

GEM STONES

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SUMMARY OUTLINE

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JEWELRY INDUSTRY IN 1945

Jewelry sales (taxable) reached a peak in 1945 (tax, \$198,944,988); in consequence, retail jewelry-store sales—considering nontaxable sales together with taxable sales by department stores and others—amounted to about \$1,200,000,000, an all-time peak and a gain of some 12 percent over 1944. Sales in the first quarter of the year were distinctly below those of 1944; from April to July they exceeded those of 1944 by 20 percent. The surrender of Japan in August decreased but did not stop increased sales in August and September, and in the last quarter of the year sales forged ahead. Montana, Texas, and Utah showed particularly large gains. Christmas time sales reached unusual proportions. Admittedly, certain stocks were in short supply, but the populace had money and bought what was available. All holiday records were exceeded. Jewel sales, generally including diamonds, in five figures were not unusual. Americans were not the only heavy buyers; Brazilians and South Africans were equally extravagant. Retail jewelers' stocks in America decreased somewhat during the year.

Sales by wholesale jewelry houses were up slightly from those of 1944, and in dollar value their inventories increased slightly in 1945. The wholesale trade centers in New York City.

Jewelry prosperity in 1945 was built upon the people's large war-time savings; demobilized GI's returning home with their savings; a high national income; a flood of marriages (only slightly below the 1943 peak); and the dearth of other durable goods to attract money from the industry. It should, however, be emphasized that in the past decade wealth has shifted from the "400" to the medium- and lower-income brackets. The carriage trade is almost extinct, and hereafter the retailers will sell fewer expensive items and more medium- and low-priced goods.

The numerous women gainfully employed during the past 6 years have, on the average, spent more money on clothing and luxuries

than the housewives. In department stores particularly, sales of medium- to high-priced costume jewelry have expanded the business of the jewelry departments.

Some jewelers anticipate a recession in sales; in consequence, the Jewelry Industry Publicity Board has had a study made of conditions in the industry, in the hope of maintaining activity in the future.

FASHIONS IN JEWELS

More jewelry was worn in 1945 than ever before. Platinum is again available for mounting, and we may expect to see palladium relegated to the side lines, except in earrings and certain clips, where its lightness is a distinct advantage. Stones mounted in invisible settings are particularly attractive. Two-toned gold retains its popularity.

In view of the shortage of skilled goldsmiths, the work of the designers merits praise. On the whole, designs were lighter and more artistic than in recent years. The three most popular motifs—flowers (sometimes in sprays or bouquets); sunburst, star, and snowflake designs; and leaves—were attractive.

Necklaces, particularly the flexible type fitting snugly to the neck, were fashionable. Clips were worn not only on dresses but attached to the necklace and on the hat. Earrings were in vogue due to the up-swept hair mode. Bracelets, singly or in groups, are as popular as ever. Rings were characterized by high pavé-domes, set with small stones rather than single gems. More and more they are being worn over gloves. Lanyards and barrettes, bandeaus, and stars for the hair are gaining in popularity.

Old jewelry is still sold but was a less-important element in the trade than in 1944.

Ensemble jewelry, three or four pieces set with the same gem, finds ready sale, as does jewelry that may be divided into two or more pieces as need arises. The double wedding-ring ceremony is now standard.

Marquise and other unusual diamond cuts are gaining in favor. Small diamonds for mountings are still in short supply, hence tiny cabochon rubies and sapphires in part supplant them. Diamond, ruby, and sapphire, including the lighter-color Ceylonese stones, led in popularity, followed by the yellow-brown gems (topaz and citrine), pearl, amethyst, turquoise, and aquamarine. Aquamarine held its own; amethyst and turquoise gained; but citrine and topaz, to a considerable extent, lost their appeal. The emerald had pride of place among the sophisticated.

The ever-insistent demand for diamonds caused colorless gems to be most popular, followed by red and blue gems; yellow, purple, and green gems were in lesser demand, in the order named.

DOMESTIC PRODUCTION

Mining for gold and mining for gem stones have been affected by war more adversely than any other branches of the industry. Production value of gem stones in 1945 dropped to about \$40,000, the lowest in a decade. The decline is attributed to shortages of labor, mining supplies, tires, and gasoline. The gem hobbyists and the

amateur and semiprofessional lapidaries could not replenish their stocks of rough; and most of their best customers, the touring automobilists, stayed at home. Further, the supply of most strategic minerals became adequate early in the year, and pegmatite mining waned. It should be stated, however, that pegmatite mining during the war furnished disappointingly few gem stones. Late in the year, gasoline and other supplies became available; and this, with the return of men from the war, will doubtless encourage greater production in 1946.

