

Thirty-second list of new mineral names

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THE present list comprises 149 new species, nearly all of which have been accepted by the IMA Commission on New Minerals and Mineral Names, together with names for 3 artificial products, 2 inadequately described minerals, 3 trade-names for gem materials, and 6 synonyms; likewise 9 erroneous spellings due to back-transliteration from the Cyrillic, 7 other errors, and 3 German spelling variants. As in earlier lists, abstracts in the *Am. Mineral.* (A.M.), *Mineral. Abstr.* (M.A.), *Mineral. Mag.* (M.M.), *Bull. Mineral.* (Bull.), and *Zap. vses. mineral. obshch.* (Zap.) are appended where available.

A useful list of official Cyrillic transliterations from the Latin alphabet for some recently described minerals will be found in *Zap. vses. mineral. obshch.*, 1980, **109**, 742-3.

- Aldermanite.** I. R. Harrowfield, E. R. Segnit, and J. A. Watts, 1981. *M. M.* **44**, 59. Minute pearly flakes on fluellite from the Moculta quarry, Angaston, South Australia, are orthorhombic, a 15.00(7), b 8.330(6), c 26.60(1) Å. Composition $2[\text{Mg}_5\text{Al}_{12}(\text{PO}_4)_8(\text{OH})_{22} \cdot n\text{H}_2\text{O}]$, with n about 32. n 1.500(5), birefringence very low. Named for A. R. Alderman. [M.A. 81-1867; Bull. **105**, 129.]
- Alforsite.** N. G. Newberry, E. J. Essene, and D. R. Peacor, 1981. *A.M.* **66**, 1050. The barium analogue of chlorapatite occurs at Big Creek, Fresno Co. (type loc.), and at Incline, Mariposa Co., California, and gives X-ray powder identical with those of synthetic $\text{Ba}_5(\text{PO}_4)_3\text{Cl}$. The Big Creek material has 4.6% CaO, 2.7% SrO, and 0.7% F, and has ω 1.70(1). [M.A. 82M/1800.]
- Alinite.** V. V. Ilyukhin, N. N. Nevsky, M. J. Bickbau, and R. A. Howie, 1977. *Nature*, **269**, 397. Crystals isolated from cement clinker are tetragonal, $I42m$, a 10.4714, c 8.6171(16) Å. Composition $2[\text{Ca}_{11}(\text{Si},\text{Al})_4\text{O}_{18}\text{Cl}]$ with Si:Al c. 3:1; intermediate between alite ($\text{Ca}_3(\text{SiO}_4)\text{O}$) and the artificial compound $\text{Ca}_3\text{SiO}_4\text{Cl}_2$.
- Almbosite.** P. Ramdohr and G. Cevales, 1980. *Min. Deposita*, **15**, 386. An inadequately described mineral from the Almhütte Bos in the Adanello pluton, near $\text{Fe}_5^{2+}\text{Fe}_4^{3+}\text{V}_4\text{Si}_3\text{O}_{27}$.
- Alumotantite.** A. V. Voloshin, Yu. P. Menshikov, and Ya. A. Pakhomovskii, 1981. *Zap.* **110**, 338 (Алюмотантит), Kola peninsula. Orthorhombic, a 4.90(1), b 11.58(2), c 5.66(1) Å. Composition $4[\text{AlTaO}_4]$. Named for its composition. [A.M. **67**, 413; M.A. 82M/1801.]
- Ammonium illite.** E. J. Sterne, R. C. Reynolds, Jr., and H. Zantop, 1982. *Clays Clay Min.* **30**, 161. Upper Mississippian shales in the DeLong Mtns., Alaska, contain an illite-type mineral in which over 50% of the interlayer cations are NH_4^+ .
- Arctite.** A. P. Khomyakov, A. V. Bykova, and T. A. Kurova, 1981. *Zap.* **110**, 506 (Арктит). Cleavage masses in the Khibina nepheline-syenite complex are rhombohedral, a 14.32 Å, α 28° 30', composition $2[\text{Na}_2\text{Ca}_4(\text{PO}_4)_3\text{F}]$. ρ 3.13 g. cm⁻³. Uniaxial, n 1.577(2). Named for its northern origin. [M.A. 82M/1802.]
- Ardaite.** V. V. Breskovska, N. N. Mozgova, N. S. Bortnikov, A. I. Gorshkov, and A. I. Tsepin, 1982. *M.M.* **46**, 357. Fine acicular aggregates from the Madyarovo ore deposit, Rhodope Mts., Bulgaria, are monoclinic, a 22.09, b 21.11, c 8.05 Å, β 103° 1'. Composition $2[\text{Pb}_{19}\text{Sb}_{13}\text{S}_{35}\text{Cl}_7]$. Named for the Arda river.
- Balyakinite.** E. M. Spirodanov, 1980. *Dokl. Akad. Nauk SSSR*, **253**, 1448 (Балякинит). Greyish-to bluish-green crystals in the Pionersk deposit, E. Sayan, and the Aginsk deposit, Kamchatka, are identical with synthetic $8[\text{CuTeO}_3]$. Space group $Pm\bar{c}n$, a 7.60, b 5.84, c 12.70 Å. α 2.11 || [100], β 2.18 || [010], γ 2.22 || [001], $2V$, 80° [?]. Alters to teineite. Named for G. S. Balyakina. [A.M. **66**, 436; M.A. 81-3234.]
- Ba-priderite.** K. Norrish, 1951. *M.M.* **29**, 500. The barium end-member of the priderite series.
- Bartelkeite.** P. Keller, H. Hess, and P. J. Dunn, 1981. *Chem. Erde*, **40**, 201. Pale green crystals with {001} cleavage in oxidized ore at Tsumeb, SW-Africa, are monoclinic, a 5.431, b 13.689, c 5.892 Å, β 111.79°. Composition $2[\text{PbFe}^{2+}\text{Ge}_3\text{O}_8]$; ρ 4.97 g cm⁻³. α 1.885, β 1.910, γ 1.913, $2V_c$ 35°. Named for W. Bartelke. [M.A. 82M/0686, A.M. **67**, 413.]
- Bartonite.** G. K. Czamanske, R. C. Erd, B. F. Leonard, and J. R. Clark, 1981. *A.M.* **66**, 369; H. T. Evans and J. R. Clark, *ibid.* 376. A further K-Fe sulphide occurs with pyrrhotine in the

- Latium, Italy, give X-ray powder patterns very similar to those of apatite, and prove to be isotopic therewith. Space-group $P6_3/m$, a 9.442(4), c 6.903(3) Å. Composition $2[\text{Ca}_2\text{Na}_3(\text{SO}_4)_3\text{OH}]$; ρ 2.786(2) obs. ω 1.570(2), ε 1.564(2). Named from the locality. [M.A. 81-4430.]
- Cesstibantite.** A. V. Voloshin, Yu. P. Menshikov, Ya. A. Pakhomovskii, and L. I. Polezhaeva, 1981. *Zap.* **110**, 345 (Цезстибтантит). A cubic mineral, a 10.526(5) Å, in the granite-pegmatites of the Kola peninsula, has the composition $4[(\text{Cs},\text{Na})\text{SbTa}_4\text{O}_{12}]$ with $\text{Cs} > \text{Na}$, and is named accordingly from *c(a)esium*, *stibium*, *tantalum*. [A.M. 67, 413.]
- Chatkalite.** V. A. Kovalenker, T. L. Evstigneeva, V. S. Malov, and L. N. Vyalsov, 1981. *Min. Zh.* **3**, no. 5, 79 (Чаткалит). Light red segregates in tetrahedrite from the Chatkalo-Kuraminsk Mts., E. Uzbekistan, are tetragonal, $P\bar{4}m2$, a 7.61(1), c 5.373(50) Å. Composition $[\text{Cu}_6\text{FeSn}_2\text{S}_8]$ with some Ag, Fe, Sb, and As.
- Chilgardite, error for Hilgardite. *Soviet Phys. (Dokl.)*, 1978, **22**, 460.
- Chlormagaluminite.** A. A. Kashaev, G. D. Feoktistov, and S. V. Petrova, 1982. *Zap.* **111**, 121 (Хлормагальюминит). A chlorine-bearing member of the manasseite-sjögrenite family occurs in southern Siberia. Hexagonal, a 5.29, c 15.46 Å, uniaxial, ε 1.560, ω 1.540; composition $(\text{Mg},\text{Fe}^{2+})_4\text{Al}_2(\text{OH})_{12}(\text{Cl}_2,\text{CO}_3) \cdot 2\text{H}_2\text{O}$ with $\text{Cl} \gg \text{CO}_3$. Named from its composition.
- Choolalite.** S. A. Williams, 1981. *M.M.* **44**, 85. Deep green octahedra from Mina La Oriental (formerly Bambollita), Moctezuma, Mexico are cubic, a 12.519 Å, with composition $12[\text{CuPb}(\text{TeO}_3)_2 \cdot \text{H}_2\text{O}]$; ρ 6.41(1) g cm⁻³ obs., 6.41 calc. An antimonian variety occurs at Tombstone, Arizona, and has a 12.576 Å. Named from the Nahuatl word *choloa*, evasive, the mineral having remained unnoticed through eight years study of the mine. [M.A. 81-1868; *Bull.* **105**, 130.]
- Claraite.** K. Walenta and P. J. Dunn, 1982. *Chem. Erde*, **41**, 97. The unnamed mineral of Walenta, 1975 (*Aufschluss*, **26**, 369) is fully described and named for its occurrence in turquoise-blue spherulitic aggregates at the Clara mine, Oberwolfach, Schwarzwald. Pseudohexagonal, probably anorthic. Powder data can be indexed on a rhombohedral cell with a_h 26.22, c_h 21.56 Å containing $66[(\text{Cu},\text{Zn})_3\text{CO}_3(\text{OH})_4 \cdot 4\text{H}_2\text{O}]$. ρ 3.35 g cm⁻³, 3.34 calc. ω 1.751(2), ε 1.645(2).
- Clinophosinaite.** A. P. Khomyakov, D. Yu. Pushcharovskii, and G. Ronsbo, 1981. *Zap.* **110**, 351 (Клинофосинаит). A pale lilac mineral from Mt. Koashva and Mt. Yukspor, Kola peninsula, has space group $P2/c$, a 7.303(2), b 12.201(5), c 14.715(4) Å, β 91.93(3)°. Composition $8[\text{Na}_3\text{CaPO}_4\text{SiO}_3]$, α 1.557, β 1.561, γ 1.567. Named for the analogy in composition to phosinaite, $\text{H}_2\text{Na}_3(\text{Ca},\text{Ln})\text{PO}_4\text{SiO}_4$ (29th List). [The name is misleading, as it suggests a polymorph of phosinaite—M.H.H.] [A.M. 67, 414.]
- Cobaltkoritnigite.** K. Schmetzer, W. Horn, and O. Medenbach, 1981. *Neues Jahrb. Min., Monatsh.* **257** (Kobaltkoritnigit, kobaltkoritnigite). The cobalt analogue of koritnigite (31st List) occurs as a weathering product of glaucodot in the Saxon Erzgebirge and the Bauhaus mining area, Richelsdorfer Gebirge, Hesse. Anorthic, a 7.95, b 15.83, c 6.67 Å, α 90.9°, β 96.6°, γ 90.0°. Composition $8[(\text{Co},\text{Zn})\text{HASO}_4 \cdot \text{H}_2\text{O}]$, with $\text{CO} > \text{Zn}$. With $\text{Co}:\text{Zn} = 2$, α 1.646, deep violet, near [010], β 1.668, red-violet, γ 1.705, blue-violet, β : [100] $12\frac{1}{2}^\circ$, $2V$, 78°. Named for its composition. [A.M. 67, 414.]
- Colquiriite.** K. Walenta, B. Lehmann, and M. Zwiener, 1980. *Tschermaks Min. Petrogr. Mitt.* **27**, 275. Anhydrous white grains up to 1 cm from the Colquiri tin mine, Bolivia, are trigonal, space group $P31c$ or $P31c$, a 5.02, c 9.67 Å. Composition $2[\text{CaLiAlF}_6]$. D 2.94 obs., 2.95 calc. ω 1.388(2), ε 1.385(2). Named for the locality. [A.M. 66, 879 and 1099.]
- Coutinite. K. Fujimori, 1980. *Anais Acad. Brasil. Ciencias*, **53**, 147. Syn. of Lanthanite-(Nd). [A.M. 67, 414.]
- Cuztците.** S. A. Williams, 1982. *M.M.* **46**, 257. Yellowish crusts from the Bambolla mine, Moctezuma, Sonora, Mexico, are hexagonal, a 5.045, c 14.63 Å. Composition $2[\text{Fe}_2\text{TeO}_6 \cdot 3\text{H}_2\text{O}]$; D 4.01 calc., 3.9 obs. ω 2.06, ε 2.05. Named from *cutzic*, the Nahuatl term for yellow.
- Cyanophyllite, error for Cyanophyllite, A.M. 66, 1274.
- Cyanophyllite.** K. Walenta, 1981. *Chem. Erde*, **40**, 195. Minute blue tabular crystals on quartz and baryte from the Clara mine, Oberwolfach, Baden, have space-group $Pm\bar{3}m$, a 11.82, b 10.80, c 9.64 Å. Composition $2[\text{Cu}_5\text{Al}_2\text{Sb}_3(\text{OH})_{25}]$; D 3.10 obs., 3.12 calc. α 1.640(2) || [001]. β 1.664(2), γ 1.67(2). Named for the blue colour and platy form.
- Dreyerite.** G. Dreyer and E. Tillmanns, 1981. *Neues Jahrb. Min., Monats.* **151**. Orange-yellow to brown-yellow platelets, tabular on {001}, at Hirschhorn, Pfalz, Germany, are tetragonal, $I4_1/amd$, a 7.303(3), c 6.584(3) Å. Composition $4[\text{BiVO}_4]$, zircon-type structure. $n > 2.0$, ω bright yellow, ε brown-yellow. Named for the late G. Dreyer. [M.A. 82M/0688.]
- Duhamelite.** S. A. Williams, 1981. *M.M.* **44**, 151. Small green crystals, up to 0.4 mm long by 0.02 mm wide, from an old (c. 1880) prospect near

