# GEM NEWS

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## DIAMONDS

### Africa

*Diamonds from Guinea.* Bridge Oil, an Australian oil and gas exploration and mining company, has joined with the Aredor-Guinea Joint Venture to explore for and mine diamonds in Guinea, in the Kissidongon, Banankourn region, abutting the diamondiferous areas of Sierra Leone.

*Exploration for diamond off Namaqualand.* Golden Dumps, a small independent South African company, will be exploring the Dawn Diamonds prospecting lease off the Namaqualand coast in South Africa. The area to be studied as a potential diamond producer is near Kleinzee, and consists of a 30 km × 4 km block running north and south of the Buffels River. The seabed will be examined first, both to determine its profile and to locate any sand and gravel deposits.

*Diamond exploration in Swaziland.* The government of Swaziland has issued a diamond-mining license to Trans-Hex, of South Africa, for exploration of an area near the industrial center of Manzini. No indication of the potential size or grade of the deposit has been revealed as yet. In the mid-1970s, De Beers sampled a deposit of diamonds located at Ehlane to the north, and also explored the adjacent Dokolwayo kimberlite. Because of the small size of the stones recovered, they eventually rejected both prospects as uneconomic.

### Australia

*Diamonds found at Limestone Creek, Western Australia.* Freeport of Australia and Gem Exploration and Minerals, having entered into a partnership called the Bow River Joint Venture, reported the recovery of 2,177 diamonds with a total weight of 367 ct from 2,250 tons of mined and processed ore. The diamonds were recovered at Limestone Creek in the Kimberley region of Western Australia, not far from the Argyle diamond locality. Most of the diamonds recovered so far are thought to be small and of industrial quality, although no evaluation has yet been made. Freeport and Gem Exploration have equal rights in the Bow River Joint Venture, but Freeport retains the option to earn an additional 30% in the project by funding future diamond exploration.

*First Argyle diamonds sold in Antwerp.* Northern Mining, holder of a 5% interest in the Australian Argyle Diamond Mining Operations, has marketed its share of production, a total of 44,600 ct of rough, through Arslanian Frères. The entire lot was sold within a week, with some of the stones going to local Antwerp firms, some to Americans, and some to Israel. Although the diamonds recovered from the Argyle mine have generally been characterized as tending toward brown and of low quality, some finer stones were noted in this first lot. A mixed parcel of white and brown stones was sold in the United States, so Australian diamonds should be available soon to jewelers in the U.S.

### India

*Diamonds from India.* The Geological Survey of India reports that Andhra Pradesh continues to yield a steady supply of gem-quality diamonds. The producing area is Munimadugu in the Kurnool District. Exploratory drilling in the Majhgawan Block, Panna Diamond Belt, Madhya Pradesh, showed a 4-cm to 34-cm-thick potentially diamond-bearing conglomerate zone. A hard-rock treatment plant was built in the Panna District to recover diamonds.

**News of the Famous Eureka Diamond.** Mr. Walter Neil Letson has supplied *Gems & Gemology* with the following report on the Eureka Diamond:

The Eureka diamond, often identified as the first diamond discovered in South Africa, has been placed on permanent loan in the De Beers Mine Museum in Kimberley.

Authorities differ on the "first diamond" claim, citing references to diamonds in southern Africa which appeared as early as the mid-18th century and to a find in 1859, whose authenticity has recently been documented. It was the Eureka, however, that first attracted wide public attention to the area; the prediction that it would be the rock "on which the future of South Africa would be built" has proved to be extremely accurate.

The 10.73-ct stone, cut from a 21.25-ct yellow rough, was found by Erasmus Jacobs on the banks of the Orange River, near Hopetown, Cape Province, in 1860 (or 1866). It was shown at the Paris Exhibition of 1867–1868 and owned for many years by a private collector in England. The Eureka was a prominent feature of "The Ageless Diamond" exhibition in London in 1959. It was purchased by De Beers in 1966 and presented to the South African Parliament. The Government now believes the

Kimberley Mine Museum to be the most fitting place for its public display; an estimated 35,000 visitors saw it during the 1983 Christmas holiday period.

