GEM NEWS

John I. Koivula and Robert C. Kammerling, *Editors*

DIAMOND

Companies vie for Angola diamond rights. Several companies are negotiating with the government of Angola for rights to develop the kimberlite pipe recently discovered at Catoca, which reportedly has production potential comparable to that of De Beers's Premier mine in South Africa. Central Selling Organization Chairman Nicholas Oppenheimer has met with Angolan President Eduardo dos Santos to discuss the possibility of Angola rejoining the CSO, which it left in 1987. Along with Botswana and the USSR, Angola is expected to be the major producer of gem-quality diamonds in the 21st century.

Australian diamonds. An offshore diamond project in the Kimberley region of Western Australia has recovered four gem-quality diamonds averaging 0.275 ct each. This has led the owners of the project, Capricorn Resources Australia NL, to expand their exploration activities. Inland, Belray Diamond Tours is now conducting one-day tours of the world's largest diamond mine, the Argyle, that begin with a 90-minute flight from Kununurra and include a first-hand look at the entire mining process, including the grading and sorting of rough.

Diamonds from China. Ashton Mining Ltd. of Australia has been granted exclusive rights to the exploration, mining, and sale of diamonds in China's Hunan Province. The Hunan provincial government will share equally with the company in any profits and will also provide at least half the labor force. In Laioning Province, the Wafandian diamond deposit, potentially one of China's largest, is being developed for mining and is expected to be operational by late 1990. The mine's total projected output of 118,000 ct per year would increase by nearly 60% China's current total diamond output. Most of the current production comes from Chang Ma, Tao Cheng, and Linshu in Shandong Province. The Wafandian mine will join the Bin-Hai, which is already operating in Laioning Province. We do not know, at present, how the recent political unrest in China will affect diamond production.

Deep space diamonds. Roy Lewis and his colleagues at the University of Chicago have reported the discovery of billions of micro-sized diamonds, each measuring no more than a few billionths of an inch across. The discovery was made when fragments of primitive meteorites were dissolved in hydrochloric acid and the residue was analyzed; it was found to consist, in part, of these tiny diamonds. The scientists believe that these diamonds originated on distant stars that subsequently exploded.

COLORED STONES

Visual representation of amethyst to citrine alteration. A great deal has been written on the heat treatment of amethyst to create citrine. However, although verbal descriptions and technical data are readily available, color illustrations of the actual change that occurs, together with practiced procedures, are much less common in the literature.

To get top-quality citrine for his gem carvings, Bart Curren, of Glyptic Illusions in Topanga, California, often does his own heat treatment. The 89.26-ct amethyst and 76.17-ct citrine shown in figure 1 were both carved from identically colored amethyst crystal tips from Marabá, Brazil. To change the one piece to citrine, Mr. Curren packed the amethyst in crushed glass as a temperature buffer, and heated it in air for approximately six hours at 525°C; he then turned off the heat and allowed the stone to cool slowly to room temperature in the crushed glass. Over the course of his heating experiments, Mr. Curren has found that amethysts with slightly grayish and brownish sections turn the best orange color when heated.

Aquamarine found in Wyoming. Transparent gem-quality aquamarine was recently found at the Boston mine in the Big Horn Mountains, Wyoming. According to Kraft's Fine Jewelry and Art of Sheridan, Wyoming, the aquamarine was found in a discard pile of pegmatitic rocks near a pegmatite composed primarily of plagioclase and microcline feldspars, quartz, and mica.

Two faceted gems from this find were studied at GIA. The 2.06-ct pleasing light blue trapezoidal step cut had refractive indices of 1.572–1.579. The smaller,

Acknowledgments: The editors would like to thank the following individuals for their assistance in the preparation of this column: Andrew Christie, Emmanuel Fritsch, Robert E. Kane, Richard T. Liddicoat, Robert Middleton, and James E. Shigley.

Gems & Gemology, *Vol. 25, No. 2, pp. 110–118*

Figure 1. The 76.17-ct citrine on the right was originally the same color as its companion 89.26-ct amethyst. The color was changed by heat treatment. Photo by Bart Curren.

elongated octagonal step cut was a light, very slightly bluish green with refractive indices of 1.573–1.581. Both gems were transparent, had a specific gravity of 2.70, and showed weak iron-related absorption in the blue region of the visible-light spectrum.

According to geologists who have studied this deposit, blasting, followed by hand picking of the resulting rubble, may yield additional aquamarines. There is currently no organized mining at the locality.

Colored stone update from China. Dealer D. J. "Doug" Parsons, of Del Mar, California, spent seven weeks traveling throughout China during April and May of this year (his fifth trip to China in 18 months). He provided Gem News with the following report on colored gem production he noted during his visit.

