Scheuchzerite $NaMn^{2+}_9Si_9V^{5+}O_{28}(OH)_4$

Crystal Data: Triclinic. *Point Group*: $\bar{1}$. As acicular crystals to 0.5 mm along [1$\bar{1}$ 1].

Physical Properties: *Cleavage*: Good parallel elongation. *Tenacity*: Brittle. *Fracture*: n.d. Hardness = ~2.5 D(meas.) = 3.50(2) D(calc.) = 3.52

Optical Properties: Transparent. *Color*: Yellow-orange. *Streak*: Yellow-orange. *Luster*: Vitreous. *Optical Class*: Biaxial (+). *n*(min.) = 1.74 *n*(max.) = 1.75 *n*(calc.) = 1.74 *Pleochroism*: Weak, *X* = brown-yellow, *Y* = pale yellow.

Cell Data: *Space Group*: $P\bar{1}$. $a = 9.831(5)$ $b = 10.107(5)$ $c = 13.855(7)$ $\alpha = 86.222(10)°$ $\beta = 73.383(9)°$ $\gamma = 71.987(9)°$ Z = 2

X-Ray Diffraction Pattern: Fianel mine, near Ausserferrera, Graubünden, Switzerland. 2.71 (100), 3.09 (80), 7.91 (70), 8.68 (50), 3.22 (40), 2.92 (40), 1.61 (40)

Chemistry:

	(1)
V_2O_5	6.46
As_2O_5	0.14
SiO2	41.02
Al_2O_3	0.04
MgO	2.86
MnO	41.54
CaO	0.13
Na_2O	2.25
NiO	0.22
ZnO	0.96
H_2O	2.71
Total	98.33

(1) Fianel mine, near Ausserferrera, Graubünden, Switzerland; average electron microprobe analysis supplemented by FTIR spectroscopy; corresponds to $Na_{0.97}(Mn_{7.79}Mg_{0.95}Zn_{0.16}Ni_{0.04}Ca_{0.03}Al_{0.01})_{\Sigma=8.98}(V_{0.95}As_{0.02}Si_{9.08})_{\Sigma=10.05}O_{32.05}H_4$.

Mineral Group: Chain silicate.

Occurrence: In a metamorphosed syn-sedimentary exhalative Mn deposit.

Association: Saneroite, tiragalloite.

Distribution: At the Fianel Fe-Mn mine, near Ausserferrera, Ferrera valley, Graubünden, Switzerland.

Name: Honors Swiss naturalist Johann Jakob *Scheuchzer* (1672-1733), junior physician of the city of Zürich, curator of the Kunstkammer - a cabinet of natural history and curiosities, and the chair of physics and mathematics at the University of Zürich.

Type Material: Geological Museum, Lausanne, Switzerland (MGL 79355).

References: (1) Brugger, J., S. Krivovichev, N. Meisser, S. Ansermet, and T. Armbruster (2006) Scheuchzerite, $Na(Mn,Mg)_9[VSi_9O_{28}(OH)](OH)_3$, a new single-chain silicate. Amer. Mineral., 91, 937-943.