NEW MINERAL NAMES

Kamiokalite

K. Sakurai, H. Nagashima and E. Sorita, Kamiokalite, a new zinc copper phosphate mineral from Kamioka Mine, Japan. *Syumi-no-Tigaku (Amateur Geologist)*, **5**, 170–175 (1952).

The mineral occurs associated with native silver, malachite, or hemimorphite, in the fissures or cavities of the decomposed skarn of the Urusiyama deposit of the Kamioka Mine, Gihu Prefecture, Japan. It is prussian blue in color, and the streak is pale blue. Transparent or translucent with a strong glassy lustre; cleavages are not developed. Fracture is conchoidal and hardness is 3–3.5. Octahedral crystals may attain a size of 2 mm., but usually they are less than 1 mm. in length. It occurs also as a thin film on the skarn. Measurements of a beautiful crystal, 1.5 mm. in size, show the mineral to be monoclinic, with $e\{011\}$, $m\{110\}$, and $i\{\bar{1}11\}$. Axial ratio: $a:b:c=0.734:1:0.966$, $\beta=76°07'$. An analysis by Sorita on pure material, 0.2 gr. in weight, gave PbO nil, CuO 30.52, ZnO 32.44, $(Fe,Al)_2O_3$ 0.31, P_2O_5 17.96, As_2O_5 nil, $H_2O(+)$ 17.26, $H_2O(-)$ 1.62. Insol. residue 0.72; total 100.83. From this the chemical formula obtained was $3CuO \cdot 3ZnO \cdot P_2O_5 \cdot 7H_2O$. Optical properties are: $\alpha=1.630$, $\beta=1.645$, $\gamma=1.683$ (± 0.001), $\gamma-\alpha=0.053$. Weak pleochroism from blue to pale blue. 2V calc. $=(+)65.5°$.

Discussion: The present mineral has mineralogical properties, intermediate between those of arakawaite, a zinc copper phosphate mineral described by Wakabayashi and Komada, and those of veszelyite, a zinc copper arseno-phosphate, described by Schrauf in 1874. The arakawaite has a chemical formula of $6(Cu,Zn)O \cdot P_2O_5 \cdot 7H_2O$, and is monoclinic, while veszelyite has a formula of $6(Zu,Zn)O \cdot (As,P)_2O_5 \cdot 7H_2O$ and is referred to as triclinic (pseudo monoclinic). It is plasuible that these two minerals form a solid solution series, and the present mineral may be a variety rich in zinc. The name is for the Kamioka Mine.

P.S. In his letter of Sept. 15, 1954, Sakurai informed the reviewer that a *x*-ray diagram of kamiokalite obtained with a North American Philips *x*-ray spectrometer agrees closely with that of arakawaite or veszelyite. Therefore he is of the opinion that these three minerals have similar structures, and that the kamiokalite should be described as a variety of veszelyite, rich in zinc. An analysis of the crystal structure of kamiokalite is now in progress.

Kenzo Yagi

Belovite

L. S. Borodin and M. E. Kazakova, Belovite—a new mineral from an alkaline pegmatite. *Doklady Akad. Nauk. S.S.S.R.*, **96**, 613–616 (1954).

Analysis (by M.E.K.) gave rare earth oxides 24.00, SrO 33.60, BaO 0.96, CaO 5.23, Na_2O 3.60, K_2O 0.20, MgO 0.16, Fe_2O_3 0.60, P_2O_5 28.88, SiO_2 0.20, SO_3 1.12, H_2O 0.89; sum 99.44%. The rare earths include Ce_2O_3 11.25%. *X*-ray determinations (*x*-ray spectroscopy?) by L. A. Voronov gave the ratios Ce:La:Nd:Pr $=1:0.6:0.5:0.2$, which, if Ce_2O_3 is taken as 11.25, give La_2O_3 6.75, Nd_2O_3 5.62, Pr_2O_3 2.25%. (Note: These add to 25.87 compared to 24.00% reported in the analysis. M.F.). The analysis conforms to the apatite group formula, $A_{10}(PO_4)_6X_2$, giving $(Sr_{4.6}Ce,etc._{2.1}Na_{1.6}Ca_{1.3}Ba_{0.1})(P_{5.8}S_{0.2})(O_{24.6}OH_{1.4})$. (No mention is made whether F or Cl were tested for. M.F.). Belovite is therefore the strontium analogue of hydroxylapatite, but also contains rare earths and sodium. It is easily soluble in dilute nitric and hydrochloric acids.

X-ray study by N. N. Sludsko and N. I. Organov show belovite to be hexagonal with

$a=9.62$ Å, $c=7.12$ Å, $c/a=0.74$. The powder pattern is given; the strongest lines are 2.87 (10), 1.998 (8), and 1.900 (8).

Belovite occurs in prismatic crystals up to 2 cm. with $(10\bar{1}0)$ and (0001) prominent. Cleavage prismatic and pinacoidal, imperfect, usually noted in thin section. Fracture irregular. Color honey-yellow, luster vitreous, greasy on fracture. The mineral is brittle, H. = 5, G. = 4.19. Optically uniaxial, neg., $\omega=1.660$, $\epsilon=1.640$, birefringence = 0.020.

