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Twenty-seventh list of new mineral names

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THE present list includes 147 names, of which 9 are spelling variants or errors, 26 new and unnecessary synonyms for known minerals and names for synthetic or hypothetical products not known in nature, and 14 a group of unnecessary varietal names proposed over a century ago by J. Fröbel, most of which have escaped inclusion in the literature until now, but are here noted 'for the record'. Names for inadequately characterized minerals (12) and names for minor varieties (1) still constitute an unnecessary burden on the literature.

Most of the 85 new named species have been approved prior to publication by the Commission on New Minerals and Mineral Names of the International Mineralogical Association, and it is noticeable that few of those published without the Commission's approval are likely to prove worthy of species rank; in the present list names (other than spelling variants) published since 1960 without the Commission's approval are distinguished by an asterisk (*); valid species are in **bold-face type**.

To save space, references to certain journals are sometimes given in shortened form: A.M., *Amer. Min.*; Bull., *Bull. Soc. franç. Min. Crist.*; M.A., *Mineralogical Abstracts*; Zap., Зап. всесоюз. мин. общ. (*Mem. All-Union Min. Soc.*).

Agrinierite. F. Cesbron, W. L. Brown, P. Bariand, and J. Geffroy, 1972. *Min. Mag.* **38,** 781. Orange orthorhombic crystals, a 14·04, b 24·07, c 14·13 Å, *Cmmm*, D 5·7, occur with uranophane in cavities in gummite at Margnac, France. Composition $8[2(K_2,Ca,Sr)O.6UO_3.8H_2O]$. $\alpha \parallel [001]$, $\gamma \parallel [010]$. Named for H. Agrinier. [M.A. 72–3346.]

Akatoreïte. P. B. Read and A. Reay, 1971. *Amer. Min.* **56,** 416 (Akatoreite). Orange-brown sheaves of prisms from Akatore Creek, Dunedin, New Zealand, are anorthic, a 8·344, b 10·358, c 7·627 Å, α 104° 29′, β 93° 38′. γ 103° 57′, D 3·48, and optics α 1·698, colourless, β 1·704, pale yellow, γ 1·720, canary yellow. Ideal composition, assuming Mn divalent, $[Mn_9Si_8Al_2O_{24}(OH)_8]$ with some deficiency of Si and excess (OH). Named for the locality. [M.A. 71–3103.]

Akdalaite. E. P. Shpanov, G. A. Sidorenko, and T. I. Stolyarova, 1970. Zap. **99,** 333 (Акдалаит). Aggregates of tabular hexagonal crystals in skarns in the Solvech fluorite deposit, Karagandin region, Kazakhstan, have a 12·87, c 14·97 Å, and a composition near $4Al_2O_3.H_2O$. ω 1·747, ϵ 1·741. The X-ray data are near those of artificial $5Al_2O_3.H_2O$ (tohdite, *q.v.*; Yamaguchi *et al.*, 1964), but show some extra weak lines.

Aldzhanite*. N. P. Avrova, V. M. Bocharov, I. I. Khalturina, and Z. R. Yunosova, 1968. [Геол. развед. месторожд. тверд. полез. Ископ. Каз., 1969, 169], abstr.

Реф. журн., геол., 1969, abstr. no. 6V233 (Альджанит). An incompletely analysed orthorhombic mineral, *a* 12·76, *b* 14·59, *c* 8·19 (Å or kX?), D 2·21, in insoluble residues from a carnallite–bischofite rock; no locality or etymology given. B_2O_3 23·6 %, Ca 15 to 20 %, Cl 10 %. [A.M. **56,** 1122; Zap. **100,** 86.]

Aliettite*. F. Veniale and H. W. van der Marel, 1969. [*Proc. Int. Clay Conf., Tokyo,* **1,** 233], abstr. A.M. **57,** 598. A regularly interstratified talc–saponite mineral from Monte Chiaro and other localities in the Taro valley region, Italy (M.A. **8**–517; **15**–332) is now named for A. Alietti.

Aluminatchromit. K. Spangenberg, 1943. Zeits. prakt. Geol. **51,** 22. A chrome ore from Tampadel, Zobten, Silesia, with Cr only slightly > Al and Mg:Fe about 3·5. Synonym of alumo-chrompicotite (15th List).

Armalcolite. A. T. Anderson, T. E. Bunch, E. N. Cameron, S. E. Haggerty, F. R. Boyd, O. B. James, K. Keil, M. Prinz, P. Ramdohr, and A. El Goresy, 1970. *Proc. Apollo XI Lunar Sci. Conf.* **1,** 55. A member of the pseudobrookite family, 4[(Mg,Fe) Ti_2O_5], with Mg ≈ Fe^{2+}, intermediate between $Fe^{2+}Ti_2O_5$ and karrooite, occurring in lunar rocks from Tranquillity Base. *a* 9·743, *b* 10·02, *c* 3·74 Å. Named for N. A. Armstrong, E. E. Aldrin, and M. Collins. [A.M. **55,** 2136; M.A. 71–1383; Zap. **100,** 618.]

α-Arsenic sulphide*. A. H. Clark, 1970. *Amer. Min.* **55,** 1338 (Alpha-arsenic sulfide). The high-temperature modification of AsS occurs at the Alacrán mine, Pampa Larga, Chile. It is very similar to realgar (β-AsS), but gives a different X-ray powder pattern. [M.A. 71–548.]

Athabascaite. D. C. Harris, L. J. Cabri, and S. Kaiman, 1970. *Canad. Min.* **10,** 207. Lath-shaped grains included in or replacing umangite, and stringers in carbonate vein material, at the Martin Lake mine, Uranium City, Lake Athabasca, Saskatchewan, are orthorhombic, *a* 8·227, *b* 11·982, *c* 6·441 Å. Composition 4[Cu_5Se_4]. Named for the locality. [A.M. **55,** 1444; **56,** 632; M.A. 71–2328; Zap. **100,** 617.]

Bariandite. F. Cesbron and H. Vachey, 1971. Bull. **94,** 49. A black fibrous mineral in the uranium–vanadium deposit of Mounana, Gabon, is monoclinic, *a* 11·70, *b* 3·63, *c* 20·06 Å, β 101° 30′, D 2·7. Composition 2[$V_2O_4.4V_2O_5.12H_2O$]. The finest fibres are pleochroic, greenish brown ∥ [010], bottle green ⊥ [010]. Named for P. Bariand. [M.A. 71–2329; Bull. **94,** 571.]

Bastnaesite-(Yt). D. A. Mineev, T. I. Lavrishcheva, and A. V. Bykova, 1970. Zap. **99,** 328 (Бастнезит(Y)). Fine-grained brick-red pseudomorphs up to 8 cm long after gagarinite (23rd List). Yt 40·1 % of total rare-earth metals. [A.M. **57,** 594.]

Boothite. J. Fröbel, 1843. *Grundzüge eines Systemes der Krystallologie.* A nickel arsenide from Richelsdorf described by Booth in 1836, later included in chloanthite. Not to be confused with the boothite of Schaller (1903; 3rd List).

Boussingaultin. J. Fröbel, 1843. See chrysargyrite (this List).

Brüggenite. M. E. Mrose, G. E. Ericksen, and J. W. Marinenko, 1971. *Progr. Abstr. Geol. Soc. Amer. Ann. Meet.,* 653. $Ca(IO_3)_2.H_2O$ occurs with lautarite, to which it dehydrates, in the Chilean nitrate deposits. Monoclinic, *a* 8·51, *b* 10·00, *c* 7·50 Å, β 95° 20′, $P2_1/c$. [A.M. **57,** 597.]

Bukovite. Z. Johan and M. Kravček, 1971. Bull. **94,** 529. Rare dark brown to

black grains, up to 2 mm, in the ore deposits of Bukov and Petrovice, Moravia, are tetragonal, *a* 3·976, *c* 13·70 Å; composition $[Cu_{3+x}Tl_2FeSe_{4-x}]$, with x up to 0·28. Named for the locality. [M.A. 72–3334.]

