

ranked third in world platinum metals production in 1978 behind South Africa and the USSR.

Producer and dealer prices of platinum increased to record levels in 1978. Fluctuations were caused by world currency problems and increased demand by consumers and speculators. The producer price climbed sharply from US\$5.95 a gram at the beginning of the year to about US\$10.95. The palladium price was relatively stable but, influenced by the erratic platinum price, it increased from US\$1.67 a gram to a high of US\$2.20. The producer price for rhodium ranged from US\$14.79 to US\$20.90 a gram. Prices of iridium, ruthenium and osmium remained unchanged.

12.3.10 Cobalt

Canadian shipments of cobalt amounted to 1163 t valued at \$27.1 million in 1978 compared with 1485 t valued at \$18.8 million in 1977. Cobalt is recovered principally as a byproduct of nickel-copper ores.

Canada's leading producer, Inco, recovers cobalt as an oxide at its nickel refinery at Thompson, Man. and Port Colborne, Ont. and produces cobalt oxide at its refinery in Clydach, Wales, from nickel matte produced in Canada. The Clydach refinery also processes some crude oxides produced in Canada into upgraded salts and metal. Falconbridge Nickel recovers cobalt metal, from nickel matte produced in Canada, at its cobalt refinery in Kristiansand, Norway.

Sherritt Gordon Mines recovers cobalt metal powder from nickel end-solutions at its hydrometallurgical refinery at Fort Saskatchewan, Alta. The refinery treats nickel-copper concentrates purchased from several nickel operations in Western Australia.

12.3.11 Magnesium

Canadian production of magnesium in 1978 was 8269 t valued at \$19.6 million. Production increased from 7633 t in 1977, but well below the 9650 t reached in 1969. The only Canadian producer of primary magnesium, Chromasco Corp. Ltd., has operated a mine and smelter at Haley, Ont., 80.5 km west of Ottawa, since 1942. World production of primary magnesium in 1978 is estimated at 250000 t compared with 257210 in 1977. The United States produced almost half the world output.

Exports of Canadian magnesium metal have entered the US duty-free under a Canada-US defence production sharing program but on a reduced scale over the past few years. The US duty on magnesium ingots and further-processed products is being reduced progressively in accordance with negotiations under the General Agreement on Tariffs and Trade. However, only in certain high-purity items can the Canadian product find a market in the US. Exports of Canadian magnesium ingots face a 20% tariff when entering the US domestic market whereas the comparable Canadian tariff is 5%.

12.3.12 Columbium (niobium) and tantalum

Canadian shipments of columbium as columbium pentoxide were 2535 t in 1978 compared with 2517 t in 1977, with a corresponding increase in value.

Niobec Inc., with a mine, mill and concentrator near Chicoutimi, Que., is Canada's only producer of columbium and has one of the three mines in the world that produce columbium in pyrochlore concentrates as a primary product; the other larger operations are in Brazil. Niobec Inc. is a joint venture of Teck Corp., Copperfields Mining Corp. and Quebec Mining Exploration Co. The mill was designed for an initial capacity of 1361 t of ore a day with provision for rapid expansion to 1814 t a day if demand warrants it. Niobec began production in 1976.

There is only one producer of tantalum concentrates in Canada, Tantalum Mining Corp. of Canada Ltd. (Tanco), with a mine and mill at Bernic Lake, Man. In 1978, Tanco production was little changed from the approximately 145000 kg of tantalum pentoxide produced in 1977. Tanco is the world's largest single mine source of tantalum; its known reserves are believed to be sufficient to maintain the current level of operations only until 1982.

12.3.13 Cadmium

Cadmium production in 1978 was 965 t valued at \$5.9 million compared to 1185 t valued at \$8.2 million in 1977. Most zinc ores in Canada contain recoverable cadmium