

Mineral Industry Surveys

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PRECIOUS METALS IN AUGUST 2000

U.S. mines produced 28,500 kilograms (kg) of gold and 161,000 kg of silver in August 2000. Compared with July, production of gold was down by 5% in California and up by 5% in Nevada; silver was down 6% in Nevada. Table 8 in this report lists the top 30 gold-producing mines in the United States in the third quarter of 2000.

Gold

Domestic.—Massive brush fires forced a temporary closure of the Montana Tunnels gold mine. About 200 mine employees were forced to evacuate the Hamilton, MT site. The open pit mine, which is owned by Apollo Gold Ltd., produced about 1,900 kg (60,000 ounces) of gold in 1999 (American Metal Market, 2000b).

Canyon Resources Corp. submitted a report to the Montana Department of Natural Resources and Conservation regarding the method of mining the McDonald and Seven-Up Pete gold-silver deposits in Lewis and Clark County, Montana. Canyon believes that an open pit operation using cyanide leaching is the only economic way of exploiting the deposits. Two years ago, voters in Montana approved an initiative (I-137) which banned the use of surface cyanide leaching in new or expanded mines in the State (Mining Journal, 2000b).

Newmont Mining Corp. curtailed gold mining operations at its Mule Canyon Mine in Nevada on August 31. Mining should resume in early March 2001. Newmont decided to put mining on hold because there wasn't much demand for Mule Canyon's sulfide ore, which has been trucked as a feed material to the nearby Lone Tree Mine autoclave (Platt's Metals Week, 2000b).

During 1999 and 1998, U.S. gold coin sales were between 75 and 90 metric tons (t) per year resulting primarily from Y2K anxiety, fears of stock market correction, and the uncertainty of the U.S. dollar. Prior to 1998, sales averaged about 30 t per year. In the first and second quarters of 2000, the U.S. gold coin market

changed dramatically; purchases declined significantly. In the first quarter, about 8 t of new gold coins were sold and 5 t of old gold coins were cashed in. In the second quarter, only one t of new gold coins was sold (American Metal Market, 2000h).

International.—Heavy rains reduced Australian gold production in the first six months of 2000 by 2% to 299,000 kg. Top mines, in descending order of gold production, were Super Pit, Granny Smith, St. Ives, Jundee/Nimary, and Cadia. The Telfer Mine was closed and the Yimuyin Manjerr (formerly Mt. Todd) Mine was placed on care-and-maintenance status (American Metal Market, 2000e).

Medals for the Sydney Olympics were made from donated freshly mined gold and silver, plus old Australian coins which were out of circulation. The gold medal was made of pure silver with a minimum of 6 grams of gold for plating. The silver medal was pure silver. While 1,000 gold, 1,000 silver, and 1,100 bronze medals were produced, only 650 gold, 650 silver, and 670 bronze medals were awarded during the Olympic Games (American Metal Market, 2000a).

First Quantum Minerals Ltd. has suspended operations at its Connemara gold mine in Zimbabwe. Connemara, which went into production in 1995, is the latest casualty of its adverse economic climate. The decision to suspend operations was taken because of low gold prices in terms of Zimbabwe dollars and the rising costs of gold production (Metal Bulletin, 2000).

Placer Dome Inc. has reached an agreement with its partner, Corporation Venezolana de Guayana, to extend the existing work contract on the Las Cristinas gold property in Venezuela by one year. Although the project remains suspended due to low gold prices, the extension provided the opportunity for Placer to fund sustainable development programs in the community and maintain the property (Platt's Metals Week, 2000a).

China's largest gold producer, Shangong Gold Group Co. Ltd.

(SGG), has adopted a novel approach to store tailings. SGG's Jiaojia gold mine produces over 180,000 t of tailings each year. Analysis of the mine tailings showed a composition of feldspar, quartz, dolomite, and calcite, which is suitable as a feedstock for making bricks. As a consequence, SGG is building a brick manufacturing plant (Mining Journal, 2000a).

On August 23, Uruguay sold about 24,000 kg (750,000 ounces) of its gold reserves. The central bank sale put downward pressure on gold prices. The liquidation of national gold reserves worldwide has abated in recent years, partly because of the Washington Accord, which was signed by 15 of the world's largest gold reserve holders who agreed not to sell more than 400 t per year. Uruguay, however, is not part of the pact (American Metal Market, 2000g).

Gold demand continued to hold steady during the second quarter of 2000. Total demand for gold was 789,000 kg, down 2% from the second quarter of 1999. Second quarter purchases of gold as an investment declined 22% from the second quarter of 1999, when early Y2K concerns drove up U.S. gold coin sales. Second quarter demand for gold jewelry, which was 695,000 kg in 2000, was 1% above that for the second quarter of 1999. Outstanding gains in jewelry consumption were made in Malaysia, Mexico, Taiwan, Thailand, and Turkey (American Metal Market, 2000d).