Oregon and Washington lapidaries were active in 1945. There are at least 50 shops, and the value of the 1945 output is variously estimated at \$100,000 to \$500,000.

For the first time the value of jade produced certainly exceeded that of sapphire and probably that of turquoise. In 1945 Wyoming produced a number of tons of light-green nephrite and almost as much black jade. The publicity the press has given Wyoming jade (all produced from float) has attracted a number of outside prospectors to the State. The largest boulders yet found were located during 1945.

There are three professional and half a dozen amateur cutters at Lander, and the Lander region remains the chief producer. Black nephrite, which takes a fine polish, is being obtained from the Red Desert. Discovery of jade in the Laramie Range is reported. The white "jade" said to have been found near Kemmerer is, according to reliable information, chalcedony. The so-called jade as found is sold at \$1 to over \$5 a pound. When peace is restored, China, may well become a good market for Wyoming jade. (Personal communications from Fred Abernathy, H. C. Dake, O. W. Plaga, Bert A. Rhoads, and Horace D. Thomas.)

Alaska jade appeared on the market in 1945. The locality, on the north side of Kobuk River, has been well-known to the local Eskimos and Indians since the Thule stage of Eskimo culture (A. D. 600 to 1600).¹ Late in 1945 the Arctic Exploration Co. of Fairbanks located mining claims in the district and flew a considerable shipment of jade to Fairbanks. Some of the material is stated to be of gem quality, but most is fit only for objets d'art. The Chinese have purchased some of it. It is reported that three or four men were collecting boulders from the bed of Kobuk River last summer. The better Alaskan material compares favorably with the better New Zealand nephrite. It is suitable for tourist jewelry and objets d'art.

Turquoise is occasionally found at the Castle Dome copper mine in Arizona. It is "high-graded" by the miners and sold in Miami or Globe. Some of it is of fine quality. A company official states—

As in the past, turquoise of an undetermined amount was recovered during routine mining operations. As a whole, the quality of the material recovered at greater depth has improved, both in hardness and in color, the latter occurring in the lighter shades of blue.

Turquoise mining was relatively active in Nevada, particularly in the Tonopah and Battle Mountain districts. Most of the material is shipped to New Mexico, although some is cut locally, there being five cutting shops at Battle Mountain (personal communication, Jay A. Carpenter). Alfred L. Ransome states that the lessors, Lee Hand

¹ Ball, Sydney, H., *The Mining of Gems and Ornamental Stones by American Indians*: Bureau Am. Ethnol., Anthropol. Paper 13, 1941, p. 37.

and Paul Bare, of the Pedro claim on the Copper Basin property of the Copper Canyon Mining Co., Battle Mountain, produced 3,601 pounds of cobbled turquoise in 1945. The Elko County mines appear to have made no shipments in 1945.

In Colorado the King mine, now renamed the Lickspittle, was operated in 1945 by Charles King of Manassa, Colo. Twelve men were employed. The Hall mine, near Villagrove, Saguache County, will soon be operated again. There are rumors of a new turquoise deposit in the Cripple Creek district. New Mexico produced no turquoise, although Indians sorted some material from the dumps. Stuart A. Northrop states that the Indian jewelers are using chrysocolla, malachite, and chalcedony, largely from Arizona, as substitutes for turquoise. Reports indicate intermittent work on the turquoise deposit near Van Horn, Tex.

The agate deposits on the Priday property in Jefferson County, Oreg., a large producer by hand methods, are to be operated mechanically in the future (personal communication from Dr. H. C. Duke). The moss agate deposits of Yellowstone River in Montana, long productive, are said to have produced less than usual in 1945. The easily accessible material is exhausted. Philip S. Hoyt produced some chalcedony in New Mexico and Arizona, which, after staining, is set in costume jewelry. Considerable rose quartz was produced in South Dakota, but most of it (which was poor quality) was sold to decorate rock gardens. Some fine rose quartz was found at the Bon Ami workings at Plumbago Mountain, Newry, Maine, according to Stanley I. Perham.

Utah produced less variscite in 1945 than in the recent past. Junius J. Hayes reports that the Clay Canyon deposit (Utah County) produced about 1,000 pounds; that the Amatrice Hill deposit near Grantsville (Tooele County), although not regularly worked, produced about 200 pounds; and that the Lucin deposit (Box Elder County) probably was not worked.

