Figure 5: At the Katjanga tourmaline deposit, miners use a pneumatic drill to prepare the pegmatite for blasting, while a front-end loader removes waste rock from the pit. The inset shows the pure greenish blue hue of a tourmaline preform from this mining area. Photos by B. M. Laurs.

Update on Some Coloured Stone Mining in Namibia

After attending the 35th International Gemmological Conference on 12–15 October 2018 in Windhoek, Namibia, this author visited some coloured stone deposits to obtain updated information on the mining and production there. Guided by Markus Wild (Paul Wild OHG, Kirschweiler, Germany), we saw active mining for tourmaline at Katjanga and Neu Schwaben, and for demantoid at the Parrot mine.

The Katjanga mining area has produced blue to blue-green gem tourmaline over the past two decades. It is situated on a private farm owned by Jeano Foelscher that is located approximately 40 km south-east of Omaruru. Several granitic pegmatites are present in an area measuring approximately 4 km^2, and the largest one was being mined in an open cut during our visit (Figure 5). The pit was being worked by a crew of 4–5 miners, who drill and blast the pegmatite with explosives. Most of the pegmatite that we saw was relatively fine grained, and it locally contained elongate coarse-grained segregations that were typically up to 1 m (rarely up to 2 m) wide and 3–6 m long; they dipped ~35° south-east. The miners look for areas where these 'veins' are cross-cut by near-vertical iron-stained joints or fractures, since this is where 'pockets' or cavities seem to occur. Most of the pockets contain only quartz, feldspar and mica, and perhaps 20% of them are mineralized with gem tourmaline. Such cavities are typically small and may produce up to ~1.5 kg of tourmaline, of which ~5% is gem quality in some cases and ~30% in others. Fine gem tourmaline also has been produced from eluvial deposits overlying the pegmatites. Most of the tourmaline from Katjanga is pure blue to blue-green and lacks any greyish or brownish hues (e.g. Figure 5, inset),

Figure 6: Numerous open pits explore the Neu Schwaben pegmatite for tourmaline, but only a few of them were being actively mined in October 2017. The prismatic greenish blue crystals in the inset are typical of tourmaline from this locality. Photos by B. M. Laurs.

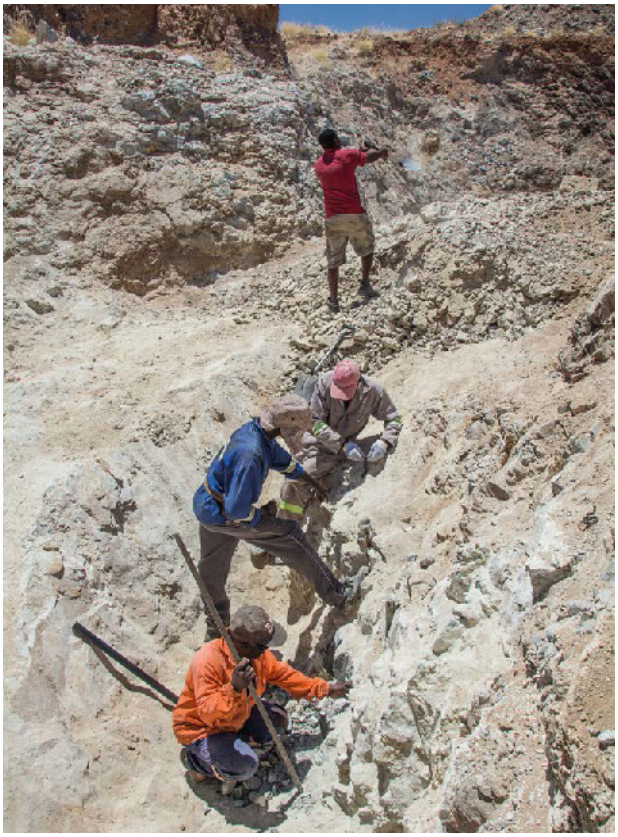

Figure 7: Demantoid is mined from a hard layer of calc-silicate rock at the Parrot mine using hand tools. Photo by B. M. Laurs.

and also has an 'open' c-axis that is prized by gem cutters and connoisseurs.

The Neu Schwaben mining area has been known for decades, and in 1996–1997 it produced large quantities of tourmaline in attractive blue-to-green colours from secondary deposits associated with a large pegmatite (Johnson and Koivula, 1997). Subsequent production has been mostly rather small and inconsistent due to the disorganized nature of the mining; this was noted by Laurs (2002) and this situation continues to the present time. During our visit we saw numerous pits (e.g. Figure 6) ranging up to 8–10 m deep over an area of approximately 3–4 km^2. The pits were located on both sides of a prominent north/south-trending ridge that is formed by the pegmatite, and four of them were actively being mined by separate groups of 3–5 people. We saw two air compressors used to power pneumatic drills (although it was not clear if they were both in use), but otherwise no mechanized equipment was present. The geology was quite similar to that seen at Katjanga, with a large relatively fine-grained pegmatite that locally contained coarse-grained 'veins' ~0.5 to 1.5 m thick that dipped shallowly to moderately south-east. According to the local miners, the pockets typically vary from 10 to 60 cm long, and may contain tourmaline that is blue to green (e.g., Figure 6, inset) or black. Although some of the tourmaline from Neu Schwaben shows an 'open' c-axis, such material is less commonly encountered than in tourmaline from Katjanga.

Demantoid and brownish to greenish yellow andradite is mined from Tubussis Farm 22 in the Erongo region of west-central Namibia. We visited the Parrot mine, which is owned by Manfred Lehrl (Esme Fine Gemstones, Omaruru) and is located adjacent to the Green Dragon mine (Reif, 2017). The main open pit extended to a depth of ~18 m, and in early October Lehrl had shifted to shallower workings that were ~7 m deep. A crew of four workers was following the steeply-dipping mineralized zone using pry-bars and feathers-and-wedges (Figure 7). The garnets were hosted by a narrow ~0.5 m layer of calc-silicate rock (skarn) adjacent to marble that had been locally intruded by granitic veins. Lehrl preferred not to use explosives near the mineralized zone to avoid breaking the garnets, and therefore mining proceeded slowly. Most of the production consisted of small broken crystals (e.g. Figure 8), although larger stones are occasionally found.

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Figure 8: Most of the Parrot mine demantoid production consists of broken crystals such as these. Photo by B. M. Laurs.