

The fossil remains collected from these beds have shown many new forms, and many of them have already been described by Mr. Whiteaves the Paleontologist of the Survey. But apart from the paleontological evidence, which, so far, is not very definite, the series might provisionally be divided under the following heads, on purely lithological distinctions.

Hudson River Shales consisting of reddish and yellowish limestones, dolomites and shales.

Upper Mottled Limestones, Magnesian limestones.

Cut Head Limestones, fine grained cherty limestones. (Magnesian)

Lower Mottled Limestones, very similar to the upper mottled.

Winnipeg Sandstones, friable sandstones with shaly bands.

These several divisions are represented on the accompanying sketch map and section, and are seen to be exposed in regular sequence from the lowest beds on the east, to the highest on the west. The whole formation seems to have a slight dip, south of west which is seen on Lake Winnipeg very plainly, by following the division between the sandstone, and the overlying limestone beds. This line is quite distinct, and the several measured sections in which it occurs, when plotted, show that the surface of the sandstone or lower face of the limestone, instead of being a plane, is gently undulating or waved, the distance between the crowns of the undulations being from eight to sixteen miles, while the variations in height run somewhere near twenty feet. The direction of the axis of the folds is with the dip towards the W.S.W., so that the intersections of this crumpled plane, with the horizontal one of the lake, forms a waving line, extending from Elk Island northward to near Dog Head.



SKETCH SECTION THROUGH S. ONEWA, E.N.E., TO THE WINNIPEG RIVER.*

The floor on which these rocks were laid is the uneven surface of the Archean rocks, seen on the eastern side of the lake. In the

*For index of shading see sketch map accompanying this paper.