

Maria and O'Connor streets, some 12 feet below the surface of the roadway. At these two places, whilst the shales of the Utica formation also occur *in situ* and undisturbed at a greater depth than is visible in either section, the uppermost measures of the section exposed and examined cannot certainly be said to be strictly *in situ*, as the beds are tilted at every conceivable angle, crushed and broken, and in the overlying glacial deposits are to be found some of the boulders themselves which assisted intilting and disturbing these once horizontal measures.

There occur a vast number of faults and dislocations in the measures of the Trenton and other formations about Ottawa, great breaks, which at times, run more or less parallel to each other and were the result of great pressure brought to bear upon the beds in question. Whether these faults and breaks are due to disturbances which took place about the close of the Silurian Age, or at the introduction of the Devonian, when Rigaud and Montreal mountains, and other similar volcanic or intrusive masses, were ejected amidst great perturbation; or whether some of these faults were not in part due to the enormous pressure which the great ice-mass exerted upon the strata in later glacial times are questions which, though readily suggested to one's mind by the phenomena examined, do not find so ready a solution. Having now examined the number, direction, movements, thickness and the erosive power of the glaciers during this Great Ice Age, having very cursorily glanced at the results which were effected in giving to the country the general appearance which it possesses at the present day, there remains to find out what are the materials and under what conditions they were deposited.

The masses of boulders, also termed "boulder clay," "*moraine-profonde*," &c., unlike both the underlying older and overlying newer deposits are not stratified, *i. e.* they have no divisional planes of stratification or true bedding. Pebbles of various sizes and of every kind of rock in the district, usually rounded and smooth, held together or cemented by an argillaceous paste or clay with a certain admixture of arenaceous material derived from the more finely crushed *detritus* and *debris* at the bottom of the glacier, form the lowest division of our Post-Tertiary deposits. These "boulder clays," as they are appropriately termed, have a very large percentage of boulders in them, the