NEW MINERAL NAMES

Bismuth jamesonite

M. S. Sakharova, Bismuth sulfosalts of the Ustarasaisk deposits. *Trudy Mineralog. Muzeya Aka. Nauk S.S.S.R., No.* **7,** 112–116 (1955) (in Russian).

Bismuth jamesonite was found as radiating aggregates of fine capillary crystals in cavities with quartz crystals in carbonate veinlets cutting arsenopyrite ore in the Ustarasaisk deposits, western Tyan-Shan. The crystals are usually some mm. long, at times up to 1 cm. long, a fraction of a mm. in cross-section. They contain inclusions of native antimony, visible only under high magnification. A little realgar and cinnabar are associated minerals.

The mineral is lead-gray, luster metallic, with one perfect cleavage. Hardness low. Under the microscope it is white, birefringent, strongly anisotropic with reddish reflections apparent only with immersion. Reflectivity 35%.

Analysis by V. M. Senderova gave Bi 30.50, Sb 16.50, Pb 32.25, Fe 1.39, Cu 0.30, S. 17.62, insol. 1.59; sum 100.15%, corresponding to $PbS \cdot (Bi, Sb)_2S_3$.

X-ray powder data are given. (The 26 lines given correspond very closely with those given for normal jamesonite by Berry, *Mineralog. Mag.*, **25,** 597–608 (1940), except that strong lines given by Berry at 4.03 and 3.76 are not listed. M.F.)

Discussion: The mineral is considered to be a variety of jamesonite. However, the ratio Bi:Sb=1.07:1, so that this is not a bismuthian jamesonite. The formula is given as $PbS \cdot (Bi, Sb)_2S_3$; the iron content given in the analysis is low for the formula generally accepted for normal jamesonite, $4\,PbS \cdot FeS \cdot 3\,Sb_2S_3$.

Michael Fleischer

Ustarasite

M. S. Sakharova, Bismuth sulfosalts of the Ustarasaisk deposits. *Trudy Mineralog. Muzeya Akad. Nauk S.S.S.R., No.* **7,** 112–126 (1955) (in Russian).

Ustarasite was found in quartz-bismuthinite veins in the deposits of Ustarasaisk, western Tyan-Shan. It occurs as prismatic crystals, some of which are bent or twisted. It is silvery-gray to gray, luster metallic. There is one perfect cleavage; a second appears on long etching. Hardness 2½.

Under the microscope, ustarasite is pure white, strongly anisotropic, without inner reflections. Reflectivity 42%. It is etched rapidly by HNO_3, slowly by HCl and turns brown, by concentrated KOH, turning brown, blackened by aqua regia. No reaction with KCN, $FeCl_3$, $HgCl_2$, or $KMnO_4$.

Analyses of two different samples by V. M. Senderova and Yu S. Nesterova gave Bi 65.33, 64.90; Sb 2.96, 1.87; Pb 10.51, 11.35; Cu 0.30, 0.74; Fe 0.60, 1.40; As none, 0.15; S 17.25, 17.25; insol. 0.34, 0.54; sum 97.29, 98.20%. A little pyrite, chalcoypyrite, and native Bi were present. The analyses give the formula $PbS \cdot 3\,(Bi, Sb)_2S_3$. Spectrographic analysis by N. V. Lizunov showed also the presence of traces of Ag, Si, Ca, Te, Sn, Mg, Mn, Al, Cr, Sr, and Cd. *X*-ray spectral determinatinons on several samples confirmed the constancy of the ratio Pb:Bi.

X-ray powder data were obtained by N. N. Sludsko; 52 lines are given. The strongest are 3.527 vs. broad, 3.080 S, 2.508 S, 1.915 S, broad, 1.732 S., 1.483 vs, 1.140 S, 1.057 vs.

Other minerals described include bismuthinite, kobellite, a rezbanyite-like mineral, and bismuth jamesonite.

