

refining of nickel-copper matte exported to its refinery at Kristiansand, Norway. Sherritt Gordon recovers cobalt as a by-product at its nickel refinery at Fort Saskatchewan, Alta., from its Lynn Lake nickel-copper ores. Cobalt Refinery Limited at Cobalt, Ont., recovers black cobalt oxide and mixed cobalt and nickel oxide from silver concentrates. Eldorado Mining and Refining Limited has developed a process for the recovery and purification of cobalt, nickel and arsenic from silver-cobalt concentrates. Total Canadian production in 1964 was 3,196,322 lb. valued at \$6,484,255.

**Columbium.**—St. Lawrence Columbium and Metals Corporation continued to be the only Canadian producer of columbium concentrates. Mine production in 1964 amounted to 2,250,000 lb. of contained  $Cb_2O_5$  in pyrochlore concentrates valued at \$2,305,000. The company's mine is near the town of Oka, 20 miles west of Montreal. Quebec Columbium Limited and Columbium Mining Products Limited also own large pyrochlore deposits in the Oka area. Masterloy Products Limited, Ottawa, Ont., is the only Canadian manufacturer of ferro-columbium, which is sold in Canada and the United States.

**Molybdenum.**—Molybdenum production in 1964 amounted to 1,278,404 lb. of contained Mo in molybdic oxide ( $MoO_3$ ) and molybdenite ( $MoS_2$ ) concentrates valued at \$1,789,234. Production came from the Molybdenite Corporation of Canada Limited's mine at Lacorne, Que., and the Gaspé Copper Mines Limited's mine at Murdochville, also in Quebec, and from the Bethlehem Copper Corporation's mine in the Highland Valley of British Columbia. Molybdenum is recovered as a primary product at the Lacorne mine and as a by-product of copper operations at the other two mines.

During 1964, preproduction work was carried out at the properties of Preissac Molybdenite Mines Limited and that of Anglo-American Molybdenite Mining Corporation; both properties are in Preissac Township, about five miles north of Cadillac, Que. Also in 1964, Noranda Mines Limited prepared its Boss Mountain property in British Columbia for production, and Endako Mines Limited prepared its property at Endako, B.C.; both mining operations were scheduled to commence by mid-1965. The Boss Mountain mine will produce about 3,000,000 lb. of contained Mo in concentrates a year and the Endako mine will produce about 10,000,000 lb. a year.

**Selenium and Tellurium.**—Selenium production in 1964 totalled 448,750 lb. valued at \$2,213,182, 4 p.c. lower than in 1963; tellurium output at 79,789 lb. valued at \$508,830 was about 4 p.c. higher than in 1963. These metals are recovered from the anode muds resulting from the electrolytic refining of copper at the plants of Canadian Copper Refiners Limited at Montreal East, Que., and International Nickel at Copper Cliff, Ont.

**Magnesium.**—The only Canadian producer, Dominion Magnesium Limited, is also the only Canadian source of calcium and thorium. Dolomite of exceptional purity is quarried and reduced to magnesium by the ferrosilicon method at Haley, Ont. In 1964, magnesium production was 9,021 tons. Expansion of the smelter from 10,000 to 11,000 tons annual capacity will be completed in 1965. Canadian consumption of primary magnesium is about 3,600 tons, including imports; a further 400 tons of semi-fabricated forms are imported.

**Titanium.**—Ilmenite, an iron-titanium oxide, is mined in the Allard Lake and St. Urbain areas of Quebec. The Allard Lake ore, mined by Quebec Iron and Titanium Corporation, is smelted by the company in electric furnaces at Sorel, Que., to produce high-titania slag and pig iron. The slag is sold to producers of titanium-based pigments in Canada, the United States, Britain, Japan and other countries. Ilmenite mined at St. Urbain by Continental Titanium Corporation is used as heavy aggregate in weighting oil and gas transmission pipelines and in shielding nuclear reactors. The value of titanium-bearing materials shipped in 1964 as ore, heavy aggregate and titanium-bearing slag was at an all-time high of \$20,981,935, which compares with \$13,806,608 in 1963.