

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As sprays of thin prismatic to acicular crystals, to 0.12 mm, elongated along [001] and showing {010}, {100}, {001}, {210}, and {201}.

**Physical Properties:** *Cleavage:* Good parallel {001} and {100}. *Fracture:* Uneven. *Tenacity:* Brittle. *Hardness* = n.d. *D(meas.)* = 1.81(4) *D(calc.)* = 1.82

**Optical Properties:** Transparent. *Color:* Colorless to white. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (-).  $\alpha = 1.390(4)$   $\beta = 1.421(4)$   $\gamma = 1.446(4)$   $2V(\text{calc.}) = 82.2^\circ$

**Cell Data:** *Space Group:*  $P2_1/n$ .  $a = 14.722(3)$   $b = 9.240(2)$   $c = 15.052(3)$   $\beta = 90.01(3)^\circ$   
 $Z = 4$

**X-ray Powder Pattern:** Dome Rock mine, Olary Province, South Australia, Australia.  
6.951 (100), 7.357 (80), 10.530 (60), 3.510 (45), 3.934 (40), 4.754 (35), 3.336 (35)

Chemistry:	(1)	(2)
Na <sub>2</sub> O	16.08	16.53
MgO	7.08	7.17
CaO	0.43	
P <sub>2</sub> O <sub>5</sub>	37.60	37.86
H <sub>2</sub> O	[38.45]	38.45
Total	99.64	100.00

(1) Dome Rock mine, Olary Province, South Australia, Australia; average of 9 electron microprobe analyses, presence of OH, PO<sub>3</sub> and H<sub>2</sub>O confirmed by IR spectroscopy, H<sub>2</sub>O from structure analysis; corresponding to Na<sub>2.93</sub>Mg<sub>0.99</sub>Ca<sub>0.04</sub>P<sub>2.99</sub>O<sub>9.97</sub>·12.03H<sub>2</sub>O. (2) Na<sub>3</sub>MgP<sub>3</sub>O<sub>10</sub>·12H<sub>2</sub>O.

**Occurrence:** A secondary mineral in the oxidized zone of a polymetallic sulfide deposit.

**Association:** Conichalcite, chrysocolla, cuprite, malachite, azurite, quartz, goethite.

**Distribution:** From the Dome Rock mine, Boolcoommatta Reserve, 42 km north of Mingary railway siding and ~470 km northeast of Adelaide, Olary Province, South Australia, Australia.

**Name:** Honors Henry Yorke Lyell Brown (1844-1928), Government Geologist of South Australia from 1882 to 1912, who authored the first geological map of the whole colony in 1899.

**Type Material:** South Australian Museum, Adelaide, South Australia, Australia (G33088).

**References:** (1) Elliott, P., J. Brugger, T. Caradoc-Davies, and A. Pring (2013) Hylbrownite, Na<sub>3</sub>MgP<sub>3</sub>O<sub>10</sub>·12H<sub>2</sub>O, a new triphosphate mineral from the Dome Rock Mine, South Australia: description and crystal structure. *Mineral. Mag.*, 77(3), 385-398. (2) (2015) *Amer. Mineral.*, 100, 2353-2354 (abs. ref. 1).