grooves and beads, but architects still specify the old forms and the well-known espagnolette bolt.

In connection with window opening we may refer to the many kinds of fanlight and skylight opener on the single-lever principle, all operated by one movement of the hand, which are, despite prejudice, coming into general use; but in this and similar cases the action of the appliance is so obvious, that the most prejudiced stickler for old methods would not hold out. Whenever the invention saves labor, the prejudice of habit soon disappears, and it is this merit of simplicity which has done more to make a new thing popular than anything else except, perhaps, cheapness.

The other day we had the opportunity of inspecting a new and improved roofing-tile, a German invention, which is certainly a step in advance of the old-fashioned method of hanging tiles by pegs to laths or battens, the jointing being on the interlocking system which does away with all pointing of lime and hair mortar, and the material, too—a compressed cement—is harder and less porous than the old clay-burnt tile. The question is, Will the new system of hanging supplant the old system? The best-known ordinary tiles, such as the Broseley, were some time in the market before they came into general use, and many kinds of ribbed and special tiles are still almost unknown to the ordinary builder. The same shyness is manifested in horticultural glazing, although such excellent systems of glass roofing, with patent bars and caps, are in the market. Only after many proofs of the undeniable advantages of wood-block flooring has it come into general use. The hard and cold stone, tile, and brick or cement, or the ordinary boarded floor were for a long time used, in spite of their defects, for almost all basements and school floors, and it is only the superiority of such wood-block systems that has compelled architects and others to introduce them. The invention of "metal lathing" has been long before architects, yet still we find specifications providing the old fir laths for buildings and positions in which a more durable and fire-resisting substitute is called for. But we may go through the whole range of the building trades, pointing the same lesson and moral. How hard it is for an inventor or the maker of a new material or appliance to introduce it! With what pertinacity the public cling to the old methods, because they will not take the trouble to learn to understand what they regard as a complicated and new fangled arrangement; because they are more familiar with the existing goods; and lastly, because those now used are thought to be less expensive.

There is another reason why patentees and introducers of novelties are so handicapped—namely, the disinclination of manufacturers and the trade to take up anything new. The reasons why they set their faces against any new invention or appliance are not far to seek. In the first place, they think it will not "take"; that if they purchased the patent-rights of, say, a new fastening, they would have to spend a small capital to advertise, or to bring it before the public or the profession, whom they know are very conservative and slow to make changes. Secondly, a manufacturer has his own goods to sell; and it is not very probable that, with a large stock of the

ordinary goods which suits builders and the public, and with plant and machinery for turning them out, he will be willing to risk an outlay of capital on new plant. A new sanitary appliance, say a trap or a closet, would entail in this manner an expenditure that could scarcely be justified till the invention had been tried and found successful. A new door or window fastening would be subject to the same difficulties and disinclination on the part of the manufacturer. We have seen many clever and excellent inventions in this way lost to the public because the patentee failed to obtain the support of a large ironmonger, or had tried to introduce his patent single-handed. The architect, to a very great degree, is a creature of circumstances. He feels rather shy of specifying a new fastening or a new stove or trap unless he has had proof of its operation, although he may have a very high opinion of the value of the invention. Some things which approve themselves directly to his judgment are found not to bear the test of actual use, owing, it may be, to some element of use that has not been apprehended by him. In selecting his fittings, ironmongery, and brasswork, he is more likely to consult the advertisements in our columns of well-known manufacturers, than adopt any independent views he may have formed. Such a course is at least safe, and it gives him less trouble, although the progress of building invention suffers thereby. The American "building exchanges" have to some extent supplied a means of bringing new inventions before the profession; but they do not carry the weight of independent criticism, such as that of unbiased professional journals, and, so far, similar attempts here have not been attended by any great success.—*Building News*.



SKETCH-CLUB OF NEW YORK.

THE regular November dinner and meeting of the Club were held in the new room, 1473 Broadway, on the evening of Saturday the 4th inst. In spite of the very disagreeable weather there was a large attendance and the meeting was of unusual interest. The guest of the evening was Mr. Hughson Hawley, who after the dinner addressed the Club on the subject of rendering architectural perspective in water-color, illustrating his remarks by making a sketch. After putting on the general first wash and a few shadows to show the principles he advocated, he cut from the stretcher the sketch he had been making, and showed beneath a finished water-color of the same subject, which he presented to the club. Mr. Hawley commanded the attention of the members and at the conclusion of his address was enthusiastically elected an honorary member of the Club.

Some drawings were handed in for the competition on artistic rendering from a poetical quotation, and a criticism by Mr. James Renwick was read on the design for a Gothic rose-window, the last month's competition. Second mention was awarded N. Hauseman and third to H. H. Braun. The author of the design placed first was not known at this meeting.

It was announced that a prize of \$25.00 would be offered in a competition for an advertisement for the Chicago Varnish Co., the advertisement to appear in the catalogue of the Architectural League Exhibition and the competition to be judged by members of the League.

Classes in water-color and pen-and-ink drawing will begin this month, the first class-night being the 10th inst.

EDGAR A. JOSSELYN, Recording Secretary.

T-SQUARE CLUB OF PHILADELPHIA.

A MEETING of the T-square Club of Philadelphia was held at the club-rooms, Wednesday evening, November 1st.

The subject for competition was "A Cover for the Sketch-book." Messrs. Henry Thouron, Wilson Eyre, Jr. and Wm. F. Gray had been invited by the club to lead the criticisms on the designs submitted, of which there were twenty-eight. First mention was awarded to Charles Z. Klauder, second to Anthony P. Valentine and third to John Molitor.

The subject for the next competition was announced as "A Country-house in the Colonial style." Required drawings: front elevation and one side elevation at one-fourth-inch scale. Elevations to be rendered in color, with shadows cast. Sketch-plan of first-floor at one-eighth-inch scale.

GEO. BISPHAM PAGE, Secretary.

THE ARCHITECTURAL CLUB.

THE adjourned annual meeting of the Architectural Club was held at the club-rooms, 5 Tremont Place, this week. The main object of the meeting was to change the constitution so as to put responsibility more with the Club, and not so much with the officers. This change was made harmoniously. These officers were elected:

President, R. D. Andrews; Vice-President, R. C. Sturgis; Treasurer, Harry F. Gibbs; Directors, H. Magonigle, E. F. Maher (all for two years); Secretary, J. H. Jones; Directors, A. G. Everett, A. H. Bowditch, E. C. Eastman (for one year).



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

THE AGRICULTURE BUILDING, MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS, NEW YORK, N. Y. AND THE COLUMBIAN FOUNTAIN, MR. FREDERICK MACMONNIES, SCULPTOR, WORLD'S FAIR, CHICAGO, ILL.

