Twenty-second list of new mineral names.

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THIS list continues the series of 21 published triennially by Dr. L. J. Spencer between 1897 and 1958. Such lists evidently meet a generally-felt need, as they now appear in the American Mineralogist, the Bulletin de la Société française de Minéralogie et de Cristallographie, and the Записки Всесоюзного Минералогического Общества; the continuation of Dr. Spencer's series seems desirable since it differs from the others in several respects.

The present list includes 474 names: of these 38 are errors (including mistransliterations; only those errors that are dangerously near another accepted name, or are consistently used by their author, or whose original may not easily be recognized, have been included); 58 are other spelling variants (including French and German transliterations of Russian names, particularly where these are likely to be indexed differently from the English transliteration); 41 are synonyms, new names proposed for minerals already named; 28 are names for mixtures or for groups rather than for individual species; and 36 were probably not intended by their authors as new names, but simply as descriptive terms (e.g. Bleiarsenapatit for mimetite), but as these terms have exactly the same form as other mineral names, such as barium-phosphuranylite, they must be regarded as new names. Of the remaining 273 names, 63 are of minerals so inadequately characterized or of such uncertain individuality that a species name is premature, and 68 are superfluous names for varieties or for end-members of an isomorphous series (e.g. alumogoethite for an aluminian goethite). There remain 142 acceptable names, less than a third of the total;[1] and of these 34 are names for artificial products not known to occur naturally.

[1] Compare M. Fleischer, Amer. Min., 1961, vol. 46, p. 463.

Ajoite. W. T. Schaller and A. C. Vlisidis, 1958. Amer. Min., vol. 43, p. 1107. Bluish-green laths, plates, or massive, from Ajo, Pima Co., Arizona, near $Cu_6Al_2Si_{10}O_{29}.5\frac{1}{2}H_2O$. Named from the locality. [M.A. **14**–198.]

Al-nontronite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 311 (Al-Nontronit). Unnecessary name for aluminian nontronite.

Aluminiocopiapit, variant of or error for Aluminocopiapit (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 211).

Aluminium-saponite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 313 (Aluminium-Saponit). Unnecessary name for aluminian saponite.

Aluminium-sepiolite. L. E. R. Rogers, J. P. Quirke, and K. Norrish, 1956. Journ. Soil Sci., vol. 7, p. 177. Unnecessary name for aluminian sepiolite.

Aluminium spinel. N. E. Filonenko, I. V. Lavrov, O. V. Andreeva, and R. L. Pevzner, 1957. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 115, p. 583 (Глиноземистой шпинел). Octahedral crystals obtained in the manufacture of synthetic corundum are stated to give chemical analyses corresponding to Al_3O_4. [M.A. **13**–648.]

Alumocobaltomelane. I. I. Ginzburg and I. A. Rukavishnikova, 1951. Мин. древн. выветривания Урала (Minerals of the ancient zone of weathering of the Urals), Moscow, 1951, p. 128 (алюмокобальтомелан). The names alumocobaltomelane, cobaltomelane, cobaltonickelemelane, cryptonickelemelane, nickel-cobaltomelane, and nickelemelane are given to a variety of admitted mixtures of manganese and other oxides. 'The names are . . . merely mineralogical waste baskets' (M. Fleischer, Amer. Min., 1961, vol. 46, p. 767).

Alumogoethite. S. I. Beneslavsky, 1957. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 113, p. 1130 (Алюмогетит). Aluminian goethite, occurring in bauxites. An unnecessary name.

Alumohematite. S. I. Beneslavsky, 1957. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 113, p. 1130 (Алюмогематит). K. F. Chudoba, Hintze, Handb. Min., 1959, Erg.-Bd. II, p. 655 (Alumohaematit). An aluminian hematite in bauxites. An unnecessary name.

Alvanite. E. A. Ankinovich, 1959. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 88, p. 157 (Альванит). Light blue-green rosettes, monoclinic, near $Al_3VO_4(OH)_6.2\frac{1}{2}H_2O$, in the argillaceous anthraxolitic vanadiferous deposits of Kurumsak and Balasanskandyk, Karatau, Kazakhstan. Named from the composition, *al*uminium *van*adate. [M.A. **14**–280.] An anion has probably been overlooked, as the mineral is stated to give off acid water when heated.

Ammonium-aphthitalite. K. F. Chudoba, 1959. Hintze, Handb. Min., Erg.-Bd. II, p. 658 (Ammonium-Aphthitalit). An unnecessary name for the ammonian aphthitalite of Frondel. [M.A. **11**–302.]

