

NEW MINERAL NAMES

M. FLEISCHER

Imgreite

O. E. YUSHKO-ZAKHAROVA, A new mineral-nickel telluride: *Doklady Akad. Nauk SSSR* **154** (3), 613-614 (1964) (in Russian).

The mineral occurs as inclusions, mostly 0.06-0.1 mm in size, in hessite. Microspectrographic analysis showed nickel and tellurium (no quantitative figures given). X-ray data showed it to be a member of the isomorphous series NiTe-NiTe₂ (melonite). Alloys of composition NiTe₂, NiTe_{1.75}, NiTe_{1.5}, NiTe_{1.25}, and NiTe were prepared by fusion in vacuo at 1400°. The properties of the mineral are closest to those of the alloy with composition NiTe.

X-ray powder data are given (23 lines), after deducting hessite lines. The strongest lines are 2.88 (10) (melonite 2.81, NiTe 2.84), 1.588 (5), (melonite 1.586, NiTe 1.56), 3.10 (3), 2.09 (3) (melonite 2.05, NiTe 2.10), 1.397 (3), 1.252 (3), 1.105 (3), 1.041 (3).

Color pale rose. Reflecting power in air (yellow light) 52.4%, in immersion 41.1%. Birefringence slight. Relief high. Polishes well. Hardness 210-220 kg/sq. mm., coefficient of anisotropy of hardness 1.13, whereas melonite has 77-137 and 1.40-1.50, respectively.

The mineral was found in the Nittis-Kumuzhya deposit of the copper-nickel ores of the Monchegorsk region in material of late paragenesis, associated with sylvanite, calaverite and other tellurides.

The name is for the Institute of the Mineralogy, Geochemistry and Crystal Chemistry of Rare Elements (IMGRE).

DISCUSSION.—The name, particularly in view of the uncertainty as to the exact composition, seems unnecessary for what seems to be a tellurium-deficient member of the melonite solid solution series.

Monohydrocalcite

E. I. SEMENOV, Hydrrous carbonates of calcium and sodium: *Kristallografiya*, **9**, 109-110 (1964) (in Russian).

Sapozhnekov and Tsvetkov, *Doklady Akad. Nauk SSSR*, **124**, 402, 405 (1959) described white material from bottom sediments of Lake Issyk-Kul, Kirgizia. These occurred as fine-grained white to gray material, with calcite. Analyses of 2 samples, one of which had been exposed to the atmosphere for some years, gave CaO 46.58, 49.30; MgO 0.21, —; CO₂ 36.43, 38.96; H₂O⁻ 5.30, —; H₂O⁺ 10.98, 11.61; R₂O₃ 0.24, —; insol. 2.11, 0.79; sum 101.85, 100.66%. Deducting insoluble, Mg, and H₂O⁻, these give CaCO₃·0.65 H₂O.

The x-ray powder diagram (27 lines) had strongest lines 2.17 (10), 1.926 (10), 4.49 (9), 3.15 (9), 2.90 (8), 1.770 (7), 1.746 (7). The material was optically uniaxial, (+), with N_p 1.545, N_g 1.590, both ±0.003. The DTA curve showed endothermal breaks at 200-300° and at about 970°.

Semenov points out that the x-ray pattern is very close to that of CaCO₃·H₂O, synthesized by many investigators. The strongest lines of the synthetic compound, according to Baron and Pesneau, *Comptes Rend.* **243**, 17 (1956) are 4.30 (vs), 3.05 (vs), 1.926 (vs), 2.813 (s), 2.368 (s), 2.157 (s). According to Lipman, *Naturwissenschaften* **46**, 19 (1959), synthetic CaCO₃·H₂O is hexagonal, *a* 10.62, *c* 7.54 Å., *G* 2.38, *Z*=9. The synthetic material is uniaxial (-), N_p 1.543, N_g 1.590.

