The Mineral Industry of Burma

By Donald C. Wininger [1]

Burma's "hard rock" part of the mineral industry showed only moderate improvement during 1971. Production from the Bawdwin mine near Lashio and the Chinese border increased, but the grade of the ore continued to decline. Production of tin and tungsten recorded a substantial increase in 1971, which indicated that the overall rehabilitation program was making significant progress, although output from the Mawchi tin-tungsten mine achieved only modest gains. In February a cooperative agreement was signed with the West German Government regarding general exploration for mineral resources in Burma.

An untied loan of $10 million [2] was negotiated with Japan to finance exploratory drilling for oil in the Gulf of Martaban. The drilling, scheduled to begin early in 1972, will be conducted by a U.S. contractor, which will be the first foreign firm to engage in drilling operations in Burma since nationalization of the oil industry in 1963. A loan was also received from the Export-Import Bank (Eximbank) to help finance the purchase of six more oil drilling rigs. The fertilizer plant being constructed by the West Germans to utilize local natural gas to make urea was nearing completion at yearend.

The mineral industry of Burma has become very much a government business. Various government corporations are assigned to manage the different mining sectors. In fiscal 1970–71,[3] the national budget showed the following estimated capital expenditures: Myanma Oil Corp. (MOC), $14.6 million; Myanma Bawdwin Corp. (MBC), $2.3 million; and Mineral Development Corp. (MDC), $4.6 million.

PRODUCTION

According to official Burmese national budget estimates,[4] "mineral" output totaled $43.3 million in fiscal year 1969–70 and $42.4 million in 1970–71. Crude oil and limestone are included, but not the value added derived from mineral and metal processing. Thus, products like salt, cement, refined oil, and processed metals are excluded either in total or in part. Reported output values for major minerals were as follows for 1970–71: Crude oil, $18.2 million; nonferrous output of the Bawdwin enterprise, $7.4 million; and tungsten concentrates, $4 million. In addition, the following values were reported for output of processed materials during 1970–71; salt, $3 million; cement, $4.1 million; refined petroleum $69.3 million; and iron and steel products, $15 million.

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[1] Physical scientist, Division of Nonmetallic Minerals.

[2] Where necessary, values have been converted from Burma Kyats (BKs) to U.S. dollars at the rate of BKs4.76=US$1.00. In the open market, the kyat is worth much less; actually, one dollar can buy 15 kyats or more.

[3] Burma's fiscal year runs from October to the following September.

[4] Report to the people by the Government of the Union of Burma on the financial, economic and social conditions for 1971–72. The revolutionary council of the Union of Burma.

Table 1.—Burma: Production of mineral commodities

(Metric tons unless otherwise specified)

Commodity [1]	1969	1970	1971 [p]
METALS			
Antimony, mine output, metal content	[e] 60	65	128
Copper:			
Mine output, metal content [e]	70	70	70
Matte, gross weight	[r] 168	167	175
Iron and steel:			
Crude steel [e]	21,000	21,000	21,000
Semimanufactures [e]	25,000	25,000	25,000
Lead:			
Mine output, metal content	8,695	8,085	9,310
Smelter:			
Refined lead	9,720	9,512	9,481
Antimonial lead (18 to 20 percent antimony)	302	239	309
Nickel:			
Mine output, metal content	30	21	24
Speiss, gross weight	119	84	94
Silver, mine output—thousand troy ounces	902	572	952
Tin, mine output:			
Metal content of tin ores—long tons	212	175	396
Metal content of tin-tungsten ores—do	161	252	284
Total—do	373	427	680
Tungsten, mine output:			
Metal content of tungsten ores	55	44	164
Metal content of tin-tungsten ores	112	175	198
Total	167	219	362
Zinc, mine output, metal content	4,892	4,067	4,247
NONMETALS			
Barite	9,703	13,463	22,963
Cement, hydraulic—thousand tons	183	156	176
Clays:			
Ball [2]	14,961	7,638	13,615
Bentonite [2]	254	1,027	329
Fire [2]	65	1,490	1,321
Industrial white [2]	912	537	1,524
Pottery	935	635	2,256
Feldspar [2]	353	812	695
Fluorspar	127	[e] 130	[e] 130
Graphite	102	78	152
Gypsum	[r] 3,499	5,334	12,193
Precious and semiprecious stones:			
Jadeite—kilograms	3,758	14,952	17,546
Rubies and sapphires—carats	6,750	10,881	18,000
Salt—thousand tons	176	193	186
Sand:			
Glass sand, brown [2]	NA	NA	4,822
Glass sand, white [2]	NA	NA	2,279
Stone:			
Dolomite [2]	768	786	658
Limestone, crushed and broken—thousand tons	572	604	609
Quartz [2]	NA	106	274
Talc and related materials, soapstone	152	213	215
MINERAL FUELS AND RELATED MATERIALS			
Coal	14,613	15,259	19,711
Gas, natural, gross production—million cubic feet	2,900	[er] 2,500	1,628
Petroleum:			
Crude—thousand 42-gallon barrels	[r] 6,050	6,388	6,652
Refinery products:			
Gasoline, aviation—do	29	24	--
Gasoline, other—do	1,457	1,476	1,415
Jet fuel—do	200	167	243
Kerosine—do	1,857	1,810	2,247
Distillate fuel oil—do	[r] 1,706	1,667	2,227
Residual fuel oil—do	1,014	929	1,610
Other—do	192	366	679
Refinery fuel oil and losses—do	402	328	NA
Total—do	6,857	6,767	NA