- Payson, Arizona, are orthorhombic, a 7.49, b 9.66, c 5.87 Å. Composition $[\text{Cu}_4\text{Pb}_2\text{Bi}(\text{VO}_4)_4(\text{OH})_3 \cdot 8\text{H}_2\text{O}]$; D 5.80(5). α 2.08, β 2.11; $\gamma \parallel [001]$, the elongation. Named for J. E. DuHamel. [M.A. 81-3236; Bull. **105**, 130, A.M. **67**, 414.]
- Dwornikite.** C. Milton, H. T. Evans, Jr., and R. G. Johnson, 1982. M.M. **46**, 351. White aggregates with vanadium sulphide ores from Minasragra, Peru, have space group $C2/c$ with a 6.839(2), b 7.582(2), c 7.474(2) Å, β 117.85(2)°. n about 1.63. Composition $4[(\text{Ni},\text{Fe})\text{SO}_4 \cdot \text{H}_2\text{O}]$, with $\text{Ni} > \text{Fe}$. The nickel analogue of kieserite. Named for E. J. Dwornik.
- Eifelite.** K. A. Graham, W. Gebert, O. Medenbach, W. Schreyer, and G. Hentschel, 1980. *Fortschr. Min.* **58**, Beiheft 1, 3. A hexagonal mineral in druses of the rocks of the Bellerberg volcano, Eifel, Germany, have a composition near $\text{KNa}_2\text{Mg}_{4.5}\text{Si}_{12}\text{O}_{30}$, or on structural grounds $\text{KNa}_{1.5}(\text{Mg},\text{Na})_5\text{Si}_{12}\text{O}_{30}$. a 10.155, c 14.233 Å; ω 1.543, ε 1.5455. Named for the locality. [A.M. **66**, 218.]
- Ekaterinite.** S. V. Malinko, B. P. Fitsev, N. N. Kuznetsova, and L. F. Cherkasova, 1980. Zap. **109**, 469 (Екатеринит). Hexagonal crystals from drill cores in carbonate rocks of the Korshunov deposit, lower Ilim region, Irkutsk, have composition $\text{Ca}_2\text{B}_4\text{O}_7(\text{Cl},\text{OH})_2 \cdot 2\text{H}_2\text{O}$. α 1.574, γ 1.577, $2V$ very small. X-ray powder data are indexed on a hexagonal cell with a 11.86, c 23.88 Å, but the indices allotted to the strongest lines seem very unlikely. Named for Ekaterine V. Rozhkova. [A.M. **66**, 437; M.A. 81-3237.]
- Erdite.** G. K. Czamanske, B. F. Leonard, and J. R. Clark, 1980. A.M. **65**, 509. Copper-red blades up to 1 mm long replacing djferfisherite in sulphide-magnetite segregations in a mafic plug at Coyote Peak, Humboldt Co., California, are monoclinic, $C2/c$, a 10.693(1), b 9.115(1), c 5.507(4) Å, β 92° 10(2). Composition $4[\text{NaFeS}_2 \cdot 2\text{H}_2\text{O}]$; ρ 2.30(1) g cm⁻³ obs., 2.216 calc. Reflection pleochroism extreme, R_1 8.8, R_2 20.7% at λ 540 nm. Named for R. C. Erd, who synthesized the mineral in 1957. [M.A. 81-0825; Bull. **104**, 696.]
- Eugsterite.** L. Vergouwen, 1981. A.M. **66**, 632. Salt efflorescences at Sindo and Luanda, Lake Victoria, Kenya, and at the Konya basin, central Anatolia, include the compound $\text{Na}_4\text{Ca}(\text{SO}_4)_3 \cdot 2\text{H}_2\text{O}$, which was also obtained synthetically. Crystals large enough for single-crystal X-ray study were not obtained, but the electron microscope showed laths, probably monoclinic with β 116°; β : $[001]$ (elongation) 27°; birefringence 0.004, n between 1.492 and 1.496. Probably the same as Phase X of L. A. Hardie. Named for H. P. Eugster. [M.A. 82M/0689.]
- Eztlite.** S. A. Williams, 1982. M.M. **46**, 257. Thin blood-red crusts from the Bambolla mine, Moc-tezuma, Sonora, Mexico, have an X-ray powder pattern indexable on a monoclinic cell with a 6.58, b 9.68, c 20.52 Å, β 90° 15'. Composition $2[\text{Fe}_6\text{Pb}_2(\text{TeO}_3)_3\text{TeO}_6(\text{OH})_{10} \cdot n\text{H}_2\text{O}]$; D 4.60 calc. 4.5 obs. A good cleavage is probably (001), with extinction angle to γ 3°. α' 2.14, γ' 2.15. Named from *eztli*, the Nahua word for blood.
- Ferrarisite.** H. Bari, F. Permingeat, R. Pierrot, and K. Walenta, 1980. Bull. **103**, 533; M. Catti, G. Chiari, and G. Ferraris, *ibid.* 541. Colourless anorthic crystals, dehydrating rapidly in air, from the Gift mine (also the Gabe Gottes mine), St. Marie-aux-Mines, Alsace, have a 8.294, b 6.722, c 11.198 Å, α 106.16°, β 92.94°, γ 99.20°. D 2.63(5) obs., 2.57 calc. Composition $[\text{Ca}_5\text{H}_2(\text{AsO}_4)_4 \cdot 9\text{H}_2\text{O}]$, dimorphous with guerinite (23rd List). α 1.562(2), β 1.572(2), γ 1.585(2) \perp (110), α : $[001]$ 17°, $2V_\gamma$ 83°. Identical with the unnamed mineral of Walenta (1973) from the Anton mine, Wittichen, Baden. [A.M. **66**, 637; M.A. 81-1242 and 1869; Bull. **104**, 697.]
- Ferripyrophyllite.** F. V. Chukhrov, B. B. Soyagin, V. A. Drits, A. I. Gorshkov, L. P. Ermilova, E. A. Goulo, and E. S. Rudnitskaya, 1979. *Chem. Erde*, **38**, 324. The ferric analogue of pyrophyllite, $\text{Fe}_2^+\text{Si}_4\text{O}_{10}(\text{OH})_2$, occurs at Strassenschacht, Germany, and Mt. Tologai, Kazakhstan. Monoclinic, a 5.26, b 9.10, c 10.1 Å, β 95° 30'. [M.A. 80-3525; Zap. **111**, 240.]
- Fe-tychite.** A. P. Khomyakov, 1979. *Dokl. Akad. Nauk. SSSR*, **249**, 1365. A cubic mineral from the alkalic rocks of the Kola peninsula, space group $Fd\bar{3}$, has a 13.962 Å, D 2.7 obs. 2.8 calc. with composition $8[\text{Na}_6(\text{Fe},\text{Mn},\text{Mg})_2\text{SO}_4(\text{CO}_3)_4]$, the Fe analogue of tychite (4th List). [A.M. **67**, 414.]
- Fluor-topaz.** M. D. Barton, H. T. Haselton, Jr., B. S. Hemingway, O. J. Kleppa, and R. A. Robie, 1982. A.M. **67**, 350. The end-member $\text{Al}_2\text{SiO}_4\text{F}_2$.
- Gallium-gehlenite. M. Kimata, 1980. *Neues Jahrb. Min., Abh.* **139**, 43. The synthetic compound $\text{Ca}_2\text{Ga}_2\text{SiO}_7$. [M.A. 81-1199.]
- Geerite.** R. J. Goble and G. Robinson, 1980. *Can. Min.* **18**, 519. A thin coating or platelets on cleavage planes of sphalerite from Dekalb Township, New York, is pseudocubic; X-ray powder data are indexed in space-group $F\bar{4}3m$ on a cubic cell with a 5.410 Å containing $4[\text{Cu}_{1.60}\text{S}]$, but optical data suggest it is orthorhombic. Named for A. Geer. [A.M. **66**, 1274; M.A. 81-4432.]
- Gobbinsite.** R. Nawaz and J. F. Malone, 1982. M.M. **46**, 365. Fibrous aggregates with gonnardite in basalt at Hills Port, S. of the Gobbins, Island Magee, Antrim, Ireland, are tetragonal, a 10.145, c 9.788 Å. D 2.194 obs., 2.136 calc. Composition $[\text{Na}_5\text{Al}_5\text{Si}_{11}\text{O}_{32} \cdot 11\text{H}_2\text{O}]$, with some K. Named for the locality.

