

NEW MINERAL NAMES*

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Arsenbrackebuschite*

K. Abraham, K. Kautz, E. Tillmanns and K. Walenta (1978) Arsenbrackebuschite, $Pb_2(Fe,Zn)(OH,H_2O)(AsO_4)_2$, a new arsenate mineral. *Neues Jahrb. Mineral. Monatsh.*, 193-196. W. Hofmeister and E. Tillmanns (1976) Structural relations of arsenbrackebuschite and tsumcorite. *Fortschr. Mineral.*, 54, Teil. 1, 38.

Microprobe analysis of material from Tsumeb gave PbO 59.4, ZnO 3.1, Fe_2O_3 (total Fe) 6.5, P_2O_5 0.17, As_2O_5 30.5, sum 99.67%, leading to the probable formula $Pb_2(Fe^{2+},Zn)(OH,H_2O)(AsO_4)_2$. The material from the Clara mine contains some Cu and some sulfate.

Single-crystal study shows the mineral to be monoclinic, space group $P2/m$, $a = 7.764$, $b = 6.045$, $c = 9.022A$, $\beta = 112.5^\circ$, $Z = 2$, G calc 6.54. X-ray powder data are given from the two localities; the strongest lines (Clara Mine, $FeK\alpha$) are 4.90 (60)(011), 3.68 (50)(111), 3.27 (100)(21 $\bar{1}$), 3.00 (100)(020, 10 $\bar{3}$, 21 $\bar{2}$), 2.78 (90)(112), 2.31 (50)(103,220), 2.12 (60)(12 $\bar{3}$).

Color honey yellow, streak light brownish-yellow, luster resinous to adamantine. H 4-5. Cleavage {010} perfect. Optically biaxial, neg., refractive indices about 2, pleochroism honey-yellow to bright yellow. Material from the Clara Mine has $\alpha < 2.04$, $\gamma > 2.04$.

The mineral occurs in the Tsumeb mine as flat laths or platelets, max dimensions 0.5mm long, 0.2mm wide, 0.1mm thick, on fissures in dolomite breccia of the second oxidation zone. It also occurs at the Clara mine, Black Forest, Germany, associated with anglesite, bayldonite, mimetite, and stolzite, and intimately intergrown with beudantite.

The name is for the analogy to brackebuschite. Type material is at the University of Mainz and University of Stuttgart.

Discussion

No evidence or explanation is given for the formula stated; by analogy with brackebuschite one might have expected $Pb_2(Fe^{2+},Zn)(AsO_4)_2 \cdot H_2O$. Infrared study is highly desirable. M. F.

Chantalite*

Halil Sarp, Jacques Deferne, and B. W. Liebich (1977) Chantalite, $CaAl_2SiO_4(OH)_4$, a new natural calcium aluminum silicate. *Schweiz. Mineral. Petrog. Mitt.*, 57, 149-156.

The average of four microprobe analyses (by Helene Bizouard, using vuagnatite as standard) gave SiO_2 23.74, Al_2O_3 38.44, MgO 0.06, FeO 0.02, CaO 21.57, Na_2O 0.06, H_2O (by diff.) 16.11%, corresponding to the formula above.

* Minerals marked with an asterisk after the name were approved before publication by the Commission on New Minerals and Mineral Names of the International Mineralogical Association.

X-ray study shows the mineral to be tetragonal, space group probably $I4_1/a$, $a = 4.945$, $c = 23.268A$, $Z = 4$, G calc 2.97, meas 2.8-2.9 (by suspension). The strongest X-ray lines (39 given) are 4.828 (45)(101), 4.171 (70)(103), 3.349 (60)(112), 2.598 (100)(116), 2.235 (50)(118), 1.453 (60)(00.16, 136, 22.10).

The mineral is colorless to white, luster vitreous. It is optically uniaxial, negative, $\omega = 1.653$, $\epsilon = 1.642$ (both ± 0.001).

The mineral occurs in anhedral grains, 0.1-0.3 mm, in rodingite dikes from an ophiolite zone in the Taurus Mts., SW Turkey. Associated minerals include vuagnatite, prehnite, hydrogrossular, chlorite, and calcite.

The name is for Mrs. Chantal Sarp. M. F.

