

## NEW MINERAL NAMES

### Birnessite

L. H. P. JONES AND ANGELA A. MILNE. Birnessite, a new manganese oxide mineral from Aberdeenshire, Scotland. *Mineralog. Mag.*, **31**, 283-288 (1956).

The mineral occurs cementing gravel in a pan 0.5 to 1.5 inches thick at a depth of about 12 feet at Birness, 20 miles north of Aberdeen. Analysis gave  $\text{SiO}_2$  18.92,  $\text{Al}_2\text{O}_3$  3.32,  $\text{Fe}_2\text{O}_3$  2.88,  $\text{TiO}_2$  0.28,  $\text{MnO}_2$  54.24,  $\text{MnO}$  4.66,  $\text{CaO}$  1.65,  $\text{Na}_2\text{O}$  2.17,  $\text{H}_2\text{O}^-$  5.88,  $\text{H}_2\text{O}^+$  4.99, sum 98.99%. Grain counts showed the sample to contain quartz 20.0, clay 7.3, limonite 5.2, rutile 0.1, birnessite 67.4% by weight. Deducting the impurities indicated, the formula  $(\text{Na}_{0.7}\text{Ca}_{0.3})\text{Mn}_7\text{O}_{14} \cdot 2.8\text{H}_2\text{O}$  is obtained. Spectrographic traces of As, Ba, Cr, Co, Cu, Ge, K, Li, Mg, Mo, Ni, P, Pb, Sr, and Zr were found.

Some of the grains showed well-defined facets. Hardness  $1\frac{1}{2}$ , G. 2.9, corrected for impurities 3.0. The crystals are nearly opaque, dark brown in transmitted light. They are faintly birefringent and give an indistinct uniaxial negative interference figure; the  $ns$  vary, but are approximately  $\epsilon$  1.69,  $\omega$  1.73.

The x-ray pattern consists of 4 lines: (in Å) 7.27 s, 3.60 w, 2.44 m, and 1.412 m. The two inner lines disappear when the material is heated to  $110^\circ$ ; the other two remain even at  $300^\circ$ . This pattern corresponds to that of synthetic (and natural) material previously described by several authors as " $\delta$ - $\text{MnO}_2$ " and "manganous manganite," both of which are now considered to be disordered forms of a distinct crystal phase.

DISCUSSION: Further study is needed. The low indices of refraction are surprising for material with  $\text{Mn}:\text{O}=1.90$ .

MICHAEL FLEISCHER

### Bobkovite

YU. V. KAZITSYN. A new mineral, aluminum-alkali opal, bobkovite. *Kristallografiya* (1955), No. 4, pp. 116-125; from an abstract by E. M. Bohnshtedt—*Kupletskaya in Zapiski Vses. Mineralog. Obshch.*, **85**, No. 3, p. 376 (1956).

The mineral has an opaline appearance. It is grayish-white, translucent on fresh fracture, with waxy luster. On drying, it cracks and becomes opaque and white. Analysis gave  $\text{SiO}_2$  89.20,  $\text{Al}_2\text{O}_3$  2.87,  $\text{Fe}_2\text{O}_3$  0.54,  $\text{CaO}$  0.37,  $\text{MgO}$  0.26,  $\text{K}_2\text{O}$  0.28,  $\text{H}_2\text{O}$  3.24, loss on ignition 3.08, sum 99.84%. Neglecting  $\text{H}_2\text{O}$  and loss on ignition, this gives  $(\text{K}, \text{Ca}, \text{Mg}, \text{Fe})_{0.5}(\text{Si}_{29}\text{Al})\text{O}_{60}$ . The most intense x-ray lines correspond to 3.24, 2.021, 1.650, 1.047, 1.788 Å; these are indexed on a cubic cell with  $a_0=12.12$  kX, with  $Z=40$ . The structure differs from that of all other modifications of  $\text{SiO}_2$ . It is changed on heating at  $950^\circ$ ; after  $1\frac{1}{2}$  hours at  $1350^\circ$ , inverts to cristobalite.

G.  $2.238 \pm 0.008$ . Under the microscope, very fine-grained, with slight birefringence (up to 0.004),  $n$  about 1.45-1.46. "Observed in the zone of hydrothermal and metasomatic transformation of old rocks of eastern U.S.S.R., in fissures and cavities of leached carbonates."

The name is for the crystallographer N. A. Bobkov.

