NEW MINERAL NAMES

Istisuite

M. A. Kashkai and A. I. Mamedov, The new mineral istisuite. *Doklady Akad. Nauk Azerb. S.S.R.*, **11**, No. 1, 21–25 (1955), from an abstract by C. Guillemin in *Bull. soc. franc. mineral. et crist.*, **78**, 617 (1955).

Analysis by F. I. Vekilovoi gave SiO_2 47.69, Al_2O_3 3.94, Fe_2O_3 2.28, FeO 0.14, MgO 0.41, CaO 41.38, MnO 0.09, Na_2O 1.13, H_2O^- 0.02, H_2O^+ 3.47, SO_3 0.26; sum 100.81%, corresponding to $(Na_{.32}Ca_{6.68})(Si_{7.07}Al_{0.93})O_{20.8}(OH)_{3.21}$. Dissolves in HCl on heating. The mineral is monoclinic. The characteristic *x*-ray lines are at 2.919, 3.254, and 1.666 Å. A *D.T.A.* curve shows an endothermic effect at 450°. The mineral is gray; it occurs in elongated prisms and in fibers. Occurs with wollastonite in the skarn zone near Istisu, Dalidag, Little Caucasus.

Michael Fleischer

Carobbiite

H. Strunz, Carobbiit, ein neues Mineral. *Rend. soc. mineralog. Ital.*, **12**, 212–213 (1956).

Carobbi, *Atti accad sci., lettere e arti Modena*, **14**, 1–12 (1936), described small cubic crystals, $n=1.362$, from cavities in lavas from Vesuvius, that were apparently KF. Strunz has re-examined this material and confirms the presence of colorless cubic crystals with cubic cleavage and $n=1.362$. *X*-ray powder photographs indicated a mixture, but 5 of about 30 lines were those of KF, a_0 5.40 Å. Spectrographic analysis showed K and a little Na; micro-chemical tests showed F and a little Cl.

KF	$n=1.352$, a_0 5.34 Å
Carobbiite	$n=1.362$, a_0 5.40 Å
NaCl	$n=1.544$, a_0 5.64 Å

The name is for Professor Guido Carobbi, Institute of Mineralogy and Geochemistry, University of Firenze (Florence).

M. F.

Simplotite

Mary E. Thompson, Carl H. Roach, and Robert Meyerowitz, Simplotite, new calcium tetravanadite from the Colorado Plateau. *Science* **123**, No. 3207, p. 1078 (1956).

Microchemical analysis on about 70 mg. (by R.M.) gave V_2O_4 67.7, V_2O_5 0.5, CaO 11.6, H_2O 18.4, insol. 0.5; sum 98.7%. Qualitative spectrographic analysis by K.E. Valentine indicated Mg and Al 0.1–0.5%, and Na, K, Fe 0.05 to 0.1%. The analysis gives the formula $CaV_4O_9 \cdot 5H_2O$. Simplotite is dark green, nearly black, in coarse aggregates to yellow-green in thin flakes. It is biaxial, negative, $\alpha=1.705$, $\beta=1.767$, $\gamma=1.769$ (all ± 0.002), 2V about 25°, $X=b$ (yellow), Y (green), $Z \wedge c 58°$ (green), dispersion $r>v$, weak and crossed. G.$=2.64 \pm 0.02$. Very soft. *X*-ray study by M. E. Mrose showed simplotite to be monoclinic, pseudotetragonal, space group *C2/m*. The unit cell has a_0 8.39, b_0 17.02, c_0 8.37 (all ± 0.02 Å), $\beta=90°25' \pm 5'$, Z$=4$, G. calcd. 2.65. Cleavage (010) very easy, micaceous.

Simplotite occurs as hemispherical aggregates of platy crystals at the Peanut Mine, Montrose County, Colo., where it occurs as coatings on fractures in the ore-bearing sandstone with duttonite, melanovanadite, native Se, and an undescribed V oxide. It has also been found at the Sundown claim, San Miguel County, Colo., the Shattuck-Den lease on

Club Mesa, and the J. J. Mine in Paradox Valley, both in Montrose Co., and the Vanadium Queen Mine, San Juan County, Utah. It is found in comparatively unoxidized ore, associated with montroseite, paramontroseite, vanadiferous silicates, uraninite, and coffinite.

