GEM NEWS

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TUCSON '88

The Tucson Gem and Mineral Show, held the first two weeks of February, has grown tremendously since last year, with never-ending crowds of buyers and dealers everywhere. The following report of some of the highlights of this year's Tucson Show was prepared with the help of Mr. Dino DeGhionno, Dr. Emmanuel Fritsch, Ms. Patricia Gray, Mr. Gary Roskin, and Ms. Carol M. Stockton.

Beryl. Because beryl was the theme mineral of this year's show, many fine specimens and faceted stones were on display or offered for sale. A large number of fine emeralds were available, with Zambia, Brazil, and Colombia well represented. Unlike past years, few trapiche emeralds were seen.

A novelty from last year's show, "mint green" Nigerian beryl, was being offered both in the rough and as faceted stones by many dealers. Color-unstable Maxixe-type dark blue beryl was also being sold in both rough and cut forms. In some cases, it was being marketed as Maxixe-type, while in others it was promoted as "rare sapphire-blue aquamarine." Regardless of the name, in a few months time under normal lighting conditions the material will revert to its original pale pink to near-colorless hue.

Carvings. Gemstone carving, a trend that seemed to take life last year, was in full swing in 1988. Especially prominent were the free-forms and so-called fantasy cuts in sizes suitable for fine jewelry. These carvings tend to have softer edges and angles than conventional faceted gems. They also tend to use, rather than hide, the natural color zoning and inclusions, often incorporating them directly into the design. More and more American carvers have become active in this style of lapidary work (figures 1 and 2) which was originated by Bernd Munsteiner of Idar-Oberstein. Michael Duber of New Hampshire and Bart Curren of Los Angeles have both won lapidary awards for their free-form carvings.

Figure 1. One of the most exciting new trends in lapidary work is the free-form cut. Los Angeles cutter Bart Curren created these stones: (clockwise from upper left) 37.85-ct rhodolite; 113.69-ct amethyst-citrine, 9.46-ct citrine, 5.14-ct bicolored tourmaline, and 12.56-ct tourmaline, with a 13.49-ct tourmaline in the center.

Figure 2. Some of the lapidaries involved with free-forms are experimenting with "interlocking" stones as well as with more valuable materials, as this interlocking emerald with tourmaline (cut by David Stanley Epstein) illustrates.

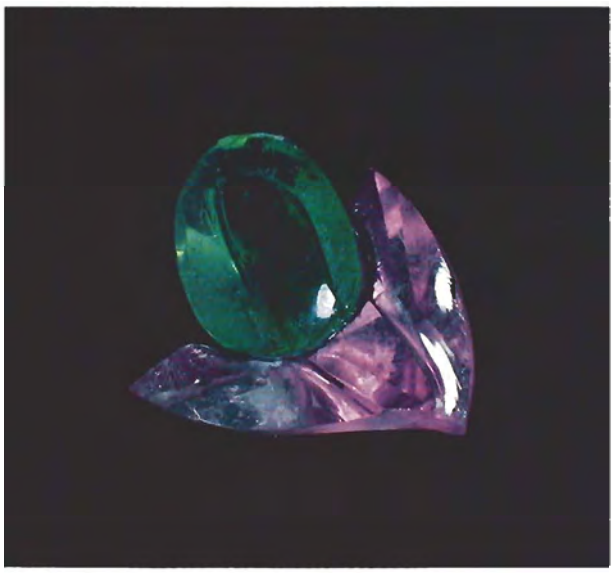

Figure 3. This 23.97-ct purple star sapphire from Sri Lanka is notable for its color, quality, and size. Courtesy of N. V. Malhotra, New York; photo © Tino Hammid.

Figure 4. These two stones—a 50.21-ct hessonite garnet and a 12.23-ct sillimanite (believed to be the largest transparent faceted sillimanite on record)—represent two new finds in Sri Lanka. Courtesy of William E. Pinch, Rochester, NY; photo © Tino Hammid.

Charoite. Once considered little more than a curiosity, charoite was being sold in several booths. The presence of large amounts of rough charoite, which is found only in the USSR, may be a sign that we will be seeing more gem materials from the Soviet Union at future shows. Perhaps *glasnost* has reached the gem community as well.

Chrysoberyl. Alexandrites from the year-old find near Hematita, Minas Gerais, Brazil, were available, but mostly in sizes under 1 ct (although faceted stones larger than 5 ct were seen).

For the first time, cat's-eye chrysoberyl from Zimbabwe (reportedly mined in the Karoi area) was available. The stones ranged from about 0.30 to 3 ct and were slightly greenish yellow with fair to excellent chatoyancy and good to fair translucency.

Corundum. "Hot pink" sapphires were available from many dealers. These "pinks" come from Burma, Kenya, Tanzania, and (the largest ones) Sri Lanka. A few small pieces from the Umba region of Tanzania were actually red, but they lacked the brownish component typical of rubies from this region. Perhaps heat treatment is being used to drive this component off (for more information, see Gem News, Fall 1987).