M. F.

Pseudolaueite

H. Strunz, Pseudolaueit, ein neues Mineral. *Naturwissenschaften*, **6,** 128 (1956).

The name pseudolaueite is given to an orange-yellow phosphate, which, from microchemical and spectroscopic determinations, appears to be a dimorph of laueite, $MnFe_2(OH)(PO_4)_2 \cdot 8H_2O$ (see *Am. Mineral.*, **39,** 1038 (1954). It is monoclinic-prismatic; the unit cell has a_0 9.57, b_0 7.45, c_0 10.16 Å., β 104°40′, $Z=2$. The crystals are prismatic to thick tabular with forms a $\{100\}$, c $\{001\}$, m $\{110\}$ and rare $\{011\}$ and $\{\bar{2}01\}$. $G.=2.463$. $H.=3$. Optically biaxial, positive, optic axis perpendicular to (010), $2V_\gamma=80°$ (calcd.), *ns* α 1.626, β 1.650, γ 1.686, X:c 2° pale yellow, Y:a 12° pale yellow, $Z=b$ yellow. X-ray powder data are given. The strongest lines of pseudolaueite are 9.926 10, 5.869 7, 3.472 4; of laueite 9.926 10, 3.276 6, 4.922 5, 6.515 4. Pseudolaueite occurs in the Hagendorf, Bavaria, pegmatite as incrustations and as the core of stewartite crystals associated with oxides of Mn and Fe.

M. F.

Calciborite

E. S. Petrova, Sbornik "Geol. gorno-khim. Syr'e," *Trudy gosudarst nauch.-issled. inst. gorno-khim. syr'e, fasc.* **2,** 218–223; from an abstract by E. M. Bonshtedt-Kupletskaya in *Zapiski vses. mineralog. obshch.*, **85,** 76–77 (1956).

The mineral occurs as white radial aggregates. Analyses by T. A. Zvereva, (1) material picked under binoculars, (2) the fraction with sp. gr. 2.9–2.95, gave: B_2O_3 47.42, 47.15; CaO 49.25, 48.30; MgO 0.81, 0.90; MnO 0.03, 0.07; alkalies—, none; Al_2O_3 0.02, 0.24; Fe_2O_3 0.30, 0.16; SiO_2 0.82, 0.65; P_2O_3—, none; CO_2 1.22, 0.71; As 0.03, 0.45; H_2O^- 0.12, 0.10; sum 100.02, 98.73%. This corresponds to $Ca_5B_8O_{17}$. The analyzed material contained a little dolomite, garnet, and pyroxene.

Insoluble in water, readily soluble in acids on heating. Fuses at 1002°, giving a bright green flame, to a greenish enamel-like bead.

The mineral is monoclinic (?). No cleavage, fracture uneven, on aggregates conchoidal. Hardness about 3½. G.=2.878. Optically biaxial, neg., with *ns* α 1.595, β 1.654, α 1.670, $\gamma-\alpha$ 0.070–0.072, 2V=54°. Extinction angle 22°. Luminesces bright green in cathodic light. The strongest *x*-ray lines are at 3.419, 3.774, 2.300, 1.787, and 2.629 Å.

Calciborite was found in deep drill cores at the contact of Middle Devonian limestone with quartz diorite in a copper deposit of the skarn type in the Urals. It is associated with calcite and dolomite, with minor amounts of garnet, magnetite, and pyroxene. It also fills fissures in limestone and was observed to replace calcite.

The name is for the composition.

Discussion: No compound of this composition was stable at the melting point in the system $CaO-B_2O_3$. Melts of this composition gave CaB_2O_4 with optical properties and *x*-ray powder pattern different from those for calciborite.

M. F.

Smythite

R. C. Erd, and H. T. Evans, Jr., The compound Fe_3S_4 (smythite) found in nature. *Jour. Am. Chem. Soc.*, **78,** 2017 (1956).

