Gem Stones

By John W. Hartwell [1] and Betty Ann Brett [2]

GEM MATERIAL collected during 1957 in the United States was valued at about $900,000, slightly less than in 1956.

New regulations on the advertising of jewelry and gem stones in publications, circulars, or orally, were issued by the Federal Trade Commission on June 28, 1957. These regulations apply to all manufacturers, importers, and sellers and are designed to protect the trade and public from unfair practices.

DOMESTIC PRODUCTION

No new localities for gem materials were reported in 1957. Sources of gem materials were listed in previous Gem Stones chapters.

About 800 gem and mineral clubs were active in the United States in 1957, mostly in the Rocky Mountain and Pacific Coast areas. The number of members was not known but was reported to be close to 40,000; about one-quarter owned and operated their own lapidary equipment.

Collecting gem material in the Pacific Northwest by amateurs was reported becoming more difficult, as more privately owned properties were closed to collectors. Collecting gained popularity in the East.

Some owners of gem-stone claims opened their land to collectors for certain fees and used power-operated dirt-moving equipment to uncover the gem material.

In the Pacific Northwest commercial producers of baroque or "tumbled"-type gems reported production valued at nearly $100,000. Because of the popularity of baroque jewelry, suitable "tumbling" material was difficult to obtain. Commercial lapidaries sold less of this type of jewelry because more amateurs "tumbled" their own material.

Six States—Oregon, California, Nevada, Texas, Arizona, and Washington—produced 72 percent of the total reported value of gem materials in 1957. Oregon led in production, with an estimated $200,000—20 percent less than was reported in 1956.

Agate.—Agate produced in the United States during 1957 was valued at more than $125,000, a 25-percent increase over 1956. Commercial and amateur lapidaries sold about 200 short tons of "tumbled" agate material as baroque gems. Principal States, in decreasing order of production, were: Oregon, New Mexico, Arizona, Texas, and Wyoming. Output in Oregon was valued at approximately $60,000, a 20-percent increase over 1956. Principal areas of production were Jefferson, Crook, and Deschutes Counties. Reports from New Mexico indicated an agate production of nearly $25,000, largely from near Deming, Luna County.

[1] Commodity specialist.
[2] Statistical clerk.

Arizona produced agate worth an estimated $15,000, principally from Greenlee, Maricopa, Pima, and Yuma Counties; this was a 40-percent decrease from the value reported in 1956.

Emerald.—The emerald mine near Little Switzerland, N. C., formerly leased by the American Gem and Pearl Co., was reopened by Little Switzerland Emerald Mines, Inc.

Yearly production of synthesized emeralds by C. F. Chatham, San Francisco, Calif., was estimated at 60,000 carats. About 10 percent of the stones were high quality, retailing at $90 to $120 per carat.[3]

Jade.—Jade production in the United States during 1957 was valued at $50,000, a 50-percent reduction from 1956. About half of the total value was reported from Wyoming.

During 1957 the Empire Jade Co., Shungnak district, Alaska, produced jade estimated equal to the 1956 output. Some jade boulders were cut to sizes suitable for 24-inch saws and sold to retailers in the United States. The balance of the material was exported to Germany for finishing into jewelry. The Government-sponsored Shungnak Jade Project in Alaska did not sell raw jade but continued to finish ornamental objects and jewelry. Only a small part of the jade, purchased from Eskimo claim owners, was gem quality.

Petrified Wood.—Production of petrified wood decreased in quantity and value from the record reported during 1956. Estimated value of production from four States was as follows: Arizona, $25,000; Utah, $5,000; Wyoming, $4,000; and Colorado, $3,000.

Gingko, tempska, and other rare fossil woods were produced in small quantities in California, Montana, Oregon, and Washington.

Turquois.—Arizona became the principal turquois-producing State in 1957, surpassing Nevada, the leading State in 1956. Arizona production of turquois was $30,000. Localities near Miami and Kingman produced about 7,500 pounds of low-grade material valued at $17,000. Nevada reported production of 1,300 pounds of high-grade material, which was valued at $13,000. The Lone Mountain and Battle Mountain mines were the principal producers. Turquois also was produced in Colorado.

Miscellaneous Gem Materials.—Fire-opal production from the Virgin Valley area, Nevada, was reported for the first time since 1955. Production was valued at $52,000.

