

The Mineral Industry of Ireland

By J. M. West ¹

Among the important events in the Irish minerals industry during 1971 were the discovery of natural gas in offshore exploration drilling and confirming large reserves at the zinc-lead discovery of Tara Exploration and Development Co., Ltd., potentially worth nearly \$2 billion ² in the ground. Generally, Ireland's metal mining industry produced at lower rates in 1971 owing to the depressed economic activity of its prime consumer, the United Kingdom. Conversely, the nonmetals producing industry showed greater activity than in 1970 when operations were curtailed because of strikes, and cement output was considerably higher in 1971. Imports of crude oil and consumption of petroleum products were sharply higher in 1971 as a result of industrial demands. Petroleum refining continued to rise. Consideration was given to establishing an alumina plant to treat imported bauxite. A plant to treat manganese dioxide for batteries was in the planning stage, pending approval of plans for construction of a lead-zinc smelter.

Underlying problems in the Irish econ-

omy continued to be inflation, economic stagnation, and unemployment. Growth in the real gross national product (GNP) was estimated at about 3 percent in 1971, a little higher than in 1970. The 1971 GNP amounted to \$4.8 billion at current prices, or \$3.7 billion at constant 1968 prices. The country's trade deficit, partly due to oil imports, rose slightly during 1971 to a yearend figure of about \$0.56 billion. The prospects of Ireland's entry into the European Communities in 1972-73 appeared favorable, and such entry was expected to have a marked stimulus on Irish economic growth, including anticipated growth in the minerals producing and consuming industries. Ireland continued to offer generous grants to finance new plants and equipment through its Industrial Development Authority. Also, the Government allowed a 15-year tax holiday on all profits derived from exports as an incentive for establishing mineral processing and other industrial plants. Ireland's labor costs, although rising, continued to be comparatively low for a relatively developed country.

PRODUCTION

Lead, zinc, and silver production declined in 1971, but outputs of most other mineral products were higher. Copper and mercury production rose despite declining world prices. Mercury was produced as a by-product at the Gortdrum copper mine. Output of construction materials rose in

accordance with higher levels of construction activities. Output of refined petroleum products were greater than in 1970.

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² Where necessary values have been converted from the Irish pound to U.S. dollars at the rate of £1 = US\$2.55.

Table 1.—Ireland: Production of mineral commodities
(Metric tons unless otherwise specified)

| Commodity ¹ | 1969 | 1970 | 1971 ^p |
|--|---------|----------|-------------------|
| METALS | | | |
| Copper, mine output, metal content..... | † 6,269 | 8,332 | 11,800 |
| Lead, mine output, metal content..... | 58,700 | 62,800 | 51,600 |
| Iron and steel, crude steel..... | 81 | 82 | ° 90 |
| Mercury..... | 420 | 1,304 | ° 2,000 |
| Silver, mine output, metal content..... | 1,866 | 2,171 | 1,432 |
| Zinc, mine output, metal content..... | 97,480 | 96,500 | 87,500 |
| NONMETALS | | | |
| Barite..... | 160,505 | 221,000 | ° 161,000 |
| Cement, hydraulic..... | 1,273 | 860 | 1,381 |
| Gypsum..... | † 294 | 295 | ° 300 |
| Lime..... | 53 | 59 | 54 |
| Sand and gravel ² | 4,352 | 4,779 | 5,954 |
| Stone, limestone ² | 5,387 | 5,488 | 6,777 |
| Other ³ | 3,201 | 2,766 | 3,095 |
| MINERAL FUELS AND RELATED MATERIALS | | | |
| Coal: | | | |
| Anthracite..... | 90 | 79 | ° 73 |
| Bituminous..... | 63 | 75 | 63 |
| Coke, gashouse, including breeze..... | 36 | 36 | ° 36 |
| Peat: | | | |
| Agricultural use..... | 54 | 53 | 57 |
| Fuel use: | | | |
| Briquets..... | 314 | 319 | 327 |
| Sod peat ⁴ | 2,188 | 2,160 | 2,183 |
| Milled peat ⁵ | 3,927 | 2,881 | 2,985 |
| Petroleum refinery products: | | | |
| Gasoline..... | 4,344 | 4,260 | 4,208 |
| Jet fuel..... | 616 | 488 | 602 |
| Distillate fuel oil..... | 4,692 | 5,326 | 5,185 |
| Residual fuel oil..... | 6,307 | 8,449 | 9,485 |
| Other..... | 910 | 1,035 | 1,172 |
| Refinery fuel and losses..... | 750 | 718 | 762 |
| Total..... | 17,619 | † 20,276 | 21,414 |

° Estimate. ^p Preliminary. † Revised.

