

From a mineral resource and supply point of view, Canada gives every indication of becoming increasingly important. Canada has already attained a prominent, and sometimes dominant, position in world production of a large number of mineral commodities and now leads the Free World in the production of nickel, asbestos, platinum and platinum metals. It is second in uranium, zinc, aluminum, gold and cadmium; third in silver, iron ore, gypsum and barite; and stands high among world producers of copper, lead, titanium, cobalt, molybdenum, magnesium and several other commodities.

There is no scarcity of mineral raw materials in the world today but rather, in many instances, there is over-supply, particularly of iron ore, crude petroleum, copper, uranium, lead, zinc and sulphur. The greatest problem facing Canada's mineral industry in the years ahead will be that of competing on an economic basis with mineral industries of other countries, particularly those of South America and Africa, in supplying mineral requirements of the industrial economies of the United States, the United Kingdom, Western Europe and Japan. Increased efficiency at all levels of operation leading to lower costs of production, the diligent search for new markets, and close co-operation between government and industry give much promise for continuing enlargement and diversification of the Canadian mineral economy and a greater role for the mineral industry in Canada's over-all economy.

Subsection 1.—Metals*

Nickel.—Canada has long been the leading world producer of nickel and in 1960 accounted for about 70 p.c. of the Free World production capacity. Other major producers are New Caledonia, Japan and the United States. Cuba has two nickel processing plants both of which were nationalized in 1960 through expropriation by the Cuban Government resulting in a loss to the Free World market of an annual production capacity of 52,000 tons of nickel. No shortage of nickel resulted from the expropriations. The commencement of electrolytic nickel production at the Thompson property in northern Manitoba early in 1961 will maintain a balanced production, supply and demand pattern.

Nickel production in Canada during 1960 reached an all-time high of 213,641 tons valued at \$312,738,234 and regained first place from uranium in the value of metallic mineral output. World demand during 1960 was extremely heavy though demand declined in the United States toward the end of the year. Nickel requirements in Western Europe continued strong all year, as steel operations remained at a high level.

The Canadian nickel industry is dominated by the mining and smelting operations of the Sudbury district of Ontario where The International Nickel Company of Canada, Limited and Falconbridge Nickel Mines Limited have mines and primary processing plants. International Nickel operates five mines: the Creighton, Frood-Stobie, Garson, Levack and Murray. It has smelters at Copper Cliff and Coniston, with the main product being nickel oxide sinter; by-product production includes copper, cobalt, the platinum metals, gold, silver, selenium, iron ore pellets and sulphur. Some sinter is used direct by industry and some is shipped to the Port Colborne, Ont., refinery where it is reduced, cast into anodes and electrolytically refined. Sinter is also shipped to the company's Mond Nickel refinery in the United Kingdom for reduction to metal by the carbonyl process. Rated 1960 production capacity of International Nickel was 165,000 tons of refined nickel. Falconbridge Nickel Mines Limited obtains ore from its Falconbridge, East and McKim mines in the Falconbridge area, and from the Hardy, Longvack and Pecunis mines in the Onaping area, all near Sudbury. Concentrates are smelted at Falconbridge to produce nickel-copper matte which is shipped to the company's refinery at Kristiansand, Norway. Current annual production capacity of Falconbridge is about 32,500 tons of electrolytic nickel.

Sherritt Gordon Mines Limited has mines at Lynn Lake in northern Manitoba and a refinery at Fort Saskatchewan, Alta. The refinery employs a pressurized ammonia leach process for recovery of nickel and cobalt from Lynn Lake concentrates. It also treats

* The figures for 1959 in this Subsection are final but those for 1960, as well as some pertaining to individual companies in both years, are subject to revision.