

NEW MINERAL NAMES

Navajoite

ALICE D. WEEKS, MARY E. THOMPSON, AND A. M. SHERWOOD, Navajoite, a new vanadium oxide from Arizona. *Science*, **119**, No. 3088, p. 326 (1954).

Navajoite is dark brown, soft, fibrous, with silky luster and brown streak. $G=2.56$. Optically biaxial, probably negative, extinction parallel, $\alpha 1.905 \pm 0.003$, β about 2.02, γ slightly above 2.02; pleochroic with X and Y yellowish brown, Z dark brown and parallel to the fiber length.

The x -ray pattern is distinct from those of hewettite and corvusite. Single crystal measurements could not be made, but a rotation photograph of a small bundle of fibers give the unit cell length along the fibers as 3.65 Å. Study of a zero-layer photograph suggests that navajoite is probably monoclinic with $a_0 17.43 \pm 1$, $b_0 3.65 \pm .05$, $c_0 12.25 \pm 0.1$ Å, $\beta 97^\circ \pm 30'$. This unit cell would contain approximately 6 ($V_2O_5 \cdot 3H_2O$).

Analysis (Sherwood) gave V_2O_5 71.68, V_2O_4 3.08, Fe_2O_3 3.58, H_2O 20.30, SiO_2 1.20, CaO 0.22; sum 100.06%, indicating the formula $V_2O_5 \cdot 3H_2O$.

Navajoite occurs in a U-V deposit in the Monument no. 2 mine, Navajo Indian Reservation, Apache County, Arizona. The ore impregnates sandstone. Associated minerals are corvusite, tyuyamunite, rauvite, hewettite, steigerite, and limonite.

The name is for the Navajo Indians.

MICHAEL FLEISCHER

Matteuccite

GUIDO CAROBBI AND CURCIO CIPRIANI, Ralstonite e bisolfato sodico (matteuccite) fra i prodotti della fumarole vesuviane. *Rend. accad. nazl. Lincei, Classe sci., fis., mat., e nat.*, **12**, 23–29 (1952).

Analyses are given of stalactites from the 1933 eruption of Vesuvius. These are mixtures: mercallite ($KHSO_4$) was identified optically; ralstonite (hydrated fluoride of Na, Mg, and Al) was identified optically and by its x -ray powder pattern. A third component with large $2V$ is probably $NaHSO_4 \cdot H_2O$ (the synthetic compound has $2V=86^\circ$, positive); the powder pattern shows a strong line at $d=3.47$, which is interpreted as corresponding to lines at $d=3.55$ and $d=3.43$ given for $NaHSO_4 \cdot H_2O$ in the *A.S.T.M.* file.

The name is for Vittorio Matteucci, 1862–1909, Director of the Vesuvius Observatory.
M. F.

Väyrynenite

A. VOLBORTH, Väyryneniiti, $[BeMn(PO_4)(OH, F)]$, *Geologi (Finland)*, **6**, P. 7 (1954).

Preliminary announcement. The mineral is monoclinic, $\beta=102^\circ 49' \pm 10'$. Optically negative, indices $\alpha=1.640$, $\beta=1.662$, $\gamma=1.667$, all $\pm .001$. $G=3.183$. From the Viitaniemi pegmatite, Eräjärvi, Finland. The name is for Heikki Väyrynen, Finnish geologist.

M. F.

Bøggildite

RICHARD BØGVAD, Mineralogical observations on the cryolite deposit at Ivigtut, Greenland. *Medd. Dansk. Geol. Foren.*, **12**, 109–110 (1951).

A. H. NIELSEN, Chemical analysis of a new mineral, bøggildite, from Ivigtut, Greenland. *Acta Chem. Scandinavica*, **8**, 136 (1954).

Analysis of material containing only traces of quartz and sphalerite gave Al 10.04, Fe 0.06, Sr 31.89, Ba 0.35, Mg 0.18, Ca 0.20, Mn trace, Na 8.60, K 0.15, Li trace, PO_4 17.63,

F 31.70, H₂O none, Cl, Zn, Ce not found; sum 100.80%, corresponding closely to Na₂Sr₂Al₂(PO₄)F₈. When heated in a glass tube over a Bunsen burner, the mineral melts and gives a small amount of white sublimate. Color flesh-red. Monoclinic (or triclinic) with twinning lamellae. H.=4-5, G.=3.66. Optically biaxial, positive, axial angle rather large, α above 1.46, β and γ below 1.47. Occurs at Ivigtut, Greenland, at the contact of cryolite with greisen. Associated minerals include siderite, fluorite, black cryolite, quartz, green mica, and sphalerite.

The name is for Professor O. B. Bøggild, University of Copenhagen.

M. F.

Tertschite

HEINZ MEIXNER, Neue türkische Boratlagerstätten. *Berg. u. hüttenmann. Monatsh.*, **98**, 86-92 (1953).