No sapphires were produced during the year in Montana; as Dr. Francis A. Thomson explains, they have lost their commercial market to the synthetic stones. A little ruby and sapphire were reported to have been produced in Franklin and Clay Counties, N. C. Charles E. Hunter reports that Linten B. Greene procured a fine sapphire at the Corundum Hill mine, Macon County. It is a deep-blue tabular crystal $\frac{1}{2}$ inch thick and 1 inch across. He intends to keep it in his collection as a rough crystal.

Dr. A. M. Butler reports that a considerable amount of "marekanite" (black obsidian nodules in Arizona perlite beds) is being cut cabochon and set in "Indian" silver jewelry. The Superior district south of Queen Creek is the most important locality.

Eldred D. Wilson (Arizona Bureau of Mines Bull. 152, Tucson, Ariz., October 1944) estimates the production value of precious stones in Arizona from 1900 to 1921 at \$300,000, an average of \$13,636 a year. In recent years production has been much less. Wilson lists the precious stones found in the State, apparently in order of production, as follows: Turquoise, silicified wood, oxidized-copper minerals (azurite, malachite, and chrysocolla), garnet, peridot, Mexican onyx, opal, tourmaline, and obsidian; and, of less importance, rock crystal,

amethyst, chrysoprase, agate, dumortierite, and catlinite. Small pyrope garnets and peridot are collected by Navajo Indians, the former from Garnet Ridge and Buell Park in Apache County and the latter from the same localities and from west of San Carlos, Gila County. At the latter locality, peridots of over 233-carat weight have been found.

Deep blue dumortierite resembling lapis lazuli occurs as boulders in gravel along the Colorado River 30 miles north of Yuma.

Mrs. E. M. Roe states that only one Sioux Indian mined catlinite at Pipestone, Minn., in 1945 but that a number of returned Indian servicemen expect to dig catlinite and fabricate it.

When the test atom bomb was dropped in New Mexico, the sand near the crater, according to the press, was fused to a grayish green glass. It was dubbed "atomsite," and souvenirs are said to have been made from it.

The States and Territory leading in gem production in 1945 were Wyoming, Oregon, Alaska, Nevada, Utah, and Arizona.

Other gem stones produced in small amounts in 1945 include agate (Idaho, Wyoming, and Luna and Sierra Counties, N. Mex.); amazonite (Amelia, Va.); amethyst (North Carolina and Mineral Valley, Millard County, Utah); aquamarine (Mitchell, Yancey, Avery, Macon, and Ashe Counties, N. C.); asteriated rose quartz (Newry, Maine); chalcedony (Nevada); citrine (North Carolina); emerald (Mitchell and Yancey Counties, N. C.); garnet and golden beryl (Mitchell County, N. C.); jasper (Idaho and near Hot Springs, N. Mex.); moonstone (New Mexico and Mitchell County, N. C.); moss agate (Wyoming); opal (Idaho and Virgin Valley, Nev.); opalized wood (Nevada and New Mexico); rock crystal (Hot Springs district, Ark.); sapphire (Idaho); green smithsonite (Magdalena, N. Mex.), and smoky quartz (North Rumford, Maine).

Heizer and Treganza have written an interesting article on the California Indian Mines and Quarries (see Bibliography). They list 142 sites worked by the Indians for various stones. Turquoise, quartz crystal, chrysocolla, chrysoprase, tourmaline, and malachite were among the gem materials used. They found that the San Bernardino County turquoise mines were worked by the Pueblos of New Mexico and Arizona, who made periodic trips to the mines.

CANADIAN GEM STONES

Canada apparently produced no precious stones in 1945, but a number of amateur lapidaries, particularly near Toronto, cut such Canadian rough as they could get. G. G. Waite,² an amateur lapidary, lists a large number of Canadian precious stones suitable for cutting; few, if any, of them are of commercial importance. Some of the Thunder Bay amethyst, however, is of fine color.

ACCESSIONS TO MUSEUMS

The National Museum, Washington, D. C., has added several fine gems to its collection, notably an unusually large and fine green chrysoberyl (120.45 carats) from Ceylon and a zincite (5.12 carats)

² Waite, G. G., Contributions to Canadian Mineralogy: University of Toronto, No. 49, 1944, pp. 75-78.

from Franklin, N. J. During the year the American Museum of Natural History acquired a 16-carat cut zincite and a 19-carat oval-cut brazilianite. The latter gem is of pleasing lemon-yellow color and quite brilliant, although it is so soft that it is suitable only for mounting as a pendant. The University of South Carolina recently acquired the Colburn mineral collection of Southern Appalachian gem stones, comprising notably representative specimens of hiddenite, rhodolite, and emerald.