[e] Estimate. [p] Preliminary. [r] Revised. NA Not available.

[1] In addition to the commodities listed, Burma also produces sand and gravel, and other varieties of crude stone, but data are inadequate to make reliable estimates of output levels.

[2] Data are for years ending June 30 of that stated.

TRADE

Burma's overall foreign trade declined sharply, from $284 million in fiscal year 1969–70 to about $216 million in 1970–71. Although total exports at $118 million showed a significant increase, total imports declined $74 million to $98 million according to preliminary estimates. In fiscal 1969–70, Burma exported $5.29 million in base metals and ores and $1.32 million in silver. In fiscal 1970–71, base metal exports were slightly down, but silver exports increased to more than four times the total for the previous year.

Burma's imports of mineral and related products dropped from roughly $31 million in 1968–69 to $26 million in 1969–70, and possibly to only $17 million in 1970–71. The largest item was base metals and manufactures, which reached $20.9 million in 1969–70, but declined to possibly only $14 million in 1970–71. Fertilizer imports showed the greatest change, declining from $6 million in 1968–69 to less than $1 million in 1969–70, and according to preliminary estimates, nil in 1970–71. Construction of new fertilizer plants brought about the sharp decline.

Table 2.—Burma: Exports and reexports of mineral commodities

(Metric tons unless otherwise specified)

Commodity	1969	1970	Principal destinations, 1970
METALS			
Antimony ore and concentrate	40	--	
Copper matte	--	220	All to West Germany.
Iron and steel semimanufactures	1	--	
Lead:			
Ore and concentrate	219	--	
Metal, unwrought:			
Refined	11,021	2,688	Hong Kong 2,438.
Antimonial	367	--	
Nickel matte and speiss	--	166	All to West Germany.
Silver, unwrought, thousand troy ounces	2,599	1,057	United Kingdom 733; West Germany 323.
Tin ore and concentrate [1], long tons	652	456	Netherlands 213; Spain 211.
Tungsten:			
Straight tungsten concentrates	279	275	Netherlands 104; India 92.
Mixed tin-tungsten concentrates	97	51	All to Netherlands.
Zinc ore and concentrate	7,878	5,530	All to Japan.
NONMETALS			
Cement	3	--	
Gem stone other than diamond:			
Jade:			
Uncut, thousand carats	64	80	All to Hong Kong.
Cut but not set, do.	125	23	Mainly to Hong Kong.
Rubies:			
Uncut, do.	40	1,238	Switzerland 1,030.
Cut but not set, do.	3	2	Hong Kong 1.
Sapphires:			
Uncut, do.	35	521	Switzerland 235; India 223.
Cut but not set, do.	7	9	Hong Kong 8.
Precious and semiprecious stones n.e.s.:			
Uncut, do.	--	99	Hong Kong 86.
Cut but not set, do.	151	2	All to Hong Kong.
MINERAL FUELS AND RELATED MATERIALS			
Anthracite and bituminous	6	--	
Petroleum refinery products:			
Gasoline, 42-gallon barrels	1	--	
Kerosine, do.	15	(2)	NA.
Distillate fuel oil, do.	10,496	18,436	NA.
Residual fuel oil, do.	56,524	11,316	NA.
Lubricants, do.	44	33	NA.
Tar and pitch, do.	5	--	

NA Not available.
[1] See also under tungsten for mixed tin-tungsten concentrates.
[2] Less than ½ unit.

