

neighbors, and the proffered assistance of one who has experience, leisure and zeal. Have we not amongst us a sufficient number able and willing to undertake the active responsibilities necessary for organization and agitation until success be attained?

You, sir, deserve the thanks and co-operation of all interested, for the sympathy you have shown in your columns toward such a movement, and I trust you will not tire, but continue to incite to action those who perhaps only await leaders and an invitation to assemble.

Yours, &c.,

M. B. AYLESWORTH.

Toronto, June 9, 1888.

### TORONTO ARCHITECTURAL DRAUGHTSMEN'S ASSOCIATION.

THE regular weekly meetings of the above association have been discontinued until the early autumn. We understand an effort is to be made to get the members together occasionally during the summer and organize sketching parties. This is a very commendable idea, and one which we hope to see carried out. A great deal of pleasure and profit might be derived by the students from sketching details for instance of some of our best Toronto buildings.

### TORONTO ARCHITECTURAL GUILD.

THE ninth monthly dinner of the Architectural Guild, of Toronto, took place on Thursday evening, the 14th inst. There was a very large attendance of members, and a very pleasant evening was spent. Business of great importance was transacted, and which we hope will result beneficially to the Guild.

The principal matter under consideration was the conditions of the proposed competition for the Board of Trade building. The opinion of the majority was that, taken as a whole, they are exceedingly good conditions, and that the competition should result satisfactorily to all concerned. The objections raised did not really refer to the conditions. Very general satisfaction was expressed that Prof. William R. Ware, of Columbia College, had been appointed to act as the professional adviser to the Building Committee, and that he had consented to act. We believe that the Building Committee, when the competition is over, will be satisfied that their action in requesting Prof. Ware to act as professional adviser was the best policy which they could adopt to bring about a satisfactory competition.

The Guild also decided to keep up the monthly dinners, but that during the summer months they should be held at some of the many summer resorts which have sprung up about this very rapidly growing city.

The curriculum of the new School of Practical Science which it is proposed to establish at Kingston, Ont., will include architecture.

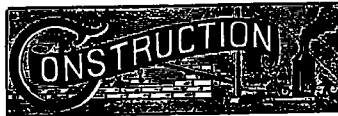
Fifty years ago last Wednesday, says the *Ontario*, the corner stone of the Belleville court house was laid by the Masonic order, and the occasion was a big demonstration in what was then a small village on Meyer's creek.

A Brantford paper facetiously remarks that their city hall would easily pass for a 12th century ruin, while a Hamilton contemporary declares that the ambitious city has some archaic verandas whose origin judging by their appearance, must date back to the time when *Rameses II.* was making mud pies on the banks of the Nile.

Several changes in the design for the new C. P. R. station at Montreal have been decided upon. The height of the tower will be increased from 100 to 132 feet, and will enclose a clock. Trains will arrive under cover, and the iron covered sheds in which passengers will alight, will be warmed by steam.

One great advantage which a village has over the city, says Archibald MacMechan in *The Week*, is that the building contractor has rarely exercised his mischievous activity there. The villager builds his own house to suit himself, as his needs, tastes, circumstances dictate; and so where you do not get picturesque effect you get the first element of it at least—variety.

The United States Government contemplates the erection of a large number of new post offices and other public buildings, the expenditure on which would be in the neighborhood of \$21,000,000. The American Institute of Architects and the Western Association of Architects are endeavoring to have some of the designs for this work thrown open to public competition. They claim that the Government's supervising architect and staff could not possibly do such a vast amount of designing, and even if they could there would not be secured the variety of design which is so desirable and which an open competition would ensure.



### FOUNDATIONS OF BUILDINGS IN MANITOBA AND THE NORTH-WEST.

By R. BOURNE, C. E.

TO refer to the first importance of this subject to a builder in any country is needless; but in the vast and rapidly filling territories named above, the advantage of gaining a thorough and well-learned knowledge of this matter can scarce be over-estimated, especially as the theory and practice hitherto had in it are both naturally crude and experimental.