During the year, the well-known star sapphire, The Star of Artaban (300 carats), was presented to the National Museum in Washington.

NOMENCLATURE

The Precious Stone Dealers Association of New York on October 11, 1945, adopted preferred names for gem stones.³ The use of a geographic designation ("Burma sapphire," for instance) for precious stones similar to the normal type produced by the country named, even if the stone may come from another country thousands of miles away, is highly recommended. It is poor practice, however, to name any member of the quartz family "topaz"; the proper name for yellow or brownish rock crystal is "citrine" or less acceptably "topaz quartz." Even the latter term is incorrect and undesirable. The association attempts in its nomenclature to draw a sharp line between natural and treated stones. The nomenclature committee consisted of H. N. Paskow (chairman), Leo Nathan, and Thomas H. Benedict.

EDUCATION IN GEM STONES

GI's are now permitted, as an educational benefit for service rendered, to enroll in the courses of the Gemological Institute of America. Gem courses in American institutions of learning apparently have a record number of students. The Australian Gemological Association has been formed to advance the knowledge of gem stones in that continent.

The Gem Trade Laboratories, Inc. (36 W. 47th St., New York City), sponsored by the colored-stone and pearl merchants of the city, now identifies stones and will make tests of them on a commercial basis. Dr. A. E. Alexander is in charge.

A new film, *The Magic Stone*, publicizes the diamond.

IMPORTS

The value of imports of precious and semiprecious real and imitation stones, exclusive of industrial diamonds, as listed by the United States Department of Commerce, totaled \$114,435,231, 48 percent more than in 1944. The great gains were in polished diamonds and in cut stones of other types, both natural and synthetic. The figures for imports follow.

³ Jewelers' Circular-Keystone, National Jewelers: November 1945, p. 214.

Precious and semiprecious stones (exclusive of industrial diamonds) imported for consumption in the United States, 1944-45

Commodity	1944		1945	
	Carats	Value	Carats	Value
Diamonds:				
Rough or uncut (suitable for cutting into gem stones), duty free.....	896,547	\$43,445,219	893,761	\$43,122,622
Cut but unset, suitable for jewelry, dutiable.....	169,097	29,263,121	377,243	64,185,406
Emeralds:				
Rough or uncut, free.....	1,066	1,668	1,085	252
Cut but not set, dutiable.....	38,666	81,233	106,684	181,834
Pearls and parts, not strung or set, dutiable:				
Natural.....		242,221		352,947
Cultured or cultivated.....		15,394		155,548
Other precious and semiprecious stones:				
Rough or uncut, free.....		105,401		134,698
Cut but not set, dutiable.....		3,725,453		5,113,937
Imitation, except opaque, dutiable:				
Not cut or faceted.....		14,550		3,220
Cut or faceted:				
Synthetic.....		503,718		805,833
Other.....		23,887		242,988
Imitation, opaque, including imitation pearls, dutiable.....		23,113		31,136
Marcasites, dutiable:				
Real.....		84,828		101,140
Imitation.....				3,665
		77,529,806		114,435,231

GOVERNMENT REGULATIONS

The end of the war has not diminished greatly the number of Government regulations affecting trade in precious stones.

In the United States, the OPA relinquished price control on "synthetic and semiprecious stones for jewelry purposes" on October 15, 1945. On December 27, the United States Government liberalized the export of jewelry, including that containing diamonds, but has refused to reduce the excise tax (20 percent) on jewelry sales, an element that encourages a black market in the jewelry trade. Canada early in the year removed price controls on jewelry.

As a postwar measure, during the year Australia permitted the import and export of jewelry. On October 21, 1945, Mexico removed the export duty on silver jewelry, even if set with stones of local origin; and Argentina, as of May 4, unified at 5 percent its sales tax on jewelry. In the fall Mexico imposed a 3-percent sales tax on jewelry. As of October 1945, South Africa still required export permits for gold and diamond jewelry. Late in the year the Italian Government removed the ban on trade in precious metals and gems.

