

The Mineral Industry of Burma

By Ta Li¹

Burma's mineral industry had another lackluster year in 1969. Production from the historically famous Bawdwin lead-silver-zinc enterprise near Lashio and the Chinese border remained at its lowest level within a decade. Tin and tungsten output also remained at low levels. Development of the Monywa district's copper deposits, with estimated reserves of 14 million tons of 0.5 to 1.0 percent copper ore, progressed very slowly.

Although crude oil production increased, the planned self-sufficiency goal was not reached, and crude oil as well as some refinery products were imported to meet domestic demand. Onshore oil exploration activities were to be increased in 1969-70 and, for the first time, offshore activities were planned. The Burmese approached the West Germans for help in exploring areas off the Arakan coast. This was the first sign that Burma might be considering opening its oil industry to foreign participation, closed since the nationalization of the oil industry in 1963.

Under the current 4-year national economic plan ending in 1969-70, special attention was given to mineral development, which was to be financed entirely from domestic sources. The fiscal 1969-70² budget for national development showed the following anticipated capital expenditures: People's Oil Industry (POI), \$11.8 million; People's Bawdwin Industry (PBI), \$2.1 million; and Mineral Development Corporation (MDC), \$1.7 million.

Although Burma no longer produces any mineral in quantities of world consequence, significant resources possibly exist. Little progress has been made toward their development, however, due to the shortage of managerial and technical talent in the country, lack of capital funds to purchase the required equipment, and Government policy against foreign private investment in the mineral industry. As a result, the Government in recent years has concentrated much of its efforts on less capital consuming ventures such as geological surveys and exploration work.

PRODUCTION

The bulk of Burma's mineral output came from State enterprises, with the Government outproducing private industry by about 5 to 1. Only some small tin-tungsten and nonmetal mines were in private hands and a significant quantity of their production was believed to be smuggled out of the country and hence not recorded.

According to official Burmese national budget estimates, total "mining" output in fiscal 1968-69 amounted to \$41.1 million. Crude oil and limestone are included in

this figure but not the value added derived from mineral and metal processing. Reported values for major minerals produced were as follows: Crude oil, \$16.6 million; nonferrous output of Bawdwin enterprise, \$7.2 million; salt, \$3.3 million; and tin and tungsten concentrates, \$2.4 million. In addition, cement output was valued at \$5.0 million.

¹ Mining engineer, Bureau of Mines, Washington, D.C.

² Burma's fiscal year is October to following September. All values have been converted at the rate of 4.76 Kyat to US\$1.

Table 1.—Burma: Production of mineral commodities^{1 2}
(Metric tons unless otherwise specified)

Commodity	1967	1968	1969
METALS			
Antimonial lead (18 to 20 percent Sb).....	400	280	300
Copper matte, gross weight.....	180	150	160
Iron and steel:			
Steel ingots and castings.....	21,000	21,000	21,000
Steel semimanufactures.....	26,000	28,000	25,000
Lead:			
Concentrate (50 to 60 percent Pb).....	18,000	17,000	17,000
Metal.....	13,000	9,000	10,000
Nickel speiss (20 to 30 percent Ni).....	130	115	115
Silver, metal..... thousand troy ounces	1,000	900	1,000
Tin concentrate (68 to 72 percent Sn)..... long tons	400	300	300
Tin-tungsten concentrate (35 percent Sn and 30 percent WO ₃)..... long tons	450	500	400
Tungsten concentrate (55 to 65 percent WO ₃).....	95	130	130
Zinc concentrate (54 to 56 percent Zn).....	8,400	8,500	9,000
NONMETALS			
Barite.....	9,400	9,600	8,200
Cement, hydraulic..... thousand tons	130	160	200
Gypsum.....	300	2,900	1,800
Limestone, crushed and broken..... thousand tons	400	520	550
Salt..... do.....	182	130	180
MINERAL FUELS AND RELATED MATERIAL			
Petroleum:			
Crude oil..... thousand 42-gallon barrels	4,580	5,634	6,085
Refinery products:			
Gasoline, aviation and motor..... do.....	1,240	1,112	1,142
Kerosine and jet fuel..... do.....	1,321	1,564	1,662
Distillate fuel oils..... do.....	1,970	1,763	2,432
Others..... do.....	423	401	598
Total..... do.....	4,954	4,840	5,834

¹ Fiscal year October through September. Figures are for first 9 months of year noted and 3 months of previous year.

² All production figures are estimates based upon official Government budget figures.

TRADE

The value of Burma's 1968-69 exports of metals and ores was estimated on a preliminary basis at \$9.2 million, more than double that of the previous year. About half of the exports came from the Bawdwin mine's output of lead, zinc, and silver. The remaining exports were mostly composed of tin and tungsten concentrates. The increase in exports was partly caused by high 1969 market prices for nonferrous metals, which induced the Government to release

its metal stockpiles held during periods of low metal prices.