Mr. Parsons was one of the first foreigners to visit the pegmatite region of Altay, in Xinjiang Uygur Autonomous Region, after it was reopened earlier this year. Here he saw commercial quantities of aquamarine (most cutting 1–2 ct stones, with some up to 10–12 ct), citrine, amethyst, light blue and light green tourmaline, and pyrope garnets. Small amounts of emerald and white topaz were also evident. He observed two cutting factories in the town of Altay, which produced beads as well as faceted stones.

In a restricted area of southern Yunnan Province, he saw considerable amounts of topaz, primarily white but some blue. His Chinese hosts informed him that there were operations in China to irradiate and anneal the white topaz to turn it blue. Some of the white topaz crystals were as large as 15 cm (6 in.) in diameter. He also encountered crystals of yellow, dark brown, and dark green tourmaline, but these were suitable primarily for specimens rather than cut stones. He encountered gem-quality topaz and aquamarine in Inner Mongolia, but not in commercial quantities.

One of the most interesting materials he was shown was a lot of more than 200 crystals (ranging in weight from 4.05 to 59.80 grams) of gem-quality diopside from Xinjiang; several of these crystals (figure 2) were submitted to the GIA Gem Trade Laboratory in Santa Monica, where the identification was confirmed. The crystals reportedly came from the Kunlun Mountains, in the

Figure 2. These gem-quality diopside crystals (4.05 to 59.80 grams) came from Xinjiang, China, near the border with Kashmir and Pakistan. Courtesy of D. J. Parsons; photo by Shane McClure.

southwestern portion of Xinjiang Uygur Autonomous Region, near the border with Kashmir and Pakistan.

On the basis of his experience in China, Mr. Parsons is optimistic that in spite of recent events, the opportunities for trade will not dry up totally. Although travel and other activities may be restricted for some period of time, he feels that it is unlikely that the Chinese people will relinquish totally the economic freedoms they have gained during the last 10 years.

Tunnels used to mine emeralds at Muzo. Two major leaseholders at the Muzo emerald mine in Boyacá, Colombia—Tecminas and Coesminas—have begun to use underground shafts and tunnels as an adjunct to the current strip mining with bulldozers. The tunnels give a new direction to the exploitation of what is recognized historically and presently as the world's richest emerald mine.

The relative flatness of many parts of the zone of exploitation at Muzo has resulted in the continual accumulation of mine tailings not only in the Río Itoco riverbed but also in some of the nearby gullies and valleys. This has inevitably covered up access to some of the rich old emerald veins of the past. With the new shafts and tunnels, the leaseholders hope to relocate some of the old veins and follow geologic indicators to new productive areas underground (figure 3).

Figure 3. Tunnels are being used again at the Muzo emerald mine in Colombia. Photo © Peter C. Keller.

Ron Ringsrud, president of Constellation Colombian Emeralds Co. of Los Angeles, spoke to Alvaro Tenjo, engineer in charge of the tunnels at Coesminas. He reports that the tunnels that radiate from the shaft are guided to some extent by geochemical indicators outlined by a joint technical survey and study made by United Nations scientists and Colombian geologists. Samples from the rocks in the tunnels are analyzed and then excavation is directed based on the amounts of sodium, lithium, and lead identified in the black shale. The use of these geochemical guides for exploration has been successful in uncovering emeralds. The rock at 50 m depth, however, is much softer than expected, so all tunnels are being reinforced heavily; the presence of considerable water requires constant pumping as well.

These shafts and tunnels mark the beginning of a new approach to mining at Muzo. Generally, sophisticated geologic mining has been actively pursued there only in the last few years. It is a testimony to the incredible richness of the Muzo region that it has been able to supply fine emeralds for literally hundreds of years with only the most primitive mining and prospecting processes.

Hackmanite: A remarkable variety of sodalite. From a collector's standpoint, one of the most interesting gem materials that we have seen in recent memory was first encountered at the February 1989 Tucson Gem and Mineral Show. This mineral is a very light yellow (near-colorless) transparent single-crystal material that makes excellent faceted stones. Known as hackmanite, it is the sulfur-rich variety of sodalite. Noted cutter Art Grant, of Coast-to-Coast Gemstones, brought the 3.32-ct gemstone to our attention to demonstrate its "color change."

This "color change" was induced by a one-minute exposure to long-wave ultraviolet radiation, during which the stone fluoresced bright orange and then emerged saturated pink (figure 4). This "color change" has been previously reported in the gemological literature, but is quite dramatic to witness.