¹ In addition to the commodities listed, substantial quantities of stone, and sand and gravel are produced by local authorities for purposes such as road maintenance, but statistics on such output are not reported and available information is inadequate to make reliable estimates of output levels.

² Excludes materials produced by local authorities (see footnote 1).

³ Figures given as reported in source; includes granite, marble, silica rock, sand, calcspar, fire clay, and shale and clays for cement, but apparently excludes those quantities of these materials specified in footnote 1.

⁴ Includes production of farmers and by Bord Na Móna.

⁵ Includes milled peat used in production of peat briquets listed previously in this table.

TRADE

Because of reduced export trade to the United Kingdom in 1971, the value of metal ore and scrap exports from Ireland declined from \$50.4 million in 1970 to \$41 million in 1971. Particularly sharp declines were noted in exports of lead and zinc. Lead ore and concentrate exports declined from 145,766 metric tons valued at \$17.2

million in 1970 to 114,975 tons valued at \$10.14 million in 1971. Zinc ore and concentrate exports fell from 194,329 metric tons valued at \$22 million in 1970 to 127,255 tons valued at \$15 million in 1971. Imports of crude petroleum rose almost 15 percent.

Table 2.—Ireland: Exports¹ of mineral commodities
(Metric tons unless otherwise specified)

| Commodity | 1969 | 1970 | Principal destinations, 1970 |
|---|----------------|----------------|--|
| METALS | | | |
| Aluminum: | | | |
| Metal including alloys: | | | |
| Scrap..... | 607 | 566 | NA. |
| Unwrought and semimanufactures..... | 4,708 | 3,964 | United Kingdom 3,658; West Germany 87. |
| Copper: | | | |
| Ore and concentrate..... | 18,451 | 11,732 | Spain 5,776; Canada 3,690. |
| Metal including alloys: | | | |
| Scrap..... | 4,258 | 4,243 | United Kingdom 1,568; Netherlands 968; Spain 524. |
| Unwrought..... | 980 | 339 | Netherlands 391; Italy 365; West Germany 62. |
| Semimanufactures..... | 701 | 682 | United Kingdom 379; United States 295. |
| Iron and steel: | | | |
| Scrap..... | 11,361 | 10,864 | France 4,359; Spain 2,548; Sweden 1,213. |
| Semimanufactures..... | 14,548 | 17,217 | United Kingdom 16,467. |
| Lead: | | | |
| Ore and concentrate..... | 148,308 | 145,766 | Belgium-Luxembourg 51,767; France 32,678. |
| Metal including alloys: | | | |
| Scrap..... | 211 | 262 | United Kingdom 221. |
| Unwrought and semimanufactures..... | 2,562 | 2,541 | United Kingdom 1,160; France 957; United States 208. |
| Zinc ore and concentrate..... | 193,548 | 194,329 | France 48,601; Netherlands 29,311; United Kingdom 27,840. |
| NONMETALS | | | |
| Barite and witherite..... | 156,435 | 222,142 | United States 179,231; Norway 9,966; Nigeria 8,514. |
| Cement..... thousand tons.. | 102 | 37 | All to United Kingdom. |
| Clays and products: | | | |
| Refractory (including nonclay bricks).. | 37,422 | 46,156 | United Kingdom 15,823; Netherlands 11,170; Italy 9,649. |
| Fertilizer materials: | | | |
| Manufactured..... | 28,830 | 18,366 | United Kingdom 18,303. |
| Gypsum and plasters..... thousand tons.. | 100 | 108 | All to United Kingdom. |
| Stone, sand and gravel: | | | |
| Gravel and crushed rock..... do.... | 359 | 305 | West Germany 146; United Kingdom 94; Netherlands 46. |
| MINERAL FUELS AND RELATED MATERIALS | | | |
| Coal and coke, including briquets..... | 18,397 | 183,344 | United Kingdom 97,140; Netherlands 51,396; Norway 21,241. |
| Gas hydrocarbon..... | 15,221 | 15,338 | All to United Kingdom. |
| Peat including peat briquets and litter..... | 82,551 | 89,840 | United Kingdom 87,136. |
| Petroleum refinery products (including bunkers): | | | |
| Gasoline (including natural) thousand 42-gallon barrels.. | 157 | 149 | All to United Kingdom. |
| Kerosene..... do.... | 1,686 | 126 | Bunkers. |
| Distillate fuel oil..... do.... | 806 | 2,388 | Bunkers 1,656; United Kingdom 732. |
| Residual fuel oil..... do.... | 2,704 | 4,017 | United Kingdom 3,231; Bunkers 620; Netherlands 132. |
| Lubricants..... do.... | -- | 28 | All to United Kingdom. |
| Other..... do.... | 309 | 302 | NA. |
| Total..... do.... | 5,662 | 7,010 | |

