American Mineralogist, Volume 58, pages 560–562, 1973

NEW MINERAL NAMES

MICHAEL FLEISCHER

Isowolframite

N. P. SENCHILO, AND K. A. MUKHLYA (1972) The nomenclature of wolframite. *Izvest. Akad. Nauk Kazakh SSR, Ser. Geol.* **4,** 45–48 (in Russian).

The complete solid solution series ferberite-hübnerite ($FeWO_4$-$MnWO_4$) is named as follows:

Mole % $FeWO_4$	Name
0–20	Hübnerite
20–40	Manganowolframite
40–60	Isowolframite
60–80	Ferrowolframite
80–100	Ferberite

Discussion

The names manganowolframite and ferro-wolframite were used long ago as synonyms of hübnerite and ferberite, respectively. In any case, these and isowolframite are superfluous. The two names ferberite and hübnerite, with adjectival modifiers, are adequate. If any change is desirable, it would be preferable to name the entire series wolframite (Fe — mole %), as for the olivine series.

Cyclowollastonite

HUGO STRUNZ (1970) *Mineralog. Tabellen,* 5th Ed., p. 402.

RUPERT HOCHLEITNER (1972) Cyclowollastonite from the dumps of the graphite mines at Pfaffenrenth near Hauzenberg, Bavarian Forests. *Aufschluss,* **23,** 340–341 (in German).

A name given to the high-temperature triclinic, pseudohexagonal form of $CaSiO_3$, previously called pseudowollastonite, found with graphite, phlogopite, spinel, titanite, and scapolite.

Miromirite

V. VUJANOVIC (1969) Miromirite, lead-bearing davidite from Nezilovo, Macedonia. Radovi Inst. Geol.-Rudarska Istrazivanja Ispitivanya Nuklear. Drugih Mineral. Sirovina **5,** 147–155. (Serbian with German summary).

Analysis gave TiO_2 47.91, Nb_2O_5 0.06, Fe_2O_3 29.66, Al_2O_3 1.54, MnO 0.07, PbO 11.83, rare earths + ThO_2 6.21, U_3O_8 2.68, sum 99.96 percent. Spectrographic analysis showed (ppm) Mg 350, Sn 159, Zr 1500, Cr 316, Sc 140, La 159, Ba 32, Y 1 percent. X-ray powder data and optics are given. The origin of the name is not stated.

Discussion

Unnecessary name for plumboan davidite.

Shcherbinaite

L. F. BORISENKO (1972) The new mineral shcherbinaite. *Zapiski Vses. Mineral. Obshch.* **101,** 464 (in Russian).

L. F. BORISENKO, E. K. SERAFIMOVA, M. E. KAZAKOVA, AND N. G. SHUMYATSKAYA (1970) First find of crystalline V_2O_5 in the products of volcanic eruption in Kamchatka. *Doklady Akad. Nauk SSSR,* **193,** 683–686 (in Russian).

Analysis by M.E.K. on 32 mg. of impure material gave V_2O_5 39, Na_2O 3.9, loss on ignition 12.5, insol. in acid 97.4 percent. The insoluble material contained SiO_2 24, CaO 7.7, Fe_2O_3 3.3, Mg and Al percents. The mineral dissolves readily in HCl or HNO_3.

The X-ray pattern corresponded closely to the ASTM pattern for synthetic V_2O_5. The strongest lines are 4.339 (100)(001), 4.067 (28)(101), 3.411 (28)(110), 2.883 (50)(400). These are indexed on an orthorhombic unit cell with *a* 4.35, *b* 11.53, *c* 3.57A.; synthetic V_2O_5 is reported to have *a* 4.36, *b* 11.48, *c* 3.55Å.

The mineral occurs on the walls of fissures in the "New" cupola of Bezymyanny Volcano, Kamchatka, where fumarolic gases rich in HCl and HF are escaping. It consists of finely fibrous aggregates of acicular crystals less than 1.5 mm long and less than 0.1 mm thick. Color yellow-green, luster vitreous, translucent. $G \sim 3.2$ (3.36 synthetic), *n* 2.42. Brittle, easily split along the length.

The name is for V. V. Shcherbina, Russian geochemist. The mineral and name were approved before publication by the Commission on New Minerals and Mineral Names, IMA.

Note. Crystalline V_2O_5 was reported without details by Stoiber and Dürr, *Econ. Geol.* **58,** 1186 (1963).

