Cymrite $BaAl_2Si_2(O,OH)_8 \cdot H_2O$

Crystal Data: Monoclinic, pseudohexagonal. *Point Group:* 2. As thin pseudohexagonal platelets and prisms, to 7 mm; also fibrous.

Physical Properties: *Cleavage:* Perfect on {001}, imperfect on {110}. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = 2–3 D(meas.) = 3.413(5) D(calc.) = 3.447 Greenish white fluorescence under UV.

Optical Properties: Translucent. *Color:* Colorless when pure; commonly dark green or brown due to inclusions of alteration products. *Luster:* Vitreous to satiny.
Optical Class: Biaxial (–); pseudouniaxial. $\alpha = 1.611$ $\beta = 1.619$ $\gamma = 1.621$
2V(meas.) = 0°–5°

Cell Data: *Space Group:* $P2_1$. $a = 5.324$–5.334 $b = 36.6$ $c = 7.662$–7.705 $\beta = 90°$
Z = [8]

X-ray Powder Pattern: Brooks Range, Alaska, USA.
2.96 (100), 3.96 (90), 2.67 (70), 7.71 (50), 2.24 (40), 2.21 (40), 1.850 (40)

Chemistry:

	(1)	(2)	(3)
SiO_2	37.65	30.3	30.54
TiO_2		0.0	
Al_2O_3	14.94	25.9	25.91
Fe_2O_3	9.26		
MnO	0.86		
BaO	31.50	38.7	38.97
K_2O		0.03	
H_2O^+	5.31	[4.58]	4.58
Total	99.52	[99.5]	100.00

(1) Benallt mine, Wales. (2) Pacheco Pass, California, USA; by electron microprobe, theoretical H_2O added. (3) $BaAl_2Si_2O_8 \cdot H_2O$.

Occurrence: In veinlets cutting hydrothermal manganese silicate ore (Benallt mine, Wales); in a copper-bearing deposit in dolostones and siderites (Ruby Creek, Alaska, USA); in jadeite graywacke near the contact of an ultramafic rock and the Franciscan Formation (San Benito Co., California, USA); a product of high-pressure metamorphism of manganese-rich rocks (Andros Island, Greece).

Association: Ganophyllite (Benallt mine, Wales); calcite, albite, lawsonite (San Benito Co., California, USA); hyalotekite, banalsite, hyalophane, hedyphane, manganoan biotite (Långban, Sweden).

Distribution: In the Benallt mine, Rhiw, Lleyn Peninsula, Wales. From Långban, Värmland, Sweden. In the USA, from Ruby Creek, Brooks Range, Alaska, and near Pacheco Pass, San Benito Co., California. On Andros Island, Cyclades Islands, Greece. From the Lianyuan-Shaoyang area, Hunan Province, China. In the Shiramaru mine, Tokyo Prefecture, Japan. At Northwest Nelson, South Island, New Zealand. In the Saureisk deposit, Polar Ural Mountains, and near Lake Baikal, eastern Siberia, Russia. From the Black Rock and Hotazel mines, near Kuruman, Cape Province, South Africa. A number of other occurrences are known.

Name: From *Cymru*, the Welsh name for *Wales*, the locality of discovery.

Type Material: The Natural History Museum, London, England, 1944,36 and 1944,48.

References: (1) Campbell Smith, W., F.A. Bannister, and M.H. Hey (1949) Cymrite, a new barium mineral from the Benallt manganese mine, Rhiw, Carnarvonshire. Mineral. Mag., 28, 676–681. (2) (1950) Amer. Mineral., 35, 135 (abs. ref. 1). (3) Runnells, D.D. (1964) Cymrite in a copper deposit, Brooks Range, Alaska. Amer. Mineral., 49, 158–165. (4) Essene, E.J. (1967) An occurrence of cymrite in the Franciscan Formation, California. Amer. Mineral., 52, 1885–1890. (5) Drits, V.A., A.A. Kashaev, and G.V. Sokolova (1975) Crystal structure of cymrite. Kristallografiya (Sov. Phys. Crystal.), 20, 280–286 (in Russian).