Chapmanite $Sb^{3+}Fe_2^{3+}(SiO_4)_2(OH)$

Crystal Data: Monoclinic. *Point Group:* m. Crystals lath-shaped; powdery, compact, massive.

Physical Properties: *Fracture:* Conchoidal to irregular when compact. Hardness = 2.5 when compact. D(meas.) = 3.69–3.75 D(calc.) = [4.29]

Optical Properties: Semitransparent. *Color:* Olive-green to deep yellow. *Streak:* Greenish yellow to deep yellow. *Luster:* Nonmetallic.
Optical Class: Biaxial. $\alpha = 1.85 \perp$ flat face. β = n.d. $\gamma = 1.96 \parallel$ length. 2V(meas.) = n.d.

Cell Data: *Space Group:* Cm. $a = 5.19$ $b = 8.99$ $c = 7.70$ $\beta = 100°40'$ Z = 2

X-ray Powder Pattern: Keeley mine, Canada; could be confused with bismutoferrite.
7.63 (100), 3.58 (100), 3.88 (90), 3.19 (90), 2.90 (70), 2.59 (70), 2.54 (35)

Chemistry:

	(1)	(2)	(3)
SiO_2	27.63	26.34	27.65
Al_2O_3	0.22	0.50	
Fe_2O_3	38.98	38.13	36.74
Sb_2O_3	31.04	30.53	33.54
H_2O^+	1.89	3.62	2.07
H_2O^-	0.31	0.64	
Total	100.07	99.76	100.00

(1) Smilkov, Czech Republic; corresponding to $(Sb^{3+}_{0.93}Fe^{3+}_{0.07})_{\Sigma=1.00}$ $Fe^{2+}_{2.00}(Si_{1.98}Al_{0.02})_{\Sigma=2.00}O_{8.00}(OH)$. (2) Do. (3) $SbFe_2(SiO_4)_2(OH)$.

Occurrence: In veinlets cutting gneisses containing varying amounts of graphite (Smilkov, Czech Republic).

Association: Silver (Keeley mine, Canada).

Distribution: In the Keeley mine, South Lorrain Township, Ontario, Canada. In Mexico, at Velardeña, and in the La Papa mine, Victoria, Hidalgo, Durango. At Smilkov, near Votice, Czech Republic. In Germany, at Bräunsdorf, Freiberg, and Schneeberg, Saxony. From near Tafone, Tuscany, Italy. In the Mine de la Bessade, Massiac, Haute-Loire, France. At the Suzuyama mine, Kagoshima Prefecture, Japan.

Name: To honor Edward John Chapman (1821–1904), Professor of Geology, University of Toronto, Toronto, Canada.

Type Material: Royal Ontario Museum, Toronto, Canada, M14075; Harvard University, Cambridge, Massachusetts, USA, 91501.

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