Table 3.—Burma: Imports of mineral commodities [1]

(Metric tons unless otherwise specified)

Commodity	1969	1970	Principal sources, 1970
METALS			
Aluminum:			
Oxide and hydroxide	6	5	United States 4.
Metal including alloys:			
Unwrought	564	634	Australia 431.
Semimanufactures	433	1,561	U.S.S.R. 1,343; Japan 95.
Antimony ore and concentrate	1	--	
Arsenic trioxide, pentoxide, acids	10	27	West Germany 17.
Copper:			
Copper sulfate	10	67	Japan 50.
Metal including alloys:			
Unwrought	83	263	United Kingdom 254.
Semimanufactures	558	335	United Kingdom 127; Japan 97.
Iron and steel:			
Ore and concentrate	1	--	
Metal:			
Pig iron including cast iron	3,977	2,571	West Germany 2,442.
Sponge iron, powder and shot	--	3	All from West Germany.
Ferroalloys	101	20	West Germany 19.
Steel, primary forms	8,424	13,484	U.S.S.R. 13,439.
Semimanufactures	57,795	60,522	India 23,764; Japan 14,583; Belgium-Luxembourg 9,033.
Lead:			
Oxide	--	1	All from United Kingdom.
Metal including alloys unwrought and semimanufactures	5	18	Japan 7; United Kingdom 5.
Manganese oxides	260	681	Japan 539; West Germany 130.
Mercury, 76-pound flasks	357	2,290	West Germany 2,178.
Nickel metal including alloys, unwrought and semimanufactures	9	3	East Germany 2.
Platinum metals including alloys, all forms, troy ounces	18	29	Mainly from United Kingdom.
Silver including alloys, do.	4,929	1,873	Japan 1,146.
Tin:			
Oxides, long tons	3	(2)	NA.
Metal including alloys, unwrought and semimanufactures, do.	3	6	Japan 5.
Titanium oxides	99	204	United Kingdom 135; West Germany 66.
Tungsten including alloys, all forms	1	--	
Zinc:			
Oxide	76	42	West Germany 37.
Metal including alloys, all forms	237	602	North Korea 234; Belgium-Luxembourg 197.
Other:			
Ore and concentrate	--	24	Mainly from Hong Kong.
Oxides, hydroxides and peroxides of metals n.e.s.	12	43	United Kingdom 42.
Metals including alloys, all forms:			
Alkali and alkaline earth	8	--	
Base metals including alloys, all forms n.e.s.	36	(2)	NA.
NONMETALS			
Asbestos	1,121	1,465	Canada 828; Republic of South Africa 621.
Boric acid	19	37	United States 36.
Bromine	--	1	All from United Kingdom.
Cement	996	1,019	Italy 848.
Chalk	110	24	Belgium-Luxembourg 20.
Clays and products:			
Crude n.e.s.:			
Kaolin (china)	59	44	All from United Kingdom.
Other	41	103	Japan 40; West Germany 40.
Products:			
Refractory, value, thousands	$274	$116	Japan $70; United Kingdom $17.
Nonrefractory, do.	$14	$26	Japan $22.
Diamond, industrial, do.	$4	--	
Fertilizer materials:			
Manufactured:			
Nitrogenous	10,697	1,250	West Germany 644; Netherlands 520.
Phosphatic	17,983	1,016	All from Australia.
Potassic	--	20	All from Netherlands.
Mixed	1,007	2,212	Japan 2,197.
Ammonia	228	56	West Germany 28; India 17.
Graphite, natural	113	96	Japan 94.
Iodine	2	6	Mainly from United Kingdom.
Mica, all forms	1	1	Do.
Precious and semiprecious stones, except diamond:			
Jade, carats	1,184	902	Reimports.
Manufactured, do.	83,460	428,376	All from Belgium-Luxembourg.

See footnotes at end of table.