Charoite*

V. P. Rogova, Yu. G. Rogov, V. A. Drits, and N. N. Kuznetsova (1978) Charoite, a new mineral, and a new jewelry stone. *Zapiski Vses. Mineralog. Obshch.*, 107, 94-100 (in Russian).

Three analyses by K. P. Glebova, A. V. Bykova, and N. N. Kuznetsova on material selected under the binoculars gave SiO_2 56.30, 56.38, 56.88; Al_2O_3 1.85, 1.07, -; Fe_2O_3 -, 0, 0.12; CaO 20.44, 20.70, 20.95; BaO 3.30, 3.12, 2.52; SrO 0.90, 2.20, 0.90; Na_2O 2.45, 2.44, 3.77; K_2O 10.50, 8.26, 10.36; H_2O + 3.80, 5.13, 4.40; F -, 0.75, 0.92, sum 99.54, 100.05 - (0.32) = 99.73, 100.82 - (0.39) = 100.43%. Spectrographic analysis showed Pb, La, Mn, O.x, Zr, Y, 0.00x%. Analysis 3 gives the formula $(Ca_{1.67}Na_{0.51}K_{0.93}Sr_{0.03}Ba_{0.07})Si_4O_{10}(OH_{0.68}F_{0.28}) \cdot 0.72H_2O$. If Al_2O_3 is subtracted from analyses 1 and 2 as anorthoclase, these yield similar formulas, which can be written as $(K,Ba,Sr)(Ca,Na)_2Si_4O_{10}(OH,F) \cdot 0.5-1.0 H_2O$. The infrared spectrum shows the presence of both molecular water and hydroxyl. About 2.4% H_2O is lost up to 300°, 1.3% more to 600°. Small endothermic effects are noted at 440°, 760°, and 970°. The mineral is insoluble in acids.

From electron diffraction patterns, $a = 31.82 \pm 0.05$, $b = 7.13 \pm 0.03$. Neither c nor calculated G is given, but the unit cell is stated to have $Z = 18$.

X-ray powder data are given. The strongest lines (37 given) are 31.8 (25)(100), 12.45 (70)(201), 3.90(30)(414), 3.348 (100)(804, 321, 515), 3.134 (85)(615, 515, 207), 2.97 (30)(10.0.3, 913), 2.79 (50), 2.71 (35).

Color lilac of various shades to violet. $G = 2.54$, H (50 g load) = 412 \pm 6 kg/sq mm. Cleavage average in 3 directions. The angle between planes of prismatic cleavages is 124°; the angle between the planes of prismatic and pinacoidal cleavages on {001} is 104°. Optically biaxial, positive, colorless in section; $\alpha = 1.550$, $\beta = 1.553$, $\gamma = 1.559$ (all ± 0.002), $2V = 28-30^\circ$. Elongation positive, $X = b$, $Z:c = 5^\circ$. In thick fragments pleochroic with X rose-colored, Z colorless. The optical properties indicate monoclinic symmetry.

The mineral occurs in K-feldspar metasomatites at the contact of nepheline- and aegirine-syenites with limestones, associated with canasite and tinaksite [*Am. Mineral.*, 45, 253 (1960), 50, 2098 (1965)], Aldan Shield, USSR. The name is for the Chary River. M. F.

Clinoeulite (= magnesian clinoferrosillite)

W. Schreyer, D. Stepto, K. Abraham and W. F. Muller (1978) Clinoeulite (magnesian clinoferrosillite) in a eulysite of a metamorphosed iron formation in the Vredefort Structure, South Africa. *Contrib. Mineral. Petrol.*, 65, 351–361.

The name is given to a clinopyroxene with composition $(\text{Fe}_{1.46}^{2+}\text{Mg}_{0.98}\text{Mn}_{0.08}\text{Ca}_{0.07})(\text{Si}_{1.99}\text{Al}_{0.01})\text{O}_6$. As the authors recognized, this is a magnesian clinoferrosillite. Hence the name is unnecessary. M. F.

Hexahydroborite*

M. A. Simonov and others (1977) The new mineral hexahydroborite, $\text{Ca}[\text{B}(\text{OH})_4]_2 \cdot 2\text{H}_2\text{O}$. *Zapiski Vses. Mineralog. Obshch.*, 106, 691–697 (in Russian).