Caesium kupletskite. A. F. Efimov, V. D. Dusmatov, A. A. Ganzeev, and Z. T. Kataeva, 1971. Докл. Акак. наук СССР (*Compt. Rend. Acad. Sci. URSS*), **197,** 1394 (Цезийкуплетскит). Rosettes of platy anorthic crystals from the Alai alkalic province have *a* 5·41, *b* 11·74, *c* 21·16 Å, α 89°, β 90°, γ 102° 23′. Composition $(Cs,K,Na)_3(Mn,Fe,Li)_7(Ti,Nb)_2Si_8O_{24}(O,OH,F)_7$, the caesium analogue of kupletskite (21st List). α yellow-green, β 1·726, yellow-brown, γ 1·758 ‖ [100], brown. [A.M. **57,** 328.]

Carbonate-fluor-chlor-hydroxyapatite*. P. G. Cooray, 1970. *Amer. Min.* **55,** 2040. A carbonatian apatite (1·2 % CO_2) with F ≈ Cl ≈ OH, from Metale, Ceylon. [M.A. 71–2322.]

Carletonite. G. Y. Chao, 1971. *Amer. Min.* **56,** 354 (abstr.) and 1855; **57,** 765. A tetragonal mineral from Mt St Hilaire, Quebec, *a* 13·178, *c* 16·695 Å, D 2·45, *P*4/*mbm*, has the ideal composition $8[KNa_4Ca_4Si_8O_{18}(CO_3)_4(OH,F)\cdot H_2O]$, with considerable vacancies in the K, Na, Ca, CO_3, and (OH,F) sites. ω 1·521, ϵ 1·517. Named for Carleton University, Ottawa. Pink to pale blue. Perfect {001} cleavage; no distinct crystals. [M.A. 72–2329 and 3335.]

Carlsbergite. V. F. Buchwald and E. R. D. Scott, 1971. *Nature* (*Phys. Sci.*), **233,** 113. Oriented platelets and grains in kamacite in Descubridora and other siderites consist of CrN, cubic, *a* 4·16 Å, *Fm*3*m*. Named for the Carlsberg Foundation. [M.A. 72–2330; A.M. **57,** 1311.]

Cerotungstite. Th. G. Sahama, O. von Knorring, and M. Lehtinen, 1970. *Bull. Geol. Soc. Finland,* no. 42, 223. The cerium analogue (Ce = 10 %, Nd = 6 %) of yttrotungstite (19th List), and named accordingly. A secondary mineral in tungsten ore from Nyamulilo mine, Kigezi, Uganda. [M.A. 72–3336; Zap. **100,** 623.]

Cesium kupletskite, see Caesium kupletskite.

Chaoite*. A. El Goresy, 1970. *Naturwiss.* **56,** 493. The hexagonal polymorph of carbon, *a* 8·948, *c* 14·078 Å, reported by A. El Goresy and G. Donnay (*Science,* **161,** 363 (1968)) from graphite gneiss from the Ries Crater, Bavaria, and by G. P. Vdovykin (Геохимия, 1969, 1145) is named for E. C. T. Chao. [A.M. **54,** 326; **55,** 1067; Zap. **100,** 614.]

Chelkarite*. N. P. Avrova, V. M. Bocharov, I. I. Khalturina, and Z. R. Yunosova, 1968. [Геол. развед. месторожд. тверд. полез. ископ. Каз. 1969, 169], abstr. Реф. журн., геол. 1969, abstr. no. 6V 233 (челкарит). Prismatic crystals in insoluble residues from a carnallite–bischofite rock are orthorhombic, *a* 13·69, *b* 20·84, *c* 8·26 (Å or kX?), *Pbca*. Two analyses differ considerably, but are near $(Ca,Mg)_4B_3O_7Cl_3\cdot 11H_2O$. No locality or etymology is given. [A.M. **56,** 1122; Zap. **100,** 86.]

Chrome-cerussite*. *Catalogue of the minerals of Tasmania*, revised edn., 1969, 28. Unnecessary new name for the variety chromiferous cerussite of the 1910 edition. [*Min. Mag.* **38,** 902.]

Chrysargyrite. J. Fröbel, 1843. *Grundzüge eines Systemes der Krystallologie.*

Synonym of electrum. Subdivided into boussingaultin, trinitatin, hyperythrin, pyrrhochrysit, gironit, and michelottin, with different Au:Ag ratios.

Clinosaffiorite. D. Radcliffe and L. G. Berry, 1971. *Canad. Min.* **10,** 877. A monoclinic polymorph of saffiorite; occurs intergrown with skutterudite at Cobalt, Ontario. A sub-cell has a 5·040, b 5·862, c 3·139 Å, β 90° 13′, $P2_1/n$. The natural material has Co:Fe:Ni::0·76:0·14:0·10. [M.A. 72–2331.]

Congolite. E. Wendling, R. von Hodenberg, and R. Kühn, 1972. [*Kali und Steinsalz,* **6,** 1]. Small (0·2 mm) red crystals of trigonal iron boracite, from water-insoluble fraction of Cretaceous salt drill core from Brazzaville, Congo. $6[(Fe_{2\cdot68}Mg_{0\cdot24}Mn_{0\cdot08})B_7O_{13}Cl]$; $R3c$ or $R\bar{3}c$, a_{rh} 8·6042 Å, α 60° 10′; ω 1·731, ϵ 1·755. Artificial compound known previously. A third polymorph complicating the α- and β-ericaite picture (21st List; H. Strunz, *Min. Tab.* 4th edn, 1966, 236 and 5th edn, 1970, 266). Named for the locality. [M.A. 72–3337; A.M. **57,** 1315.]

Craigite*. S. L. Miller, 1970. *Science,* **165,** 489. Because air bubbles are not present in the Antarctic ice at depths greater than 1200 m, although gas is still evolved on melting, it is assumed that the known cubic compounds $4O_2.23H_2O$ and $4N_2.23H_2O$ are present. Named for H. Craig. [A.M. **55,** 1071.]

Derriksite. F. Cesbron, R. Pierrot, and T. Verbeek, 1971. Bull. **94,** 534. Rare malachite-green crystals on selenian digenite at Musonoi, Katanga, are *Pnmm* or *Pnm*2, a 5·57, b 19·07, c 5·96 Å. $2[Cu_4UO_2(SeO_3)_2(OH)_6.H_2O]$; α 1·77 ‖ [100], β ‖ [010]. Named for J. Derriks. [M.A. 72–3338.]

Dipingite, error for dypingite (this List). [Bull. **94,** 571.]

Dypingite. G. Raade, 1970. *Amer. Min.,* **55,** 1457. White globular aggregates from the Dypingdal serpentine–magnesite deposit, Snarum, Norway, have α 1·508, β 1·510, γ 1·516. Composition $Mg_5(CO_3)_4(OH)_2.5H_2O$. Named for the locality. [M.A. 71–1384; Bull. **94,** 571; Zap. **100,** 88.]

Dyslaukite. J. Fröbel, 1843. *Grundzüge eines Systemes der Krystallologie.* A cobaltian arsenian ullmannite from Eisern and Frensburg, Westphalia.

Eakerite. P. B. Leavens, J. S. White, *Jr.,* and M. H. Hey, 1970. *Min. Record,* **1,** 92. Prismatic crystals in spodumene pegmatite at King's Mt., North Carolina, are monoclinic, a 15·829, b 7·721, c 7·438 Å, β 101° 9′, $P2_1/a$; D 2·93; α 1·584 ‖ [010], β 1·586, γ 1·600; $2[Ca_2SnAl_2Si_6O_{16}(OH)_6]$. Named for J. Eaker. [A.M. **56,** 637; M.A. 71–2330.]

Elyite. S. A. Williams, 1972. *Amer. Min.* **57,** 364. Tiny prismatic to fibrous violet monoclinic crystals, with langite, serpierite, and galena in the Caroline tunnel of the Silver King mine, Ward, Nevada. $2[Pb_4CuSO_4(OH)_8]$; a 14·248, b 5·768, c 7·309 Å, β 100° 26′, $P2_1/a$, D about 6; α 1·990, β 1·993 ‖ [010], γ 1·994. Named for J. Ely. [M.A. 72–3339.]

