Barrotite $Cu_9Al(HSiO_4)_2[(SO_4)(HAsO_4)_{0.5}](OH)_{12}\cdot 8H_2O$

Crystal Data: Hexagonal. *Point Group*: 3. As hexagonal plates tabular on {001} to 0.5 mm or in radiating aggregates to 2 mm.

Physical Properties: *Cleavage*: Perfect mica-like on {001}. *Tenacity*: Flexible.
Fracture: Irregular. Hardness = 2 D(meas.) = 2.90(2) D(calc.) = 2.977 Nonfluorescent.

Optical Properties: Transparent to translucent. *Color*: Intense blue. *Streak*: Pale blue.
Luster: Vitreous to subadamantine.
Optical Class: Uniaxial (-). ω = 1.652(2) ε = 1.576(2) *Pleochroism*: *O* = blue, *E* = light blue.

Cell Data: *Space Group*: $P3_1$ or $P3_2$. a = 10.650(2) c = 21.954(7) Z = 3

X-Ray Diffraction Pattern: Roua, Alpes-Maritimes, France.
7.34 (100), 3.670 (90), 2.645 (90), 1.537 (50), 2.587 (30), 2.396 (25), 1.331(20)

Chemistry:

	(1)	(2)
CuO	54.63	56.07
Al_2O_3	4.18	3.99
SiO_2	9.06	9.41
SO_3	6.48	6.27
As_2O_5	4.14	4.50
H_2O	[21.51]	19.76
Total	100.00	100.00

(1) Roua, Alpes-Maritimes, France; average electron microprobe analysis supplemented by IR and Raman spectroscopy, H_2O by difference; corresponds to $Cu_{8.85}Al_{1.06}(HSiO_4)_2[(S_{1.04}O_4)(HAs_{0.93}O_4)_{0.5}](OH)_{12}\cdot 8H_{2.07}O$. (2) $Cu_9Al(HSiO_4)_2[(SO_4)(HAsO_4)_{0.5}](OH)_{12}\cdot 8H_2O$.

Occurrence: Secondary in sandstone.

Association: Chalcophyllite, malachite, cuprite, chrysocolla, algodonite.

Distribution: From the copper mines of Roua, Alpes-Maritimes, France.

Name: For the *Barrot* Dôme, where the mines of Roua are located.

Type Material: Aydin Adnan Menderes University, Memnune İnci Meslek Yüksek Okulu, Karacasu-Aydin, Turkey (KMY-26) and the Laboratory of Crystallography, University of Geneva, Geneva, Switzerland (CR-011).

References: (1) Sarp, H., R. Černý, D.Y. Pushcharovsky, P. Schouwink, J. Teyssier, P.A. Williams, H. Babalik, and G. Mari (2014) La barrotite, $Cu_9Al(HSiO_4)_2[(SO_4)(HAsO_4)_{0.5}](OH)_{12}\cdot 8H_2O$, un nouveau minéral de la mine de Roua (Alpes-Maritimes, France). Riviéra Scientifique, 98, 3-22.