- Goosecreekite.** P. J. Dunn, D. R. Peacor, N. Newberry, and R. A. Ramik, 1980. *Can. Min.* **18**, 323. Crystal aggregates from Goose Creek quarry, Leesburg, Virginia, are monoclinic, a 7.52, b 17.56, c 7.35 Å, β 105.71°. Cleavage {010}. Composition $2[\text{CaAl}_2\text{Si}_6\text{O}_{16} \cdot 10\text{H}_2\text{O}]$; D 2.21 obs., 2.16 calc. α 1.495, β 1.498 || [010], γ 1.502, γ : [001] 46°. Named from the locality. [A.M. **66**, 1275; M.A. 82M/0690.]
- Goyzaite**, error for Goyazite. *Rocks and Minerals*, 1981, **56**, No. 5, 207.
- Gregoryite.** J. Gittins and D. McKie, 1980. *Lithos*, **13**, 213. A premature incomplete description of a calcium alkali carbonate from the carbonate lavas of Oldoinyo Lengai, Tanzania. Named for J. W. Gregory. [A.M. **66**, 879.]
- Guiseppettite.** F. Mazzi and C. Tadini, 1981. *Neues Jahrb. Min., Monatsch.* 103. A pale violet-blue mineral in a volcanic block from Sacrofano, Latium, Italy, is hexagonal, a 12.880, c 42.22(3) Å. Composition $8[(\text{Na}_{5.00}\text{K}_{1.83}\text{Ca}_{0.94})(\text{Si}_{5.96}\text{Al}_{6.04})\text{O}_{24}(\text{SO}_4)_{1.34}\text{Cl}_{0.24}]$; cancrinite family; ρ 2.35 g cm⁻³ obs. ω 1.491, ε 1.507. Named for G. Guiseppetti. Cf. sacrofanite (this List). [M.A. 81-4433; A.M. **67**, 415.]
- Hetsenite.** Yn. L. Kapustin, 1980. *Zap.* **109**, 631 error for Götzenite, through back-transliteration from Гетценит. [M.A. 81-3086.]
- Holtedahlite.** G. Raade and M. H. Mladeck, 1979. *Lithos*, **12**, 283. The Mg-analogue of satterlyite (31st List), $6[\text{Mg}_2\text{PO}_4(\text{OH})]$, with some CO_3^{2-} occurs in the serpentine-magnesite deposits of Modum, Norway. Hexagonal, a 11.188, c 4.9751 Å; ρ 2.94 g cm⁻³ obs., 2.936 calc. ω 1.599, ε 1.597. Dimorphous with althausite (29th List). Named for O. Holtedah. [A.M. **65**, 809; M.A. 81-3238; *Zap.* **111**, 234.]
- Hydrodelhayelite.** M. D. Dorfman and M. I. Chiragov, 1979. [*New Data on Minerals of the USSR*, **28**, 172], abstr. M.A. 80-4914. An alteration product of delhayelite (22nd List) from Mt. Rasvumchorr, Khibina massif, Kola peninsula, has space-group $Pnm2_1$, a 6.6483, b 23.8462, c 7.0727 Å. Ideal composition $2[\text{KCa}_2\text{AlSi}_7\text{O}_{17}(\text{OH})_2 \cdot 6\text{H}_2\text{O}]$. α 1.503, γ 1.518. [*Zap.* **111**, 247.]
- Hydrohonesite.** E. H. Nickel and J. E. Wildman, 1981. *M.M.* **44**, 333; D. L. Bish and A. Livingstone, *ibid.* 339. Tiny yellow hexagonal crystals on quartz and magnesite at the Otter Shoot nickel mine, Kambalda, Western Australia, give X-ray powder patterns indexed on a hexagonal cell with a 3.09, c 10.80 Å; ω 1.63, ε 1.59. It is a higher hydrate of honessite, which has c 8.8 Å, and occurs mixed with honessite (21st List) and reevesite (25th List) on chromite at Hagdale, Unst, Shetland. The structures of honessite and hydrohonesite resemble that of the pyroaurite family, with SO_4^{2-} in place of CO_3^{2-} . The Kambalda hydrohonesite approximates to $\text{Ni}_{5.4}^{2+}\text{Fe}_{2.6}^{3+}(\text{OH})_{16}(\text{SO}_4)_{1.3} \cdot \text{NiSO}_4 \cdot 7\text{H}_2\text{O}$, with interlayer NiSO_4 (cf. mountkeithite, this List); the Unst material also has SO_4^{2-} in excess of Fe_2^{3+} . [M.A. 82M/0691.]
- Hydrombobomkulite.** J. E. J. Martini, 1980. *Am. Geol. Surv. S. Africa*, **14**, no. 2. Pale blue nodules from the Mboobo Mkuulu cave are a higher hydrate of mbobomkulite (this List), to which they dehydrate irreversibly on exposure to air; the loss is 32.1%. The X-ray powder pattern of this higher hydrate was indexed on a monoclinic cell with a 10.145, b 17.155, c 20.870 Å, β 90.55°. [A.M. **67**, 415.]
- Hydroxyl-topaz.** M. D. Barton, H. T. Haselton, B. S. Hemmingway, O. J. Kleppa, and R. A. Robie, 1982. *A.M.* **67**, 350. Syn. of Hydroxyl-topaz (20th List).
- Iftisite**, original spelling of Yftisite, q.v.
- Imandrite.** A. P. Khomyakov, N. M. Chernitsova, S. M. Sandomirskaya, and G. L. Vasileva, 1979. *Mineral. Zh.* **1**, 89 (Имандрит). Rare grains in a drill core from the Khibina deposits near Lake Imandra, Kola Peninsula, are orthorhombic, a 7.426(4), b 10.546(1), c 10.331(1) Å. ρ 2.93 g cm⁻³ obs., 2.92 calc. Composition $[\text{Na}_{1.2}\text{Ca}_3\text{Fe}_3^{3+}(\text{Si}_6\text{O}_{18})_2]$; lovozerite family. α 1.605, β 1.608, γ 1.612, $2V_\gamma$ 75°. Named for the locality. [A.M. **65**, 810; M.A. 80-4915.]
- Iraqite**, error for Iraqite. *Can. Min.* 1982, **20**, 59.
- Jamesite.** P. Keller, H. Hess, and P. J. Dunn, 1981. *Chem. Erde* **40**, 105. Reddish-brown tabular crystals elongated on [100] with duftite (9th List) and tsumcorite (27th List) from Tsumeb, SW-Africa, are anorthic, a 5.622, b 9.593, c 10.279 Å, α 109.80°, β 90.54°, γ 97.69°. Composition $[\text{Pb}_2\text{Zn}_2\text{Fe}_3^{3+}(\text{AsO}_4)_5\text{O}_4]$. α 1.960, pale brown, β 1.995, pale brown, γ 2.020 deep reddish-brown. Named for C. James. [A.M. **66**, 1275; M.A. 81-4434.]
- Jasmundite.** L. S. Dent Glasser and C. K. Lee, 1981. *Acta Crystallogr.* **B37**, 803. Tetragonal crystals from the Ettringer Feld, a lava flow of the Bellerberg volcano, Mayen, Eifel, have space-group $I\bar{4}m2$, a 10.461(1), c 8.813(1) Å. Composition $2[\text{Ca}_{11}(\text{SiO}_4)_4\text{O}_2\text{S}]$; ρ 3.03 g cm⁻³ obs., 3.23 calc. ω 1.75, ε 1.728. Named for K. Jasmund. [M.A. 81-4435.]
- Jervisite.** M. Mellini, S. Merlino, P. Orlandi, and R. Rinaldi, 1982. *A.M.* **67**, 599. Small light green crystals with cascandite (this List) in the granite of Baveno, Italy, are monoclinic $C2/c$, with a 9.853(11), b 9.042(10), c 5.312(7) Å, β 106° 37(7)'. A scandium pyroxene, $(\text{Na,Ca,Fe}^{2+})(\text{Sc,Mg,Fe}^{2+})\text{O}_6$, with Na and Sc dominant. Named for N. P. Jervis.

- Johnbaumite.** P. J. Dunn, D. R. Peacor, and N. Newberry, 1980. *A.M.* **65**, 1143. The arsenate analogue of hydroxyapatite occurs at Franklin, New Jersey as massive material with $\{10\bar{1}0\}$ cleavage; a 9.70, c 6.93 Å; ρ 3.68 g cm⁻³, obs., 3.73 calc.; ω 1.687, ε 1.684. Named for John L. Baum. [M.A. 81-3239; *Bull.* **105**, 132.]
- Jugawaralite**, error for yugawaralite. *Neues Jahrb. Min., Abh.* **143**, 244 (1982).
- Jungite.** P. B. Moore and J. Ito, 1980. *Aufschluss*, **31**, 55. Rosettes up to 1 cm diam. of very thin tabular dark green crystals from the Hagendorf Sud pegmatite, Bavaria, are orthorhombic, a 11.98, b 20.37, c 9.95 Å. D 2.843 obs., 2.849 calc. Composition $2[\text{Ca}_2\text{Zn}_4\text{Fe}_3^{3+}(\text{PO}_4)_9(\text{OH})_9 \cdot 16\text{H}_2\text{O}]$. Cleavage $\{010\}$ perfect. $\alpha \parallel [010]$, β 1.658, γ 1.664 $\parallel [001]$. Named for G. Jung. [A.M. **65**, 1067.]
- Kalborosite.** Yu. A. Malinovskii and N. V. Belov, 1980. *Dokl. Akad. Nauk. SSSR*, **252**, 611 (Кальборсит); A. P. Khomyakov, S. M. Sandomirskaya, and Yu. A. Malinovskii, *ibid.* 1465. Colourless grains in pegmatite from Mt. Rasvumchorr, Khibina massif, Kola peninsula, have space group $P4_21c$, a 9.851(5), c 13.060(5) Å. Composition $2[\text{K}_6\text{Al}_4\text{Si}_6\text{O}_{20}\text{B}(\text{OH})_4\text{Cl}]$; D 2.5 obs., 2.48 calc. Uniaxial positive, ω 1.525, $\varepsilon - \omega < 0.001$. Named for the composition K₆Al₄Boron₄Si₆. [A.M. **66**, 879; M.A. 81-3241.]
- Karlite.** G. Franz, D. Ackermann, and E. Koch, 1981. *A.M.* **66**, 872. Light green aggregates of needles from Schlegeisthal, Zillertaler Alpen, Austria, have space group $P2_12_12_1$, a 17.929(5), b 17.600(5), c 3.102(1) Å. Composition $4[\text{Mg}_7(\text{BO}_3)_3(\text{OH},\text{Cl})_5]$. The needles are elongated $\parallel [001]$, with cleavage $\{001\}$, and bounded by $\{100\}$ and $\{110\}$. ρ 2.80 to 2.85 g cm⁻³ obs., 3.02 calc. α 1.589 $\parallel [001]$, γ 1.634 $\parallel [100]$, $2V_\alpha 24^\circ$. Named for F. Karl. [M.A. 82M/0693.]
- Kelyanite.** V. I. Vasilev, Yu. G. Lavrentev, and L. A. Palchik, 1982. *Zap.* **111**, 330 (Келянит). Globular aggregates in the ores of Kelyan, Buryatsk ASSR, contain a monoclinic mineral, a 23.50(12), b 13.62(6), c 10.31(5) Å, β 97.01(12)°. Composition $2[\text{Hg}_{36}\text{Sb}_3(\text{Cl},\text{Br})_9\text{O}_{28}]$, D calc. 8.51 or $3[\text{Hg}_{24}\text{Sb}_2(\text{Cl},\text{Br})_6\text{O}_{20}]$, D calc. 8.55; D obs. 8.51-8.63.
- Khanneshite.** G. K. Eremenko and V. A. Velko, 1982. *Zap.* **111**, 321 (Ханнешит). The carbonatites of Khanneshin, Afghanistan, contain a complex carbonate, related to burbankite (20th List) Space group $P6_3mc$, a 10.65(1), c 6.58(1) Å. Composition $(\text{Na},\text{Ca})_3(\text{Ba},\text{Sr},\text{Ln},\text{Ca})_3(\text{CO}_3)_5$, with $\text{Ba} > (\text{Sr},\text{Ln},\text{Ca})$, ω 1.620-3, ε 1.608-10, ρ 3.8-3.9 g cm⁻³.
- Kinichilite.** H. Hori, E. Koyama, and K. Nagashima, 1981. *Min. J.* **10**, 333. A dark brown mineral from the Kawazu mine, Shimoda, Izu peninsula, Japan, is the Fe²⁺ analogue of zemannite. Hexagonal, a 9.419(5), c 7.666(5) Å. Uniaxial +, $\omega > 1.8$. Named for Kin-ichi Sakurai.
- Kobaltkoritnigite**, original spelling of Cobaltkoritnigite, q.v.
- Kolfanite.** A. V. Voloshin, Yu. P. Menshikov, L. I. Polezhaeva, and A. A. Lentsi, 1982. *Min. Zh.* **4**, no. 2, 90 (Колфанит). Alteration of holtite in granite pegmatite of the Kola peninsula gives rise to red crusts; monoclinic, a 17.86, b 19.66, c 11.11 Å, β 96°. Composition $12[\text{Ca}_2\text{Fe}_3^{2+}(\text{AsO}_4)_3\text{O}_2 \cdot 2\text{H}_2\text{O}]$. α 1.810 light yellow, β 1.923 orange, γ 1.933 dark orange. Named for the Kolsky filial Akad. Nauk. SSSR.
- Kolwezite**, error for Kolwezite. M.A. 82M/1807.
- Korshunovskite.** S. V. Malinko, A. E. Lisitsyn, S. P. Purnsova, B. P. Fitsev, and T. A. Khruleva, 1982. *Zap.* **111**, 324 (Коршунувскит). Grains of a basic chloride associated with the borates of the Korshunovsk deposit, Irkutsk, are anorthic, a 8.64(3), b 6.25(1), c 7.42(1) Å, α 101.4(3)°, β 103.9(1)°, γ 72.7(6)°. Composition $2[\text{Mg}_2\text{Cl}(\text{OH})_3 \cdot 4\text{H}_2\text{O}]$; ρ 1.798(2) obs., 1.787 calc. α 1.516, β 1.538, γ 1.527, $2V_\alpha 62^\circ$. Identical with synthetic $\text{Mg}_2\text{Cl}(\text{OH})_3 \cdot 4\text{H}_2\text{O}$. (P. M. deWooft and L. Walter-Lévy, *Acta Cryst.* **6**, 40, 1953).
- K-priderite.** K. Norrish, 1951. *M.M.* **29**, 500. The potassium end-member of the priderite series.
- Kulkeite.** K. Abraham, W. Schreyer, O. Medenbach, and W. Gebert, 1980. *Fortschr. Mineral.* **58**, Beiheft 1, 4. An ordered 1:1 mixed layer (clinochlore-talc) mineral from Perrag, Algeria. Monoclinic, a 5.32, b 9.20, c 23.88 Å, β 97°; perfect cleavage on $\{001\}$. Composition near $2[\text{Mg}_8\text{Al}(\text{AlSi}_7)\text{O}_{20}(\text{OH})_{10}]$. α 1.552, β 1.5605 $\parallel [100]$, γ 1.5610 $\parallel [010]$, $2V_\alpha 24^\circ$. Named for H. Kulke. [A.M. **66**, 218; see also A.M. **67**, 396.]
- Kuznetsovite.** V. L. Vasileva and Yu. G. Lavrentev, 1980. *Dokl. Akad. Nauk SSSR*, **275**, 963 (Кузнецовит). Pale brown grains in cinnabar ore at Arzaks, Tuva ASSR, and Khaidarkan, Kirgiz SR, are cubic, a 8.40(2) Å. Composition $2[\text{Hg}_6\text{As}_2\text{Cl}_2\text{O}_9]$; D 8.64 to 8.82 obs., 8.786 calc. Isotropic. R 16.2% at λ 590 nm. Named for V. A. Kuznetsov. [A.M. **66**, 1100; M.A. 81-3242.]
- Lammerite.** P. Keller, W. H. Paar, and P. J. Dunn, 1981. *Tschermaks Min. Petr. Mitt.* **28**, 157. Dark green crystals, tabular on $\{100\}$ and with cleavage $\{010\}$, from Veta Negra, Laurani, Bolivia, are monoclinic; a 5.080(2), b 11.616(6), c 5.391(2) Å, β 111.71(3)°. Composition $2[\text{Cu}_3(\text{AsO}_4)_2]$. ρ 5.18 g cm⁻³ obs., 5.26 calc. $\alpha \leq 1.89$, light blue, $\parallel [010]$, β 1.90, sky blue, γ 1.95, blue-green, $\gamma: [001]$ c . 40°, $2V_\gamma 54 \pm 5^\circ$. Named for F. Lammer. [A.M. **67**, 415.]