Table 3.—Burma: Imports of mineral commodities [1]—Continued
(Metric tons unless otherwise specified)

Commodity	1969	1970	Principal sources, 1970
NONMETALS—Continued			
Salt	73	3	All from United Kingdom.
Sodium and potassium compounds n.e.s.:			
Caustic soda	2,406	3,012	Poland 1,564; Netherlands 670.
Caustic potash, sodic and potassic peroxides	9	23	West Germany 18.
Stone, sand and gravel:			
Gravel and crushed rock	--	2	All from West Germany.
Quartz and quartzite	16	59	Belgium-Luxembourg 30.
Sulfur:			
Elemental	243	1,331	West Germany 1,318.
Sulfuric acid	117	12	United Kingdom 7.
Other nonmetals n.e.s.:			
Crude, other	251	213	India 208.
Oxides and hydroxides of magnesium	2	(2)	NA.
Building materials of asphalt, asbestos, and fiber cement, and unfired nonmetals n.e.s.	2	507	Japan 497.
MINERAL FUELS AND RELATED MATERIALS			
Asphalt and bitumen, natural	1	--	
Carbon black	160	250	Australia 109.
Coal and briquets:			
Anthracite and bituminous	153,854	206,829	All from India.
Lignite and lignite briquets	--	82	All from West Germany.
Hydrogen, rare and inert gases	25	5	All from Japan.
Petroleum:			
Crude—thousand 42-gallon barrels	447	1,473	Malaysia 1,378.
Refinery products:			
Gasoline, aviation—do	60	5	Mainly from Iran.
Kerosine and jet fuel—42-gallon barrels	263	1	All from United Kingdom.
Residual fuel oil—do	62,913	10	United Kingdom 7.
Lubricants thousand 42-gallon barrels	118	126	Singapore 80; Malaysia 15; Japan 15.
Mineral jelly and wax—42-gallon barrels	1,338	527	West Germany 244.
Other:			
Nonlubricating oils n.e.s—do	137,060	7,056	All from Japan.
Pitch—do	36,700	53,713	Malaysia 26,210; Japan 16,520.
Pitch coke—do	39	--	
Bitumen and other residues—do	76,732	12	All from West Germany.
Bituminous mixtures n.e.s—do	25,125	48	Mainly from West Germany.
Mineral tar and other coal, petroleum, or gas derived crude chemicals	354	9	United Kingdom 7.

NA Not available.
[1] Imports for consumption only; does not include imports into bond by commodity.
[2] Less than ½ unit.

COMMODITY REVIEW

METALS

Antimony.—In recent years, until 1970, the only antimony produced in Burma had been a few hundred tons of antimonial lead annually, analyzing 18 to 20 percent antimony, by the lead smelter in Namtu. Early in 1970, small-scale extraction of antimony ore was resumed, due primarily to extremely high prices and Government assistance by MDC. In fact, an intensive search for antimony led to the discovery of various deposits. A sharp decline in antimony prices from the high level of early 1970 undoubtedly will affect future operations, but actual production in 1971 was substantially higher than in the previous year.

Copper.—The Japanese Ministry of International Trade and Industry (MITI) joined with Japanese copper smelters to study the Monywa copper deposit northwest of Mandalay. Reserves are estimated at 15 million tons that grade from 1.3 to 1.5 percent copper.[5]

About 175 tons of copper matte was produced as a byproduct of refined lead from the Bawdwin mine.

Iron and Steel.—The Ywama steel plant, which has an electric furnace and rolling mills, remained the country's only steel producer. Scrap iron for feeding the furnace came from domestic sources, but a shortage seemed imminent. The steel plant rated at 40,000 tons of products annually has been running at about half capacity. Bars and rods were the main products, followed by wire nails, galvanized iron, and barrel sheets. Plans have been made to

[5] World Mining. Burma. V. 7, No. 8, July 1971, p. 42.

build additional facilities for wire netting, roller extension, tubes, and sheets, although funds were not in sight. Burma also has plans to build an integrated steel industry, a project which is even more uncertain.

Lead, Zinc, Copper, Silver, and Nickel.—The Government-owned Bawdwin enterprise in Northern Shan State near the Burma Road, originally under the Burma Corporation, then the People's Bawdwin Industry (PBI), and now the MBC, continued to be Burma's sole significant producer of nonferrous metals. Bawdwin has been producing refined lead, zinc concentrate, and byproducts for decades. The zinc concentrate has been sold as such mostly to Japan; lead and other materials have been sent to nearby Namtu for smelting before marketing abroad, primarily to India as in the case of refined lead. As of yearend 1970, this mining complex, with more than 7,000 workers, was capable of producing each year approximately the following: Refined lead, 15,000 tons; zinc concentrate, 10,000 tons; silver 1 million ounces; antimonial lead, 300 tons; copper matte, 200 tons; and nickel speiss, 130 tons.