The London Bullion Market Association's gold clearing statistics fell to new lows during July. Gold transfers were down about 25% in comparison with those of June, falling to 20.5 million ounces (638,000 kg). The number of gold transfers decreased from 857 to a new low of 734. In addition, the quantity of gold transferred in July 2000 was lower than that of July 1999 (American Metal Market, 2000f).

Silver

Coeur d'Alene Mines Corporation, Coeur d'Alene, ID, reported increased production of silver at its Coeur Silver Valley operations in Wallace, ID. Production averaged 11,500 kg of silver per month during June, July, and August, a 36% increase from the average for the first five months of 2000. Cash cost of production averaged \$4.08 per troy ounce (ounce) compared with \$5.47 per ounce during the first five months of 2000 and \$5.09 per ounce in 1999. The company attributed the improvements to greater productivity and increased production from higher-grade ores (American Metal Market, 2000c).

During the first seven months of 2000, Mexico's refined silver output grew by 8% to 1,500 t. Most of the silver was produced as a byproduct of lead smelting. Industrias Peñoles S.A. de C.V., Mexico's leading silver producer, was able to increase silver output at its Torreon Refinery because the adjacent lead smelter was running at close to 100% of capacity. Peñoles' Rey de Plata Mine, with an annual production of 70 t to 75 t of lead-silver concentrates, was due to begin production at the end of September and La Negra Mine, closed earlier in 2000, was expected to reopen in October. La Negra's lead concentrates contain 6 to 7 kg per t of silver and is expected to produce 35 t per year of silver in lead concentrates (CRU Precious Metals Monitor, 2000).

Spent Silver Catalyst used as Bactericide.—Catalysts make industrial processes, such as the production of plastics, more efficient by increasing the rates of reaction, and eliminating unwanted chemical reactions and their byproducts. After periods of use, catalysts become deactivated and must be regenerated. In

the case of silver catalysts, refiners can remove the silver from its substrate, usually alumina, refine it and place it onto a new substrate. Not all of the silver, however, can be economically removed from the substrate. Studies have shown that used silver catalyst substrates retain enough silver to enable the material to be used as an effective bactericide or fungicide. When immersed in water, the spent catalyst will release the more readily available silver immediately, inactivating a large range of bacteria, including *E-coli*. The remaining silver, more strongly bound within the pore structure of the alumina, dissolves more slowly and supplies a concentration of about 5 parts-per-billion (which will also inactivate bacteria) over a long period of time, giving the material a long-term sanitation effect (Silver News, 2000).

Platinum-Group Metals

Russia's Krasnoyarsk precious metals refinery may be nationalized if a plan by the regional parliament is adopted. Krasnoyarsk, the only Russian refinery that can handle large volumes of PGM concentrates, processes nearly all of Norilsk Nickel's PGM concentrates. The parliament's Property Committee recommended that the joint stock company which owns the refinery's assets be converted into a State enterprise. When Krasnoyarsk was privatized in the mid-1990's, it came under the control of Uneximbank and Norilsk Nickel, also based in Krasnoyarsk. Norilsk Nickel was later forced to return its refinery shares to offset tax debts. Krasnoyarsk officials now want to reverse the privatization, claiming that it would facilitate stricter control of the facility and its PGM output and prevent refinery shares from being used as loan collateral (Platt's Metals Week, 2000c).

Anoroaq Resources Corporation reported that core holes drilled at the company's Platreef platinum/palladium project on the Bushveld Complex in South Africa successfully intersected platinum/palladium/rhodium/gold horizons with associated copper/nickel mineralization over a strike length of 4.5 kilometers (km). The prospective Platreef horizon on the property has a total strike length of 11.5 km (Engineering & Mining Journal, 2000).

New Fuel Cell Eliminates Need for Platinum.—The most commonly used fuel cells contain platinum catalysts to convert conventional fuels into hydrogen fuel. Researchers in Japan have designed a solid-oxide fuel cell (SOFC), that advances the prospect of using fuel cells for onboard power generation in transportation applications that require the use of conventional fuels. The system consists of only one gas chamber in which both the anode and cathode are exposed to the same mixture of fuel and air. This design eliminates the need for a reformer, which uses a platinum catalyst, to convert hydrogen rich hydrocarbons to hydrogen. Among the advantages over more commonly used polymer electrolyte membrane (PEM) fuel cells: SOFC's do not require conversion of hydrocarbons to hydrogen, and SOFC's have a lower fabrication cost because they do not require the use of platinum catalysts. In addition, the anode in SOFC's is not poisoned by carbon monoxide, a major problem with PEM fuel cells that decrease their performance when conventional fuels are used directly. The new SOFC design also is compact and takes up less space than PEM cells. That advantage, combined with no need for an onboard reformer, makes the SOFC system attractive for transportation applications (Environmental Science & Technology, 2000, p. 419A).

