

CONTRIBUTION TO THE GEOLOGY AND PALÆONTOLOGY
OF THE TOWNSHIPS OF RUSSELL AND CAMBRIDGE,
IN RUSSELL, ONT.

I.—PHYSIOGRAPHY AND GENERAL GEOLOGY.

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The Townships of Russell and Cambridge are almost perfectly level. The Township of Russell is bordered on the south, west and north by a rim of slightly higher land. The main portion and all the centre of the township is quite level and continues so into and through the Township of Cambridge. The soil, or drift of the level land, is composed of very fine blue and red clay, covered in some places by two to three feet of brown loam. The blue clay is of considerable thickness, from twenty-five to one hundred feet, and there are no shells in it. It has probably been deposited in deep water and came from the north. At a depth of thirty to forty feet under the clay there is generally found water-worn gravel or hard pan. In one locality the hard pan is composed of small water-worn pebbles and blue clay ground down to a smooth surface and as hard as rock. When this is drilled through water is always found and rushes up in such quantity that wells cannot be walled up with stone. In other places the gravel is loose and filled with small shells. In one place, when digging a well at about eighteen feet from the surface, in the clay, a bone of some animal was found, supposed to have been a rib. It was about eighteen to twenty inches in length, about one inch in diameter and almost round, and in the same excavation at a depth of thirty-one feet a cedar limb about three inches in diameter was found lying on two or three inches of small white shells covering the gravel. The red clay has been deposited after the blue as it is nearer the surface. They are both very fine and where exposed in cuttings are found to be stratified in layers of three or four inches. They are splendid brick clays and should be first class for the manufacture of terra cotta. In the township of Cambridge the clay covers the whole township and is covered by loam the same as in Russell; and on the north side of the township there is an extensive deposit of yellow sand