When the pink hackmanite is exposed to incandescent light, the color fades within a few minutes, and the stone returns to its original light yellow color. This coloring cycle can be repeated again and again, but it is difficult to record on film because the instant the photolights are switched on, the pink color immediately starts to fade.

Hackmanite's remarkable "color change," together with its reported hardness of 5.5 to 6 on the Mohs scale and a cleavage listed as poor, makes this variety of sodalite a most interesting, if rare, gem for jewelry items such as pendants and brooches.

Figure 4. This light yellow 3.32-ct hackmanite (left) becomes bright pink (right) after exposure to long-wave ultraviolet radiation. Courtesy of Art Grant; photo by Robert Weldon.

Australia's opal industry crippled. March flooding has collapsed mine shafts and caused extensive equipment damage and financial losses in the opal fields at Coober Pedy, Mintabie, and Andamooka. A steady downpour during the entire month severely disrupted most of the claims near Coober Pedy, causing flooded shafts to be permanently sealed off and trapping tunneling machinery underground. In low-lying areas, earthmovers and bulldozers in open-cut mines were literally submerged. "Opal production will be down and prices will be up," said Anna Vanajek, of the Coober Pedy Miners Association. "It will take at least six months, and in some cases a year, to get back to full production."

A significant find of Mexican quartz. Well-known mineralogist-gemologist Si Frazier has reported a relatively new find of beautifully formed, gem-quality colorless quartz crystals near Oaxaca, Mexico. According to Mr. Frazier, these crystals closely resemble the nearly perfect quartz crystals from the famous locality in Herkimer County, New York. He reports, however, that in addition to being euhedral, they are "often larger than most Herkimers" and, like most quartz crystals "that grow slowly in solution cavities in calcareous sediments, they are quite lustrous. These features make many of them suitable for use in jewelry in their natural state."

Another significant difference in these Mexican crystals, according to Mr. Frazier, is that "toward the end of their growth, many of them experienced very rapid deposition on the edges and tips, leading to the type of unusual development on some of the larger crystals that is called 'fenster' (window growth) in Europe." This rapid growth on the edges and tips results in the development of cavernous (sunken) rhombohedron and prism faces. In some cases, a sheet of quartz will then grow out from the edges and cover the cavernous opening. These thin sheets of glass-like quartz (the fenster or window) frequently trap clay and/or liquids behind them, resulting in a most unusual quartz-inclusion habit.

These new Mexican quartzes may also have some organic inclusions, again reminiscent of the Herkimer quartzes. So, although the precise locality of these new quartz crystals has not yet been revealed, the matrix rock is probably a calcareous sedimentary rock similar to that from which the New York crystals are mined. The Mexican crystals examined by the Gem News editors ranged up to 5 cm, but the larger specimens were heavily included. Thousands of these crystals were available from a single dealer at the 1989 Tucson Show.

Rose quartz from Connecticut. William Shelton, of Monroe, Connecticut, reports that rose quartz is currently being mined in Fairfield County, Connecticut. Several areas in the state, including this one, have produced rose quartz intermittently for at least 50 years.

The rose quartz occurs in a small pegmatite body that cuts local metamorphic schists of Devonian age. One large vein of rose quartz contains a layer approximately 2.5 cm (1 in.) thick that is composed of very fine faceting-quality gem material. As is typical with gem materials, however, only a small portion of the total amount of rose quartz present is cutting quality.

The finest rose quartz from this locality is transpar-

ent and has an unusual optical effect reminiscent of adularescence. Cut gems show a pleasing internal color, with pale rose and yellowish highlights. At this time, there is no organized recovery of gem material.

Blue sapphires from Kenya. According to Dr. N. R. Barot, managing director of the Ruby Center in Nairobi, Kenya, two recently discovered sapphire sources in that country are yielding some blue gems of exceptional quality. One of these deposits, near Kenya's border with Sudan and Ethiopia, is yielding noteworthy quantities of rough crystals. In northeast Kenya, the other new deposit is producing some exceptional star sapphires.

Sapphire in Ontario. Clifford H. Stevens, a gemologist from Gansevoort, New York, recently visited a new locality for blue sapphire near Lake Bap and Bancroft, in Ontario, Canada. He reports seeing numerous corundum crystals in white matrix in a large (approximately 7 m × 1.5 m) hole that had been blasted into the hillside. For the most part, the barrel-shaped crystals averaged 1.5 cm × 5.0 cm, although many were much larger. They were primarily dark gray to a distinct blue-gray in color, with some showing small gemmy areas.