- Lavulite.** A trade-name for purple Sugilite (30th List). *Diamond Fields Advertiser*, 8 February 1982, p. 4.
- Lazarenkoite.** L. K. Yakhontova and I. I. Plosina, 1981. *Min. Zh.* 3, no. 3, 92 (Лазаренкоит); L. K. Yakhontova, *Trudy Min. Muz. Akad. Nauk SSSR*, 1964, 15, 176 (unnamed). Orange crusts on Fe-As ores in a W. Siberian deposit have composition $10[(\text{Ca}, \text{Fe}^{2+})\text{Fe}^{3+}\text{As}_3^{3+}\text{O}_7 \cdot 3\text{H}_2\text{O}]$; I.R. study shows neither AsO_3^{3-} nor AsO_4^{3-} is present. The X-ray powder pattern was indexed on an orthorhombic cell with a 21.80, b 12.64, c 8.40 Å. D 3.45(5) obs., 3.59 calc. α 1.820(3) pale yellow, β 1.920(3) pale brown, γ 1.955(3), red-brown, $2V_\alpha 30^\circ$. [A.M. 52, 300 and 67, 415; M.A. 82M/1808.]
- Liandratite.** error for Liandratite. *Bull.* 104, 699.
- Lingaitukuang.** Wang Xianjue, 1978. [*Kexue Tongbao*, 23, 743], abstr. A.M. 1981, 66, 878. Pale yellow to brownish green granular aggregates, α 1.691, β 1.696, γ 1.725, $2V_\gamma 44^\circ$, give an X-ray powder pattern identical with that of synthetic $\text{CaTh}(\text{PO}_4)_2$. Identical with brabantite (31st List) which was approved by the I.M.A. Commission on New Minerals and so has priority.
- Liujinyinite.** Chen Zhen-jie, Zen Ji-liang, Xu Wen-yuan and Wang Feng-ge, 1979. [*Kexue Tongbao*, 24, 843], abstr. A.M. 1980, 65, 810. Material from Guangdong, Anhui, and Gansu provinces give chemical and X-ray powder data near synthetic Ag_3AuS_2 . Named for the composition (Liu=S, Jin=Au, Yin=Ag). [The mineral is uytenbogaardite—M.F.]
- Luddenite.** S. A. Williams, 1982. M.M. 46, 363. Green rosettes or plates from the Artillery Peaks area, Arizona, have composition $\text{Cu}_2\text{Pb}_2\text{Si}_5\text{O}_{14} \cdot n\text{H}_2\text{O}$. α 1.852, γ 1.867. D 4.45 obs. X-ray powder data are given. Named for R. W. Ludden.
- Mcguinnessite.** R. C. Erd, F. P. Cesbron, F. E. Goff, and J. R. Clark, 1981. *Min. Record*, 12, 143. Zoned blue spherules on serpentinized peridotite at Red Mountain, Mendocino Co., California, are monoclinic, or possibly anorthic, a 9.398, b 12.011, c 3.379 Å, β 93.28°. Composition $4[(\text{Mg}, \text{Cu})_2\text{CO}_3(\text{OH})_2]$, with Mg:Cu from 57:43 (rim of spherule) to 46:54 (core); rosasite family. α 1.596–1.607, increasing with Cu content, γ 1.724–1.740, α : [001]11°. [M.A. 82M/0694.]
- Macquartite.** S. A. Williams and M. Duggan, 1980. *Bull.* 103, 530. Orange crystals up to 1 mm long on diopside from Tiger, Arizona, are monoclinic, a 20.81, b 5.84, c 9.26 Å, β 91° 48'. D 5.49 obs., 5.58 calc. Composition $4[\text{Pb}_3\text{CuCrO}_4\text{SiO}_3(\text{OH})_4 \cdot 2\text{H}_2\text{O}]$. α 2.28, β 2.31 || [010], γ 2.34, α : [001] + 35°, $2V_\alpha 85^\circ$. Cleavage {100} good. Named for L. C. H. Macquart (1745–1803). [A.M. 66, 638; M.A. 81–1872; *Bull.* 104, 700.]
- Matulaite.** P. B. Moore and J. Ito, 1980. *Aufschluss*, 31, 55. White pearly crystals from the Bachman iron mine, Hellertown, Pennsylvania, are monoclinic, cleavage {100}, space group $P2_1/c$, a 20.4(1), b 16.7(1), c 10.6(1) Å, β 98.2°. Composition $2[\text{CaAl}_{18}(\text{PO}_4)_{12}(\text{OH})_{20} \cdot 28\text{H}_2\text{O}]$. D 2.330 obs.; β 1.576(2) || [010], γ 1.582(2), γ : [001] c . 8°, $2V_\alpha 60^\circ r \ll v$. Named for Mrs. M. Matula.
- Mbobomkulite.** J. E. J. Martini, 1980. *Ann. Geol. Surv. S. Africa*, 14, no. 2. Pale blue nodules from the Mboobo Mkulu cave, Nelspruit district, Transvaal, lose water irreversibly in a few hours on exposure to air, and then give an X-ray powder pattern near that of chalcoalumite (10th List); indexed accordingly on a monoclinic cell with a 10.171, b 8.865, c 17.145 Å, β 95.37°. Composition $4[(\text{Ni}, \text{Cu})\text{Al}_4\{(\text{NO}_3)_{21}\text{SO}_4\}(\text{OH})_{12} \cdot 3\text{H}_2\text{O}]$, with $(\text{NO}_3)_2 > \text{SO}_4$. D 2.30 obs., 2.344 calc. α 1.515, γ 1.585. Cleavage {001}; α : [001]10°. [A.M. 67, 415.]
- Medaite.** C. M. Gramaccioli, W. H. Griffin, and A. Mottana, 1982. A.M. 67, 85. Small brown grains with tiragalloite (this List) from an abandoned manganese mine at Molinello, Chiavari, Liguria, have space-group $P2_1/n$, a 6.712(1), b 28.948(8), c 7.578(2) Å, β 95.4(2)°. Composition near $4[\text{MnVSi}_5\text{O}_{18}\text{OH}]$, with some replacement of Mn by Ca and of V by As. D 3.70(5) obs., 3.750 calc. α 1.77(1), β 1.78(1) || [010], γ 1.80(2), γ : [001]3°, $2V_\gamma$ calc. 71°. Named for F. Meda.
- Meta-vanmeerscheite.** P. Piret and M. Deliens, 1982. *Bull.* 105, 125. Canary yellow tabular on {010}, with {100} and {101}; with vanmeerscheite and other U minerals at Kobokobo, Kivu, Zaïre. Orthorhombic, space-group $Fddd$, a 34.18, b 33.88, c 14.074 Å. Composition $32[\text{U}^{6+}(\text{UO}_2)_3(\text{PO}_4)_2(\text{OH})_6 \cdot 2\text{H}_2\text{O}]$, α 1.67, β 1.68, γ 1.69, $2V_\alpha$ c . 83°. A lower hydrate of vanmeerscheite (this List).
- Mgriite.** Yu. M. Dymkov, T. I. Loseva, E. N. Zavyalov, B. I. Ryzhov, and L. I. Bochek, 1982. *Zap.* 111, 215 (Мгритт). X-ray studies of some ores from the Erzgebirge, Saxony, revealed a new cubic mineral, a 5.530(5) Å. Composition $[\text{Cu}_3\text{AsS}_3]$. Named from the initials of the Moskov. geol.-razved. Inst.
- Miharaite.** A. Sugaki, H. Shima, and A. Kitakaze, 1980. A.M. 65, 784. Minute grains in bornite from the Mihara mine, Okayama Prefecture, Japan, are orthorhombic, a 10.854(4), b 11.985(4), c 3.871(1) Å. Composition $2[\text{Cu}_4\text{FePbBiS}_6]$. Optically very similar to wittichenite; R 31.7–32.6% at λ 589 nm. Named for the locality. [M.A. 81–0829; *Bull.* 104, 700.]
- Minamiite.** J. Ossaka, J. Hirabayashi, K. Okada, R. Kobayashi, and T. Hayashi, 1982. A.M. 67,