^r Revised. NA Not available.

¹ Excludes reexports.

Table 3.—Ireland: Imports of mineral commodities

(Metric tons unless otherwise specified)

| Commodity | 1969 | 1970 | Principal sources, 1970 |
|---|---------|---------|--|
| Metals | | | |
| Aluminum metal, including alloys: | | | |
| Unwrought..... | 8,335 | 5,082 | Canada 3,174; United Kingdom 1,428; West Germany 350. |
| Semimanufactures..... | 6,294 | 6,536 | United Kingdom 4,768; West Germany 470; Belgium-Luxembourg 336. |
| Copper metal, including alloys: | | | |
| Unwrought..... | 185 | 156 | United Kingdom 127. |
| Semimanufactures..... | 8,590 | 7,965 | United Kingdom 7,548; West Germany 137; France 73. |
| Iron and steel: | | | |
| Pig iron, ferroalloys, and similar materials..... | 22,665 | 29,890 | United Kingdom 11,854; Spain 11,849; Poland 3,915. |
| Steel, primary forms..... | 6,937 | 5,449 | West Germany 3,549; United Kingdom 1,382. |
| Semimanufactures: | | | |
| Bars, rods, angles, shapes, and sections..... | 102,831 | 100,209 | United Kingdom 59,145; West Germany 15,258; Belgium-Luxembourg 10,989. |
| Universals, plates, and sheets..... | 96,663 | 89,844 | United Kingdom 55,619; Belgium-Luxembourg 8,733. |
| Hoop and strip..... | 11,527 | 9,527 | United Kingdom 8,601; West Germany 405; Belgium-Luxembourg 395. |
| Rails and accessories..... | 6,376 | 3,699 | United Kingdom 2,637; West Germany 242. |
| Wire..... | 22,622 | 8,127 | United Kingdom 6,068; West Germany 1,312. |
| Tubes, pipes, and fittings..... | 41,507 | 48,250 | United Kingdom 40,090; Netherlands 2,521. |
| Castings, and forgings, rough..... | 555 | 339 | United Kingdom 326. |
| Total..... | 282,081 | 259,995 | |
| Lead: | | | |
| Oxides..... | 1,586 | 1,881 | United Kingdom 1,857. |
| Metals including alloys, all forms..... | 1,281 | 1,566 | United Kingdom 1,423. |
| Nickel, metal, including alloys, all forms..... | 449 | 539 | United Kingdom 361; Switzerland 107. |
| Platinum-group metals and silver metal, including alloys: | | | |
| Platinum group..... value, thousands..... | \$190 | \$183 | All from United Kingdom. |
| Silver, all forms..... do..... | \$371 | \$302 | United Kingdom \$291. |
| Tin metal including alloys, all forms..... | | | |
| long tons..... | 100 | 341 | United Kingdom 125. |
| Titanium oxide..... | 3,265 | 3,201 | United Kingdom 2,094; West Germany 518; Netherlands 265. |
| Zinc: | | | |
| Oxides..... | 686 | 783 | United Kingdom 524. |
| Metal including alloys: | | | |
| Unwrought..... | 4,579 | 2,767 | United Kingdom 2,341; Bulgaria 302. |
| Semimanufactures..... | 866 | 890 | United Kingdom 804; West Germany 65. |
| Other, ore and concentrate..... | 20,686 | 15,581 | Republic of South Africa 15,103. |
| NONMETALS | | | |
| Asbestos..... | 6,545 | 4,350 | Cyprus 1,420; Republic of South Africa 1,345; U.S.S.R. 639. |
| Cement..... thousand tons..... | 1,526 | 208 | United Kingdom 138; Denmark 50; Belgium-Luxembourg 11. |
| Clays and products (including nonclay bricks): | | | |
| Crude n.e.s..... | 14,802 | 18,705 | United Kingdom 15,512; Greece 2,000. |
| Products: | | | |
| Refractory (including nonclay bricks)..... | 14,799 | 17,756 | United Kingdom 16,845; Canada 456. |
| Nonrefractory..... | 7,558 | 7,121 | United Kingdom 5,734; West Germany 913. |
| Fertilizer materials: | | | |
| Crude: | | | |
| Nitrogenous..... thousand tons..... | 1 | -- | |
| Phosphatic..... do..... | 339 | 385 | All from Morocco. |
| Manufactured: | | | |
| Nitrogenous..... do..... | 12 | 16 | United Kingdom 7; Portugal 5. |
| Phosphatic: | | | |
| Thomas slag..... do..... | 153 | 152 | Belgium-Luxembourg 150; United Kingdom 2. |
| Other..... do..... | 17 | 20 | United Kingdom 15; Netherlands 3. |
| Potassic..... do..... | 193 | 253 | France 108; West Germany 58; Spain 29. |
| Other, including mixed..... do..... | 67 | 60 | United Kingdom 59; Netherlands 1. |
| Ammonia..... | 39,092 | 40,235 | United Kingdom 22,054; France 9,363; Netherlands 8,800. |
| Lime..... | 4,441 | 4,839 | All from United Kingdom. |