A number of the crystals, both loose and in matrix, were of fine mineral specimen quality. Some gave the appearance of asterism or chatoyancy. In some large (up to 1 m in diameter) chunks of the white matrix, as much as 20% of the mass was made up of terminated translucent crystals of a medium grayish blue (similar to the border color of the Summer 1988 cover of *Gems & Gemology*).

The deposit is on private land and the visit was by invitation only. Also observed at the site were calcite/marble, translucent white feldspar (probably microcline), sphene crystals, and small flakes of common black to dark brown biotite.

Figure 5. The unusual multi-layer color zoning of this 4.23-ct Australian sapphire is clearly seen with immersion and diffused transmitted light. Courtesy of Fred Toth; photo by John I. Koivula.

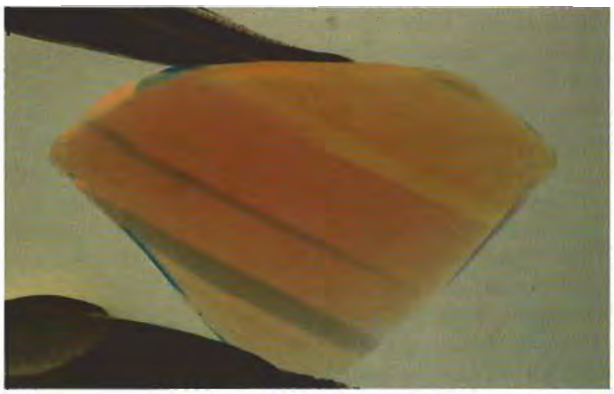


Figure 6. This 10.01-ct Sri Lankan sapphire, set with diamonds in a platinum and yellow gold ring, has classic "padparadscha" coloration. Ring courtesy of Yahiya Farook; photo by Shane McClure.

An interesting zoned Australian sapphire. An unusual 4.23-ct round brilliant-cut Australian sapphire was shown to us recently by Fred Toth of Pacific Palisades, California. Before cutting, the approximately 20-ct rough sapphire was a rounded irregular mass of saturated orangy yellow color with prominent rutile "silk" near its surface that masked the overall transparency. The rough was recovered from alluvial soil at Willows, about 40 km (25 mi.) west of Anakie, a site famous for yellow sapphires. After cutting, it was noticed that, when viewed from the side using immersion and diffused transmitted light, the gem showed an unusual multi-layer color zoning of blue, orangy pink, and yellow (figure 5). Color-zoned or parti-colored Australian sapphires were described in the Fall 1985 *Gems & Gemology* article by Terrence Coldham. In that article, however, no mention was made of parti-colored sapphires showing orangy pink zones together with the more common blue and yellow layers.

"Padparadscha" sapphire. In the Spring 1983 issue of *Gems & Gemology*, Robert Crowningshield traced the history and discussed the use and origin of the color-based trade name "padparadscha." It is rare that a gemologist encounters a natural pinkish orange sapphire that would visually qualify as a "padparadscha," especially one of significant size.

Just such a stone was seen at the 1989 Tucson Show,

and later submitted to the Gem News editors for examination. Yahiya Farook, of Sapphire Gem Trading Company, was showing a pleasing "classic" pinkish orange oval mixed-cut sapphire with a stated weight of 10.01 ct that was reportedly from Sri Lanka. It was mounted as the center stone, surrounded by diamonds, in an ornate platinum and yellow gold ring (figure 6). In the mounting, the stone measured approximately 11.8 × 9.7 × 9.88 mm. When examined with a hand-held type of spectroscope, it showed strong chromium-caused absorption in the red. The microscope revealed only one small "fingerprint" inclusion. The gem fluoresced a strong red-orange to long-wave ultraviolet radiation, with a weak fluorescence of the same color to short-wave U.V.

Large tourmaline pocket discovered at the Himalaya mine. Bill Larson, of Pala International, reports the discovery of a large gem pocket at the historic Himalaya mine in the Mesa Grande District of San Diego County, California. First entered on May 7, 1989, the pocket was eventually opened to approximately 0.7 × 1 × 3.7 m deep (2 × 3 × 11 ft.). Large (up to 20 cm) crystals of pink and bicolored tourmaline (figure 7) were found embedded not only in the walls and ceiling of the pocket but also on the floor. At many places throughout the pocket, the host clay was so soft that the crystals could be dug out with one's fingertips.

Five hundred kilos of tourmaline were recovered in the three months following discovery of the pocket. The bulk of the material is suitable for mineral specimens; of particular note are the "matrix" specimens of tourmaline with quartz. Approximately 50% of the production is carving or cabochon grade. Although less than 1% is suitable for faceting, stones as large as 20 ct have been cut. Small cutting-quality crystals of stibiotantalite have also been recovered. This is one of the most important pockets discovered at the Himalaya since it was reopened 12 years ago.