Semenov concludes that the material from Lake Issyk-Kal. is identical with the synthetic monohydrate, despite the difference in optical sign. He attributes the low water content to admixed calcite.

Tatarskite

V. V. LOBANOVA, The new mineral tatarskite: *Zapiski Vses. Mineralog. Obsch.* **92**, 697-702 (1963) (in Russian).

One complete and one partial analysis was made by K. A. Baklanova on material picked under binoculars. These gave CaO 36.32, 36.3; MgO 6.78, 6.78; Na₂O 1.22, 0.96; K₂O 0.78, 0.55; SO₃ 15.45, 15.34; Cl 14.84, 14.85; CO₂ 9.60, —; H₂O (so given) 16.65, 17.2; H₂O (so given) 0.35, —; TiO₂ tr., —; Al₂O₃ 0.25, —; SiO₂ 0.23, —; P₂O₅ tr., —; F 0.10, 0.10; sum 102.96, —; (O = Cl₂) 3.35 = 99.22%. (The sums are given as 102.57 and 99.61; the molecular ratios correspond to the figures above M.F.). This corresponds approximately to Ca_{3.1}Mg_{0.8}(K,Na)_{0.1}(CO₂)₁(SO₄)₁Cl₂(OH)₂·3.4H₂O or Ca₃Mg(SO₄)(CO₂)Cl₂(OH)₂·3.5H₂O. The mineral is soluble in water on boiling, in dilute HCl in the cold. Three DTA curves are given; they show a sharp exothermal peak at 492–518°, a slight to sharp endothermal curve at about 532°, and an exothermal peak at about 560°.

Unindexed x-ray powder data (45 lines) are given; the strongest lines are 2.967 (10), 2.625 (9), 5.34 (8), 2.004 (8), 2.917 (7), 1.585 (7), 2.522 (6), 2.310 (6).

Tatarskite is transparent, colorless to slightly yellowish, G. 2.341, H. 2½. Luster vitreous pearly on cleavage. Two average cleavages on pinacoids. Optically biaxial (—), α 1.567, β 1.654, γ 1.7222 (all ± 0.002), 2V 83° calc. Extinction parallel, elongation positive. Probably orthorhombic.

The mineral was found in coarsely crystalline masses in a drill core in anhydrite rock, of the Caspian depression at depths of 850–900 m. Halite, bischofite, magnesite, hilgardite, and strontio-hilgardite are present. Tatarskite is evidently of secondary origin. It is in part present as pseudomorphs after an unknown prismatic mineral.

The name is for Professor V. B. Tatarskii of Leningrad Univ.

DISCUSSION.—The indices of refraction are surprisingly high for material of this composition with low G and H.

Glucine

N. A. GRIGORIEV, Glucine, a new beryllium mineral: *Zapiski Vses. Mineralog. Obshch.* 92, 691–696 (1963) (in Russian)

Analyses of material dissolved by 5–10% HCl from fractions of sp. gr. 2.275–2.436, less than 2.447, and 2.318–2.338 gave, resp., P₂O₅ 36.99, 34.02, 35.80; SiO₂ —, 0.95, —, CO₂ 1.88, 2.14, —; Al₂O₃ 0.95, —, —; Fe₂O₃ (limonite) —, 0.60, —; BeO 28.97, 29.46, —; CaO 14.11, 12.72, —; MgO —, tr., —; H₂O 13.70, 13.70, —; F —, 0.12, —; insol. 2.90, not detd., 1.92; sum 99.50%, —, —. Spectrographic analysis by L. I. Kolenko showed Sr 0.1, Ba 0.1–0.3, Pb 0.1–0.3, Cu, Na, Y 0.01%. The first two analyses give formulas: Ca_{0.86}Be_{3.94}[(PO₄)_{1.79}(AlO₄)_{0.06}(CO₃)_{0.15}]_{2.00}(OH)_{3.63}·0.80H₂O and Ca_{0.84}Be_{4.28}[(PO₄)_{1.76}(SiO₄)_{0.06}(CO₃)_{0.18}]_{2.00}[(OH)_{4.34}F_{0.02}]_{2.00}·0.62H₂O, or ideally CaBe₄(PO₄)₂(OH)₄·0.5H₂O.