Table 3.—Ireland: Imports of mineral commodities—Continued
(Metric tons unless otherwise specified)

| Commodity | 1969 | 1970 | Principal sources, 1970 |
|--|---------|---------|--|
| NONMETALS—Continued | | | |
| Magnesite..... | 23,204 | 22,396 | United Kingdom 18,045; People's Republic of China 1,707. |
| Pyrite (gross weight)..... | 1,256 | -- | |
| Salt..... thousand tons.. | 51 | 56 | United Kingdom 39; West Germany 9; Spain 6. |
| Sodium and potassium compounds, n.e.s.... | 6,233 | 6,560 | United Kingdom 6,028. |
| Stone, sand and gravel: | | | |
| Dimension stone: | | | |
| Crude and partly worked..... | 5,022 | 2,448 | Italy 981; United Kingdom 785. |
| Worked..... | 363 | 218 | United Kingdom 215. |
| Gravel and crushed rock..... | 50,793 | 64,687 | United Kingdom 64,042. |
| Sand excluding metal bearing..... | 41,543 | 50,811 | Belgium-Luxembourg 36,527; United Kingdom 13,824. |
| Sulfur: | | | |
| Elemental..... | 108,525 | 120,686 | United States 99,693; France 20,662. |
| Sulfuric acid, including oleum..... | 12,587 | -- | |
| Other nonmetals, n.e.s..... | 10,974 | 14,351 | United Kingdom 6,882; Italy 2,989; Mozambique 1,442. |
| MINERAL FUELS AND RELATED MATERIALS | | | |
| Asphalt and bitumen, natural..... | 17,188 | 10,098 | United Kingdom 5,209; Netherlands 2,272. |
| Coal and coke, including briquets thousand tons.. | 1,167 | 1,230 | Poland 942; United Kingdom 173; United States 32. |
| Petroleum: | | | |
| Crude and partly refined thousand 42-gallon barrels.. | 16,997 | 20,287 | Kuwait 6,647; Saudi Arabia 6,029; Iran 4,682. |
| Refinery products: ¹ | | | |
| Gasoline..... do.... | 588 | 1,176 | United Kingdom 935; Italy 127; Israel 127. |
| Jet fuel..... do.... | 1,736 | 1,744 | All from United Kingdom. |
| Kerosine, white spirit, and special boiling point liquids..... do.... | 576 | 760 | Do. |
| Distillate fuel oil..... do.... | 918 | 1,365 | United Kingdom 1,253; Israel 112. |
| Residual fuel oil..... do.... | 7,706 | 8,685 | United Kingdom 5,881; U.S.S.R. 1,419. |
| Liquefied petroleum gases..... do.... | 290 | 348 | All from United Kingdom. |
| Lubricants..... do.... | 266 | 273 | Do. |
| Bitumen..... do.... | 24 | 21 | United Kingdom 19. |
| Other..... do.... | 2,390 | 2,362 | United Kingdom 707; Netherlands Antilles 476. |
| Total..... do.... | 14,494 | 16,734 | |

¹ Source: Organization for Economic Cooperation and Development (OCED; Paris), Oil Statistics, Supply and Disposal, 1969.

