Jentschite **$PbTlAs_2SbS_6$**

Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals are platy to long prismatic, showing {010}, {130}, {001}, {041}, {$\bar{1}$01}, {$\bar{1}$21}, {$\bar{1}$51}, to 2 mm, in aggregates. *Twinning:* Polysynthetic on {010} and contact twins on {100}.

Physical Properties: *Cleavage:* Perfect on {$\bar{1}$01}. *Fracture:* Uneven to conchoidal. *Tenacity:* Extremely brittle. Hardness = 2–2.5 VHN = 38–51 (10 g load). D(meas.) = n.d. D(calc.) = 5.24

Optical Properties: Opaque; translucent in thin fragments. *Color:* Black; in transmitted light, dark red with red internal reflections; pale gray in reflected light. *Streak:* Dark red. *Luster:* Metallic to submetallic. *Anisotropism:* Distinct.
R_1–R_2: (470) 29.7–35.4, (543) 28.8–33.1, (587) 26.7–30.3, (657) 26.6–29.9

Cell Data: *Space Group:* $P2_1/n$. $a = 8.0958(5)$ $b = 23.917(2)$ $c = 5.8876(5)$ $\beta = 108.063(8)^\circ$ Z = 4

X-ray Powder Pattern: Binntal, Switzerland.
2.823 (100), 3.587 (86), 2.778 (84), 3.998 (74), 2.670 (58), 3.816 (54), 5.346 (32)

Chemistry:

	(1)	(2)	(3)
Pb	21.44	24.45	23.67
Tl	23.92	23.94	23.34
As	19.16	21.69	17.11
Sb	12.53	7.68	13.91
S	22.42	22.29	21.97
Total	99.47	[100.05]	100.00

(1) Binntal, Switzerland; by electron microprobe, average of 15 analyses; corresponds to $Pb_{0.89}Tl_{1.01}As_{2.20}Sb_{0.89}S_{6.02}$. (2) Do.; by electron microprobe, average of 24 analyses, original total given as 100.1%; corresponds to $Pb_{1.01}Tl_{1.00}As_{2.48}Sb_{0.54}S_{5.96}$. (3) $PbTlAs_2SbS_6$.

Occurrence: Very rare in a hydrothermal deposit in dolostone.

Association: Realgar, orpiment, hutchinsonite, hatchite, wallisite, edenharterite, bernardite, sicherite.

Distribution: From the Lengenbach quarry, Binntal, Valais, Switzerland [TL].

Name: In honor of Franz Jentsch (1868–1908), an early prolific collector of Lengenbach minerals.

Type Material: Natural History Museum; Mineralogical Institute, University of Basel, Basel, Switzerland.

References: (1) Graeser. S. and A. Edenharter (1997) Jentschite ($TlPbAs_2SbS_6$) – a new sulphosalt mineral from Lengenbach, Binntal (Switzerland). Mineral. Mag., 61, 131–137. (2) (1997) Amer. Mineral., 82, 1261 (abs. ref. 1). (3) Berlepsch, P. (1996) Crystal structure and crystal chemistry of the homeotypes edenharterite ($TlPbAs_3S_6$) and jentschite ($TlPbAs_2SbS_6$) from Lengenbach, Binntal (Switzerland). Schweiz. Mineral. Petrogr. Mitt., 76, 147–157.