

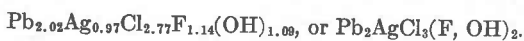
NEW MINERAL NAMES

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Bideauxite

S. A. WILLIAMS (1971) Bideauxite, a new Arizona mineral. *Int. Mineral. Assoc., Proc. 7th Gen. Meet., Tokyo, 1970*; [*Mineral. Soc. Japan Spec. Pap.* 1, 180-182].

The average of two microchemical analyses by Jack A. Allen (Pb, Ag) and by Schwarzkopf Microchemical Lab. (Cl, F, Br, I) gave Pb 62.66, Ag 15.74, Cl 14.74, F 3.26, Br none, I none, (OH) 2.78 (calc.), sum 99.18 percent, corresponding to:



Readily melts to a brilliant yellow liquid in a Bunsen burner flame. The mineral is readily dissolved by hot or cold, dilute or conc. HNO_3 ; decomposed by dilute cold HCl, and by warm NH_4OH .

Rotation and Weissenberg photographs showed the mineral to be cubic, $Fd\bar{3}m$, $a 14.117 \pm 0.008 \text{ \AA}$, $Z = 16$, ρ (calc.) 6.256, ρ (meas.) 6.274 ± 0.008 (av. of 4, Berman balance). The strongest X-ray lines (45 given) are 4.259 (7)(311), 4.076 (7)(222), 3.530 (9)(400), 3.240 (7)(331), 2.718 (10)(511, 333), 2.497 (9)(440), 1.978 (5)(711, 551), 1.839 (554, 731), 1.366 (5)(951, 773). Crystals show forms in order of decreasing importance: a {100} and o {111}, d {011} and m {113}, μ {114}, n {112}, ϕ {116}, and {029} (vicinal).

Colorless, luster adamantine, streak white, becomes pale lavender and dull on exposure to strong light. H . 3, brittle, but verges on sectile when pressed or pushed with a needle. No cleavage, fracture conchoidal. Isotropic, n 2.178 in S-Se melts, 2.192 by Brewster's method on a polished crystal.

Bideauxite occurs in the oxidation zone of the Mammoth-St. Anthony mine, Tiger, Pinal County, Arizona, enveloping and replacing boleite and commonly filmed by later cerussite. Associated minerals include leadhillite, matlockite, anglesite, and covellite.

The name (pronounced bi-dō'-ait) is for Richard A. Bideaux, mineralogist, Tucson, Arizona, who first noted the mineral (labelled cerargyrite) on U. S. Nat. Museum No. 114,583. The mineral and name were approved in advance of publication by the Commission on New Minerals and Mineral Names, IMA.

Ludlockite

R. J. DAVIS, P. G. EMBREY, AND M. H. HEY, Ludlockite: A new arsenate mineral (abstr.) *Proc. Int. Mineral. Assoc., 7th Gen. Meet., Tokyo, 1970*; [*Mineral. Soc. Japan Spec. Pap.* 1, 264]

Analysis gave PbO 9.32, FeO 17.50, Fe_2O_3 2.13, As_2O_5 70.82, sum 99.77 percent, corresponding to a cell content of $\text{Fe}_{7.94}\text{Pb}_{1.21}\text{As}_{17.83}\text{O}_{64}$ or $(\text{Fe}, \text{Pb})\text{As}_2\text{O}_6$. Readily dissolved by conc. HCl or HNO_3 , more slowly dissolved by dilute acids. Loses As_2O_5 when heated above 500° , the sublimate in a closed tube becoming yellow, then brown and black. Infra-red and Raman spectra show no signs of isolated AsO_4 or AsO_3 groups nor of As-O bonds. There are close similarities to the As-O-As bonds in the spectra of claudetite and a structure is suggested that is based on AsO_6 octahedra with all corners shared.

X-ray study showed the mineral to be triclinic, a 10.41, b 11.95, c 9.86 Å (± 0.2 percent), α 113.9°, β 99.7°, γ 82.7 ($\pm 0.2^\circ$), $V = 1103 \text{ \AA}^3$. ρ (meas.) 4.40 ± 0.05 , ρ (calc.) 4.35. The strongest lines are 10.90 (m), 8.81 (vs), 4.74 (m)(b), 4.47 (m)(b), 3.69 (m), 3.33 (ms), 3.16 (ms), 2.935 (vs), 2.863 (ms). Crystals are elongated [100], flattened $\{0\bar{1}1\}$, other prominent form $\{021\}$, no terminal faces. Cleavage $\{0\bar{1}1\}$ micaceous, combines with other easy $\{0kl\}$ cleavages to give ready fraying of crystals into fibers. Lamellar twinning, composition plane $\{0\bar{1}1\}$.

