

daily for 23 days each month. Bulk nickel-copper concentrates are exported to Japan. After installation of new equipment, daily mill capacity in 1964 will be about 1,500 tons.

There were no price changes for nickel during the year. Prices remained at 84 cents a lb. for Canada and 79 cents for the United States, both f.o.b. Port Colborne, Ont. The United States price includes import duty of 1½ cents a lb.

Copper.—Mine production of copper increased slightly over 1962 but there was a minor decline in the output of refined copper; total mine output was 458,735 tons valued at \$287,704,456 in 1963. Increased production in British Columbia, Manitoba and New Brunswick offset reductions in Ontario, Quebec, Newfoundland and Saskatchewan. There was no production from the Yukon and Northwest Territories. Five mines started production in 1963 and 12 were under development. A sustained demand for copper has stimulated prospecting in all the copper-producing provinces and territories.

Six smelters for the reduction of copper and copper-nickel ores and concentrates are operated in Canada. In the Sudbury district of Ontario, International Nickel operates smelters at Copper Cliff and Coniston, and Falconbridge Nickel Mines produces copper-nickel matte at its Falconbridge smelter. Hudson Bay Mining and Smelting at Flin Flon, Man., smelts concentrates from its mines in Manitoba and Saskatchewan and copper concentrates from Sherritt Gordon's mine at Lynn Lake, Man. Ores and concentrates from most of the copper mines in Ontario, Quebec and Newfoundland are smelted at the Noranda smelter of Noranda Mines, Limited and the Murdochville smelter of Gaspé Copper Mines, Limited, both in Quebec. Copper refineries are operated by International Nickel at Copper Cliff, Ont., and by Canadian Copper Refiners Limited at Montreal East, Que. Production of refined copper in 1963 was 378,911 tons, 1 p.c. less than in 1962.

Production from the three copper-producing mines in Newfoundland totalled 14,058 tons valued at \$8,856,369. At Baie Verte, Consolidated Rambler Mines Limited started construction of a 400-ton-a-day mill in preparation for production in 1964. New Brunswick's copper production totalled 8,150 tons valued at \$5,134,500, more than double the 1962 output. Production was obtained from the Wedge mine of The Consolidated Mining and Smelting Company and from Heath Steele's mine both in the Newcastle-Bathurst district. Brunswick Mining and Smelting Corporation Limited near Bathurst was building a 4,500-ton-a-day concentrator in preparation for production in 1964.

The combined output of Quebec's 21 copper-producing mines was 145,019 tons valued at \$91,362,122, slightly less than in 1962 because of the continuation of production curtailments at Noranda's Horne mine and Gaspé Copper's Needle Mountain mine, and a prolonged strike at the property of Solbec Copper Mines, Ltd. In the Mattagami Lake area, Mattagami Lake Mines Limited, New Hosco Mines Limited and Orchan Mines Limited started production from their mines in October. In the Noranda-Val d'Or-Normetal area, Lake Dufault Mines Limited completed an initial shaft-sinking program and began development of its massive copper-sulphide orebody. Construction of a 1,300-ton-a-day mill was started with production scheduled for 1964. North of Amos, Rio Algom Mines Limited and Joutel Copper Mines Limited continued underground exploration at their respective properties.

Production curtailments at the mines of International Nickel and Falconbridge in the Sudbury area reduced Ontario's copper output by about 5 p.c., to 180,058 tons valued at \$112,137,657. Ontario's producing mines were: Geco and Willroy at Manitowadge; North Coldstream at Kashabowie; Rio Algom's Pater at Spragge; Kam-Kotia and McIntyre at Timmins; International Nickel (six mines, three mills and two smelters) and Falconbridge (four mines, three mills and a smelter) in the Sudbury district. Kam-Kotia Porcupine Mines, Limited continued underground development of its new orebody and production from it will start in 1964. McIntyre-Porcupine Mines, Limited started production from its low-grade copper orebody in July. Concentrates were shipped to Copper Cliff for smelting by International Nickel. Prospecting parties have been active in northwestern Ontario between Sault Ste. Marie and Port Arthur since the discovery of copper mineralization in the Batchawana area.