The decline of the historically famous Bawdwin mine is mainly attributed to depletion of high-grade reserves that have analyzed one-third combined base-metal content in the ore. The tenor of the extracted ore has dropped sharply, and the grade of concentrates produced apparently continues to decline. Overall output of lead concentrates increased considerably, reaching about 16,900 tons in 1971, compared with 14,700 tons in 1970. However, the old smelter, which has a large surplus capacity, reportedly produced only 9,480 metric tons of refined lead in 1971, slightly lower than 1970.

The small Bawsaing mine in the Taunggyi district, also under MBC, which controls all nonferrous base-metal operations in the country, was being expanded to produce about 1,000 tons per year each of sulfide lead ore, carbonate lead ore, and lead slag. Output, so far totaling only about 2,000 tons of ore per year, has been sent to Namtu for smelting.

The new Yadana Theingi mine in the Nawnghkio district, Northern Shan State, was being built up to produce over 40,000 tons of silver-lead-zinc ore annually. The plan is to construct a powerplant, a mill, and a 32-mile road from the mine to Ohnmathi on the Mandalay-Lashio highway.

Tin and Tungsten.—MDC continued to control most of the country's tin and tungsten mines, and Government policy calls for the eventual takeover of the remaining private mines as soon as their licenses expire. Concentrates were produced separately or in mixed form. Combined annual output of the two related minerals has ranged between 800 and 1,700 tons of concentrates during the last 5 years, much lower than pre-World War II levels. Although statistics are conflicting, Burma has been producing, in terms of metal content, approximately 300 to 600 tons of tin and 100 to 350 tons of tungsten per year. Most production has come from the Tavoy and Mergui districts in the Tenasserim Division near the Thai border. The Government helps the small miners with implements. It also buys concentrates at relatively low prices, an action which has brought about smuggling into Thailand. Large-scale dredging operations have virtually ceased.

In an effort to spur production, a 4-year technical assistance agreement was signed between MDC and the Soviet Union to rehabilitate the once-famous Mawchi tin-tungsten lode mine. The mine was reopened on March 27, 1970, and a Soviet team of five experts arrived 4 months later. The initial goal was to produce about 100 tons of mixed concentrates monthly—roughly twice the monthly levels late in 1970. This was not achieved for 1971 as a whole. Apparently production of tin concentrate and tungsten concentrate were increased considerably in 1971, which indicates that the overall rehabilitation program was making significant progress.

NONMETALS

Cement.—Burma's only cement plant at Thayetmyo is also a Government enterprise. With two wet-process rotary kilns, the plant is capable of producing about 180,000 tons per year.

The Industrial Development Corp., operators of the Thayetmyo plant, ordered a second plant from Japan near yearend 1970. Kawasaki Heavy Industries is to supply this 800-ton-per-day cement plant for about $8.5 million. The plant will be installed in the Kyangin area in the upper reaches of the Irrawaddy River in 1972.

Fertilizer Materials.—Difficulties in rice production influenced the Government to encourage the use of chemical fertilizers in Burma. During the 5 years prior to 1970, annual fertilizer consumption had risen to approximately 150,000 tons, all imported. In 1970 the first of two similar fertilizer plants was completed, signaling the eventual stoppage of large-scale imports of nitrogen fertilizers. Complex or mixed fertilizers, however, would still be imported.

Both plants are located near the Chauk oilfields in central Burma in order to utilize the natural gas there. The annual capacities of each plant, costing approximately $14 million each, will be 40,000 tons of ammonia and an associated 65,000 tons of urea. The first plant, located at Pagan 20 kilometers north of Chauk, was built by the Japanese firm Hitachi Zosen. The second plant, near Sale at Kyunchaung 30 kilometers south of Chauk, is being built by a consortium of West German firms and was nearing completion late in 1971.

Gem Stones.—Uncut Burmese jade continued to be of importance in world jewelry circles. Annual output usually varies between 52,300 and 93,300 kilograms of uncut jadeite. Since many mines are in insurgent territory near the border, additional jade presumably was produced and smuggled out of the country. Burma also produces ruby, sapphire, spinel, other "precious stones," and cultured pearls. The pearl industry was nationalized in 1964, when the Japanese part of a joint venture was dissolved. Producers of jade and precious stones were first required to sell to MDC. By 1970, both these industries had become totally nationalized.

During the eighth annual emporium held in Rangoon in March 1972, sales totaled $2.3 million, including $1.7 million for jade, $362,250 for pearls, and $148,000 for precious stones. Pearl sales have lost ground steadily since the Japanese left. Recorded output of precious stones also declined sharply since nationalization.