Microchemical analyses gave B_2O_3 26.91, CaO 20.51, MgO 0.89, FeO 0.22, H_2O 43.45, CO_2 1.76, SiO_2 1.56, sum 101.30. After deducting diopside and calcite, this gives $\text{CaB}_2\text{O}_4 \cdot 6\text{H}_2\text{O}$. Insoluble in water at room temperature, dissolved by alcohol and by dilute acids. The DTA curve shows a strong divided endothermic peak at 107 and 123°, a second strong endothermic effect at 160°, and a strong exothermic effect at 700°. The crystals contain many inclusions, two-phase gas-liquid and single-phase liquid. The mineral is decomposed during preparation of normal thin sections. X-ray study shows the mineral to be monoclinic, space group $P2/a$, $a = 8.006$, $b = 6.649$, $c = 8.012$ (all $\pm 0.002\text{Å}$), $\beta = 104.21^\circ$, $Z = 2$. The strongest X-ray lines (34 given) are 7.73 (10)(100,010), 3.37 (9b)(2 $\bar{1}$ 1,1 $\bar{2}$ 1,021,201), 3.118 (9)(012,210), 2.792 (112), 2.550 (202), 2.469 (8)(3 $\bar{1}$ 1,220), 2.283 (212), 1.961 (7)(2 $\bar{3}$ 2), 1.931 (7)(2 $\bar{4}$ 0,420).

The mineral occurs as veinlets associated with pentahydroborite in drill cores from the Solongo deposit, Buryat ASSR. It is in aggregates of flattened colorless prismatic crystals up to 0.5mm. Luster vitreous. $H = 2.5$, $G = 1.87$. Optically biaxial, positive, $2V$ 83°, $\alpha = 1.498$, $\beta = 1.503$, $\gamma = 1.510$ (all ± 0.001), $r > v$ very strong, elongation X , extinction $c:X = 14^\circ$. Cleavage perfect, with normal to the plane 12° from Z ; also an imperfect cleavage.

The name is for the composition. Type material is at the Mineralogical Museum, Academy of Sciences, USSR, Moscow. M. F.

Phurcalite*

Paul Piret and Jean-Paul Declercq (1978) Phurcalite. *Acta Crystallogr.*, 34B, 1677–1679.

The structure was determined. The mineral is orthorhombic, $Pbca$, $a = 17.426$, $b = 16.062$, $c = 13.592\text{Å}$, $Z = 8$ [$\text{Ca}_2(\text{UO}_2)_3(\text{PO}_4)_2(\text{OH})_4 \cdot 4\text{H}_2\text{O}$]. Locality is Bergen an der Trieb, Saxony, West Germany. No X-ray powder data nor other data are given.

Discussion

Again the first use of a mineral name gives the structure without other data. M. F.

Poubaite*, Unnamed lead bismuth copper selenide-sulfides

Frantisek Čech and Ivan Vavřin (1978) Poubaite, $\text{PbBi}_2(\text{Se},\text{Te},\text{S})_4$, a new mineral. *Neues Jahrb. Mineral. Monatsh.*, 9–19.

Microprobe analysis by Z. Kotrba and I. Vavřin, using pure Pb, Bi, Cu, Se, and Te and analyzed galena and covellite as standards, gave Pb 22.95, Bi 40.29, Cu 0.61, Se 15.48, Te 17.47, S 2.10, sum 0003-004X/78/1112-1283\$00.50

98.90%, corresponding to $\text{Pb}_{1.11}\text{Bi}_{1.94}\text{Cu}_{0.10}\text{Se}_{1.97}\text{Te}_{1.87}\text{S}_{0.68}$. The name is for material with $\text{Se} > \text{Te}$.

X-ray powder data are given for a mixture of poubaite with unnamed "Mineral S" [$\text{PbCuBi}(\text{S},\text{Se},\text{Te})_3$]; 32 lines are given, 16 of which are attributed at least in part to "Mineral S." The strongest lines are 3.627 (5)(012), 3.093 (10)(107), 2.251 (76)(01.14), 2.127 (8)(110), 1.752 (6)(027), 1.546 (5)(20.14). The indexing is on a trigonal cell, with $a = 4.252$, $c = 40.095\text{Å}$, $Z = 3$, probable space group $R\bar{3}m$.