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

HOUSE OF CHARLES M. HEMENWAY, SOMERVILLE, MASS. MR. SAMUEL D. KELLEY, ARCHITECT, BOSTON, MASS.

NEW YORK LIFE INSURANCE COMPANY'S BUILDING, NORTHEAST CORNER LA SALLE AND MONROE STREETS, CHICAGO, ILL. MESSRS. W. L. B. JENNEY & W. B. MUNDIE, ARCHITECTS, CHICAGO, ILL.

DESCRIPTION.—The dimensions are 80 feet on La Salle Street and 141 feet on Monroe Street. The building is twelve stories in height. The first, second and third stories are of dressed granite. Above the third story the building is faced with terra-cotta. The alley and court are faced with white enamelled brick.

The basement has a rentable area of 7,000 square feet, being the entire frontage on La Salle Street, and two-thirds of the frontage on Monroe Street, with entrance on Monroe Street. The balance of the basement is devoted to the working-department, boilers, pumps, elevator-machinery, ventilating machinery and electric-light plant.

The first story, or ground-floor, has a central entrance on both streets into the stairway and elevator halls. The passenger-elevators are five in number, and are located near the centre of the building. The freight-elevator is located on the alley and will run from basement to attic.

On the first-floor are three fine offices suitable for banks or insurance companies.

The second story is designed specially for banking purposes, and is arranged for one, for two, or for three banks, as may be determined later.

The third to twelfth stories are arranged for offices.

In two of the stories one or two of the rooms, having court-fronts only, will be devoted to barber-shops and toilets.

The bank floor will be finished in mahogany; the other floors in oak. The entrance-ways and halls on ground-floor will be paved with handsome mosaic. The other halls with marble. In first and second stories, the entire hall finish, including walls, ceiling and staircase, is of marble.

The work is being pushed very rapidly, and the building will be ready for tenants in April, 1894.

Estimated cost, \$800,000.

The construction is what is termed "Steel Skeleton" or the "Chicago Construction" in which all the loads of exterior walls, of interior walls and partitions, and of floors, are carried independently, story by story, on the columns. The columns are of riveted steel and the work at the building is all assembled with hot rivets. All steel is carefully protected by masonry or other fireproofing. The wind-pressure is carefully calculated and provided for, so that the building may be considered as reasonably protected against fire, cyclones, or earthquakes.

Work on the foundations of this building was begun July 19th, and the steel-work was completed October 3d, together with two stories of granite, three stories of terra-cotta and the fireproof arches laid in four floors.

This style of construction was first introduced in the Home Insurance Building, Chicago, in 1884, W. L. B. Jenney, architect.

Steel Frame.

In making a description of the steel frame of the New York Life Insurance Company Building, we will first speak of the loads, which occur, and then of the steel frame, which resists these loads.

The loads may be classed as follows:

Dead-loads.—Weight of floors, sidewalks and alley pavements. Partitions. Curtain walls, cornice, glass and mullions. Piers. Miscellaneous loads—vaults, tanks, marble ceilings, etc.

Live-loads.—Live-loads on floors, sidewalk and alley pavement. Snow-load on roof. Elevator-loads. Wind-pressure.

Weight of Floors in Detail.

First Floor.—12" tile arch.....	50 lbs. per sq. ft.
Concrete.....	31 " " "
12" — 32 lbs. I-beam....	8 " " "
Mosaic floor.....	15 " " "
Plaster.....	6 " " "

110 lbs.

In same manner weight of second to thirteenth floors inclusive, was found to be 90 pounds per square foot; weight of roof, 70

pounds per square foot; sidewalk, 140 pounds per square foot and alley pavement, 190 pounds.

The weight of the partition was added to the dead floor-load at 20 pounds per square foot of floor area.

The reactions of vaults, tanks, etc., were calculated for each case. The weights of curtain-walls, piers and mullions were computed per lineal foot from the wall sections.

Live-loads.

Live-load on floor-beams in first floor taken at....	125 lbs. per sq. ft.
" " girders " " " " " " " " " " " "	110 " " " "
" " floor-beams, second to thirteenth floor inclusive.....	70 " " " "
" " girders, second to thirteenth floor inclusive.....	60 " " " "
" " floor-beams, roof.....	40 " " " "
" " girders, roof.....	40 " " " "
" " floor-beams, sidewalk and alley pavement.....	200 " " " "
" " girders, sidewalk and alley pavement.	180 " " " "

The following table will show how live-loads were taken on columns:

Story in which column is located.	Live-load on column from floor above.	Total live-load on column.	Floor can be loaded up to.
Attic.....	40 lbs. per sq. ft.	40 lbs. per sq. ft.	15 lbs. per sq. ft.
Twelfth....	50 " " " "	90 " " " "	15 " " " "
Eleventh....	35 " " " "	125 " " " "	15 " " " "
Tenth.....	25 " " " "	150 " " " "	15 " " " "
Ninth.....	20 " " " "	170 " " " "	15 " " " "
Eighth.....	15 " " " "	185 " " " "	15 " " " "
Seventh....	10 " " " "	195 " " " "	15 " " " "
Sixth.....	10 " " " "	205 " " " "	15 " " " "
Fifth.....	5 " " " "	210 " " " "	15 " " " "
Fourth....	5 " " " "	215 " " " "	15 " " " "
Third.....	5 " " " "	220 " " " "	15 " " " "
Second....	0 " " " "	220 " " " "	15 " " " "
First.....	0 " " " "	220 " " " "	15 " " " "
Basement..	100 " " " "	320 " " " "	100 " " " "

The snow-load was taken at 40 pounds per square foot.

The wind-load was taken at 30 pounds per square foot on exposed vertical surface of building.

In taking live-loads of elevators, double the maximum load was taken to allow for sudden shocks.

The building being built on compressible soil, that with a load of 3,500 pounds per square foot will compress at least 3 inches, it becomes necessary to determine the dead-loads quite accurately to secure uniform unit-loads and hence equal settlements. As the live-load is small in comparison to the dead-load, during the period of construction when most of the settlement takes place, it is disregarded in determining the base area of a footing, but it is considered in calculating the strength of the footing.

Note the reduction of live-load from beams to girders and the graduated reduction of live-load on the columns from top to bottom. These reductions are made on logical assumptions and from motives of economy.

To return to the settlement, the building is set $4\frac{1}{2}$ inches above its normal grade. The greater part of the settlement $2\frac{1}{2}$ to 3 inches will be obtained by the time the building is ready for occupancy. After that the settlement may amount to one inch (1") in the next twelve months and will then cease as long as load is quiescent.

