Kolfanite $Ca_2Fe_3^{3+}O_2(AsO_4)_3 \cdot 2H_2O$

Crystal Data: Monoclinic. *Point Group:* n.d. As flattened crystals, compact radiating in nodules, to 1.5 mm, and in incrustations.

Physical Properties: *Cleavage:* One, parallel to flattening. *Tenacity:* Brittle. Hardness = n.d. VHN = 73 (100 g load). D(meas.) = 3.3 D(calc.) = 3.75

Optical Properties: Semitransparent. *Color:* Red; orange to yellow in transmitted light. *Luster:* Adamantine.
Optical Class: Biaxial (–). *Pleochroism:* X = pale yellow; $Y = Z$ = dark orange. $\alpha = 1.810$ $\beta = 1.923$ $\gamma = 1.933$ 2V(meas.) = 5°–7°

Cell Data: *Space Group:* n.d. $a = 17.86(4)$ $b = 19.66(5)$ $c = 11.11(3)$ $\beta = 96°$ Z = 12

X-ray Powder Pattern: Mt. Vasin-Myl'k, Russia.
8.90 (10), 2.72 (10), 3.29 (9), 2.95 (9), 2.216 (8), 1.646 (8), 5.64 (5)

Chemistry:

	(1)	(2)
P_2O_5	0.96	
As_2O_5	43.30	47.07
Sb_2O_5	2.20	
SiO_2	1.20	
Al_2O_3	0.05	
Fe_2O_3	32.09	32.70
CaO	14.97	15.31
H_2O	5.10	4.92
Total	99.87	100.00

(1) Mt. Vasin-Myl'k, Russia; by electron microprobe, total Fe as Fe_2O_3, H_2O by TGA; corresponds to $Ca_{1.95}(Fe_{2.93}Al_{0.01})_{\Sigma=2.94}(As_{2.74}Si_{0.14}P_{0.10}Sb_{0.10})_{\Sigma=3.08}O_{14} \cdot 2.06H_2O$.
(2) $Ca_2Fe_3O_2(AsO_4)_3 \cdot 2H_2O$.

Occurrence: An alteration product of holtite in a hydrothermally altered granite pegmatite.

Association: Mitridatite, arseniosiderite, laueite, apatite, montebrasite.

Distribution: From Mt. Vasin-Myl'k, Voron'i massif, Kola Peninsula, Russia.

Name: An abbreviation for the Russian KOL'skii Filial Akademii Nauk SSSR [Kola Branch of the Academy of Sciences of the USSR].

Type Material: Geology Museum, Kola Branch, Academy of Sciences, Apatity, 5537; Mining Institute, St. Petersburg, 1654/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 82769.

References: (1) Voloshin, A.V., Y.P. Men'shikov, L.I. Polezhaeva, and A.A. Lentsi (1982) Kolfanite, a new mineral from granite pegmatite, Kola Peninsula. Mineral. Zhurnal, 4(2), 90–95 (in Russian with English abs.). (2) (1983) Amer. Mineral., 68, 280 (abs. ref. 1). (3) (1982) Mineral. Abs., 33, 431 (abs. ref. 1).