Jeanbandyite $(Fe^{3+}, Mn^{2+})Sn^{4+}(OH)_6$

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Crystal Data: Tetragonal, pseudocubic. *Point Group:* $4/m$. In crystals, showing dominant {111}, {001}, and {100}; {111} may be striated ‖ {100}, to 0.5 mm; in crude pseudo-octahedral aggregates, epitaxial on wickmanite or overgrown on natanite.

Physical Properties: *Cleavage:* {001} and {100}, fair. Hardness = ∼3.5
D(meas.) = 3.81(5) D(calc.) = 3.81

Optical Properties: Transparent to translucent. *Color:* Orange-brown to red-brown, pale yellow; light orange-brown in transmitted light. *Streak:* Yellow-brown. *Luster:* Vitreous to subadamantine.
Optical Class: Uniaxial (–). $\omega = 1.837(5)$ $\epsilon = 1.833(5)$

Cell Data: *Space Group:* $P4_2/n$. $a = 7.648(7)$ $c = 7.648(7)$ $Z = 4$

X-ray Powder Pattern: Llallagua, Bolivia.
3.83 (100), 2.71 (70), 1.710 (60), 1.562 (35), 4.41 (20), 1.912 (20), 2.205 (15)

Chemistry:

	(1)
SiO_2	0.79
SnO_2	49.61
Fe_2O_3	22.07
MnO	5.82
MgO	0.61
H_2O	[21.10]
Total	[100.00]

(1) Llallagua, Bolivia; by electron microprobe, average of eight analyses; Fe confirmed as principally Fe^{3+} microchemically, H_2O by difference; corresponds to $(Fe^{3+}_{0.71}Mn^{2+}_{0.21}Mg_{0.04})_{\Sigma=0.96}(Sn_{0.84}Si_{0.03})_{\Sigma=0.87}(OH)_6$.

Mineral Group: Stottite group.

Occurrence: In the oxide zone of polymetallic hydrothermal deposits.

Association: Wickmanite, fluorapatite, stannite, pyrite, jamesonite, cassiterite, wolframite, bismuthinite, franckeite, crandallite, quartz (Llallagua, Bolivia); natanite, pyrrhotite, siderite, quartz (Santa Eulalia, Mexico).

Distribution: From Llallagua, Bolivia. At Santa Eulalia, Chihuahua, Mexico. In the Mt. Pleasant tin mine, New Brunswick, Canada.

Name: Honors Jean A. Bandy, Wickenburg, Arizona, USA, who, with her husband Mark Bandy, translated Agricola's *De Natura Fossilium* from original Latin.

Type Material: Natural History Museum, Los Angeles, California, 18309; Harvard University, Cambridge, Massachusetts, 119125; National Museum of Natural History, Washington, D.C., USA, 149348.

References: (1) Kampf, A.R. (1982) Jeanbandyite, a new member of the stottite group from Llallagua, Bolivia. Mineral. Record, 13, 235–239. (2) (1983) Amer. Mineral., 68, 471–472 (abs. ref. 1).

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