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TABLE 1
MINE PRODUCTION OF RECOVERABLE GOLD AND SILVER IN THE UNITED STATES, BY STATE 1/

(Kilograms)

| Gold | Alaska | California | Nevada | Other States 2/ | Total |
|------------------|----------|------------|-----------|-----------------|------------|
| 1999: p/ | | | | | |
| August | 1,390 | 1,350 | 21,100 | 4,340 | 28,100 |
| September | 1,360 | 1,370 | 21,200 | 4,310 | 28,300 |
| October | 1,260 | 1,540 | 21,800 | 4,440 | 29,000 |
| November | 1,180 | 1,640 | 22,200 | 4,470 | 29,500 |
| December | 1,260 | 1,810 | 21,900 | 4,620 | 29,600 |
| January-December | 15,700 | 17,500 | 257,000 | 51,300 | 341,000 |
| 2000: | | | | | |
| January | 1,200 | 1,470 | 23,200 | 4,200 | 30,000 |
| February | 1,140 | 1,390 | 21,700 | 4,030 | 28,300 |
| March | 1,200 | 1,390 | 22,600 | 4,400 | 29,600 |
| April | 1,190 | 1,280 | 21,400 | 4,240 | 28,100 |
| May | 1,190 | 1,360 | 19,500 | 4,540 | 26,600 |
| June | 1,190 | 1,470 | 21,400 | 4,710 | 28,800 |
| July | 1,460 r/ | 1,470 | 18,900 r/ | 4,410 r/ | 26,300 r/ |
| August | 1,460 | 1,400 | 20,800 | 4,810 | 28,500 |
| January-August | 10,600 | 11,700 | 196,000 | 35,200 | 254,000 |
| Silver | Arizona | Idaho | Nevada | Other States 3/ | Total |
| 1999: p/ | | | | | |
| August | 14,600 | 35,100 | 39,300 | 61,400 | 150,000 |
| September | 13,900 | 34,400 | 47,600 | 59,900 | 156,000 |
| October | 13,500 | 35,100 | 48,700 | 63,500 | 161,000 |
| November | 12,100 | 34,400 | 41,500 | 61,500 | 150,000 |
| December | 14,700 | 34,400 | 75,100 | 61,800 | 187,000 |
| January-December | 183,000 | 417,000 | 577,000 | 769,000 | 1,950,000 |
| 2000: | | | | | |
| January | W | 34,400 | 58,300 | 75,200 | 168,000 |
| February | W | 34,300 | 63,100 | 69,900 | 167,000 |
| March | W | 34,300 | 71,000 | 75,000 | 180,000 |
| April | W | 34,300 | 57,500 | 72,900 | 165,000 |
| May | W | 34,300 | 73,800 | 73,400 | 182,000 |
| June | W | 34,200 | 59,800 | 74,500 | 168,000 |
| July | W | 34,200 | 56,700 | 71,200 r/ | 162,000 r/ |
| August | W | 34,800 | 53,100 | 73,200 | 161,000 |
| January-August | W | 278,000 | 515,000 | 583,000 | 1,380,000 |

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data, included with "Other States."

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes Arizona, Colorado, Idaho, Montana, New Mexico, South Carolina, South Dakota, Utah, and Washington.

3/ Includes Alaska, California, Colorado, Missouri, Montana, New Mexico, New York, South Carolina, South Dakota, Tennessee, Utah, Washington, and State indicated by symbol W.

TABLE 2
SELECTED PRECIOUS METAL PRICES

(Dollars per troy ounce)

| | Gold | Silver | Platinum | Palladium |
|------------------------------|-----------------------|---|---|----------------------|
| <u>Engelhard Industries:</u> | | | | |
| 1999: | | | | |
| Low/date | 253.88 (July 20) | 4.91 (January 4, April 14, May 28, June 4) | 344.00 (January 28) | 293.00 (May 4) |
| High/date | 326.70 (October 5) | 5.75 (September 28) | 457.00 (November 16) | 456.00 (December 29) |
| Average | 279.91 | 5.25 | 378.94 | 363.20 |
| 2000: | | | | |
| July: | | | | |
| Low/date | 277.87/31 | 4.97/26 | 540.00/5 | 630.00/5 |
| High/date | 287.99/5 | 5.07/18 | 587.00/20,21, and 31 | 830.00/31 |
| Average | 282.14 | 5.02 | 568.42 | 721.16 |
| August: | | | | |
| Low/date | 273.11/9 | 4.83/23 | 568.00/7 | 720.00/28 |
| High/date | 278.72/1 and 2 | 5.03/31 | 615.00/2 | 865.00/2 |
| Average | 275.57 | 4.93 | 583.739 | 769.26 |
| September: | | | | |
| Low/date | 270.61/21 | 4.89/21 | 582.00/26 | 720.00/28 |
| High/date | 277.52/28 | 5.02/27 | 615.00/11 and 12 | 775.00/13 |
| Average | 274.65 | 4.95 | 595.75 | 738.85 |
| Year to date: | | | | |
| Low/date | 270.61 (September 21) | 4.83 (August 23) | 416.00 (January 6) | 437.00 (January 6) |
| High/date | 313.88 (February 7) | 5.53 (February 7) | 615.00 (August 2, September 11 and 12) | 865.00 (August 2) |
| Average | 283.34 | 5.08 | 532.56 | 648.06 |
| <u>Handy and Harman:</u> | | | | |
| 1999 | | | | |
| | 278.81 | 5.25 | XX | XX |
| 2000: | | | | |
| July | 281.01 | 5.02 | XX | XX |
| August | 274.44 | 4.93 | XX | XX |
| September | 273.53 | 4.95 | XX | XX |
| Average year to date | 282.20 | 5.08 | XX | XX |
| <u>London Final: 1/</u> | | | | |
| 1999 | | | | |
| | 278.77 | 5.22 | XX | XX |
| 2000: | | | | |
| July | 281.59 | 4.97 | XX | XX |
| August | 274.47 | 4.88 | XX | XX |
| September | 273.68 | 4.89 | XX | XX |
| Average year to date | 282.32 | 5.03 | XX | XX |