The Kimberley Mine Museum has also recently received a collection of more than 1,000 diamonds of exceptional technical importance from the estate of Alpheus Fuller Williams, who was a De Beers general manager for 26 years, author of *The Genesis of the Diamond* (London: 1932), and a distinguished student of the geology of the diamond. He was the son of Gardner Fuller Williams, the American mining engineer who was the first De Beers general manager and whose monumental work *The Diamond Mines of South Africa* (London: 1905) set a standard in its field.

The stones were purchased by the South African Diamond Producers Association and presented to the museum on the condition that they be exhibited and made available for study and research.

## COLORED STONES

**Correction: Brazilian amethyst.** In the Gem News column of the Fall 1983 issue it was reported that a new find of amethyst was from Para, Minas Gerais, Brazil, which is of course impossible since Para is a separate state in Brazil, some 1,500 km north of the state of Minas Gerais. This error was brought to our attention both by Michael Ridding of Silverhorn Designers and Goldsmiths in Banff, Alberta, Canada, and by Jack Lowell of the Colorado Gem and Mineral Company, Tempe, Arizona, who was the source of the original news item. According to Mr. Ridding, the lighter material described by Jack Lowell is found near the town of Maraba in Para, and the dark material is found farther south, near the town of Pan d'Arco, also in Para.

**Gem Exploration in Southern India.** Karnataka, India's southern state, may prove very interesting gemologically. To date, the Geological Survey of India, in cooperation with Karnataka's Department of Mines and Geology, has identified three gem tracts in the southern part of the state: in the areas of Haggadadevankote, Holenarsipur, and Pavagada Taluk. During the current field season, the gem potential of the Bangerpet, Osahunda, and Kamasamndram areas in the Kolar District is also being explored.

**Heat treatment in Sri Lanka.** Mr. Joe Segera, of the *Daily News* in Colombo, Sri Lanka, reports that Sri Lanka's government-owned State Gem Corporation is promoting the formation of a Sri Lanka–Thai joint stock company to handle the treatment of poor-quality corundum, here known as geudas, in Sri Lanka. Gem dealers from Thailand have been visiting Sri Lanka regularly to purchase these stones at attractive prices and then have been taking them back to Thailand for of heat treatment to enhance the color. The projected company will also handle the export of these treated gems.

**Korean amethyst.** Choong Hyun Kim, of the Gemological Institute of Korea, reports on Korean amethysts of a very attractive violetish purple color. The gems this editor examined ranged in weight from 2.35 ct to 4.54 ct and were of excellent jewelry quality, containing just enough inclusions to prove their natural origin. For further information on the new Korean amethyst, please contact: Choong Hyun Kim, Gemological Institute of Korea, 24 Sogong-Dong, Sam Jim Bldg. #300-302, Choong-Ku, Seoul, Korea.

## PRECIOUS METALS

**Lady Bountiful looks promising.** Consolidated Exploration Limited recently announced that it has obtained very high gold assay results from several diamond drill holes at the Lady Bountiful prospect in Western Australia, at depths betwen 108 and 110 m. The highest assay value in this depth interval was 2668 grams of gold per ton of ore over 0.51 m from one of the drill holes. Since there are 31.103 grams per troy ounce, this converts to 85.77 troy ounces of gold per ton of ore. With gold at $400 per ounce, this half-meter section promises $34,308 per ton of ore mined. (Homestake Mine, the richest in America, operated for many years at $8 per ton gold recovery.)

**Rich Gulch California gold.** Inca Resources Inc. released results from three drill holes completed at its Rich Gulch gold property in Plumas County, California. The holes were drilled in the near-surface high-grade extension of the Virginia zone. The assay values ranged from 42 to 16.4 grams/ton gold (1.35 to 0.52 ounces per ton of ore), over widths from 2.7 m to 12.5 m. The maximum depth of the intersections was no more than 50 m. A feasibility study on the property is being completed; indications suggest that a 3,000-ton-per-day operation, with a grade in excess of 3.8 grams/ton, and operating costs in the $150-$160 per ounce range, might be developed in the near future.

**Soviets recover gold from industrial waste.** According to Soviet press reports, the Siberian Institute of Chemistry has discovered a new process for recovering greater amounts of gold from waste waters used in industrial processes involving the use of gold. The new process involves the use of carbon fiber electrodes.