The Frame.

The following parts may be considered:

Beams.—Carrying floor-arches, curtain-walls, cornices, mullions and in part piers.

Girders.—Carrying beams, curtain-walls, cornices, etc.

Columns.—Carrying beams and girders, and piers directly.

Cast-iron Stools.—Carrying the basement-columns, and

Foundation-beams.—Which ultimately transmit all the loads to the ground.

The columns are spaced, with some exceptions, 15' 5 1/2" between centres. The sizes of beams and girders in the different floors were found to be as follows:

	Beams.	Girders.
First floor.....	12"—32 lbs. I-beams.	15"—41 to 80 lbs. I-beams.
Second to thirteenth floor inclusive....	10"—25 1/2 " " "	15"—41 to 50 " "
Roof.....	8"—18 " " "	12"—32 " "

The exceptions to the above are such other sizes as were required by the special framing around elevator-openings, stair-well holes and valleys formed by the slopes of the roof.

Special beams and girders are provided to carry the curtain-walls, cornice and party-wall, their number and size depending on the shape and weight of the former. In a number of cases it has been necessary to use girders built of plates and angles.

Columns.—The columns used are built up of two channels connected either by side-plates or by lattice-bars. Ten-inch channels have been used in all cases, the various necessary cross-section areas being obtained by the different weights of the channels and the different thicknesses of side-plates, or the substitution of lattice bars. The interior columns have side-plates 12 inches in width. The exterior columns have side-plates 21 inches in width and the columns are placed with the longer axis parallel to the face of the building. The columns generally are continuous through one story only, the top of each column ending in a horizontal top-plate of $\frac{3}{4}$ -inch steel which is riveted to column by horizontal angles, and on which the column above rests, the upper column being connected to lower by horizontal angles. In the case of an exterior column the top-plate is generally larger and of special shape to carry at each story the piers that surround the column. As an exception to this, the granite piers carry themselves and the curtain-walls from the foundations, up to the third floor line. Let it be remarked here that what we are calling the first floor is what is often known as the ground-floor.

The basement columns rest on cast-iron stools 12 inches high and with a base $3' 0'' \times 3' 0''$. The shape of the stool has been designed to develop the required strength with as little metal as practicable. The top of the stool is planed and to it is bolted the column which ends in a $\frac{3}{4}$ inch base-plate.

The arrangement of the foundation beams (including the stool) in every case is designed to resist in an economical and safe manner the bending-moments and shears that are produced in transferring the load from the column to the ground; from an intensity of 13,000 pounds per square inch to one of 3,500 per square foot.

The beams and girders are generally connected to the columns by resting on the top plates of the latter and being riveted to the column through the ends of the flanges. The beams are connected to the girders by means of vertical angles riveted to the webs.

Wind-pressure and wind-bracing.—The action of the wind on the building was assumed to be the action of a uniform force of 30 pounds per square foot acting on the whole of any one side, above the fifth-floor line; this line being at the average height of the surrounding buildings. The bending-moments and shears resulting from this action are resisted

First.—By the rigid connections especially designed, between the outside columns, and the beams and channels between them, and by these channels, beams and columns themselves, and by the party-wall to which the steel frame is connected.

Second.—By the general rigid connections between all the columns and the beams attached to them.

Third.—By the partitions, piers and floor arches, the partitions and piers taking up a percentage of the shear and the stiff floor system distributing the shear at that plane over the column system below it.

At every joint formed by the outside columns and beams the bending-moment from wind action was carefully computed, and the connection, beams and column, designed accordingly. As a matter of course the maximum resultant action of dead, live and wind loads, was considered.

The special connections of outside columns and beams were designed to resist entire wind-pressure at 30 pounds per square foot. Any excess would be taken up by items two and three.

MAIN STAIRCASE OF THE SAME.

THE *Brooklyn Eagle* BUILDING, BROOKLYN, N. Y. MR. GEORGE L. MORSE, ARCHITECT, BROOKLYN, N. Y.

THREE stories are rented for offices, the remainder of the building is occupied by the *Brooklyn Daily Eagle* establishment. It is thoroughly fireproof. The material of the exterior is Long Meadow Kibby stone, Perth Amboy brick and terra-cotta. Cost \$325,000.

[Additional Illustrations in the International Edition.]

THE COLONNADE BETWEEN THE AGRICULTURE AND MACHINERY BUILDINGS, WORLD'S FAIR, CHICAGO, ILL. MESSRS. PEABODY & STEARNS, ARCHITECTS, BOSTON, MASS.

[Gelatin Print.]

A HOUSE AT EPINAL, FRANCE. MR. J. BOUSSARD, ARCHITECT.

[Copper-plate Engraving.]

THE key-note of this structure is found in the architect's appreciation of the old Roman and Gallo-Roman method of at the same time excluding from the dwelling-house all injurious exhalations from the building site and warming the whole structure in an even and equal degree. To this end the lower story is carried on a tile floor laid upon brick vaulting, supported on piers, and the space below is used as a heating and ventilating chamber, the current being set up by natural draught; this space has an average height of about one metre. The rooms of the ground-floor are about sixteen feet in the clear and are treated in the Pompeian manner so as

to bring everything into harmony with certain doors and other fixtures which until recently formed parts of the famous Pompeian house of Prince Napoleon which was built in the Avenue Montaigne some thirty years ago after the design of M. Normand. The exterior of this building is of stone and the entire building will cost about \$30,000.

LONGITUDINAL SECTION OF THE SAME.

[Copper-plate Engraving.]

J. & C. SIMONDS & CO.'S BANK BUILDINGS, READING, ENG. MR. G. W. WEBB AND MR. W. GALT MILLAR, ARCHITECTS.

PRINCIPAL DOORWAY OF THE SAME.

WE publish this week two illustrations showing the alteration and extension of the banking premises of Messrs. Simonds, in King St., Reading. The whole of the western half of the old bank has been demolished, and the façade made to harmonize with the other portions, besides being raised. The work presented great difficulties to the architects and contractors, but all have been successfully overcome. Entering from King St., there is on the right a spacious telling-room, with every accommodation for the public, on the left being two large offices for the use of the partners. Over, are floors fitted up for the various requirements of a bank and for a manager's residence, and in the basement is a series of safes. The entrance from the market-place has been retained and improved. A lift runs from the basement to the top story; every floor is fireproof; the heating throughout is by hot water; there is a very complete series of speaking-tubes and throughout a most valuable and interesting feature is the combined electric-light and gas-fitting.

THE NEW ENGLISH PRESBYTERIAN CHURCH, ALEXANDRA ROAD, SWANSEA, ENG. MR. T. G. WILLIAMS, ARCHITECT, LIVERPOOL, ENG.