XX Not applicable.

1/ Silver price reported as "London Spot/US Equiv."

Source: Platt's Metals Week.

TABLE 3
U.S. IMPORTS AND EXPORTS OF GOLD 1/

(Kilograms of gold content, unless otherwise specified)

| Period and country | Ores and concentrates 2/ | Doré and precipitates | Refined bullion 3/ | Ash and residues | Total 4/ | Waste and scrap (gross weight) | Metal powder (gross weight) | Gold compounds (gross weight) |
|---------------------------------|--------------------------|-----------------------|--------------------|------------------|------------|--------------------------------|-----------------------------|-------------------------------|
| Imports for consumption: | | | | | | | | |
| 1999 | 117 | 24,700 | 196,000 | 133 | 221,000 | 30,500 | 5,500 | 9,400 |
| 2000: | | | | | | | | |
| May | 5 | 2,140 | 11,800 | 2 | 14,000 | 2,340 | 225 | 616 |
| June | 3 | 1,910 | 10,400 | 8 | 12,300 | 1,820 | 600 | 144 |
| July: | | | | | | | | |
| Brazil | -- | -- | 2,540 | -- | 2,540 | -- | -- | 112 |
| Canada | 7 | -- | 10,600 | -- | 10,600 | 73 | 773 | -- |
| Chile | -- | -- | 429 | -- | 429 | -- | -- | -- |
| Colombia | -- | 73 | 229 | -- | 301 | -- | -- | -- |
| Dominican Republic | -- | -- | -- | -- | -- | 333 | -- | -- |
| Fiji | -- | -- | 266 | -- | 266 | -- | -- | -- |
| Israel | -- | -- | 100 | -- | 100 | -- | -- | -- |
| Mexico | -- | 339 | 46 | 1 | 385 | 206 | -- | -- |
| Peru | -- | 1,080 | -- | -- | 1,080 | -- | -- | -- |
| Other | 1 | 108 | 104 | 1 | 213 | 176 | 24 | 2 |
| Total | 8 | 1,590 | 14,300 | 2 | 15,900 | 789 | 797 | 114 |
| Year to date | 27 | 21,900 | 99,900 | 13 | 122,000 | 11,400 | 2,440 | 6,850 |
| Exports: | | | | | | | | |
| 1999 | 117 | 87,300 | 435,000 | -- | 523,000 | 40,000 | 270 | 561,000 |
| 2000: | | | | | | | | |
| May | -- | 11,000 | 5,720 | -- | 16,700 | 3,650 | 24 | 25,200 |
| June | 96 | 10,000 | 29,800 | -- | 39,900 | 3,550 | 208 | 275,000 |
| July: | | | | | | | | |
| Canada | -- | 392 | 12 | -- | 405 | 2,260 | 4 | 23,900 |
| France | -- | -- | -- | -- | -- | -- | 1 | -- |
| Germany | 119 | -- | 7 | -- | 126 | 78 | 3 | -- |
| Israel | -- | 2 | 2 | -- | 4 | -- | 13 | 30,700 |
| Japan | -- | 2 | 5 | -- | 6 | 2 | 3 | -- |
| Mexico | 149 | -- | 2,730 | -- | 2,880 | -- | -- | -- |
| Netherlands Antilles | -- | -- | -- | -- | -- | -- | 2 | -- |
| Peru | -- | -- | 490 | -- | 490 | -- | -- | -- |
| Philippines | 2 | -- | 1 | -- | 3 | -- | -- | -- |
| Singapore | -- | -- | 14 | -- | 14 | -- | -- | 149 |
| Switzerland | -- | 10,300 | -- | -- | 10,300 | 19 | -- | -- |
| Thailand | -- | -- | -- | -- | -- | -- | 1 | -- |
| United Arab Emirates | -- | -- | -- | -- | -- | -- | 2 | -- |
| United Kingdom | -- | -- | 2,140 | -- | 2,140 | 610 | 19 | 362 |
| Other | -- | -- | 112 | -- | 112 | 164 | -- | 6 |
| Total | 270 | 10,700 | 5,510 | -- | 16,500 | 3,130 | 46 | 55,100 |
| Year to date | 371 r/ | 67,100 r/ | 245,000 r/ | -- | 312,000 r/ | 32,700 r/ | 589 r/ | 895,000 r/ |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes gold content of base metal ores, concentrates, and matte imported for refining.