Burma imported over \$13 million worth of mineral and mineral related products in 1968-69 as compared with the \$33 million in 1967-68. Smaller purchases of metals and metal manufactures (\$10.5 million as compared with \$19.2 million in 1967-68) were made in 1968-69. Manufactured fertilizer purchases were also reduced (\$2.8 million as compared with \$11.8 million in 1967-68).

COMMODITY REVIEW

METALS

Iron and Steel.—The Ywama steel mill, with an electric furnace and rolling mill, remained the country's only steel producer. Formerly, the electric furnace's scrap iron requirements were met by imports but, due to foreign exchange shortages, recent supplies have come from domestic sources. The rolling mill, reportedly rated at 40,000 tons

of products annually, produced only an estimated 25,000 tons. Products include approximately 15,000 tons of bars and rods; 3,500 tons of wire nails; and 2,000 tons each of galvanized iron and barrel sheets.

Burma has plans for an integrated steel industry, based upon domestic resources. However, known deposits of coal and iron ore are low grade and located in areas

where large investments in transportation facilities would be required. Accordingly, plans remained rather uncertain.

Lead, Zinc, Copper, Silver, and Nickel.—The PBI mine, located near Namtu in northern Shan State, continued to be Burma's sole significant producer of nonferrous metals. The Bawdwin mine has been producing lead, zinc, silver and byproduct copper matte, nickel speiss, and antimonial lead for many decades. Lead concentrates are shipped to Namtu for smelting, and zinc concentrates are exported, mostly to Japan.

Recent output from the mine has been only about one-fifth of the pre-World War II levels. Estimates of production for fiscal year 1968-69 were as follows: Refined lead, 9,500 tons; zinc concentrates, 9,000 tons; silver, 1 million ounces; antimonial lead, 300 tons; copper matte, 115 tons; and nickel speiss, 160 tons.

The decline of the Bawdwin mine is principally attributed to depletion of high-grade reserves and behind-schedule development of the lower grade ores. Reserves at yearend totaled approximately 6 million tons, assaying 11.2 percent lead, 5.6 percent zinc, 0.30 percent copper, and 7.8 ounces of silver per ton. Insurgent activity within the region, poor transportation, and inefficient mining techniques have also plagued the mine. In 1966, a United Nations Special Fund survey concluded that the output could be doubled through modernization of mine and enlargement of facilities. However, efforts on the part of the Burmese Government to obtain the necessary capital and equipment have not been successful.

Tin and Tungsten.—MDC continued to operate most of the country's tin and tungsten mines. Government policy calls for the eventual takeover of the remaining privately operated mines as soon as their licenses expire. Tin and tungsten concentrates were produced either separately or in mixed form; combined annual output of the two minerals has remained at the low level of roughly 1,000 tons of concentrates since 1966. In an effort to spur production, the Government reportedly signed a 4-year contract with the U.S.S.R. to rehabilitate the once-famous Mawchi tin-tungsten mine.

The mine's high-grade reserves have been depleted and present efforts are being directed toward exploiting lower grade reserves.

NONMETALS

Fertilizer Materials.—Two chemical fertilizer plants, each with a 65,000-ton-per-year capacity, were being built at a cost of \$14 million each. The first, located in Sale and constructed with Japanese aid for completion in 1969-70, was behind schedule. The other plant in Kyunchaung, northern Burma, being built with West German aid, was scheduled for completion in 1970-71.

Through 1969 Burma imported all its manufactured fertilizer needs. The country consumed about 140,000 tons in fiscal 1968-69, double that of the previous year.

MINERAL FUELS

Petroleum.—POI increased crude oil production to about 6 million barrels in fiscal year 1968-69; however, the industry did not reach the self-sufficiency target of 7 million barrels. Nevertheless, Burma was able to further reduce crude oil imports by 35 percent from the previous year, a decline of almost 72 percent since 1965-66.

The failure to reach the 1968-69 target was principally attributed to a much lower production rate than anticipated from two of the new fields, Prome and Shwepyitha. Due to a lack of crude, Burma's two refineries at Chauk and Syriam with a combined daily capacity of 26,300 barrels, continued to operate at less than full capacity.

Partly because of the unsatisfactory results at Prome and Shwepyitha, Burma lowered its estimates of known crude oil reserves from 200 million barrels to around 140 million. An extensive exploration program, both on and offshore, was planned by POI for the present fiscal year. On the basis of a successful seismic survey conducted by a Japanese concern off the Arakan coast, plans were made to drill a number of exploratory test holes. Onshore, exploration will encompass 10 regions covering 9,170 square miles and including for the first time the Northern Chin Hills and the Delta region.