A dynamic heating curve showed loss of weight (% of weight at 100°): 100–140° 2.70, 140–450° 1.25, 450–620° 5.27, 620–1040° 0.18%. The water lost up to 125° is quickly regained on cooling. The DTA curve shows endothermal effects at 70° and 570°, exothermal effects at 830° (weak) and at 1020°. The mineral is slowly dissolved by 5% HCl.

X-ray powder data by A. N. Aizikovich are given (31 lines). The strongest lines are 10.81, 11.0 (9–10), 2.41, 2.42 (9–10), 1.390, 1.395 (8–10), 1.948, 1.957 (8, 8), 1.529, 1.535 (8, 6), 3.14, 3.17 (5, 8).

The minerals occur in concretions in mica-fluorite ores, Urals, in friable hydromuscovite rocks, associated with hydromuscovite, quartz, limonite, moraesite, fluorite and rutile. The concretions consist of micron-sized needles of glucine. Hardness about 5. G 2.23–2.40. The optical sign and symmetry could not be determined; mean *n* of fine grains is 1.555–1.565, for larger needles, α 1.547, γ 1.571; elongation positive, extinction parallel.

The name is for glucinum, name formerly used for beryllium.

Calcurmolite

A name given by A. S. Povarennykh in the translation of *Mineralogische Tabellen* by H. Strunz to a mineral first described in 1959 by L. S. Rudnitskaya, *Sbornik Yderno*

Goryche Reaktornye Metally, who gave the composition as $\text{Ca}(\text{UO}_2)_3(\text{MoO}_4)_3(\text{OH})_3 \cdot 8\text{H}_2\text{O}$ (doesn't balance M.F.). The mineral has now been redescribed by O. V. Federov, *Zapiski Vses. Mineralog. Obschch.* **92**, 464–465 (1963), who gives the following data: Analysis by T. L. Pokrovskaya gave UO_3 47.73, MoO_3 23.83, CaO 3.30, H_2O 12.90, SiO_2 6.18, $\text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3$ 2.76, sum 96.70%. This corresponds to $\text{Ca}(\text{UO}_2)_3(\text{MoO}_4)_3(\text{OH})_2 \cdot 11\text{H}_2\text{O}$.

X-ray powder data (34 lines) agree well with those given by Rudnitskaya; the strongest lines of the three patterns are: 7.76, 7.60, 7.85 (10); 8.41, 8.28, 8.34 (7-5); 3.90, 3.90, 3.89 (5, 6); 2.42, 2.42, 2.43 (5, 2, 3); 2.06, 2.04, 1.99 (6, 1, 4).

Occurs as honey-yellow prismatic crystals or massive; platy aggregates. Optically biaxial (-), α 1.770, β 1.816–1.827, γ 1.856–1.863. Pleochroic, X colorless, Y pale yellow, Z yellow. Luminesces strongly in yellowish-green under UV light. It forms pseudomorphs after uraninite and is associated with uranophane, uranospinite, halloysite, betapokaldite, jarosite and ferrimolybdate in the zone of oxidation of a U-Mo ore deposit (locality not given).

The name is evidently for the composition.

Calcium catapleite

A. M. PORTNOV, Calcium catapleite, a new variety of catapleite: *Doklady Akad. Nauk SSSR* **154** (3), 607–609 (1964) (in Russian).