Embreyite. S. A. Williams, 1972. *Min. Mag.* **38,** 790. Orange to brown drusy crusts on a number of old specimens from Berezov, Siberia, carrying crocoite, phoenicochroite, and vauquelinite, prove to be a chromate and phosphate of lead with some Cu. Monoclinic, a 9·755, b 5·636, c 7·135 Å, β 103° 5′, D 6·45; $[Pb_5(CrO_4)_2(PO_4)_2.H_2O]$; α 2·20, β and γ 2·36, β ‖ [010]. Named for P. G. Embrey. [M.A. 72–3340.]

β-Ericaite. See entry for congolite (this List).

Erlichmanite. K. G. Snetsinger, 1971. *Amer. Min.* **56,** 1501. A few grains of a cubic mineral, *a* 5·60 Å, with ferroplatinum in placers at the MacIntosh mine, Trinity River, Humboldt Co., California, prove to be OsS_2, matching synthetic material. Also found in a platinum sample from Ethiopia. Named for J. Erlichman. [M.A. 72–1398.]

Ernstite. E. Seeliger and A. Mücke, 1970. *Neues Jahrb. Min. Monatsh.* 289. A yellow-brown oxidation product of eosphorite, from Karibib, SW. Africa, has *a* 13·32, *b* 10·497, *c* 6·969 Å, β 90° 22′, very near the eosphorite cell, but with the *a* and *b* axes interchanged. *a* 1·678, yellow-brown, β 1·706, red-brown, γ 1·721, pale yellow, ‖ [010]; D 3·07; $8[(Mn^{2+},Fe^{3+})AlPO_4(O,OH)_2 . ?H_2O]$. Named for Th. Ernst. [A.M. **56,** 637; Zap. **100,** 623.]

Eskerite, error for eakerite (this List) (*Min. Record,* **1,** 94).

Ewaldite. G. Donnay, J. D. H. Donnay, and M. H. Hey, 1971. *Tschermaks min. petr. Mitt.,* **15,** 185; G. Donnay and H. Preston, ibid., 201 (struct.). Two-phase polycrystals from the Green River formation, Wyoming, consist of mckelveyite (24th List) and a bluish-green mineral with *a* 5·284, *c* 12·78 Å, $P6_3mc$, D 3·25; $2[Ba(Ca,Ln,Na,K)(CO_3)_2]$; ω 1·646, dark blue-green, ϵ 1·572, pale yellow-green. Named for P. P. Ewald. [A.M. **56,** 2156; M.A. 71–3105 and 3106.]

Eylettersite. L. Van Wambeke, 1972. Bull. **95,** 98. White nodules in the Kobokobo pegmatites, Kivu, Congo, are a thorian member of the crandallite family. *a* 6·98, *c* 16·7 Å, $R\bar{3}m$. Composition variable, near $[Th_{0.3-0.4}Pb_{0.1}(U,Ca,Sr)_{0.1}H_{0.2}Al_{3.5}(PO_4)_{1.3-1.4}(SiO_4)_{0.1}(OH)_{8.1-8.5}]$. The name is for Mme Van Wambeke. [M.A. 72–3341.]

Ferripumpellyite*. P. B. Moore, 1971. *Lithos,* **4,** 98. A name for the Fe^{3+} analogue of pumpellyite, $Ca_2MgFe^{3+}Si_3O_{11}(OH)_2 . H_2O$. *Hypothetical* end-member. [A.M. **56,** 2158.]

Ferritchromit. K. Spangenberg, 1943. *Zeits. prakt. Geol.* **51,** 23. The grey, magnetic outer zone on many chromite grains from Tampadel, Zobten, Silesia, is enriched in Fe^{2+} and Fe^{3+} and depleted in Mg^{2+} and Al^{3+}, and is termed Ferritchromit as distinct from the inner, fresh Aluminatchromit (this List). No analysis is given; probably the same as the ferrichrompicotite of Betekhtin (14th List). Cf. Ferritspinelle (24th List).

Ferrohalotrichite*. E. Z. Vieira de Mello, 1969. [*Brasil, Min. Inter. Supt. Desenvolvimento Nordeste, Dept. Recurrsos Naturais, Div. Geol. Ser. Especial,* no. 10, 1 (Ferrohalotriquita)], abstr. A.M. **56,** 1122 (1971). A superfluous name for halotrichite.

Ferropseudobrookite*. Author? *Artificial* $Fe^{2+}Ti_2O_5$, a member of the pseudobrookite family. Name also used in preliminary reports for armalcolite (this List); cf. karrooite (22nd List). [A.M. **55,** 2136.]

Ferropumpellyite*. P. B. Moore, 1971. *Lithos,* **4,** 98. The Fe^{2+} analogue of pumpellyite, $Ca_2Fe^{2+}AlSi_3O_{11}(OH)_2 . H_2O$. [A.M. **56,** 2158.]

Ferrosilicon*. V. Kh. Gevorkyan, 1968. [Докл. акад. наук УССР (*Compt. rend. Acad. sci. Ukrain. RSS*), ser. geol. **2,** 513], abstr. Zap. **99,** 71. Ferrosilicon in drill cores from Konsko-Yalynsk is believed to be natural; later found to consist of two phases, named fersilicite and ferdisilicite (26th List).

Fischesserite. Z. Johan, P. Picot, R. Pierrot, and M. Kvaček, 1971. Carbonate veins at Předbořice, Bohemia, carry a wide variety of selenides including hakite and

permingeatite (this List). The present mineral is cubic, *a* 9·967 Å, $I4_132$, isostructural with petzite. Composition $8[Ag_3AuSe_2]$. Named for R. Fischesser. [M.A. 72–2332.]

Fluor-polylithionite. H. Takeda and C. W. Burnham, 1969. *Min. Journ.* [*Japan*], **6,** 102. *Synthetic* $KAlLi_2Si_4O_{10}F_2$; mica family.

Germanite-(W)*. B. H. Geier and J. Otteman, 1970. *Neues Jahrb. Min., Abh.* **114,** 89. An unnecessary name for a tungstenian germanite; see tungsten-germanite (this List). [A.M. **56,** 1487.]

Gironit. J. Fröbel, 1843. See chrysargyrit (this List).

Grimselite*. K. Walenta, 1972. *Schweiz. Min. Petr. Mitt.* **52,** 93. Pale yellow crusts from the tunnel between Garstenegg and Sommerloch, Grimsel area, Oberhasli, Switzerland, are hexagonal, *a* 9·30, *c* 8·26 Å, $P\bar{6}2c$. Composition $2[K_3NaUO_2(CO_3)_3.H_2O]$. ω 1·611, yellow, ϵ 1·480, colourless. Water-soluble. Has been synthesized. Named for the locality.

Gustavite. S. Karup-Møller, 1970. *Canad. Min.* **10,** 173. Tabular grains with metallic lustre from Ivigtut, Greenland, are orthorhombic, *a* 13·548, *b* 19·449, *c* 4·105 Å, *Bbmm*, *Bb2m*, or *Bbm2*. Composition $Ag_3Pb_5Bi_{11}S_{23}$ (microprobe); $Ag_3Pb_6Bi_{11}S_{24}$ fulfils unit-cell requirements. Considered to be an intermediate between $Pb_3Bi_2S_6$ ('lillianite') and $AgPbBi_3S_6$, with the substitution $2Pb \rightleftharpoons AgBi$. The name gustavite, for Gustav A. Hagemann, is assigned to the end-member $AgPbBi_3S_6$ and should include some intermediate members. Gustavite and an unnamed exsolved phase are the 'mineral X' of Karup-Møller (*Canad. Min.* **8,** 414 (1966)).

Hakite. Z. Johan, 1971. Bull. **94,** 45. Grey-brown to grey minute grains with a variety of selenides including permingeatite and fischesserite (this List) in a calcite vein at Předbořice, Bohemia, are cubic, *a* 10·88 Å. Composition $8[(Cu,Hg)_3SbSe_3]$; one analysis shows some sulphur. Tetrahedrite family. Named for J. Hak. [M.A. 71–2332; Bull. **94,** 572.]

Haxonite. E. R. D. Scott, 1971. *Nature* (*Phys. Sci.*), **229,** 61. A cubic carbide of iron and nickel, near $(Fe,Ni)_{23}C_6$, occurs in the Toluca, Cañon Diablo and other siderites. Named for H. Axon: Not named in the description; the name first appears in 'Glossary of Mineral Species', 1971, by M. Fleischer (*Min. Record*, Bowie, Maryland). [M.A. 72–547.]