To protect its mines and its cutters of precious stones, Brazil (January 22, 1945) required import licenses for all precious stones, diamonds, and quartz crystals; after May 25, 1945, upon presentation of import licenses, 1 unit of cut synthetic gems could be imported, provided at the same time 10 units of rough synthetic gems were imported.

In Uruguay the sales tax (February 23, 1945) on jewelry became 13 percent. On March 31, 1945, France increased the luxury tax on

jewelry sales from 10 to 25 percent, and late in the year Bolivia increased the luxury tax to a point that threatens the disappearance of jewelry from the retailers' shelves in that country.

As to taxes, the Quebec jewelers find themselves in what would be a ludicrous position, were it not serious. Their sales are subject to a 25-percent Federal tax, a 6-percent Provincial tax, and a 2-percent municipal tax.

DIAMOND

Nineteen forty-five was a highly prosperous year in the diamond industry. The sales of the Diamond Trading Co., the principal seller of rough stones, reached £24,500,000—an all-time peak; presumably, the sales of cut goods also attained a record. Indeed, the United States imports of cut were appreciably above those of the lush 1920's. Again consumption greatly exceeded production, and the drain on stocks was heavy. Stocks in certain categories of both rough and cut are depleted, and in no grade are they large. In consequence, both the gem and industrial diamond trades must look more and more to current production for their diamonds. Additional mines are being equipped, but no great increase in production can be expected for 3 or 4 years.

World production was almost 14,000,000 carats, a fifth greater than that of 1944. Of the total, 83 percent by weight were industrials and 17 percent gem grades.

The price of gem rough again advanced, although there has been no increase in the wholesale price of industrials in 7 or 8 years. Uncut gem diamonds are now quoted at more than twice the prewar price. Cut has never been so high. Since 1939, melee has at least tripled in price, and larger cut has more than doubled in price. The price of large stones (10 carats or more) is a matter of negotiation between buyer and seller. Fine cut, in the United States at least, was in short supply much of the year.

Industrials, once a drug on the market, now represent about 20 percent, in dollar value, of the world's rough sales. Yearly the distinction between gem grades and industrials is defined more sharply.

With the war's end, investment in diamonds has not ceased. The people of much of the world have more confidence in diamonds than in their own countries' currency.

Share dealings.—The shares of diamond-mining companies, virtually all of which are listed on the London Stock Exchange, gained about 17 percent in 1945 as contrasted with the slight loss suffered in 1944. Strangely enough, quotations were affected only slightly by the surrender of Germany and Japan, but much more so by sales of rough, dividend declarations, and publication of annual reports. Of the eight principal mining companies, all paid dividends in 1945, although the yield at year-end prices varied greatly.

Imports.—Imports of gem diamonds into the United States increased from \$26,186,948 in 1942 to \$107,308,028 in 1945, or almost 310 percent.

The following table shows comparative figures of imports during 1944 and 1945. The figures for rough are almost identical; those for

cut show an increase, respectively, of 123 percent by weight and 119 percent by value. The grade of the imports was somewhat poorer in 1945 than in 1944.

Diamonds imported into the United States, 1944-45, by countries

[Exclusive of industrial diamonds]

Country	Rough or uncut			Cut but unset		
	Carats	Value		Carats	Value	
		Total	Average		Total	Average
1944						
Africa:						
British:						
Gambia and Sierra Leone.....	725	\$13,164	\$18.16			
Gold Coast.....	1,350	24,860	18.41			
Union of South Africa.....	854,239	42,197,278	49.40	32,676	\$6,514,128	\$199.36
Australia.....				1	500	500.00
Belgium and Luxembourg.....	(1)	5	5.00	641	137,063	213.83
Brazil.....	25,619	726,378	28.35	25,031	4,219,310	168.56
British Guiana.....	2,613	64,405	24.65	532	61,162	114.97
Cuba.....				43,683	6,749,686	154.52
Mexico.....				1,092	30,798	28.15
Netherlands.....				20	11,423	571.15
Palestine and Trans-Jordan.....				53,883	9,337,281	173.29
U. S. S. R.....				1,436	202,180	140.79
United Kingdom.....	6,201	233,977	37.73	10,102	1,999,650	197.95
Venezuela.....	5,800	185,152	31.92			
	896,547	43,445,219	48.46	169,097	29,263,121	173.06
1945						
Africa:						
British:						
British East Africa.....	7,413	207,556	28.00			
British West Africa ²	1,158	21,402	18.48			
Union of South Africa.....	834,393	41,290,329	49.49	46,096	10,720,816	232.58
Argentina.....				4	2,000	500.00
Austria.....				12	1,136	94.67
Belgian Congo.....	10,054	86,793	8.63			
Belgium and Luxembourg.....				104,840	14,612,123	139.38
Brazil.....	14,349	628,325	43.79	28,472	4,988,200	175.20
British Guiana.....	1,774	42,715	24.08	580	67,471	116.33
Canada.....	1,110	16,650	15.00	1	100	100.00
Cuba.....				64,737	11,439,698	176.71
France.....				44	7,511	170.70
Germany.....				1,230	133,496	108.53
India and Dependencies.....				703	134,641	191.52
Mexico.....	13,838	504,641	36.47	9	5,003	555.89
Netherlands.....				2,599	520,516	200.28
Palestine and Trans-Jordan.....				105,899	17,684,997	167.00
Portugal.....				18	6,405	355.83
Switzerland.....				271	39,738	146.63
U. S. S. R.....				3,569	562,617	157.64
United Kingdom.....	5,699	173,797	30.50	17,535	3,176,270	181.14
Venezuela.....	3,973	150,414	37.86	624	82,668	132.48
	893,761	43,122,622	48.25	377,243	64,185,406	170.14