The name is for J. R. Simplot, former owner of the Peanut Mine.

M. F.

Kupletskite

E. I. Semenov, Kupletskite—a new mineral of the astrophyllite group. *Doklady Akad. Nauk S.S.S.R.*, **108**, 933–936 (1956) (in Russian).

The mineral occurs in lamellar masses up to 5×3×1 cm. in size, consisting of individual plates with perfect cleavage on [100]; it also occurs as fine plates. Monoclinic (or triclinic with small departure from monoclinic symmetry). Color dark-brown to black, streak brown. Hardness about 3.

Analyses gave:

	1	2	3
SiO_2	32.60	33.54	—
TiO_2	12.04	10.64	—
ZrO_2	1.19	none	—
Nb_2O_5	0.66	2.48	4.35
Al_2O_3	1.68	1.00	—
Fe_2O_3	5.44	7.80	—
FeO		5.35	—
MnO	27.65	23.60	20.45
MgO	2.98	1.63	—
CaO	3.60	1.45	—
BaO	—	0.32	—
K_2O	4.38	5.63	—
Na_2O	2.14	2.14	—
H_2O^+	3.83	3.90	—
H_2O^-	1.08	0.80	—
F	1.22	—	—
	100.49	100.28[a]	
$-O=2F$	0.51		
	99.98		
Sp. gr.	3.201	3.229	

Analyst T. A. Burova, V. A. Moleva.

[a] Given as 100.18 in original.

X-ray spectrographic analysis showed the presence of about 1% Sr, 0.2% Rb, 0.1% Ce, 0.1% Nd. Spectrographic analysis showed weak lines of Be, Zn, Ga, and Ta. The analyses agree well with the formula $(K, Na)_2, (Mn, Fe)_4(Ti, Nb)Si_4O_{14}(OH)_2$ except that they give for K+Na 1.12 and 1.31 instead of 2. Kupletskite is therefore the manganese analogue of astrophyllite; nearly the entire series from the pure Fe'' end member to analysis no. 1 is known.

X-ray powder data are given for kupletskite and astrophyllite; they are nearly identical. The strongest lines of kupletskite are in Å., 3.505 (8), 2.642 (8), 2.573 (4).

Kupletskite melts easily before the blowpipe to a weakly magnetic dark globule. The dehydration curve shows an endothermal break at 740–800°, probably due to melting. The mineral is soluble in acids. Easily alters to porous black manganese oxides.

Kupletskite is optically biaxial, negative, $2V=79°$, $\gamma=1.731$, $\beta=1.699$, $\alpha=1.656$ (calculated). Strong dispersion, $r>v$. Pleochroic with Z brown to X orange-yellow. Elongation positive.

Kupletskite occurs in four pegmatites of the Lovozero massif of alkalic rocks, Kola Peninsula. It occurs mainly in a natrolite-rich central part of the pegmatites, associated with schizolite and neptunite, also in small amount in the border zone of the pegmatite in microcline and eudialyte which are associated with nepheline and aegirine, and also in small amount in the nepheline syenites themselves.

The name is for the geologists Boris Mikhailovich Kupletsky and Elsa Maximilianovna Bohnshtedt-Kupletskaya.

M. F.

Hibonite

HUBERT CURIEN, CLAUDE GUILLEMIN, JEAN ORCEL, AND MICHELINE STERNBERG, La hibonite, nouvelle espèce minérale. *Compt. rend.*, **242**, 2845–2847 (1956).

The mineral occurs in hexagonal prisms flattened parallel to (0001) or in steep pyramids; the crystals are up to 4 cm. in largest dimension. The face (0001) is commonly divided into 6 sectors. Cleavage (0001) easy, parting on $(10\bar{1}0)$.