Haycockite. L. J. Cabri and S. R. Hall, 1972. *Amer. Min.* **57,** 689. Massive sulphides at Mooihoek Farm, Lydenburg District, Transvaal, include a chalcopyrite-yellow orthorhombic, pseudotetragonal mineral, $a \approx b$ 10·71, *c* 31·56 Å. Composition $12[Cu_4Fe_5S_8]$; about $\frac{1}{2}$ % Ni may be essential. Named for M. H. Haycock. [M.A. 72–3345.]

Heyrovskyite. J. Klominsky, M. Rieder, C. Kieft, and L. Mraz, 1971. *Min. Depos.* **6,** 133. Tin-white orthorhombic crystals, tarnishing black, from Hurky, Czechoslovakia, have *a* 13·705, *b* 31·194, *c* 4·121, D 7·17, *Bbmm* or *Bbm2*. Analyses show some deficiencies from the ideal $4[Pb_6Bi_2S_9]$, with some Ag. [A.M. **57,** 325; M.A. 72–1399.]

Holtite. M. W. Pryce, 1971. *Min. Mag.* **38,** 21. A fibrous to prismatic mineral with stibiotantalite and tantalite from Greenbushes, Western Australia, is allied to dumortierite; orthorhombic, *a* 11·905, *b* 20·355, *c* 4·690 Å, *Pmcn*, D 3·90. Unit cell contents

$[Al_{24\cdot5}Sb^{3+}_{2\cdot56}Ta_{1\cdot36}Nb_{0\cdot16}Sb^{5+}_{0\cdot76}Fe^{3+}_{0\cdot10}Be_{0\cdot05}Ti_{0\cdot03}Mn_{0\cdot02}B_{1\cdot40}Si_{9\cdot09}O_{66\cdot85}]$ or $4[X_{10}O_{17}]$. α 1·744 || [001], β 1·757, γ 1·759. Named for H. E. Holt. [M.A. 71–1385.]

Hydrargyrite. J. Fröbel, 1843. *Grundzüge eines Systemes der Krystallologie.* Synonym of moschellandsbergite. Not the hydrargyrite of Bertrand, 1872 (Dana, 6th edn., 159).

Hydroauerlite*. V. S. Karpenko, N. G. Nazarenko, and O. V. Shchipanova, 1967. [Вопр. прикл. радиогеол., Атомиздат, 100], abstr. Zap. **98,** 330 (Гидроауэрлит). An unnecessary name for a hydrous phosphatian thorite (auerlite). [A.M. **55,** 1070.]

Hydrocalcite*. H. Marschner, 1969. *Science*, **165,** 1119. A superfluous and pre-empted name for monohydrocalcite (Semenov, 1964; 24th List). Not the hydrocalcite of Kosmann, 1892 (1st List) or of Dana, 1892 (a synonym of hydroconite). [A.M. **55,** 1069.]

Hydrograndite, error for hydrougrandite (24th List). (H. Strunz, *Min. Tab.*, 1970, 5th edn., 535).

Hydroxylellestadite*. K. Harada, K. Nagashima, K. Nakao, and A. Kato, 1971. *Amer. Min.* **56,** 1507. An ellestadite from the Chichibu mine, Saitama Prefecture, Japan, has OH > (Cl+F), and is accordingly a hydroxylellestadite. [M.A. 72–1401.]

Hyperythrin. J. Fröbel, 1843. See chrysargyrit (this List).

Ilmaiokite*. I. V. Bussen, L. F. Gannibal, E. I. Goiko, A. N. Merkov, and A. P. Nedorezova, 1972. Zap. **101,** 75 (Ильмайокит, Ilmayokite). White crystals in cavities of natrolite in the Karnasurt Mts., Ilmaoik valley, Lovozero Tundra, Kola Peninsula, coated with sodium carbonate, are probably monoclinic. Possibly near $Na_2TiSi_3O_9 \cdot 6H_2O$. Further study is necessary.

Indigirite. L. N. Indolev, Yu. Ya. Zhdanov, K. I. Kashertseva, V. S. Soknev, and K. I. Del'yanidi, 1971. Zap. **100,** 178 (Пндигирит). Radiating fibrous aggregates from the Sarylakh gold–antimony deposit, Indigirki river, NE. Yakutia, have α 1·472, γ 1·502 || elongation, D 1·6. Composition $Mg_2Al_2(CO_3)_4(OH)_2 \cdot 15H_2O$. [A.M. **57,** 326; M.A. 72–548.]

Insizwaite. L. J. Cabri and D. C. Harris, 1972. *Min. Mag.* **38,** 794. Tiny grains with pentlandite, chalcopyrite, parkerite, and niggliite in the pyrrhotine ore from the Insizwa deposit, Waterfall Gorge, Pondoland, South Africa, are cubic with a 6·625 Å, composition $Pt_{1\cdot03}Bi_{1\cdot35}Sb_{0\cdot57}$. This is near the Sb-rich end of the solid-solution series $Pt(Bi,Sb)_2$. The name, from the locality, is proposed for $PtBi_2$, the analysed material being an antimonian insizwaite. [M.A. 72–3342.]

Jagiite, error, through back-transliteration of Ягиит, for yagiite (26th List). (Zap. **99,** 82.)

Joseïte C. A. A. Godovikov, K. V. Kochetkova, and Yu. G. Lavrent'ev, 1970. Геол. геофиз. (*Geol. geophys.*), no. 11, 123. (Жозеит С). Small (< 10μm) grains of approximate composition $Bi_{16}(TeS_3)_3$ occur with four unnamed and also partially characterized bismuth sulphotellurides at the contact of quartz and native bismuth at Sokhondo, eastern Transbaikal. Named to follow joseïte B (Peacock, 1941), which also needs further study. [A.M. **56,** 1839.]

Kawazulite. A. Kato, 1970. *Introduction to Japanese Minerals, Geol. Surv. Japan* 1970, 87 (provisional description). Silver to tin-white foils with selenian tellurium

in vein quartz from the Kawazu mine, Shizuoka Prefecture, Japan, are the Se analogue of tetradymite. a_h 4·24, c_h 29·66 Å, $R\bar{3}m$, $R3m$, or $R32$, D > 7·5 (8·08 calc.), H 1½, R 45 to 50 %. Composition 3[$BiTe_2Se$]. Named for the locality. [A.M. **57**, 1312.]

Kinoite. J. W. Anthony and R. B. Laughon, 1970. *Amer. Min.* **55**, 709. Deep blue monoclinic crystals, a 6·990, b 12·890, c 5·654 Å, β 96° 5′, $P2_1/m$, D 3·16, from the northern Santa Rita Mts., Pima Co., Arizona. Composition 2[$Cu_2Ca_2Si_3O_{10}.2H_2O$]. α 1·638, pale green-blue; β 1·665, blue; γ 1·676, deep blue. Named for E. F. Kino. [A.M. **56**, 193; M.A. 70–3431; Zap. **100**, 625.]

Kittlite*. Santiago Rivas, 1970. [*Rev. Minera Geol. Mineral. Argentina*, **29**, 56, and **30**, 14], abstr. A.M. **57**, 1313. An inadequately characterized silver-grey cubic mineral, $F\bar{4}3m$, containing major Hg, Ag, Cu, S, and Se; D 5·4, H 5 to 5½; from near Jaguel, Llantenes region, prov. La Rioja, Argentina. May be a selenian metacinnabarite. Named for E. Kittl.

Komarovite. A. M. Portnov, G. K. Krivokoneva, and T. I. Stolyarova, 1971. Zap. **100**, 599 (Комаровит). Platy rose-coloured aggregates and veinlets in natrolite at Mt. Karnasurt, Lovozero, Kola Peninsula, are orthorhombic, a 21·30, b 14·00, c 17·19 Å; α 1·750 ‖ [010], β 1·766, γ 1·85. The composition is 18[(Ca,Mn)$Nb_2(Si_2O_7)O_3.3\frac{1}{2}H_2O$]; the mineral is the end-member of the labuntsovite–nenadkevichite series. Named for V. M. Komarov. [M.A. 72–2334.]

