

to such a depth? This very question gives us a clue to one factor at least in the estimate of the powerful ice-mass which, coming from the West or W. N. W. struck down upon the shales and limestones of the formations here to be found. It also gives us data to estimate its thickness. The occurrence of striated rocks at the top of old Barrack Hill, where the Parliament Buildings now stand, shows that as that cliff is one hundred and eighty-seven feet above the level of the river, and over two hundred feet above the level of the bed of the river, the mass must have been much over two hundred feet. Further, in order that a mass of ice or a glacier carrying boulders and detritus—*moraine-profonde*—can groove and polish the rocks of a district to such an extent as was the case here, the superincumbent weight and attending pressures must have been enormous, and from what is known of present glaciers, whether in alpine or arctic regions, we know that its thickness must have been very great. A fair estimate, we believe, of the thickness of the glacier or *mer-de-glace* extending over our city and its environs during the glacial epoch must have been very little short of one thousand feet, if indeed that number is not too small. The erosive or denuding force of glaciers has as yet only casually been touched upon, for when we take into consideration the millions of tons of material which have been removed from even the small area about our city, it is marvellous to know where it all went. You can hardly find a loose rock or boulder in the fields without seeing written upon it indubitable marks of scratching and grooving, and, along with millions of others were held firm in a mixture of cementing clay and sand (to a small extent) carried forward upon the floor of the glacier and ground one against the other, at times, to such an extent that all angularities and rough points were removed and the boulders left smooth and polished. The striations, grooves and polished surfaces of rocks which up to this date attest clearly to the fact of the existence of those glaciers, besides the boulders themselves, may be seen not only in the places already mentioned, but at the corner of Sussex and Rideau streets, where there is an interesting exposure.

The effect of these glaciers upon the softer shaly strata of our neighbourhood is clearly shown in such a deposit of the Utica shales as is met with at Cumming's Bridge, on the Rideau River, or at the corner of