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Chatoyant Danburite from Sri Lanka

During the February 2026 gem and mineral shows in Tucson, Arizona, USA, an interesting Sri Lankan danburite specimen was displayed by Dudley Blauwet (Dudley Blauwet Gems, Louisville, Colorado, USA). The 49.68 ct yellow danburite cabochon displayed a slight but noticeable cat’s-eye (Figure 4). To the author’s knowledge, chatoyancy has not been previously documented for Sri Lankan danburite, prompting further examination.

Blauwet reported that the original rough stone came from Okkampitiya, Monaragala District, Uva Province, Sri Lanka. The Okkampitiya gem field is located in south-eastern Sri Lanka, and both alluvial gravels and primary deposits have been mined there (Mathavan *et al.* 2000). The gem materials include sapphire, garnet, spinel, tourmaline and zircon, alongside rarer species such as ekanite.

Danburite, with the ideal chemical formula

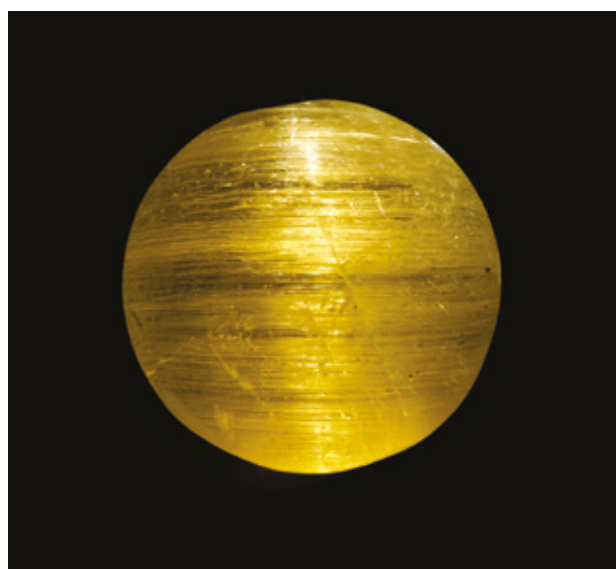


Figure 4: This 49.68 ct chatoyant yellow danburite is reportedly from the Okkampitiya region of Sri Lanka. Photo by Noelle White and Daniel Maldonado, Stuller Inc.

$\text{CaB}_2\text{Si}_2\text{O}_8$, is an orthorhombic calcium borosilicate. It was first described in 1839 from Danbury, Connecticut, USA (Shepard 1839). It is most commonly colourless, but can occur in yellow to yellow-brown hues (Smith *et al.* 2017). The mineral forms through hydrothermal activity in metamorphosed carbonate rocks, and has been reported from Madagascar, Mexico, Myanmar, Russia, Sri Lanka, Tanzania and Vietnam (O’Donoghue 2006; Chadwick & Laurs 2008; Huong *et al.* 2017; Smith *et al.* 2017). Danburite has a Mohs hardness of 7–7½, which makes it suitable for jewellery, but gem-quality material is scarce.

The 49.68 ct danburite described here was a well-saturated yellow round cabochon (21.50 mm in diameter × 14.00 mm high). With the sample being relatively transparent, the cutter maximised the chatoyant effect by creating a rounded, frosted base nearly equal in size to the polished dome. This reduced the transmission of light through the stone and accentuated the reflective needles while retaining weight. The frosted base may also reflect light back through the stone to reinforce the chatoyant band against the body colour (Schmetzer *et al.* 2015).

An RI of 1.63 was measured using the distant-vision method, and the hydrostatic SG was 2.99; these values are consistent with those reported for danburite (e.g. O’Donoghue 2006). No pleochroism was observed with a London or calcite dichroscope, and the stone was inert to both long- and short-wave UV radiation. A faint absorption band in the yellow region was visible with an OPL spectroscope. Raman and FTIR spectroscopy (with Magilabs instruments) matched reference danburite spectra. EDXRF chemical analysis with a Shimadzu EDX-800 unit confirmed the expected major-element chemistry with no additional trace elements detected.

Microscopic examination revealed patches of two- and three-phase inclusions arranged in planes,

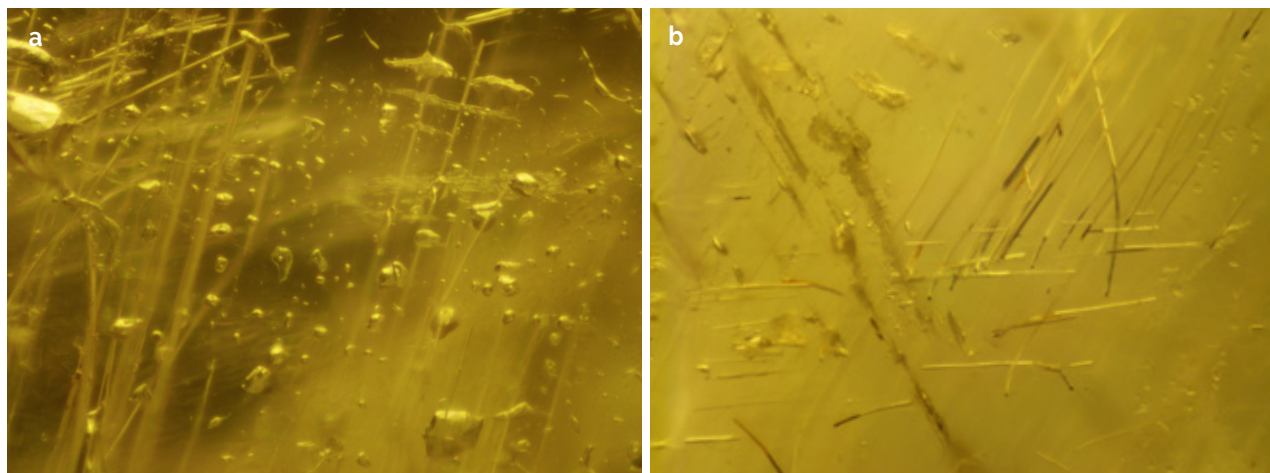


Figure 5: (a) Irregular crystals, two-phase inclusions and elongate tubes are seen in the chatoyant danburite in Figure 4. (b) Elongated tubes (probably dissolved dislocations) are the cause of the cat's-eye effect. Also present are two-phase inclusions (on the left) and low-relief crystalline inclusions (on the right). Photomicrographs by Guy Borenstein, Stuller Inc.; image widths (a) 2.8 mm and (b) 4.7 mm.

low-relief crystals, and elongated tubes (Figure 5). The internal features resemble those reported previously in a chatoyant yellow danburite from Tanzania (Chadwick & Laurs 2008). The chatoyancy was caused by the abundant needle-like tubes, which were subparallel and locally bent, and thus were consistent with dissolved

dislocations (rather than growth tubes), which are common in danburite (Philippe & Fritsch 2019).

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Near-Colourless Grossular from Tanzania

Lack of colour is comparatively rare among members of the garnet family, and therefore it appears worth noting when new production of colourless to near-colourless grossular occurs. Such material was recently reported from Balochistan, Pakistan, with the largest faceted stone weighing 1.66 ct (Luo *et al.* 2025). Tanzania has also been a source of colourless

to near-colourless grossular, from an unspecified locality (Zook 1975), as well as from the Tanga area in the north-eastern part of the country (Hänsel 2019).

Recently, gem dealer Brad Payne (The Gem Trader, Cave Creek, Arizona, USA) shared some faceted samples that were reportedly from the southern Dodoma Region in central Tanzania. He had about