

DEPARTMENT OF THE INTERIOR
HUBERT WORK, Secretary

UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

MINERAL RESOURCES

OF THE

UNITED STATES

1920

G. F. LOUGHLIN
Geologist in Charge, Division of Mineral Resources

PART II—NONMETALS
R. W. STONE, Geologist in Charge



*Clemson College Library
Government Publications*

WASHINGTON
GOVERNMENT PRINTING OFFICE
1923

GEMS AND PRECIOUS STONES.

By B. H. STODDARD.

PRODUCTION.

Value of precious stones produced in the United States, 1916-1920.

Variety.	1916	1917	1918	1919	1920
Agmatolite.....					(a)
Andalusite.....		(a)	(a)		
Beryl.....	\$2,031	\$2,178	\$1,906	(a)	\$3,440
Calamine.....			(a)		
Chlorastrolite.....	(a)	45	146	\$53	(a)
Copper-ore gems.....	1,713	2,857	2,299	(a)	(a)
Corundum (sapphire).....	99,180	54,204	42,414	40,304	214,705
Datolite.....	(a)	(a)	(a)	(a)	(a)
Diamond.....	2,680	4,175	1,910	(a)	(a)
Epidote.....	(a)	(a)	(a)		(a)
Feldspar.....	305	(a)	(a)	(a)	520
Fluorite.....			(a)		
Fossil coral.....	(a)	(a)		(a)	
Garnet.....	1,542	624	1,277	1,630	331
Hematite.....	(a)	(a)	138	(a)	45
Iceland spar.....	(a)	(a)	(a)	(a)	398
Jet.....				(a)	(a)
Kyanite.....	(a)				
Lapis lazuli.....		(a)	(a)	(a)	
Lazulite.....	(a)				
Mariposite.....			(a)		
Meerschaum (sepiolite).....	(a)	(a)	(a)	(a)	
Obsidian.....	134	(a)	(a)		40
Olivine.....	455	458	1,018		100
Opal.....	1,838	805	6,304	(a)	(a)
Phenacite.....		(a)	(a)		
Pyrite.....	2,075	(a)	(a)		(a)
Quartz.....	25,707	28,273	15,211	17,632	14,676
Rhodonite.....	(a)	512	515	160	(a)
Rutile.....	(a)	(a)			
Satin spar (gypsum).....			(a)		
Serpentine.....	(a)				
Smithsonite.....		(a)			
Spinel.....				(a)	(a)
Spodumene.....	(a)	(a)	281	(a)	
Staurolite.....	(a)	(a)	(a)		(a)
Thomsonite.....	47	(a)	(a)	(a)	
Topaz.....	1,065	230	907	210	767
Tourmaline.....	50,807	12,452	6,206	17,700	4,869
Turquoise.....	21,811	14,171	20,667	22,750	16,865
Variscite.....	3,140	2,350	753	925	(a)
Vesuvianite.....	(a)	2,765	320		
Willemite.....		(a)	(a)		
Zircon.....					144
Zoisite.....		(a)	(a)		
Undistributed.....	3,323	4,913	4,251	10,399	8,295
	217,793	131,012	106,523	111,763	265,205

a Less than three producers; figures included under "Undistributed."

Value of precious stones produced in the United States in 1920, by States.

Montana.....	\$223,196	Arkansas, Colorado, New Mex-	
Nevada.....	12,920	ico, Utah.....	\$8,435
California.....	5,504	Other States ¹	3,609
Arizona.....	5,328		
Maine.....	3,738		265,205
Oregon.....	2,475		

¹Connecticut, Georgia, Idaho, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, South Dakota, Texas, Virginia, and Wyoming.

AMETHYST AND TOPAZ.

Amethyst and topaz are reported by J. E. Reed, 431 South Main Street, Butte, Mont., to have been found in 1920 about 18 miles southeast of Butte. The claims are undeveloped, but sufficient work is said to have been done to expose the gem material.

CORUNDUM (SAPPHIRE).

The mines of the American Gem Mining Syndicate, in Granite County, and those of the New Mine Sapphire Syndicate, in Fergus County, Mont., were operated in 1920, and their output, which includes nearly all the sapphire produced in the United States, was greater than in any previous year except 1913. According to a statement of an official of the New Mine Sapphire Syndicate, the demand for industrial sapphire is increasing every year, and the output of the syndicate's mines is engaged for two years ahead.

DIAMOND.

The Arkansas Diamond Co., Little Rock, Ark., which owns the Arkansas mine, in Pike County, continued testing by pits and washing by hand in 1920 and is reported to have recovered several hundred carats of diamonds, valued in the rough at several thousand dollars. Operations on a larger scale have been planned, and at the present time (October, 1921) the company is reported to be installing new machinery in its screening and jigging plant for washing the surface material in the field. The concentrates from this plant will go to the grease tables. In September, 1921, the laborers digging test pits on the property are reported to have picked up a white diamond weighing $20\frac{1}{4}$ carats. S. H. Zimmerman, the engineer and general manager of the company, is quoted in the Arkansas Gazette of October 9, 1921, as stating that it was a "fairly good stone." The property of the Arkansas Diamond Co. is described in an article entitled "Diamonds in Arkansas," by Samuel W. Reyburn and Stanley H. Zimmerman, published in the Engineering and Mining Journal of April 24, 1920.