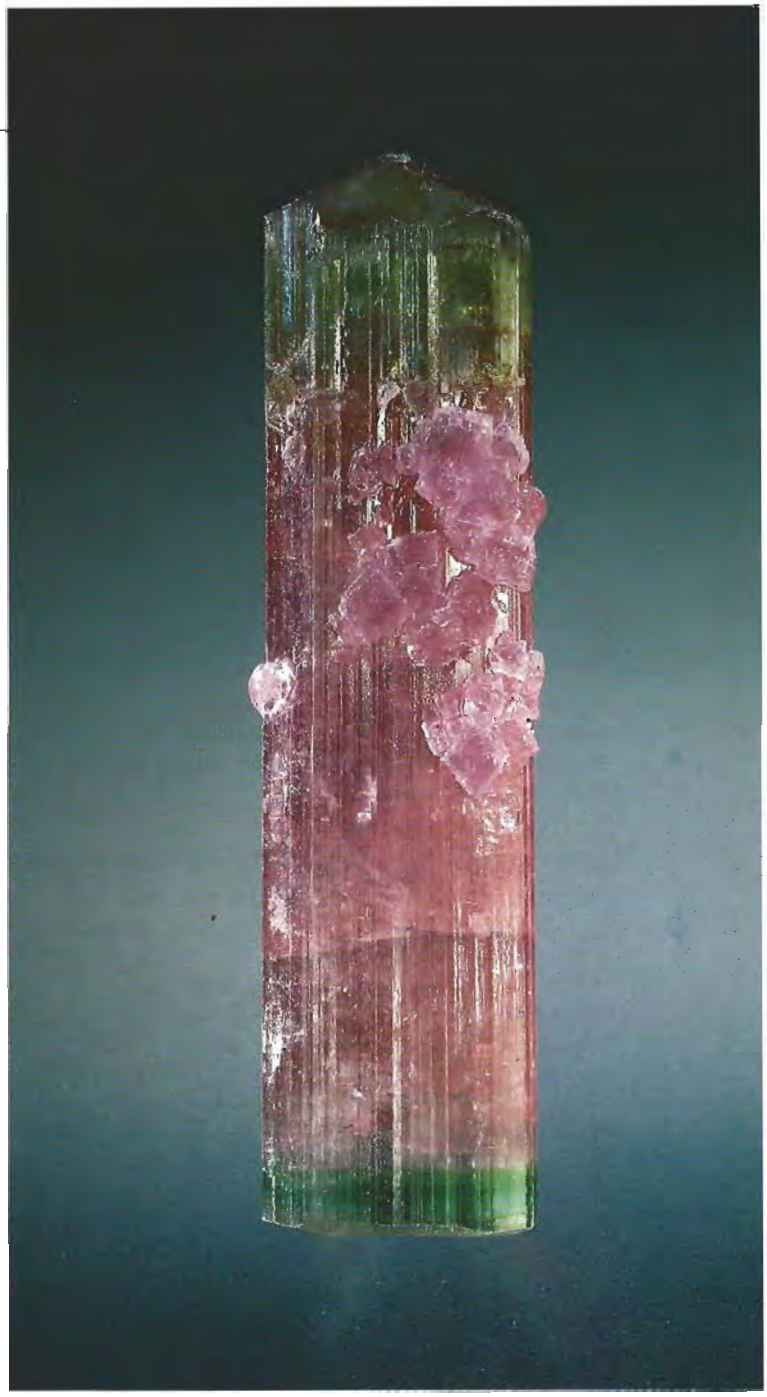


Figure 7. Hundreds of kilograms of bicolored (this crystal is approximately 6 cm high) and pink tourmaline have been recovered from the new pegmatite pocket at the Himalaya mine in San Diego County, California. Courtesy of Pala International; photo © Harold & Erica Van Pelt.

PEARLS

Two remarkable natural freshwater pink pearls from Texas. Boaz Arch, president of Aura America Inc., in Houston, Texas, recently loaned GIA's Dr. Emmanuel Fritsch two unusually large (13.3 and 12.2 mm in diameter) round pink pearls for examination (figure 8). These pearls were stated to be natural freshwater pink pearls from the Concho River, approximately 240 km (150 mi.) northwest of Austin, Texas. The fact that they are natural pearls was confirmed by X-radiography at the GIA Gem Trade Laboratory in New York. These pearls display a "tight" structure with very thin conchiolin layers, as expected. They do not, however, luminesce to X-rays, although freshwater pearls generally show a light orange luminescence which has been attributed to their manganese content. Nevertheless, manganese was easily detected by Dr. Fritsch using X-ray fluorescence spectrometry. Tom Moses, of the New York laboratory, commented that he and his colleagues have observed over the years that the darker the pink color in this type of pearl is, the weaker the X-ray luminescence is. Therefore, the absence of reaction is not totally surprising. Mr. Arch has been told that the color of the pearls from this region seems to lighten as they are found further down the river, closer to Austin.

