

common term. As the point is of much interest, however, it should be kept in view.

4. Above the lower clay deposits, or resting immediately (where these are absent) on the foundation rock of the country, we meet with a series of sands and gravels of evidently northern origin, containing boulders of gneissoid and other rock, and alternating occasionally with beds of clay, in which northern boulders are also frequently found. This clay, with scarcely an exception, is remarkably free from calcareous matter,—the cause of which will be alluded to further on. In some places the clay and gravel are mixed up together, and present no signs of stratification; but more usually they are distinctly stratified, and the boulders are mostly accumulated towards the upper part of the series. As a general rule, indeed, the boulders occur in by far the greatest abundance, scattered, *per se*, over the surface of the gravels; or resting immediately on the underlying rocks where the clays and gravels are absent. This appears to have arisen, in some cases, from the subsequent removal, or washing away, of the looser materials in which the boulders were originally imbedded; but the greater number of these were evidently thrown down where they now lie, by melting or stranded icebergs, after the deposition of the other Drift materials. The boulders, whether of gneissoid or fossiliferous rock, belong always to northern localities, in relation to the spots on which they now occur. Here and there, the infiltration of water containing bi-carbonate of lime, has cemented some of these upper Drift deposits into conglomerates of considerable solidity. (Burlington Heights; vicinity of Niagara Falls; Georgetown, &c.)

5. Under the gravels and sands, or where the isolated boulders of this series are found, the rocks are always more or less marked by glacial action. The more common effects comprise: a smoothed and polished surface, and a fine striation—the striæ running in long straight lines in a general N.E. and S.W. direction, although following to a certain extent, in hilly and broken districts, the natural windings of the rock slopes on which they occur. These effects are seen in Western Canada, at various heights above the sea-level, up to an elevation of at least 1500 feet. They are well shown on the top of the Collingwood escarpment, at about 1000 feet above the level of Lake Huron; on the same line of escarpment near Niagara Falls; on many of the rock exposures on the north shore of Lake