

NEW MINERAL NAMES

1 Tc—Strontiohilgardite, 2 M (Cc)—Calciumhilgardite (= Hilgardite), 3 Tc—Calciumhilgardite (= Parahilgardite)

OTTO BRAITSCHE. 1 Tc—Strontiohilgardit, (Ca, Sr)₂ [B₅O₈(OH)₂Cl] und seine Stellung in der Hilgarditgruppe, X₂ [B₅O₈(OH)₂Cl]. *Beiträge Mineral. u. Petrog.*, 6, 233–247 (1959).

Strontiohilgardite was found in insoluble residues from "Hartsalz" of the 820 m. level of the Königshall-Hindenburg II K mine, Reyershausen, Germany. The sample contained about 37 vol. % sylvite, 37% halite, 22% dense white anhydrite. Other insoluble minerals were anhydrite, quartz, mica, clays, celestite, K-feldspar, magnesite, hematite, and Fe-boracite.

The mineral occurs as crystals with max. dimensions 2 mm. long, 1 mm. wide, 0.5 mm. thick. Crystal forms observed (010), (0 $\bar{1}$ 0), (dominant), (100), ($\bar{1}$ 00), (001), (00 $\bar{1}$), ($\bar{1}$ 01), (0 $\bar{1}$ 1), (120), and (111). Measurements of 13 crystals (5 left, 8 right) were made. Triclinic, pedial, $a:b:c = 0.9845:1:1.0198$, $\alpha 75.4^\circ$, $\beta 61.2^\circ$, $\gamma 60.5^\circ$. Twinning not observed. Piezoelectric. Precession, rotation, and Weissenberg photographs gave $a_0 6.38$, $b_0 6.489$, $c_0 6.608 \text{ \AA}$, space group $P 1$, $Z=1$. Cleavage (001 good, (211) distinct. Indexed x-ray powder data are given. The strongest lines are 2.89 (s), 2.82 (s), 2.775 (s), 2.142–2.137 (ms), 2.092 (ms), 1.986 (ms), 1.829 (ms, broad).

The mineral is colorless to pale yellow, luster vitreous to adamantine. Hardness 5–7. $G. 2.99_3$ (suspension method). Optically biaxial, positive, n_s (at 500 $m\mu$), $\alpha 1.638$, $\beta 1.639$ (calcd.), $\gamma 1.670$, $2V 19 \pm 3^\circ$, optic axis nearly parallel to [100], $\gamma' : [100] = 21 \pm 1^\circ$. For α , $\phi - 146^\circ$, $\rho 14^\circ$; for β , $\phi - 6^\circ$, $\rho 79^\circ$; for γ , $\phi 86^\circ$, $\rho 81^\circ$.

Spectrographic analysis on 6 mg. by Braitsch with x-ray fluorescence determination of Sr and microchemical determinations by O. Pfundt of Cl and H₂O gave B₂O₃ 40–45, CaO 15–20, SrO 20–25, Cl 8.2, H₂O 5.3, Al₂O₃ 0.2, MgO 0.1, SO₃ n.d., sum 90–105%. Calculation of the molecular weight from the unit cell and G. indicate Ca: Sr = 1.08:0.92. The formula Ca_{1.08}Sr_{0.92} [B₅O₈(OH)₂Cl] requires B₂O₃ 46.37, CaO 26.13, SrO 25.39, Cl 9.44, H₂O 4.80%.

Partial analyses showed SrO 1.3% in hilgardite and 1.6% in parahilgardite from the type localities. If the original analyses (see Dana's System, 7th Ed., Vol. II, pp. 382–382) are corrected for the SrO present, the formulas of both are closer to Ca₂B₅O₈(OH)₂Cl than to the formula previously given, Ca₈B₁₈O₃₃Cl₄·4H₂O.

Restudy of hilgardite and parahilgardite showed previous x-ray data to be partly in error. The new data are:

	Strontiohilgardite Reyershausen	Hilgardite Choctaw	Parahilgardite Choctaw
Symmetry	Triclinic	Monoclinic	Triclinic
Space group	$P 1$	$C c$	$P 1$
a_0 (Å.)	6.38	6.31	6.31
b_0 (Å.)	6.480	11.33	6.484
c_0 (Å.)	6.608	11.44	17.50
α	75.4°	90°	84.0°
β	61.2°	90°	79.6°
γ	60.5°	90°	60.9°
Cell vol. (Å ³)	208	817	615
Z	1	4	3

To show the relationships of the polymorphs, the names suggested are: 1 Tc—Strontiohilgardite, 2 M (Cc)—Calciumhilgardite (= Hilgardite), 3 Tc—Calciumhilgardite (= Parahilgardite).

DISCUSSION—The naming of polymorphs in a manner showing the type of structure (wurtzite—4H, muscovite—1M, etc.) has many advantages and is coming into wide use. But using the terms as prefixes is confusing. Why not instead hilgardite—2M for hilgardite, hilgardite—3Tc for parahilgardite, and strontian hilgardite—1 Tc for strontiohilgardite?

