Loseyite $(Mn^{2+},Zn)_7(CO_3)_2(OH)_{10}$

Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals are lathlike, elongated along [010], to 0.5 mm, in radiating bundles and subparallel aggregates.

Physical Properties: Hardness = ∼3 D(meas.) = 3.27 D(calc.) = 3.34

Optical Properties: Transparent. *Color:* Pale blue, pale brown; colorless in transmitted light. *Optical Class:* Biaxial (+). *Orientation:* $Y = b$. *Dispersion:* $r > v$, weak. $\alpha = 1.637$ $\beta = 1.648$ $\gamma = 1.676$ 2V(meas.) = 64°

Cell Data: *Space Group:* $A2/a$. $a = 16.408(7)$ $b = 5.540(3)$ $c = 15.150(4)$ $\beta = 95.48(3)°$ Z = 4

X-ray Powder Pattern: Franklin, New Jersey, USA.
3.68 (100), 2.63 (100), 3.80 (90), 7.49 (80), 2.54 (70), 3.54 (60), 2.79 (60)

Chemistry:

	(1)
CO_2	12.59
Mn_2O_3	1.03
FeO	0.64
MnO	34.94
ZnO	32.77
MgO	3.42
H_2O	13.83
insol.	0.16
Total	99.38

(1) Franklin, New Jersey, USA; corresponds to $(Mn_{3.49}Zn_{2.85}Mg_{0.60}Fe_{0.06})_{\Sigma=7.00}(CO_3)_{2.02}(OH)_{10.86}$. (2) Do.; by electron microprobe, average of seven analyses, not given; stated to correspond to $(Mn_{3.48}Zn_{2.99}Mg_{0.53})_{\Sigma=7.00}(CO_3)_2(OH)_{10}$.

Occurrence: A very rare mineral occurring in veinlets in massive ore in a metamorphosed stratiform zinc orebody.

Association: Pyrochroite, sussexite, chlorophoenicite, calcite.

Distribution: From Franklin, Sussex Co., New Jersey, USA.

Name: To honor Samuel R. Losey (1830–1904), mineral collector of Franklin, New Jersey, USA.

Type Material: National School of Mines, Paris, France; Harvard University, Cambridge, Massachusetts, 89344; National Museum of Natural History, Washington, D.C., USA, 95984, 162599.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 214–215. (2) Hill, R.J. (1981) The structure of loseyite. Acta Cryst., 37, 1323–1328.