

**Crystal Data:** Hexagonal. *Point Group:* 6mm. In hexagonal crystals, pyramidal {11 $\bar{2}$ 4}, {11 $\bar{2}$ 2}, {11 $\bar{2}$ 2}, or flattened on {0001}, bounded by {11 $\bar{2}$ 0}, small {0001} and {000 $\bar{1}$ }, to 2 cm, may be intergrown || {0001} with nigerite or högbomite; in fine-grained aggregates. *Twinning:* On {0001}, possible.

**Physical Properties:** *Fracture:* Conchoidal. Hardness = 8–8.5 D(meas.) = 3.605–3.613 D(calc.) = 3.588 Commonly fluoresces green under X-rays; may fluoresce red under LW UV, and yellowish green under SW UV.

**Optical Properties:** Transparent to translucent. *Color:* Mauve, lilac, pink, red, brown, deep to pale grayish purple, blue, greenish, pale beige-gray, may be nearly colorless. *Luster:* Vitreous. *Optical Class:* Uniaxial (-); may be anomalously biaxial. *Pleochroism:* E = yellow rose; O = carmine red (for a deep red example).  $\omega = 1.721\text{--}1.736$   $\epsilon = 1.717\text{--}1.727$  2V(meas.) = 15°

**Cell Data:** *Space Group:* P6<sub>3</sub>mc.  $a = 5.67\text{--}5.72$   $c = 18.33\text{--}18.38$   $Z = 2$

**X-ray Powder Pattern:** Sri Lanka.

2.415 (100), 2.595 (60), 2.043 (60), 4.58 (50), 4.34 (40), 2.167 (40), 2.378 (30)

Chemistry:	(1)	(2)	(3)	(1)	(2)	(3)
Al <sub>2</sub> O <sub>3</sub>	73.63	71.95	73.65	MnO	0.04	
Fe <sub>2</sub> O <sub>3</sub>		0.71		BeO	[3.33]	4.52
Cr <sub>2</sub> O <sub>3</sub>	0.12			MgO	21.64	19.84
FeO	1.24	3.14		Total	[100.00]	[100.00]
						100.00

(1) Sri Lanka; by electron microprobe, total Fe as FeO, BeO by difference; corresponding to (Mg<sub>2.96</sub>Fe<sub>0.10</sub>) $\Sigma=3.06$ (Al<sub>7.97</sub>Cr<sub>0.01</sub>) $\Sigma=7.98$ Be<sub>0.97</sub>O<sub>16</sub>. (2) Mt. Painter, Australia; Fe<sup>2+</sup>:Fe<sup>3+</sup> and BeO calculated from stoichiometry; corresponding to (Mg<sub>2.77</sub>Fe<sub>0.25</sub>) $\Sigma=3.02$ (Al<sub>7.95</sub>Fe<sub>0.05</sub>) $\Sigma=8.00$ Be<sub>0.98</sub>O<sub>16</sub>. (3) Mg<sub>3</sub>Al<sub>8</sub>BeO<sub>16</sub>.

**Polymorphism & Series:** 4H, 8H polytypoids.

**Occurrence:** In gem gravels (Sri Lanka); in skarns at the contact between dolostones and limestones with beryllium-bearing granite (Hsianghualing Ridge, China); in spinel-phlogopite schists (Mt. Painter, Australia).

**Association:** Spinel, apatite, phlogopite, zircon, garnet, as inclusions (Sri Lanka); hsianghualite, chrysoberyl, phenakite, zinnwaldite, cancrinite, fluorite, spinel, calcite (Hsianghualing Ridge, China).

**Distribution:** From Sri Lanka, in the Ratnapura district. On Hsianghualing Ridge, and in the Anhua area, Hunan Province, China. In the Pitkäranta district, Lake Ladoga, Karelia, and from an undisclosed locality in eastern Siberia, Russia. From six km west of Mt. Painter, South Australia.

**Name:** For Count Edward Charles Richard Taaffe (1898-1967), Bohemian-Irish gemologist, of Dublin, Ireland, who noted the first specimen.

**Type Material:** The Natural History Museum, London, England, 1967,309.

**References:** (1) Anderson, B.W., C.J. Payne, and G.F. Claringbull (1951) Taaffeite, a new beryllium mineral, found as a cut gemstone. *Mineral. Mag.*, 29, 765–772. (2) (1952) *Amer. Mineral.*, 37, 360 (abs. ref. 1). (3) Vlasov, K.A., Ed. (1966) *Mineralogy of rare elements*, v. II, 77–79. (4) Moor, R., W.F. Oberholzer, and E. Gübelin (1981) Taprobanite [taaffeite], a new mineral of the taaffeite group. *Schweiz. Mineral. Petrog. Mitt.*, 61, 13–21. (5) Schmetzer, K. (1983) Crystal chemistry of natural Be–Mg–Al-oxides: taaffeite, taprobanite, musgravite. *Neues Jahrb. Mineral., Abh.*, 146, 15–28. (6) Nuber, B. and K. Schmetzer (1983) Crystal structure of ternary Be–Mg–Al oxides: taaffeite, BeMg<sub>3</sub>Al<sub>8</sub>O<sub>16</sub>, and musgravite, BeMg<sub>2</sub>Al<sub>6</sub>O<sub>12</sub>. *Neues Jahrb. Mineral., Monatsh.*, 393–402. (7) Gunawardene, M. (1984) Inclusions in taaffeites from Sri Lanka. *Gems & Gemology*, 20, 159–163. (8) Kampf, A.R. (1991) Taaffeite crystals. *Mineral. Record*, 343–347.