The mineral occurs in a pegmatite in nepheline syenite, locality not stated (Kola Peninsula? M.F.). The principal minerals of the pegmatite are eudialyte, ussingite, and aegirine; minor constituents are sodalite, natrolite, microcline, murmanite, erikite, schizolite, neptunite, steenstrupine, and nepheline. Eudialyte and aegirine are localized in the border zone of the pegmatite; ussingite, natrolite, and belovite occur in the central part. Belovite occurs in ussingite, which was formed by late stage replacement of microcline.

The name is for N. V. Belov, Russian mineralogist and crystallographer.

Michael Fleischer

Evenkite

A. V. Skropyshev, A paraffin from a polymetallic vein. *Doklady Akad. Nauk S.S.S.R.* **88**, 717–719 (1953); from *Mineralog. Abs.*, **12**, 305 (1954).

The name evenkite is given to a crystalline hydrocarbon found in geodes lined with chalcedony and quartz in a vein cutting vesicular lava, Evenki region, Lower Tunguska River, Siberia. The vein contains pyrite, pyrrhotite, sphalerite, galena, chalcopyrite, calcite, chalcedony, and quartz. The hydrocarbon is colorless or yellowish, wax-like, G. = 0.873, H = 1, m.p. 49–51° C. It contains C 85.43, H 14.99%, corresponding to $C_{12}H_{42}$. It is soluble in ether. The crystals are biaxial positive, 2V small, $\alpha=\beta\leqq 1.504$, $\gamma\cong 1.553$. The crystals show a good mica-like cleavage and polysynthetic twinning.

M. F.

Parasymplesite

Tei-Ichi Ito, Hideo Minato and Kin'ichi Sakurai, Parasymplesite, a new mineral polymorphous with symplesite. *Proc. Japan Acad.*, **30**, 318–324 (1954).

Crystals from Kiura, Ohita, Japan, are about 3×1.5×1 mm. in size. Goniometric measurements and Weissenberg photographs show them to be monoclinic, space group $C2/m$; the unit cell has a 10.25, b 13.48, c 4.71 Å, β 103°50′, and contains $2(Fe_3(AsO_4)_2\cdot 8H_2O)$; $a:b:c=0.760:1:0.350$. The type symplesite from Felsöbanya, Rumania, was found to be triclinic, in agreement with the work of Wolfe, *Am. Mineral.*, **25**, 801 (1940). The name parasymplesite is proposed for the monoclinic dimorph. Analysis gave As_2O_5, 38.43; Fe_2O_3, 0.81; FeO, 37.70; MgO and CaO, none; P_2O_5, none; H_2O^-, 10.67; H_2O^+, 12.70; sum 100.33% X-ray powder data are given; for the strongest lines are (in Å): symplesite 6.785, 7.499, 8.971; parasymplesite 6.830, 7.063, 9.006, 7.499. Twenty forms were noted on parasymplesite crystals; prominent faces were $b\{010\}$, $w\{\bar{2}01\}$, $m\{110\}$, $E\{\bar{5}02\}$ and $t\{\bar{4}01\}$. Parasymplesite has a very perfect cleavage after {010}. Hardness = 2, D_{20} 3.07 measured, 3.097 calculated. Optically negative (?) with large 2 V, $\alpha=1.628$, $\beta=1.660$, $\gamma=1.705$, $c\wedge Z$ 31°20′. X = bluish green, Y = yellowish, Z = brownish yellow.

M. F.

Arsenosulvanite

A. G. Betekhtin, The new mineral arsenosulvanite. *Zapiski Vses. Mineral. Obshch.* (*Mem. soc. russe mineral*), **70**, 161–164 (1941) (English summary).

V. I. Mikheev, The structure of arsenosulvenite, *Ibid.*, 165–184 (1941) (English summary).

These papers, not previously abstracted in this journal, describe a new mineral occurring in quartz-calcite veins cutting bituminous limestone in Mongolia. Analyses gave Cu 48.84, 46.65; S 33.14, 31.66; As 12.80, 11.67; V 4.16, 5.20; insol. 1.01, 3.82, sum 99.95, 99.00%. This corresponds to $Cu_3(As,V)S_4$ with As:V about 2:1. Color bronze-yellow, H. = 3½, G. = 4.01, 4.2. Cubic, with $a = 5.257 \pm .003$ Å. Detailed data are given on the structure which is like that of sphalerite. Space group T_d^1.

M. F.

Aldanite

M. M. Bespalov, A find of a new member of the thorianite group. *Soviet Geol. 1941*, No. **6**, pp. 105–107 (in Russian).

In this paper, not previously abstracted in this journal, three analyses are given of a cubic mineral, $a = 5.539 \pm .005$ Å and $5.578 \pm .009$ Å on 2 samples, found in placers in the Aldan River. The analyses show ThO_2 64.3, 69.3; UO_3 14.9, 20.4; PbO 11.2, 12.5%. Hardness = 6½, G. = 8.92. The mineral is evidently a uranoan plumboan thorianite and the name aldanite is unnecessary.