Kôzulite. M. Nambu, K. Tanida, and T. Kitamura, 1969. *Journ. Jap. Ass. Min. Petr. Econ. Geol.* **62**, 311. An alkali-amphibole from the Tanohata mine, Iwate Prefecture, Japan; occurs in reddish-black prismatic monoclinic crystals, a 9·91, b 18·11, c 5·30 Å, β 104·6°, $C2/m$. D 3·30. α 1·685, yellow-brown, β 1·717, reddish-brown, γ 1·720, dark brown. Composition 2[$Na_{2.54}K_{0.27}Ca_{0.19}Mn_{3.69}Mg_{0.63}Fe^{3+}_{0.33}Al_{0.31}Si_8O_{21.78}(OH)_{2.22}$]. Named for S. Kôzu. [A.M. **55**, 1815; M.A. 71–1386; Zap. **100**, 90.]

Kutinaite. J. Hak, Z. Johan, and B. J. Skinner, 1970. *Amer. Min.* **55**, 1083. A silvery-grey mineral with metallic lustre, intimately intergrown with novákite, is cubic, a 11·76 Å. D 8·38 on synthetic material. Cell contents 28[$Cu_{2.07}Ag_{0.84}As$]. Found in only a few polished sections of the ores from Černy Důl, Bohemia. Named for J. Kutína. [M.A. 71–549; Zap. **100**, 615.]

Laponite, a synthetic hectorite-like clay (B. S. Neumann and K. G. Sansom, [*Israel Journ. Chem.*, **8**, 315 (1970)]); *Clay Min.* **9**, 231 (1971). [M.A. 71–67 and 1680].

Lavernite, superfluous gem-trade name for artificial periclase (R. Webster, *Journ. Gemmology*, **12**, 129 (1970)).

Lokkaite. V. Perttunen, 1970. *Bull. Geol. Soc. Finland*, **43**, 67. A rare-earth carbonate from Pyörönmaa, Kangasala, SW. Finland, originally described as tengerite (*Compt. Rend. Soc. Géol. Finlande*, **38**, 241) proves to be a lower hydrate. Orthorhombic, a 39·07, b 6·079, c 9·19 Å; composition near $(Yt,Ca)_2(CO_3)_3.1{\cdot}58H_2O$. α 1·569, β 1·592, γ 1·620 ‖ [001]. [A.M. **56**, 1838; M.A. 72–3343.]

Ludlockite. R. J. Davis, P. G. Embrey, and M. H. Hey, 1970. *Proc. Int. Min. Ass.* 7th Gen. Meet., Tokyo (*Min. Soc. Japan Spec. Pap.* **1**, 264). Red anorthic prisms with zincian chalybite from Tsumeb, SW. Africa, have a 10·41, b 11·95, c 9·86 Å, α 113·9°, β 99·7°, γ 82·7°, D 4·40. Composition 9[$(Fe,Pb)As_2O_6$]. α 1·96, yellow, β 2·055, deep

yellow, $\gamma > 2{\cdot}11$, orange-yellow, near [100]. Named for F. Ludlow Smith III and C. Locke Key. [A.M. **57,** 1003.]

Macedonite. D. Radusinović and C. Markov, 1971. *Amer. Min.* **56,** 387. Small black grains and rare crystals in quartz-syenite veins in Crni Kaman, Prilep, Macedonia, are tetragonal, a 3·889, c 4·209 Å, D 7·82; composition $PbTiO_3$, identical with synthetic material. Perovskite group. Named from the locality. [M.A. 71–3109.]

Majorite. J. V. Smith and B. Mason, 1970. *Science,* **168,** 832. Minute purple grains in the Coorara meteorite are cubic, a 11·524 Å, with a garnet structure and a composition near hypersthene. Named for A. Major. [A.M. **55,** 1815; M.A. 72–3344; Bull. **94,** 573.]

Mangantapiolite*. V. Khvostova and V. N. Arkhangel'skaya, 1970. Докл. Акад. наук СССР (*Compt. Rend. Acad. Sci. URSS*), **194,** 677 (Мангантапиолит). A superfluous name for a manganoan tapiolite. [A.M. **56,** 1122; Zap. **100,** 620.]

Metadelrioïte. M. L. Smith, 1970. *Amer. Min.* **55,** 185. Topotype delrioïte (22nd List) is shown to be a mixture of two phases. Delrioïte, the more hydrous phase, $8[CaSrV_2O_6(OH)_2.3H_2O]$, is monoclinic, a 17·170, b 7·081, c 14·644 Å, β 102° 29′, Ia or $I2/a$; metadelrioite, $2[CaSrV_2O_6(OH)_2]$, is anorthic, a 7·343, b 8·382, c 5·117, α 119° 39′, β 90° 16′, γ 102° 49′. The fibrous intergrowths have a of delrioïte parallel to c of metadelrioïte. [M.A. 70–2573; Zap. **100,** 623.]

Michelottin. J. Fröbel, 1843. See chrysargyrit (this List).

Miomirite*. V. Vujanovič, 1969. [*Rad. Inst. geol. rud. istraž. ispit. nukl. min. sirov,* **4,** 147], abstr. Zap. **100,** 619. Plumbian (?) davidite from Nežilova, Skopl, Macedonia. The title of the paper (Miomirit – olovni davidit iz Nežilova) would refer to a stannian davidite, but the analysis shows PbO and no SnO_2.

Mooihoekite. L. J. Cabri and S. R. Hall, 1972. *Amer. Min.* **57,** 689. Massive sulphides at Mooihoek Farm, Lydenburg District, Transvaal, include a chalcopyrite-yellow tetragonal mineral, a 10·58, c 5·37 Å, $P\bar{4}2m$. Composition $[Cu_9Fe_9S_{16}]$. Obtained synthetically. Named for the locality. [M.A. 72–3345.]

Mrazekite*. G. H. Neacsu, 1970. [*Rev. Roum. Geol. Geophys. Geogr., Ser. Geol.* **14,** 24], abstr. A.M. **57,** 595. White earthy masses, turning brown on exposure, occur with murgocite (this List), and are considered to be a 'montmorillonoide magnésien'. Analytical, X-ray, and d.t.a. data are given. 'The mineral resembles saponite, stevensite, and talc. . . . The data are inadequate to characterize a new phase' [M.F.]. [Zap. **100,** 625.]

Muchinite, non-standard transliteration of Мухинит, mukhinite (Zap. **99,** 80).

Murgocite*. V. Ianovici and Ch. Neacsu, 1970. [*Rev. Roum. Geol. Geophys. Geogr., Geol. Ser.,* **14,** 3], abstr. A.M. **57,** 594. Soft earthy masses, greasy to the touch, from Moldava Noua, Banat, Romania, are regarded as a regular 1:1 interstratified saponite and swelling chlorite mineral with 20 % of stevensite sheets. Analytical, X-ray, and d.t.a. data are given. The origin of the name is not given. 'The data are inadequate to characterize a new species' [M.F.]. [Zap. **100,** 625.]

Natrophosphate*. Yu. L. Kapustin, A. K. Bykova, and V. I. Bukin, 1972. Zap. **101,** 80 (Натрофосфат, Natrophosphate). An irregular monomineralic mass from the Yukspor Mts., Khibina massif, is isotropic, n 1·460–1·462. Analysis corresponds to

$Na_6H(PO_4)_2F.17H_2O$. X-ray powder data are close to those of artificial $Na_7(PO_4)_2F.19H_2O$ (E. W. Neuman, 1933; M.A. **5**–473). Cubic, *a* 27·79 Å. Further study is desirable.

Nisbite. L. J. Cabri, D. C. Harris, and J. M. Stewart, 1970. *Canad. Min.* **10,** 240. Small (< 20 μm) grains with metallic lustre in two polished sections from Mulcahy Township, Kenora District, Ontario, have the composition $NiSb_2$. X-ray powder data agree with those of synthetic $NiSb_2$, and lead to a cell with *a* 5·162, *b* 6·303, *c* 3·839 Å. Named for the composition. Occurs in the same deposit as paracostibite (this List). [A.M. **56,** 631; M.A. 71–2333; Zap. **100,** 615.]