Fracture sub-conchoidal. Hardness$=7\frac{1}{2}$–8, G.$=3.84$, color brownish-black to black, reddish-brown in thin fragments. Optically uniaxial, negative, $\omega=1.807\pm0.002$, $\epsilon=1.79\pm0.01$; pleochroic with O brownish-gray, E gray. Analysis by Patureau gave SiO_2 1.50, Al_2O_3 74.00, TiO_2 8.50, Fe_2O_3 0.45, FeO 2.30, rare earth oxides 3.50, CaO 6.50, Mg 3.20; sum 99.95%. Spectrographic analysis showed traces of Cu, Cr, Mn, and Na. The radioactivity is weak, corresponding to 1000 ppm Th or 100 ppm U. The analysis corresponds to $(Ca_{1.61}$ Ce etc. $_{0.31})$ $(Al_{20.31}Fe_{0.53}Ti_{1.48}Si_{0.35}Mg_{1.11})O_{37.9}$ or essentially $CaAl_{12}O_{18}$. The mineral is infusible, slowly soluble in a mixture of H_2SO_4 and H_3PO_4.

Laue, rotation, and Weissenberg photographs showed the space group to be $P6/m\,mc$, the unit cell has $a=5.60$ *k*X, $c=22.12$ *k*X, containing $2(CaO\cdot 6\,Al_2O_3)$. The structure is similar to those of magnetoplumbite $(PbO\cdot 6\,Fe_2O_3)$, the artificial oxide $CaO\cdot 6\,Al_2O_3$, and beta-alumina.

The mineral occurs in an alluvial deposit at Esiva, Fort Dauphin region, Madagascar. Also found in a metamorphosed limestone rich in calcic plagioclase, associated with corundum, spinel, and thorianite.

The name is for P. Hibon, who discovered the mineral. Pronounced Ee'bonite; not to be confused with hibbenite.

M. F.

Karpinskyite

L. L. SHILIN, Karpinskyite—a new mineral. *Doklady Akad. Nauk S.S.S.R.*, **107**, 737–739 (1956) (in Russian).

Chemical analysis by V. A. Moleva gave SiO_2 56.68, TiO_2 trace, Al_2O_3 16.40, Fe_2O_3 0.06, BeO 2.58, ZnO 3.26, MgO 0.78, Na_2O 9.18, K_2O 1.55, H_2O^- 2.50, H_2O^+ 5.00; sum 97.99%. (Given as 99.99 in the original and the molecular ratios agree with the figures given. *M. F.*) Spectrographic analysis by A. S. Dudykin showed Ga, Ca 0.X%, Pb, Cu, Zr, Sr, Mn 0.0X%, Nb 0.01%. This gives the formula $(Na_{1.79}K_{0.20})(Be_{0.62}Zn_{0.24}Mg_{0.12})Al_{1.95}Si_{5.71}O_{14.65}(OH)_{3.35}$ or $Na_2(Be,Zn,Mg)Al_2Si_6O_{16}(OH)_2$. The mineral is insoluble in 1:1 HCl, HNO_3, and H_2SO_4. The *DTA* curve shows endothermic breaks at 90°, 540°, and 900°.

Karpinskyite is white with vitreous to pearly luster. Soft, H. not more than $1\frac{1}{2}$–2. Sp. gr. = 2.545, by hydrostatic suspension. Fracture uneven, easily cleavable to fine fibers. Optically uniaxial, positive, with *n*s $\epsilon = 1.518$, $\omega = 1.511$.

The crystals are prismatic, acicular. The hexagonal cell has $a = 14.24$, $c = 4.83$ Å, but the mineral is rhombohedral, with possible symmetry classes D_{3d}, C_{3v}, or D_3. *X*-ray powder data are given; the strongest lines are 3.161 (10), 3.388 (7), 2.463 (7), and 1.741 (7).

Karpinskyite occurs in rosettes of radiating crystals in a pegmatite vein cutting lujavrites on "the northern slope of one of the alkalic massifs." (Kola Peninsula? *M. F.*) Associated minerals are natrolite and albite, the latter partly replaced by karpinskyite. Also mentioned is "a yellow lamellar mineral kozhanovite (karnasurtite)," not otherwise identified (new mineral? *M. F.*).

The name is for A. P. Karpinsky, late President of the Academy of Sciences, U.S.S.R.

DISCUSSION: Calculation of the hexagonal cell content does not give satisfactory results. Further *x*-ray study is needed. This is the first instance of isomorphous substitution of Be by Zn, often postulated previously on the basis of the relations between willemite and phenakite in spite of the large differences in ionic radii.

