Lapeyreite $Cu_3O[AsO_3(OH)]_2 \cdot H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As rectangular crystals elongate along [010] to 0.2 mm, flattened on (001), displaying {100}, {010}, and {001}; as acicular fibrous crystals or powdery masses. *Twinning*: Ubiquitous by mirror reflection on (001) observed in X-ray analysis.

Physical Properties: *Cleavage*: Perfect on {001}. *Tenacity*: Brittle. *Fracture*: Conchoidal. Hardness = n.d. D(meas.) = ~4.3 D(calc.) = 4.385 Dissolves slowly in dilute HCl.

Optical Properties: Transparent to translucent (aggregates). *Color*: Dark pistachio-green; pistachio-green in transmitted light. *Streak*: Yellowish green. *Luster*: Vitreous to adamantine. *Optical Class*: Biaxial (+). $\alpha \approx 1.82$ $\beta \approx 1.85$ $\gamma \approx 1.902$ 2V(meas.) = 76° 2V(calc.) = 77° *Pleochroism*: Strong, X = light yellow-green, Y = pistachio-green, Z = dark pistachio-green. *Dispersion*: $r > v$, medium. O*rientation*: $X \wedge c \approx 12°$, $Y = a$, $Z = b$.

Cell Data: *Space Group*: $C2/m$. $a = 19.158(3)$ $b = 2.9361(6)$ $c = 9.193(2)$ $\beta = 103.26(1)°$ $Z = 8/3$

X-ray Powder Pattern: Roua copper deposits, Var valley, northwest Alpes-Maritimes, France. 2.984 (100), 3.173 (90), 2.484 (80), 5.842 (40), 2.396 (40), 4.476 (35), 2.337 (35)

Chemistry:

	(1)	(2)
CuO	46.49	47.73
As_2O_5	45.82	45.97
H_2O	[6.30]	6.30
Total	98.61	100.00

(1) Roua copper deposits, Var valley, northwest Alpes-Maritimes, France; average of 10 electron microprobe analyses; H_2O calculated from structure analysis; corresponds to $Cu_{2.96}As_{2.01}O_{6.99}(OH)_{2.01} \cdot 0.77H_2O$. (2) $Cu_3O[AsO_3(OH)]_2 \cdot 0.75H_2O$.

Occurrence: A secondary mineral in geodes of cuprite in a weathering zone.

Association: Trippkeite, olivenite, malachite, gilmarite, cornubite, connellite, theoparacelsite, brochantite, cuprite, native copper, algodonite, domeykite.

Distribution: From the old copper mines of Roua (North and South group, districts of Guillaumes and Daluis, respectively), upper part of the Var valley (Daluis gorge), ~50 km from Nice, northwest Alpes-Maritimes department, France.

Name: Honors Laurent *Lapeyre* (b. 1973), the mineral collector who found the mineral.

Type Material: Laboratory of Crystallography, University of Geneva, Switzerland (CR.010); the University of Adnan Menderes, Vocational School of Memnune Inci, Karacasu-Aydın (KMY.25) and the University of Dokuz Eylül, Vocational School of Izmir, Buca-Izmir (BM.73), Turkey.

References: (1) Sarp, H., R. Černý, H. Babalik, M. Hatipoğlu, and G. Mari (2010) Lapeyreite, $Cu_3O[AsO_3(OH)]_2 \cdot 0.75H_2O$, a new mineral: Its description and crystal structure. Amer. Mineral., 95, 171-176.