¹ Less than 1 carat.

² Effective Jan. 1, 1945, includes Gambia and Sierra Leone.

Cutting.—Due largely to revival of part of the Belgian cutting industry, the number of artisans employed jumped from 14,000 at the end of 1944 to 25,000 at the end of 1945. The amount of rough gem material has not been increased proportionately; and, because of shortages of rough, there will presumably be considerable unemployment in the trade in 1946. The best cutting of large stones today is done in the United States and the finest small cut in the United

States, Palestine, and Belgium. The Belgian industry has made a remarkable come-back and at the year end had 10,000 operatives. The other principal cutting centers are New York City, Palestine, Brazil, and Holland.

World production.—Owing to the war, accurate diamond-production statistics are not available, but the estimates in the following table are believed to be fairly reliable. World production (gems and industrials) in 1945 is estimated to have been 14,257,000 carats (3.129 short tons), worth about \$64,750,000. The quantity was about 22 percent greater and the value 35 percent greater than in 1944. Of the total, cuttables made up about 18 percent of the total, a smaller proportion than last year because of the large production of crushing bort by BCK, a Belgian Congo producer. By weight, some 5,125 pounds were industrials and 1,130 pounds gem stones.

The Belgian Congo was the leading producer by weight (72.9 percent), although it represented but 13 percent of the value. On the other hand, the British Empire, accounting for only 19.2 percent of the weight, represented 71 percent of the value.

Compared with 1944, the Belgian Congo increased its production, by weight, 38 percent. Tanganyika Territory continued its gain in output; in consequence, DeBeers sent engineers to look over the field. DeBeers operated its Dutoitspan and Bulfontein pipe mines and is beginning to reopen Premier and New Jagersfontein, although it will be several years before these are producing. The South African alluvial production increased. The Venezuelan production continued to decrease, and that of Brazil probably was less than in 1944.

The following table shows as accurately as available statistics permit world production for the past 5 years.

World production of diamonds, 1941-45, by countries, in metric carats

[Including industrial diamonds]

Country	1941	1942	1943	1944	1945
Africa:					
Angola.....	786,980	791,850	794,990	800,000	786,000
Belgian Congo.....	5,866,000	6,018,236	4,881,000	7,540,000	10,386,000
French Equatorial Africa.....	130,000	120,000	120,000	15,000	15,000
French West Africa.....	57,726	1,500	135,000	160,000	160,000
Gold Coast.....	11,000,000	11,000,000	11,000,000	11,000,000	1500,000
Sierra Leone.....	1850,000	1850,000	1850,000	1700,000	1800,000
South-West Africa.....	46,578	56,420	188,000	154,000	156,000
Tanganyika.....	29,046	41,000	52,998	90,667	115,666
Union of South Africa:					
Mines.....			175,885	639,000	878,713
Alluvial.....	158,422	118,821	126,444	270,000	262,527
Total Union of South Africa.....			302,329	909,000	1,141,240
Brazil.....	1325,000	1300,000	1275,000	1370,000	1275,000
British Guiana.....	26,427	22,208	18,272	13,911	17,251
Other countries.....	34,350	40,836	29,650	34,000	15,000
Grand total.....	9,210,529	9,260,871	8,347,239	11,676,578	14,257,157

¹ Estimated.