A dispatch from the Pike County diamond field, Arkansas, states that a diamond weighing 3.11 carats was found during 1957. One diamond weighing 15.33 carats was found in 1956 near the same location.[4]

Development of the Yogo sapphire mine in Judith Basin County, Mont., uncovered 2 large stones, weighing 4½ and 5½ carats. Plans were made to build a mill in 1958.

Over 5 tons of obsidian and quantities of other durable gem materials were used by lapidaries for "tumbling" during 1957 to fill the demand for baroque gems.

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[3] Morello, Ted, Green Treasure of the Andes: Nature Mag., vol. 50, No. 10, December 1957, p. 515.
[4] Washington Evening Star, Woman Finds 3.11-Carat Diamond in Arkansas Mine: 105th Year, No. 140, May 20, 1957, p. A5.

TABLE 1.—Estimated production of gem stones in the United States, 1955–57, in thousand dollars

	1955	1956	1957		1955	1956	1957
Alaska	(2)	(1)	(2)				
Arizona	97	104	75	Nevada	(1)	50	100
Arkansas	4	25	(1)	New Hampshire	5	(2)	(2)
California	(1)	90	100	New Jersey	(2)	(2)	(2)
Colorado	48	30	35	New Mexico	25	30	30
Connecticut			(2)	New York	(2)	2	5
Florida		(2)	(2)	North Carolina	(2)	1	(2)
Georgia	(2)	(2)	(2)	North Dakota			(2)
Idaho	5	(1)	5	Oregon	150	250	200
Illinois			2	Pennsylvania	(2)	(2)	(2)
Iowa			(2)	South Dakota	7.4	10	15
Maine	5	(2)	(2)	Texas	115	115	100
Maryland		(2)	(2)	Utah	6	10	12
Michigan	(2)	(2)	(2)	Washington	65	75	75
Minnesota	(2)	(2)	(2)	Wyoming	57	75	55
Missouri			(2)	Other States and Territories	226	20	36
Montana	(1)	35	35				
Nebraska	2.4	3	2	Total	818	925	882

[1] Included with "Other States and Territories."
[2] Figures of less than $1,000 included with "Other States and Territories."

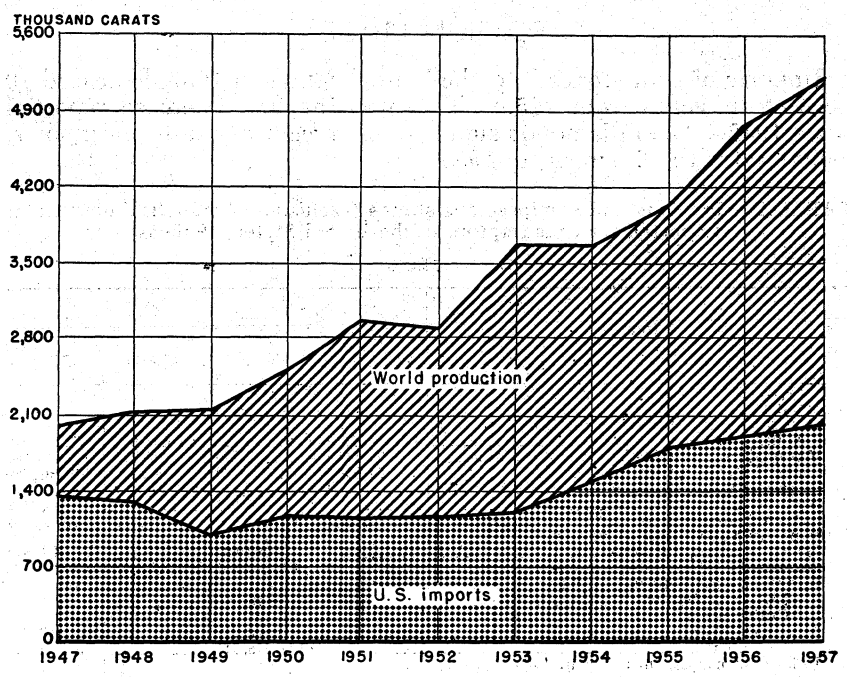

FIGURE 1.—World production and United States imports of gem diamonds, 1947–57.

CONSUMPTION

Sales of lapidary equipment and supplies, gem materials (excluding diamond), and mineral specimens were estimated at nearly $5 million. Synthetic gem-stone purchases from producers in the United States were estimated to be about $1 million; other countries supplied over

$10 million. Purchases of natural gem material, exclusive of diamond, from other sources was reported to be nearly $15 million.