MICHAEL FLEISCHER

Hellyerite

K. T. WILLIAMS. Nickel mineralization in western Tasmania. *Australasian Inst. Mining and Metallurgy*, **F. L. Stillwell Anniversary Vol.** (December 1958), pp. 263–302.

The name hellyerite is given to a light blue mineral of composition $\text{NiCO}_3 \cdot 6\text{H}_2\text{O}$ found as a secondary coating on nickel ore at the Lord Brassey Mine, Heazlewood. A full description was published in the *Am. Mineral.*, **44**, 533–538, 1959.

M. F.

Unnamed ($2\text{Na}_2\text{SO}_4 \cdot \text{CaSO}_4 \cdot 2\text{H}_2\text{O}$?)

FRED BENINGTON. Preliminary identification of crystalline phases in a transparent stalactite. *Science*, **129**, 1227 (1959).

Glassy stalactites found in the Flint Ridge Cavern system of south-central Kentucky effloresced and melted when brought above ground. Samples transported to the laboratory under a cool, water-saturated atmosphere, consisted of two phases. The major phase melted at 33–34° C., had “the refractive index 1.40 and sp. gr. 1.46,” and is therefore identified as mirabilite. Solution of the mirabilite in an ice cold alcohol-water mixture gave about 1 per cent of insoluble material, occurring in monoclinic needles. It was slightly soluble in water, readily soluble in dilute HCl. The solution contained Na, Ca, and SO_4 with spectroscopic traces of Mg, Al, and Si. Analysis gave Na:Ca=3.821. The loss in weight at 125° in a vacuum was 7.9–8.0 per cent. It is suggested that this is the compound $2\text{Na}_2\text{SO}_4 \cdot \text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ synthesized by Hill and Wills, *J. Am. Chem. Soc.*, **60**, 1647 (1938), by the action of Na_2SO_4 solution on gypsum, and which is not a stable phase at 25° or above. “The measured refractive index is 1.518”; Hill and Wills reported 1.510.

DISCUSSION.—Adequate optical and x-ray data must be provided before this can be accepted.

M. F.

NEW DATA

Ianthinite

C. GUILLEMIN AND J. PROTAS. Ianthinite et wyartite, *Bull. soc. franç. mineral. crist.*, **82**, 80–86 (1959).

Re-examination of 6 samples of ianthinite from 3 localities shows it to be orthorhombic with a_0 11.52 ± 0.05 , b_0 7.15 ± 0.02 , c_0 30.3 ± 0.1 Å, $a:b:c = 1.611:1:4.238$, $Z = 4$. Cleavage (001) perfect, also (100). Color black to violet, streak brownish-violet. Hardness 2–3. G . 5.16 ± 0.05 . Optically biaxial, neg., n_s , α 1.685 ± 0.002 , β 1.91 ± 0.01 , γ 1.93 ± 0.01 . Strongly pleochroic, X (=c) colorless, Y (=b) purple, Z (=a) violet. The formula of Big-nand (1955) was $\text{UO}_{2.84} \cdot x\text{H}_2\text{O}$. A new determination of H_2O gave 9.90%, which gives

$\text{UO}_2 \cdot 0.84 \cdot 1.76\text{H}_2\text{O}$ or $\text{UO}_2 \cdot 5\text{UO}_3 \cdot 10.56\text{H}_2\text{O}$. A D.T.A. curve shows a large endothermic break at about 100° , a small exothermic break at 320° (oxidation of $\text{UO}_2?$), and an endothermic break at 630° . X-ray powder data are given.

M. F.

DISCREDITED MINERALS

Epi-ianthinite (= Schoepite)

C. GUILLEMIN AND J. PROTAS. Ianthinite and wyartite, *Bull. soc. franç. mineral. crist.*, **82**, 80–86 (1959).

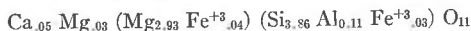
Epi-ianthinite (Schoep and Stradiot, *Am. Mineral.*, **32**, 344–350 (1947); Frondel, *U. S. Geol. Survey Bull.* **1054**, 60–62 (1958)) is probably schoepite. All samples of ianthinite examined showed yellow pseudomorphs that correspond to "epi-ianthinite" and give x-ray patterns practically identical with that of schoepite. It is not clear, however, whether the type material was re-examined.

M. F.

Aphrodite (= Stevensite)

C. CAILLÈRE AND S. HÉNIN. Une probleme de nomenclature: les montmorillonites magnésiennes (Saponite—aphrodite—rassoulite—stevensite). *Bull. groupe franç. argiles* **8**, No. 3, 37–40 (1956).

Restudy of aphrodite (Berlin, 1840, Dana's System, 6th Ed., p. 675) shows it to be a member of the montmorillonite group with formula (water-free basis) of



It is suggested that the single name saponite be used for saponite, aphrodite, rassoulite (ghassoulite), and stevensite, or that saponite be used for material showing appreciable tetrahedral substitution, stevensite for material showing only slightly tetrahedral substitution.

DISCUSSION.—The name aphrodite (1840) has priority over stevensite (1873), but since the name had not been used for over a hundred years, priority may be set aside. The second suggestions above is preferred; it is recommended that the names stevensite and saponite be retained.

M. F.