

**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As irregular equant grains, to 0.2 mm, in aggregates.

**Physical Properties:** *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = n.d. VHN = 224–262, 252 average (15 g load). D(meas.) = n.d. D(calc.) = 4.48

**Optical Properties:** Opaque. *Color:* Black; pale gray with pink-yellow tint in reflected light. *Luster:* Submetallic. *Anisotropism:* Strong; yellow-brown. *Birefractance:* Distinct.

$R_1$ – $R_2$ : (400) —, (420) 24.8–35.6, (440) 24.5–35.2, (460) 24.1–34.7, (480) 23.9–35.2, (500) 23.8–35.5, (520) 23.7–35.5, (540) 23.8–36.0, (560) 24.1–36.4, (580) 24.6–36.7, (600) 25.2–37.1, (620) 25.4–37.0, (640) 25.6–36.8, (660) 25.7–36.4, (680) 25.8–36.1, (700) 25.8–35.6

**Cell Data:** *Space Group:*  $Pnam$  (by analogy to berthierite).  $a = 11.47(2)$   $b = 14.36(3)$   
 $c = 3.81(1)$   $Z = 4$

**X-ray Powder Pattern:** Vorontsovskoye deposit, Russia.  
2.65 (100), 3.69 (90), 2.90 (80), 3.23 (70), 1.813 (50), 4.46 (40), 2.18 (40)

<b>Chemistry:</b>	(1)
Mn	13.1
As	4.4
Sb	51.2
S	30.8
Total	99.5

(1) Vorontsovskoye deposit, Russia; by electron microprobe, average of five analyses; corresponding to  $Mn_{1.00}(Sb_{1.75}As_{0.25})_{\Sigma=2.00}S_{4.00}$ .

**Occurrence:** In a hydrothermal gold deposit in limestone.

**Association:** Realgar, pyrite, alabandite, sphalerite, aktashite, routhierite, zinkenite, chalcostibite, orpiment, stibnite, cinnabar, tetrahedrite–tennantite, gold, greigite.

**Distribution:** From the Vorontsovskoye gold deposit, Serov district, Northern Ural Mountains, Russia [TL].

**Name:** To honor Onisima Yegorovicha Klera (1845–1920), Russian geologist, President of the Ural Society of Natural Sciences Amateurs, Ykaterinberg (Sverdlovsk), Russia.

**Type Material:** Ural Geological Museum, Mining Institute, Yekaterinburg (Sverdlovsk), Russia.

**References:** (1) Murzin, V.V., A.F. Bushmakin, S.G. Sustavov, and D.K. Shcherbachev (1996) Clerite  $MnSb_2S_4$  – a new mineral from the Vorontsovskoye gold deposit in the Urals. *Zap. Vses. Mineral. Obshch.*, 125, 95–101 (in Russian with English abs.). (2) (1997) *Amer. Mineral.*, 82, 620–621 (abs. ref. 1). (3) Bente, K. and A. Edenharter (1990) X-ray structure analysis of synthetic  $MnSb_2S_4$  and structure refinement of natural  $FeSb_2S_4$  (berthierite). *Zeits. Krist., sup.* 2, 36. (4) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. *Ocean Pictures*, Moscow, 67.