THE new English Presbyterian Church at Swansea is just completed, at a cost of nearly £3,000. The church is approached by vestibules and porches leading to Alexandra Road. The pews on the ground-floor are arranged in circular form, having a radius taken from the pulpit. The ground-floor with the gallery has accommodation for 650 to 700 persons. All the joinery is in pitch-pine varnished. The windows are glazed with glass of various tints. The walls are built of local stone with Bath-stone dressings. The church contains an organ-chamber, spacious vestry and classrooms and conveniences, and adjoins a large schoolroom, which was previously built. The main feature is the façade fronting Alexandra Road, which has a square tower about seventy feet high, and the tracery windows in the gable, which are in Bath stone.

NEW OFFICES AT FARNLEY, ENG., FOR THE FARNLEY IRON COMPANY.



[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

THE MERCHANT TAILORS' BUILDING: A CORRECTION.

NEW YORK, N. Y., November 6, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Very much to my surprise I find in your last issue of the *American Architect* a photo. print of the Merchant Tailors' Building in the exposition grounds accredited to Mr. C. B. Atwood.

This building was designed by myself and I know it is only necessary for me to call your attention to the error in order to have it corrected in the fullest manner.

Very truly yours,

S. S. BEMAN.

[We regret sincerely the mistake our correspondent brings to light, and will say in palliation of it that we had no reason for doubting the reliability of the two informants who told us that the building had been designed by Mr. Atwood. We hope the subscribers to the International edition will at once turn to our issue of last week and make the correction upon the plate itself.—EDS. AMERICAN ARCHITECT.]

"A DISPUTE WITH A CHURCH BUILDING-COMMITTEE."

October 30, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Your advice as per to-day's issue, I most thoroughly appreciate. In reference to my resignation, I might say that as there is no contract between us, I having been employed as their architect, I can see no reason why they could not discharge me if they so desired at any time, or I refuse to continue to serve them if the circumstances warranted such action on the part of either of us.

That they had the absolute right to do with theirs as they choose, I at no time had the slightest doubt, but I should certainly think

that there was some redress for an architect, when a client so alters his work, architecturally, as to injure his reputation.

Had the committee stood loyally by me no trouble would have arisen, but you can readily understand how natural it would be for them to be led by the advice, and influenced by the remarks and opinions of the builder, who is at the same time one of the Board. The grounds for his emphatic prejudice was my disposition to have the work done at as low a cost as possible, which I have no doubt seriously affected his profits.

Since my letter of October 9, the work to be done by a portion of the masonry in this building, was so exaggerated as to lead one of the building inspectors to condemn it, and although I have been unable to find either engineer or practical builder who has not sustained me beyond question as to the accuracy of my work, this wall was taken down and a new one of much greater thickness erected, without notifying me of the inspector's action, or even giving me an opportunity to explain myself, and when I find such disposition on the part of clients (this builder being one) I can see no reason why I should not resign, it being clearly evident, the more trouble and annoyance given me, the better. Its purpose being to establish an excuse for not paying the balance of my bill.

Yours truly,

TRANSEPT.



A RIVAL TO OAK.—The representative of a well-known firm of builders informs me that he believes that he has hit upon a discovery in a Borneo wood called "bilian." It has a very close grain, and in appearance is not unlike ebony, more especially after exposure to the air. Its main virtue, however, consists in its breaking strain, which is greater even than that of English oak. Moreover, "bilian" is not a particularly heavy wood, since it only weighs sixty pounds per cubic foot against the eighty pounds of boxwood. Further, it seems remarkably free from the propensity to swell in water, and so would be extremely useful for subaqueous piles, besides being most suitable for beams and uprights in domestic architecture. — *London Correspondence Manchester Courier.*

PARAFFINE FLOORS.—M. Burd of Lyons has stopped absolutely the sweeping of floors of hospital wards. He has the floors covered with a coat of a solution of paraffine in petroleum, which makes them impermeable to anything, and gives them a brown tint. A single application lasts two years. Thus prepared the floors stand very well wiping every day with a damp cloth, moistened with some antiseptic solution. The same process can be applied with advantage to barracks, school-rooms and other places. In private dwellings, where the floors are covered with carpets, there should be substituted for the ordinary sweeping the use of mechanical brushes, which, instead of making the dust fly, collect it in special boxes, from which it can be thrown into the fire, the great destroyer and purifier of all germs. This mode of sweeping is especially requisite in the lower stories of houses, since microbean germs are found in greatest number in lower layers of the atmosphere. They are ten times more numerous in the centre of Paris, in the vicinity of the Seine, than on higher ground. In every house, considered separately, the air of the upper stories is incontestably purer and freer from microbes than that of the lower stories. — *Exchange.*