Anarakite (probably = zincian Paratacamite)

DARIUS ADIB, AND JOACHIM OTTEMANN (1972) Ein neues Mineral, $(Cu, Zn)_2(OH)_3Cl$, aus der Kali-Kafi-Mine, Provinz Anarak, Zentral-Iran. *Neues Jahrb. Mineral. Monatsh.* 335–338.

Microprobe analysis of a pure and homogeneous crystal gave Cu 48.53, Zn 10.64, Cl 17.25, OH (by difference) 23.58 percent, corresponding to $(Cu_{0.82}Zn_{0.18})_2(OH)_3Cl$. DTA study indicated an inversion at 90° and decomposition at 277 ± 2°.

Precession and Weissenberg study showed the mineral to be monoclinic, space group C_s^4 or C_{2h}^6, *a* 11.901, *b* 6.830, *c* 10.162Å., β 112.87°, $Z = 12$, *G* calc 3.90. The strongest X-ray lines (18 given) are 5.476 (65)(200), 2.755 (100)(022), 1.708 (30)(040).

Color emerald-green, *H* 3-3.5, biaxial positive, *ns* α 1.842 ± 0.002, γ1.849 ± 0.002, $2V$ 40°, pleochroic from grass-green to green. Infra-red absorption study (no data given) gave results differing markedly from those of atacamite and paratacamite.

The mineral occurs in the zone of oxidation of the Shah Khuni and Kali-Kafi mines, Anarak Province, Central Iran, associated with atacamite, minerals of the boleite group, murdochite, plattnerite, phoenicochroite, "khuniite," rosasite, autunite, and wulfenite.

The name is for the province.

Discussion

This mineral was submitted to the IMA Commission (letter of April 10, 1972). By letter of April 18, it was pointed out to the authors: (1) that the composition was that of a zincian variety of $Cu_2(OH)_3Cl$, for which the minerals atacamite, paratacamite, and botallackite are known; (2) that their powder data matched closely those for rhombohedral paratacamite, *a* 13.65 (twice their *b*), *c* 13.95Å. (3) that the optics matched those of paratacamite; (4) that their calculated values of *Z* and *G* were in error (their data give *G* 5.61 for $Z = 12$, *G* 3.74 for $Z = 8$, the latter agreeing closely with *G* for paratacamite).

The authors replied on May 2, pointing out that synthetic paratacamite had been described as monoclinic by Oswald and Guenter, *J. Appl. Crystallogr.* **4,** 530 (1971), but with a different space group, $P2_1/a$, *a* 11.83, *b* 6.822, *c* 6.166A., β 130.62°.

On May 10, it was suggested to the authors that publication should be deferred until definitive proof was obtained that anarakite differed from paratacamite. The present paper had been submitted to the journal on April 25.

Until proof to the contrary is presented, anarakite must be considered to be zincian paratacamite.

Unnamed hexagonal $Cu_{1.83}S$

A. H. CLARK (1972) A natural occurrence of hexagonal $Cu_{1.83}S$ in Rancuaga, Chile. *Nature, Phys. Sci.* **238,** 123–124.

Electron microprobe analysis (av. of 3) using synthetic chalcocite and covellite as standards, gave Cu 78.6, S 21.7, Fe traces, sum 100.3 percent corresponding to $Cu_{1.83}S$. The strongest X-ray lines (24 given) are: 3.60 (25), 3.36 (50), 3.002 (40), 2.866 (80), 2.630 (65), 2.540 (40), 2.452 (25), 2.377 (85), 1.937 (100), 1.860 (90), in good agreement with data on material synthesized by Cavolotti and Salvago, *Electrochim. Metal.* **4,** 181 (1969) and by Cook *et al, J. Appl. Phys.* **41,** 3058 (1970).

Color bluish-black. Fine granular, grain size not exceeding 15 microns. Pale blue in plane polarized light in air, not detectably bireflectant, anisotropy strong from pale greenish-blue to deep purplish-blue. Slightly softer (Vickers hardness about 50) and less reflectant (*R* about 35%) than the associated djurleite.

The mineral occurs as a powdery coating on djurleite that rims chalcopyrite and pyrite in a veinlet in the El Teniente copper deposit near Rancagua, central Chile. It was probably formed by the oxidation of djurleite.

Unnamed Arsenates

KURT WALENTA (1972) The secondary minerals of the Co-Ni-Ag-Bi-U-ore veins in the Wittichen region, central Black Forest. *Aufschluss,* **23,** 279–329 (in German).