Oosterboschite. Z. Johan, P. Picot, R. Pierrot, and T. Verbeek, 1970. Bull. **93,** 476. A yellowish metallic-looking mineral with trogtalite (21st List) in the Musonoi Cu–Co deposit, Katanga, is orthorhombic, *a* 10·42, *b* 10·60, *c* 14·43 Å. Composition $8[(Pd,Cu)_7Se_5]$. Named for M. R. Oosterbosch. [M.A. 71–1387; Zap. **100,** 617.]

Orthoericssonite. P. B. Moore, 1971. *Lithos,* **4,** 137. Ericssonite (26th List), from Långban, Sweden, is shown to consist of two intergrown phases, monoclinic ericssonite, *a* 20·46, *b* 7·03, *c* 5·34 Å, β 95° 30′, *C*2/*m*, and orthorhombic orthoericssonite, *a* 20·37, *b* 7·03, *c* 5·34 Å. Both have α 1·807, pale greenish tan, ‖ [010], β 1·833, red-brown, γ 1·89, deep brown. Analysis of material containing both phases, believed to be polymorphous, leads to $4[BaMn_2Fe^{3+}Si_2O_7OOH]$. [A.M. **56,** 2157; M.A. 71–3104.]

Osarsite. K. G. Snetsinger, 1972. *Amer. Min.* **57,** 1029. Grains from placer gravels at Gold Bluff, Humboldt Co., California, contain aggregated curved monoclinic laths (100 to 150×30 μm) with irarsite (25th List) of composition $4(?)[(Os,Ru)AsS]$; *a* 5·933, *b* 5·916, *c* 6·009 Å, β 112° 21′. Analysis shows Os > Ru and As > S. Arsenopyrite family. Named for the composition, by analogy with irarsite.

Osmiridin. J. Fröbel, 1843. *Grundzüge eines Systemes der Krystallologie.* Synonym of nevyanskite.

Oxyannite*. H. P. Eugster and D. R. Wones, 1962. *Journ. Petrology,* **3,** 83. The trioctahedral oxidized annite (of Winchell) 'molecule' $K[Fe^{2+}Fe^{3+}][AlSi_3]O_{12}$. *Hypothetical* end-member.

Oxybiotite*. H. P. Eugster and D. R. Wones, 1962. *Journ. Petrology,* **3,** 83. General name for trioctahedral oxidized biotites.

Oxyferropumpellyite*. P. B. Moore, 1971. *Lithos,* **4,** 93. A name for a pumpellyite-group mineral in which MgOH is replaced by $Fe^{3+}O$ (cf. Ferropumpellyite, this List). *Hypothetical* end-member. [A.M. **56,** 2158.]

Oxyjulgoldite*. P. B. Moore, 1971. *Lithos,* **4,** 93. A member of the pumpellyite family, in which the $Fe^{2+}OH$ of julgoldite (26th List) is replaced by $Fe^{3+}O$. *Hypothetical* end-member. [A.M. **56,** 2158.]

Paewelite, error for parwelite (26th List) (Zap. **99,** 83).

Paracostibite. L. J. Cabri, D. C. Harris, and J. M. Stewart, 1970. *Canad. Min.* **10,** 232. Small (< 130 μm) grains with metallic lustre in drill cores from Mulcahy Township, Kenora District, Ontario, give an X-ray powder pattern near that of pararammelsbergite, indexable as *a* 5·764, *b* 5·952, *c* 11·635 Å; composition CoSbS. Occurs in the same deposit as nisbite (this List). Named from the composition (cf. costibite,

26th List) and probable structural relation to pararammelsbergite. [A.M. **56,** 631; M.A. 71–2333; Zap. **100,** 617.]

Paradocrasite. B. F. Leonard and C. W. Mead, 1971. *Amer. Min.* **56,** 1127. Silvery-white prisms (0·5 mm) with stibarsen (16th List) and antimonian löllingite, replacing calcite, are monoclinic, *a* 7·252, *b* 4·172, *c* 4·431 Å, *β* 123° 8·4′, *C*2, composition $[Sb_{2\cdot93}As_{1\cdot07}]$; *R* 66·75 %. From Broken Hill, New South Wales. Named from *παράδοξος* and *κρᾶσις*, unexpected alloy, by analogy with dyscrasite, which it resembles. [M.A. 72–549.]

Pellyite. E. P. Meagher, 1971. *Prog. Abstr. Geol. Soc. Amer. Ann. Meet.*, 644. $Ba_2Ca(Fe^{2+},Mg)_2Si_6O_{17}$, orthorhombic, *a* 15·677, *b* 7·151, *c* 14·209, *Cmcm*. Not related to pumpellyite. Etymology ? [A.M. **57,** 597.]

Permingeatite. Z. Johan, P. Picot, R. Pierrot, and M. Kravček, 1971. Bull. **94,** 162. Microscopic grains with a variety of selenides, including hakite and fischesserite (this List), in a calcite vein at Předbořice, Bohemia, are tetragonal, *a* 5·63, *c* 11·23 Å, $I\bar{4}2m$. Composition $2[Cu_3SbSe_4]$, a member of the luzonite–germanite family. Named for F. Permingeat. [M.A. 72–1402.]

Picotpaulite. Z. Johan, R. Pierrot, H.-J. Schubnel, and F. Permingeat, 1970. Bull. **93,** 545. A thallium mineral, only observed as patches (< 0·5 mm) in polished sections, associated with raguinite (26th List) and pyrite in realgar at Allchar, Macedonia, is orthorhombic, *a* 5·40, *b* 10·72, *c* 9·04 Å. Composition $4[TlFe_2S_3]$. Pseudohexagonal by interpenetration twinning on {120}. Named for Paul Picot.

Plumbobetafite*. A. A. Ganzeev, A. F. Efimov, and G. V. Lyubomilova, 1969. Труды Мин. муз. Акад. наук СССР (*Trav. Mus. Min. Acad. Sci. URSS*), **19,** 135 (Плюмбобетафит). Metamict yellowish grains (up to 2 to 3 mm) and octahedra, cubic after heating to 800 °C (*a* 10·33 Å), D 4·64, from a dyke in the Burpala massif, northern Baikal, analyse as $(Pb_{0\cdot44}U_{0\cdot25}Ca_{0\cdot18}Na_{0\cdot12}Ln_{0\cdot12})Nb_{1\cdot12}Ti_{0\cdot78}Fe_{0\cdot07}Ta_{0\cdot02}O_6(OH)_{0\cdot58}F_{0\cdot42}$. [A.M. **55,** 1068; Zap. **100,** 83.]

Plumbopalladinite. A. D. Genkin, T. L. Evstigneeva, L. N. Vyal'sov, I. P. Laputina, and N. V. Troneva, 1970. Геол. Рудн. Месторожд. **5,** 63 (Плюмбопалладинит). Aggregates of minute grains, in veinlets of cubanite in talnakhite (25th List) in the Talnakh Ni–Cu deposits, are hexagonal, *a* 4·470, *c* 5·719 Å. Composition Pd_3Pb_2 with small amounts of Ag, Cu, Bi, Sn, Sb. Named from the composition. [A.M. **56,** 1121; M.A. 71–2335; Zap. **100,** 614.]

Polyosmin. J. Fröbel, 1843. *Grundzüge eines Systemes der Krystallologie*. Synonym of sysertskite.

Pyroxferroite. E. C. T. Chao, J. A. Minkin, C. Frondel, C. Klein, *Jr.*, J. C. Drake, L. Fuchs, B. Tani, J. V. Smith, A. T. Anderson, P. B. Moore, G. R. Zechman, *Jr.*, R. J. Traill, A. G. Plant, J. A. V. Douglas, and M. R. Dence, 1970. *Proc. Apollo XI Lunar Sci. Conf.* **1,** 65. Yellow anorthic grains in lunar rocks from Tranquillity Base, composition $(Fe_{0\cdot85}Ca_{0\cdot15})SiO_3$, have *a* 6·62, *b* 7·54, *c* 17·35 Å, *α* 114·4°, *β* 82·7°, *γ* 94·5°, D 3·68, 3·76; *α* 1·748–1·756, *β* 1·750–1·758, *γ*1·768–1·767. The mineral is the iron analogue of pyroxmangite, and is named accordingly. [A.M. **55,** 2137; M.A. 71–1388; Zap. **100,** 624.]