M. F.

Karpatite

G. L. PIOTROVSKY, Karpatite—a new organic mineral from Transcarpathia. *Lvovskoe geol. Obshch., Mineralog. Sbornik*, No. **9**, 120–127 (1955) (in Russian).

The mineral was found associated with curtisite (idrialine) and amorphous organic material in cavities at the contact of diorite-porphyry with Flysch argillites. It forms acicular crystals and fibrous, radiating aggregates about 0.05–0.2 mm. thick, up to 5 mm. long. Monoclinic with $\beta = 110°$; goniometric measurements on natural material agree closely with those on material prepared by recrystallization from aniline or by sublimation; cleavage excellent parallel to the length. Hardness about 1, G. = 1.40, melts about 430° with partial decomposition, sublimes if held just below the melting point. Optically biaxial, negative, $\alpha = 1.780 \pm 0.002$, $\beta = 1.977$–1.982, $\gamma = 2.05$–2.15; optic axial plane parallel to length (=X). Analyses by T. G. Sokolov, L. M. Samtsov and L. B. Lebedev gave C 92.22, 92.08; H 4.08, 4.03; O (by diff.) 3.70, 3.89%, corresponding to C:H:O approximately 33.17:17:1 (actually 32.3:16.9:1 *M. F.*). *X*-ray powder diagrams by Ya. L. Giller are different from those of curtisite and hoelite. Apparently named for the locality.

M. F.

Heidornite

WOLF V. ENGELHARDT AND HANS FÜCHTBAUER, with *x*-ray data by *Josef Zemann*. Heidornit, $Na_2Ca_3Cl(SO_4)_2B_5O_8(OH)_2$, ein neues Bormineral aus dem Zechsteinanhydrit. *Heidelberger Beitr. Mineralog. Petrog.* **5**, 177–186 (1956).

The mineral occurs, mixed with an equal amount of glauberite, in a cavity in a drill core at 1968 m. depth in the upper anhydrite of the Zechstein formation on the German-Dutch border northwest of Nordhorn. It is found as terminated (some doubly), transparent crystals up to 7 cm. long. The crystals are steep, spear-like, with the forms {110}, {11$\bar{1}$}, and {11$\bar{2}$} dominant. H. 4–5. G. 2.753±0.002, by suspension in bromoform-methanol.

Analysis by R. Kühn gave NaCl 9.40, Na_2O 5.07, CaO 27.61, SO_3 26.55, B_2O_3 27.99, H_2O^- (105) 0.14, H_2O^+ 3.15, insol. in acid 0.07, sum 99.98 per cent, corresponding to $Na_2Ca_3Cl(SO_4)_2B_5O_8(OH)_2$. Fe was detected in the insoluble residue. The water is given off between 500° and 600° C.

Goniometric study showed heidornite to be monoclinic, $a:b:c=1.29:1:2.37$, β 93°15′. The {11$\bar{2}$} faces and the perfect cleavage on {001} were smooth, but {11$\bar{1}$} and {110} were striated and showed vicinal faces so that measurements were approximate. Weissenberg and rotation diagrams gave a 10.21, b 7.84, c 18.79 Å. (all ±0.5%), β 93°30′±15′, $a:b:c=1.30:1:2.40$. The unit cell contains 4 of the above formula weights. G. calcd. 2.70. The space group is either $C\,2/_c-C^6{}_{2h}$ or $Cc-C^4{}_s$, probably the former, as a positive test for piezoelectricity was not obtained. X-ray powder data are given; the strongest lines in Å. are: 3.11 vs, 3.77 s, 2.74 s, 2.96 ms.

Heidornite is optically biaxial, positive, ns at 587 mμ α 1.579_5, β 1.588_5, γ 1.604_5, 2 V 74° calcd., somewhat variable 63–77° measured, $\beta=b$, $\gamma:a=23°$, dispersion $v>r$.

The name is for F. Heidorn, geologist.

M. F.

Kettnerite

LUBOR ZAK AND VLADIMIR SYNEČEK. Kettnerite, $(CaF)(BiO)CO_3$, a new mineral of the phosgenite-bismutite group: preliminary note *Časopis mineral. geol.* **1**, No. 3, 195–197 (1956) (Czech with English summary).