The apparent consumption (domestic production plus imports minus exports) of gem stones in the United States in 1957 was over $142 million.

PRICES

In January 1957 the Diamond Trading Co. of London, England, announced price increases of 5 to 7½ percent on all qualities of rough diamonds used in manufacturing regular goods, tapered baguettes, and melee.[5]

The average diamond prices per carat imported into the United States were for cut, but unset, $107.28 and for rough or uncut, $76.93. The upward trend of prices paid for rough or uncut stones continued in 1957, with an average increase of $4.35 per carat; prices for cut but not set stones decreased $2.07 per carat.

Average prices paid for sapphire imported into the United States for consumption were $9.67 higher per carat in 1957 than in 1956.

FOREIGN TRADE[6]

Imports of gem stones into the United States in 1957 decreased 10 percent in value from 1956. This was the first decrease reported since 1952. Gem diamonds supplied 85 percent of the total imports, compared with 86 percent in 1956.

TABLE 2.—Precious and semiprecious stones (exclusive of industrial diamonds) imported for consumption in the United States, 1956–57

[Bureau of the Census]

Item	1956		1957	
	Carats	Value	Carats	Value
Diamonds:				
Rough or uncut (suitable for cutting into gem stones), duty-free	[1] 1,176,832	[1] $86,216,172	1,002,696	$77,142,072
Cut but unset, suitable for jewelry, dutiable	693,142	[2] 75,795,826	609,775	65,418,387
Emeralds: Cut but not set, dutiable	50,931	[2] 1,688,429	37,245	1,594,789
Pearls and parts, not strung or set, dutiable:				
Natural	----------	[2] 626,237	----------	480,172
Cultured or cultivated	----------	[2] 8,024,660	----------	9,508,701
Other precious and semiprecious stones:				
Rough or uncut, duty-free	----------	[2] 280,692	----------	629,814
Cut but not set, dutiable	----------	[2] 3,116,372	----------	3,163,573
Imitation, except opaque, dutiable:				
Not cut or faceted	----------	[2] 40,496	----------	59,598
Cut or faceted:				
Synthetic	----------	[2] 402,272	----------	463,687
Other	----------	[2] 11,448,744	----------	10,061,841
Imitation, opaque, including imitation pearls, dutiable	----------	[2] 30,410	----------	23,054
Marcasites, dutiable: Real and imitation	----------	38,911	----------	26,413
Total	----------	[1] [2] 187,709,221	----------	168,572,101

[1] Revised figure.
[2] Owing to changes in tabulating procedures by the Bureau of the Census data known to be not comparable with years before 1954.

[5] Jewelers' Circular-Keystone, The Diamond Industry, 1956: P. 2.
[6] Figures on imports and exports compiled by Mae B. Price and Elsie D. Jackson, Division of Foreign Activities, Bureau of Mines, from records of the U. S. Department of Commerce, Bureau of the Census.

The principal imported gem stones that showed decreases in value were imitation gems (25 percent), natural pearls (23 percent), and diamond (11 percent). Increases were noted in rough or uncut precious and semiprecious gems, excluding diamond and cultured pearls, 124 and 18 percent, respectively.

TABLE 3.—Diamonds (exclusive of industrial diamonds) imported for consumption in the United States, 1956–57, by countries

[Bureau of the Census]