3/ Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

4/ "Waste and scrap," "Metal powder," or "Gold compounds" not included in "Total."

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS AND EXPORTS OF SILVER, REFINED AND AS NITRATE 1/

(Kilograms)

| Period and country | Bullion (silver content) | Doré (silver content) | Total (silver content) | Other unwrought silver (gross weight) | Metal powder (gross weight) | Silver nitrate (gross weight) |
|---------------------------------|-----------------------------|--------------------------|---------------------------|--|-----------------------------------|-------------------------------------|
| Imports for consumption: | | | | | | |
| 1999 | 2,660,000 r/ | 407,000 r/ | 3,070,000 r/ | 126,000 r/ | 120,000 r/ | 4,480 r/ |
| 2000: | | | | | | |
| May | 245,000 | 4,680 | 250,000 | 28,200 r/ | 32,000 | -- |
| June | 222,000 | 3,650 | 226,000 | 10,600 | 40,100 | 23 |
| July: | | | | | | |
| Brazil | -- | -- | -- | -- | -- | 1,000 |
| Canada | 62,300 | -- | 62,300 | 12,800 | 9,740 | -- |
| China | 606 | -- | 606 | -- | -- | -- |
| Fiji | 142 | -- | 142 | -- | -- | -- |
| France | 100 | -- | 100 | -- | -- | -- |
| Germany | -- | -- | -- | -- | 1,940 | -- |
| Japan | -- | -- | -- | -- | 7,780 2/ | -- |
| Mexico | 131,000 | -- | 131,000 | 6,790 | -- | -- |
| Peru | 2,180 | -- | 2,180 | -- | -- | -- |
| United Kingdom | 123 | -- | 123 | 46 | -- | -- |
| Other | 86 | -- | 86 | -- | 2 2/ | -- |
| Total | 197,000 | -- | 197,000 | 19,600 | 19,500 | 1,000 |
| Year to date | 2,540,000 | 68,300 | 2,600,000 | 108,000 | 168,000 | 8,230 |
| Exports: | | | | | | |
| 1999 | 481,000 | 64,400 | 545,000 | 75,100 | 324,000 r/ | 62,500 |
| 2000: | | | | | | |
| May | 48,600 | 2,070 | 50,600 | 5,120 | 34,600 | 22,400 |
| June | 860 | 4,760 | 5,620 | 7,370 | 32,000 | 24,500 |
| July: | | | | | | |
| Canada | 280 2/ | -- | 280 | 606 | 2,730 | 15,400 2/ |
| China | -- | -- | -- | -- | 433 | 8,720 |
| Dominican Republic | -- | -- | -- | 355 | -- | -- |
| France | -- | -- | -- | -- | 1,510 | -- |
| Germany | -- | -- | -- | 1,330 | 7,740 2/ | -- |
| Hong Kong | -- | -- | -- | -- | 2,350 | -- |
| Japan | -- | -- | -- | 12 | 14,400 | -- |
| Korea, Republic of | -- | -- | -- | -- | 1,740 | -- |
| Mexico | 19 | -- | 19 | 59 | -- | 557 |
| Netherlands | 24 | -- | 24 | -- | 253 | -- |
| Singapore | -- | -- | -- | -- | 132 | 102 2/ |
| Switzerland | -- | 1,060 | 1,060 | -- | -- | -- |
| Taiwan | -- | -- | -- | 1,020 | 9,950 2/ | 99 |
| Thailand | -- | -- | -- | 284 | -- | 14 |
| United Kingdom | -- | 193 | 193 | 41 | 1,830 | 190 |
| Other | -- | -- | -- | 12 | 79 | -- |
| Total | 323 | 1,250 | 1,570 | 3,720 | 43,200 | 25,100 |
| Year to date | 150,000 | 30,800 | 180,000 | 38,200 | 233,000 | 133,000 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS AND EXPORTS OF SILVER, RAW, SEMIMANUFACTURED, AND WASTE AND SCRAP 1/

(Kilograms of silver content, unless otherwise specified)