114. A member of the alunite family occurs in altered andesite at Okumanza, Gumma Prefecture, Japan; rhombohedral, space group $R\bar{3}m$, a_h 6.981(2), c_h 33.490(14) Å, composition near $6[\text{Na}_{0.36}\text{Ca}_{0.27}\text{Al}_3(\text{SO}_4)_2(\text{OH})_6]$. The doubled c -axis compared to alunite is probably due to partial ordering. Named for A. E. Minami.
- Minrecordite.** C. G. Garavelli, F. Vurro, and G. C. Fioravanti, 1982. *Min. Record*, **13**, 131. Milky white crystals from Tsumeb, SW-Africa, are the Zn analogue of dolomite. Space-group $R3$, a_{rh} 9.0240 Å, α 47° 9'. $[\text{CaZn}(\text{CO}_3)_2]$, ordered structure. D 3.45(2) obs. ω 1.750(2), ε 1.850(2). A magnesian variety was also found.
- Mohite.** V. A. Kovalenker, V. S. Malov, T. L. Evstigneeva, and L. N. Vyalsov, 1982. *Zap.* **111**, 110. (Мохит). Grains up to $10 \times 80 \mu\text{m}$ in the sulphide ores of Kochbulak, Uzbekistan, are probably anorthic, a 6.64, b 11.51, c 19.93 Å, β 109° 45', α and $\gamma \approx 90^\circ$. Composition $12[\text{Cu}_2\text{SnS}_3]$. Named for G. Moh. Not to be confused with Mohsite.
- Morozevicitze.** C. Haraneyzyk, 1975. [*Rudy Metalle*, **20**, 288], abstr. A.M. 1980, **66**, 437. Ore minerals intergrown with marcasite from Lower Silesia include members of the series $8[(\text{Pb},\text{Fe})_3(\text{Ge},\text{Fe})_{1-x}\text{S}_4]$ with x from 0.2 to 0.7. Those with $\text{Pb} > \text{Fe}$ are named morozevicitze for J. Morozevicz, those with $\text{Fe} > \text{Pb}$ are named polkowicite for the Polkowice mine. Cubic; a specimen with $\text{Fe} \approx \text{Pb}$ had a 10.61 Å. [Of 7 analyses cited, only one has $\text{Pb} > \text{Fe}$, and several have $(\text{Pb} + \text{Fe} + \text{Cu})$ considerably less than 3—M.H.H.] [A.M. **66**, 437.]
- Mountkeithite.** D. R. Hudson and M. Bussell, 1981. M.M. **44**, 345. A low-temperature hydrothermal vein in serpentinite in the Mount Keith nickel deposit, Western Australia, contains white flaky grains, giving an X-ray powder pattern that could be indexed on a hexagonal cell with a 10.698, c 22.545 Å; D 2.12 obs., 1.95 calc.; ω 1.52, ε 1.51. Composition $[(\text{Mg},\text{Ni})(\text{Fe}^{3+},\text{Cr},\text{Al})_3(\text{OH})_{24}]^{3+}[(\text{CO}_3,\text{SO}_4)_{1.5}(\text{H}_2\text{O})_{11}(\text{Mg},\text{Ni})_2(\text{SO}_4)_2]^{3-}$ with $\text{Mg} \gg \text{Ni}$. In water MgSO_4 is leached out and the strong basal spacing collapses from 11.3 to 7.8 Å; this reaction is reversible by immersion in molar MgSO_4 solution. Named from the localities. Cf. hydrohonesite (this List). [M.A. 82M/0695.]
- Muassinite.** G. I. Tugarov, and A. M. Ogurtsov, 1980. *Zap.* **109**, 704. Error for Moissanite, through back-transliteration from Муассанит.
- Mundite.** M. Deliens and P. Piret, 1981. *Bull.* **104**, 669. Yellow crystals, tabular on {010} from Kobokobo, Kivu, Zaïre, are orthorhombic, a 17.08, b 30.98, c 13.76 Å; cleavages b , a , and c . Composition $16[\text{Al}(\text{UO}_2)_3(\text{PO}_4)_2(\text{OH})_3 \cdot 5\frac{1}{2}\text{H}_2\text{O}]$ β 1.682 || [001], γ 1.688 || [100], $2V_a 33^\circ$. Named for W. Mund. [M.A. 82M/1810].
- Murunskite.** M. G. Dobrovolskaya, A. I. Tsepin, T. L. Evstigneeva, L. N. Vyalsov, and O. N. Zaozerina, 1981. *Zap.* **110**, 468 (Мурунский). X-ray diffraction data on grains from the Murunsk ores are indexed on a tetragonal cell with a 3.88, c 13.10 Å. Composition $\text{K}_2\text{Cu}_3\text{FeS}_4$, the K analogue of thalcusite (29th List). [M.A. 82M/1811.]
- Nagashimalite.** S. Matsubara and A. Kato, 1980. *Min. J.* **10**, 122; S. Matsubara, *ibid.* 131. Greenish-black crystals, tabular on {001}, elongated on [010] in Mn ore at the Mogurazawa mine, Kiryu City, Gumma Prefecture, Japan, have space group $Pm\bar{m}n$, a 13.937, b 12.122, c 7.116 Å. Composition $2[\text{Ba}_4(\text{V},\text{Ti})_4\text{B}_2\text{Si}_8\text{O}_{27}(\text{O},\text{OH})_2\text{Cl}]$, the V analogue of taramellite (5th List). α 1.750 greenish-yellow || [100], β 1.753 green || [001], γ 1.780 greenish brown || [010], absorption $\gamma > \beta > \alpha$. $2V_a \approx 30^\circ$, $r > v$ strong. Named for O. Nagashima. [A.M. **66**, 638.]
- Namuwite.** R. E. Bevins, S. Turgoose, and P. A. Williams, 1982. M.M. **46**, 51. A pale sea-green mineral with hydrozincite on a specimen from the Aberllyn mine, Llanrwst, Bettws-y-Coed, Wales, consists of hexagonal plates up to $60 \mu\text{m}$ across. X-ray powder data agree well with synthetic $(\text{Zn},\text{Cu})_4\text{SO}_4(\text{OH})_6 \cdot 4\text{H}_2\text{O}$, which is hexagonal, and index well with a 8.29(1), c 10.50(1) Å. Composition $(\text{Zn},\text{Cu})_4\text{SO}_4(\text{OH})_6 \cdot 4\text{H}_2\text{O}$, with $\text{Zn}:\text{Cu} = 5:3$; this is considerably richer in Cu than Glibert (1977) could obtain synthetically. ρ 2.77 g cm^{-3} obs., cleavage {0001} perfect, ω 1.577(5). Named for the National Museum of Wales. [M.A. 82M/1812.]
- Natanite.** $\text{FeSn}(\text{OH})_6$, (Натанит) see Vismirnovite, $\text{ZnSn}(\text{OH})_6$, this List.
- Natrite.** A. P. Khomyakov, 1982. *Zap.* **111**, 220. Anhydrous Na_2CO_3 has now been found in the Khibina and Lovozero massifs, Kola peninsula. X-ray powder data agree well with those of the low-temperature, monoclinic polymorph of Na_2CO_3 . Named for its composition.
- Natrium-Phlogopit**, original form of Sodium-phlogopite, q.v.
- Natroapophyllite.** H. Matsueda, Y. Miura, and J. Rucklidge, 1981. A.M. **66**, 410; Y. Miura, T. Kato, J. Rucklidge, and H. Matsueda, *ibid.* 416. An orthorhombic sodium analogue of apophyllite, $2[\text{NaCa}_4\text{Si}_8\text{O}_{20}\text{F} \cdot 8\text{H}_2\text{O}]$, occurs with apophyllite in skarns at the Sampo mine, Okayama, Japan. Space group $Pn\bar{m}n$, a 8.875(4), b 8.881(6), c 15.79(1) Å. ρ 2.30 g cm^{-3} obs. on slightly impure material, 2.50 calc. α 1.536(2), β 1.538(2), γ 1.544(2) || [001], $2V_\gamma 32(1)^\circ$. [M.A. 82M/0696 and 0697; *Bull.* **105**, 134.]

- Natrotantite.** A. V. Voloshin, Yu. P. Menshikov, and Ya. A. Pakhomovskii, 1981. *Zap.* **110**, 338 (Нагротантит). A monoclinic mineral, space group $C2/c$, a 10.819(20), b 6.239(20), c 12.781(20) Å, β 106.43(8)°, from the granite-pegmatites of the Kola peninsula, USSR; composition NaTa_3O_8 . The X-ray powder pattern closely matches that of the synthetic product formulated $\text{Na}_2\text{Ta}_4\text{O}_{11}$, and the latter formula is doubted. [A.M. **67**, 413.]
- Nealite.** P. J. Dunn and R. C. Rouse, 1980. *Min. Record*, **11**, 299. Orange crystals in the Laurion slags, Greece, are anorthic, a 6.537(7), b 10.239(7), c 5.582(5) Å, α 96.20(5)°, β 89.39(10)°, γ 97.74(7)°. Composition $[\text{Pb}_4\text{Fe}(\text{AsO}_4)_2\text{Cl}_4]$; $n > 2.00$. Named for L. Neal Yedlin. [M.A. 81-3243.]
- Neltnerite.** C. Baudracco-Gritti, R. Caye, F. Permingeat, and J. Protas, 1892. *Bull.* **105**, 161 (neltnerite). Black grains and ditetragonal bipyramids from Tachgagalt, Morocco, have space-group $I4/acd$, a 9.464(2), c 18.854(10) Å. Composition $8[\text{CaMn}_6\text{SiO}_{12}]$; D 4.63(5) obs., 4.65 calc. Named for L. Neltner.
- Nickelalumite.** J. E. J. Martini, 1980. *Ann. Geol. Surv. S. Africa*, **14**, no. 2. Crusts on gypsum from the Mbobbo Mkulu cave, Nelspruit district, Transvaal, consist of the Ni analogue of chalcocalumite (10th List), and the X-ray powder pattern is indexed accordingly on a monoclinic cell with a 10.175, b 8.860, c 17.174 Å, β 95.95°. Composition $4[(\text{Ni,Cu})\text{Al}_4\{\text{SO}_4(\text{NO}_3)_2\}(\text{OH})_{12} \cdot 3\text{H}_2\text{O}]$, with $\text{SO}_4 > (\text{NO}_3)_2$. D 2.24 obs., 2.28 calc. α 1.532, γ 1.543, α [001] c . 30°. [A.M. **67**, 415.]
- Nickelbousingaultite.** L. K. Yakhantova, G. A. Sidorenko, T. I. Stolyarova, I. I. Plyusnina, and T. L. Ivanova, 1976. *Zap.* **105**, 710 (Никельбуссенголит). The Ni analogue of bousingaultite occurs in the oxidation zone of Norilsk ore deposits, Siberia. $(\text{NH}_4)_2(\text{Ni,Mg})(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$ with $\text{Ni} \gg \text{Mg}$.
- Nickelbussengotite, error for Nickelbousingaultite (this List), through back-transliteration from Никельбуссенголит. *Zap.* **111**, 233 (1982).
- Nordströmite.** W. G. Mumme, 1980. *A.M.* **65**, 789; *Can. Min.* **18**, 343. The seleniferous Pb-Si sulphides from Falun, Sweden, include, besides weibullite and wittite, here fully characterized, a new mineral, named for T. Nordström. Monoclinic $P2_1/m$, a 17.97(8), b 4.11(2), c 17.62(8) Å, β 94.3(2)°; composition $\text{CuPb}_3\text{Bi}_7(\text{Se}_4\text{S}_{10})$. Indexed X-ray powder data are given for all three minerals. [M.A. 81-0830.]
- Nullaginite.** E. H. Nickel and L. G. Berry, 1981. *Can. Min.* **19**, 315. Bright green fibres from the Otway deposit, Nullagine, Western Australia, are monoclinic, a 9.263(3), b 12.001(6), c 3.091 Å, β 90.48(7)°. Composition $4[\text{Ni}_2\text{CO}_3(\text{OH})_2]$. α 1.67, β and γ c . 1.78, α : [001] 6°. Cf. rosasite (5th List) and glaukosphaerite (28th List). Named from the locality. [M.A. 82M/0698].
- Nyböite.** L. Ungaretti, D. C. Smith, and G. Rossi, 1981. *Bull.* **104**, 400. Nybø, Nordfjord, Norway. The clinoamphibole end-member $\text{Na}_3\text{Mg}_3\text{Al}_3\text{Si}_7\text{O}_{22}(\text{OH})_2$. [M.A. 82M/1684.]
- O'Danielite.** P. Keller and H. Hess, 1980. *Fortschr. Min.* **58**, Beiheft 1, 68; P. Keller, H. Hess, P. J. Dunn, and D. Newbury, *Neues Jahrb. Min., Monatsh.* 1981, 155. Monoclinic pale violet crystals from Tsumeb, SW-Africa, have space group $C2/c$, a 12.113, b 12.445, c 6.793 Å, β 112.87°. Composition $4[\text{Na}(\text{Zn,Mg})_3\text{H}_2(\text{AsO}_4)_3]$ with $\text{Zn}:\text{Mg}$ c . 6. Cleavages {010}, {100}, {001}. α 1.745, β 1.753, γ 1.778 || [010], β : [001] + 18°, $2V$, 60°. Named for H. O'Daniel. [A.M. **66**, 218 and 1276; M.A. 82M/0699.]
- Ogdensburgite.** P. J. Dunn, 1981. *Min. Record*, **12**, 269. Dark reddish-brown platelets from the Sterling Hill mine, Ogdensburg, New Jersey, are near $\text{Ca}_3\text{ZnFe}_3^+(\text{AsO}_4)_5(\text{OH})_{11} \cdot 5\text{H}_2\text{O}$. α 1.765(5), β 1.775(5), γ 1.800(5), ρ 2.92 g cm⁻³.
- Okanogonite.** R. C. Boggs, 1980. *A.M.* **65**, 1138. Tan to pale pink pseudotetrahedra in cavities in granite of the Golden Horn batholith, near Washington Pass, Okanogan Co., Washington, are rhombohedral fourlings, twinned on {0114}, the faces {0001} bounding the pseudotetrahedra. a_h 10.72(1), c_h 27.05(8) Å, or a_{rh} 10.94(3) Å, α 58.7(3)°. The rhombohedral cell contains $[(\text{Na,Ca})_3(\text{Y,Ln})_{12}\text{Si}_6\text{B}_2\text{O}_{27}\text{F}_{14}]$, with Ln mainly Ce, Nd, La, and Gd. ρ 4.35(4) g cm⁻³ obs., 4.37 calc. ω 1.753(2), ε 1.740(2). [M.A. 81-3244; *Bull.* **105**, 135.]
- Olympite.** A. P. Khomyakov, A. V. Bykova, and Yu. A. Malinovskii, 1980. *Zap.* **109**, 476 (Олимпит). A water-soluble mineral, altering rapidly in damp air, occurs in the Rasvumchorr pegmatites, Khibina massif, Kola peninsula. Orthorhombic, a 10.154, b 14.819, c 10.143 Å. Composition $16[\text{Na}_3\text{PO}_4]$, D 2.8 meas., 2.85 calc. α and β 1.510(2), γ 1.512(2), $2V$, 46(1)°. Named for the Olympic Games at Moscow, 1980. [A.M. **66**, 438.]
- Otjissimeite.** P. Keller, H. Hess, and P. J. Dunn, 1981. *Neues Jahrb. Min., Monatsh.* **49**. Colourless anorthic pseudo-hexagonal crystals in germanium ore at Tsumeb, SW-Africa, have a 6.945(12), b 6.958(11), c 9.279(6) Å, α 102.94(10)°, β 103.05(11)°, γ 114.77(12)°. Composition $2[\text{PbGe}_4\text{O}_9]$. Cleavage {001}, elongation [001]. α 1.920(5), γ 1.943(5), $2V$, γ c , 20°; α : [001] 3 to 5°. Named from the Herero name for Tsumeb, Otjissime. [M.A. 81-3245.]
- Päkkönenite.** Yu. S. Borodaev, N. N. Mozgova, N. A. Ozerova, N. S. Bortnikov, P. Oivanen, and

