Bergenite $(Ba,Ca)_2(UO_2)_3(PO_4)_2(OH)_4 \cdot 5.5H_2O$

Crystal Data: Monoclinic. *Point Group:* $2/m$. As thin tabular to needlelike crystals, to 3 mm.

Physical Properties: Hardness = n.d. D(meas.) = ∼4.1 D(calc.) = 4.98 Radioactive; pale green fluorescence under SW UV.

Optical Properties: Semitransparent. *Color:* Yellow to greenish yellow. *Streak:* Pale yellow. *Optical Class:* Biaxial (–). $\alpha = 1.660$ β = n.d. $\gamma = 1.722$ 2V(meas.) = 60°

Cell Data: *Space Group:* $P2_1/c$. $a = 23.32$ $b = 17.19$ $c = 20.63$ $\beta = 93.0°$ Z = 18

X-ray Powder Pattern: Streuberg, Germany.
7.73 (100), 3.837 (80), 3.054 (60), 2.874 (50), 2.826 (50), 8.54 (40), 3.742 (40), 3.415 (40)

Chemistry:

	(1)	(2)
UO_3	62.54	62.4
P_2O_5	10.98	11.4
CaO	2.44	2.5
BaO	13.98	13.2
H_2O	[10.06]	[10.5]
Total	[100.00]	[100.0]

(1) Streuberg, Germany; by electron microprobe, average of five analyses, H_2O by difference; corresponds to $(Ba_{1.22}Ca_{0.58})_{\Sigma=1.80}(UO_2)_{2.93}(PO_4)_{2.07}(OH)_4 \cdot 5.5H_2O$. (2) Do.; by electron microprobe, H_2O by difference.

Occurrence: On a mine dump (Streuberg, Germany).

Association: "Uranocircite", torbernite, autunite, dewindtite, barian uranophane (Streuberg, Germany).

Distribution: In Germany, from the Streuberg, near Bergen, Saxony, and at Menzenschwand, Black Forest.

Name: For the first-noted occurrence of the mineral near Bergen, Germany.

Type Material: n.d.

References: (1) Bültemann, H.W. and G.H. Moh (1959) Bergenit, ein neues Mineral der Phosphuranylit-Gruppe. Neues Jahrb. Mineral., Monatsh., 232–233 (in German). (2) (1960) Amer. Mineral., 45, 909 (abs. ref. 1). (3) Piret, P. and M. Deliens (1981) Nouvelles données sur la bergenite holotype. Bull. Minéral., 104, 16–18 (in French with English abs.).