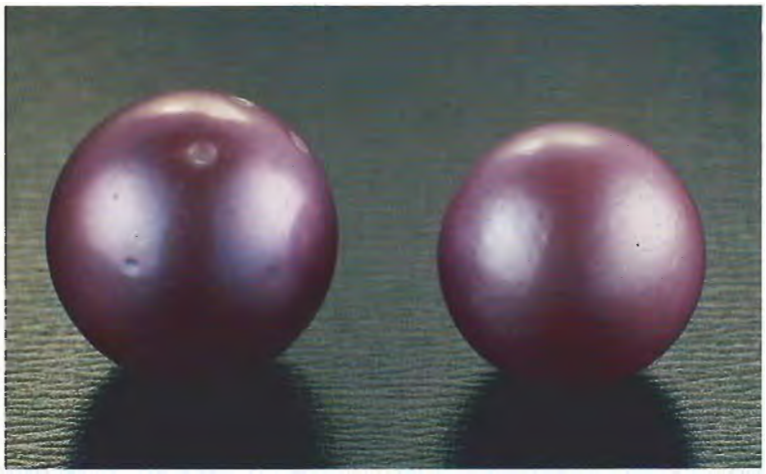


Figure 8. These two pink pearls (13.3 and 12.2 mm in diameter) are reportedly from the Concho River in Texas. Courtesy of Boaz Arch; photo by Robert Weldon.

SYNTHETICS AND SIMULANTS

"Bull's-eye" optic figure in synthetic berlinite. Dr. Emmanuel Fritsch recently received a synthetic berlinite crystal as a donation from Dr. Robert Shannon, of the E. I. Dupont Central Research Laboratory. The crystal was grown by Bruce H. T. Chai, of the University of Central Florida in Orlando.

Berlinite, a naturally occurring aluminum phosphate with the chemical formula $AlPO_4$, is structurally isomorphous with quartz. Both minerals crystallize in the hexagonal (trigonal) crystal system and are optically active (i.e., they have both left- and right-handed varieties). Because of this, when examined between crossed polarizers, untwinned berlinite also shows the "bull's-eye" optic figure (figure 9) described in the gemological literature as being characteristic only of quartz (natural and synthetic). Therefore, it is possible that the "bull's-eye" figure might be characteristic of all optically active uniaxial crystals.

Figure 9. Untwinned berlinite (the crystal illustrated here is synthetic) can show the "bull's-eye" optic figure usually associated only with quartz. Photomicrograph by John I. Koivula.

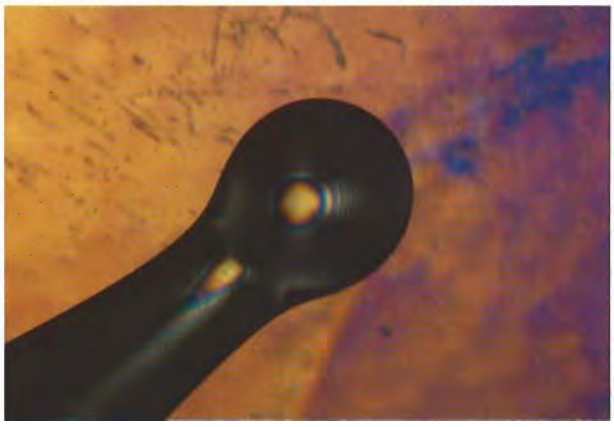


Figure 10. This well-detailed, 35-mm-high cameo is made of ceramic alumina, which has excellent durability. Photo by Robert Weldon.

An unusual ceramic cameo. A particularly fine, non-assembled white-on-blue ceramic cameo (figure 10) was brought to our attention by Masashi Furuya, a gemologist and executive manager of Furuya and Co., of Yamanashi-ken, Japan. The Mohs hardness of the cameo had been stated to be near 9, which suggested that it might be composed of ceramic alumina. The pleasing blue color hinted that the coloring agent could be cobalt. A judiciously applied number 8 (topaz) hardness point failed to produce a scratch on the cameo, thus supporting the reported hardness. An attempt to obtain a refractive index using a Duplex II refractometer and white light yielded a vague reading between 1.75 and 1.76. Qualitative chemical analysis done by GIA's Emmanuel Fritsch and Michael Moon showed that the detectable elements in the cameo were indeed aluminum and cobalt. This is the first time we have seen a cameo of this composition.