- V. Pietuinen, 1981. *Zap.* **110**, 480 (Пяккёненит). Grains in the sulphide ores of Kalliosa, Seinäjoki region, Finland, are monoclinic, a 5.372(7), b 3.975(5), c 11.41(1) Å, β 89.71(5)°, in good agreement with synthetic $2[\text{Sb}_2\text{AsS}_2]$. Named for V. Pääkönen. [M.A. 82M/1813.]
- Palarstanide.** V. D. Begisov, E. N. Zavyalov, and E. G. Pavlov, 1981. *Zap.* **110**, 487. (Паларстанид, palarstanide). Anhydrous grains in the Talnakh Cu-Ni ores are hexagonal, a 6.784(8), c 14.80(1) Å; composition $\text{Pd}_8(\text{As}, \text{Sn})_3$ with As \approx Sn. R_1 56.4, R_2 55.1% at γ 580 nm. [M.A. 82M/1814.]
- Palfevite.** D. M. Hansen, 1982, in C. Milton, E. J. Dwornik, and J. Marinenko, *Arkansas Geol. Comm. Misc. Publ. no. 18*, 53. A provisional name for an amorphous phosphate of Al and Fe with some vanadate. Material from Nevada appears to be ferrian vanadian richmondite, and that from Potash Sulfur Springs, Arkansas, is ferrian vanadian kingite.
- Paralstonite.** A. C. Roberts, 1979. *Geol. Surv. Can. Pap. 79-1C*, 99; H. Effenberger, *Neues Jahrb. Min., Monatsh.* 1980, 353. The unnamed $\text{BaCa}(\text{CO}_3)_2$ of A. C. Roberts, *Geol. Surv. Can. Pap. 78-1C*, 49 from Cave-in-Rock, Illinois, is named from its relation to alstonite. Trigonal, space group $P321$, a 8.692, c 6.148 Å, ω 1.672, ϵ 1.527. [A.M. 66, 219; M.A. 80-3528; *Zap.* **111**, 231.]
- Pararealgar.** A. G. Roberts, H. G. Ansell, and M. Bonardi, 1980. *Can. Min.* **18**, 525. Bright yellow to orange-brown aggregates replacing realgar at Mt. Washington, Vancouver Island, British Columbia, are a monoclinic polymorph of realgar. a 9.929, b 9.691, c 8.503 Å, β 97.06. Composition $16[\text{AsS}]$; D 3.52 obs., 3.499 calc. Named for its relation to realgar. [A.M. 66, 1277; M.A. 81-4438.]
- Parascholzite.** B. D. Sturman, R. C. Rouse, and P. J. Dunn, 1981. *A.M.* **66**, 843. Colourless twinned crystals from Hagendorf, Bavaria, tabular on $\{100\}$, which is the twin plane, are monoclinic, a 17.864(5), b 7.422(2), c 6.674(2) Å, β 106° 27'. Composition $4[\text{CaZn}_2(\text{PO}_4)_2 \cdot 2\text{H}_2\text{O}]$. D 3.12(3) obs., 3.10 calc. α 1.587(2) \parallel $[010]$, β 1.588(2), γ 1.603(2), γ : $[001]$ 13(1)°, $2V_\gamma$ 25(2)°. Named for its relation to scholzite. [M.A. 82M/0700.]
- Pehrmanite.** E. A. J. Burke and W. J. Lustenhouwer, 1981. *Can. Min.* **19**, 311. The Fe^{2+} analogue of taaffeite (19th List) occurs in the Rosendal pegmatite, Kemiö I., Finland. Space group $R3m$, a_h 5.70, c_h 41.16 Å. Composition $9[(\text{Be}, \text{Zn}, \text{Mg})\text{Fe}^{2+}\text{Al}_4\text{O}_8]$; green hexagonal tablets, uniaxial negative, n 1.79. Named for G. Pehrman. [M.A. 82M/0701.]
- Peisleyite.** E. S. Pilkington, E. R. Segnit, and J. A. Watts, 1982. *M.M.* **46**, 449. Fine-grained, compact, brittle, white material on dumps at Tom's Phosphate Quarry, nr. Kapunda, South Australia, is monoclinic, a 13.31(6), b 12.62(6), c 23.25(1) Å, β 110.0(3)°; composition $2[\text{Na}_3\text{Al}_{1.6}(\text{SO}_4)_2(\text{PO}_4)_{1.0}(\text{OH})_{1.7} \cdot 20\text{H}_2\text{O}]$; n c . 1.51, low birefringence. Named for V. Peisley.
- Peretaite.** N. Cipriani, S. Menchetti, P. Orlandi, and C. Sabelli, 1980. *A.M.* **65**, 936. Colourless crystals, tabular on $\{100\}$, with $\{001\}$, $\{302\}$, $\{010\}$ or $\{110\}$, $\{310\}$, and $\{122\}$ are monoclinic, $C2/c$, a 24.641, b 5.598, c 10.180 Å, β 95.95°. Composition $4[\text{CaSb}_3^+\text{O}_4(\text{SO}_4)_2(\text{OH})_2 \cdot 2\text{H}_2\text{O}]$; ρ 4.06 g cm^{-3} calc., c 4.0 obs. Ax. pl. \parallel (010) ; from a prism $[(100):(3\bar{1}0)]$, γ' 1.935, near $[001]$, α' 1.841, at c . 28° to $[010]$; $2V_\gamma$ very large. Named for the locality, Pereta, Tuscany. [M.A. 81-1875; *Bull.* **105**, 135.]
- Petarasite.** G. Y. Chao, T. T. Chen, and J. Baker, 1980. *Can. Min.* **18**, 497; S. Ghose, Che'ng Wan, and G. Y. Chao, *ibid.* 503. Greenish-yellow grains with catapleite, zircon, etc. at the Demix quarry, Mt. St.-Hilaire, Quebec, have space group $P2_1/m$, a 10.7956, b 14.4928, c 6.6229 Å, β 113.214°. Composition $2[\text{Na}_5\text{Zr}_2\text{Si}_6\text{O}_{18}(\text{OH}, \text{Cl}) \cdot 2\text{H}_2\text{O}]$. Cleavage $\{110\}$, $\{010\}$, $\{001\}$. D 2.88 obs., 2.915 calc. α 1.596 \parallel $[010]$, colourless, β 1.598, pale greenish-yellow, γ 1.632, pale greenish-yellow, γ : $[001]$ + 41.5°, $2V_\gamma$ 29°. Named for Peter Tarasoff. [A.M. 66, 1277; M.A. 81-4439.]
- Philipsbornite.** K. Walenta and M. Zwiener, 1982. *Neues Jahrb. Min., Monatsh.* 1. Grey-green massive material with crocoite, from Dundas, Tasmania, are related to hidalgote (20th List). a 7.01 Å, α 60.94°. Composition $[\text{PbAl}_3\text{H}(\text{AsO}_4)_2(\text{OH})_6]$. Isotropic, n 1.790(3). Named for H. von Philipsborn.
- Pianlinite.** Liu Changling, Liu Deye, Zhang Fu, Li Jinsheng, Sun Weijian, and Lu Wenhen, 1963. [*Kexue Tongbao*, **10**, 59]; Liu Changling, 1979. [*Ibid.* **24**, 553]; *abstr.* *A.M.* 1980, **65**, 1068. A clay bed in Pianling, China, is almost wholly composed of a mineral of composition $\text{Al}_2\text{Si}_2\text{O}_6(\text{OH})_2$; ρ 2.45 g cm^{-3} ; perfect cleavage, straight extinction; α 1.532(2), β 1.539(4), γ 1.541(4), $2V$ 0 to 5° [!]. Named for the locality. [The data show the mineral to be unique . . . should not have been given a name at the present stage—G.Y.C.]
- Pirquitasite.** Z. Johan and P. Picot, 1982. *Bull.* **105**, 229. Concentrates from the Pirquitas mine, Rinconada, Jujuy province, Argentina, contain several minerals of the stannite family, including a new member, $[\text{Ag}_2\text{ZnSnS}_4]$, space group $I42m$ or $I\bar{4}$, a 5.786, c 10.829 Å.
- Polkovicite.** see Morozewiczite.

- Poyarkovite.** V. I. Vasilev, Yu. G. Lavrentev, and N. A. Palchik, 1981. *Zap.* **110**, 501 (Поярковит). Monoclinic, a 18.82, b 9.02, c 16.79 Å, β 112° 24'; composition 24[Hg₃ClO]. Occurs in the Khaidarkan ores. Named for V. E. Poyarkov. [M.A. 82M/1815.]
- Preisingerite.** D. Bedlivy and K. Mereiter, 1981. *Fortschr. Min.* **59**, Beiheft 1, 15 (abstr.). White to grey tablets with rooseveltite (18th List) at San Francisco de los Andes and Cerro Negro de la Aguachita, Calingasta Dept., San Juan Prov., Argentina, are anorthic, a 9.543, b 7.404, c 6.937 Å, α 92.18°, β 106.67°, γ 110.62°. Composition 2[Bi₃(AsO₄)₂O(OH)]. α 2.130, β 2.16, γ 2.195. 2V c . 90°. Named for A. Preisinger. [A.M. 67, 516.]
- Preiswerkite.** H. R. Keusen and T. Peters, 1980. A.M. **65**, 1134. The mica in a rodingite dyke in the Geisspfad ultramafic complex is an Al-rich trioctahedral sodium mica near 2[NaMg₂Al{Al₂Si₂O₁₀(OH)₂}] of 2M₁ type: a 5.22, b 9.05, c 19.42 Å, β 95° 10'; ρ 2.96 g cm⁻³ obs., 2.94 calc. α 1.560(4), β 1.614(2) || [010], γ 1.615(2), 2V_z 5 to 7°. Named for H. Preiswerk. [M.A. 81-3246; Bull. **105**, 135.]
- Protohematite.** S. Yariv and E. Mendelovici, 1979. *Appl. Spectroscopy*, **33**, 410; *Thermochimica Acta*, 1981, **45**, 327 and 339. An unnecessary name for poorly crystallized hematite.
- Ramsdellite** (of Kolotyркиn *et al.*). V. I. Kolotyркиn, J. A. Kessler, V. A. Shchelkotunov, I. V. Gordeev, Yu. G. Metlin, and Yu. D. Tretyakov, 1981. *Thermochimica Acta*, **43**, 27. The name ramsdellite is misapplied to the artificial compound Li₂Ti₃O₇ without explanation.
- Revdite.** A. P. Khomyakov, G. E. Cherepivskaya, T. A. Kurova, and V. P. Vlasyuk, 1980. *Zap.* **109**, 566 (Ревдит). White masses in ussingite veinlets are anorthic, a 27.54, b 10.01, c 6.96 Å, α 90°, β 97° 15', γ 100° 28'. Composition 8[Na₂Si₂O₅·5H₂O]; ρ 1.94 g cm⁻³, cleavage {100} and {010}. α 1.469, β 1.482, γ 1.490, β : [001] 0 to 10°.
- Roaldite.** V. F. Buchwald and H. P. Nielsen, 1981. [*Lunar Planet. Sci.* **12**, 112], abstr. A.M. **66**, 1100. Platelets 1-2 μ m thick in the kamacite of the Jerslev and Youndegin meteorites are cubic, *Pm*3m, a 3.79(4) Å. Composition (Fe,Ni)N with c 6% Ni. Named for Roald N. Nielsen.
- Rohaite.** S. Karup-Møller, 1978. *Bull. Grønlands Geol. Undersøg.* **126**, 23. Material intergrown with chalcocite at Kvanefeld, S. Greenland, is tetragonal, a 3.801(1), c 20.986(8) Å. Composition 2[Cu₅TlSbS₂]. Named for J. Rose-Hansen. [A.M. **65**, 208.]
- Royal lavulite, see Lavulite.
- Ruarsite.** Tsu-hsiang Yu and Hsueh-tsi Chou, 1979. [*Sci. Bull. (K'o'Hsueh Tung Pao)* **24**, 310], abstr. A.M. 1980, 1068. Heavy mineral concentrates and polished sections of chromium ore from an ultramafic in N. Tibet contain grains of (Ru,Os)AsS with Os 0 to 15%. X-ray powder data match those of synthetic RuAsS. Distinctly anisotropic, R 42.6-43.3% for λ 589 nm.
- Sacchite, error for Sakhaite. Soviet Phys. (Dokl.), 1978, **23**, 225.
- Sacrofanite.** F. Burrigato, G. C. Parodi, and P. F. Zanazzi, 1980. *Neues Jahrb. Min., Abh.* **140**, 102. Hexagonal prisms in a volcanic block from the Sacrofano area, Latium, Italy, are hexagonal, a 12.865, c 72.240 Å. Composition 14[Na_{6.25}Ca_{1.83}K_{1.39}(Si_{6.26}Al_{5.74})O₂₄(OH)₂(SO₄)_{1.14}(CO₃)_{0.27}Cl_{0.20}·0.27H₂O]; cancrinite family. ω 1.505(1), ϵ 1.486(1). Named for the locality. Cf. Giuseppettite (this List). [A.M. **66**, 1100; M.A. 81-3249.]
- Saneroite.** G. Lucchetti, A. M. Penco, and R. Rinaldi, 1981. *Neues Jahrb. Min., Monatsh.* 161. The unnamed mineral of L. Cortesogno, G. Lucchetti, and A. M. Penco, *Rend. soc. Ital. Min. Petrol.* **35**, 188 (1979) is named; see also R. Basco and A. Della Giusta, *Neues Jahrb. Min., Abh.* **138**, 333 (1980). Orange veins in Mn ores of Val Grevegna, Italy; anorthic, a 9.741(5), b 9.974(7), c 9.108(5) Å, α 92.70°, β 117.11°, γ 105.30°. Composition [Na_{2.3}Mn_{2.3}Mn_{0.7}Si₁₁VO₃₄(OH)₄](Mn³⁺ calculated for charge balance). α 1.720 deep orange, β 1.740-5 lemon yellow, γ 1.745-50 yellow orange. Named for E. Sanero. [A.M. **66**, 1278; M.A. 82M/0702.]
- Schuiskit, German form of Shuiskite. *Zap.* 1981, **110**, 509.
- Shabynite.** N. N. Pertsev, S. V. Malinko, V. A. Vakhrushev, B. P. Fitsev, V. Sokolova, and I. B. Nikitina, 1980. *Zap.* **109**, 569 (Шабьнит). White fibrous material in a drill core of the Korshunov magnetite deposit, Angaro-Ilim region, Siberia, is probably monoclinic. Composition Mg₅BO₃(Cl,OH)₂(OH)₅·4H₂O. α 1.543(2) || elongation, β 1.571(3), γ 1.577(2). Named for L. I. Shabynin. [A.M. **66**, 1101; M.A. 81-3250.]
- Shahovite, original inaccurate transliteration of Шаховит, Shakhovite, q.v.
- Shakhovite.** V. I. Vasilev, Yu. G. Lavrentev, and N. A. Palchik, 1980. *Geol. Geofiz.* 128 (Шаховит, Shahovite). Bright green to olive grains in cinnabar ores of the Kelyan deposit, Buryat ASSR, and the Khaidarkan deposit, Kirgiz SSR are anorthic, a 5.47, b 4.85, c 16.5 Å, α 101°, β 75°, γ 82°. Composition [Hg₈Sb₂O₁₃]; D 8.34 to 8.5 meas., 8.39 calc. $n > 2.03$, strongly anisotropic; R_1 20.3, R_2 15.6 at 590 nm. Named for Ф. Н. Шахов (F. N. Shakhov), and should therefore be shakhovite. [A.M. **66**, 1101; M.A. 81-4441.]