The mineral occurs as small brown, brownish-yellow, to lemon-yellow plates in cavities in a quartz vein cutting pegmatitic K-feldspar near Krupka (Graupen), Krušné hory (Erzgebirge), N. W. Bohemia. Associated minerals are fluorite, Bi, bismuthinite, hematite, and altered topaz. Chemical and spectrographic analysis (not given) yield the formula $CaBi(CO_3)OF$. The mineral is ditetragonal dipyramidal, space group $P_4/n\ m\ m$ ($D^7\ 4h$) with a_0 3.79, c_0 13.59 A., Z=2. G. 5.80. The name is for Radim Kettner, Professor of geology, Charles University, Prague.

M. F.

DISCREDITED MINERALS

Waltherite (=Walpurgite)

E. FISHER, Identität von Waltherit und Walpurgin. *Chemie der Erde*, **17**, 341–345 (1955).

X-ray study of 8 samples of waltherite (presumably a bismuth carbonate) from the type locality showed that it is identical with walpurgite (bismuth uranium arsenate). Microchemical tests showed Bi, U, As, and P, and CO_2 (admixed bismutite?) Other properties including physical properties and c_0 (5.42 waltherite, 5.49 walpurgite) are in good agreement. The name waltherite (1857) has priority over walpurgite (1877), but the description was so inadequate that the name waltherite should be dropped.

M. F.

Alushtite (=Dickite+hydrous mica)

L. V. Logvinenko, and V. A. Frank-Kamenetskii, On the so-called alushtite. *Doklady Akad. Nauk SSSR*, **105**, 554–557 (1955) (in Russian).

Alushtite was described by Fersman in 1907 as a hydrous aluminum silicate from Alushta, Crimea. It is now shown by chemical, optical, *x*-ray, and *D.T.A.* study to be dickite with admixed hydrous mica.

M. F.

Avalite (=chromian illite)

Douchan Stangatchilovitch (Dusan Stangačilović), Sur la présence d'illite chromifère dans le gisement de cinabre d'Avala, près de Belgrade. *Compt. rend.*, **242**, 145–147 (1956).

Avalite was described in 1884 by Losanitch (*Dana's System*, 6th Ed., p. 617) as a chromium-bearing mica, and has since generally been classed as a chromian muscovite (fuchsite). A new analysis gave SiO_2 50.05, Al_2O_3 22.83, Cr_2O_3 12.38, Fe_2O_3 2.33, FeO, MnO none, MgO 0.14, CaO 0.43, K_2O 2.16, Na_2O 0.24, TiO_2 0.40, P_2O_5 tr., H_2O^+ 9.43; sum 100.39%. *X*-ray powder data show the strongest lines at 10.13, 4.91, and 3.68 Å; a line at 7.1 Å indicates the presence of a little kaolinite. Dehydration and *D.T.A.* data also indicate that the material is to be classed as an illite. The mineral was formed by the hydrothermal alteration of a serpentinite.

M. F.

Staszicite (=Olivenite)?

C. Guillemin, Contribution a la minéralogie des arséniates, phosphates et vanadates de cuivre. I. Arséniates de cuivre. *Bull. soc. franc. minéral. crist.*, **79**, 7–95 (1956).

Staszicite was described by Morozewicz (1918) as $(Cu,Zn,Ca)_2AsO_4(OH)$. It was classed in *Dana's System*, Vol. II, p. 806, as a zincian conichalcite, $Ca(Cu,Zn)AsO_4(OH)$. Guillemin, on a sample from the type locality, Miedzianka, Poland, finds the *x*-ray powder pattern to be that of olivenite, $Cu_2AsO_4(OH)$. The sample gave a microchemical test for zinc and is considered to be a zincian olivenite.

Discussion: Guillemin does not comment on the fact that the only analysis of staszicite showed 20.80% CaO, with $Ca:(Cu+Zn)$ nearly 1:1, as in conichalcite.

Further study is needed.

M. F.

Arsentsumebite (=Duftite-α)

C. Guillemin, *op. cit.* *X*-ray study of the original specimen (*Bull. soc. franc. mineral.*, **58**, 4 (1935)) showed it to be duftite-α mixed with a little bayldonite. (See abstract of duftite under New Data.)