Further, the difficulty of arriving at a right conclusion as to the best kind of foundation to be used here is much increased,—1st, by the poor supply of Nature's foundations; and, by the nature of the climate; 2nd, by the expense attending experiments in this direction. For these reasons several of the most costly and carefully erected structures have seriously failed from the sinking of the foundations, generally under a limited part of the building. As to the first impediment named, viz., the natural strata, it may be well to state that they are: 1st, a rich black loam, in depth from 6 to 12 inches; 2nd, a yellow clay of a greasy nature, from which a good kind of brick is made, and which, from the character given to it, often causes land slides on the river banks, its depth being from 10 inches to 3 ft.; 3rd, a toughish blue clay, from 10 ft. to 30 ft. in depth; 4th, a coarse gravel, suitable for concrete, and sometimes containing boulders of some size, some 16 ft. deep; 5th, a waterbearing quicksand, usually at a depth of about 48 ft. from the surface.

This description applies particularly to the land in and around Winnipeg. In other parts of the country much firmer strata, i. e., coarse gravel or hard clay, are met with at or near the surface.

It can be readily seen that strata, such as named, present a problem hard of solution to the builder; for, even after sinking through the loam and yellow clay to the blue, a "pocket" of the yellow enemy may lurk still at a short distance underneath, when pressure comes upon it, especially if beneath a corner, may slide away, and cause ugly cracks in the building. In fact, an instance just comes to mind where this has taken place in the costly and carefully founded residence which a city merchant has lately built close to the "Main street." This experience, which is rather common, makes it wise to test a foundation by boring, after sinking to the needed depth, and if one of these mischievous "pockets" is found, to use piles where it occurs.

Another injury caused by this usual enemy is the land slide on the river banks (as stated before), thus making it very difficult to erect permanent warehouses, etc., near the water's edge. In fact, the only support for such to be relied on is, of course, the pile, which has also been generally used here in the early history of the city in the erection of heavy buildings anywhere.

As to piles, the favorite support here for a number of years, it may be said that they are no doubt very reliable, when long enough and driven according to a proper specification. This is now known to be very necessary; as the men in charge of the work having been hitherto required to drive piles merely of a certain length, they have often driven a pile through a yielding clay no further than its neighbor, which happened to pass through a tougher medium alongside. This latter should not occur with timber of sufficient length, and required to sink to a certain depth on the last strokes of the hammer. An objection, also, which applies to piles here as elsewhere is, that sometimes the resistance to sinkage is almost wholly owing to friction of the clay on the sides of the pile. Now, the trickling of water down its sides, especially in a wet season, may so far loosen it as to render it unfit to bear its due pressure.

For the reasons given, and on account of their cost as compared with other supports, piles have been very much left out of use of late years, and plank foundations preferred. They are found to do their work well where the boring mentioned above has been used, the plank of sufficient thickness, and laid at least twice transversely, and masonry containing large flat stones built upon to a secure height.

(TO BE CONTINUED.)

### HAMILTON.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

SINCE last month's report of the building progress of the Ambitious City and its environs, which was certainly meagre enough, consequent upon the conduct of the unions, I have observed that a better state of things will in all probability prevail during the remainder of the season. It is to be fervently hoped that working men will in future "let caution mark the guarded way," and profit by the experience they have learned within the last few months. Gradually the work is coming on, but very gradually. So far the Hamilton Building Inspector's books record the following buildings to be erected for the month of May—(that is to say it gives the number of buildings, where to be built, but not the cost of erection, nor the proprietor's name, for which contractors who enter the report should be responsible. I understand the building record is better and more creditably kept in Toronto, and perhaps in future it will be so here:—J. McDonald, 1 a storey brick dwelling, York street, between Queen and Locomotive street, value, say \$1,200; S. S. Ryckman, 2 a storey houses, Heyburn street, near Mauld, cost \$2,000; Chas. Bolton, 2 a storey houses, Murray and Catherine streets; C. Peebles, two a storey houses, Magill street; Mr. Milne, two a storey houses, James, near Hunter street; W. James, two a storey houses, West Avenue; Mr. Tyson, two a storey houses, Florence street, between

York and Pearl streets; Mr. Sullivan, brick house on Hunter street, between Cherry and Wellington streets; Mr. James, brick a storey house on West Avenue; Adolph Farewell, block of rough cast dwellings on Napier street; W. Richards, a storey brick house on Spring street, between James and Heyburn streets; Mr. O'Brien, a storey brick house 20x28, corner of Victoria Avenue and Evans streets; Mr. Noxon, hotel on King William street; Mr. Howell, a brick house on Queen street south.

