

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. Crystals to ~0.4 mm, are elongated along [100], dominated by {141}, with {001}, {010}, {031}, and {301}; in aggregates to 2 mm.

**Physical Properties:** *Cleavage:* None. *Fracture:* Uneven to conchoidal. *Tenacity:* Brittle. Hardness = ~3 VHN = 57-59, 58.3 average (10 g load). D(meas.) = n.d. D(calc.) = 5.26

**Optical Properties:** Opaque. *Color:* Dark metallic gray, pure white in reflected light.

*Streak:* Dark brown-red. *Luster:* Metallic.

*Optical Class:* Anisotropism: Extremely weak in air.

R<sub>1</sub>-R<sub>2</sub>: (470) 31.43-33.43 (15.98-18.41)<sub>oil</sub>, (546) 28.31-30.52 (13.48-15.80)<sub>oil</sub>, (589) 27.10-29.11 (12.54-14.56)<sub>oil</sub>, (650) 25.57-27.44 (11.36-13.17)<sub>oil</sub>

**Cell Data:** *Space Group:* Pmnb. *a* = 12.479(3) *b* = 15.522(4) *c* = 5.719(4) Z = 4

**X-ray Powder Pattern:** Lengenbach quarry, Binntal, Switzerland.

2.822 (100), 3.363 (50), 3.118 (27), 3.210 (26), 3.29 (23) 2.540 (17), 3.655 (16)

Chemistry:	(1)	(2)
Tl	23.63	23.36
Ag	23.98	24.66
Cu	0.22	
As	19.08	18.85
Sb	10.96	11.14
S	21.65	21.99
Total	99.53	100.00

(1) Lengenbach quarry, Binntal, Switzerland; average electron microprobe analysis; corresponding to Tl<sub>1.02</sub>Ag<sub>1.96</sub>Cu<sub>0.03</sub>(As<sub>2.24</sub>Sb<sub>0.80</sub>)<sub>Σ=3.04</sub>S<sub>5.95</sub>. (2) TlAg<sub>2</sub>(As<sub>2.2</sub>Sb<sub>0.8</sub>)<sub>Σ=3</sub>S<sub>6</sub>.

**Occurrence:** In cavities in dolomitic rock; the product of late-stage Tl-As-bearing hydrothermal solutions during metamorphism.

**Association:** Realgar, hutchinsonite, hatchite, jentschite.

**Distribution:** From Lengenbach quarry, Binntal, Valais Canton, Switzerland.

**Name:** Honors Valentin *Sicher* (b. 1925), active member in the Lengenbach syndicates since 1963 who contributed greatly to specimen recovery efforts at Lengenbach for research and collectors.

**Type Material:** Department of Mineralogy, Natural History Museum, Basel, Switzerland.

**References:** (1) Graeser, S., P. Berlepsch, E. Makovicky, and T. Balić-Zünić (2001) Sicherite, TlAg<sub>2</sub>(As,Sb)<sub>3</sub>S<sub>6</sub>, a new sulfosalt mineral from Lengenbach (Binntal, Switzerland): Description and structure determination. *Amer. Mineral.*, 86(9), 1087-1093.