

**Crystal Data:** Hexagonal. *Point Group:*  $6/m\ 2/m\ 2/m$ ,  $6mm$ , or  $\bar{6}m2$ . As hexagonal thin to thick tabular crystals, up to about 200  $\mu\text{m}$ . *Twinning:* Ubiquitous.

**Physical Properties:** Hardness = n.d. VHN = 610(7) (100 g load). D(meas.) = n.d. D(calc.) = 10.8

**Optical Properties:** Opaque. *Color:* In polished section, yellowish white. *Pleochroism:* Weak, in pale yellow to yellowish white, also sometimes faint greenish, pinkish, or lavender.

*Anisotropism:* Distinct, colors usually lacking but some grains are purplish gray to greenish gray.

$R_1$ – $R_2$ : (400) 39.9–40.6, (420) 42.2–43.4, (440) 44.5–46.2, (460) 46.6–48.5, (480) 48.4–50.4, (500) 50.0–52.0, (520) 51.4–53.2, (540) 52.5–54.2, (560) 53.5–54.8, (580) 54.4–55.2, (600) 55.4–55.6, (620) 56.4–56.0, (640) 57.4–56.6, (660) 58.6–57.1, (680) 59.7–57.6, (700) 61.0–58.3

**Cell Data:** *Space Group:*  $P6_3/mmc$ ,  $P6_3mc$ , or  $P\bar{6}2c$ .  $a = 7.598(2)$   $c = 28.112(9)$   
Z = 12

**X-ray Powder Pattern:** Tweefontein Farm, South Africa.

2.236 (100), 2.194 (100), 1.279 (50), 1.228 (50), 1.183 (50), 1.576 (40), 1.267 (30)

Chemistry:	(1)	(2)	(3)
Pd	68.0	67.8	68.60
Cu	1.6	1.9	
Sn	0.2		
Sb	30.5	31.2	31.40
As	0.2		
Total	100.5	100.9	100.00

(1) Tweefontein Farm, South Africa; by electron microprobe, corresponding to  $(\text{Pd}_{4.87}\text{Cu}_{0.19})_{\Sigma=5.06}\text{Sb}_{1.91}$ . (2) Goodnews Bay, Alaska, USA; by electron microprobe, average of analyses of seven grains, corresponding to  $(\text{Pd}_{4.83}\text{Cu}_{0.23})_{\Sigma=5.06}\text{Sb}_{1.94}$ . (3) Pd<sub>5</sub>Sb<sub>2</sub>.

**Occurrence:** An uncommon constituent of platinum deposits.

**Association:** Braggite, cooperite, mertieite-II, sperrylite, Pt–Fe–Cu–Ni alloys, genkinite, platarsite, chromite, chalcopyrite, pentlandite, pyrrhotite, geversite, gold, violarite.

**Distribution:** In the USA, at Goodnews Bay, Alaska. In Transvaal, South Africa, from Tweefontein Farm, Potgietersrust district, and from the Elephant Winze, near Rietfontein; at the Onverwacht and Driekop mines. From the Department of Chocó, Cauca, Colombia. In the USSR, from the Morozova mine, Noril'sk region, western Siberia, and at Zlatoust, Ural Mountains. From the Lac des Iles Complex, Ontario, Canada.

**Name:** For the composition.

**Type Material:** British Museum (Natural History), London, England, 1930,950-2; Royal Ontario Museum, Toronto, Canada, M34229; National Museum of Natural History, Washington, D.C., USA, 135408; all probably topotypic.

**References:** (1) Cabri, L.J. and T.T. Chen (1976) Stibiopalladinite from the type locality. *Amer. Mineral.*, 61, 1249–1254. (2) Desborough, G.A., J.J. Finney, and B.F. Leonard (1973) Mertieite, a new palladium mineral from Goodnews Bay, Alaska. *Amer. Mineral.*, 58, 1–10. (3) Ramdohr, P. (1969) *The ore minerals and their intergrowths*, (3rd edition), 413–416. (4) Cabri, L.J., Ed. (1981) *Platinum group elements: mineralogy, geology, recovery*. *Can. Inst. Min. & Met.*, 139–140.