Marrucciite $Hg_3Pb_{16}Sb_{18}S_{46}$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As elongated and striated acicular crystals to 2 mm bundled parallel to [010].

Physical Properties: *Cleavage*: Perfect || [010] on $(20\bar{1})$. *Tenacity*: Brittle, elastic thin fibers. *Fracture*: Uneven. Hardness = ~2 VHN = 69-101, 85 average (20 g load). D(calc.) = 6.00

Optical Properties: Opaque. *Color*: Black, light gray with weak yellow tint in reflected light, rare dark red internal reflections. *Streak*: Dark gray with a very weak reddish tint. *Luster*: Metallic. *Optical Class*: *Anisotropism*: Distinct, grayish brown to dark brown. *Bireflectance*: Weak. R: (470) 33.1, (546) 30.0, (589) 28.8, (650) 26.5

Cell Data: *Space Group*: *C*2/*m*. $a = 48.32(1)$ $b = 4.117(1)$ $c = 24.056(5)$ $\beta = 118.84(3)°$ Z = 2

X-Ray Diffraction Pattern: Buca della Vena mine, near Pietrasanta, Apuan Alps, Italy. 2.994 (100), 3.418 (88), 3.480 (64), 2.056 (52), 2.922 (41), 1.764 (41), 4.02 (33)

Chemistry:

	(1)	(2)
Cu	0.18	0.03
Hg	7.90	7.83
Cd		0.02
Fe		0.06
Zn		0.02
Pb	42.41	43.13
Sn		0.03
Sb	29.71	29.15
Bi		0.12
S	19.47	19.71
Cl	0.06	0.05
Total	99.73	100.15

(1) Buca della Vena mine, near Pietrasanta, Apuan Alps, Italy; average electron microprobe analysis; corresponds to $Cu_{0.21}Hg_{2.98}Pb_{15.46}Sb_{18.44}S_{45.87}Cl_{0.13}$. (2) Zenderling, Slovak Republic; average electron microprobe analysis; corresponding to $Hg_{2.93}(Pb_{15.63}Fe_{0.08}Cu_{0.04}Cd_{0.02}Zn_{0.02}Sn_{0.02})_{\Sigma=15.81}(Sb_{17.97}Bi_{0.04})_{\Sigma=18.01}(S_{46.14}Cl_{0.11})_{\Sigma=46.25}$.

Occurrence: In a hydrothermal assemblage, within small calcite veinlets crosscutting dolomitic lenses interstratified in a Ba-Fe deposit (Buca Della Vena).

Association: Zinkenite, scainiite, chalcostibite, cinnabar or bournonite, boulangerite (Zenderling).

Distribution: From the Buca della Vena mine, near Pietrasanta, Apuan Alps, Italy [TL]. At Zenderling, near Gelnica, Spišsko-Gemerské Rudohorie Mts., Slovak Republic.

Name: Honors mineral collector Angelo *Marrucci* (1956-2003), for his contributions to the mineralogy of Tuscany.

Type Material: Natural History Museum, University of Pisa, Italy.

References: (1) Orlandi, P., Y. Moelo, I. Campostrini, and A. Meerschaut (2007) Leadantimony sulfosalts from Tuscany (Italy). IX. Marrucciite, $Hg_3Pb_{16}Sb_{18}S_{46}$, a new sulfosalt from Buca della Vena mine, Apuan Alps: Definition and crystal structure. Eur. J. Mineral., 19, 267-279. (2) (2008) Amer. Mineral., 93, 253 (abs. ref. 1). (3) Laufek F., J. Sejkora, K. Fejfarová, M. Dušek, and D. Ozdín (2007) The mineral marrucciite: monoclinic $Hg_3Pb_{16}Sb_{18}S_{46}$. Acta Crystal., E63, i190-i190. (4) Sejkora J., D. Ozdín, F. Laufek, J. Plášil, and J. Litochleb (2011) Marrucciite, a rare Hg-sulfosalt from the Gelnica ore deposit (Slovak Republic), and its comparison with the type occurrence at Buca della Vena mine (Italy). J. Geosci., 56, 399-408.