| Period and country | Silver ores and concentrates | Base metal ores and concentrates | Ash and residues | Total | Semimanufactured form 2/ 3/ (gross weight) | Waste and scrap (gross weight) |
|--------------------------|------------------------------|----------------------------------|------------------|---------|--|--------------------------------|
| Imports for consumption: | | | | | | |
| 1999 | 10,800 | 2,750 | 101,000 | 115,000 | 137,000 r/ | 1,640,000 r/ |
| 2000: | | | | | | |
| May | -- | -- | 3,270 | 3,270 | 3,840 | 62,800 |
| June | 55 | -- | 5,240 | 5,290 | 4,670 | 93,200 |
| July: | | | | | | |
| Australia | -- | -- | 129 | 129 | -- | -- |
| Belgium | -- | -- | -- | -- | -- | 11,100 |
| Brazil | -- | -- | -- | -- | 158 | 11 |
| Canada | -- | -- | 1,570 | 1,570 | 11,800 4/ | 17,000 |
| China | -- | -- | -- | -- | -- | 256 |
| Dominican Republic | -- | -- | -- | -- | -- | 81 |
| France | -- | -- | -- | -- | 369 | 55,700 |
| Germany | -- | -- | -- | -- | 2,070 4/ | 8,320 |
| Italy | -- | -- | -- | -- | 57 4/ | -- |
| Japan | -- | -- | (4/) | (4/) | 87 4/ | 613 |
| Korea, Republic of | -- | -- | -- | -- | 472 | 4,180 |
| New Zealand | -- | -- | -- | -- | -- | 141 |
| Singapore | -- | -- | -- | -- | -- | 191 |
| Spain | -- | -- | -- | -- | -- | 1,350 |
| Switzerland | -- | -- | -- | -- | 53 4/ | 689 |
| United Kingdom | -- | -- | 772 | 772 | 152 | 282 |
| Other | -- | -- | -- | -- | 59 4/ | 100 |
| Total | -- | -- | 2,470 | 2,470 | 15,300 | 100,000 |
| Year to date | 1,080 | -- | 28,200 | 29,300 | 62,000 | 690,000 |
| Exports: | | | | | | |
| 1999 | 70,800 | -- | -- | 70,800 | 122,000 | 1,310,000 |
| 2000: | | | | | | |
| May | -- | -- | -- | -- | 9,510 | 105,000 |
| June | 5 | -- | -- | 5 | 10,300 | 136,000 |
| July: | | | | | | |
| Belgium | -- | -- | -- | -- | 186 | 5,150 |
| Canada | 30,000 | -- | -- | 30,000 | 5,160 | 38,600 |
| China | -- | -- | -- | -- | -- | 23,400 |
| Egypt | -- | -- | -- | -- | 422 | -- |
| Germany | -- | -- | -- | -- | 161 4/ | 7,480 |
| Hong Kong | -- | -- | -- | -- | 365 | 464 |
| India | -- | -- | -- | -- | 10 4/ | 297 |
| Indonesia | -- | -- | -- | -- | 88 | -- |
| Italy | -- | -- | -- | -- | 97 4/ | -- |
| Japan | -- | -- | -- | -- | 111 4/ | 1,250 |
| Mexico | -- | -- | -- | -- | 785 | -- |
| Netherlands | -- | -- | -- | -- | 107 | -- |
| New Zealand | -- | -- | -- | -- | 112 | -- |
| Peru | -- | -- | -- | -- | 50 | -- |
| Poland | -- | -- | -- | -- | -- | 7,680 |
| Singapore | -- | -- | -- | -- | 86 | -- |
| South Africa | -- | -- | -- | -- | -- | 307 |
| Spain | -- | -- | -- | -- | 1,320 | -- |
| Sweden | -- | -- | -- | -- | -- | 1,310 |
| Taiwan | -- | -- | -- | -- | 163 | 373 |
| United Kingdom | -- | -- | -- | -- | 294 4/ | -- |
| Other | 31 | -- | -- | 31 | 117 4/ | 8 |
| Total | 30,000 | -- | -- | 30,000 | 9,630 | 86,300 |
| Year to date | 56,600 | -- | -- | 56,600 | 99,700 | 912,000 |

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Containing 99.5% or more by weight of silver. Imports only.

3/ Semimanufactured (including silver plated with gold or platinum) forms of silver.

4/ All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM-GROUP METALS 1/

(Kilograms of metal content, unless otherwise specified)