Salt.—Burma produces the salt it needs, which amounted to about 185,000 tons during 1971. Early in 1970 the Burma Salt Industries, the sole operator harvesting salt from brine pits located along the Indian Ocean coast, started a modernization program. The company has placed a $1 million order with Allis-Chalmers Manufacturing Co. for tractor scrapers, crawler dozers, and graders to build pits, dikes, and channels, which will replace elephants and bullocks formerly employed.

Other Nonmetallics.—An Industrial Raw Materials Committee helps MDC supervise various small, nonmetallic industries, which include fire clay from Pegu Yomas east of Minhla and from Kyaukpadaung; fluorspar from Kalaw; soapstone from Katha; graphite from Wapyudaung; manganese dioxide from Kyaukpadaung; bentonite from Shwebo; gypsum from Chauk; dolomite from Kalaw and feldspar from Thazi and Taungtha for the Syrium glass factory; quartz from Choungzon in Amherst district; and barite from Kyaukse and elsewhere. Barite and bentonite extraction were being stepped up because of growing demand by MOC. The industrial clay near Minhla may turn out to be rather important.

MINERAL FUELS

Coal.—The Kalewa coalfield in the northwest, sole producer in Burma, produced about 19,700 tons of low-grade coal during 1971, compared with only 15,000 tons during 1970. Burma's imports of coal are also small.

Petroleum.[6]—Burma intensified offshore exploration in 1971 and prepared to begin exploratory drilling in the Gulf of Martaban, financed by a Japanese loan. The Government continued to seek foreign governmental assistance in 1971. In addition to the loan from Japan, it received a $2.8 million loan from the Eximbank to help finance the purchase of six U.S. onshore drilling rigs and ancillary equipment.

Onshore, based largely upon expanded production at the new Mann field, crude output continued to climb and probably reached 20,000 barrels per day by late 1971. Production at Burma's other fields either held its own or declined. Chauk and Yenangyaung, Burma's old fields, although declining slowly, still accounted for about 6,000 barrels per day between them. Myanaung, which also produced about 6,000 barrels per day, is declining more rapidly than expected, even though secondary recovery methods have been instituted. The Prome field is holding its own at about

[6] U.S. Embassy, Rangoon, Burma. Annual Petroleum Report. State Department Airgram A-183, Dec. 21, 1971, pp. 1–12.

2,000 barrels per day. Production at Shwepyitha has shut down completely.

Operating at about 91-percent capacity (1,125,000 gallons per day), Burma's two refineries at Syriam and Chauk processed almost 375 million gallons of refined products in 1970–71, the fifth consecutive year that refined production has increased.

In 1971 Burma added a new item to its small list of petroleum export products, naphtha. For the past 2 years MOC has had excess naphtha available for sale from its refinery at Syriam, where 60,000 tons were reportedly processed in 1970–71. In March MOC made its first sale, contracting with Mitsui of Japan to sell 20,000 tons. Burma also exports a few thousand tons of petroleum coke mainly to Japan and Malaysia, and wax (figures unknown). In addition, Burma earns about $42,000 per month from the sale of jet aviation fuel to airlines using Mingaladon Airport.

Burma continued to import sizable quantities of crude oil during the year because production was unable to keep up with consumption. Imports of crude oil during the fiscal year were 80 percent greater than the previous year.

Offshore, after the seismic survey conducted in late 1970 and early 1971 by the West German firm Prakla, MOC issued tenders for drilling exploratory wells in the Gulf of Martaban. The contract was awarded to the firm Reading & Bates, largely on the basis of the technical suitability of its rig, the MG Hulme. The work is being financed by a long-term Japanese loan of $10 million, which is untied to the use of Japanese equipment and companies. Preparatory to drilling, Japan Petroleum Exploration Co. conducted a detailed seismic survey of part of the area covered in the initial survey by Prakla. Drilling was scheduled to begin in early 1972.

Onshore exploration covered about 9,475 square miles in fiscal year 1970–71, up from 8,323 square miles in 1969–70. Exploration work included geological, magnetic, and seismic surveys and ranged over most of the country, although there appeared to be a shift in emphasis from the Arakan coastal region to Lower Burma in the Rangoon area. The two most promising areas surveyed were the Thayetmyo region on the west bank of the Irrawaddy between Prome and the Mann field and the area around Rangoon. Both areas were scheduled for exploratory drilling in the coming year. Uncertainties regarding security in Burma have made distribution difficult, and most of the crude is being shipped to refineries by water and trucks rather than by pipeline.