M. F.

### Ginzburgites

F. V. ЧУКХРОВ. Colloids in the Earth's crust. *Izd. Akad. Nauk S.S.S.R.* (1955), p. 598; from an abstract by E. M. Bohnshtedt—*Kupletskaya in Zapiski Vses. Mineralog. Obshch.*, **85**, No. 3, p. 382-383 (1956).

The name ginzburgites is applied to a group of minerals with the general empirical

formula  $(Al, Fe)_2O_3 \cdot 2SiO_2 \cdot nH_2O$ , with  $n$  generally above 2, the ratio Al:Fe variable, and the ratio  $(Al, Fe)_2O_3:SiO_2$  ranging from 1:1 to 1:2.5. Distinguished from kaolinite by containing Fe. The heating curve corresponds to that of halloysite. Has a higher capacity for adsorption of bases than halloysites or kaolinites. The extreme greenish members of the group represent hoeferites; other members of the group have been described under the names ferrihalloysite, faratsihite, and others.

The name is for I. I. Ginzburg.

DISCUSSION: One might reasonably have supposed that the time was long past when such useless names would be proposed, without even  $x$ -ray data to support them. Hoeferite and faratsihite have been identified as nontronite or mixtures containing nontronite.

M. F.

### Shorsuite

N. T. VINNICHENKO. Shorsuite—a new mineral species of the alum group. *Trudy Middle-Asiatic Gos. Univ.* 63, 19–22 (1955); from an abstract by E. M. Bohnshedt—*Kupletskaya in Zapiski Vses. Mineralog. Obshch.*, 85, No. 3, p. 377 (1956).

Analysis by E. F. Kasyanova gave  $Al_2O_3$  12.15,  $Fe_2O_3$  1.01, FeO 4.28, MgO 2.09,  $Na_2O$  0.70,  $SO_3$  37.07,  $H_2O^-$  28.60,  $H_2O^+$  13.46,  $SiO_2$  0.72, CaO and  $K_2O$  not detected, sum 100.08%, corresponding to  $(Fe, Mg)Al_2(SO_4)_4 \cdot 19.6 H_2O$ . The author indicates that the sample may have lost water during storage.

The mineral occurs in fibers up to 1 cm. long, luster silky, color grayish-white. Hardness low. Soluble in water, giving a solution with astringent taste.  $Np$  1.5025,  $Ng$  1.5175, extinction inclined. In the burner flame, easily fusible with effervescence. Found in Middle Asia in the zone of oxidation of aluminous deposits.

The name is for the locality (not given in abstract).

DISCUSSION: The mineral corresponds in every detail except the slightly high indices of refraction to a member of the pickeringite-halotrichite group.

M. F.

### Eunicite

J. E. PAIVA HETTO. Eunicite—nova variedade de montmorillonite necontrada nos melafiros de compostos da Serra de Botucatu. *Engenharia, mineria e metalurgia*, 22, No. 128, p. 99 (1955); from an abstract by E. M. Bohnshedt—*Kupletskaya in Zapiska Vses. Mineralog. Obshch.*, 85, No. 3, p. 382 (1956).

The name eunicite is given to a yellow-green to green product of decomposition of melaphyres from the Serra de Botucatu, Portugal. It has conchoidal fracture, and an agate-like texture, with color zoning. Two analyses gave  $SiO_2$  42.00, 42.00;  $Al_2O_3$  18.50, 23.20;  $Fe_2O_3$  10.10, 7.10; FeO 0.28, 0.40; MgO 2.80, 3.40; CaO 0.25, 0.20;  $Na_2O$  0.35, 0.31;  $K_2O$  0.21, 0.21;  $TiO_2$  0.10, 0.20;  $P_2O_5$  0.03, 0.07;  $H_2O^-$  15.50, 12.50;  $H_2O^+$  10.60, 10.50, MnO trace, trace; sum 100.72, 100.09%. The ratio  $(Fe, Al)_2O_3:SiO_2$  was 1:2.7 to 1:3.0 for 4 samples. The cation exchange capacity was 80 to 100 m.e.q. per 100 g. on material dried at 110°. It is indicated that the mineral differs in its thermal curve from other clay minerals.

DISCUSSION: Insufficient basis for a new name for a montmorillonite mineral.

M. F.

### Nenadkevite

V. A. POLYKAROVA. Nenadkevite—a new uranium silicate. *Atomnaya Energiya*, No. 3, 132–134 (1956).

The mineral occurs in very fine (0.05–0.001 mm) prismatic crystals. Color black, greenish-black, brown, to reddish-brown, orange, and yellowish; different colors are ob-

served in single samples. Luster vitreous to greasy. Sp. gr. 4.16–4.81 (black), 3.80–3.91 (brownish), 3.65–3.70 (yellow-orange). No cleavage, fracture flat conchoidal. Very brittle. Non-magnetic.

