Obradovicite $\mathbf{H_4(K,Na)CuFe_2^{3+}(AsO_4)(MoO_4)_5 \cdot 12H_2O}$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Crystals are tabular, showing {100}, {110}, {011}, to 0.1 mm, {100} striated ‖ [001]; generally in dense aggregates.

Physical Properties: Hardness = 2.5 D(meas.) = 3.55(5) D(calc.) = 3.68

Optical Properties: Translucent. *Color:* Pea-green. *Streak:* Pale pea-green. *Optical Class:* Biaxial (+). *Pleochroism:* Weak; in yellows. *Orientation:* $X = b$; $Y = c$; $Z = a$. *Dispersion:* Extreme. *Absorption:* $Z > X = Y$. $\alpha = 1.790$ $\beta = 1.798$ $\gamma = 1.811$ 2V(meas.) = 81°

Cell Data: *Space Group: Pcnm.* $a = 15.046$ $b = 14.848$ $c = 11.056$ Z = 4

X-ray Powder Pattern: Chuquicamata, Chile.
8.906 (10), 10.565 (8), 7.424 (8), 2.969 (6), 5.733 (5), 2.898 (5b), 2.761 (5)

Chemistry:

	(1)
MoO_3	55.29
As_2O_5	8.46
Fe_2O_3	10.12
CuO	5.85
Na_2O	0.56
K_2O	2.48
H_2O	18.33
Total	101.09

(1) Chuquicamata, Chile; corresponding to $H_4(K_{0.71}Na_{0.24})_{\Sigma=0.95}Cu_{0.99}Fe_{1.77}(As_{0.99}O_4)(Mo_{1.03}O_4)_5 \cdot 11.6H_2O$.

Occurrence: A rare secondary mineral in the oxidized zone of a Cu–Mo ore deposit.

Association: Jarosite, wulfenite, quartz.

Distribution: From Chuquicamata, Antofagasta, Chile.

Name: Honoring Martin T. Obradovic, who provided the type material.

Type Material: Colorado School of Mines, Golden, Colorado; National Museum of Natural History, Washington, D.C., USA, 164185.

References: (1) Finney, J.J., S.A. Williams, and R.D. Hamilton (1986) Obradovicite, a new complex arsenate-molybdate from Chuquicamata, Chile. Mineral. Mag., 50, 283–284. (2) (1987) Amer. Mineral., 72, 1026 (abs. ref. 1).