

## CHARACTER SKETCH.

E. H. KEATING,  
CITY ENGINEER OF TORONTO.

"We put too much faith in systems, and look too little to men."—B. Disraeli.

PERFECT as may be the plans laid and the system under which work is performed, without men of character and determination to carry out the work, failure is very likely to follow. Many an important undertaking has been spoiled because the man in charge has lacked, not so much the knowledge, but the administrative talent enabling him to bring it to a successful issue. And as one views the administration of municipalities and governments, this seems to be a marked weakness.

These were conditions that were widely discussed, when in 1892 the citizens of Toronto found it necessary to appoint a City Engineer in succession to Mr. William Jennings, who had resigned from this position. The experience of the past three years would lead to the conclusion that in fixing a choice on Mr. E. H. Keating, no mistake had been made, and the weaknesses that in some respects had been feared are not likely to develop in this appointment.

Mr. Keating is a Nova Scotian by birth, and some of the circumstances that influenced him to leave Duluth, Minn., and accept the office of City Engineer of Toronto, furnished evidence that he was possessed of a strong Canadian sentiment, and that love of country to no small extent induced him to return again to the country of his birth. Mr. Keating was born in Halifax, N. S., in 1844. He was a school-mate of the late Sir John Thompson at the Common School, and later at the Free Church Academy. He completed his education at Dalhousie College, entering shortly after that into the calling that he had chosen, serving for some time under George Wightman, the government engineer.

Railroad building in Canada has proven a useful field of education for many of our best civil engineers. Mr. Keating's predecessor, Mr. Wm. Jennings, owed no little of the success he has attained in after life to the opportunities for development in his profession that were offered during his connection with the Canadian Pacific Railway. Mr. Keating took part in the survey of the Pictou Railway in 1867, under that famous engineer, Sandford Fleming. A little later he was appointed assistant engineer of the Intercolonial, then in process of survey. For a short time he was draughtsman on the Windsor and Annapolis, and then he returned to the Intercolonial during the construction period.

In 1870, when the work of surveying was entered into on the highlands between Hudson Bay and Lake Superior, for the Canadian Pacific, he again engaged under Mr. Sandford Fleming, and did good service in this particular work. In the same year the position of City Engineer of Halifax was offered him and accepted. This position he held from 1871 to 1890, having charge of the construction of many important civic works, particularly the water-works and the Halifax graving dock. These years were useful in obtaining a knowledge of civic management that stood him in good stead in positions of a similar kind, though of an enlarged character, that he held in after years. His arrangement with the City of Halifax enabled him to engage in other work aside from the city practice, and evidence of his skill and ability in engineering directions is scattered throughout the province of Nova Scotia.

In 1890 the people of Duluth were in want of a City Engineer, and the position was offered to Mr. Keating entirely without solicitation. He accepted it, remaining there until July, 1892, when he became City Engineer of Toronto. The reluctance with which the citizens of Duluth severed the official connection was a high compliment to his sterling worth and splendid abilities.

Mr. Keating's work in Toronto during these three years is before the people. Some of the most important undertakings en-

tered into by the city have been completed within this period, under Mr. Keating's direction. The changing of the street railway system to electricity and remodelling the water-works department take a first place among these. It has called for vigorous watching to see that the arrangements between the Street Railway Company and the city have been faithfully carried out, but Mr. Keating has been equal to the occasion. The water-works plans have not really reached the ideal that the Engineer has before him. He believes that a tunnel, such as was described with some detail in the ARCHITECT AND BUILDER two months ago, is necessary to the success of the system. The citizens by their votes have declared against this, though there is no reason to suppose from any want of confidence in the Engineer, but rather because of the heavy burden of taxation that is being borne by them at the present time, and, perhaps, not without some misgivings, though they believe the Engineer to be a strong man, that his municipal advisers are not all possessed of the same measure of back-bone.

As the executive head of the most important department of civic management, Mr. Keating has shown himself possessed of that tact and diplomacy necessary to one occupying a place of this kind. He has also proven himself eminently successful in dealing with his subordinates. "The great art of commanding," said Napier, "is to take a fair share of the work," and Mr. Keating's success as a commander is due, no doubt, in a good degree, to the readiness with which he himself takes hold of the work of the office.

Personally the City Engineer is a very agreeable gentleman. Not given to much talking, he is at the same time always approachable and pleasant. With Wellington he can say that his watchword is "Duty," and to the faithful carrying out of this, other matters must be subordinate.



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## THE ESSENTIALS OF GOOD PORTLAND CEMENT.

At a recent meeting of the Society of Engineers a paper on Portland cement was read by Mr. D. B. Butler. The author stated that the chief chemical components of a good cement ranged as follows:—Silica, from 20 to 28 per cent., average 24 per cent.; oxide of iron and alumina, from 8 to 14 per cent., average 11 per cent.; lime, 58 to 65 per cent., average 61.5 per cent. These ingredients constituted about 96 per cent. of the

whole, the remainder being made up of small proportions of magnesia, sulphuric acid, alkalis, &c. With respect to soundness, the usual test is the moulding of a thin pat with a minimum of water. This pat is allowed to harden on a glass slab, which it should do without cracking. This, the author says, is not altogether reliable, as he had known cases where, though the pat remained sound at the end of seven days, it went to pieces later on. He therefore advocated Mr. Fajja's test, which consisted essentially of subjecting a freshly-gauged pat to a moist heat of 100 deg. Fahr. until set, and then placing it in warm water at 115 deg. Fahr. for 24 hours. A pat which stood this test without blowing showed a reliable cement. The edge-runner mills, which were now being largely substituted for stones, did not, he considered, give so large a proportion of the impalpable powder, which is the essential part of the cement, so that a cement ground by stones, and leaving a 10 per cent. residue on a 50 by 50 sieve, was equal in cementitious value to one ground in an edge-runner mill, leaving but half as much residue on the same sieve. From a number of experiments Mr. Butler concludes that the time of setting is less the higher the temperature. Some of the samples tried, when mixed at 80 deg. Fahr. set in half the time required at 40 deg. Fahr., and with other specimens the difference was even greater, and the result was of the same character whether the specimens were tested for initial set or for set hard.

The Canadian Granolithic Company, Ottawa, are putting down a granolithic sidewalk on Clarence and Wellington streets, Kingston.