Copper Arsenate-Sulfate (p. 269)

Green to blue-green crusts found at 3 localities gave microchemical tests for Cu, arsenate, and sulfate. The strongest X-ray lines (35 given) are 10.69 (10), 4.57 (8), 4.04 (7), 2.95 (5), 2.59 (10), 2.53 (7), 1.505 (6). Apparently orthorhombic. Optically biaxial, neg., 2*V* large, α 1.667, γ 1.737 (both $\pm$ 0.003). Associated with brochantite, lavendulan, and erythrite.

Barium uranyl arsenate (Mineral F) (p. 303)

Occurs in yellow crusts, associated with meta-heinrichite and uranospinite, at the Sophia shaft. Microchemical tests indicate it to be a Ba-uranyl arsenate; some Ca is present. Readily dissolved by HCl or HNO_3. The strongest X-ray lines (43 given) are 9.01 (10), 4.91 (5d), 4.49 (8), 3.54 (6), 3.29 (6), 3.01 (7), 2.86 (7), 1.921 (5), 1.877 (5). In acicular crystals up to 40 microns long, 1 micron thick. Probably orthorhombic. Biaxial, neg., 2*V* small, *ns* α1.605, γ1.738 (both $\pm$ 0.005), *X* colorless, *Z* yellowish. Not fluorescent in U.V. light.

Calcium-Magnesium Arsenate (a) (p. 316–317)

The mineral occurs in the Johann Mine with gypsum, monohydrocalcite, schroeckingerite, novacekite, and hoernesite. Microchemical tests indicate it to be a hydrous Ca-Mg arsenate. The strongest X-ray lines (42 given) are 7.28 (10), 6.50 (10), 4.02 (8), 3.57 (6d), 3.28 (8), 3.21 (8), 3.02 (8d), 2.96 (8d), 2.54 (8), 2.00 (7d), 1.838 (7), 1.603 (5). Colorless. Orthorhombic or monoclinic. *ns* α1.540, γ1.563, both $\pm$ 0.002. The optic sign could not be determined.

Calcium-Arsenate (c)

The mineral occurs in the Johann Mine as colorless tabular crystals intergrown with gypsum and associated with mineral *a* above. Microchemical tests showed it to be a calcium arsenate; sulfate may be present. The strongest X-ray lines (20 given) are 7.86 (10), 4.32 (7), 3.89 (6), 3.11 (7), 2.80 (6), 1.903 (5). Optically biaxial, pos., *ns* α 1.513, γ 1.554 m, both $\pm$ 0.002, 2*V* 50°, $r < v$, *X* parallel elongation, $Z \perp$ plane of tabular crystals. Perhaps the arsenate analogue of ardealite.

Calcium-Arsenate (p. 317–318)

The mineral occurs at the Anton Mine associated with picropharmacolite. Microchemical tests showed that it was a hydrous calcium arsenate. The strongest X-ray lines (52 given) are 10.84 (10), 6.39 (6), 4.09 (6), 3.59 (6), 3.17 (7), 2.84 (8), 2.61 (5). Colorless, transparent to translucent. Probably monoclinic, *ns* α1.652, γ1.583, both $\pm$ 0.002, 2*V* near 90°, $Z = b$, $Y \wedge c = 8°$.

Calcium-Arsenate-Sulfate (p. 318)

The mineral occurs in the Anton Mine as rhombohedral colorless crystals associated with pharmacolite, picropharmacolite, sainfeldite, and gypsum. The strongest X-ray lines (80 given) are 8.59 (10), 5.71 (6), 5.34 (8), 4.55 (6), 3.74 (7d), 3.59 (8), 3.05 (7), 2.86 (8), 2.83 (8), 2.70 (8), 2.67 (8). The rhombohedron faces are at an angle of about 76°. Fracture conchoidal. Optically uniaxial to slightly biaxial, neg., *n*E 1.585, *n*O 1.593, both $\pm$ 0.002.

New Data

Khuniite (probably = Hemihedrite)

D. Adib, J. Ottemann, and B. Nuber (1972) Further data on khuniite from the Tschah Khuni mine, Anarak, Iran. *Neues Jahrb. Mineral., Monatsh.*, 328–335.