Analysis by G. P. Sinyugina gave SiO_2 44.49, ZrO_2 31.00, TiO_2 0.06, Al_2O_3 0.60, Fe_2O_3 0.36, CaO 13.82, RE_2O_3 0.28, Na_2O 0.32, K_2O 0.10, H_2O^+ 9.15, H_2O^- 0.18, sum 100.36%, which corresponds to $(\text{Ca}_{0.83}\text{Na}_{0.00})\text{Zr}_{1.00}(\text{Si}_{2.94}\text{Al}_{0.04})\text{O}_9 \cdot 2.01 \text{H}_2\text{O}$, or $\text{CaZrSi}_3\text{O}_9 \cdot 2\text{H}_2\text{O}$, i.e. catapleite with 2Na replaced by Ca. The rare earths were found by K. V. Bursuk to contain $\text{La}_{22.0}$, $\text{Ce}_{39.5}$, $\text{Nd}_{12.00}$, $\text{Yb}_{6.7}$, $\text{Gd}_{1.5}$, $\text{Tm}_{0.8}$, $\text{Y}_{17.5}$ %.

DTA study showed a small endothermic effect at 450–600° and a rather large exothermic effect at 1000°. X-ray study showed that heating at 1000° causes the formation of tetragonal ZrO_2 . The pH of asuspension of the mineral was 7.7.

X-ray data are given (50 lines); they are very close to those for catapleite. The strongest lines are 2.96 (10), 3.96 (8), 3.06 (8), 1.975 (8), 1.835 (8), 6.45 (7), 1.740 (7), 5.40 (6), 2.68 (6).

Color pale yellow to cream, luster vitreous to dull. Opaque, translucent on edges. Cleavage average, H. $4\frac{1}{2}$ –5. G. 2.77. Optically uniaxial (+), α 1.603, γ 1.639, X = c.

The mineral occurs in syenite pegmatites of the alkalic massif of Burpala, northern Baikal, in cavities between crystals of microcline. Associated minerals are pyrophanite, pyrochlore, titanolavenite, loparite, kupletskite, rare-earth apatite and hiortdahlite. Calcium catapleite was partly replaced by calcium seidozerite.

Barsanovite

M. D. DOREFMAN, V. V. ILOKHIN AND T. A. BURORA, Barsanovite, a new mineral: *Doklady Akad. Nauk SSSR*, **153**, 1164–1167 (1953) (in Russian).

Analysis by T.A.B. gave SiO_2 45.72, TiO_2 0.23, ZrO_2 12.66, Nb_2O_5 2.74, Ta_2O_5 , Al_2O_3 0.18, Fe_2O_3 0.77, FeO 5.22, MgO —, MnO 3.66, CaO 10.86, SrO 2.45, Na_2O 10.71, K_2O 0.52, ThO_2 0.17, RE_2O_3 3.17, Cl 1.00, H_2O^+ 0.46, H_2^- 0.02, sum 100.59 — ($= \text{Cl}_2$) 0.22 = 100.37%. This corresponds to $(\text{Na}_{0.45}\text{Ca}_{3.05}\text{Sr}_{0.33}\text{RE}_{0.28})_{9.2}(\text{Fe}_{1.15}\text{Mn}_{0.82})_{2.0}(\text{Zr}_{1.42}\text{Nb}_{0.30}\text{Ti}_{0.00})_{2.0}\text{Si}_{12}(\text{O}_{36.33}\text{Cl}_{0.67})_{37}$. The rare earths have the composition La 13.2, Ce 32.3, Pr 3.2, Nd 12.0, Sm 2.3, Tb 0.6, Dy 4.1, Ho 1.2, Er 2.5, Yb 2.3, Y 23.0%. The mineral dissolves easily in acid and gelatinizes on heating. DTA showed no effects up to 980°.

X-ray study showed the mineral to be monoclinic, space group $C2/m$, $C2$ or Cm ; the presence of a piezo effect makes the last two more probable. Rotation photographs gave for yellow-green barsanovite a 21.6, b 14.4, c 13.0 Å, β 118°, or in another setting a 19.2,

b 14.2, c 13.0 Å, β 98.5°, $Z=4$. Reddish-brown barsanovite gave slightly different parameters. Unindexed x -ray powder data (48 lines) are given; the strongest lines are 1.021 (10), 3.16 (7), 2.95 (7), 2.84 (7), 1.374 (6), 1.350 (6), 0.989, 0.987 (6). The lines at large angles are diffuse and are not given. Material heated at 800° gave the same pattern.

