Parasterryite $Ag_4Pb_{20}(Sb_{14.5}As_{9.5})_{\Sigma=24}S_{58}$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As striated [100] acicular crystals to 4 mm. *Twinning*: Polysynthetic twins parallel elongation.

Physical Properties: *Cleavage*: Poor perpendicular to elongation. *Fracture*: Conchoidal. *Tenacity*: Brittle.
Hardness = 3-4 VHN = 196 (25 g load). D(meas.) = n.d. D(calc.) = 5.747

Optical Properties: Opaque. *Color*: Black, white in reflected light. *Streak*: Black. *Luster*: Metallic. *Pleochroism*: Weak, grayish white to white. *Anisotropism*: Distinct, gray to dark gray (with brownish and greenish tint).
Optical Class: n.d.
R_1-R_2: (470) 35.1-40.8 $(19.4\text{-}22.2)_{oil}$, (586) 33.5-39.3 $(19.3\text{-}21.7)_{oil}$, (586) 32.7-38.2 $(18.7\text{-}21.1)_{oil}$, (650) 31.4-36.5 $(17.3\text{-}19.5)_{oil}$

Cell Data: *Space Group: P*$2_1/c$. (pseudo-orthrombic) $a = 8.3965(5)$ $b = 27.9540(4)$ $c = 43.8840(13)$ $\beta = 90.061(12)°$ $Z = 4$

X-ray Powder Pattern: Pollone deposit, near Pietrasanta, Apuan Alps, Tuscany, Italy.
3.62 (100), 3.35 (95), 2.945 (85), 2.885 (80), 3.23 (65), 3.42 (45), 3.01 (45)

Chemistry:

	(1)
Cu	0.09
Ag	4.36
Hg	0.15
Pb	47.00
Sb	19.57
As	7.73
S	20.56
Total	99.46

(1) Pollone deposit, near Pietrasanta, Apuan Alps, Tuscany, Italy; average of 32 electron microprobe analyses, corresponding to $Cu_{0.13}Ag_{3.65}Hg_{0.07}Pb_{20.41}(S_{b14.49}As_{9.25})_{\Sigma=23.74}S_{57.72}$.

Occurrence: In vugs within hydrothermal barite–quartz veins embedded in barite-pyrite lenses in complexly sheared and metamorphosed sedimentary rocks.

Association: Acanthite, famatinite, geocronite-jordanite, pyrargyrite-prustite, Sb-rich rathite, sphalerite (overgrowth on sterryite), tetrahedrite, xanthoconite.

Distribution: Pollone deposit,Valdicastello Carducci, near Pietrasanta, Apuan Alps, Tuscany, Italy.

Name: For the similarity to *sterryite* with the Greek prefix *para* meaning "near".

Type Material: Natural History Museum, University of Pisa, Italy (19347), and at the Mineralogy Museum, School of Mines, Paris, France (82522).

References: (1) Moëlo, Y., P. Orlandi, C. Guillot-Deudon, C. Biagioni, W. Paar, and M. Evain (2011) Lead-antimony sulfosalts from Tuscany (Italy). XI. The new mineral species parasterryite, $Ag_4Pb_{20}(Sb_{14.5}As_{9.5})_{\Sigma 24}S_{58}$, and associated sterryite, $Cu(Ag,Cu)_3Pb_{19}(Sb,As)_{22}(As\text{-}As)S_{56}$, from the Pollone mine, Tuscany, Italy. Canadian Mineralogist, 49, 623-638. (2) Moëlo, Y., C. Guillot-Deudon, M. Evain, P. Orlandi, and C. Biagioni (2012) Comparative modular analysis of two complex sulfosalt structures: sterryite, $Cu(Ag,Cu)_3Pb_{19}(Sb,As)_{22}(As\text{-}As)S_{56}$, and parasterryite, $Ag_4Pb_{20}(Sb,As)_{24}S_{58}$. Acta Crystallographica Section B, 68, 480-492. (3) (2014) Amer. Mineral., 99, 872-873 (abs. refs. 1 and 2).