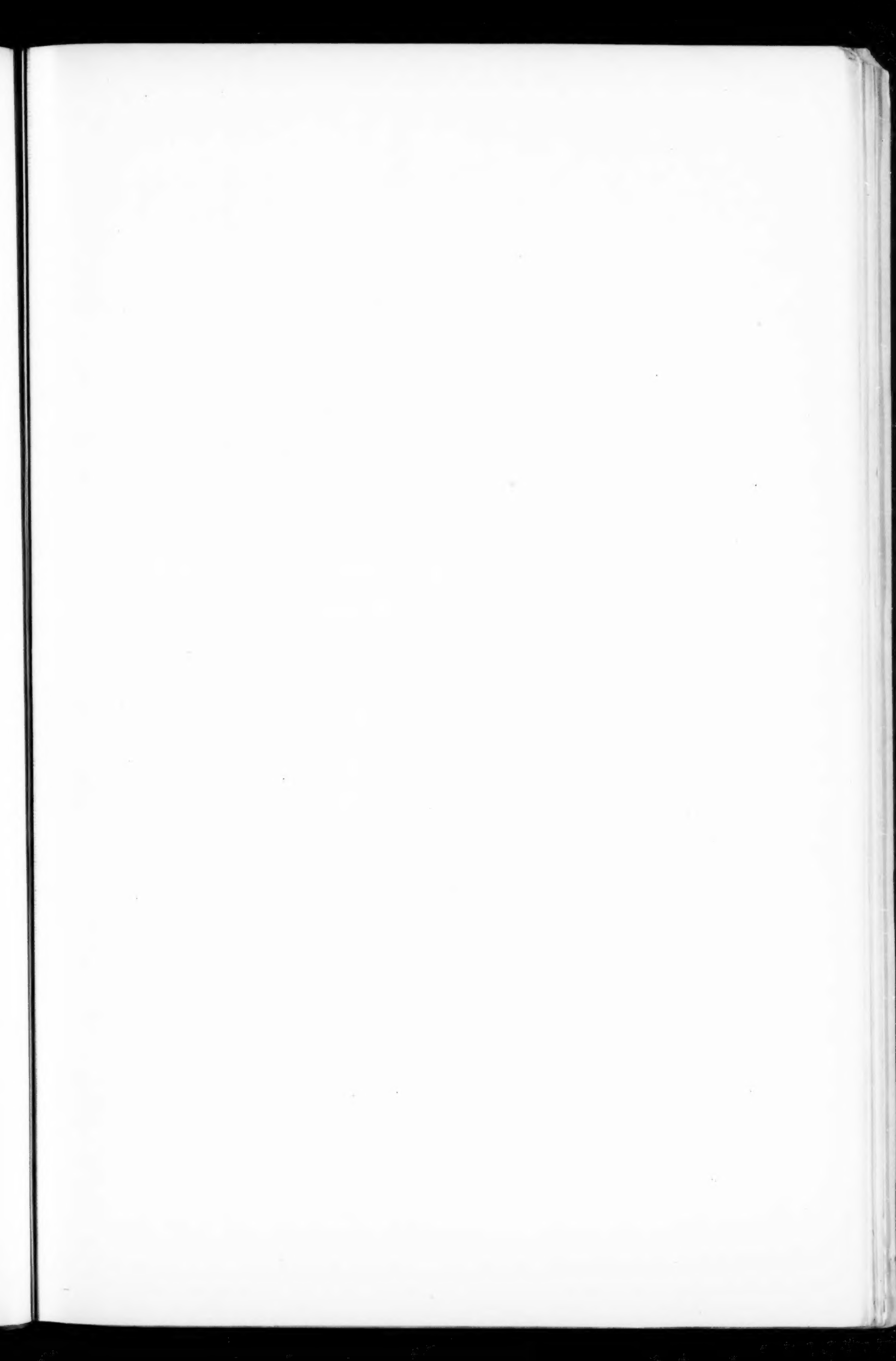
ACOUSTICS OF BUILDINGS.—Like the laws of all other sciences those which regulate the transmission of sound are most simple. They depend entirely upon proportion. Given the height of a platform or bench; to this add the height of a person sitting or standing, and one-half the width of the room. These three dimensions—viz, the height of the platform, the height of the speaker, and half the width of the room—being added together should be the height from the floor to the ceiling. The voice of a person speaking from this position will strike the two side walls and the ceiling at the same moment of time. Reverberation is thus reduced to a minimum, and the result of repeated practice shows that this rule is perfectly successful, even to the extent of twice its width in length; in other words, a double square. This simple law has been adopted in many buildings with uniform success. When a room is as high as it is wide the voice has to travel nearly twice the distance to the ceiling than it has to the side walls, and the consequence is that the auditory receive the second word from a speaker in a direct line before the reverberation of the first word has reached it from the ceiling. The Houses of Parliament are a notorious instance of failure. They are little more than 40 feet in width and as much in height. Could they be made half as wide again as they now are, and the height remain the same, the acoustic qualities would be perfect. In the case of a law court the continuous rise of the platforms for the counsel somewhat reduce the general height of the room, and, therefore, a little excess upon the above rule may be permitted, but if the width of a court be restricted to 32 feet it is recommended that the height should not exceed 27 feet. — *The Architect and Contract Reporter.*

PERUVIAN RUINS.—A magnificent work on the curious ruins of Tiahuanaco on the high plateau of Peru has been published by Wiscott at Breslau. It is by Stübel, who with Reiss published the great work on the necropolis of Ancon, assisted by the antiquarian Uhle. It is a huge folio in two parts, the first containing maps, colored prints, and forty-two photographic plates, the second the greater part of the text. Like former investigators, Herr Stübel thinks that a race of high civilization undertook to erect a religious edifice on these high arid plains,

but were forced to stop before the buildings were finished. The eminence at Ak-Kapana was a natural one, not an artificial mound. Stones weighing 100 and 150 tons were brought from great distances across several inlets of Lake Titicaca. The remains are absolutely unique and are megalithic, like Stonehenge in England, but represent a higher form in which true architecture must be admitted. Stübel believes that the carved doorways and columns show that the style of architecture was developed in a wooded region and abruptly transferred to stone on the plateau where no trees are to be had. The great question whence the people with a style of wooden architecture came, is considered at length, and the opinion is expressed that they were the Aymaras, elder brothers of the Quechuas or Peruvians proper, of whom the Incas were the rulers. They are the true aboriginal holders of the Titicaca basin, and they may have come from wooded lands to the south. The Quechuas overcame the Aymaras before the Spaniards arrived, and it is supposed that Ak-Kapana then became deserted, the building or buildings being still incomplete. The finds at this early religious centre include a drinking-glass of pottery shaped like an hour-glass, found on Titicaca Island; two or three statues in stone, and columnar shafts rudely shaped like the human figure. Some attempt is made to explain the symbols carved on the famous doorway, made of a single block of stone, and the dressed stones scattered over a wide district are used to reconstruct in imagination the unfinished temple. — *N. Y. Times.*

THE ELGIN MARBLES.—Every year or so it is rumored in Athens that we are going to send these stolen treasures back. England is the only nation in the world which has even been known to surrender valuable territory unthreatened and simply on sentimental grounds. If England gave up the Ionian Islands, they argue, worth several millions sterling, why should they not give back the marbles, which, if put up to auction in lots, would hardly fetch a million. Captain Trant, writing in 1830, said that it was reported that the King of Bavaria, who was a great Philhellene, had expressed his intention of making his Glyptothek at Munich disgorge the Æginetan marbles, and restoring them to Greece. He rightly thought it problematical, and they are, of course, still at Munich. Oddly enough, the people who abuse us most for having robbed the Parthenon are not the Greeks, but the French, who have done more of that kind of thing than any nation since the Romans. This occurred to Chateaubriand (who confessed to a certain amount of mild spoliation himself), and he attempted to contrast our thefts with those of his compatriots; his first distinction that they did not pull down to take away is plausible, but will not bear examination, as the bare places they left behind them in Italy were quite as great eyesores, and the precious prey did not stand in so great need of protection; his second distinction, that in their case the glory of France required it, smells too much of vanity for us to have anything to do with it. The question of the restoration of the Elgin marbles is one of artistic expediency. Few Englishmen would maintain that we had a moral right to keep them longer than is necessary in the interests of art. The first question to be decided is whether they are more useful to the world in London or in Athens. If it be in doubt, the original ownership of Athens should shift the balance of proving the superior advantages of London on to us; if it be admitted that Athens is the more suitable place for them, the question resolves itself into selecting the right moment for their restoration. This will obviously be when they will be in no danger from either a foreign enemy or a revolutionary mob. I am inclined to answer the first question in favor of Athens. To the second I should reply that as long as Deleyannism exists the marbles must stay in the British Museum, which means that, before they go, the criminal statistics must show a very marked improvement, and the drachma must get to within ten per cent of its nominal value. — *Greece under King George,* by Bickford Smith.

