Fizélyite $Pb_{14}Ag_5Sb_{21}S_{48}$(?)

Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals to 12 mm, deeply striated and lacking terminal faces. *Twinning:* On {010}, with two sets of polysynthetic twins, ‖ to [001] and to {001}, giving a chess-board pattern.

Physical Properties: *Cleavage:* {010}. *Tenacity:* Very brittle. Hardness = 2 VHN = n.d. D(meas.) = 5.56 D(calc.) = 5.224

Optical Properties: Opaque. *Color:* Dark lead-gray to steel-gray. *Streak:* Dark gray. *Luster:* Metallic. *Anisotropism:* Shown, but without distinct color effects.
R_1–R_2: (400) 41.6–48.3, (420) 40.6–47.4, (440) 39.6–46.5, (460) 39.3–46.1, (480) 39.0–45.8, (500) 38.8–45.6, (520) 38.4–45.2, (540) 38.0–44.9, (560) 37.8–44.5, (580) 37.4–43.8, (600) 36.9–43.2, (620) 36.3–42.4, (640) 35.6–41.4, (660) 34.8–40.3, (680) 34.0–39.0, (700) 33.0–37.8

Cell Data: *Space Group:* $P2_1/n$. $a = 13.21$ $b = 19.27$ $c = 8.68$ $\beta = 90.4°$ Z = 1

X-ray Powder Pattern: Herja, Romania.
3.34 (10), 3.49 (5), 2.96 (5), 2.89 (5), 3.80 (4), 2.80 (3), 2.77 (3)

Chemistry:

	(1)	(2)	(3)
Pb	37.48	38.10	38.49
Ag	7.70	7.37	7.16
Fe	0.62	0.51	
Mn		0.20	
Sb	34.02	33.25	33.93
As	0.32		
S	20.10	20.79	20.42
insol.	0.30		
Total	100.54	100.02	100.00

(1) Herja, Romania; corresponds to $Pb_{13.85}Ag_{5.47}Fe_{0.85}Sb_{21.40}As_{0.33}S_{48.00}$. (1) Băiţa, Romania; by electron microprobe, corresponds to $Pb_{13.61}Ag_{5.06}Fe_{0.68}Mn_{0.27}Sb_{20.22}S_{48.00}$. (3) $Pb_{14}Ag_5Sb_{21}S_{48}$.

Occurrence: In hydrothermal veins.

Association: Semseyite, galena, sphalerite, pyrite, pyrrhotite, quartz, dolomite (Herja, Romania).

Distribution: In Romania, from Herja (Kisbánya), Baia Mare (Nagybánya) district, [TL] and Băiţa (Rézbánya). In the Gabe-Gottes mine, at Třebsko, south-southwest of Příbram, Czech Republic. At St. Andreasberg, Harz Mountains, Germany. In the Les Farges mine, near Ussel, Corrèze, and from Bournac, Montagne Noire, Finistère, France. In the USA, from Morey, Nye Co., and at the Boss mine, Goodsprings district, Clark Co., Nevada. In Canada, from the Van Silver mine, ??, British Columbia. [cf Mineral. Record, 31.3, 219–229, among best in world??] At the Candelaria mine, Santa Isabel district, Bolivia. At the Inakuraishi mine, Hokkaido, Japan.

Name: For Sandor Fizély (1856–1918), Hungarian mining engineer, who discovered the mineral.

Type Material: Hungarian Natural History Museum, Budapest, Hungary, A85134.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 450. (2) Moëlo, Y., E. Makovicky, and S. Karup-Møller (1984) New data on the minerals of the andorite series. Neues Jahrb. Mineral., Monatsh., 175–182. (3) Berry, L.G. and R.M. Thompson (1962) X-ray powder data for the ore minerals. Geol. Soc. Amer. Mem. 85, 156–157.