Howard A. Millar², of the Kimberlite Diamond Mining & Washing Co., 2014 Railway Exchange Building, St. Louis, Mo., reports that the company holds a lease on the Mauney mine and owns the Ozark and Kimberlite mines, at Murfreesboro, Ark. Its two testing plants, which were destroyed by fire January 13, 1919, have not been rebuilt, but further exploration work was carried on, and as soon as conditions become normal activities will be resumed on a larger scale. In the recoveries of gem material the deep canary color and the mahogany shade of brown are said to be especially worthy of mention; blue or pink stones and occasionally a "frosted" or etched white stone are also reported. Mr. Millar states that fragments and fractures were noticeable in the surface material but that with slight depth in the undisturbed volcanic ground these features have almost disappeared. From a careful analysis of several thousand diamonds it is reported by Mr. Millar that on a color basis the mine-run yields white stones 40 per cent, brown 37 per cent, yellow 22 per cent, and bort 1 per cent. The policy of the company has been to withhold information on pro-

² Personal letter, Mar. 7, 1921.

duction. Accordingly, in the table giving the production of diamonds the output of this company is not included.

OPAL.

F. M. Myrick, Johannesburg, Calif., reported the discovery of a deposit of canary-colored moss opal 18 miles southwest of Johannesburg. Several years ago Mr. Myrick submitted to the United States Geological Survey specimens of precious opal which he had obtained from a prospect 15 miles west of his bloodstone mine on Brown Mountain in the Death Valley region. It was light colored and showed flashes of green, blue, and red.

IMPORTS.³

The precious stones (excluding pearls) imported into the United States in 1920 were valued at \$66,100,742, the highest value ever reported except that for 1919, from which it shows a decrease of 28 per cent. The value of the pearls produced is omitted from the total, for pearls are not a mineral but an animal product, being deposited in the shells of mollusks. They are lustrous calcareous concretions with animal membrane between successive layers, and they owe their beauty and value in part to their organic structure; but as they are among the most desired of gems, their value is given in a separate column in the table of imports.

General imports and imports for consumption for any period will differ to the extent that the value of entries for warehouse for the period differs from the value of withdrawals from warehouse for consumption. The term "entry for consumption" is the technical name of the import entry made at the customhouse and implies that the goods have been delivered into the custody of the importer and that the duties have been paid on the dutiable portion. Some of them may be afterwards exported.

Gems and precious stones imported and entered for consumption in the United States, 1910-1920.

Year.	Diamonds.				Other stones not set.	Total, excluding pearls.	Pearls.
	Glazier's.	Dust and bort.	Rough or uncut.	Cut but not set.			
1910.....	\$213,701	\$54,701	\$8,991,890	\$25,593,641	\$4,237,232	\$39,091,165	\$1,626,083
1911.....	199,930	110,434	9,654,219	25,676,302	3,820,703	39,461,588	1,384,376
1912.....	452,810	94,396	9,414,514	22,865,685	3,433,163	36,200,569	5,130,376
1913.....	471,712	100,704	12,268,543	24,812,604	2,805,963	40,439,526	5,002,624
1914.....	579,332	77,408	2,851,933	11,976,871	1,649,875	17,135,419	2,090,018
1915.....	366,793	75,944	7,020,646	13,177,919	1,078,391	21,719,693	4,513,909
1916.....	836,018	67,290	11,441,328	24,282,140	2,303,351	38,930,127	11,336,971
1917.....	1,098,102	349,746	13,092,855	18,421,838	1,883,810	34,846,351	4,947,509
1918.....	718,397	475,870	12,636,024	7,734,150	1,192,398	22,666,839	765,929
1919.....	984,381	1,420,442	20,306,758	64,085,610	5,161,639	91,958,830	11,008,973
1920.....	1,527,753	3,387,488	10,526,125	45,240,013	5,419,363	66,100,742	7,879,384

³ Statistics compiled by J. A. Dorsey, of the United States Geological Survey, from records of the Bureau of Foreign and Domestic Commerce.

Diamonds imported into the United States in the calendar years 1919 and 1920.

[General imports.]

Country.	1919				1920			
	Uncut.		Cut but not set.		Uncut.		Cut but not set.	
	Carats.	Value.	Carats.	Value.	Carats.	Value.	Carats.	Value.
Argentina.....			17	\$2, 933				
Australia.....							1	\$710
Austria.....							121	13, 325
Belgium.....	46	\$2, 913	13, 133	1, 793, 815	2, 343	\$185, 965	63, 390	8, 345, 615
Bolivia.....			5	1, 745				
Brazil.....	13, 940	529, 272	298	27, 969	7, 679	503, 236	737	67, 445
British Guiana.....	588	29, 613			2, 242	118, 483	5	1, 112
British South Africa.....	8, 263	469, 999	62	16, 572	3, 374	334, 618	171	39, 599
Canada.....	1	22	681	59, 600			41	5, 945
Cuba.....			40	3, 361				
Czecho-Slovakia.....							18	3, 215
Denmark.....			991	23, 627			485	86, 276
Egypt.....							9	1, 592
England.....	245, 207	17, 921, 148	66, 758	6, 664, 911	102, 339	9, 283, 918	22, 104	3, 003, 534
France.....	857	22, 818	8, 995	2, 033, 268	1, 875	55, 342	16, 247	2, 506, 090
Germany.....							144	16, 374
Greece.....							50	6, 565
Italy.....							306	48, 857
Japan.....					80	4, 748	68	34, 456
Jugoslavia.....							21	4, 431
Mexico.....							1	250
Netherlands.....	20, 998	1, 337, 775	434, 340	53, 561, 019	1, 146	40, 189	198, 477	31, 024, 241
Panama.....			6	1, 275				
Poland and Dan- zig.....							486	48, 898
Portugal.....							333	69, 376
Rumania.....							100	8, 448
Siam.....	897	2, 198						
Switzerland.....			230	32, 064			758	108, 000
Turkey in Europe.....			3	788	4	863	3	555
	290, 797	20, 315, 758	525, 559	64, 222, 947	121, 082	10, 527, 362	304, 076	45, 444, 999