**French study of worldwide gold deposits now available.** A technical study of worldwide gold deposits, now available in book form, is the result of three years of research by a French team from the Bureau de Recherches Geólogiques et Minières and the Ecole Nationale Supérieure des Mines de Paris. The team was led by Jean-Jacques Bache, who is also editor of the book. Accompanying the text are a number of detailed maps, diagrams, and tables. The book is available only in French.

For further information, write to: Bureau de Recherches Géologiques et Minières, Avenue de Concyr, Orléans-La-Source (Loiret), BP 6009, 45060 Orléans Cedex, France.

## SYNTHETICS

**Seiko growing synthetic gemstones by the floating-zone method.** Floating-zone crystal growth was first developed in 1953 to produce high-purity silicon as a semiconductor. It has since been used to produce refractory metals, alloys, and other semiconducting compounds. Although colorless synthetic sapphire has been grown by this method in the past, it was not until the Suwa Seikosha (Seiko Watch) Company Ltd. of Japan, became involved, as part of their efforts to make a better electronic crystal for their watches, that this technique was developed to produce synthetic gems.

In the floating-zone crystal growth process, a sintered rod, composed of a uniform mixture of all of the components necessary to produce the desired gem material, is held vertically at both the top and bottom. An infrared radiation convergence heater, using a halogen lamp and an ellipsoidal reflector with its inner surface gold plated, heats a small region near the top of the rod until it melts. The two holders then begin to rotate while at the same time the heat source begins dropping down the rod at an even rate. Eventually, the sintered rod is consumed and a single crystal results.

The floating-zone synthetics examined to date are a 0.35-ct ruby, a 0.49-ct pinkish orange sapphire, and a 0.51-ct alexandrite chrysoberyl. The three stones showed no unusual characteristics during testing. Their reactions to long-wave and short-wave ultraviolet radiation and their refractive indices are as follows:

| Floating-zone synthetic | LWUV | SWUV | R.I. |
|---|---|---|---|
| Ruby | Very strong red | Strong red | 1.762–1.770 |
| Orange sapphire | Strong red | Strong red | 1.762–1.770 |
| Alexandrite | Weak red | Very weak red | 1.740–1.749 |

The internal characteristics visible in all three of the stones were swirled and curving to subangular growth as well as color zoning and gas bubbles. Since November 1983, Seiko has been marketing, under the trade name Bijoreve, a synthetic ruby, orange and blue sapphires, and an alexandrite chrysoberyl — all grown by the floating-zone method. They have also started to market a flux emerald as well, but this material was not available for examination.

# ANNOUNCEMENTS

**Smithsonian devises gemstone donation procedures.** As reported in the American Gem Society's *Gem and Jewelry Fact Sheets*, the Smithsonian Institution has revised its regulations covering gemstone donations because of the Internal Revenue Service's close scrutiny of such tax exemptions. The museum now requires an appraisal which is then evaluated in writing by the curator. The appraisal, together with the curator's evaluation, is then studied by individuals of higher authority at the National Museum. John S. White, curator of gems and minerals at the Smithsonian, suggests that in preparing appraisals of gemstones for museum donation the following procedure be used:

1. Give a range of value
2. Be objective in pricing
3. Select a value that will hold over a period of time
4. Never use the country of origin in the description without supporting evidence

**The Fifth Annual Course in Antique Jewelry and Gemstones** will be held at the University of Maine, in Orono, July 9–11. For further information, please contact: Helen Thomas at (213) 735-0205.

**Jewelry competition.** "Jewelry USA," a national competitive exhibition, is being cosponsored by the American Craft Museum in New York City and the Society for North American Goldsmiths. The event, which will be juried, is to be held at the museum from June 3 through August 31, 1984. The exhibition will encompass all aspects of contemporary jewelry design and is open to all residents of the United States. Entry forms are available from the Society for North American Goldsmiths, 2849 St. Ann Drive, Green Bay, WI 54301.

**The AFMS/CFMS National Gem and Mineral Show** will be held July 12–15, 1984, in the Convention and Performing Arts Center, San Diego, California. Among the guest speakers will be noted *Gems & Gemology* authors Peter Keller, John Koivula, and D. Vincent Manson. For further information, please contact: Shirley Leeson, Co-Chairman, 6155 Haas, La Mesa, CA 92041.