The figure on this cameo is very nicely detailed. Because of this, and because of its excellent durability, it appears that such ceramic alumina cameos would work well in a wide variety of jewelry and decorative items.

A clever imitation emerald crystal. During a recent visit to the city of Anapolis, in Goiás, Brazil, GIA's Carl Chilstrom and GIA Gem Trade Laboratory's Caio Maia were shown some unusual "emerald" crystals by Sebastião Domingos de Oliveira and Ronaldo Priori of Metais de Goiás S/A. According to these gentlemen, the crystals had been represented as natural emeralds from the Campos Verdes area, near Santa Terezinha de Goiás. They also stated that manufactured emerald crystals of this type were being seen with some frequency, and they generously donated a sample crystal so that it could be studied in detail.

The 17.51-ct "rough" crystal we examined (figure 11) is a semi-transparent, slightly rounded, doubly terminated hexagonal prism with two of the prism faces polished. Small patches of light brown "matrix" material adhere to the unpolished faces. The crystal is a very convincing slightly bluish green. When held up to a light source, it gives the impression that it could produce one or two excellent faceted emeralds. There is also an obvious, somewhat jagged fracture that superficially circumvents the entire crystal near its middle; this is the actual assembly point. There are no core-hole openings at the surface, as have been present on the assembled crystals we have seen in the past.

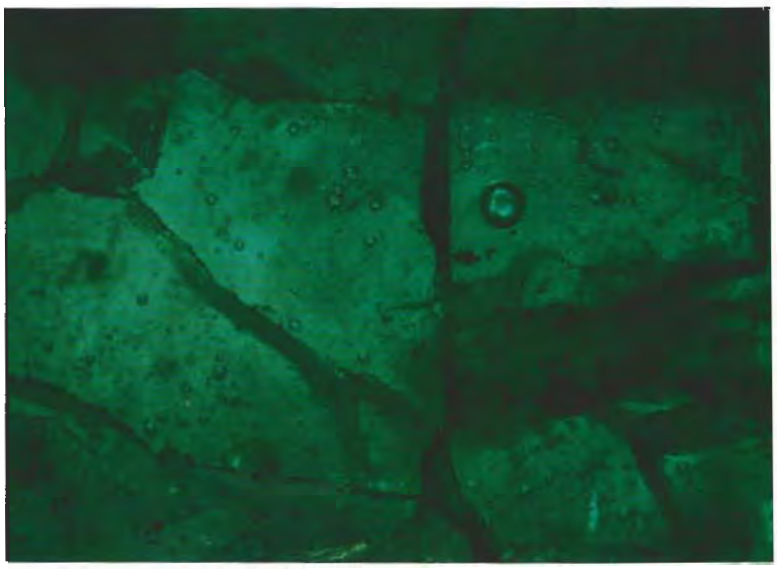
Figure 11: Although this 17.51-ct crystal appears to be emerald, it actually is a clever fake made with near-colorless beryl. Photo by Robert Weldon.

To create this "gem," the pale green to near-colorless beryl crystal was broken in half across its prism faces in a direction essentially perpendicular to the long axis. The cores of the two halves were then drilled out from their freshly broken surfaces, filled with a dyed green epoxy or liquid plastic material, and reassembled. With this method, there are no suspicious openings to the surface other than that provided by the main fracture described above. Once you get by the deceptive outward appearance, however, identification of this imitation emerald crystal is relatively simple.

With a 10× lens or microscope, it was easy to see numerous spherical gas bubbles just beneath the surface of the crystal, visible through any of the six prism faces. Their presence would immediately indicate that something is "wrong." It is also apparent that any fractures in the surface of the crystal only go inward to a uniform depth of about 1 mm or less (figure 12). If specific gravity testing liquids are available, the low S.G. of 2.36±0.01 (compared to the 2.70 typical of natural emeralds) easily reveals that this is an assembled imitation. The bluish green to yellowish green dichroism of emerald is also absent in this imitation. There is no color filter reaction, and the crystal has an absorption spectrum somewhat reminiscent of dyed green jadeite, but not at all like emerald.

Chatham expands. Chatham Created Gems, the world's largest producer of flux-grown synthetic emeralds and rubies, had previously cut all of their stones in Hong

Figure 12. With magnification, fractures confined to near-surface areas and gas bubbles can be seen in the "emerald" crystal shown in figure 11, proving that it is an imitation. Photomicrograph by John I. Koivula; magnified 25×.