Transparent, usually isotropic, rarely has anisotropic patches. In transmitted light the dark varieties are bottle-green with  $N_m$  1.716–1.781; light varieties are yellowish with  $N_m$  1.618–1.635. Dark varieties were amorphous but when heated to 600° gave an  $x$ -ray pattern analogous to that given by the light material. The strongest lines are 2.90, 1.883, 4.65, 3.50, 2.18, and 1.746.

Six analyses are given, showing a highly variable composition. Five contain  $UO_3$  38.50–66.10, the other contains  $UO_3$  30.94,  $UO_2$  21.72;  $SiO_2$  10.60–20.25,  $PbO$  6.37–11.7,  $CaO$  4.04–8.30,  $MgO$  0.7–11.08, rare earths 0.31–1.29%,  $H_2O$  5.6–9.86%. The formula is given as  $(U^{+4}, Y, Ce) U^{+6} (Ca, Mg, Pb)(SiO_4)_2(OH)_4 \cdot nH_2O$ . It is considered to be a member of the thorite-uranothorite series and to differ from coffinite in the substitutions for uranium.

Nenadkevite was found "in the zone of sodium metasomatism of iron-uranium deposits, associated with brannerite, uraninite, albite, aegirine, alkali amphiboles, and magnetite." The locality is not given.

The name is for K. A. Nenadkevich.

DISCUSSION: An unnecessary name for what is probably a variety of coffinite. Should not be confused with nenadkevichite (*Am. Mineral.*, **40**, 1154 (1955)).

M. F.

### Urgite

R. V. GETSEVA. Hydronasturan and urgite—new minerals of the group of hydrated uranium oxides. *Atomnaya Energiya*, No. 3, 135–136 (1956) (in Russian).

The name urgite is given to a reddish-yellow to amber-yellow oxidation product of pitchblende. It is vitreous, hardness 2–3, sp. gr. for low-water varieties 4.17. Dense, no cleavage, fracture conchoidal. Under the microscope variable, in part isotropic with  $n$  up to 1.705, in part biaxial with  $N_g$  1.669–1.680,  $N_p$  1.647–1.657. Gives no  $x$ -ray powder pattern.

Partial microchemical analyses gave: reddish-yellow,  $UO_3$  70.83,  $PbO$  2.67,  $Al_2O_3 + Fe_2O_3$  4.23,  $SiO_2$  3.92,  $H_2O$  10.42%; amber-yellow,  $UO_3$  71.09,  $PbO$  2.90,  $Al_2O_3 + Fe_2O_3$  1.89,  $SiO_2$  3.80,  $H_2O^-$  7.95,  $H_2O^+$  6.14%. Spectrographic analysis showed the presence of Mg, Co, Bi, V, Cu, I, and Be (?).

The name is from uranium and gidrat (hydrate).

DISCUSSION: Should not have been named. May be a mixture ("gummite"). Dr. Clifford Frondel points out that the optical data for biaxial material are close to those of uranophane and the analysis shows  $SiO_2$ .

M. F.

### Hydronasturan

R. V. GETSEVA. Hydronasturan and urgite—new minerals of the group of hydrated uranium oxides. *Atomnaya Energiya*, No. 3, 135–136 (1956) (in Russian).

The name hydronasturan is given to a partially oxidized pitchblende. Two partial microchemical analyses gave  $UO_2$  22.2,  $UO_3$  54.07,  $PbO$  5.64,  $H_2O$  5.71%, and  $UO_2$  11.90,  $UO_3$  63.00,  $PbO$  5.78,  $H_2O^-$  3.77,  $H_2O^+$  3.44%. This is formulated as  $UO_2 \cdot k UO_3 \cdot nH_2O$ ,  $k=2.3-5$ ,  $n=3.9-9$ . Color black to bottle-green in fine fragments. Luster vitreous. Brittle with conchoidal fracture. Hardness decreases with increasing  $UO_3$  and  $H_2O$  from 3.8 to 3.1. Sp. gr. of highly hydrated material is 4.3. Under the microscope, isotropic,  $n$  1.715–1.738.

Gives no x-ray pattern except rarely diffuse lines of the uraninite pattern. Loses water up to 300°, remaining amorphous, and yields crystalline  $U_3O_8$  at 500°.

