Parascorodite $Fe^{3+}AsO_4 \cdot 2H_2O$

Crystal Data: Hexagonal. *Point Group*: $\bar{3}$ 2/*m*. Tabular to prismatic hexagonal crystals, to 1 μm, may be fan-shaped, in crudely hemispherical aggregates. *Twinning*: Observed.

Physical Properties: *Fracture*: Earthy to conchoidal in compact masses. Hardness = Soft.
D(meas.) = 3.213(3) D(calc.) = 3.358

Optical Properties: Semitransparent. *Color*: Yellowish white, greenish gray; very pale yellow to brown in transmitted light. *Streak*: Yellowish-white.
Optical Class: Uniaxial, very low birefringence. n(calc.) = 1.797 ω = n.d. ε = n.d.

Cell Data: *Space Group*: $P\bar{3}\,c1$. a = 8.9232(2) c = 9.296(3) Z = 6

X-ray Powder Pattern: Kaňk, Czech Republic.
4.076 (100), 2.806 (68), 3.053 (67), 4.973 (61), 2.661 (59), 2.520 (54), 4.184 (44)

Chemistry:

	(1)	(2)
SO_3	1.53	
P_2O_5	0.84	
As_2O_5	44.45	49.79
Al_2O_3	0.17	
Fe_2O_3	34.55	34.60
H_2O^+	16.81	
H_2O^-	1.60	
H_2O		15.61
Total	99.95	100.00

(1) Kaňk, Czech Republic; average of two analyses, corresponding to $(Fe_{0.98}Al_{0.01})_{\Sigma=0.99}[(AsO_4)_{0.88}(SO_4)_{0.04}(PO_4)_{0.03}]_{\Sigma=0.95}\cdot 2.05H_2O$. (2) $FeAsO_4\cdot 2H_2O$.

Polymorphism & Series: Dimorphous with scorodite.

Occurrence: A rare secondary mineral in mine dumps, presumed to be a pre-mining weathering product of arsenopyrite (Kaňk, Czech Republic).

Association: Scorodite, pitticite, bukovskýite, kaňkite, zýkaite, gypsum, jarosite, iron hydroxides (Kaňk, Czech Republic); scorodite, kaňkite, arsenic, pyrite, proustite (Svornost mine, Czech Republic).

Distribution: From the Kuntery mine, Kaňk, Kutná Hora district, and in the Svornost mine, Jáchymov (Joachimsthal), central Bohemia, Czech Republic.

Name: From the Greek *para*, for *near*, and the dimorphic relation to *scorodite*.

Type Material: National Museum, Prague, Czech Republic, P1p 25/98.

References: (1) Ondruš, P., R. Skála, C. Viti, F. Veselovskỳ, F. Novák, and J. Jansa (1999) Parascorodite, $FeAsO_4\cdot 2H_2O$ - a new mineral from Kaňk near Kutná Hora, Czech Republic. Amer. Mineral., 84, 1439-1444. (2) Perchiazzi, N., R. Ondru., R. Skála (2004) Ab initio X-ray powder structure determination of parascorodite, $Fe(H_2O)_2AsO_4$. Eur. J. Mineral. 16, 1003-1007. (3) (2005) Amer. Mineral., 90(8), 1469 (abs. ref. 2).