ton and Hudson River groups of America) of the New York Geological Survey, under the name Cambro-Silurian—a name given by one of the fathers of English Geology (Professor Sedgwick) before Sir R. Murchison included their Welsh equivalents as the lower portion of his "Silurian System," as the character of the organic remains is intermediate between *Sedgwick's Cambrian* and *Murchison's Original Silurian Systems*.

In the State of New York the Niagara group is divided in ascending order into the ONEIDA, MEDINA, CLINTON and NIAGARA EPOCHS, and overlies the Hudson River formation.

The Oneida of New York consists of a conglomerate, and is wanting in Canada, but all the other members of the series are present in the Province. At the head of Lake Ontario, the Medina is underlaid by the rocks of the Hudson River epoch; and the rocks of the Niagara period form the surface deposits adjacent to the lake region, while twenty miles to the westward, they are overlaid in the neighbourhood of the towns of Galt and Guelph by the deposits of the Guelph formation.

In the Niagara Peninsula, south of Hamilton, the Niagara formation is succeeded by some of the members of the Helderberg group, unless there be some thin concealed deposits of the Guelph group not exposed.

The general dip of the whole series is 25.5 feet in the mile in a direction of about twenty degrees west of south.

III.—GEOLOGICAL SECTIONS.

During the summer of 1879, the writer, with the assistance of the late George Beasley, Esq., C. E., made instrumental measurements of four Geological Sections—the most complete that could be obtained. Two of these sections were at Dundas, one at Hamilton, and one south-east of the city, from the watershed between Lake Ontario and Lake Erie, along the exposures of the Niagara Limestones in the bed of the Rosseaux Creek, to its falls at Mount Albion. These measurements required several days' levelling over many miles of ground. In addition to the principal sections, several smaller exposures were measured in order to compare the continuity of various strata.

The thickness and character of the lowest portions of the Medina formation were ascertained from the log of an Artesian well, sunk to a depth of 1600 feet, in the western part of Dundas.