Daubréeite $BiO(OH, Cl)$

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. Compact massive, columnar.

Physical Properties: *Cleavage:* [{001}, perfect] (by analogy to bismoclite). *Tenacity:* [Very plastic.] Hardness = [2–2.5] D(meas.) = 6.4–6.5 D(calc.) = [7.70]

Optical Properties: Opaque. *Color:* Pale yellow.
Optical Class: Uniaxial (–). $\omega = 1.91(1)$ $\epsilon =$ n.d.

Cell Data: *Space Group:* $P4/nmm$. a = 3.85(1) $c = 7.40(2)$ Z = 2

X-ray Powder Pattern: Tazna, Bolivia.
2.66 (s), 1.672 (s), 2.72 (ms), 1.562 (ms), 7.35 (m), 1.259 (m), 3.70 (w)

Chemistry:

	(1)	(2)
Fe_2O_3	0.72	
Bi_2O_3	89.60	92.74
Cl	7.50	7.06
H_2O	3.84	1.79
$-O = Cl_2$	1.69	1.59
Total	99.97	100.00

(1) Tazna, Bolivia. (2) $BiO(OH, Cl)$ with OH:Cl = 1:1.

Occurrence: A secondary mineral formed by alteration of bismuth or bismuthinite, intermixed with "clay" (Tazna, Bolivia).

Association: Kaolinite (?).

Distribution: From the Constancia mine, Tazna, Bolivia.

Name: For Gabriel Auguste Daubrée (1814–1896), French mineralogist and geologist.

Type Material: National Museum of Natural History, Paris, France, 94.247.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 60–62. (2) Bannister, F.A. (1935) The crystal-structure of the bismuth oxyhalides. Mineral. Mag., 24, 49–58.