COMMODITY REVIEW

METALS

Aluminum.—Plans were discussed for the construction of a \$144 million alumina plant at Limerick. If built, the plant would treat imported bauxite, producing 600,000 tons of alumina per year for shipment to a new aluminum smelter in Northumberland, United Kingdom.

Copper, Lead, Zinc, Mercury, and Silver.—Production of copper coming mainly from the Avoca, Tynagh, and Gortdrum mines rose during the year. Avoca Mines (Canada) Ltd., controlled by Discovery Mines Ltd. (Canada), established new facilities at its Avoca copper mine in the Wicklow Mountains, south of Dublin.³ During the first 6 months of 1971, 403,000 tons of ore was milled, including 130,000 tons from old surface dumps and stockpiles, with a total

copper content of about 5.5 million pounds for an average grade of 0.79 percent copper. The flotation plant, with a 2,400-ton-per-day existing capacity, was scheduled for expansion to 4,000 tons per day. Copper concentrate was trucked 5 miles to Arklow for shipment to Spain and Sweden. Pyrite concentrate was stored at the mine site for future sale to Nitrigin Eireann Teoranta, an Irish firm building a fertilizer plant that will use the pyrite beginning about 1972 as a source of sulfur.

Outputs of other base metals and silver declined in 1971, although the outlook for future production was brighter than ever. Recent discoveries by Tara Exploration and Development Co. Ltd. at Navan, northwest

³ World Mining. Avoca is Ireland's Newest Copper Producer in a Historic Mining Center. V. 7, No. 12, November 1971, pp. 50-55.

of Dublin, were being confirmed by continued drilling. By the end of 1971 reserves were placed at more than 20 million tons and possibly as much as 50 million tons of zinc-lead ore averaging 12 to 14 percent combined metal content; generally, one-fifth was lead and the balance zinc. Bulk samples were scheduled to be taken for metallurgical testing, and plans were under consideration to produce at rates on the order of 2 million tons of ore per year. Tara also entered into an agreement with a United Kingdom subsidiary of American Metal Climax, Inc., for the latter to explore Tara's licensed areas in County Wexford.

The Tynagh lead-zinc mine of Irish Base Metals, Ltd., subsidiary of Northgate Exploration, Ltd. (Canada), continued to produce the bulk of the Irish lead output and a significant part of the zinc production.⁴ The mine, which began as an open pit, underwent extensive underground development in 1971 in the section known as Zone 2 which contains an estimated 4.5 million tons of ore. The open pit (Zone 1) was estimated to be about three-fourths mined out. Plans were made to phase out the open pit operation while preparing underground facilities for mining at rates of extraction reaching 850,000 tons per year by mid-1973. At the Gortdrum mine, also owned by Northgate Exploration, ore from the open pit was milled at a rate of about 1,500 tons per day, producing mill concentrates containing 30 to 40 percent copper and 20 to 30 ounces of silver per ton plus a small quantity of mercury. Over 2,000 flasks of mercury was expected to be produced in 1971 and marketed in the United Kingdom and Western Europe. Calcined copper concentrates were sent to Limerick and to the Rio Tinto-Patiño, S.A. smelter at Huelva, Spain.

Mogul of Ireland Ltd. developed a new ore zone at its Silvermines lead-zinc mine, near Tynagh, County Tipperary, at a depth of about 500 feet and located 4,000 feet east of the existing main shaft. The new ore body was estimated to contain about 2 million tons of ore grading 3.5 percent lead, 6 percent zinc, and 1 ounce per ton in silver. Production at the mine, all underground, was reduced in 1971 by a 2-month strike, but plans were in progress to expand milling rates from 2,000 to 3,000 tons per day with the additional output from the new zone.