² Includes Venezuela (12,769 carats), Borneo, India, New South Wales, and U. S. S. R.

Industrial diamonds.—With the end of World War II, it was expected that imports (roughly, consumption) would fall markedly. Many war contracts were canceled after VJ-day but imports, as to weight, held up surprisingly, although the drastic decline in value indicates that crushing bort formed an ever-increasing percentage of American imports. Consumption again largely exceeded production, and stocks were heavily drawn on and are perhaps dangerously low; certainly, they are largely depleted as to some sizes and grades. Manufacturers of diamond-set tools have, through inertia, demanded of the trade a type of diamonds that may be in short supply. Provided they show ingenuity in using diamonds physically more or less similar, they will find a fair stock at their disposal. American industrial diamond merchants probably have a relatively large stock.

Thanks to the large production of BCK, the 1945 output of industrials was an all-time record, but much of it was crushing bort, and no great increase in the production of bort can be expected for 2 or 3 years.

After VJ-day, the United States Government removed many of its controls over industrial diamonds, although import and inventory controls are still in effect. The British Government removed all controls in the Empire in December.

Diamond drilling was exceedingly active in 1945 due to the mining boom in Canada and the increasing use of diamond bits in stope drilling. Diamond consumption in drilling increased greatly. Diamond-impregnated wheels—the bond being a plastic, a ceramic product, or a powdered metal—are having wide peacetime use. Standardization of diamond powders has been accepted by the industry. War-born uses for diamond tools and dies insure a satisfactory peacetime demand.

Figure 1, originally prepared by Herbert Backman several years ago, shows the tremendous increase in use and the sharp decline in price per carat in American imports in the last 27 years.

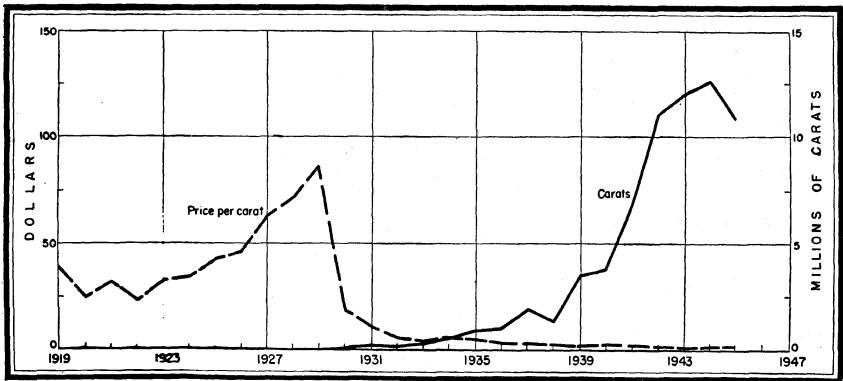


FIGURE 1.—United States imports and average price per carat of industrial diamonds, 1919-45.

Imports of industrial diamonds into the United States during the past 5 years were as follows:

Industrial diamonds (glaziers', engravers', and miners') imported for consumption in the United States, 1941-45

Year	Carats	Value		Year	Carats	Value	
		Total	Average			Total	Average
1941-----	6, 882, 248	\$14, 908, 809	\$2. 17	1944-----	12, 614, 507	\$22, 861, 401	\$1. 81
1942-----	11, 203, 704	22, 057, 577	1. 97	1945-----	10, 729, 869	12, 810, 932	1. 19
1943-----	12, 084, 133	21, 890, 568	1. 81				

RUBY, SAPPHIRE, AND EMERALD

Of the world's purchases of precious stones, at least 95 percent are diamonds. Because of this and because the types of the deposits of the ruby, sapphire, and emerald do not lend themselves to large-scale operations, successful gem mining by large companies is confined to the diamond. It is true that Burma Ruby Mines, Ltd., for over 3 decades worked the Burmese ruby mines and that several entrepreneurs have leased and worked the Colombian emerald mines, but such enterprises were failures. Fine rubies come from Burma; gem sapphires from Thailand, Indochina, Kashmir, and Ceylon; and emeralds from Colombia and the Urals in Russia. In the first half of 1945, the United States imported from Russia 1,682 carats of cut emeralds valued at some \$31,000, or roughly \$18.50 a carat. The price suggests that the quality was poor. Today some of these deposits are shut down; Indochina and Kashmir are practically exhausted, or at least it is so reported; the Colombian emerald deposits are dormant; and during World War II the Ceylonese gem miners were recruited to mine graphite. Furthermore, the colonial laws made the marketing of gems complicated, if not almost impossible. Shipments from Ceylon to America are inferior to prewar shipments. The Ceylonese have more money than formerly to buy fine gems, and they have lost their European markets for inferior gems. The native miners of Burma, Thailand and Indochina in 1945 continued to mine a few gems, although they could scarcely have sold many to the Japanese. Happily, the Burma ruby mines were reoccupied by the United Nations on March 20, 1945, and Thailand and Indochina later.