Pyrrhochrysit. J. Fröbel, 1843. See chrysargyrit (this List).

Rameauite. F. Cesbron, W. L. Brown, P. Bariand, and J. Geffroy, 1972. *Min. Mag.* **38,** 781. Orange monoclinic crystals, *a* 13·97, *b* 14·26, *c* 14·22 Å, *β* 121° 1′, *C*2/*c*, D 5·55, occur with uranophane on pitchblende at Margnac, France. Composition $4[K_2O.CaO.6UO_3.9H_2O]$. $\alpha \parallel [010]$, γ: [001] 4 to 6°. Named for J. Rameau. [M.A. 72–3346.]

Rasvumite. M. N. Sokolova, M. G. Dobrovol'skaya, N. I. Organova, and A. L. Dmitrik, 1970. Zap. **99,** 712 (Расвумит). Grains with metallic lustre, consisting of fine orthorhombic fibres, *a* 9·12, *b* 11·08, *c* 5·47 Å, D 3·1, occur in the Rasvumchorr and Kukisvumchorr pegmatites of the Khibina massif. Composition $[K_3Fe_9S_{14}]$, with a little Na and Mg. Named for the locality. [A.M. **56,** 1121; M.A. 71–2337; Zap. **100,** 615.]

Rhodomacon*. I. C. C. Campbell, 1972. *Journ. Gemmology*, **13,** 53. Unnecessary gem name, synonym of rhodolite (2nd List), suggested because of possible confusion with rhodonite; derived from the colour and the type locality, Macon County, North Carolina. [M.A. 72–3216].

Riolite. J. Fröbel, 1843. *Grundzüge eines Systemes der Krystallologie.* The riolite of Brooke (1836) being commonly discredited, Fröbel transfers the name to the supposed $AgSe_2$ from Tasco described by Del Rio (1827) and later named tascine.

Roubaultite. F. Cesbron, R. Pierrot, and T. Verbeek, 1970. Bull. **93,** 550. Rosettes of green platy crystals with other uranium minerals at Shinkolobwe, Katanga, are anorthic, *a* 7·73, *b* 6·87, *c* 10·87 Å, *α* 86° 29′, *β* 134° 12′, *γ* 93° 10′. Composition $Cu_2(UO_2)_3(OH)_{10}.5H_2O$. *α*′ 1·700, colourless, *β*′ 1·800, colourless, nearly $\parallel$ [100], *γ*′ 1·84, greenish yellow. Named for M. Roubault. [M.A. 71–2338; Bull. **94,** 573; Zap. **100,** 619.]

Satimolite. V. M. Bocharov, I. I. Khal'turina, N. P. Avrova, and Yu. V. Shipovalov, 1969. Труды Мин. муз. Акад. наук СССР (*Trav. Mus. Min. URSS*), **19,** 121 (Сатимолит). I. V. Ostrovskaya, *ibid.* 202. White powdery aggregates or small orthorhombic crystals (*a* 12·62, *b* 18·64, *c* 6·97 Å); *α* 1·535, *β* 1·552, *γ* 1·552. Composition $4[KNa_2Al_4(B_2O_5)_3Cl_3.13H_2O]$. Named for the locality—which is not stated. [A.M. **55,** 1069; Zap. **100,** 86.]

Schmitterite. R. V. Gaines, 1971. *Amer. Min.* **56,** 411. Pale straw-yellow rosettes (1 mm) of orthorhombic plates from the 'Moctezuma mine', Sonora, Mexico, have *a* 7·860, *b* 10·089, *c* 5·363 Å, *Pmab*, D 6·878; composition $4[UO_2TeO_3]$. Optically biaxial, negative, $n > 2{\cdot}0$. Named for E. Schmitter Villada. [M.A. 71–3111.]

Schoenfliesite. G. T. Faust and W. T. Schaller, 1971. *Zeits. Krist.* **134,** 116. A dark reddish-brown mass of 'altered hulsite', with a little fluorite, from Brooks Mt., Seward Peninsula, Alaska, contains minute particles of $MgSn(OH)_6$ as a major constituent (19·5 %), with goethite, maghemite, hematite, and hulsite. Cubic, *Pn*3, *a* 7·759 Å, $Z = 4$. D 3·36 (adjusted from mixture); *n* 1·590. Properties partly derived from synthetic material. Related to wickmanite (25th List). Named for A. M. Schoenflies.

Schubnelite. F. Cesbron, 1970. Bull. **93,** 470. Black crystals (0·5 mm) with fervanite in the oxidation zone of the Mounana uranium deposit, Gabon, are anorthic, *a* 6·59, *b* 5·43, *c* 6·62, *α* 125°, *β* 104°, *γ* 84° 43′, *P*$\bar{1}$. Composition $[Fe_2V_2O_8.2H_2O]$. Named for H.-J. Schubnel. [M.A. 71–1389; Zap. **100,** 622.]

Seeligerite. A. Mücke, 1971. *Neues Jahrb. Min. Monatsh.* 210. Thin bright yellow plates with schwartzembergite at Santa Ana mine, Caracoles, Sierra Gorda, Chile, are identical with synthetic $8[Pb_3IO_3Cl_3O]$. $a = b = 7{\cdot}964$, c 27·88 Å, $C222_1$, D 6·83; α 2·12, β and γ 2·32. Named for E. Seeliger. [A.M. **57,** 327; M.A. 71–3112.]

Silhydrite. A. J. Gude III and R. A. Sheppard, 1972. *Amer. Min.* **57,** 1053. Soft white masses (up to 4 cm) of minute (< 4 μm) orthorhombic crystals remain after Na has been leached from magadiite (25th List) at Trinity County, California, by spring water. Composition $3SiO_2 . H_2O$. a 14·519, b 18·80, c 15·938 Å; D 2·141; n 1·466. Named for the composition.

Sodium betpakdalite. K. V. Skortsova, G. A. Sidorenko, Yu. S. Nesterova, G. A. Arapova, A. D. Dara, and L. I. Rybakova, 1971. Zap. **100,** 603 (натриевый бетпакдалит, Natrion betpakdalite). Lemon-yellow crystals in the oxidation zone of a molybdenum deposit, with α 1·792, γ 1·810, are monoclinic, a 11·28, b 19·30, c 17·67 Å, β 94° 30′, D 2·92, and have a composition corresponding to that of betpakdalite (22nd List) with rather more than half the Ca replaced by Na_2. The name as originally given employs an adjectival modifier, and would have been better rendered Sodian (or Natrian) betpakdalite. [M.A. 72–2335; A.M. **57,** 1312.]

Stistaite. E. P. Nikolaeva, V. A. Grigorenko, and P. E. Tsypkina, 1970. Zap. **99,** 68 (Стистаит). Light-grey cubic crystals with metallic lustre, a 4·15 Å, from placer samples near the Elkiaidan river, Uzbekistan, associated with native tin and Cu(Sn,Sb), have the composition SnSb, and are identical with the synthetic product. Named for the composition (STIbium, STAnnum). [A.M. **56,** 358; M.A. 71–550; Zap. **100,** 78.]

Sulphurin. J. Fröbel, 1843. *Grundzüge eines Systemes der Krystallologie.* Synonym of sulphur.

Tadzhikite. A. F. Efimov, V. D. Dusmatov, V. Yu. Alkhazov, Z. G. Pudovkina, and M. E. Kazakova, 1970. Докл. Акад. наук СССР (*Compt. Rend. Acad. Sci. URSS*), **195,** 1190 (Таджикит). Platy crystals and prisms, with somewhat different compositions, occur in pegmatite dykes in the Turkestana alkalic province of Tadzhikistan. Anorthic, a 17·93, b 4·71, c 10·39 Å, β 100° 45′, α and $\gamma \approx 90°$; D 3·73, 3·86. Composition $2[Ca_3Ln_2(Ti,Al,Be)B_4Si_4O_{22}]$. Similar to but distinct from hellandite (3rd List). [A.M. **56,** 1838; M.A. 71–3113; Zap. **100,** 613.]

Tageranite, non-standard transliteration of Тажеранит, tazheranite (Zap. **99,** 75).

