

South Nation which rises near the St. Lawrence not far from the town of Brockville, and after a somewhat tortuous course of 100 miles reaches the Ottawa about forty miles east of Ottawa city. The descent of the river in this distance is not more than 100 feet, so that, allowing for the High Falls near Casselman and several rapids between that place and the Ottawa, it will be seen that for the greater part of its course the waters of the South Nation must be comparatively sluggish.

The elevation of the height of land to the north which divides the waters of the Ottawa from those flowing into James' Bay is rarely more than 1,000 feet above sea-level. Over a large part of this area to the north, embracing many thousands of square miles in this direction, the surface is covered with heavy deposits of sand which overlie thick beds of clay. These deposits extend from the lower Ottawa and the St. Lawrence nearly, or in places quite, to the height of land. In the absence of fossils in these higher clays positive evidence of their marine origin cannot be obtained, but it may be stated that they are continuous northward with those which do contain such organisms, and therefore the assumption may be made that the sea, at some date prior to or at the time of their deposition, had invaded all the northern country to a depth of some hundreds of feet.

The denudation of the old crystalline rocks, which were the first to appear throughout this area, must have been enormous. How many thousands of feet have thus been removed, cannot be surmised. But along portions of the lower Ottawa, as in the stretch below the Joachims Rapids, known as the Deep River, the present bottom of the channel is now many feet below the sea-level, the surface of the river being about 370 feet above tide, while soundings made several years ago are reported to have reached a depth of over 500 feet.

In Lake Temiscaming also, certain portions have been sounded and show that here the excavation has been very great. At one point a depth of 470 feet was obtained, while the surface of the lake is 591 feet above the sea. There must therefore have been a large amount of denudation throughout this part of the old river basin, though certain parts of this old channel have since been to a certain extent filled in by glacial deposits.