

Crystal Data: Monoclinic. *Point Group:* $2/m$. As prismatic crystals striated parallel to the elongation [100], to 2 mm.

Physical Properties: *Cleavage:* Perfect parallel [100]. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = n.d. $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 5.908\text{--}5.924$

Optical Properties: Opaque. *Color:* Lead-gray to black; white in reflected light. *Streak:* Black. *Luster:* Metallic.

Optical Class: n.d. *Anisotropism:* Distinct, gray to dark gray with brownish and greenish shades. $R_1\text{--}R_2$: (470) 39.7-41.4, (546) 38.3-39.9, (589) 37.4-39.0, (650) 35.8-37.2

Cell Data: Space Group: $P2_1$. $a = 8.2393(1)$ $b = 43.6015(13)$ $c = 28.3688(8)$ $\beta = 94.128(2)^\circ$
 $Z = 2$

X-ray Powder Pattern: Pizzone stope, Pollone mine, Apuan Alps, Tuscany, Italy. 3.334 (vs), 3.663 (s), 3.244 (s), 2.072 (ms), 3.762 (m), 3.016 (m), 2.968 (m)

Chemistry:	(1)	(2)
Cu	0.22	0.22
Ag	3.15	3.04
Tl	0.07	0.13
Pb	48.54	48.53
Sb	25.41	25.40
As	2.82	2.93
Bi	n.d.	0.06
S	19.74	19.82
Se	0.14	0.13
Cl	0.03	0.05
Total	100.12	100.31

(1) Pizzone stope, Pollone mine, Apuan Alps, Tuscany, Italy; average of 3 electron microprobe analyses; corresponds to $(\text{Ag}_{5.29}\text{Cu}_{0.63})_{\Sigma=5.92}(\text{Pb}_{42.43}\text{Tl}_{0.06})_{\Sigma=42.49}(\text{Sb}_{37.80}\text{As}_{6.82})_{\Sigma=44.62}(\text{S}_{111.53}\text{Se}_{0.32}\text{Cl}_{0.15})_{\Sigma=112}$. (2) Pizzone stope, Pollone mine, Apuan Alps, Tuscany, Italy; average of 3 electron microprobe analyses; corresponds to $(\text{Ag}_{5.08}\text{Cu}_{0.62})_{\Sigma=5.70}(\text{Pb}_{42.22}\text{Tl}_{0.12})_{\Sigma=42.34}(\text{Sb}_{37.61}\text{As}_{7.07}\text{Bi}_{0.05})_{\Sigma=44.73}(\text{S}_{111.45}\text{Se}_{0.30}\text{Cl}_{0.25})_{\Sigma=112}$. Presence of oxygen suggested by structural analysis.

Occurrence: Formed in a hydrothermal Pb-Zn-Ag deposit.

Association: Barite, boulangerite, pyrite, quartz, sphalerite.

Distribution: From the Pizzone stope, Pollone mine, near Valdicastello Carducci, Apuan Alps, Tuscany, Italy.

Name: Honors Alain Meerschaut (b. 1945), former Research Director at the Centre national de la recherche scientifique (CNRS), chemist-crystallographer at the Institut des Matériaux Jean Rouxel, Nantes, France, for his contributions to the definition and crystal structural analysis of new lead-antimony sulfosalts from the hydrothermal ores of the Apuan Alps.

Type Material: Natural History Museum, University of Pisa, Italy (19649), the Mineralogy Museum, MINES Paris Tech, Paris, France (63264) and the Natural History Museum, London, England (2015,2).

References: (1) Biagioni, C., Y. Mořlo, P. Orlandi, and C.J. Stanley (2016) Lead-antimony sulfosalts from Tuscany (Italy). XVII. Meerschautite, $(\text{Ag,Cu})_{5.5}\text{Pb}_{42.4}(\text{Sb,As})_{45.1}\text{S}_{112}\text{O}_{0.8}$, a new expanded derivative of owyheeite from the Pollone mine, Valdicastello Carducci: occurrence and crystal structure. *Mineral. Mag.*, 80(4), 675-690. (2) (2017) *Amer. Mineral.*, 102, 469 (abs. ref. 1).