| Period and country | Platinum grain and nuggets | Platinum sponge | Other unwrought platinum | Platinum, other | Platinum waste and scrap | Platinum coins | Unwrought palladium | Palladium, other | Iridium 2/ | Unwrought osmium | Unwrought ruthenium | Rhodium 3/ |
|--------------------|----------------------------|-----------------|--------------------------|-----------------|--------------------------|----------------|---------------------|------------------|------------|------------------|---------------------|------------|
| 1999 | 6,100 | 78,300 | 7,820 | 16,500 | 19,700 | 169 | 165,000 | 24,100 | 2,250 r/ | 23 | 11,400 | 10,300 r/ |
| 2000: | | | | | | | | | | | | |
| May | 47 | 5,490 | 298 | 631 | 273 | 4 | 11,500 | 3,020 | 166 | -- | 1,470 | 1,330 |
| June | 531 r/ | 5,600 r/ | 840 r/ | 351 | 156 r/ | 2 r/ | 12,600 | 2,340 | 71 | -- | 712 | 1,240 |
| July: | | | | | | | | | | | | |
| Australia | -- | -- | -- | 39 | -- | (4/) | -- | -- | -- | -- | -- | -- |
| Belgium | -- | 545 | -- | -- | -- | -- | 1,200 | -- | -- | -- | -- | 112 5/ |
| Brazil | -- | -- | -- | 100 | 14 | -- | -- | -- | -- | -- | -- | -- |
| Canada | -- | -- | -- | 23 | 52 | -- | 303 | -- | 5 | -- | -- | -- |
| China | -- | -- | -- | -- | 4 | -- | 221 | 19 | -- | -- | -- | 3 |
| Colombia | -- | -- | 14 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| France | -- | -- | -- | -- | 12 | -- | -- | 1 | -- | -- | -- | -- |
| Germany | 32 | 798 | 24 | 308 | 72 | (4/) | 162 | 79 | 31 | -- | -- | 7 |
| Guatemala | -- | -- | -- | -- | 1 | -- | -- | -- | -- | -- | -- | -- |
| Hong Kong | -- | -- | -- | -- | 47 | -- | -- | -- | -- | -- | -- | -- |
| Israel | -- | -- | 18 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Italy | -- | 83 | -- | (4/) | -- | -- | 35 | 59 | -- | -- | -- | -- |
| Japan | 47 | -- | -- | 8 | (4/) | -- | 463 | 1 | -- | -- | -- | 16 |
| Korea, Republic of | -- | -- | -- | -- | 13 | -- | -- | -- | -- | -- | -- | -- |
| Lithuania | -- | -- | -- | -- | (4/) | -- | -- | -- | -- | -- | -- | -- |
| Mexico | 6 | -- | -- | -- | 19 | -- | -- | -- | -- | -- | -- | -- |
| Netherlands | -- | -- | -- | (4/) | -- | -- | -- | -- | -- | -- | 5 | -- |
| Norway | -- | 16 | -- | -- | -- | -- | 75 | -- | -- | -- | -- | -- |
| Peru | -- | -- | -- | -- | 2 | -- | -- | -- | -- | -- | -- | -- |
| Philippines | -- | -- | -- | -- | 3 | -- | -- | -- | -- | -- | -- | -- |
| Russia | -- | 620 | 497 | -- | -- | -- | 1,280 | 2,000 | -- | -- | -- | 150 |
| South Africa | 466 | 3,850 | 94 | -- | -- | -- | 1,080 | 46 | 65 | 79 | 736 5/ | 468 |
| Spain | -- | -- | -- | 64 | -- | -- | -- | -- | -- | -- | -- | -- |
| Sweden | -- | -- | -- | -- | -- | -- | 89 | -- | -- | -- | -- | -- |
| Switzerland | -- | -- | -- | 92 | -- | -- | 33 | 58 | -- | -- | -- | -- |
| Taiwan | -- | -- | -- | 1 | -- | -- | -- | -- | -- | -- | -- | -- |
| United Kingdom | -- | 795 | 44 | 1 | 52 | -- | 1,030 | 16 | 30 5/ | -- | -- | 21 |
| Total | 551 | 6,710 | 690 | 636 | 291 | (4/) | 5,970 | 2,280 | 131 | 79 | 741 | 776 |
| Year to date | 1,790 | 41,500 | 2,360 | 3,820 | 10,600 | 19 | 79,500 | 22,500 | 1,450 | 102 | 9,040 | 10,700 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Unwrought and other forms of iridium.

3/ Unwrought and other forms of rhodium.

4/ Less than 1/2 unit.

5/ All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF PLATINUM GROUP METALS 1/

(Kilograms of metal content, unless otherwise specified)

| Period and country | Palladium 2/ | Platinum 2/ | Platinum waste and scrap | Iridium, osmium and ruthenium 2/ 3/ | Rhodium 2/ |
|----------------------|--------------|-------------|--------------------------|-------------------------------------|------------|
| 1999 | 43,800 | 19,400 | 7,660 | 851 | 114 |
| 2000: | | | | | |
| May | 2,700 | 977 | 893 | 145 | 5 |
| June | 8,080 | 4,960 | 1,130 | 102 | 64 |
| July: | | | | | |
| Australia | 10 | 154 | -- | -- | -- |
| Belgium | 2 5/ | (4/) | 3 | -- | 3 |
| Bermuda | 2 5/ | -- | -- | -- | -- |
| Brazil | -- | 4 | -- | -- | -- |
| Canada | 939 | 339 | 34 | -- | 63 |
| Chile | 5 5/ | -- | -- | -- | -- |
| China | 281 5/ | -- | -- | -- | 10 5/ |
| Colombia | -- | 1 | -- | -- | -- |
| Denmark | 2 | -- | -- | -- | -- |
| France | 59 5/ | 5 | -- | 80 | -- |
| French Polynesia | 1 5/ | -- | -- | -- | -- |
| Germany | 203 | 218 | 187 | 20 | -- |
| Hong Kong | 35 5/ | 33 | -- | -- | -- |
| Ireland | -- | 1 | -- | -- | -- |
| Israel | 651 5/ | -- | -- | -- | -- |
| Italy | 25 | 12 5/ | -- | -- | -- |
| Japan | 596 | 150 | -- | 62 | 56 |
| Korea, Republic of | 42 5/ | 66 | 43 | -- | 8 |
| Kuwait | -- | 2 | -- | -- | -- |
| Luxembourg | 2 5/ | -- | -- | -- | -- |
| Malaysia | -- | 49 | -- | -- | -- |
| Mexico | 8 | 8 | -- | -- | (4/) |
| Netherlands | 185 | 3 | -- | (4/) | -- |
| New Zealand | 3 | -- | -- | -- | -- |
| Peru | -- | 1 | -- | -- | -- |
| Philippines | 2 5/ | 3 | -- | -- | -- |
| Singapore | 2 | 1 | -- | -- | -- |
| Slovenia | 5 5/ | -- | -- | -- | -- |
| South Africa | 1 | -- | -- | -- | -- |
| Spain | 2 | 2 | -- | -- | -- |
| Sweden | 20 | 12 | (4/) | -- | -- |
| Switzerland | 1,130 | 6 | -- | -- | -- |
| Taiwan | 311 | 7 | -- | -- | 5 |
| Thailand | 3 | 1 | -- | -- | -- |
| Turkey | 1 | -- | -- | -- | (4/) |
| United Arab Emirates | 2 5/ | -- | -- | -- | -- |
| United Kingdom | 71 5/ | 330 5/ | 36 | 133 | -- |
| Total | 4,600 | 1,410 | 303 | 296 | 143 |
| Year to date | 32,000 | 17,700 | 4,220 | 917 | 525 |

