

or only 28.4 p.c. below the record of 1930. This contrasts favourably with the production in the former depression year 1922 and shows the expansion of the copper industry in Canada in the past decade. Some Canadian copper producers, located principally in Manitoba, Ontario and Quebec, are fortunate in possessing ores containing sufficiently high values in precious metals to permit of operation in spite of the abnormally low copper prices prevailing in 1931 and 1932, so that copper has remained third in value among the minerals produced in Canada. Yet the low prices have lessened production and have also curtailed the search for and development of new copper properties. In June of 1932 the United States instituted a duty of 4 cents per pound on foreign copper, which adversely affected Canadian copper production, more especially that of British Columbia. Shortly afterwards, at the Imperial Economic Conference in Ottawa, it was recommended that Great Britain impose a duty of 2 pence per pound on copper produced outside the Empire, provided that if at any time Empire producers were unable or unwilling to offer this commodity on first sale in the United Kingdom at prices not exceeding the world prices and in quantities sufficient to supply the requirements of United Kingdom consumers, the duty might be removed.

**Quebec.**—Until 1894, when Ontario took the lead, Quebec was the chief copper-producing province of Canada, the principal mines being the Eustis and Huntingdon properties in the Eastern Townships. There is still an annual production from this field. Recent developments in the Rouyn camp of northwestern Quebec have resulted in a greatly increased production of copper since 1927. These deposits are associated with an easterly extension of formations similar to those of the Kirkland Lake area in Ontario. The first discoveries were located as gold prospects; the existence of large bodies of copper and zinc ores was subsequently proved and there is now a large production of copper as well as of gold. During 1931 the Canadian Copper Refiners, Ltd., commenced treating blister copper in their new plant located at Montreal East. This material came from the Noranda smelter and the smelter at Flin Flon, Manitoba.

**Ontario.**—The Sudbury deposits were first noted in 1856 but did not attract attention until 1883-4, during the construction of the C.P.R., when a railway cutting was made through the small hill on which the Murray mine was afterwards located. During the first years the deposits were developed for their copper content alone; not until 1887 was the presence of nickel determined and the true value of the ores known. These nickel-copper ores of the Sudbury area are the source of nearly all the copper produced in Ontario. Under the International Nickel Co. of Canada, an amalgamation of the former International Nickel Co. and the Mond Nickel Co., an extensive program of expansion in the mining and metallurgical facilities of the district has been carried out. A subsidiary company, the Ontario Refining Co., Ltd., has completed a copper refinery at Copper Cliff where electrolytically refined copper is produced from the blister copper smelted by the International Nickel Co., chiefly from ores from their own mines in the district. The company also operates the Acton precious metals refinery situated near London, Eng., where it recovers, in a refined state, the gold, silver and platinum metals contained in the concentrates produced at both the Swansea and Port Colborne nickel refineries. The Falconbridge Nickel Mines, operating a mine in Falconbridge township, make a copper-nickel matte which is shipped to Norway for refining. Adverse industrial conditions led to reductions in the copper production of Ontario in 1931 and 1932.