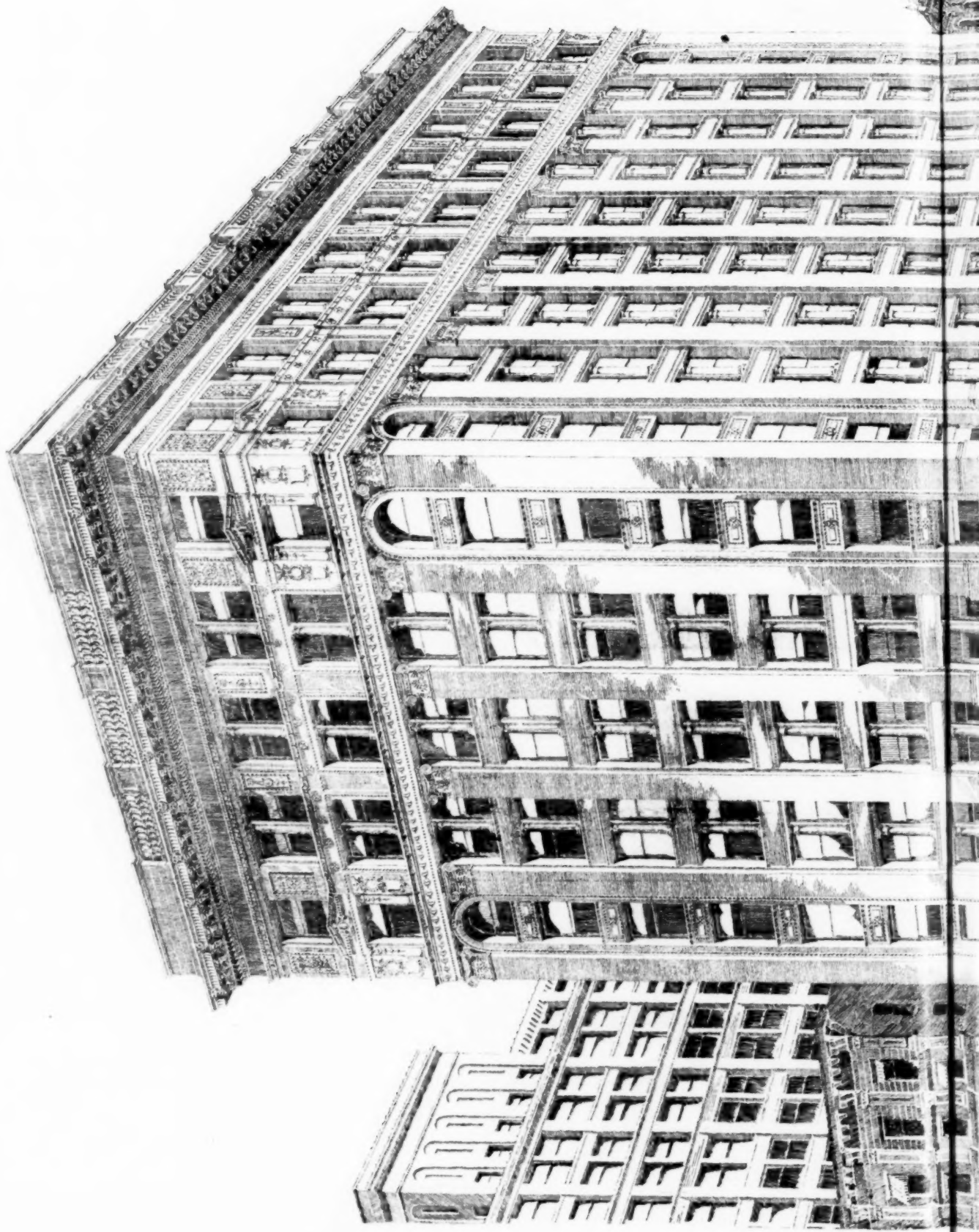
DEFLECTION OF THE ROOF OF THE TOWN-HALL AT LEWES, ENG.—There is some apprehension in Lewes about the stability of the new municipal buildings. The town councillors do not appear to be more confident than other people that an accident may not arise. At the meeting on Wednesday several questions were asked on the subject. In reply it was admitted that there was a weakness in the building and the walls had bulged out, but rumor had exaggerated the mischief. The roof of the assembly-room is also supposed to be unsafe, and the committee, in order to create some confidence in the minds of the inhabitants, called in Mr. John Johnson, architect, of London. In his report, dated August 29, Mr. Johnson says that his opinion, based upon upwards of thirty years' experience and the erection of several roofs of similar span is, that the deflection existing is due to the weight of the tiling (about three times that of slating) and the fixing of struts not executed as described on the drawings, thus exerting a strain upon the principals which reacts upon the walls. On stretching a line from end to end on the west side he found that the sill of the central gable window is 2 3/8 inches beyond the sills of the two end ones. Externally this is very obvious, but internally nothing is visible excepting very slight cracks in the plastering of cove, etc., proving that most of the deflection took place when the walls were green, before the plastering was executed and that very little movement has since been visible. Mr. Johnson considers no danger exists, especially as it must be borne in mind it is next to impossible to execute a collar-braced roof of great span perfectly rigid, owing to the elasticity and shrinkage of timbers of large scantlings. In this case the Corn Exchange buttresses up one side, consequently the strains and movements are thrown to a great extent on one side only. The timber is of good quality and he cannot complain of the workmanship as the joints are fairly fit, considering the extraordinary season of hot weather. To relieve the load on the gables the architect proposes support which Mr. Johnson thinks is judicious, and he suggests, to strengthen the joints, that six-by-one-half-inch steel plates be bolted on each principal at the junction with tie-beam. On these comparatively small matters being carried out, Mr. Johnson believes that neither heavy falls of snow nor severe gales will have the least detrimental effect upon the structure. — *The Architect.*

