Trippkeite $CuAs_2^{3+}O_4$

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. Crystals short prismatic to equant, with {021}, {100}, {001} dominant, four additional forms, may be bent.

Physical Properties: *Cleavage:* {100}, perfect; {110}, good. *Tenacity:* Fibers formed by cleavage are easily bent. Hardness = Soft. D(meas.) = 4.8(5) D(calc.) = 4.48

Optical Properties: Semitransparent. *Color:* Greenish blue; pale bluish green in transmitted light. *Luster:* Vitreous.
Optical Class: Uniaxial (+). $\omega = 1.90(1)$ $\epsilon = 2.12(1)$

Cell Data: *Space Group:* $P4_2/mbc$ (synthetic). $a = 8.592(4)$ $c = 5.573(4)$ Z = 4

X-ray Powder Pattern: Synthetic; calculated from crystal structure.
3.16 (100), 6.07 (57), 3.04 (47), 2.34 (36), 1.95 (36), 2.72 (34), 1.64 (25)

Chemistry: Apparently no analysis has ever been performed.

Occurrence: In a copper deposit.

Association: Cuprite, malachite, olivenite, chalcopyrite.

Distribution: From near Copiapó, Atacama, Chile.

Name: To honor Dr. Paul Trippke (1851–1880), Polish mineralogist, who discovered the mineral.

Type Material: n.d.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1034. (2) Zemann, J. (1951) Formel und Kristallstruktur des Trippkeits. Tschermaks Mineral. Petrog. Mitt., 2, 417–423 (in German). (3) Pertlik, F. (1975) Verfeinerung der Kristallstruktur von synthetischem Trippkeite, $CuAs_2O_4$. Tschermaks Mineral. Petrog. Mitt., 22, 211–217 (in German with English abs.). (4) Pertlik, F. (1977) Zur Synthese von Kristallen von $CuAs_2O_4$ (Trippkeit) und $Cu_2As_3O_6CH_3COO$. (Ein Komponente des Farbpigments "Schweinfurter Grün"). Z. Anorg. Allg. Chem., 436, 201–206 (in German with English abs.).