

Crystal Data: Monoclinic. *Point Group:* $2/m$. As platelets to $\sim 50 \mu\text{m}$ in aggregates to 1 mm.

Physical Properties: *Cleavage:* Almost perfect on $\{010\}$ or $\{001\}$. *Fracture:* Uneven.
Tenacity: Brittle. Hardness = n.d. $D(\text{meas.}) = 2.78(1)$ $D(\text{calc.}) = 2.802$

Optical Properties: Transparent. *Color:* Sky-blue. *Streak:* Pale blue. *Luster:* Vitreous to waxy.
Optical Class: n.d. $n(\text{calc.}) = 1.64$. Highly birefringent.

Cell Data: Space Group: $P2_1/c$. $a = 3.4245(6)$ $b = 10.141(2)$ $c = 19.397(3)$ $\beta = 90.71(1)^\circ$ $Z = 4$

X-ray Powder Pattern: Val di Fiemme, Carano, Trento, Italy.
5.079 (100), 3.072 (58), 9.71 (55), 4.501 (50), 7.02 (28), 2.686 (25), 2.891 (20)

| Chemistry: | (1) | (2) |
|------------|---------|--------|
| Cu | 44.00 | 44.57 |
| Zn | 0.09 | |
| O | [44.40] | 44.89 |
| C | [8.34] | 8.42 |
| H | [2.10] | 2.12 |
| Total | 98.93 | 100.00 |

(1) Val di Fiemme, Carano, Trento, Italy; Cu and Zn by electron probe EDS analyses supplemented by Raman spectroscopy; values for O, C, and H calculated for $\text{Cu}_{1.996}\text{Zn}_{0.004}(\text{C}_2\text{O}_4)(\text{OH})_2 \cdot 2\text{H}_2\text{O}$.
(2) $\text{Cu}_2(\text{C}_2\text{O}_4)(\text{OH})_2 \cdot 2\text{H}_2\text{O}$.

Occurrence: In coalified wood trunks in continental sandstone which were permeated by mineralizing solutions containing Cu, U, As, Pb and Zn. The mineralization is a “sandstone-uranium type” roll front deposit. Oxalate anions came from diagenesis of plant remains in the sandstone.

Association: Baryte, olivenite, middlebackite, moolooite, brochantite, cuprite, devilline, malachite, azurite, zeunerite/metazeunerite, tennantite, chalcocite, galena.

Distribution: From northeast of the San Lugano Pass, Val di Fiemme, Carano, Trento, Italy.

Name: For the locality near where the first specimens were collected.

Type Material: Science Museum, Trento, Italy (5249).

References: (1) F. Demartin, I. Campostrini, P. Ferretti, and I. Rocchetti (2018) Fiemmeite $\text{Cu}_2(\text{C}_2\text{O}_4)(\text{OH})_2 \cdot 2\text{H}_2\text{O}$, a new mineral from Val di Fiemme, Trentino, Italy. *Minerals*, 8(6), 248.
(2) (2020) *Amer. Mineral.*, 105(8), 1279 (abs. ref. 1).