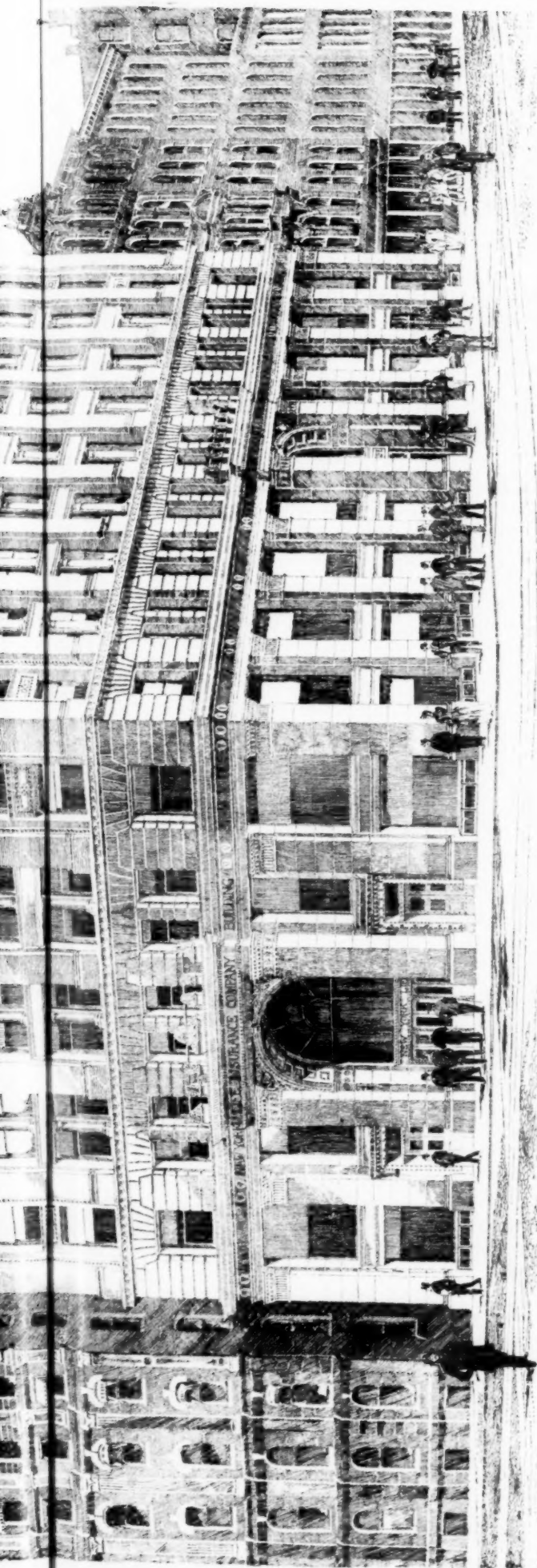


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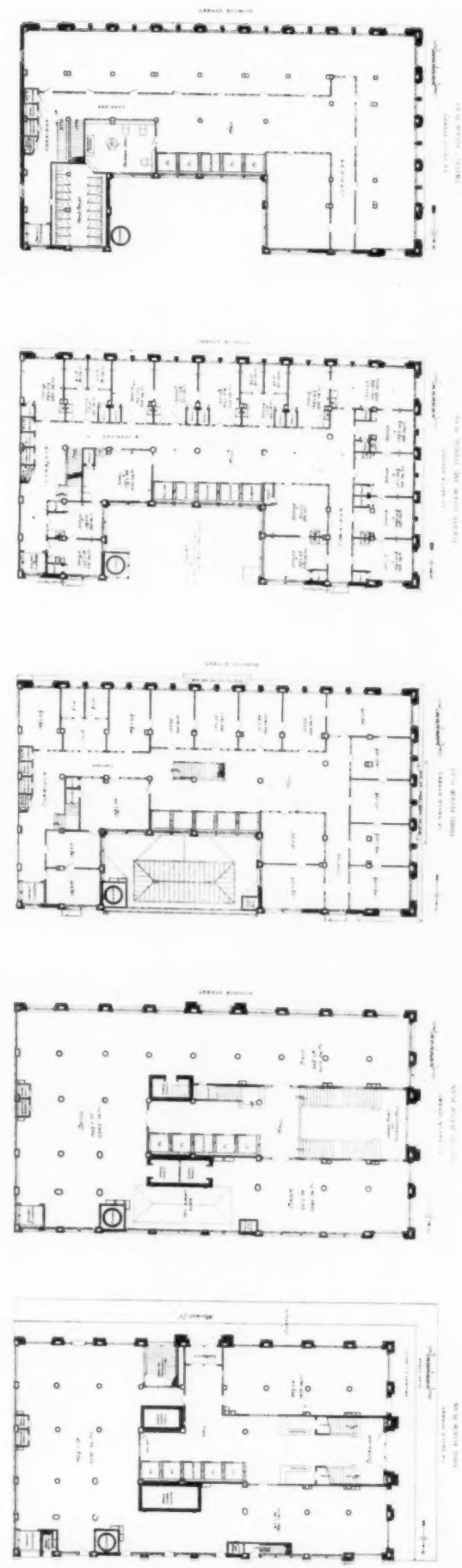
AMERICAN ARCHITECT AND BUILDING NEWS. Nov. 11, 1893.