Smelter Corp. of Ireland, Ltd. a sub-

sidary of Northgate Exploration, continued negotiations toward establishing a proposed \$70 million lead-zinc smelter on Little Island at Cork. Local opposition was voiced because of possible pollution problems. The Irish Government was expected to support construction by supplying up to 45 percent of the financing.

Manganese.—Mitsui Mining & Smelting Co., Ltd., of Japan planned construction of an approximately \$8 million electrolytic manganese plant in Ireland in conjunction with the proposed lead-zinc smelter of Smelter Corp. of Ireland. The plant, to produce up to 12,000 tons per year of manganese dioxide, chiefly for dry cell battery use, would rely on the smelter for an adequate and low cost supply of sulfuric acid, necessary for the manganese ore processing. Ores were to be imported primarily from Ghana and Gabon.

NONMETALS

Output of most nonmetallic minerals rose in 1971. The new seawater and dolomite magnesite plant of Quigley Magnesite Division, Pfizer, Inc. (U.S.), operated the full year at Dungarvan, County Waterford. Barite continued to be produced by Magcobar (Ireland) Ltd. in County Tipperary, mainly for U.S. markets. Cement was produced in greater quantity by Cement Ltd. at two locations, Drogheda and Limerick, with operations continuous through the year.

MINERAL FUELS

Ireland in 1971 depended largely on imported oil and coal for its primary energy supplies. Other domestic energy sources were peat, produced largely by Bord na Móna, a State organization; a small output of coal; and hydroelectricity, produced under authority of the Electricity Supply Board, a State organization with a monopoly on electricity production and distribution. All gas continued to be produced from imported coal or oil, although natural gas was discovered offshore during the year (see the petroleum section, this chapter). Oil and peat supplied about seven-eighths of the power for electrical generation. Plans were considered for construction of a \$200 million, 500-megawatt nuclear power station by the Electricity Supply Board, and specifications were

⁴ Mining Magazine (London). Major New Developments Underway at Ireland's Base Metal Mines. V. 126, No. 1, January 1972, pp. 13-25.

drawn up. Selection was due in 1972 from one of five coastal sites for the plant, and a 1980 completion date was proposed.

Coal, Coke, and Peat.—Output of sod, and milled peat increased in 1971, but production of anthracite and bituminous coal continued to decline. The quantity of briquets manufactured from peat increased and significant quantities of these briquets and of agricultural peat were exported, with the United Kingdom the principal destination. Imports of coal and coke included gas coal from Poland, as in the past.

Petroleum.—In late 1971 Marathon Petroleum (Ireland) Ltd. announced discovery of an apparently significant natural gas field in offshore waters about 27 miles from the Old Head of Kinsale in about 310 feet of water. A flow rate of 27.6 million cubic feet per day was recorded through a 0.5-inch choke in tests 2,700 to 3,050 feet below the surface. The discovery hole was drilled to 6,549 feet total depth, and other gas producing zones were noted. The gas from the drill hole was lit, and the flare was visible for miles. Further testing and exploration in the area was suspended for the winter months. Under Marathon's production agreements with the Irish Government, the firm must pay the Government

12.5 percent of the market value at the wellhead of any gas produced, after certain allowances. Also, any oil or gas found must be delivered to Ireland unless the Government consents to delivery elsewhere.

Ireland imported 22.23 million 42-gallon barrels of crude petroleum in 1971, nearly 10 percent more than in 1970, and of this, 57 percent came from Kuwait, 26 percent from Iran, 16 percent from Saudi Arabia, and nearly all of the balance from Southern Yemen. Partly refined petroleum totaling 0.78 million barrels was imported from the United Kingdom and Italy in 1971. Estimated consumption of refined products, as reported by a principal Irish distributor, was 32.12 million barrels, including bunker fuels. Consumption, excluding bunkering of foreign aircraft was as shown below, in thousand metric tons:

| Product | 1970 | 1971 |
|-------------------------|--------------|--------------|
| Gasolines | 609 | 669 |
| Aviation fuels | 73 | 392 |
| Kerosine | 104 | 93 |
| Gas/diesel oil | 745 | 872 |
| Residual fuel oil | 2,040 | 2,401 |
| Other | 198 | 200 |
| Total | 3,769 | 4,627 |

Source: Organization for Economic Cooperation and Development (OECD; Paris). Provisional Oil Statistics by Quarters (4th Quarter 1971), 1971.

