

sand, supporting at present a growth of small pine. As for much of the underlying clay its origin is doubtful. Shells are found only at rare intervals, but in character the sediments strongly resemble the marine clays of the lower Ottawa. Organic remains have, however, been found at widely separated points in the valley, up to elevations of over four hundred and fifty feet above sea level. The overlying deposits of sand and gravel are frequently well stratified, and excellent sections of these, as well as of the underlying clays, are presented along many of the streams which have cut deep channels in the drift. In these *Saxicava* and other forms are found.

While there are no exact determinations as to the altitude of the height of land north of the Ottawa, several close approximations have been obtained by means of barometric observations. The elevation of the Iroquois Chute (Labelle), on the Rouge River, has been fixed by the survey of the railway from St. Jerome at 875 feet on the terrace level one hundred feet above the river, though the elevation of the ridge east of St. Faustin, which the railway crosses, is 1,520 feet. The elevation of the height of land to the northeast between the head waters of the Rouge and the head of the Mattawin, a branch of the St. Maurice, will not probably exceed three hundred feet more, as we enter upon a broad extent of plain sandy country beyond the bend of the river near the Nominigou Lake and Creek, so that the height of land in this direction would not be far from 1,050 to 1,100 feet. Further west, near the sources of the Gatineau and upper Ottawa, the height of land has been estimated, by Dr. Bell, at about the same figure, the elevation of Grand Lake being put at about 860 feet. From observations by A. E. Barlow, the height of the Abittibi divide, north of Lake Temiscaming, is put at 923 feet, while that at the head of Montreal River is not far from 1,300 feet, the elevation of Lake Temiscaming being only 585 feet. Continuing round by the south the height of the divide at Lake Nipissing is only 642 feet, but this gradually rises till, at the head waters of the Muskoka and Petawawa, it is, according to Murray, about 1,400 feet. Near the source of the Madawaska River at Papineau Lake, the same authority gives the elevation at 1,121 feet. Murray also places the source of the Little Madawaska at 860 feet, and of Wahsuhze Lake at the head of the Maganetawan at 1,097. Further east the height of the divide at the head of the Rideau lakes, according to the Canal survey, has sunk to 417 feet.

The principal area of fossiliferous sediments in the Ottawa valley, is that which extends up the lower part of the Ottawa River from its junction with the St. Lawrence and is continuous with the great area which occupies the valley of the St. Lawrence for hundreds of square miles. Prior to the deposition of these sediments a deep depression must have extended northwestward from that river for many miles and the drainage basin of the Ottawa, even at that early time, was well established. The