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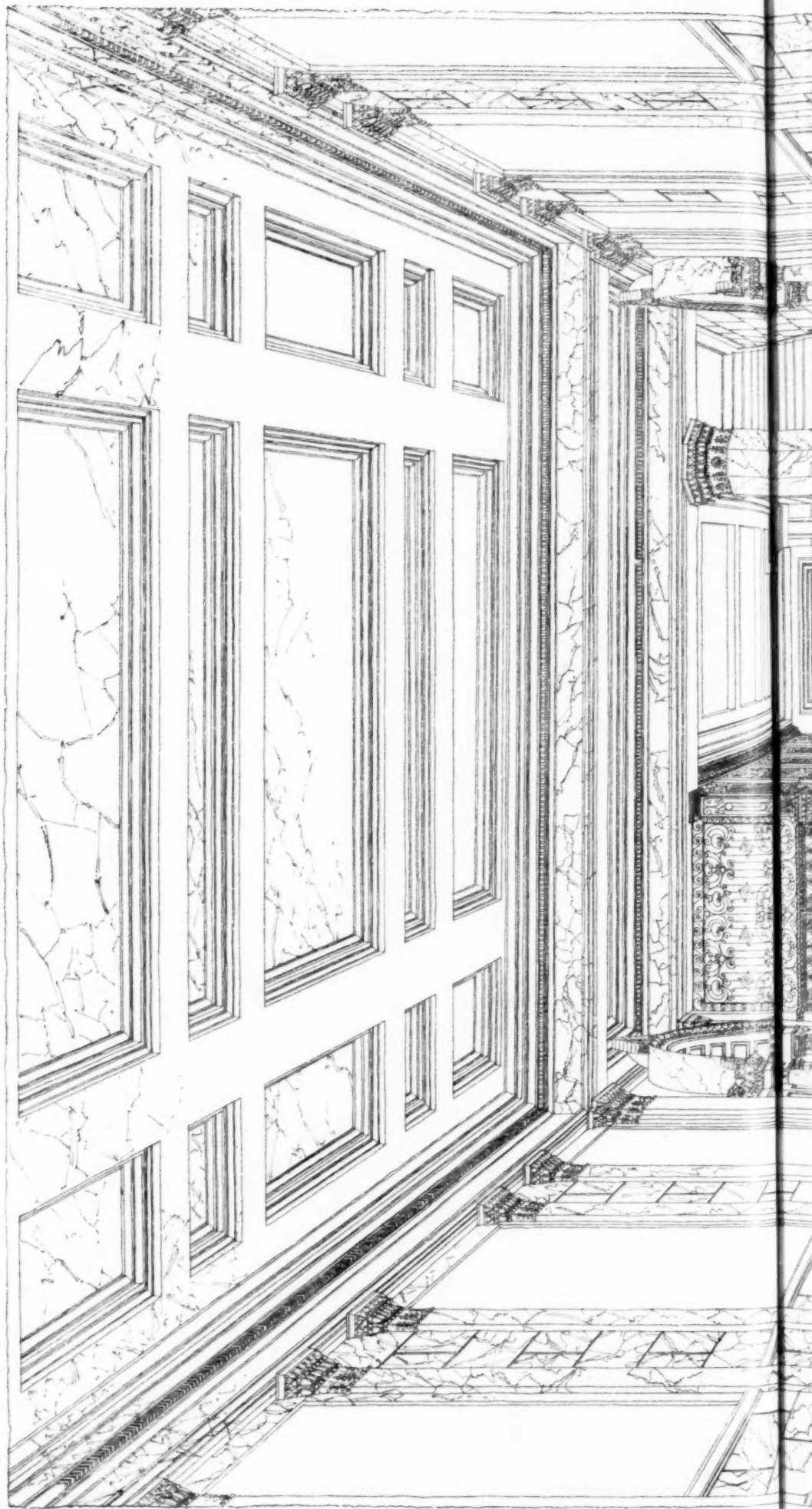
NEW YORK LIFE INSURANCE COMPANY BUILDING - CHICAGO - JENNEY & MUNDIE ARCHITECTS

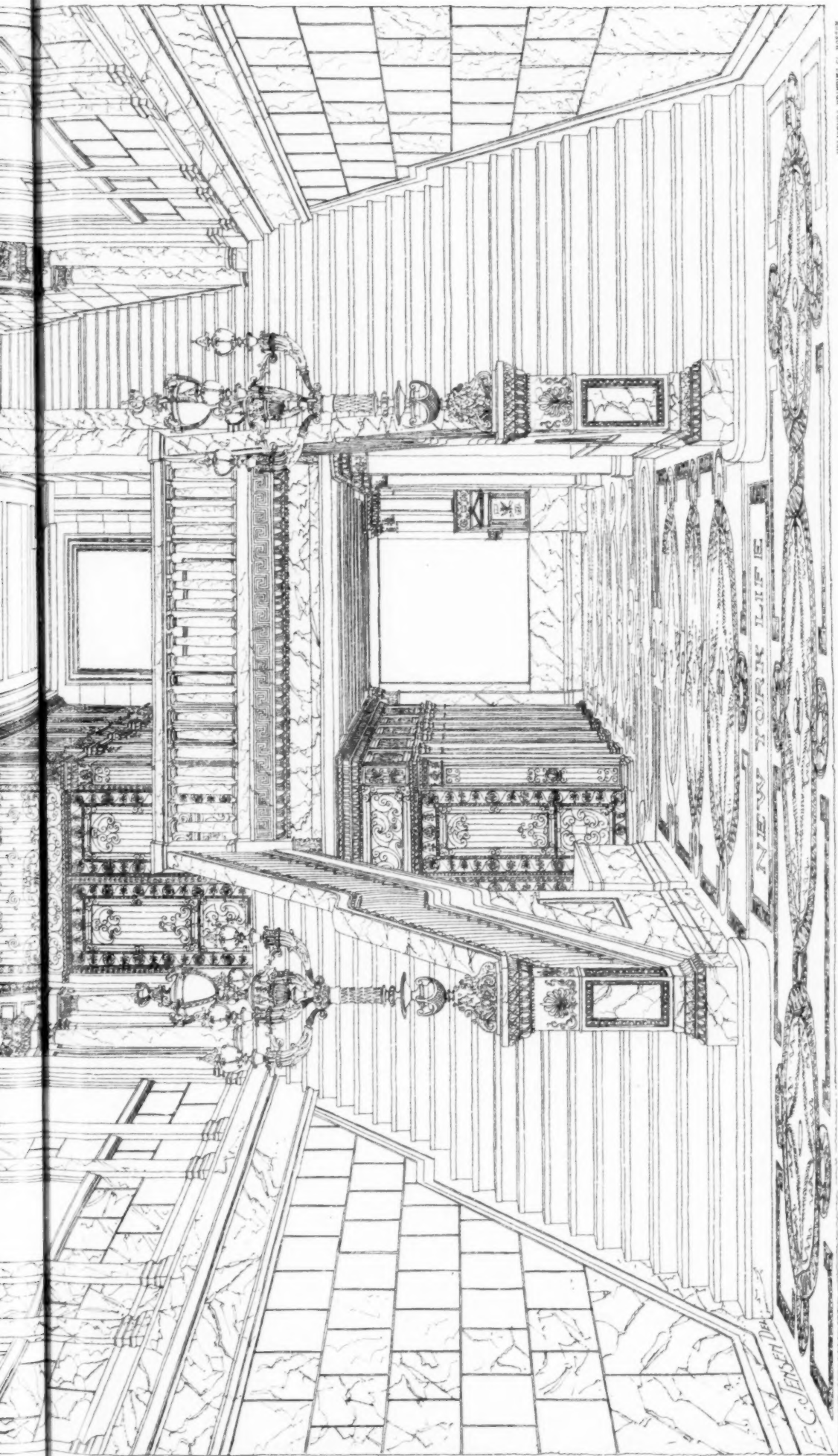


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COTTAGE OF CHARLES M. HEMENWAY, ESQ., SOMERVILLE, MASS.

SAMUEL D. KELLEY, Architect.

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THE "EAGLE" BUILDING, BROOKLYN, N. Y.

GEORGE L. MORSE, Architect.