

Gem Notes

COLOURED STONES

Axinite from Shigar Fort, Northern Pakistan

While on a buying trip to Pakistan in October 2014, one of the authors (DB) saw an old friend in Skardu who had financed a mining venture to work an alpine cleft deposit (series of hydrothermal veins) located above Shigar Fort, a historical site on the outskirts of Shigar town. This area is the gateway to the Shigar Valley, which is famous for producing well-formed crystals of aquamarine, topaz, garnet and other minerals (e.g. Agheem et al., 2014). The dealer had about 3.5 kg of axinite from the Shigar Fort deposit, mostly as broken or poorly formed crystals ranging from 2.5 to 7.0 cm long. Approximately 1 kg of the more transparent pieces were purchased by this author, and many contained silky string-like inclusions that produced a slight schiller effect. Twenty-one pieces weighing 135.4 g were sent to the cutting factory, resulting in 40 faceted stones totalling

Figure 2: Coarse irregular tubules form abundant inclusions in the Pakistan axinite. Photomicrograph by B. Clark; magnified 40×.

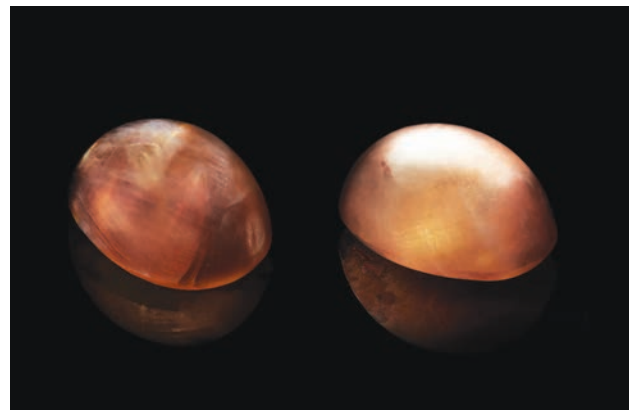


Figure 1: Weighing 6.57 and 5.79 ct, these axinite cabochons are from near the historic Shigar Fort in northern Pakistan. Photo by Bilal Mahmood and Alex Mercado.

25.03 carats (ranging from 0.12 to 3.44 ct each), and two cabochons weighing a total of 12.36 carats. The cutters were instructed to produce clean faceted stones with proper depth, and for the cabochons it was hoped that a cat's-eye effect would result from the silky inclusions. The yield was small due to the presence of fractures and the silky inclusions, as well as the typically thin dimensions of the platy rough material.

The two cabochons (Figure 1) were characterized by one of the authors (BC) for this report. They weighed 6.57 and 5.79 ct, and both were reddish brown, with moderate pleochroism of light brown and purple-brown. The spot RI values of both stones were 1.67–1.69, yielding a birefringence of 0.02. Hydrostatic SG values for the two samples were 3.28 and 3.29. These values are similar to those of axinite from elsewhere in Pakistan (Baluchistan: Fritz et al., 2007), except that the birefringence from these spot readings was somewhat higher. Both stones were inert to long- and short-wave UV radiation. They contained similar inclusion features, consisting of abundant long irregular tubules throughout the stones as well as partially healed fissures and clouds of fine particles (Figure 2).