bay. It may be reached from Montreal by a journey of 439 miles westward on the main line of the Canadian Pacific railway, or from Toronto by a journey of 260 miles north on the Canadian Pacific railway or the Canadian Northern railway. The nearest nickel mines are about two miles to the north and three miles to the west. The smelting is mostly done at Copper Cliff, a short distance from the town of Sudbury. The nickel region has sharply defined geological boundaries, all the ore deposits being connected with a single great sheet of eruptive rock, roughly boat-shaped, having its interior filled with sedimentary rocks.

The basin is thirty-six miles long and sixteen miles wide, and the known ore deposits are all either along the edge of the sheet or less than four miles away from it. The nickel deposits are not distributed uniformly around the basin. There are rich portions separated by barren portions. Along a somewhat irregular line of thirty-three miles, on the southern margin of the nickel-bearing eruptive, seventeen mines have produced nickel ore, and within two or three miles to the south of it ten other mines have been worked. While some of the deposits appear to be pockets, there are a number of extensive bodies of ore. It is believed that the Canadian Copper Company has enough ore in two of its mines to last for sixty years, while there are a number of other mines supposed to contain great quantities of ore. The whole nickel basin includes an area of 550 square miles, divided among twenty-four townships of the regular size and shape. Mining has taken place in eight of these townships, while important ore deposits are known to exist in several others. The Sudbury ores are sulphides, containing on the average about 45 p.c. of iron, about 3.09 p.c. of nickel, 2.12 p.c. of copper and small quantities of cobalt, gold, silver, platinum and palladium. The iron content of the ore is thrown out and wasted in the smelting process, the aim being to produce a nickel-copper matte suitable for shipment to the refineries in the state of New Jersey and in Wales.

The Sudbury ores all contain large quantities of sulphur, and the first process to which they are subjected is roasting to remove part of the sulphur. They are then smelted in water-jacket furnaces, producing a matte which is re-smelted in Bessemer converters, making a matte containing from 75 to 80 p.c. of nickel and copper, of which less than half is copper. In the roasting process the sulphur thrown off is entirely wasted. It destroys all vegetation in the neighbourhood. Deposits of low-grade nickel have been reported in a number of other localities in Ontario. The Alexo mine in Dundonald township, near Matheson, in northern Ontario, is said to have the most promising nickel deposits outside of the Sudbury district. The discovery of a new nickel range near Schreiber on the Canadian Pacific railway has been reported. Small quantities of nickel ore are found in the Cobalt silver ores. Arrangements have been made for the construction of great works for the refining of nickel in Canada.

Copper.—Besides the copper which is associated with nickel in the Sudbury district and near Matheson, copper sulphides have been found in Ontario in the North Hastings, Parry Sound, Timiskaming and Timagami districts, and in the section west of Port Arthur, but their extent and value are unknown, as there has been no development work.