Minute, plate-like inclusions in calcite crystals from Bloomington, Ind., are opaque, strongly ferromagnetic, and of a dark bronze color, but gave an *x*-ray pattern distinct from that of pyrrhotite. X-ray fluorescence and microchemical tests showed Fe and S present, with a little Ni. Buerger precession photographs show the crystals to be rhombohedral, probable space group $R\,\bar{3}m-D_{3d}^5$, with hexagonal unit cell dmensions a_0 3.47, c_0 34.5 Å., containing Fe_9S_{12}. G. calcd 4.09, measured by flotation 4.06±.03. The structure is related to that of pyrrhotite. The composition was derived from the structural analysis.

The name (pronounced smīth-ite) is for Professor C. H. Smyth, Jr. of Princeton University.

Discussion: Not to be confused with smĭth-ite.

M. F.

Secondary Uranium Minerals

Jean Chervet and Georges Branche, Contribution a l'étude des mineraux secondaires d'uranium français. *Sciences de la Terre, Ann. École Natl. Supérieure Géol. Appl. et Prospection Minière Univ. Nancy*, **3**, No. 1–2, 1–188 (1955).

On p. 178 of this monograph are listed a number of new names taken from samples exhibited by the U.R.S.S. delegation to the Geneva Conference on Peaceful Uses of Atomic Energy, August, 1955.

Orlite. $3\ PbO \cdot 3\ UO_3 \cdot 4\ SiO_2 \cdot 6\ H_2O$.

Nenadkevite. $U^{+6}(U^{+4}, Th)(Mg, Ca, Pb)_3(SiO_4)_2(OH)_8 \cdot nH_2O$. Named for K. Nenadkevich, Russian geologist. Not to be confused with Nenadkevichite, see *Am. Mineral.*, **40**, 1154 (1955).

Prjevalskite. $PbO \cdot 2UO_3 \cdot P_2O_5 \cdot 4H_2O$. Named for N. Prjevalsky, Russian explorer of Central Asia.

Lermontovite. $(U, Ca, R.E.)_3(PO_4)_4 \cdot 6H_2O$. In nodular and botryoidal green aggregates.

Sodium Autunite. $Na_2(UO_2)_2(PO_4)_2 \cdot H_2O$.

Hydrogen Uranospinite. $H_2(UO_2)_2(AsO_4)_2 \cdot 8H_2O$.

Priguinite. $UO_3 \cdot 2MoO_3 \cdot 4H_2O$. Yellow.

Moluranite. $UO_2 \cdot 2UO_3 \cdot 5MoO_3 \cdot 12H_2O$. Black.

M. F.

Discredited Minerals

Mikheevite = Görgeyite

E. I. Nefedov, Neue Minerale. *Geologie* **4**, No. 5, 526–528 (1955).

Heinz Meixner, Zur Identität von Mikheewit (Micheewit) mit Görgeyit. *Geologie* **4**, No. 6, 576–578 (1955).

Nefedov corrects some of the data previously given (see *Am. Mineral.*, **40**, 551 (1955), thus removing most of the discrepancies between mikheevite and görgeyite. Meixner shows that the properties are now so close that the minerals must be identical.

M. F.

Canbyite (=Hisingerite)

S. H. U. Bowie, Thucolite and hisingerite-pitchblende complexes from Nicholson Mine, Saskatchewan, Canada. *Bull. Geol. Survey Great Britain, No.* **10**, 45–57 (1955).

Canbyite was described in 1924 as a crystalline mineral with a composition identical with that of the amorphous mineral hisingerite. A new analysis and optical data are given for hisingerite. *X*-ray powder photographs of canbyite and of 5 samples of hisingerite, including one of type material from Riddarhytten, Sweden, all show five broad bands, strong ones at 4.39–4.45 Å, 3.53–3.58 Å, 2.56–2.58 Å, and 1.53–1.54 Å, and a weak one at 1.70–1.71 Å. Hisingerite is therefore cryptocrystalline and the name canbyite should be dropped. The relation of hisingerite to nontronite is not clear; nontronite gives a strong basal reflection at 14–15 Å that is absent from the powder patterns of hisingerite.

M. F.