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Unwrought and other forms.

3/ Gross weight.

4/ Less than 1/2 unit.

5/ All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 8
LEADING GOLD-PRODUCING MINES IN THE UNITED STATES IN THE THIRD QUARTER OF 2000,
IN ORDER OF OUTPUT 1/

| Rank | Mine | County and State | Operator | Kilograms produced |
|------|-------------------------|------------------------|--|--------------------|
| 1 | Betze-Post/ Goldstrike | Eureka, NV | Barrick Gold Corporation | 33,400 |
| 2 | Carlin Mines Complex 2/ | Eureka, Elko, etc., NV | Newmont Gold Company | 26,900 |
| 3 | Twin Creeks 2/ | Humboldt, NV | do. | 25,800 |
| 4 | Cortez | Lander, NV | Placer Dome Inc. | 22,200 |
| 5 | Meikle/ Goldstrike | Eureka, NV | Barrick Gold Corporation | 17,700 |
| 6 | Round Mountain | Nye, NV | Round Mountain Gold Corporation | 14,100 |
| 7 | Bingham Canyon | Salt Lake, UT | Kennecott Utah Copper Corp. | 12,700 |
| 8 | Lone Tree 2/ | Humboldt, NV | Newmont Gold Company | 9,000 |
| 9 | Fort Knox | Fairbanks, AK | Fairbanks Gold Mining Inc. | 7,800 |
| 10 | Jerritt Canyon | Elko, NV | Independence Mining Company, Inc. | 7,500 |
| 11 | Cresson | Teller, CO | Cripple Creek & Victor Gold Mining Co. | 5,700 |
| 12 | Golden Sunlight | Jefferson, MT | Placer Dome Inc. | 4,900 |
| 13 | Ken Snyder | Elko, NV | Euro-Nevada Mining Co. | 4,400 |
| 14 | Homestake | Lawrence, SD | Homestake Mining Company | 4,100 |
| 15 | McCoy/ Cove | Lander, NV | Echo Bay Mines, Limited | 4,100 |
| 16 | Bald Mountain | White Pine, NV | Placer Dome Inc. | 3,300 |
| 17 | Barney's Canyon | Salt Lake, UT | Kennecott Barney's Canyon Mining Co. | 3,300 |
| 18 | Ruby Hill | Eureka, NV | Homestake Mining Company | 3,000 |
| 19 | Mesquite 2/ | Imperial, CA | Newmont Gold Company | 2,800 |
| 20 | Castle Mountain | San Bernardino, CA | Viceroy Gold Corporation | 2,800 |
| 21 | McLaughlin | Napa, CA | Homestake Mining Company | 2,500 |
| 22 | Denton-Rawhide | Mineral, NV | Kennecott Rawhide Mining Co. | 2,500 |
| 23 | Rand | Kern, CA | Glamis Rand Mining Co. | 2,300 |
| 24 | Kettle River | Ferry, WA | Echo Bay Mines, Limited | 2,300 |
| 25 | Wharf | Lawrence, SD | Wharf Resources, Ltd. | 2,200 |
| 26 | Beartrack | Lemhi, ID | Meridian Gold Inc. | 2,000 |
| 27 | Briggs | Inyo, CA | Canyon Resources Corp. | 2,000 |
| 28 | Greens Creek | South Star, AK | Kennecott Greens Creek Mining Co. | 1,900 |
| 29 | Rochester | Pershing, NV | Coeur Rochester Inc. | 1,700 |
| W 3/ | Florida Canyon | do. | Florida Canyon Mining, Inc. | W |

W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to no more than three significant digits; these mines accounted for more than 96% of the U.S. gold production in the third quarter of 2000.

2/ Mill output.

3/ Production at Florida Canyon is withheld; mine is among the top 30 gold-producing mines in the United States, but is not shown in rank order to avoid disclosing company proprietary data.

Sources: Company quarterly reports, Security Exchange Commission's 10Q reports, or company news releases.