Poubaite is opaque. In reflected light white with a creamy tint. Reflectance maximum parallel to elongation (creamy), minimum at right angles (creamy with weak brownish tint). Strongly anisotropic, with interference colors light grayish-blue to total extinction. Cleavage distinct parallel to elongation. Microhardness could not be measured.

Maximum and minimum reflectances were given at 15 wave lengths (420–700 nm); these are greatest at 460 nm.

	Max.	Min.
420	55.19	52.65
460	56.12	54.35
540	55.39	53.75
580	54.83	53.19
660	53.81	52.19

The mineral occurs in euhedral to subhedral lath-like crystals 30–40 microns, rarely up to 80 microns long, 8–10 microns thick, generally in galena-clausthalite veinlets in calcite at Oldrichov, near Tachov, western Bohemia, Czechoslovakia. Associated minerals include selenian rucklidgeite, "Mineral S," and the following minerals, perhaps new, for which no data are given: $(\text{Pb},\text{Cu})\text{Bi}(\text{Se},\text{Te},\text{S})_2$ with Te 16–21%; $(\text{Pb},\text{Bi})_4(\text{Se},\text{S},\text{Te})_8$; $(\text{Pb},\text{Bi})_7(\text{Se},\text{S},\text{Te})_6$; $(\text{Bi},\text{Pb},\text{Cu})_4(\text{S},\text{Se},\text{Te})_5$; $(\text{Bi},\text{Pb},\text{Cu})_6(\text{S},\text{Se},\text{Te})_5$. Mineral S contains (weight percent) Pb33.86, Cu9.76, Bi31.71, S8.83, Se14.55, Te0.79, sum 99.50%, corresponding to $\text{Pb}_{1.06}\text{Cu}_{0.97}(\text{S}_{1.77}\text{Se}_{1.18}\text{Te}_{0.04})$; its powder pattern differs from that of aikinite.

The name is for Dr. Z. Pouba, head of the department of economic geology, Charles University, Prague, where type material is deposited. M. F.

Rhenium

M. B. Rafal'son and N. D. Sorokin (1976) Determination of native rhenium in wolframites by the method of local X-ray spectrographic analysis. *Voprosy Geokhim. Tipomorfizm Mineral.*, 1, 62–66 (in Russian).

Wolframites from Transbaikal were found to contain several ppm Re. Microprobe analysis of irregular inclusions (15–50 microns) showed them to consist of metallic rhenium; no other element, including S, was present. Under the beam of the probe rhenium oxidized to Re_2O_7 .

A. El Goresy, K. Nagel, B. Dominik and P. Ramdohr (1977) Fremdlinge: potential presolar material in Ca–Al-rich inclusions of Allende. *Meteoritics*, 12, 215–216.

"Detailed S.E.M. studies on two Ca–Al-rich inclusions (Type A and B) revealed that the refractory siderophile metals are present in objects of complex mineralogy. These objects (hereinafter called Fremdlinge) consist of silicates, phosphates, sulfides, and FeNi alloys. . . . In both types Pt metals are not alloyed with FeNi but are

present as small dust particles rather than nuggets in both FeNi and silicates. Re is present mainly as almost pure grains (97% Re, 3% Ru)." **M.F.**

Unnamed α - U_3O_7

Vassilios Voultsidis and Dietmar Clasen (1978) Problems and boundary ranges of uranium mineralogy. *Erzmetall*, 31, no. 1, 8-13 (in German).

Idiomorphic crystals about 0.1mm in size, resembling uraninite, occur in zoned intergrowths with gersdorffite at Key Lake, Saskatchewan. X-ray data showed the lines 3.14 (111), 2.72 (200), 2.70 (001), 1.928 (220), 1.918 (202), 1.648 (311), 1.63 (133) (intensities not given). These correspond closely to the data for synthetic α - U_3O_7 (upper stability limit 135°), which is tetragonal, pseudocubic, $a = 5.47$, $c = 5.397A$ (Westrum and Gronvold, *J. Phys. Chem. Solids*, 23, 39-53, 1962). **M.F.**

Unnamed U-Nb oxide

E. C. Arcidiacona and Dora Bedlivy (1976) Datos preliminares sobre el hallazgo de un nuevo mineral de uranio, en Tanti (Prov. de Cordoba, R. Argentina). *Rev. Asoc. Geol. Argentina*, 31, 232-234