- Shuiskite.** O. K. Ivanov, V. A. Arkhangelskaya, L. D. Miroshnikova, and T. A. Shilova, 1981. *Zap.* **110**, 508 (Шуйскит). The chromium analogue of pumpellyite occurs in the Bisersky deposits in the Urals. a 8.897, b 5.843, c 19.41 Å, β 98°, space group $A2/m$. Composition $4[\text{Ca}_4(\text{Mg},\text{Al})_2(\text{Cr},\text{Al})_4\text{Si}_6\text{O}_{22}(\text{OH})_4 \cdot 2\text{H}_2\text{O}]$. Named for V. P. Shuisk. [M.A. 82M/1817.]
- Sodium-phlogopite.** W. Schreyer, K. Abraham, and H. Kulke, 1980. *Fortschr. Mineral.* **58** Beiheft 1, 120 (Natrium-Phlogopit); *Contrib. Min. Petrol.* **74**, 223. Near $\text{NaMg}_3\text{AlSi}_3\text{O}_{10}(\text{OH})_2$; from an evaporite at Derrag, Tell Atlas, Algeria. [A.M. **66**, 219 and 639; M.A. 81-3122.]
- Sopcheite.** D. A. Orsoev, S. A. Rezhnova, and A. N. Bogdanova, 1982. *Zap.* **111**, 114 (Сопчеит). Inclusions in the chalcopyrite ores of the Sopcha massif, Monchegorsk pluton, USSR, are orthorhombic, a 9.645, b 7.906, c 11.040 Å; composition $4[\text{Ag}_4\text{Pd}_3\text{Te}_4]$. R 44.4% at λ 580 nm.
- Spertinite.** J. D. Grice and E. Gasparri, 1981. *Can. Min.* **19**, 337. Small blue botryoidal aggregates of 10 μm laths with chalcosine at the Jeffrey mine, Quebec, have space group $Cmcm$, a 2.951(1), b 10.592(3), c 5.257(3) Å. Composition $4[\text{Cu}(\text{OH})_2]$. α 1.720(2), colourless, $\gamma > 1.800$, dark blue. Named for F. Spertini. [M.A. 82M/0704.]
- Spinel (of Kolotyркиn et al.)** V. I. Kolotyркиn, J. A. Kessler, V. A. Schelkotunov, I. V. Gordeev, Yu. G. Metlin, and Yu. G. Tretyakov, 1981. *Thermochimica Acta*, **43**, 27. The term spinel, without qualification, is applied to the artificial compound $\text{Li}_4\text{Ti}_5\text{O}_{12}$; presumably it has, or is thought to have, the spinel structure.
- Spionkopite.** R. J. Goble, 1980. *Can. Min.* **18**, 511. 'Blaubleibender Covellit' from the Spionkop Creek area, Alberta, is hexagonal, a 22.962, c 41.429 Å. Composition $18[\text{Cu}_{39}\text{S}_{28}]$. R_0 15.5%, R_e 20.6% at λ 546 nm. Named from the locality. Cf. yarrowite (this List). [A.M. **66**, 1279; M.A. 81-4442.]
- Stanleyite.** A. Livingstone, 1982. *M.M.* **45**, 163. Efflorescent blue outgrowths on patronite (4th List) from Cerro de Pasco, Minsaragra, Peru, are orthorhombic, a 12.12, b 9.71, c 14.92 Å. D 1.95 obs., 2.01 calc., composition $8[\text{VOSO}_4 \cdot 6\text{H}_2\text{O}]$. α 1.505, β 1.519, γ 1.533. Named for H. M. Stanley.
- Steaeyite.** G. Perrault and J. T. Szymanski, 1982. *Can. Min.* **20**, 59. The material from Mt. St.-Hilaire, Quebec, described as ekanite by G. Perrault and P. Richard, 1973 (*Can. Min.* **11**, 913) is shown to be a structurally distinct species and is named for H. R. Steacy. Space group $I422$, a 7.483(3), c 14.77(2) Å, composition $2[(\text{Na},\text{Ca})_2\text{K}_{1-x}\text{ThSi}_8\text{O}_{20}]$, with x about 0.4 and $\text{Na} > \text{Ca}$. Material from central Asia described by Ginzburg et al. (1965) as ekanite has the steacyite structure with $\text{Ca} > \text{Na}$ but is not named. The 'kanaekanite' of Povarennykh (1965) has the steacyite structure.
- Sterlinghillite.** P. J. Dunn, 1981. *A.M.* **66**, 182. Small clusters of minute white to pale pink crystals on a single specimen of löllingite-franklinite-willemite ore from the Sterling Hill mine, Ogdensburg, Sussex Co., New Jersey, have composition $\text{Mn}_3(\text{AsO}_4)_2 \cdot 4\text{H}_2\text{O}$; α 1.656(3), γ 1.671(3). The crystals are too small for single-crystal study, but X-ray powder data are given. Named from the locality. [M.A. 81-3251; Bull. **105**, 137.]
- Stibivanite.** S. Kaiman, D. C. Harris, and J. E. Dutrizac, 1980. *Can. Min.* **18**, 329; J. T. Szymanski, *ibid.* 333. Radiating yellow-green fibrous crystals from Lake George, New Brunswick, Canada have space group $C2/c$, a 17.989, b 4.7924, c 5.500 Å, β 95.15°. Composition $4[\text{Sb}_3^{3+}\text{V}^{4+}\text{O}_5]$. $\alpha > 1.87 \parallel [010]$, emerald green, β emerald green, $\gamma < 1.89 \parallel [001]$ olive green. [M.A. 82M/0705.]
- Strontio-burbankite.** R. P. Tikhonenkova, N. G. Shumyatskaya, and M. E. Kazakova, 1977. [*Novye Dannye Min., Min. Metod. Issled.*], cited by G. K. Eremenko and V. A. Velko, 1982 (*Zap.* **111**, 321) (Стронциобербанкит). Apparently an unnecessary name for burbankite with $\text{Sr} > 1.5$ atoms in the formula $(\text{Na},\text{Ca})_3(\text{Sr},\text{Ba},\text{Ln},\text{Ca})_3(\text{CO}_3)_5$, the original burbankite (20th List) having Sr 1.255 atoms.
- Suessite.** K. Keil, J. L. Berkley, and L. H. Fuchs, 1980. *Meteoritics*, **15**, 312; *A.M.* **67**, 126. The metallic phase in the North Haig ureilite is the Si-rich end-member of the α solid-solution Fe-Si, near Fe_3Si with 2½% Ni, and lacks the longer spacings of synthetic Fe_3Si . Cubic, a 2.84 Å. Named for H. E. Suess.
- Sulphotsumoite.** E. N. Zavyalov and V. D. Begizov, 1982. *Zap.* **111**, 316 (Сульфозумоит). Grains with joséite-B and tsumoite in the Ergelyakh ore deposit, Yakutia, give powder data indexed on a rhombohedral cell with a_h 4.316, c_h 23.43 Å. Composition $2[\text{Bi}_3\text{Te}_2\text{S}]$. Named from its relation to tsumoite, BiTe.
- Sundiusite.** P. J. Dunn and R. C. Rouse, 1980. *A.M.* **65**, 506. Colourless crystals with blixite (22nd List) on manganese ore from Långban, Sweden, are monoclinic with a 24.67(1), b 3.781(1), c 11.881(5) Å, β 100.07(4)°. Optically +, $n > 2.1$, $\gamma - \alpha$ 0.070; on cleavage $\{100\}$ laths, elongation $[010]$, +. Composition $2[\text{Pb}_{10}(\text{SO}_4)\text{Cl}_2\text{O}_8]$; not to be confused with sundiusite of R. Phillips and W. Layton (23rd List), an amphibole end-member. Named for N. Sundius. [M.A. 81-0831; Bull. **104**, 702.]