HEINZ MEIXNER, Einige Boratminerale (Colemanit und Tertschit, ein neues Mineral) aus der Türkei. *Fortschr. Mineral.*, **31**, 39-42 (1953)

HEINZ MEIXNER, Mineralogische Beobachtungen an Colemanit, Inyoit, Meyerhofferit, Tertschit, und Ulexit aus neuen türkischen Boratlagerstätten Heidelberg. *Beitr. Mineral. Petrog.*, **3**, 445-455 (1953).

The new mineral occurs at the Kurtpinari mine, Faras, Turkey, as snow-white masses that are finely fibrous with silky luster, resembling ulexite. Analysis of air-dried material (W. Zwicker, analyst) gave CaO 22.40, MgO tr., B₂O₃ 37.26, H₂O (total) 37.72, gangue 2.68; sum 100.06%, corresponding to Ca₄B₁₀O₁₉ · 20 H₂O.

The mineral loses 10.16% H₂O at 50°, 21.24 at 110°, 26.70% at 150°. It is slightly soluble in hot H₂O, easily soluble in dilute HCl. The optical properties are difficult to measure because of the fibrous character. Monoclinic? α' 1.502, γ' 1.517, extinction inclined, γ' to long axis 30-33°. X-ray powder data are given; the strongest lines are at 2.83, 2.35, 2.02, 3.12, 2.16, and 1.93 Å. Under ultra-violet light, it fluoresces light to deep blue-violet, the same as ulexite.

The name is for Prof. Hermann Tertsch, Univ. of Vienna.

M. F.

Tavorite

M. L. LINDBERG AND W. T. PECORA, Tavorite and barbosalite: two new phosphate minerals from Minas Gerais, Brazil. *Science*, Vol. **119**, no. 3099, p. 739 (1954).

Tavorite is the iron analogue of montebrasite, with which it is isostructural. Analysis: Li₂O 7.64, FeO 2.39, MnO 1.47, Fe₂O₃ 42.57, P₂O₅ 39.78, H₂O⁺ 5.76, H₂O⁻ 0.40; sum 100.01%, formula LiFe(PO₄)(OH). It is yellow, fine-grained, with mean n 1.807, sp.gr. 3.29. X-ray powder diagrams show principal d -spacings at 3.045, 3.285, 4.99, 4.68, and 2.474 Å. Tavorite occurs in the Supucaia pegmatite, Minas Gerais, intimately intergrown with barbosalite, and associated with many phosphates including triphylite and its oxidation products, frondelite, faheyite, variscite, montebrasite, and apatite.

The name is for Professor Elysiario Tavora, Universidade do Brasil, Rio de Janeiro.

M. F.

Barbosalite

M. L. LINDBERG AND W. T. PECORA, *op. cit.*

Barbosalite is the ferric analogue of scorzalite. Analysis, recalculated after deducting admixed tavorite, gave FeO 13.12, MnO 2.82, Fe₂O₃ 41.70, P₂O₅ 37.54, H₂O 4.92%, corre-

sponding to the formula $\text{Fe}'' \text{Fe}''' (\text{PO}_4)_2(\text{OH})_2$. It is structurally identical with the synthetic compound described by Gheith (*Am. Mineral.*, **38**, 612–628 (1953)) as ferrous ferric lazulite. It occurs in black, nearly opaque, grains and masses. Thin edges are dark blue-green and show pleochroism. The mean apparent n is 1.810, sp. gr. 3.60. X-ray powder diagrams show principal d -spacings at 3.361, 3.313, 4.84, 3.239, 3.160, and 2.327 Å. For occurrence, see Tavorite above.

The name is for A. L. de M. Barbosa, Professor of Geology, Escola de Minas, Ouro Preto, Brazil.

M. F.

NEW DATA

Lead Selenate (PbSeO_4) (=kerstenite?)

J. GONI AND C. GUILLEMIN, *Données nouvelles sur les sélénites et séléniates naturels*, *Bull. soc. franç. mineral. crist.*, **76**, 422–429 (1953).

Lead selenate, PbSeO_4 , was found in orthorhombic prisms and acicular needles 1 mm. long. at Pacajake, Bolivia, and at Cerro de Cacheuta, Argentina. Colorless to greenish yellow, luster greasy, hardness = $3\frac{1}{2}$. Cleavage imperfect perpendicular to the elongation. Optically biaxial, negative, $\alpha = 1.96$, $\gamma = 1.98$, $2V$ about 50° , elongation positive, extinction parallel. Difficulty soluble in warm (1+1) HNO_3 . The x-ray pattern is given; it is identical with that of synthetic PbSeO_4 and very similar to that of anglesite. This may be identical with kerstenite (see *Dana's System*, Vol. II, p. 640), but the properties of the latter are so little known that comparison is not yet possible.

M. F.

Ahlfeldite

J. GONI AND C. GUILLEMIN, *op. cit.*

The validity of ahlfeldite, hydrate nickel selenite, is established on material from the type locality, Pacajake, Bolivia. Ahlfeldite is rose-colored, luster vitreous, no cleavage, fracture conchoidal. Hardness = $2\frac{1}{2}$, $G = 3.4 \pm .05$. Optically biaxial negative, $\alpha = 1.73$, $\gamma = 1.76$, $2V$ about 80° , extinction inclined 16° ; strongly pleochroic, X rose, Y pale green, Z brown green. Easily soluble in dilute HNO_3 . Gives microchemical reactions for nickel, selenite, and a little Co. X-ray powder data are given. Cobaltomenite may be identical with ahlfeldite, but the type material is not available to check this.