The mineral was first described in 1970 (abstract in *Amer. Mineral.* 55, 1813), without any X-ray data. Two new microprobe analyses gave PbO 72.7, 72.2; CuO 2.8, 4.2; ZnO 2.4, 1.1; Cr_2O_3 20.1, 19.8; SiO_2 3.9, 3.9; MoO_3 tr., – – –; sum 101.9, 101.7 percent, corresponding to $Pb_5(Cu_{0.54}Zn_{0.44})(CrO_4)3(SiO_4)$. Precession and Weissenberg photographs show the mineral to be triclinic, *a* 9.456, *b* 10.880, *c* 9.893Å, α64.24°, β111.83°, γ107.72°; assuming $Z = 2$, *G* calc. = 6.26, meas (Berman balance) 6.0–6.1. The strongest X-ray lines are 4.877 (41)($\bar{1}$12), 4.370 (60)($\bar{1}$22), 3.294 (100)(211), 3.185 (90)(032), 3.081 (73)(233), 2.922 (54)(131), 2.851 (40)(003). *H* 3–3.5. Optically biaxial, positive, 2*V* 30°, *ns* α2.10, β2.35, γ2.60, weakly pleochroic from greenish-yellow to brownish-yellow.

Discussion

It was pointed out to the authors in 1970 that khuniite is probably identical with hemihedrite [*Amer. Mineral.* **55,** 1088–1144 (1970)]. The X-ray powder data are essentially identical, but the triclinic unit cells derived are different. Hemihedrite, $Pb_{10}Zn(CrO_4)_6SiO_4)_4F_2$, differs slightly in containing F, in not containing Cu, in the proportions of Zn, and in having 2*V* 88°. The formula given for khuniite is not in valence balance. Hemihedrite has clear priority and khuniite must be considered to be a variety of it unless clear evidence to the contrary is presented.

Blanchardite = Brochantite

J. S. White, Jr. (1972) What's new in minerals? *Mineral. Record*, **3,** 229.

The name blanchardite was given in 1964 to brilliant green crystals from the Blanchard claims, Bingham, New Mexico. No data whatever were given [*Amer. Mineral.* **54,** 993 (1969)]. White quotes Abraham Rosenzweig, University of New Mexico, and Peter Embrey, British Museum of Natural History, who state that numerous specimens so labelled have been found by optical and X-ray tests to be brochantite.

Aktashite

V. S. Gruzdev, N. M. Chernitsova, and N. G. Shumkova (1972) Aktashite, $Cu_6Hg_3As_5S_{12}$, new data. *Doklady Akad. Nauk SSSR,* **206,** 694–697 (in Russian).

See *Amer. Mineral.* **56,** 358–359 (1971). The mineral has been found in the Gal Khaya deposit, Yakutia. Analysis of material containing pyrite by N.G.S. and a microprobe analysis by Yu. G. Lavrent'ev gave, resp., Hg 27.80, 32.55; Cu 16.80, 23.2; As 17.02, 18.9; Sb 0.67, 0.41; S 28.25, 23.6; Fe 9.67, not found; Zn, 0.15, sum 100.21, 101.66 percent. Subtracting pyrite from the first analysis, both agree with the formula above.

X-ray study shows the mineral to be trigonal, space group probably $C_3^4 - R_3$ (indicated by the morphology) or $C_{3i}^2 - R\bar{3}$, *a* 13.72 ± 0.01, *c* 9.32 ± 0.01A., $Z = 3$. X-ray powder data (37 lines) are given. Other data agree with the previous description; reflectances are given at 9 wavelengths (472 nm, 30.7; 579, 29.9; 691, 27.2 percent.

Discussion

Evidently a valid mineral.

Discredited Minerals

P. B. Moore (1972) On Igelström's manganese arsenates and antimonates from the Sjö Mine, Grytthyttan, Orebro County, Sweden. *Geol. Fören, Förh.* **94,** 423–434.

X-ray study was made of type material for species described by Igelström (1884–1894) from the collections in the Swedish Natural History Museum. Some of the minerals were new species and had priority, but the descriptions were so scanty that new names were given later by others. Moore suggests (agreed to by the IMA Commission on New Minerals and Mineral Names) that these names now be abandoned. The references below are to *Dana's System of Mineralogy,* 7th Ed., vol. 2:

Basiliite (Dana, 1025) = Hausmannite + Feitknechite
Chloroarsenian (Dana, 684) = Allactite
Magnetostibian (Dana, 1025) = Jacobsite
Pleonectite (Dana, 902). The type material = Hedyphane.
  Two other samples so labelled were Tephroite and Berzeliite.
Pleurasite (Dana, 845), a mixture, mainly Sarkinite
Pyrrhoarsenite (Dana, 683) = Berzeliite
Rhodosarsenian (Dana, 1026) = Rhodonite
Sjögruvite (Dana, 845) = Caryinite.