Country	Rough or uncut			Cut but unset		
	Carats	Value		Carats	Value	
		Total	Average		Total	Average
1956						
North America:						
Bermuda	498	$48,664	$97.72			
Canada	4,929	576,212	116.90	279	$22,304	$79.94
Mexico				57	23,467	411.70
Total	5,427	624,876	115.14	336	45,771	136.22
South America:						
Brazil	2,456	112,342	45.74	253	20,196	79.83
British Guiana	6,595	200,740	30.44			
Colombia	86	12,055	140.17			
Surinam				85	834	9.81
Uruguay				75	23,000	306.67
Venezuela	56,996	1,644,575	28.85	156	25,363	162.58
Total	66,133	1,969,712	29.78	569	69,393	121.96
Europe:						
Austria				480	52,800	110.00
Belgium-Luxembourg	139,965	16,579,867	118.46	422,002	46,810,415	110.92
Czechoslovakia				25	5,660	226.40
France	4,634	436,790	94.26	9,293	1,173,809	126.31
Germany, West	2,442	108,457	44.41	38,333	2,750,098	71.74
Italy				64	8,806	137.59
Netherlands	3,776	212,270	56.21	21,987	2,696,243	122.63
Switzerland	11,085	429,418	38.74	385	340,049	883.24
United Kingdom	810,591	60,991,614	75.24	3,526	536,427	152.13
Total	972,493	78,758,416	80.99	496,095	54,374,307	109.60
Asia:						
Ceylon				14	1,058	75.57
Hong Kong	76	1,662	21.87	4	419	104.75
India				1,424	121,254	85.15
Israel	2,556	51,011	19.96	145,950	13,169,447	90.23
Japan				1,050	88,242	84.04
Lebanon	89	7,666	86.13			
Malaya				111	15,670	141.17
Total	2,721	60,339	22.18	148,553	13,396,090	90.18
Africa:						
British East Africa	74	740	10.00			
Egypt				77	6,674	86.68
French Equatorial Africa	48,012	1,242,420	25.88			
Liberia	35,536	1,420,676	39.98	15	4,130	275.33
Southern British Africa				1	487	487.00
Union of South Africa	46,436	2,138,993	46.06	47,496	7,898,974	166.31
Total	[1] 130,058	[1] 4,802,829	[1] 36.93	47,589	7,910,265	166.22
Grand total	[1] 1,176,832	[1] 86,216,172	[1] 73.26	693,142	75,795,826	109.35

[1] Revised figure; Belgian Congo revised to none.

TABLE 3.—Diamonds (exclusive of industrial diamonds) imported for consumption in the United States, 1956–57, by countries—Continued

Country	Rough or uncut			Cut but unset		
	Carats	Value		Carats	Value	
		Total	Average		Total	Average
1957						
North America: Canada	5,850	$567,531	$97.01	419	$52,190	$124.56
South America:						
Argentina	147	2,600	17.69	9	615	68.33
Brazil	3,426	135,503	39.55	778	75,620	97.20
British Guiana	4,782	135,938	28.43	236	24,011	101.74
Surinam	2,726	88,438	32.44			
Venezuela	61,890	2,057,533	33.24	4	493	123.25
Total	72,971	2,420,012	33.16	1,027	100,739	98.09
Europe:						
Belgium-Luxembourg	130,646	13,308,054	101.86	345,899	37,482,783	108.36
France	21,052	846,483	40.21	6,228	987,074	158.49
Germany, West	588	18,498	31.46	29,873	2,019,582	67.61
Hungary				105	3,500	33.33
Italy				147	21,839	148.56
Netherlands	4,248	319,044	75.10	22,686	2,914,262	128.46
Switzerland	917	27,160	29.62	134	107,905	805.26
United Kingdom	646,424	55,447,905	85.78	3,275	551,728	168.47
Total	803,875	69,967,144	87.04	408,347	44,088,673	107.97
Asia:						
Hong Kong				3	274	91.33
India	23	2,250	97.83	385	259,119	673.04
Iran				147	12,519	85.16
Israel	3,462	128,664	37.16	151,488	13,685,980	90.34
Japan	249	4,148	16.66	1,297	115,713	89.22
Malaya	300	43,655	145.52			
Thailand				152	1,283	8.44
Total	4,034	178,717	44.63	153,472	14,074,888	91.71
Africa:						
Belgian Congo	4,150	13,584	3.27			
British East Africa				1	515	515.00
French Equatorial Africa	23,600	633,920	26.76			
French West Africa	2,469	52,572	21.29			
Liberia	45,496	1,607,795	35.34			
Southern British Africa				42	3,250	77.38
Union of South Africa	40,161	1,700,797	42.35	46,284	7,063,491	152.61
Total	115,966	4,008,668	34.57	46,327	7,067,256	152.55
Oceania: Australia				183	34,641	189.30
Grand total	1,002,696	77,142,072	76.93	609,775	65,418,387	107.28

[1] Owing to changes in tabulating procedures by the Bureau of the Census, data known to be not comparable with years before 1954.

WORLD REVIEW

In a historical world review of diamond discoveries, production, and sales it was estimated that, in 1955, nearly 22 thousand workers were engaged in cutting and polishing diamonds. Belgium led in number of workers, with 10,700, followed by Germany, 4,000; Israel, 2,500; and the United States, 2,000. The remaining workers were in 11 countries. Rough diamonds sold by the Diamond Syndicate during 1920–29, and the Central Selling Organization, 1930–56, were included. Sales in 1956 were nearly $210 million.[7]

[7] Leeper, Sir Reginald, The Development of the Diamond Industry: Optima (Johannesburg), vol. 7, No. 3, September 1957, pp. 125–129.