Kong, but in fall 1988 they added cutting facilities in Thailand to meet increasing demand.

Chatham also announced that for the first time they will be growing their synthetic gems in an undisclosed overseas location as well as in their U.S. laboratories in San Francisco. At the same time, they will be increasing production in the United States through expansion of their existing laboratories. Chatham's total production and resulting sales amounted to over 10,000 ct of synthetic gems per month at the end of 1988.

Union Carbide growing large synthetic sapphires. GIA's Emmanuel Fritsch recently attended the 11th Conference on Crystal Growth, organized by the American Association for Crystal Growth, which was held in northern California from June 5 to 8. He reports that Union Carbide is now growing colorless synthetic sapphires of excellent quality in sizes up to 15 cm in diameter in an iridium crucible. Union Carbide also produces titanium-doped synthetic sapphire that emerges with a color they refer to as "light ruby" (pink sapphire?). Both materials are grown using variations of the Czochralski-pulling technique. Although both types of synthetics are manufactured principally for industrial applications (electronics and lasers, respectively), representatives of Union Carbide report that "lesser quality" top and bottom portions of the synthetic crystals are sold by a bidding system to the jewelry industry. They indicated that this is a common practice in other companies that grow optical-quality materials.

ANNOUNCEMENTS

The Amsterdam Sauer Gemstone Museum has recently opened in the gem-rich country of Brazil. Located in Rio de Janeiro, this new museum encompasses more than 1,200 specimens of both rough and cut gemstones gathered since 1940 by the museum's founder, Jules R. Sauer. Many of these were used to illustrate his book *Brazil, Paradise of Gemstones.*

The new museum's most recent acquisitions are indeed significant. One is a gigantic, 13,400-gram (67,000-ct), gem-quality aquamarine crystal that was discovered last year in Marambaia, northern Minas Gerais. Another is a very fine cat's-eye chrysoberyl, cut from rough unearthed in the town of Padre Paraíso, also in Minas Gerais. The Sauer Museum is also home to what is said to be the world's largest faceted natural alexandrite, 122.40 ct.

The Gemmological Association of Israel was formed during the May reunion/conference of the Gemmological Institute of Israel. The association's aims include promoting gemology in Israel and providing graduates of the Israeli institute with updates on current technologies. Members must have passed a "recognized" gemology course either in Israel or abroad. Contact Jeremy Graus for more information at 1 Jabotinsky St., Ramat-Gan, 52520, Israel; fax: 972-3-262547.

Gem miners and wholesalers in Zambia have formed a trade association and are collecting information on prices for various grades of rough and faceted amethyst, aquamarine, emerald, malachite, and tourmaline. Assistance from the trade is welcome. For further information, write to Zambia Gemstone and Precious Metals Association, P.O. Box 31099, Room 17, Luangwa House, Cairo Road, Lusaka, Zambia.

The 1989 Santa Fe Symposium in Jewelry Manufacturing Technology will be held September 20–23 in Santa Fe, NM. A variety of speakers will address issues on all aspects of jewelry manufacturing, from rediscovering the technology used in antique jewelry to modern health issues for jewelers. For information, contact the Santa Fe Symposium at 3820 Academy Parkway North N.E., Albuquerque, NM 87109; (505) 344-3357.

KOSIMA '89, an exhibit of jewelry, gem materials, machinery, and equipment, will take place October 20–23, 1989, at the Helexpo's fairgrounds in Thessaloniki, Greece. Helen Lazaridou of Helexpo can be reached at 154, Egnatia Str., Gr 546 21 Thessaloniki, Greece, or via fax at 031-229-116.

The Fashion Institute of Technology will conduct a symposium on "The Romance of the Stone"—diamonds—on Sunday, October 29, 1989. Noted speakers will include François Curiel of Christie's; Peter Schaffer, specialist in Fabergé and Russian jewelry; Diana Scarisbrick, an authority on English jewelry; Benjamin Zucker, historian, collector, and gem dealer; Ken Scarratt of the Gem Testing Laboratory of Great Britain; William Boyajian, president of GIA; Robert Crowningshield of the GIA Gem Trade Laboratory; and Lloyd Jaffe of the American Diamond Industry Association. For information, call Jean Appleton at (212) 760-7254.

The Mineralogical Society of Southern California will be holding their annual show at the Pasadena Center in Pasadena, CA, on November 25 and 26, 1989. The theme will be "Famous Mining Districts." Along with exhibits of gems and minerals, there will be several lectures. For more information, contact Michael T. Evans at 13059 Casa Linda Lane #36H, Garden Grove, CA 92644.