Tajikite, non-standard transliteration of Таджикит, tadzhikite (Zap. **100,** 623).

Takanelite. M. Nambu and K. Tanida, 1971. *Journ. Jap. Ass. Min. Petr. Econ. Geol.* **65,** 1. Grey to black grains in the oxidation zone of the Nomura mine, Ehime Prefecture, Japan, are the manganous analogue of ranciéite (4th List). Powder data are indexed on a hexagonal unit cell, a 8·68, c 9·00 Å, D 3·41, containing $3[(Mn^{2+},Ca)Mn_4^{4+}O_9 . 1{\cdot}3H_2O]$. [A.M. **56,** 1487; M.A. 72–1404.]

Tanjeloffite*. J. Tanjeloff, 1971, in L. Zara, *Min. Digest,* **2,** 21. Synonym of blue zoisite (tanzanite).

Thorgadolinite*. L. B. Zubkov, V. I. Paribok, and A. B. Cheryakhovskii, 1970. Докл. Акад. наук СССР (*Compt. Rend. Acad. Sci. URSS*), **192,** 633 (Торгадолинит). An unnecessary name for a thorian (4.65 % ThO_2) gadolinite. [A.M. **56,** 2156.]

Titanochromite*. E. N. Cameron, 1970. *Science,* **167,** 623. An unnecessary name

for a titanian chromite occurring in Apollo XI lunar rocks. [A.M. **55,** 2135; Zap. **100,** 618.]

Tohdite*. I. Yamaguchi, H. Yanagida, and S. Ono, 1964. [*Bull. Chem. Soc. Japan,* **37,** 752 and 1555], quoted Zap. **99,** 333. *Synthetic* $5Al_2O_3.H_2O$, identical with the Al_2O_3–KI of Torkar and Krischmer [*Monatschr. Chem.*, **91,** 638 (1960)] and the AS(H)–I of S. Aramaki and R. Roy, *Amer. Min.* **48,** 1322 (1962). Synonym of akdalaite (Shpanov, 1970; this List).

Tranquillitite, error for tranquillityite (*Geotimes,* **17,** 46 (1972)).

Tranquillityite. J. F. Lovering, D. A. Wark, A. F. Reid, N. G. Ware, K. Keil, M. Prinz, T. E. Bunch, A. El Goresy, P. Ramdohr, G. M. Brown, A. Peckett, R. Phillips, E. N. Cameron, J. A. V. Douglas, and A. G. Plank, 1971. *Proc. Second Lunar Sci. Conf.* (*suppl. to Geochim. Acta,* **35**), **1,** 39. Rare semi-opaque dark foxy-red laths ($< 65 \times 15$ μm) in basaltic rocks from Apollo XI and XII missions are hexagonal pseudocubic, *a* 11·69, *c* 11·11 Å. Composition $3[Fe_8^{2+}(Zr,Yt)_2Ti_3Si_3O_{24}]$. Apparently unrelated to any terrestrial species. This is the 'phase A' of Ramdohr and El Goresy (1970), the 'unnamed Y–Zr-silicate' of Cameron (1970), and the 'Fe, Ti, Zr silicate' of Dence *et al.* (1970). [M.A. 72–3349.]

Trinitatin, J. Fröbel, 1843. See chrysargyrite (this List).

Tsumcorite. B. H. Geier, K. Kautz, and G. Müller, 1971. *Neues Jahrb. Min. Monatsh.* 305. Yellow-brown crusts and red-brown crystals from the Tsumeb mine oxidation zone are monoclinic, *C*2/*m*, *a* 9·131, *b* 6·326, *c* 7·583 Å, β 115·2°. Composition $2[PbZnFe(AsO_4)_2.H_2O]$. *n* 1·9, 2V 90°, D 5·2 (all approx.); H $4\frac{1}{2}$. May be related to brackebuschite. Named for the TSUMeb CORporation. [M.A. 72–1405.]

Tungsten-germanite*. B. H. Geier and J. Ottemann, 1970. *Neues Jahrb. Min. Abh.* **114,** 89. Unnecessary name for a tungstenian germanite. [A.M. **56,** 1487; M.A. 71–1391.]

Uranohydrothorite*. V. A. Khvostova, 1969. Геохимия, 328 (Ураногидроторит). An ill-defined mineral, presumably a hydrous uranian thorite. An yttrian variety occurs in Precambrian conglomerates in the Urals. [Zap. **100,** 624.]

Uranothorogummite(s)*. L. van Wambeke, 1967. *Bull. Soc. belge geol.* **76,** 7. Unnecessary varietal name for uranian thorogummite. [Zap. **100,** 624.]

Vanadium-germanite*. B. H. Geier and J. Ottemann, 1970. *Neues Jahrb. Min. Abh.* **114,** 89. Unnecessary name for a vanadian germanite. [A.M. **56,** 1487; M.A. 71–1391.]

Wakabayashilite. A. Kato, K. I. Sakurai, and K. Ohsumi, 1970. *Introduction to Japanese Minerals, Geol. Surv. Japan,* 1970, 92 (provisional description), golden to lemon-yellow fibres [010] (5 mm) in quartz druses at the Nishinomaki mine, Gumma Prefecture, Japan, are monoclinic $P2_1$ or $P2_1/m$, *a* 25·17, *b* 6·48, *c* 25·24 Å, β 120° 0′. Composition $6[(As,Sb)_{11}S_{18}]$. Also occurs at White Caps, Nevada (< 2 cm); associated with realgar and orpiment at both localities. Named for Y. Wakabayashi. [A.M. **57,** 1311.]

Walderite. Superfluous gem-trade name for colourless artificial corumdum. L. H. Benson, *Highlights at the Gem Trade Laboratory in Los Angeles, 1958/59,* **9,** no. 8, 231 and 254; R. Webster, *Gems,* 1962, 764.

Wermlandite. P. B. Moore, 1971. *Lithos*, **4**, 213. Greenish-grey hexagonal plates on museum specimens from Långban, Wermland, Sweden, have a 9·260, c 22·52 Å, D 1·93; ϵ 1·482, ω 1·493. Idealized formula (based on a 1938 analysis that may not relate to the material here described) $2[(CaMg(OH)_4(Mg_6(Al,Fe)_2(OH)_{16})(CO_3)_{0.5}OH.15H_2O]$. The mineral is related to the pyroaurite group. Named for the province. [M.A. 71–3115.]

Westerveldite. I. S. Oen, E. A. J. Burke, C. Kieft, and A. B. Westerhof, 1972. *Amer. Min.* **57**, 354. An orthorhombic mineral (a 3·46, b 5·97, c 5·33 Å) occurring as intergrowths with maucherite in chromite–nickeline ores from La Gallego, Spain, has the composition (Fe,Ni)As with Fe:Ni around 2:1, near the Ni-rich end of the synthetic solid-solution series; the name, for J. Westerveld, is applied to the series.

Zapatalite. S. A. Williams, 1972. *Min. Mag.* **38**, 541. Pale blue crusts with libethenite, chenevixite, beaverite, etc., in a small prospect near Agua Prieta, Sonora, Mexico, are tetragonal. a 15·22, c 11·52 Å, D 3·02; composition $6[Cu_3Al_4(PO_4)_3(OH)_9.4H_2O]$. ϵ 1·635, ω 1·646. Named for E. Zapata. [M.A. 72–1406.]

Zemannite. J. A. Mandarino, E. Matzat, and S. A. Williams, 1969. *Canad. Min.* **10**, 139. Brown hexagonal crystals, a 9·41, c 7·64 Å, $P6_3/m$, from Moctezuma, Sonora, Mexico. Uniaxial, ω 1·85, ϵ 1·93. $2[Na_xH_{2-x}Zn_2(TeO_3)_3.yH_2O]$. Named for J. Zemann. [A.M. **55**, 1448; Zap. **100**, 88.]

Zinc-stottite*. B. H. Geier and J. Ottmann, 1970. *Neues Jahrb. Min. Abh.* **114**, 89. Secondary minerals at Tsumeb include a stottite with Fe 13·4, Zn 12·6 %; since Fe is still > Zn, this is a zincian stottite and a new name is unnecessary. [A.M. **56**, 1488; M.A. 71–1391 ('Mineral A').]