

plied by these Middle and Upper Silurian formations, but their strata are mostly concealed by Drift-deposits. The localities in which instructive exposures occur, have been mentioned under the separate descriptions of each formation, at the commencement of this Part of our Essay. The Clinton beds near the mouth of the Niagara River are only a few feet in thickness, but they increase towards the northwest, and attain, on the shores of Georgian Bay, a thickness of about 180 feet. The Niagara formation increases in the same direction, from about 240 or 250 feet, to probably about 400 feet. The Guelph formation at its thickest part is estimated by Sir Wm. Logan at 160 feet. The Onondaga formation averages from 200 to 300 feet.

Still further to the west, a thin band of sandstone, belonging to the Oriskany Formation (Map : No. 15), crops out above the Eurypteris beds in the townships of Bertie, Cayuga, &c. This forms the base of the Devonian series. It is succeeded by a large development of the cherty limestones of the Corniferous Formation, (No. 16), averaging collectively about 200 (?) feet in thickness, and supposed to be the source of the Petroleum supplies of that district. These are followed by the encrinural limestone bands and calcareous shales of the Hamilton (or Lambton) series (No. 17,) making up an additional thickness of from 200 to 300 feet. Finally, at Kettle Point, and in the townships of Warwick and Brooke, a few isolated patches of dark bituminous shales, containing calamites and fish-scales, conclude the Devonian series as developed in this part of Canada. These bituminous shales, are referred to the base of the Portage group (No. 18). The relations of the Hamilton or Lambton shales to the underlying Corniferous strata, and the chief points of interest belonging to the occurrence of petroleum in this region, have already been sufficiently discussed.

The Drift accumulations spread so generally over this western basin, consist of thick beds of clay, overlaid in most places by deposits of sand and gravel, with boulders of gneiss, syenite, limestone, and other rocks. The thickness of the entire mass varies greatly, but in places it exceeds 100 feet. In the upper Drift beds, or rather in those formed out of Drift and other materials by Post-glacial influences, numerous shells of existing fresh-water mollusks (*planorbis*, *cyclas*, &c.), occur at different heights above our present lake-waters ; whilst there seems to be an entire absence, in these beds, of marine or estuary types, such as occur in deposits of a similar age in the St. Lawrence basin. Hence the inference, that, at a comparatively recent geological period, our