In addition to the above some very fine villa residences are being erected on James street South and East Avenue, besides which many more are in contemplation, to be erected on selected lots in the extreme limits east and west, which can now be reached by the street railways. In most of the new residences provision is being made for either hot air or steam heating instead of the ordinary heating by stoves. Nearly all of the stove manufacturers here are perfecting new and improved radiating furnaces for dwelling houses.

### MONTREAL.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

The building trade is very brisk this month, and all the larger works are being pushed forward while the fine weather lasts.

A large extension is about to be added to the Windsor Hotel. The management have secured a large vacant lot adjoining, on which the addition will be built; it will consist of a large hall and concert room 140 feet by 60 feet, with galleries at each end.

The Montreal Gas Co. have ordered a new gasometer from Messrs. Lindlaw of Glasgow, to replace the one recently blown up at Hochelaga.

The residents of Verdun are vigorously opposing the erection of the new Protestant Insane Asylum, being persuaded that serious unsanitary results would ensue to the Verdun municipality as well as to the city of Montreal.

Two new elevators have been placed in the court house by a New

York Captain, of the fire brigade, has been appointed assistant Building Inspector, and will no doubt make a competent one, as he was engaged in the building trade prior to joining the fire department.

### OWEN SOUND.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

THE North American Chemical Mining and Manufacturing Company, of this town, have discovered a large deposit of marl with clay underlying, covering several hundred acres, which they have secured, and are now organized with the intention to turn out on a large scale Portland cement. They have had the material analyzed, and it proves to contain all the ingredients for the production of a high grade Portland cement. The Company have erected "test-kilns" recently, and have succeeded in turning out a cement that cannot be excelled by any of the leading Portland cement makers in Germany or England. The directors of this company are Messrs. H. J. Doyle, Wm. Robinson, John Corbett and R. P. Buchart, of Owen Sound, and Wm. Heard, contractor of Chatham, Ont.

Architect J. C. Foster reports the following work he has this month: Brick residences for Mrs. J. W. Layton, cost \$1,895, contractor, Chas. Crothers; additions to Brockhouse school, cost \$830, contractors, Gordon & Sinclair; pair of semi-detached brick residences for Mr. Jno. Stephens, cost \$2,800, contractor, D. L. Binns. Plans are prepared for additions to American Hotel, and J. M. Kilborn's houses; also for a residence, brick, with stone trimmings, for W. S. Wolfe.

Contracts have also been let for Mr. Jos. Robinson's block of stores and music hall, Warton, Ont., for R. Washburn and Simons & Hill, contractors, cost about \$5,000.

400 yards of asphalt walk will be laid in Galt this season.

Work has been commenced on the building for the new Methodist book room and publishing establishment on Richmond street, Toronto. The site cost \$30,000 and the estimated cost of the building is \$70,000.

Messrs. Harris & Walton have been instructed to prepare plans and specifications for the improvement of Albert College, Belleville, towards which Prof. Dyer has raised \$2,400 by subscriptions.

Mr. Baker, engineer of the Forth bridge, and Mr. Jos. Ross, of Quebec, after investigation, have pronounced the tunnelling of the Detroit river as being feasible, and a syndicate known as the Michigan and Canada Tunnel Company representing, it is said, more than \$100,000,000 of capital, has been formed to carry out the work.

We hope, says the *American Architect*, that some one is keeping notes of all the building accidents in which Portland cement plays a part. As used by inexperienced persons, it is certainly a dangerous material. Our professional brethren abroad have learned to take various precautions against over-heating, under-burning and other defects, of which we know little, and as we, presumably, often get the cement shipped to us which the foreign engineers have rejected, it is all the more important to be on our guard.

When a succession of door entrances are in line with each other says the *Builder and Woodworker*, a far better effect is produced by their being low arched instead of being cut off above by horizontal lines. Arches springing directly from the joints have not the meagre look of those resting on pillars; the curve, too, contrasts well with the straight rods of portieres, and may be fitted with elegant metal open work protected by glass.

The method of sinking a shaft through sand and by freezing the sand and excavating it like rock has recently been carried out in Belgium. Large iron tubes are sunk in the sand about three feet apart, and in these tubes smaller tubes are inserted, through which circulates a solution of chloride of magnesium. The sand is frozen for a distance of three feet around. It resembles rock, is hard and compact, and can be excavated in the same manner as rock. It is probable that the process can also be used to great advantage in the digging of foundations where water and sand often make trouble.