Color red, streak light brown, luster sub-adamantine. $H. 1\frac{1}{2}$ -2, sectile and flexible. Optically biaxial, positive, α 1.96, β 2.055, $\gamma > 2.11$, Z near a , optic axial plane perpendicular to $\{0\bar{1}1\}$. Pleochroic, X yellow, Y deep yellow, Z orange yellow.

Ludlockite occurs associated with zincian siderite in a cavity of ore from the "germanite section" at Tsumeb, S. W. Africa.

The name is for the New Jersey mineral collectors and dealers Frederick Ludlow Smith, III, and Charles Locke Key, who supplied specimens, that they had found, for investigation. The mineral and name were approved prior to publication by the Commission on New Minerals and Mineral Names, IMA.

Unnamed complex oxide of Ti, V, Cr, Fe

CARL O. MATHIESEN (1970). An occurrence of unusual minerals at Bidjovagge, northern Norway. *Norg. Geol. Unders.* 266, 86-104.

The mineral occurs in an area of a few sq. meters in albite fels in a hydrothermal chalcopyrite-pyrite-pyrrhotite-carbonate ore as 1-2 mm grains, surrounded by friable material. One of these showed a center portion with octahedral outlines. The center part was isotropic and homogeneous; the outer part was banded, predominantly anisotropic but with isotropic bands similar to the center.

Chemical and spectrographic analyses gave TiO_2 54, ZrO_2 0.4, V_2O_5 17.7, Cr_2O_3 7.4, Al_2O_3 1, Fe_2O_3 6.6, FeO 4.5, MgO 0.5, MnO 0.06, U 0.5-2, rare earths 0.91 (mainly Ce 0.6, Y 0.2), Pb 0. x, Sr 0.2, Cu 0.2, S 1.5, SiO_2 1.5 percent and traces of Ni, Zn, Th, Sc. Electron microprobe of the anisotropic and isotropic phases gave, respectively, TiO_2 50.29, 51.17; V_2O_5 14.42, 13.15; Cr_2O_3 8.91, 9.43; Fe_2O_3 (total Fe) 8.58, 10.19; Al_2O_3 0.60, 0.86; MgO 0.05, 0.26; CeO_2 0.70, 4.12; Sc_2O_3 1.00, 2.89; Y_2O_3 0.36, not detected; SiO_2 2.39, not detected.

X-ray study gave for the anisotropic phase (14 lines given) the strongest lines 3.80 (6), 3.47 (10), 2.81 (6), 2.61 (7), 2.14 (6), 1.89 (5), 1.66 (8); for the isotropic phase 3 lines, 2.46 (4), 2.17 (7), 1.69 (10).

The mineral is black, luster metallic-adamantine, streak black-brown. Brittle. ρ 4.0-4.2. DTA showed endothermic reactions at 470° (perhaps due to sulfides) and 690°, and an exothermic reaction at 900°; sintering began at 1000°.

Associated minerals are thortveitite, gadolinite, vanadian rutile (V_2O_5 3.8, Cr_2O_3 0.6 percent), vanadian chromian magnetite (V_2O_5 16.98, Cr_2O_3 15.09 percent). Analyses of these are given.

Unnamed copper aluminum sulfate

W. C. LEICHT (1971) Minerals of the Grandview Mine. *Mineral. Rec.* 2, 214-221.

The mineral occurs as sky-blue radiating tufts perched on and intermixed with chalcoalumite. Electron microprobe analysis indicates that it is a copper

aluminum sulfate of unknown hydration state. Biaxial, negative, $2V$ rather large, β 1.625, γ 1.645, strongly pleochroic. X-ray powder data showed strongest lines at 9.60 (8), 6.22 (10), 5.26 (8), 3.95 (10), 2.81 (6), 2.38 (7). Occurs with brochantite and chalcocolumbite at the Grandview Mine, Grand Canyon National Park, Coconino County, Arizona.