NORTH AMERICA

Canada.—An increased quantity of jade was produced from the Frazer River deposits of British Columbia, Canada, during 1957. These deposits were becoming more important as a source of good gem material as deposits in the United States and Alaska were being depleted.

Cuba.—The diamond cutting and polishing industry established during World War II was reported almost nonexistent in 1957. Over 12,000 carats were exported to the United States from 1947 to 1950, inclusive; none was exported from 1951 to 1956.[8]

Guatemala.—A study on jade and jade artifacts found in Guatemala gave the history of use; nomenclature; geologic occurrence; chemical, physical, and optical properties; and types of jade and other green minerals used in meso-American cultures.[9] After the study was published a jade deposit was found in place near Monzanal, Guatemala.

Mexico.—The quality, quantity, and location of agate, amethyst, apatite, beryl, danburite, garnet, obsidian, opal, orthoclase, scapolite, topaz, and tourmaline were reported. Many agate varieties, including iris, moss, flame, plume, and banded, were considered more valuable than other gem materials found. Agate was produced in large quantities.[10]

It was reported that a "lost" Mexican jade deposit was traced to an area near Taxco, Guerrero.[11]

SOUTH AMERICA

Surinam.—A diamond area near Rosebel and Sabanpassie, known since 1880, was investigated by the Geological and Mining Service. Diamond was found in eluvial conglomerate deposits. Mining would depend on the adaptability of large-scale equipment.[12]

Venezuela.—Over 19,000 carats of gem-quality diamonds was produced in 1956, equivalent to 20 percent of total diamond production. Only a small part was domestically cut and polished. Pearls sold in domestic jewelry came from local sources but were only a small part of the total production. Most of the pearls produced were exported.[13]

ASIA

India.—A total of 360 tons of ore from 20 sampling shafts, sunk at intersections of gridlines 250 feet apart, in the Panna diamond-mining area yielded 63 diamonds, equivalent to 12.5 carats per 100 tons.

Iran.—An estimated 15,000 pounds of turquois was mined in Nishapur during 1956. Production in 1957 was reported to be 30 percent less in quantity but 15 percent more in value. Sales to the United States were about $2,400.[14]

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[8] U. S. Embassy, Havana, Cuba, State Department Dispatch 412: Nov. 18, 1957, p. 1.
[9] Foshag, W. F., Mineralogical Studies on Guatemalian Jade: Smithsonian Miscellaneous Collections, vol. 135, No. 5, Dec. 3, 1957, 60 pp.
[10] Barron, E. M., Report on Mexican Gem Minerals: Unpublished.
[11] Science Newsletter, vol. 71, No. 13, Mar. 30, 1957, p. 198.
[12] U. S. Consulate, Paramaribo, Surinam, State Department Dispatch 115: Nov. 20, 1957, p. 3.
[13] U. S. Embassy, Caracas, Venezuela, State Department Dispatch 469: Jan. 7, 1958, pp. 39-40.
[14] Bureau of Mines, Mineral Trade Notes: Vol. 45, No. 6, December 1957, pp. 28-29.

Israel.—Progress was reported by the Israel diamond-polishing industry, which anticipated exports valued at $31 million during 1957, compared with $24.5 million in 1956. According to spokesmen of the industry, employment rose to about 3,000. The average "added value" of the diamond increased from 17 to 20 percent.[15]

Japan.—The pearl industry overproduced in the spring during declining prices, cut production, increased exports, and stabilized prices in the last half of 1957. Production for the year was 45,469 pounds—4,134 pounds less than in 1956. Exports were 55,140 pounds valued at $14.3 million.[16]

U. S. S. R.—Diamond was discovered in an area of over 115 square miles near Yakutia. In an article describing the deposits, data were given on diamond properties and methods of prospecting, petrography, and mineralogy of the kimberlite. The largest diamond found weighed 32.5 carats; but in typical deposits, 70 to 90 percent of the diamonds were smaller than 1/10 carat. Because the stones were small, the field might be regarded principally as a source of industrial diamond.[17]

The Yakutia discoveries also were summarized and references to Russian publications describing the six separate diamond-bearing areas were given. It was indicated that about 19 percent of the diamonds were good industrial stones and gem stones.[18]

AFRICA

Angola.—The Portuguese Government was formulating plans to develop a diamond-cutting and polishing industry in Lisbon, utilizing diamond produced in Angola. Most of the Angola output was gem quality (60 percent), and was exported to the United Kingdom.[19]

Belgian Congo.—A decree effective August 1, 1957, was issued increasing the base value of Kasai diamonds, but reducing the export tax from 5 to 3 percent ad valorem.