M. F.

Molybdomenite

J. GONI AND C. GUILLEMIN, *op. cit.*

Molybdomenite, considered to be a dubious mineral (*Dana's System*, Vol. II, p. 640), is confirmed as a valid species by study of type material from Cerro de Cacheuta, Argentina, and from a new find at Trogtal, Harz. It is orthorhombic (?), with one perfect cleavage and another less distinct perpendicular to the first. Colorless to yellowish-white, luster pearly (Cerro de Cacheuta), greasy (Trogtal), hardness = $3\frac{1}{2}$. Optically biaxial, negative, $\alpha = 2.12$, $\beta = 2.14$, $2V$ about 80° , extinction parallel, elongation positive. Soluble in cold (1+10) HNO_3 ; gives qualitative tests for lead and selenite. The x-ray powder pattern differs from that of PbSeO_4 .

M. F.

Churchite

G. F. CLARINGBULL AND M. H. HEY, A re-examination of churchite. *Mineralog. Mag.*, **30**, 211–217 (1953).

Churchite from Cornwall, described in 1865 as a hydrated phosphate of Ca and rare earths, is shown by analysis and x-ray study to be (Y, Er, La) PO₄ · 2H₂O, identical with weinschenkite (Laubmann, 1922). It is urged that the name churchite be retained, since it has priority, the error in the original description by which the yttrium group was overlooked being considered insufficient to cause preference to be given to weinschenkite.

DISCUSSION: This is a hard decision to make; the original description was so incomplete that rather remarkable insight would have been needed by Laubmann to recognize the identity. For the sake of uniformity, the suggestion of the authors should be followed and the name weinschenkite abandoned.

M. F.

Chlorites

M. H. HEY, A new review of the chlorites. *Mineralog. Mag.*, **30**, 277–292 (1954).

From consideration of 117 analyses, a new classification is suggested which retains the following names:

Orthochlorites—corundophilite, pseudothuringite, sheridanite, ripidolite, daphnite, clinochlore, pycnochlorite, brunsvigite, pennine, diabantite, and talc-chlorite. For the oxidized chlorites (Fe₂O₃ more than 4%)—thuringite and its variety klementite, chamosite, and delessite. The following are varieties and the names can be discarded: aphrosiderite (=ripidolite), bavalite and metachlorite (daphnite), berlaute, chloropite, euralite, and hallite (delessite), grochauite (sheridanite), leuchtenbergite (clinochlore), loganite and pyrosclerite (pennine), subdelessite (chamosite), also rumpfite and pseudophite, which fall into two of the new groups. Doubtful species include batavite, epichlorite, epiphanite, moravite, parathuringite, phyllochlore, steatargillite, and strigovite.

DISCUSSION: We need more of this.

M. F.

DISCREDITED MINERALS

Arnimite (= Antlerite?)

P. KOKKOROS, Antlerit aus Lavrion. Eventuelle Identität des Arnimits mit Antlerit. *Tschermaks Mineralog. petrog. Mitt.*, **3**, 295–297 (1953).

Arnimite (Weisbach, 1886) was described as a calcium-free variety of devillite with formula Cu₃(SO₄)₂(OH)₆ · 3H₂O. Frondel (*Dana's System*, 7th Ed., Vol. 2, p. 592) states that he "found an authentic specimen to be sensibly orthorhombic with nX 1.720 ± 0.003. The five darkest powder lines are d 4.84, I 10; 3.60, 9; 2.68, 8; 2.57, 8; 2.13, 8."

Kokkoros points out that Frondel's x-ray data agree well with the strongest lines of the powder diagram given by antlerite, Cu₃(SO₄)(OH)₄, which has nX 1.724–1.726.

M. F.

Jurupaite (= Xonotlite)

H. F. W. TAYLOR, The identity of jurupaite and xonotlite. *Mineralog. Mag.*, **30**, 338–341 (1954).

X-ray study of jurupaite and xonotlite, both from the type localities, showed them to be identical with $a = 8.50$, $b = 7.32$, $c = 7.05$ Å, beta 90° ± 1°. The compositions differ in that

jurupaite was reported to contain 4.19% MgO and much more water than xonotlite.

M. F.

Falkenhaynite (= Tetrahedrite)

JAN KUTINA, The identity of falkenyaynite with tetrahedrite. *Bull. internat. Acad. tcheque Sci.*, (1951), No. 34, 5 pp.

Falkenhaynite (Scharizer, 1890) has been considered a dubious species, probably tetrahedrite. Spectrographic and x -ray study of the type material show it to contain Cu and Sb as essential elements, Ag, As, Fe, and Zn as subordinate to insignificant, and to give a powder pattern (a_0 10.357 Å) identical with that of tetrahedrite.

M. F.