Unnamed copper iron arsenate-sulfate

W. C. LEICHT (1971) Minerals of the Grandview Mine. *Mineral. Rec.* 2, 214-221.

The mineral occurs in two habits: (a) green radiating tufts or frothy masses of intergrown crystals, (b) micaceous, more blue-green. Both give tests for arsenate and sulfate. Microprobe analysis of (a) gave in atomic-weight percent (?) Cu 73, Fe 13.5, As 8, S + Pb, U, Al 5.5 percent; (b) contains less iron. Hydration state unknown. Material of (b) is probable biaxial, negative, $2V$ 60-65°, β 1.693, γ 1.710; (a) is length-slow, $2V$ rather large, strongly pleochroic. Both gave identical X-ray patterns, with strongest lines 13.59 (10), 10.28 (8), 3.07 (4), 2.58 (5), 2.53 (5), 1.50 (4). Occurs with metazeunerite at the Grandview Mine, Grand Canyon National Park, Coconino County, Arizona.

Discussion: The optical data and some, but not all, of the X-ray lines, are close to those in the literature for tyrolite.

NEW DATA

Bafertisite

A. A. GANZEEV, A. F. EFIMOV, AND G. V. LYUBOMILOVA (1971) Manganiferous bafertisite from the Burpala massif (northern Baikal). *Tr. Mineral. Muz. Akad. SSSR* 20, 195-197 [in Russian].

Previous descriptions are summarized in *Amer. Mineral.* 45, 754, 1317 (1960). The mineral was found in small amount in a dike of microclinized granite-aplite near the center of the Burpala alkaline massif. Analysis by GVL on 35 mg. gave SiO₂ 25.18, TiO₂ 14.27, Nb₂O₅ 0.32, Al₂O₃ 1.00, Fe₂O₃ 3.67, FeO 10.82, MnO 12.77, MgO none, CaO 0.30, BaO 26.59, K₂O 0.33, Na₂O 0.38, H₂O⁺ 2.16, F 3.50, sum 101.29—(O = F₂) 1.47 = 99.82 percent. This corresponds to the formula:

Ba(Fe²⁺_{0.76}Fe³⁺_{0.33}Mn_{0.90})TiSi₂O₇(O, OH, F)₂. Color orange. Cleavage {001} perfect, $ns \alpha$ 1.786 (calc.), β 1.813, γ 1.852, $2V$ 80°.

Discussion: This differs from previous analyses in the high Mn content. Mn exceeds Fe²⁺ but not Fe²⁺ + Fe³⁺. In view of possible oxidation and the very small amount of material analyzed, a new name should not be given until material closer to the probably existing Mn-end member is found.

Bisbeeite (= Planchete + Chrysocola?)

M. C. VAN OOSTERWYCK-GASTUCHE AND CH. GREGOIRE (1971) Electron microscopy and diffraction identification of some copper silicates. *Proc. Int. Mineral. Assoc., 7th Gen. Meet., Tokyo, 1970*; [*Mineral. Soc. Japan Spec. Pap.* 1, 196-205].

New determinations on a sample from Pinal County, Arizona (RG 10, 772) showed that fibers with γ 1.65 consisted of rod-like assemblages of chrysocolla fibers, those with γ 1.7 were plancheite-like. The authors propose to discredit bisbeeite.

Discussion: These determinations were not made on type material, which was from Bisbee, Cochise Co., Ariz. (*Dana's System*, 6th Ed., App. 3, p. 14). The fibers, with γ 1.7 were plancheite-like. The authors propose to discredit bisbeeite.

Leifite (new data)
Karpinskyite (discredited)

HARRY MICHEELSEN AND O. V. PETERSEN (1971) Leifite, revised, and karpinskyite, discredited (abstr.). *Proc. Int. Mineral. Assoc., 7th Gen. Meet., Tokyo*. 1970; [*Mineral. Soc. Japan Spec. Pap.* 1, 264-265].

New analyses (not given) of leifite from the type locality, Narsarsuaq, Greenland, lead to the formula:



or



Leifite is trigonal, *P*321 or *P*312, *a* 14.351, *c* 4.854 Å. Uniaxial, positive, ω 1.516, ϵ 1.520

X-ray data on karpinskyite [*Amer. Mineral.* 42, 119-120 (1957)] show that it is a mixture of leifite and a zinc-bearing clay of the montmorillonite group.

The redefinition of leifite and the discrediting of karpinskyite were approved before publication by the Commission on New Minerals and Mineral Names, IMA.