French West Africa.—On February 20, 1957, at Kerouane, French Guinea, an African cooperation, Bakima, was created for diamond exploitation in the Famarodou area. This organization was established to protect the authorized miners and to help stop the illegal production and sale of diamond. The history of the area and methods of mining were related.[20]

Liberia.—Diamond exports in 1956 were over 1 million carats, more than 5 times the 1955 exports.[21]

A second diamond rush was reported in the Suehn-Bopolo district, northeast of Bomi Hills, about 75 miles from Monrovia.[22]

Rhodesia and Nyasaland, Federation of.—An emerald discovery near the Belingwe Native Reserve, Southern Rhodesia, was placed under Government control. Specimens were sent to the United States

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[15] U. S. Embassy, Tel Aviv, Israel, State Department Dispatch 222: Oct. 15, 1957, p. 3.
[16] U. S. Consulate, Nagoya, Japan, State Department Dispatch 43: Jan. 10, 1958, p. 1.
[17] Davidson, C. F., The Diamond Fields of Yakutia: Min. Mag. (London), vol. 47, No. 6, December 1957, pp. 329–338.
[18] Moyar, A., The Diamond Industry in 1956–57, Vlaams Economisch Verbond (Antwerp, Belgium), undated: Pp. 72–76.
[19] U. S. Consulate, Luanda, Angola, State Department Dispatch 62: Nov. 26, 1957, pp. 1–2.
[20] U. S. Consulate, Dakar, French West Africa, State Department Dispatch 241: Apr. 10, 1957, pp. 1–7.
[21] U. S. Embassy, Monrovia, Liberia, State Department Dispatch 256: Apr. 10, 1957, pp. 2–3.
[22] U. S. Embassy, Monrovia, Liberia, State Department Dispatch 206: Feb. 6, 1957, pp. 5–6.

for appraisal. The value and extent of deposits were not known.[23]

Tanganyika.—In 1957 production from the Williamson and Alamasi, Ltd., diamond mines exceeded that for 1956. Exports from the territory increased about 4 percent in weight and over 1 percent in value. Improvements made by Alamasi, Ltd., increased the output above the average of former years.[24] John T. Williamson, principal owner of the Williamson Diamond, Ltd., mine died January 8, 1958.[25]

Union of South Africa.—The Diamond Export Duty Act of 1957 was approved and adopted by the Government. This act, consolidating the export duty acts of 1917, 1919, 1947, 1950, and 1956, which were wholly or partly repealed, regulated the export duty of rough and uncut diamonds from the Union of South Africa.[26]

The DeBeers Consolidated Mines, on behalf of the Central Sales Organization, reported sales of gem diamond in 1957 totaling nearly $148 million, the highest on record and about $6 million over 1956.[27]

H. F. Oppenheimer became chairman of the board of DeBeers Consolidated Mines, Ltd., on the death of his father, Sir Ernest Oppenheimer, on November 25, 1957.[28]

OCEANIA

Australia.—Recovery of an additional 100 tons of oystershell by Japanese "pearlers" outside the 10-mile zone was approved by the Australian Government. The number of pearls recovered was not known.

A quantity of cultured pearls was produced by the Australian-Japanese-United States company described in the 1956 Gem Stones chapter.[29]

TECHNOLOGY

Scheelite crystals 7/16 inch in maximum dimensions were discovered in the Tyler Creek tungsten mine near Deer Creek, Calif. Crystals are rare, because most deposits contain only disseminated scheelite grains.[30]

A series of articles was published on gem materials, listing the properties that make them highly esteemed. Information on localities and facts about cutting and polishing were given.[31]

The properties of natural and artificial gem stones and methods of distinguishing between them were described.[32]

