

P R E F A C E.

Civil Engineering in England received its tone from the days of George Hudson. Fostered into life by the original railway-*mania*, it held in contempt all considerations of the economical. The temper of the profession at home was shown by an associate of mine twenty-seven years ago, on the Great Munster Railway of Ireland, who met my remark that he could cross the River Deel half a mile up-stream by an ordinary bridge, with the reply that he had selected the crossing lower down in order that the construction should be of a magnificence to give him "immortality!" Educated in that school, my views had, it is true, undergone sobering by subsequent service as an Engineer under the Imperial Government; but had left me when I left home to practice in the United States, a great deal to learn and to unlearn.

The limit of means in construction addressed itself to me for the first time in America. It pressed itself there upon my acceptance as even the controlling element in railway design. Rivalries of the carrying-trade operate in the United States under circumstances which bring considerations of transportation so forcibly upon the attention of the thoughtful Engineer, as to place their study and application amongst his most important duties. A service of many years as Chief Engineer on several great railways of that country having given that development to my professional thinking, I attempted, on transferring my practice back after a long absence to Canada, to point out in the paper reproduced here the causes of the misfortunes of the Grand Trunk and the means by which those misfortunes may be remedied.

The original form of this pamphlet was placed about the close of May, 1875, in the hands of the publishers of the *Canadian Monthly*. The promise of those persons that it would appear on the first of July, was broken. The publication was put off from month to month until the following October, under a series of remarkable evasions. In the meantime my attention was directed to a similarity of a group of facts in my manuscript to a group in a letter from a railway-speculator of this city, which had just appeared in the London