

## New Rubies from Tanzania



*Fig. 1: Unheated rubies (2.2 to 3.6 ct) from the new source at Winza, Tanzania. Courtesy Gemburi Co. Ltd. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute*

During the recent Basel World, the spring jewellery fair in Switzerland, the SSEF Swiss Gemmological Institute received a number of rubies (Fig. 1) that showed some new features. The new kind of rubies of high transparency that were presented by several dealers had all a rather saturated red and showed no indications of heating. An absolutely striking stone of 10.5 ct has been presented to the SSEF laboratory to establish a gemstone report with origin indication (Fig. 2). Two weeks later, during SSEF off-premise testing in Bangkok we have seen more of this beautiful ruby material, including two more stones over 10 ct. Furthermore we saw also some rough pieces of deep blue and purple colour from the same locality in Tanzania.



*Fig. 2: An excellent ruby from 10.75 ct originating from the new source at Winza, Tanzania. The stone has no fissures and shows no indications of heating. Characteristic inclusions consists of fine bent fibres. Courtesy Gemburi Co. Ltd. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute*

**Microscopic features:**

The internal features of the new material includes specifically bent fibres (Fig. 3), identified as hollow channels with a polycrystalline filling of probably secondary minerals. Also present are often straight lines representing twin lamellae intersections. Naturally healed fissures are charged with negative crystals containing a polyphase solid filling consisting of white and often black grains (Fig. 4). Blue colour zones, often occurring as thin stripes (Fig. 5) or in growth sectors are another characteristic feature. Typical mineral inclusions for rubies from other Tanzanian deposits, such as zircon as single inclusions or clusters have so far not been seen.

**Chemical analysis:**

When the chemical composition was tested with ED-XRF, Cr and Fe were found as main traces while Ga was little and Ti and V under the detection limit of the method.

**Rough material:**

Werner Spaltenstein, rough gemstone buyer in East Africa, has furnished some months before a number of rough crystals and fragments that strongly resembled Mong Hsu ruby. The origin was indicated as **Winza**, Morogoro area, central Tanzania. Heat treatment experiments to remove the blue colour zones in the Winza ruby had not success, as reported from people from Chantaburi.

When the characteristics of the faceted stones were compared to those of the rough, a good coincidence of features was observed. It was therefore possible to attach the origin tag "Winza Tanzanian Ruby" on the new cut material.



*Fig. 3: Ruby from Winza, Tanzania. Characteristic inclusions consist in fine bent fibers with a polycrystalline filling of probably secondary minerals. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute*



*Fig. 4: Ruby from Winza, Tanzania, with a healing fissure charged with multiphase inclusions. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute*



*Fig. 5 : Ruby from Winza, Tanzania, with characteristic blue colour zoning as thin parallel stripes. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute*



*Fig. 6: Ruby crystals of rhombohedral to prismatic habit from Winza, Morogoro Area, Central Tanzania. The stones may contain blue patches that are confined to crystallographically controlled areas. The largest stone is 25 mm across and 88 ct. Photo © H.A. Hänni, SSEF*

The crystals and fragments expose different crystal habits and faces (Fig. 6). The most surprising is an octahedron like variation of the rhombohedral shape. Many of the ruby crystals strikingly resemble spinel octahedra. The angles between the ruby faces are however different, and twin lines are common. With magnification, one can discover on the triangular faces traces of surfacing twin lamellae, visible as sets of parallel fine lines.

The cut gems we have seen so far from this deposit suggest that there is a potential for high-grade rubies that do not need a treatment. But as in all deposits, the lower qualities will surely be subjected to heat treatment, to remove the blue spots and to lessen the conspicuousness of the fractures.

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