M. F.

Irinite

L. S. Borodin and M. E. Kazakova, Irinite—a new mineral of the perovskite group. *Doklady Akad. Nauk S.S.S.R.*, **97**, 725–728 (1954) (in Russian).

Irinite occurs as cubic crystals with cube and octahedron faces and in fluorite-like penetration twins; the crystals are up to 1 cm. in size. The color is reddish-brown, brown, occasionally brownish-yellow. Streak brownish-yellow. Cleavage absent, fracture conchoidal. Luster greasy. In thin section isotropic, $n = 2.105$. Hardness = 5–5½, G. = 4.476. Not attacked by HCl or HNO_3, slowly decomposed by warm H_2SO_4.

Irinite is metamict. It gives few *x*-ray lines when heated to 200°, more at 470°, and when heated at 650° it gives a pattern of the perovskite group with strongest lines at 2.71 (10), 1.919 (9), 1.569 (8), and 1.028 (6). From the powder data, the calculated edge for the smallest cell is $a_0 = 3.83$ Å. (should be 7.66Å? M.F.).

Analysis (by M.E.K.) gave TiO_2 46.45, ThO_2 13.00, (Ce, etc.)$_2$O$_3$ 24.00, $(Nb,Ta)_2O_5$ 6.31, Fe_2O_3 0.88, CaO 1.83, Na_2O 6.41, H_2O^+ 1.22, HeO^- 0.03; sum 100.13%, corresponding to

$$(Na_{0.34}Ce_{0.24}Th_{0.08}Ca_{0.05})(Ti_{0.95}Nb_{0.08}Fe_{0.02})[O_{2.78}(OH)_{0.22}].$$

A dehydration curve is given. Most of the water is lost between 400° and 650°.

The mineral occurs in nepheline syenite pegmatite, locality not stated (Kola Peninsula? M.F.), closely associated with aegirine and catapleite between crystals of the most abundant minerals, microcline and arfvedsonite. Other minerals present include nepheline, eucolite, ilmenite, and astrophyllite.

The name is for Irin Dmitriev Borneman-Starynkevich, Russian mineralogist.

Discussion: Irinite is a thorian variety of loparite, which is essentially (Na, Ce, Ca) (Ti, Nb)O_3, and the name is unnecessary.

M. F.

Peligotite (= Johannite)

V. G. Melkov, Peligotite—a new mineral species. *Zapiski Vses. Mineral Obshch.* (*Mém. soc. russe minéral.*), **71**, 9–11 (1942).

In this paper, previously overlooked in this journal, the author describes a yellow-green uranium sulfate from the Taboshar deposit, North Tadzhikistan. The physical and optical properties were recognized by him to be very close to those of johannite (gilpinite), but two chemical analyses gave the formula $CuO \cdot 2UO_3 \cdot 2SO_3 \cdot 3H_2O + 6H_2O$, different from that then accepted for johannite. The name is for Èugene-Melchior Peligot, who first prepared metallic uranium in 1841.

Discussion: The formula now accepted for johannite is $CuO \cdot 2UO_3 \cdot 2SO_3 \cdot 7H_2O$ and the name peligotite should be relegated to the synonymy.

M. F.

NEW DATA

Bazzite (=scandian beryl?)

H. Huttenlocher, Th. Hügi and W. Nowacki, Röntgenographische und spektrographische Untersuchungen am Bazzit vom Val Strem (Kt. Graubünden, Schweiz). *Experentia 10,* No. **9,** 366–367 (1954).

Spectrographic analysis showed bazzite to contain mainly (very strong) Be, Si, Al, Mg, Sc; (strong) Fe, Na, Ba; (medium) Ca, Sr. Also present (weak) Cu; (very weak) Ga, V, Sn, Y, Yb, Ag. The Sc content is about 3%. *X*-ray study showed the structure to be of the beryl type with space group probably D_{6h}^2-$P6/mcc$ (possibly C_{6v}^2-$P6cc$) with $a=9.50$, $c=9.18$ Å.

Discussion: Bazzite, which has never been analyzed chemically, was originally described as a scandium silicate, the beryllium content having been missed. The close correspondence of the unit cell, hardness, specific gravity, and composition makes it seem likely that bazzite is a scandian beryl. The indices of refraction and birefringence are higher than those reported for any beryl (due to Fe and Sc?), which suggests that cesium may be present in appreciable amount. Dr. W. T. Schaller suggests the possibility that some crystals from various localities identified by sight as blue tourmaline could be bazzite, although the absorption schemes are reversed.

M. F.

DISCREDITED MINERALS

Wenzelite, Baldaufite (=Hureaulite)

H. Strunz, Identität von Wenzelit und Baldaufit mit Huréaulith. *Neues Jahrb. Mineral., Monatsh.* **1954,** 166–177.

Chemical analyses, optical data, and *x*-ray powder data on samples from the type locality, Hagendoff, Bavaria, show that the original analyses (Müllbauer, 1925) were incorrect and that both minerals are hureaulite.

M. F.