- Suzukiite.** S. Matsubara, A. Kato, and S. Yui, 1982. *Min. J.* **11**, 15. Bright green orthorhombic crystals in the manganese ore of the Mogurazawa mine, Kiryu City, Gumma Pref., Japan, have a 7.089(2), b 15.261(2), c 5.364(1) Å; ρ 4.0 g cm⁻³ obs., 4.03 calc. Composition $2[\text{Sr}_2\text{V}_2^{4+}(\text{SiO}_3)_4\text{O}_2]$, the Sr analogue of Haradaite (24th List). α 1.730(5) pale green || [100], β 1.739 calc., light yellowish green, || [010], γ 1.748(5) light yellowish green || [001], $2V$ c . 90°, $r \ll v$. Named for J. Suzuki.
- Takéuchiite.** J. O. Bovin and M. O'Keefe, 1980. *A.M.* **65**, 1130; *Acta Crystallogr.* **A37**, 28 (1981). A specimen labelled orthopinakiolite, from Långban, Sweden, proved to carry, not orthopinakiolite, but a polymorph thereof with $1\frac{1}{2}$ times its a -dimension. Acicular crystals bounded by {320} are orthorhombic, a 27.50(1), b 12.614(2), c 6.046(1) Å; composition $(\text{Mg}, \text{Mn}^{2+})_2(\text{Mn}^{3+}, \text{Fe}^{3+})\text{BO}_5$ ($\text{Mn}^{2+} : \text{Mn}^{3+}$ ratio assumed). Named for Y. Takéuchi. [M.A. 81-3525; *Bull.* **105**, 137.]
- Taneyamalite.** S. Matsubara, 1981. *M.M.* **44**, 51. The Mn-dominant analogue of howieite (24th List) occurs in Mn-Fe ores at the Iwaizawa mine, Saitama Prefecture, Japan, as greenish grey-yellow seams in caryopilite and is identical with the unnamed mineral of Aoki and Isono (1968) from the Taneyama mine, Kumamoto Prefecture. Anorthic, a 10.198(1), b 9.820(1), c 9.485(1) Å, α 90° 30(1)', β 70° 32(1)', γ 108° 34(1)'. Composition $[(\text{Na}, \text{Ca})(\text{Mn}^{2+}, \text{Mg}, \text{Fe}^{3+}, \text{Al})_{12}\text{Si}_{12}(\text{O}, \text{OH})_{44}]$, with $\text{Na} > \text{Ca}$, $\text{Mn}^{2+} > (\text{Mg}, \text{Fe}^{3+}, \text{Al})$, and $\text{O} > \text{OH}$. α 1.646(2) nearly colourless, β 1.664(2) nearly colourless, γ 1.676(2) pale yellow; $2V_x$ c . 70°. Some material originally described as howieite is Mn^{2+} dominant and thus is taneyamalite. Named from the first locality. [A.M. **66**, 1101; M.A. 81-1876; *Bull.* **105**, 138.]
- Tarnowskite.** M. Czaja, 1978. *Mineral. Polonica*, 1989. Variant of Tarnowitzite.
- Tetraauricupride.** Chen Keqiao, Yu. Tinaggao, and Zhang Yongge, 1982. *Sci. Geol. Sinica*, no. 1, 114. Grains in platinum-bearing ultrabasic rocks at Sardala, Manas County, Xinjiang, China, are tetragonal, $C4/mmm$, a 3.89, c 3.72 Å. Composition $2[\text{CuAu}]$. Cf. Auricupride.
- Tetranatrolite.** T. T. Chen and G. Y. Chao, 1980. *Can. Min.* **18**, 77. The unnamed tetragonal natrolite of Andersen *et al.* 1969 from Ilímaussaq, Greenland, is named. a 13.098, c 6.635 Å, cell-contents $4[\text{Na}_2\text{Al}_2\text{Si}_3\text{O}_{10} \cdot 2\text{H}_2\text{O}]$. [M.A. 81-4443.]
- Tetraenaite.** R. S. Clarke, Jr., and E. R. D. Scott, 1980. *A.M.* **65**, 624. The 'clear taenite' of G. J. Taylor and D. Heymann, 1971, is ordered $[\text{FeNi}]$, tetragonal, $P4/mmm$, a 2.533(2), c 3.582(2) Å, and is a common constituent of both aerolites and siderites. [M.A. 81-0833; *Bull.* **104**, 703.]
- Theisite.** S. A. Williams, 1982. *M.M.* **46**, 49. Thin seams of a green mineral in an oxidation zone at a small uranium prospect near Durango, Colorado, yield cleavage plates up to 2 mm, but they are curved; X-ray powder data can be indexed on a hexagonal cell with a 8.225, c 14.97 Å, or an orthorhombic pseudo-hexagonal cell with a 8.225, b 7.123, c 14.97 Å. Sensibly uniaxial with α 1.755 || [001], $\beta = \gamma$ 1.785. D 4.3 obs., 4.45 calc. Composition $2[\text{Cu}_5\text{Zn}_5(\text{As}, \text{Sb})\text{O}_4]_2(\text{OH})_{14}$, with As:Sb = 3:1. Named for N. J. Theis. [M.A. 82M/1818].
- Theophrastite.** T. Marcopoulos and M. Economou, 1981. *A.M.* **66**, 1020. Small emerald-green plates in magnetite-chromite ore from Vermion, N. Greece, are trigonal, a 3.131, c 4.605 Å. Composition $[\text{Ni}(\text{OH})_2]$; D 4.00 obs., 3.95 calc. Uniaxial positive, ω 1.759-760, $\epsilon - \omega$ very small. Named for Theophrastos (372-287 BC). A magnesian variety occurs on chromite at Hagdale, Unst, Shetland (A. Livingstone and D. L. Bish, 1982, *M.M.* **46**, 1). [M.A. 82M/1752 and 1819.]
- Tiragalloite.** C. M. Gramaccioli, W. L. Griffin, and A. Mottana, 1980. *A.M.* **65**, 947. Orange grains with braunite, parsettenite, etc. from an abandoned manganese mine at Molinello, Chiavari, Liguria, are monoclinic, $P2_1/n$, a 6.66(1), b 19.92(2), c 7.67(1) Å, β 95.7(1)°. Composition $4[\text{Mn}_4\text{AsSi}_3\text{O}_{12}(\text{OH})]$. α 1.745(5), near [100], β 1.751(3) || [010], γ 1.760(5); $2V_\gamma$ 38 to 46°, with inclined dispersion. Named for P. Tiragallo. [M.A. 81-1877; *Bull.* **105**, 138.]
- Tivanite.** I. E. Grey and E. H. Nickel, 1981. *A.M.* **66**, 866. The black mineral mentioned by Nickel, 1977, as a titanium vanadate from Kalgoorlie, Western Australia, is fully described and named from its composition. Space group $P2_1/c$, a 7.494(5), b 4.552(4), c 10.005(8) Å, β 129.79(2)°. Composition $2[(\text{V}^{3+}, \text{Ti}^{4+})(\text{O}, \text{OH})_2]$ with V:Ti near 1. [M.A. 82M/0706.]
- Tolovkite.** L. V. Razin, N. S. Rudashevskii, and G. A. Sidorenko, 1981. *Zap.* **110**, 474. (Толовкит). Grains in the alluvium of the Tolovka river, NE USSR, are cubic, space group $P213$, a 6.027(3) Å. Composition $4[\text{IrSbS}]$. [M.A. 82M/1820.]
- Treadgoldite, error for Threadgoldite. *Bull. Min.* **104**, 704.
- Tugarinovite.** V. G. Kruglova, A. A. Poteryaikina, G. A. Sidorenko, L. S. Dubakina, and E. G. Ryabeva, 1980. *Zap.* **109**, 465 (Тугариновит). Dark lilac-brown crystals, $\frac{1}{2}$ to $1\frac{1}{2}$ mm, are identical with synthetic MoO_2 . Monoclinic, a 5.59(1), b 4.82(1), c 5.51(1), β 119° 32'. Strongly birefringent and anisotropic, inclined extinction

- 5–7°; R 19.7% at λ 588 nm, at longer λ elongation +, at shorter –. Named for A. I. Tugarinov. [A.M. 66, 438; M.A. 81–1878.]
- Vanmeerscheite.** P. Piret and M. Deliens, 1982. *Bull.* 105, 125. Canary-yellow tablets with other uranium minerals at Kobokobo, Kivu, Zaïre, are orthorhombic, a 17.06, b 16.76, c 7.023 Å, space group $P2_1mn$. Composition $4[U^{6+}(UO_2)_3(PO_4)_2(OH)_6 \cdot 4H_2O]$. β 1.715(2) || [001], γ 1.718(2) || [100], $2V_z 56^\circ$. Named for M. Van Meersche. Cf. meta-vanmeerscheite (this List), a lower hydrate.
- Velerite.** Yu. L. Kapustin, 1980. *Zap.* 109, 631. Error for Wöhlerite, through back-transliteration from Велерит.
- Viitaniemiite.** S. L. Lahti, 1981. *Bull. Geol. Surv. Finland*, 314, 51. White crystals with esophorite in the Viitaniemi pegmatite are monoclinic, a 6.832(3), b 7.143(3), c 5.447(3) Å, β 109° 22(5)'; cleavage {10 $\bar{1}$ }. Composition $2[Na(Ca,Mn)AlPO_4(F,OH)_3]$, with $Ca > Mn$ and $F > OH$. α 1.557(1), β 1.565(1) || [010], γ 1.571(1), $2V_\alpha 81^\circ$. X-ray powder data are close to those of an unnamed mineral from Greifenstein, Saxony, JCPDS card 13–587. Named from the locality. [A.M. 66, 1102.]
- Vismirnovite.** N. K. Marshukova, A. B. Pavlovskii, G. A. Sidorenko, and N. I. Chistyakova, 1981. *Zap.* 110, 492 (Висмирновит). Aggregates in massive varlamoffite from tin deposits of Central Asia consist of vismirnovite and natanite (this List). Both are cubic, space group $Pn\bar{3}m$; the former, with a 7.69(1) Å, is $4[ZnSn(OH)_6]$, the latter, with a 7.72(2) Å, is $4[FeSn(OH)_6]$. Named for V. I. Smirnov and Natana I. Ginzburg. [M.A. 82M/1821.]
- Wesselite.** A trade-name for purple Sugilite (30th List). *Diamond Fields Advertiser*, 8 February 1982, p. 4.
- Wonesite.** F. S. Spear, R. M. Hazer, and D. Rumble III, 1981. *Am. Min.* 66, 100. A sodium-rich tri-octahedral member of the mica family occurs with phlogopite, etc. in the Post Pond Volcanics, Vermont. Space group $C2/m$, a 5.312(3), b 9.163(5), c 9.825(6) Å, β 103.18(6)°. Composition near $2[(Na,K)(Mg,Fe,Al)_6(Al,Si)_8O_{20}(OH,F)_4]$, with $Na \gg K$, $Mg:Fe$ c. 6, and total Al c. 2. α 1.544(4) \perp (001) pale brown, $\beta = \gamma$ 1.608(2) dark brown, $2V_\alpha < 5^\circ$. Named for D. R. Wones. [M.A. 81–3253; Bull. 105, 139.]
- Yafsoanite.** A. A. Kim, N. V. Zayakina, and Yu. G. Lavrentev, 1982. *Zap.* 111, 118 (Яфсоанит). Rhombic dodecahedra, octahedra, and cubo-octahedra in Kuranakh type gold deposits, Central Aldan, have a 6.315(2) Å. Composition $2[(Zn_{1.38}Ca_{1.36}Pb_{0.26})_3TeO_6]$. Named for the Yakut filial, Sibirsk. *Otdel. Akad. nauk.*
- Yarrowite.** R. J. Goble, 1980. *Can. Min.* 18, 511. 'Blaubleibender Covellit' from the Yarrow Creek area, Alberta, is hexagonal, a 3.800, c 67.26 Å. Composition $3[Cu_9S_8]$. R_o 12.1%, R_e 20.6% at 546 nm. Named from the locality. Cf. spionkopite (this List). [A.M. 66, 1279; M.A. 81–4442.]
- Yftsite.** N. I. Pletneva and L. I. Polezhaeva, 1979. [Nov. dann. min. Kolsk, 62], abstr. *Zap.* 110, 230 (Ифтисит, Yftsite). The unnamed mineral of N. I. Pletneva, A. P. Denisov, and N. A. Elina, 1971. [*Mat. Min. Kolsk*, 8, 176], abstr. *Zap.* 102, 456. Kola peninsula, space group $Cmcm$, a 19.949, b 10.626, c 7.043. Composition $(Y,Ln)_4TiO(SiO_4)_2(F,OH)_6$. D 3.96 obs., 4.87 calc. α 1.690, β 1.705, γ 1.710–12. Named for its composition Y,F,Ti,Si; the name should accordingly be Yftsite, not Iftsite.
- Zhonghuacerite.** P. Zhang and K. Tao, 1981. *Sci. Geol. Sinica*, 195. A pale yellow fine-grained mineral in dolomite from Bayan Obo, N. China, is trigonal, a 5.07, c 9.82 Å. Composition $[Ba_2Ce(CO_3)_3F]$; ρ 4.2–4.4 g cm $^{-3}$. ω 1.745, ϵ 1.568. Named from the locality and cerium. [M.A. 82M/0707.]
- Ziesite.** J. M. Hughes and R. W. Birnie, 1980. *A.M.* 65, 1146. Anhedral black crystals from a fumarole of the Izalco volcano, El Salvador, is identical with synthetic β - $Cu_2V_2O_7$, the metastable high-temperature polymorph. Space group $A2/a$, a 10.094(15), b 8.020(13), c 7.711(10) Å, β 110.43(9)°. Named for E. G. Zies. [M.A. 81–3254; Bull. 105, 140.]