Menchettiite $AgPb_{2.40}Mn_{1.60}Sb_3As_2S_{12}$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As irregular grains to 200 μm.
Twinning: Twinned on {100}.

Physical Properties: *Cleavage*: None. *Fracture*: Uneven. *Tenacity*: Brittle.
Hardness = 2.5-3 VHN = 128 (100 g load). D(meas.) = n.d. D(calc.) = 5.146

Optical Properties: Opaque. *Color*: Black. *Streak*: Black. *Luster*: Metallic.
Optical Class: Anisotropic. *Bireflectance*: Weak to moderate. *Pleochroism*: Weak, dark gray to dark green.
R_1-R_2: (471.1) 33.1-39.8, (548.3) 31.8-38.0, (586.6) 30.9-37.3, (652.3) 29.0-35.8

Cell Data: *Space Group*: $P2_1/n$. a = 19.233(2) b = 12.633(3) c = 8.476(2) β = 90.08(2)°
Z = 2

X-ray Powder Pattern: Calculated pattern.
3.2853 (100), 2.8535 (49), 2.8519 (47), 3.4066 (39), 3.4025 (39), 2.1190 (33), 2.8585 (26)

Chemistry:

	(1)	(2)
Pb	31.27	31.22
Ag	6.59	6.77
Cu	0.02	
Mn	5.52	5.52
Fe	0.03	
Zn	0.02	
Sb	23.26	22.93
As	9.27	9.41
Bi	0.03	
S	24.09	24.15
Se	0.02	.
Total	100.12	100.00

(1) Uchucchacua deposit, Catajambo, Peru; average of 12 electron microprobe analyses, corresponding to $Ag_{1.95}Cu_{0.01}Pb_{4.81}Mn_{3.20}Fe_{0.02}Zn_{0.01}Sb_{6.09}As_{3.94}Bi_{0.01}S_{23.95}Se_{0.01.}$
(2) $AgPb_{2.40}Mn_{1.60}Sb_3As_2S_{12}$.

Occurrence: In a polymetallic (Ag-Mn-Pb-Zn) vein, replacement, and contact metamorphic mineral district.

Association: Orpiment, tennantite/tetrahedrite, quartz, calcite.

Distribution: From Level 890, Uchucchacua polymetallic deposit, Oyon district, Catajambo, Lima Department, Peru.

Name: Honors Silvio Menchetti (b. 1937), Professor of Mineralogy and Crystallography, University of Florence, Italy, in recognition of his contributions to the systematics of sulfosalt minerals.

Type Material: Natural History Museum, University of Florence, Italy (3109/I).

References: (1) Bindi, L., F.N. Keutsch, and P. Bonazzi (2012) Menchettiite, $AgPb_{2.40}Mn_{1.60}Sb_3As_2S_{12}$, a new sulfosalt belonging to the lillianite series from the Uchucchacua polymetallic deposit, Lima Department, Peru. Amer. Mineral., 97, 440-446.