Ansermetite $Mn^{2+}V^{5+}_2O_6 \cdot 4H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As rare crystals with a monoclinic habit to 100 μm and crusts to several square centimeters.

Physical Properties: *Cleavage*: Excellent on {110}. *Fracture*: Uneven. *Tenacity*: Brittle. Hardness ≈ 3 D(meas.) = 2.57(2) D(calc.) = 2.49

Optical Properties: Transparent. *Color*: Carmine red (crystals); "bordeaux" (crusts). *Streak*: Orange. *Luster*: Adamantine.
Optical Class: Biaxial. *n*(min.) = 1.797 *n*(max.) = 1.856
Pleochroism: Strong, *X* = yellow-orange, *Z* = ruby-red.

Cell Data: *Space Group*: *C*2/*c*. *a* = 13.171(2) *b* = 10.1280(10) *c* = 6.9830(10)
β = 111.572(2)º Z = 4

X-ray Powder Pattern: Fianel mine, Ferrara Valley, Canton Graubünden, Switzerland.
7.82 (100), 3.029 (70), 4.51 (30), 3.91 (30), 5.69 (20), 5.06 (20), 3.98 (10)

Chemistry:

	(1)
V_2O_5	53.80
As_2O_5	0.44
MnO	20.85
SrO	0.14
H_2O	[24.77]
Total	100.00

(1) Fianel mine, Ferrara Valley, Canton Graubünden, Switzerland; average of 8 electron microprobe analyses, recalculated to 100%, H_2O calculated from stoichiometry; corresponding to $(Mn_{0.988}Sr_{0.004})_{\Sigma=0.992}(V_{1.989}As_{0.013})_{\Sigma=2.002}O_6 \cdot 4H_2O$.

Occurrence: Of synsedimentary to diagenetic origin, in thin fractures, in a metamorphosed exhalative Fe-Mn deposit in carbonate rocks.

Association: Fianelite, Fe oxyhydroxides, silica (Fianel mine); kegginite, gypsum, mesaite, sherwoodite (Packrat mine).

Distribution: From the Fianel mine, near Ausserferrera, Ferrara Valley, Canton Graubünden, Switzerland [TL]. At the Packrat mine, near Gateway, Mesa County and the Burro mine, San Miguel County, Colorado, USA.

Name: Honors Stefan *Ansermet* (b. 1964), Swiss mineralogist for contributions to the descriptive mineralogy and photography of Alpine mineralogical wealth.

Type Material: The Geology Museum, Lausanne, Switzerland (MGL #68936).

References: (1) Brugger, J., P. Berlepsch, N. Meisser, and T. Armbruster (2003) Ansermetite, $MnV_2O_6 \cdot 4H_2O$, a new mineral species with V^{5+} in five-fold coordination from Val Ferrera, eastern Swiss Alps. Can. Mineral., 41, 1423-1431. (2) (2004) Amer. Mineral., 89(10), 1575 (abs. ref. 1). (3) Kampf, A.R., J.M. Hughes, B.P. Nash, and J. Marty (2017) Kegginite, $Pb_3Ca_3[AsV_{12}O_{40}(VO)] \cdot 20H_2O$, a new mineral with a novel e-isomer of the Keggin anion. Amer. Mineral., 102(2), 461-465 [ansermetite locality]. (4) Kampf, A.R., J. Plášil, B.P. Nash and J. Marty (2019) Ammoniomathesiusite, a new uranyl sulfate-vanadate mineral from the Burro mine, San Miguel County, Colorado, USA. Mineral. Mag., 83, 115-121 [ansermetite locality].