

Crystal Data: Monoclinic. *Point Group:* 2/m. Granular to acicular.

Physical Properties: Cleavage: n.d. *Tenacity:* n.d. *Fracture:* n.d. Hardness = n.d.
D(meas.) = n.d. D(calc.) = n.d.

Optical Properties: Opaque. *Color:* Lead gray. *Streak:* n.d. *Luster:* Metallic.
Optical Class: Weakly birefractant, weakly pleochroic, and strongly anisotropic.

Cell Data: *Space Group:* P2₁. *a* = 8.368 *b* = 115.75 *c* = 7.903 β = 90.1°

X-ray Powder Pattern: Lengenbach quarry, Switzerland.
2.978 (100), 3.663 (70), 2.339 (65), 2.735 (60), 2.713 (50), 3.216 (48), 2.872 (48)

Chemistry:	(1)	(2)
Pb	50.92	51.82
Ag	0.44	0.13
Tl	0.83	0.14
As	23.42	22.75
Sb	0.28	1.37
<u>S</u>	<u>23.46</u>	<u>23.25</u>
Total	99.35	99.46

(1) Lengenbach quarry, Switzerland; electron microprobe analysis; corresponds to (Pb_{30.91}Ag_{0.51}Tl_{0.51}) $\Sigma=31.93$ (As_{39.30}Sb_{0.46}) $\Sigma=39.76$ S_{92.00}. (2) Okoppe mine, Japan; electron microprobe analysis; corresponds to (Pb_{31.74}Ag_{0.15}Tl_{0.09}) $\Sigma=31.98$ (As_{38.54}Sb_{1.42}) $\Sigma=39.96$ S_{92.00}.

Mineral Group: Sartorite group.

Occurrence: In a high-sulfidation, epithermal, Cu-Pb-Zn disseminated, massive sulfide deposit (Japan).

Association: n.d.

Distribution: From Lengenbach quarry, Binntal, Vallis, Switzerland [TL] and the Okoppe mine, Ohma Town, Shimokita-gun, Aomori Prefecture, northern Japan.

Name: Honors Fumiyuki *Marumo* (b. 1931), professor of mineralogy and crystallography at Nihon University, Tokyo, Japan, a specialist on the structures of sulfosalt minerals.

Type Material: n.d.

References: (1) Ozawa, T. and Y. Takéuchi (1983) A new Pb-As sulfosalt, having a long periodicity, from Lengenbach. Annual Meeting Mineralogical Society Japan, 1983, Abstr., 92 (in Japanese). (2) Shimizu, M., Y. Ishizaki, T. Honma, S. Matsubara, and R. Miyawaki (2005) Dufrenoyite and marumoite from the Okoppe mine, Japan. in "Mineral Deposit Research: Meeting the Global Challenge", J. Mao and F.P. Bierlein, eds. Springer-Verlag, Berlin, Vol. 1, 695-697.