Pierrotite $TlSb_3As_2S_8$

Crystal Data: Orthorhombic. *Point Group:* $mm2$. As polycrystalline aggregates.

Physical Properties: Hardness = n.d. VHN = n.d. D(meas.) = 4.97 D(calc.) = 4.75

Optical Properties: Translucent. *Color:* Gray-black; in polished section, white, with red internal reflections; dark red in thin section. *Luster:* Metallic, lively. *Anisotropism:* Moderate. R_1–R_2: (400) 35.9–39.6, (420) 35.2–38.8, (440) 34.5–38.0, (460) 33.7–37.2, (480) 33.1–36.6, (500) 32.5–36.0, (520) 31.9–35.5, (540) 31.3–35.0, (560) 30.7–34.5, (580) 30.2–34.0, (600) 29.7–33.4, (620) 29.1–32.8, (640) 28.6–32.1, (660) 28.0–31.5, (680) 27.4–30.9, (700) 26.7–30.3

Cell Data: *Space Group:* $Pna2_1$. $a = 38.746(8)$ $b = 8.816(2)$ $c = 7.989(2)$ $Z = 8$

X-ray Powder Pattern: Jas Roux, France.
3.59 (100), 3.49 (90), 2.70 (90), 3.63 (80), 2.84 (80), 2.347 (80), 2.52 (60)

Chemistry:

	(1)	(2)
Tl	20.95	20.94
Sb	37.65	37.43
As	15.54	15.35
S	26.57	26.28
Total	100.71	100.00

(1) Jas Roux, France; by electron microprobe, average of seven analyses. (2) $TlSb_3As_2S_8$.

Polymorphism & Series: Dimorphous with parapierrotite.

Occurrence: In quartz veins (Jas Roux, France).

Association: Stibnite, realgar, pyrite, an unnamed amorphous mineral of composition $Tl(As,Sb)_{10}S_{16}$ (Jas Roux, France); chabourneite, parapierrotite (Alšar, Macedonia).

Distribution: From the Jas Roux deposit, 10 km east of Chapelle-en-Valgaudemar, Hautes-Alpes, France [TL]. At Alšar (Allchar), near Rošden, Macedonia. From near Lookout Pass, Tooele Co., Utah, USA.

Name: Honors Roland Pierrot (1930–), French mineralogist, Head of Mineralogy, B.R.G.M., Orléans, France.

Type Material: National School of Mines, Paris, France.

References: (1) Guillemin, C., Z. Johan, C. Laforêt, and P. Picot (1970) La pierrotite, $Tl_2(Sb,As)_{10}S_{17}$, une nouvelle espèce minérale. Bull. Soc. fr. Minéral., 93, 66–71 (in French with English abs.). (2) (1972) Amer. Mineral., 57, 1909–1910 (abs. ref. 1). (3) Engel, P., M. Gostojić, and W. Nowacki (1983) The crystal structure of pierrotite, $Tl_2(As,Sb)_{10}S_{16}$. Zeits. Krist., 165, 209–215.