No locality is given.

DISCUSSION: The material should not have been given a name.

M. F.

#### Borgniezite

PIERRE DE BETHUNE AND ANDRE MEYER. Les carbonatites de la Lueshe (Kivu, Congo belge) *Compt. rend* **245**, 1132–1134 (1956).

The name borgniezite is given to a sodic amphibole, whose pleochroism is reminiscent of that of glaucophane and some arfvedsonites, but which is distinguished from these by its large extinction angle. No other data are given.

The name is for G. Borgniez, who discovered the carbonatite, adjacent to which the mineral occurs.

DISCUSSION: There is no excuse for burdening the literature with such names.

M. F.

#### Abernathyite

M. E. THOMPSON, BLANCHE INGRAM AND E. B. GROSS. *Am. Mineral.*, **41**, 82–90 (1956).

#### Osumilite

AKIHO MIYASHIRO. *Am. Mineral.*, **41**, 104–116 (1956). *Am. Mineral.*, **39**, 690 (1954).

#### Metatyuyamunite

T. W. STERN, L. R. STIEFF, M. N. GIRHARD AND ROBERT MEYROWITZ. *Am. Mineral.*, **41**, 187–201 (1956).

#### Coffinite

L. R. STIEFF, T. W. STERN AND A. M. SHERWOOD. *Am. Mineral.*, **41**, 675–688 (1956).

#### Niocalite

E. H. NICKEL. *Am. Mineral.*, **41**, 785–786 (1956).

#### Gerstleyite

CLIFFORD FRONDEL AND VINCENT MORGAN. *Am. Mineral.*, **41**, 839–843 (1956).

#### Lesserite

C. FRONDEL, V. MORGAN AND J. T. L. WAUGH. *Am. Mineral.*, **41**, 927–928 (1956).

### NEW DATA

#### Starkeyite

OLIVER R. GRAW. *Am. Mineral.*, **41**, 662 (1956).

Professor Grawe points out that the mineral described by him in 1945 as being  $FeSO_4 \cdot 4H_2O$  was actually  $MgSO_4 \cdot 4H_2O$  and transfers the name starkeyite to the latter composition. The name leonhardtite was proposed for this mineral in 1952 by Berdinski (see *Am. Mineral.*, **37**, 1072 (1952)) and has priority over starkeyite for this composition. However, since leonhardtite has been in use since 1843 for a variety of laumontite, it seems best to use starkeyite for  $MgSO_4 \cdot 4H_2O$ .

M. F.

## DISCREDITED MINERALS

**Offretite (=Phillipsite)**

H. STRUNZ. Die Zeolithe Gmelinit, Chabasit, Levyn (Phakolith, Herschelit, Seebachit, Offretit). *Neues Jahrb. Mineral., Monatsh.*, 1956, 250-259.

Offretite was described by Gonnard in 1890 (Dana's System, 6th Ed., P. 1043) as a new mineral with a composition close to that of phillipsite, but hexagonal or rhombohedral. X-ray study of material from the type locality shows it to be identical with phillipsite.

M. F.

**Cryphiolite = mixture**

G. F. CLARINGBULL AND M. H. HEY. The nature of cryphiolite, *Mineralog. Mag.*, **31**, 346-347 (1956).

Cryphiolite was described in 1886 by Scacchi as a phosphate-fluoride of Ca and Mg. X-ray photographs of one of Scacchi's original crystals shows it to be a pseudomorph after wagnerite, now consisting of a mixture of apatite, sellaite, and a little wagnerite.

M. F.

**Diderichite (=Rutherfordine)**

CLIFFORD FRONDEL AND ROBERT MEYROWITZ. *Am. Mineral.*, **41**, 127-133 (1956).

M. F.

**Vesbine (=Volborthite)**

C. GUILLEMIN, Contribution à la minéralogie des arsénates, phosphates et vanadates de cuivre. II. Phosphates et vanadates de cuivre. *Bull. soc. franc. mineral et crist.*, **79**, 219-275 (1956).

Vesbine was described in 1879 by Scacchi as yellow incrustations on Vesuvian lavas. Analyses by Zambonini and Carobbi, *Am. Mineral.* **12**, 1-10 (1927) showed it to be a lead copper vanadate, probably mottramite. A new analysis and x-ray study show no lead; the x-ray pattern is that of volborthite,  $\text{Cu}_3(\text{VO}_4)_2 \cdot 3\text{H}_2\text{O}$ , plus an admixture of vésigniéite.

M. F.