Many star sapphires in a variety of colors were also seen. One stone of special note because of its color, quality, and size was a magnificent 23.97-ct translucent purple Sri Lankan gem (figure 3). The presence of a fluid inclusion near the "heart" of this stone proved that the color was natural and not the result of heat treatment. A few translucent to semitranslucent green star sapphires, said to be from East Africa, were also available. The color of the two we observed was a slightly grayish pastel green. These are the first truly green asteriated corundums the editors remember seeing.

Garnet. A surprising number of fine, large (10–15 ct) tsavorites were available. This material was reportedly from the Komolo mine in Tanzania, but rumors were circulating of a new East African locality.

About six months ago, an important new find of spessartine garnet was made at the Little Three mine in Ramona, California. Cut stones from 1.25 to 2 ct are now on the market. A spectacular necklace containing over 165 ct of Little Three spessartines (the largest stone weighs 39.50 ct) was displayed at Tucson.

Beautiful light orange hessonite grossulars from Tissamaharama in the Kataragama region of southeast Sri Lanka were seen; they are remarkable for their size and degree of transparency. The largest of these (50.21 ct) is shown in figure 4.

A new find of "raspberry" rhodolite from the Kangala mine in Tanzania was also reported. Facet-grade rough as well as some cut stones, many in the 5–10 ct range, were available. The magnificent color of this material was found by energy-dispersive X-ray fluores-

Figure 5. "Raspberry" rhodolite garnet like the 5.08-ct faceted stone shown here (courtesy of Tsavo Madini, Costa Mesa, CA) is now being mined in East Africa. The 17.08-ct rough sample (courtesy of New Era Gems, Grass Valley, CA) is from the Kangala mine in Tanzania. Photo © Tino Hammid.

cence (analyst, Carol M. Stockton) to be enhanced by traces of chromium. Rhodolite of a similar color is also being mined elsewhere in East Africa (figure 5).

Scapolite. A few beautifully translucent pink, "candy-like" cat's-eye scapolites from the Mogok area of Burma were at the show. The 19.04-ct stone that we examined (figure 6) has a razor-sharp eye when viewed with a single incandescent spotlight or in the sun.

Sillimanite. Gem-quality sillimanite from a new find in Sri Lanka was seen. The stones are reportedly from Morawaka, in the district of Deniyaya, 30 miles (48 km) southeast of Ratnapura. The color of the largest cut gems, a very slightly grayish green, is most unusual for sillimanite. The largest cut stone from this find is also the world's largest transparent faceted sillimanite (again, see figure 4).

Synthetics, imitations, and treatments. Paul Marrujo, of Syntho Tek, displayed a large variety of 1-kg-plus blocks

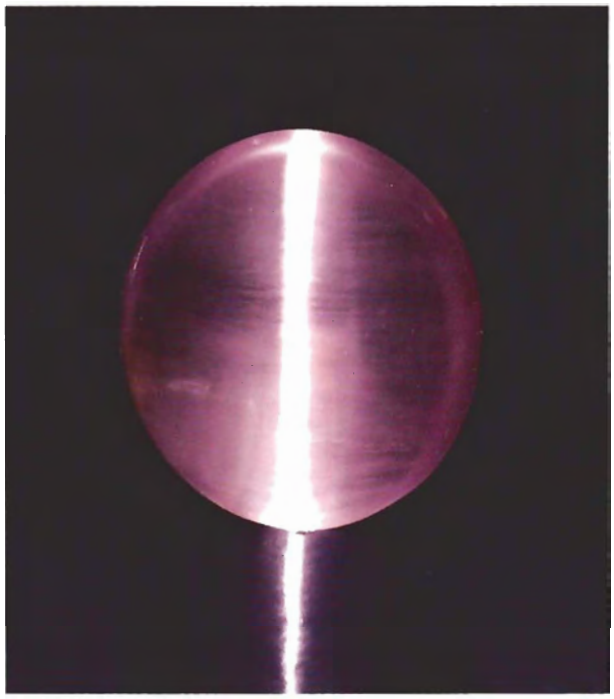

Figure 6. A number of fine pink cat's-eye scapolites from Burma were available at the February 1988 Tucson Gem and Mineral Show. This 19.04-ct stone is courtesy of Lorna Davison, Mullica Hill, NJ; photo © Tino Hammid.

of "synthetic and reconstructed materials" that looked quite good to the unaided eye. Of particular interest were a number of purple to violet blocks of "synthetic sugilite." Also displayed at this booth were "reconstituted turquoise with and without matrix and veins, coral, lapis lazuli with and without pyrite, ivory, black onyx, variscite, and rhodonite." The motto on their business card is "You can fool mother nature," but they make no such claims concerning GIA.

Thomas Chatham informed us that he is now successfully heat treating his dark blue and dark red synthetic corundums to lighten the color. We do not know yet what temperatures he is using and what this heat treatment does to the internal characteristics that are key features in the identification of the Chatham products.