M. F.

Parabayldonite (=Plumboan Conichalcite)

C. GUILLEMIN, *op. cit.* Parabayldonite (Biehl, 1919) is shown by analysis and *x*-ray study to be a plumboan conichalcite (Ca, Pb)$CuAsO_4(OH)$, part of the duftite-β-conichalcite series.

M. F.

Cuproplumbite (=Bayldonite)

C. GUILLEMIN, *op. cit.* Cuproplumite (Biehl, 1919) has generally been considered to be bayldonite. This is now verified by *x*-ray powder data on material from Tsumeb.

M. F.

Trichalcite (=Tyrolite)

C. GUILLEMIN, *op. cit.* Trichalcite (Hermann, 1858), supposedly $Cu_3(AsO_4)_2 \cdot 5H_2O$, is found by *x*-ray study of material from the type locality, Turginsk, Ural Mts., to be identical with tyrolite, $Cu_9Ca_2(AsO_4)_4(OH)_{10} \cdot 9\text{–}10H_2O$, as had previously been suggested by Berry, *Am. Mineral.*, **33,** 193 (1948). Material from Shoshone County, Utah, described by Shannon, *Proc. U. S. Natl. Museum*, **62,** art. 9 (1922) as trichalcite is found by *x*-ray study to be the sulfate langite.

M. F.

NEW DATA

Duftite

C. GUILLEMIN, Contribution a la minéralogie des arséniates, phosphates et vanadates de cuivre. I. Arséniates de cuivre, *Bull. soc. franc. minéral crist.*, **79,** 7–95 (1956).

Guillemin finds that there are two minerals of the composition $PbCuAsO_4(OH)$. The type material, here called duftite-α, is orthorhombic and the *x*-ray powder pattern is very similar to those of descloizite and mottramite, so that the space group is probably *Pnma*. Duftite-β is orthorhombic, disphenoidal, space group $P2_12_12_1$ and forms a complete series of solid solutions with conichalcite, $CaCuAsO_4(OH)$. Analyses, optical data, and *x*-ray powder data are given.

DISCUSSION: It would be preferable to drop the terms duftite-α and duftite-β, to restrict the name duftite to what is called here duftite-α, and to rename duftite-β.

M. F.

Lavendulan (Freirinite=Lavendulan)

C. GUILLEMIN, *op. cit.*

Lavendulan was described by Breithaupt in 1837 from Annaberg as a hydrous cobalt-nickel-copper arsenate, and was found by Vogel in 1853 at Joachimsthal, and by Goldsmith in 1877 from San Juan, Chile. Foshag (*Am. Mineral.*, **9,** 29–31 (1924)) found that the Chilean material differed optically from that of Joachimsthal and his analysis of the Chilean mineral led to the formula $Na_3(Cu,Ca)_3(AsO_4)_2(OH)_3 \cdot H_2O$. He therefore decided that the Chilean material was not identical with lavendulan and he gave it the new nmae freirinite.

Guillemin now finds by *x*-ray study that lavendulan and freirinite from the type localities give identical *x*-ray powder patterns. Analyses of a sample from Chile (impure) and of synthetic material show the presence of Cl and lead to the formula $Na(Cu,Ca)_6(AsO_4)_4Cl \cdot 4\text{–}5H_2O$ with Ca:Cu variable, about 1:5 (probably better written $NaCaCU_5(AsO_4)_4Cl \cdot 4\text{–}5H_2O$ *M.F.*). H.=2½, G.=3.54. Orthorhombic, $a=9.73$, $b=41.0$, $c=9.85$ Å, isostructural with sampleite, $NaCaCU_5(PO_4)_4Cl \cdot 5H_2O$.

M. F.

Lindackerite

C. Guillemin, *op. cit.*

New analyses of lindackerite show that the 1853 analysis, which gave the formula $Cu_6Ni_3(AsO_4)_4(SO_4)(OH)_4 \cdot 5H_2O$, was in error. No sulfate was found. Two new analyses gave the formula $H_2Cu_5(AsO_4)_4 \cdot 8\text{–}9H_2O$ with a little Co and Ni replacing Cu. Optical and *x*-ray powder data and data on dehydration are given. Lindackerite is monoclinic with $a=3.95$, $b=8.02$, $c=6.277$ Å, $\beta=100°30'$.

M. F.