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[23] Rhodesia and Nyasaland Newsletter (Salisbury), Value of Rhodesian Emerald Find Still Unknown: Feb. 7, 1958, p. 3.
[24] U. S. Consulate, Dar es Salaam, Tanganyika, State Department Dispatch 157: Feb. 19, 1958, p. 4.
[25] Canadian Mining Journal, The Late John T. Williamson: Vol. 51, No. 550, February 1958, p. 120.
[26] U. S. Embassy, Pretoria, Union of South Africa, State Department Dispatch 76: Sept. 3, 1957, p. 1.
[27] DeBeers Consolidated Mines, Ltd., Annual Report, 1957: p. 18.
[28] DeBeers Consolidated Mines, Ltd., Annual Report, 1957: pp. 7–9, 11.
[29] U. S. Consulate, Perth, Australia, State Department Dispatch 3: Aug. 28, 1957, p. 4.
[30] California State Division of Mines, Mineral Information Service, Scheelite-Crystal Discovery: Vol. 10, No. 5, May 1, 1957, pp. 6–7.
[31] Owens, G. S., Gems: Rocks and Minerals, vol. 32, Nos. 1–2, January–February 1957, pp. 43–46; Report on Spinel: Nos. 7–8, July–August 1957, pp. 375–377; Beryl: Nos. 9–10, September–October 1957, pp. 469–472; Report on Chrysoberyl: Nos. 11–12, November–December 1957, pp. 582–585.
Cole, Bill, Tourmaline: Rocks and Minerals, vol. 32, Nos. 1–2, January–February 1957, pp. 47–48; Turquoise: Nos. 3–4, March–April 1957, pp. 146–147; Feldspar Gems: Nos. 5–6 May–June 1957, pp. 268–269; Quartz Gems (part I, The Crystalline Forms): Nos. 7–8, July–August 1957, pp. 400–401; Quartz Gems (part II, The Crysptocrystalline Forms): Nos. 9–10, September–October 1957, pp. 473–474.
[32] Blas, L. [Characteristics of Natural and Synthetic Gems]: Ion, vol. 16, No. 176, March 1956, pp. 147–152; Eng. Index Service No. 57–1879; Ind. Diamond Rev. Abs., vol. 17, No. 198, May 1957, p. B78.

A review of the gem-stone industry in California included mineralogy and geology, occurrences, locations of deposits, mining, utilization and treatment, markets, and a bibliography.[33]

A method of forming emerald crystals under high temperature and pressure was given.[34]

Sapphires grown in aqueous solutions—a process similar to that used to grow quartz crystals—appeared free from strain. The crystals might be useful in manufacturing optical items. The process might be used to make synthetic rubies and star sapphires under controlled conditions.[35]

A synthetic gem—strontium titanate—was made by the Verneuil process. It had an index of refraction higher than diamond and a hardness of 6 on the Mohs scale.[36]

Quality corundum crystals without strains and with minimum brittleness were grown by the Verneuil process.[37]

A report on gem stones and industrial crystals other than natural discussed the inadequacies of the terminology used in the trade to describe the finished products.[38]

Twelve mineral specimens were described, giving the synonyms, nomenclature, varieties, compositions, crystallography, physical and optical properties, tests, diagnoses, occurrence, and uses. Each mineral was illustrated in color. These mineral specimens were listed in chronological order: Beryl, sphalerite, chrysocolla, garnierite, pitchblende, chromite, quartz, corundum, fuller's earth, kyanite, pyrrhotite, and feldspar.[39]

A formula for calculating the weight of regular cuts of gem stones and pearls, particularly brilliant-cut diamonds, was given. Tables and graphs were included.[40]

A new instrument, the refractoscope, to determine the density and/or the index of refraction of gem stones, was introduced to jewelers and gemmologists.[41]

Laboratory methods to remove surface coatings from rough diamonds by chemical means were investigated. Present methods require a window cut into the stone to determine its quality.[42]

The color terminology and quality grades in diamond evaluation were discussed.[43]

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The properties of certain natural and synthetic colorless gem stones were described.[44]

Methods of determining the difference between true jade and artificially colored jade were given.[45]

Patents, suitable for use in lapidary processes, were obtained on a diamond bandsaw,[46] a diamond-filled-paste applicator,[47] an automatic feeder for cooling lapidary grinding tools,[48] a machine for grinding gem diamonds to selected shapes,[49] and an apparatus for cutting and polishing gem facets.[50]

Patents were also issued on a process of bonding diamond powder on a tool grinding face,[51] and a method of producing blue-white boules, which have gemlike properties.[52]

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