Barsanovite occurs in irregular masses, mostly reddish-brown, rarely yellow-green. Luster vitreous. No cleavage observed macroscopically, fracture uneven to fine conchoidal. H (yellow-green) about 5, microhardness 455–535 kg/sq mm or 4.8. G 3.073 detd., 2.94 calc. from x -ray data. Fuses easily B.B.

In section transparent, slightly yellowish to brownish, with zoning. Optically biaxial (–): yellowish-green, α 1.633, β 1.639, γ 1.639, $2V$ 13–17°; reddish-brown, α 1.624, β 1.628, γ 1.628, $2V$ 12°. Appears uniaxial under normal magnification. Pleochroism noted only in yellow-green variety: X pale yellow, Z yellowish. Two imperfect cleavages were noted in section at about 120°, one perhaps {310}.

The mineral occurs in nepheline-feldspar pegmatite, Petrelius River, Khibina massif. The microcline has been albitized, nepheline replaced by cancrinite, aegirine-augite by alkali hornblende and biotite. Barsanovite was formed by replacement of eudialyte (relicts observed). It is suggested that other samples previously considered to be anomalously biaxial eudialyte are actually barsanovite.

The name is for Professor Georg Pavlovich Barsanov of Moscow.

DISCUSSION.—The chemical and physical properties and the x -ray powder pattern are very close to those of eudialyte-eucolite.

Unnamed Sodium Manganese Carbonate

E. I. SEMENOV, Hydrous carbonates of calcium and sodium: *Kristallografiya*, 9, 109–110 (1964) (in Russian)

The data given: “In nepheline syenite pegmatites of the Lovozero massif, we have found an unknown sodium manganese carbonate. The mineral has a rosy-white color, with perfect cleavage. Sp. gr. 2.95. Optically biaxial (–), N_g 1.60, N_p 1.52. According to determinations by N. G. Batalieva, $a=6.77$, $b=9.01$, $c=515$ Å, $\beta=90^\circ 04'$. Principal lines of the powder diagram: 3.37, 2.70, 2.58, 1.870, 1.686, 1.584 Å.”

DISCREDITED MINERALS

Unnamed Sodium Carbonate (=Thermonatrite) (?)

E. I. SEMENOV, Hydrous carbonates of calcium and sodium: *Kristallografiya*, 9, 109–110; (1964) (in Russian)

P. K. Semenov in 1959 (*Am. Mineral.* 47, 418 (1962)) described a mineral from the Kola Peninsula with composition $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ but differing from thermonatrite in being uniaxial (+). E. I. Semenov now states, “These differences could be results of misunderstanding. An analogous mineral from Khibina studied by me is optically biaxial, negative. It also does not differ from thermonatrite in x -ray powder pattern. Thus the “unknown” sodium carbonate mineral of P. K. Semenov, listed in reviews as a new mineral, is apparently thermonatrite.”

DISCUSSION.—Unless *type* material, not merely “analogous” material, was examined, the mineral is not discredited.

Weibyeite (=Bastnaesite+Ancylite)

PER CHR. SÆBO, The identity of weibyeite: *Norsk Geol. Tidsskrift*, 43, 441–443 (1963).

Study of the type material (Brøgger, 1890) shows that weibyeite consists of octahedral-shaped bastnaesite pseudomorphous after ancylite, ancylite crystals partly replaced by bastnaesite, a few unaltered crystals of ancylite, and bastnaesite-ancylite pseudomorphs after zircon. This confirms an unpublished study (1959) by W. T. Pecora and M. E. Mrose.