Moolooite $Cu(C_2O_4)\cdot 0.4H_2O$

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Crystal Data: Orthorhombic. *Point Group:* n.d. Crystallites are lathlike or prismatic, to 4 μm, in microconcretions.

Physical Properties: Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.43

Optical Properties: Semitransparent. *Color:* Turquoise green, green, blue. *Luster:* Dull to waxy.
Optical Class: Biaxial. *Orientation:* $X \parallel$ elongation; $Z \perp$ elongation. $\alpha = 1.57$ $\beta = [1.77]$ $\gamma = 1.95$ 2V(meas.) = n.d.

Cell Data: *Space Group:* n.d. $a = 5.35$ (by analogy to synthetic $Cu(C_2O_4)\cdot 0.1H_2O$. $b = 5.63$ $c = 2.56$ Z = 1

X-ray Powder Pattern: Mooloo Station, Australia.
3.88 (100), 2.50 (30), 1.753 (30), 2.31 (25), 1.787 (25), 2.14 (20), 2.33 (18)

Chemistry:

	(1)
SiO_2	[6.35]
CuO	[46.7]
C_2O_3	42.3
H_2O	4.65
Total	[100.0]

(1) Mooloo Station, Australia; CHN analyzer gave C 14.10% and H 0.52% and a positive test for oxalate was obtained; calculating CuO for stoichiometry and assuming SiO_2 by difference, corresponds to $Cu(C_2O_4)\cdot 0.44H_2O$.

Occurrence: On an outcrop of quartz, thought to have formed by reaction between bird guano and soluble secondary copper minerals (Mooloo Station, Australia); in a mine shaft near tree roots (Sainte-Marie-aux-Mines, France).

Association: Opaline silica, sampleite, libethenite, brochantite, antlerite, atacamite, whewellite, chalcopyrite, digenite, covellite, gypsum, barite, jarosite (Mooloo Station, Australia).

Distribution: From Mooloo Station, 12 km east of the homestead, Murchison, Western Australia. At Sainte-Marie-aux-Mines, Haut-Rhin, France.

Name: For the original locality on Mooloo Station, Australia.

Type Material: Western Australian Museum, Perth, Australia, MDC6738.

References: (1) Clarke, R.M. and I.R. Williams (1986) Moolooite, a naturally occurring hydrated copper oxalate from Western Australia. Mineral. Mag., 50, 295–298. (2) (1987) Amer. Mineral., 72, 1025–1026 (abs. ref. 1).

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