In consequence of the above circumstances, very few newly mined colored gems are coming on the market, and today we look to jewelers' stocks and old jewelry for our supply. Some fine emeralds are being obtained from once-wealthy nationals of Spain and England, and rubies and sapphires from the out-moded jewelry of England and the Continent. The demand is insistent, but the supply is inadequate. Although prices today are very high, they are likely to follow the law of supply and demand and go higher.

Fine rubies, sapphires, and emeralds of size are hard to find in New York today and are by no means modestly priced. The New York market must also compete with the Far Eastern market, where colored stones are highly regarded, not alone for their beauty, but

also as the safest of investments. Compared with the diamond the noble gems, particularly the emerald, have a more restricted group of admirers, although these may well be the more intelligent and intellectual of the populace. The diamond, therefore, has a higher rank as an investment.

At present, demand and supply are badly out of balance and will be in the immediate future, unless demand becomes less insistent.

Our soldiers in the East continue to buy gems, and as amateurs they are commonly duped with synthetic or inferior gems. At times, however, they may pick up lucky bargains. Their purchases have forced up prices appreciably.

It has been noted that colored glass used to direct traffic on American airfields in Burma disappeared; it is a possible source of some of the "gems" the boys are buying. The members of the American Gem Society have offered to test free for veterans the stones they have purchased.

The Muzo and Coscuez emerald mines in Colombia have been shut down since 1938. The Colombian Government desires to turn the ownership of these mines from a liability into an asset. The emeralds in the Bank of the Republic owned by the Government, valued by Moderer and Dixon at pesos 1,200,459.26, were said to have been sold early in 1946 to an American jewelry firm for some \$685,000 United States currency.

LESSER GEMS

In America the opal has been used more in fine jewelry in the past year than for several generations; and our armed forces, when stationed in Australia, bought many fine gems. The stone's beauty deservedly warrants its revived popularity. During the war few Australian opals were produced, and the Mexican production has been small, hence the price trend of all grades is upward.

A new gem stone of considerable beauty, brazilianite, was discovered during the year. Zincite of an attractive deep-red color, from Franklin, N. J., has recently been cut into gems. Reference has been made to both of these gems in the section on Accessions to Museums and in the bibliography.

The aquamarine remains one of the most popular gem stones, so popular, in fact, that blue topaz, which if fine in quality is a superior stone, is appearing on the market as a substitute. Price has moved up markedly, apparently to an unwarranted extent. Brazil is the premier producer, particularly Minas Gerais and to a lesser extent Ceará. Minas Gerais includes the production of aquamarine with tourmaline. In 1936 over 7,235,000 carats of the two gems were produced; since then production has fallen and in 1943 was only 1,469,000 carats. Exports of aquamarine to the United States, however, have increased considerably—in 1943 158,695 carats valued at about \$232,000 (\$1.46 per carat) and in 1944, 364,285 carats valued at \$578,506 (\$1.58 per carat). Brazil also produces a much smaller amount of kunzite, a few emeralds, a little topaz, fine garnets, and much rock crystal and citrine.⁴ Brazil stains a certain amount of chalcedony to black onyx, some of the product being exported.

⁴ See also Pough, Frederick H., *Jewelers' Circular-Keystone*, February 1945, pp. 143-144, 158-163.

The Madagascar gem-mining industry, which was negligible during the war, may revive, as certain French firms wish to import rough gem stones.

The gem production of Ceylon during the war was small, labor being diverted to more important industries.

South African jewelry manufacturers are attempting to interest the public in the Dominion's rather mediocre gem stones, the diamond of course, being the exception.

It is reported that production at the Nishapur (Iran) turquoise mine has been very small during the past few years (personal communication from Lester S. Thompson). Lithuania is again beginning to produce and fabricate amber. Meerschaum was one of the principal exports of Turkey before the war; to a certain extent the industry is reviving (1944 production, 9,520 kilograms).

Asteriated quartz colored blue is being offered on the market as a substitute for the star sapphire.

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