A plastic opal imitation with a very convincing play-of-color (giving it to the appearance of fine white opal) was being sold as Opalite. We borrowed two pieces of this material and are currently working on a report to be published in a future issue of *Gems & Gemology*.

Cabochons of "cat's-eye" (actually star material with only one leg) quartz of a yellow-green color, which was said to have been produced by irradiation, were being sold as cat's-eye chrysoberyl.

Manfred Kammerling of Viktor Kammerling, Idar-Oberstein, the firm that invented the beryl triplet, is making sapphire–synthetic ruby doublets using light-colored Sri Lankan material for the crown instead of

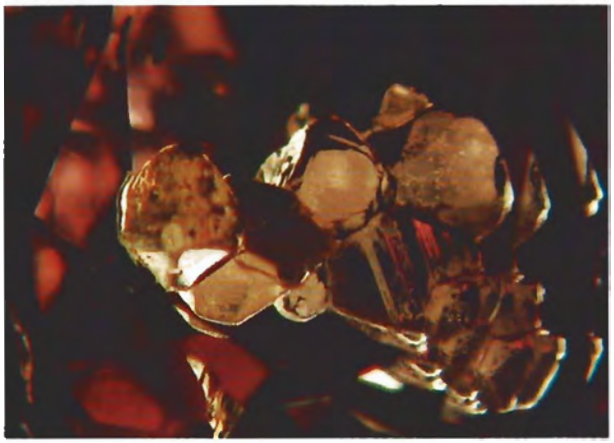

Figure 7. Inclusions of fluorite in alexandrite from Hematita, Minas Gerais, Brazil, were identified by Dr. Henry Hänni and Dr. Edward Gübelin. They are distinctive of their locality. Magnified 12×; photomicrograph by Edward J. Gübelin.

Figure 8. Dr. Edward Gübelin, Dr. Karl Schmetzer, and Mr. Charles Schiffmann identified apatite as an inclusion in the Hematita alexandrites. Stone courtesy of Robert Van Wagoner, Aspen, CO. Magnified 25×; photomicrograph by John I. Koivula.

dark green Australian material. The result is that, face-up, the finished doublet looks more like a fine Burmese ruby and less like a dark-colored ruby from Thailand.

Tourmaline. Some excellent faceted bi-colored tourmalines from Kaffi, Nigeria, were being shown for the first time. They were of good clarity and weigh up to 25 ct. Also, significant amounts of fine tourmaline from the Kaduna state in Nigeria, showing virtually every elbaite color except blue, were available in weights up to 15 ct. The gems were beautifully cut and seemed to come exclusively through Idar-Oberstein.

Zircon. Heat-treated blue zircons from Kampuchea (formerly Cambodia) in sizes up to 15 ct were available in quantity, in contrast to past years when this material was quite scarce. Their presence may reflect increased smuggling or the renewed interest of the Vietnamese government (which now controls most of Kampuchea) in developing the country's natural resources. The reappearance of the zircons leads us to hope that Pailin, also in Kampuchea, will once again become an important source for sapphires.

COLORED STONES

Inclusions identified in new Brazilian alexandrites. Two characteristic mineral inclusions observed in the alexandrites from the recent discovery at Hematita in Minas Gerais, Brazil (see the article by K. Proctor in this issue), have been identified by means of detailed chemical analysis. Dr. Henry Hänni found inclusions of fluorite (figure 7) in one of the alexandrites, and Dr. Karl Schmetzer and Mr. Charles Schiffmann confirmed the identification of apatite (figure 8). Dr. Edward Gübelin initiated the study and followed it through to completion. This is the first time that fluorite has been recognized as a mineral inclusion in chrysoberyl.

SYNTHETICS

Synthetic diamond thin films. Laurie Conner, marketing manager of Crystallume, loaned the GIA Research Department a synthetic diamond thin film made at their facility in Palo Alto, California, so that GIA could effectively evaluate the potential danger for the jewelry industry of this new, low-temperature, low-pressure method of synthetic diamond deposition. Close examination with a microscope of the 1-μm-thick polycrystalline film, deposited on silicon, revealed an easily detectable granular structure. If this type of synthetic diamond film were deposited on a faceted diamond or a diamond simulant, assuming this is possible, it would be easily recognizable by its granular nature.

Synthetic red chrysoberyl. A most unusual sample of transparent dark red synthetic chrysoberyl was loaned to us by Mr. Rex Harris, co-owner of the red beryl–producing "Violet Claims" in the Wah Wah Mountains of western Utah. At first we thought that this might be a large synthetic alexandrite with a deep body color, but it showed no signs of a color change.

This sample, which had been cut from a larger crystalline mass, measured about 1 in. (2.5 cm) in its largest dimension and contained rib-like rows of light tan-colored flux. Its synthetic origin was confirmed by the infrared spectrometer (analyst, Carol M. Stockton).

The sample had been given to Mr. Harris by a Mexican miner, who said it was natural red chrysoberyl. The miner claimed that it came from a new find in Mexico.