The new mineral occurs in a pegmatite east of Tanti, Cordoba Province, Argentina, as nodules 3mm in diameter. Microprobe analysis showed U 35%, Nb 13%; also present Th, Ta, Ti, Ca, Cu, Si, K, P, and Ce, Y, and La. X-ray powder data (32 lines) are indexed on an orthorhombic cell with $a = 14.03$, $b = 15.37$, $c = 16.53A$. The strongest lines (32 given) are 8.22 (m) (002), 7.02 (s) (200), 4.17

(vs) (213), 3.32 (m) (233), 3.04 (s) (025), 3.00 (m) (150), 2.80 (s) (500), 2.14 (m) (505).

The mineral is yellow, $G > 3.5$, $n > 1.77$. **M.F.**

Zykaite*

F. Čech, J. Jansa and F. Novak (1978) Zykaite, $Fe_2^{3+}(AsO_4)_3(SO_4)(OH) \cdot 15H_2O$; a new mineral. *Neues Jahrb. Mineral. Monatsh.*, 134-144.

Analyses by M. Mrazek gave Fe_2O_3 30.72, 30.44; As_2O_5 33.58, 33.76; P_2O_5 traces, 0.24; SO_3 8.51, 8.20; CaO 0.02, 0.02; H_2O 26.13, 26.88; insol. 0.88, 0.10; sum 99.84, 99.64%. The mineral is insoluble in water, dissolves readily in 10% HCl. The DTA curve shows 4 endothermic peaks: at 195° (loss of H_2O), a weak one at 580° (probably loss of hydroxyl), one at 740° (loss of SO_3), one at about 1000°. An exothermic peak is present at 610°. The infrared spectrum is given.

No crystals suitable for single-crystal study were found. X-ray powder data are given (56 lines). The strongest lines (Co radiation) are 10.6 (7)(103), 10.4 (10)(200), 6.92 (4)(204,011) 5.610 (4)(014), 3.812 (4). These were indexed by A. Kato on an orthorhombic cell with $a = 20.85$, $b = 7.036$, $c = 37.01A$, $Z = 8$, G calc 2.504, meas 2.50. Further refinement gave $a = 20.853$, $b = 7.033$, $c = 36.991A$.

The mineral occurs as nodules up to 3cm in size or as fillings in cavities after leached sulfides in the dump of the ancient Safary mine, Kank, Czechoslovakia. Color grayish-white with a light yellowish green tint, rarely with a brownish tint. Luster dull, fracture uneven. Soft; after drying some samples have hardness up to 2. Associated minerals include kankite, scorodite, pitticite, gypsum, and "limonite."

The name is for Dr. V. Zyka, Director of the Institute of Mineral Raw Materials, Kutna Hora, Czechoslovakia. Type material is at Charles University, Prague. **M.F.**

ERRATA

Zektzerite: a new lithium sodium zirconium silicate related to tuhualite and the osumilite group by Pete J. Dunn, Roland C. Rouse, Bart Cannon and Joseph A. Nelen (Vol. 62, 416-420).

In the characterization of zektzerite, the Miller indices {001} and {010} were erroneously interchanged in Figure 1. The error is entirely the fault of the senior author, who wishes to thank Dr. Adolf Pabst and Mr. Russell Boggs for their astute observations.

The role of octahedral cations in pyroxenoid crystal chemistry. I. Bustamite, wollastonite, and the pectolite-schizolite-serandite series

by Yoshikazu Ohashi and Larry W. Finger (Vol. 63, 274-288).

In the footnote to Table 1, page 276, the Fe-WO specimen catalog number is incorrectly listed; it should be U. S. National Museum #106183.

Albrittonite, a new cobalt chloride hydrate from Oxford, Llano County, Texas by Wilson W. Crook, III and Louise-Annette Marcotty (Vol. 63, 410-412).

The proper cell parameters for albrittonite are, space group $I2/m$, $a = 8.899$, $b = 7.065$, $c = 6.644$, $\beta = 97.25^\circ$, $Z = 2$; for space group $C2/m$, $a = 10.331$, $b = 7.065$, $c = 6.644$, $\beta = 122.38^\circ$, $Z = 2$.