Ammonium boltwoodite, sodium boltwoodite. R. M. Honea, 1961. Amer. Min., vol. 46, p. 12. The ammonium and sodium analogues of boltwoodite, $K_2(UO_2)_2(SiO_3)_2(OH)_2.5H_2O$; the term potassium boltwoodite is applied to boltwoodite itself.

Ammonium gastunite, *see* Gastunite (of Honea).

Ammonium-glaserite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 195 (Ammonium-Glaserit). Syn. of Ammonium-aphthitalite, q.v.

Angelellite. P. Ramdohr, F. Ahlfeld, and F. Berndt, 1959. Neues Jahrb. Min., Monatsh., p. 145 (Angelellit); see also K. Weber, ibid., p. 152. Dark brown anorthic crystals in the fissures of a fumarole on Cerro Pululus, north-west Argentina, appear to be $Fe_4As_2O_{11}$. Named after Dr. V. Angelelli, Director of the Geol. Survey of Argentina. [M.A. **14**–343.]

Aquacrepit, *error for* Aquacreptit (Hintze, Handb. Min., Erg.-Bd. II, p. 659).

Arizonite. H. G. Hanks, before 1878. [Hinton, Handbook to Arizona, 1878], quoted in A. L. Flagg, Mineralogical journeys in Arizona (Scottsdale, Arizona), 1958, p. 23. Name for 'a type of ore, discovered in Yavapai county . . . on a claim known at the time as the Sumner'. A mixture: 'The principal vein matter is micaceous iron, iodide of silver, gold, sulphurets of iron and antimony.' Not the Arizonite of C. Palmer, 1909 (5th List).

Arschinowit, *see* Arshinovite.

Arsenatapatit. F. Machatschki, 1953. Spez. Min., Wien, p. 330. Syn. of Svabite.

Arsenatbelowit, German transliteration of Арсенат-беловит (arsenate-belovite, 21st List) (Hintze, Handb. Min., 1959, Erg.-Bd. II, p. 660).

Arsenothorite. E. M. Bonshtedt-Kupletskaya, 1961. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 90, p. 108 (Арсеноторит, arsenothorite). Translation of the Chinese name Shen-t'u-shih (Shentulite, q.v.).

Arsen-stibiconite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 146 (Arsen-Stibiconit). Syn. of Arsenstibite.

Arsen-struvite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 243

(Arsen-Struvit). $NH_4MgAsO_4.6H_2O$, the artificial arsenic analogue of struvite.

Arsensulvanit, *error for* Arsenosulvanit (20th List) (Hintze, Handb. Min., Erg.-Bd. II, p. 660).

Arsenuranocircite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 253 (Arsen-Uranocircit). Name proposed by Strunz for the arsenic analogue of uranocircite, then unknown in nature. L. N. Belova, 2nd U.N. Internat. Conf. Peaceful Uses Atomic Energy, 1958, vol. 2, p. 294, proposed the same name for a natural barium uranyl arsenate from a pitchblende-molybdenum deposit (locality not stated), but this mineral belongs to the meta- series: 'it should have been called meta-arsenuranocircite' (M. Fleischer, Amer. Min., 1959, vol. 44, p. 466). [M.A. **14**–199, 344.] Synonym of Heinrichite (q.v.); it is not clear which name has priority as applied to a natural mineral.

Arsenuranylite. L. N. Belova, 1958. Зап. Всесоюз. Мин. Общ. (Trans. All-Union Min. Soc.), vol. 87, p. 598 (Арсенуранилит). The arsenate analogue of phosphuranylite, which it closely resembles except for a deeper orange colour. Formula $Ca(UO_2)_4(AsO_4)_2(OH)_4.6H_2O$. Locality not stated. Named from the composition and in analogy with phosphuranylite. [M.A. **14**–282, 344.]

Arshinovite. E. G. Razumnaya, G. A. Smelyanskaya, K. G. Korolev, and G. V. Pokulnis, 1957. [Мет. иссл. мин. сырья (Methods of study of raw materials), Gosgeoltekhizdat, p. 45]; abstr. in Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 486 (аршиновит, arshinovite); Hintze, Handb. Min., Erg.-Bd. II, 1959, p. 660 (Arschinowit). Yet another name for a partially metamict zircon. [M.A. **14**–277, 345; Amer. Min. **44**–210.]

Avicennite. Kh. N. Karpova, E. A. Konkova, E. D. Larkin, and V. F. Saveliev, 1958. [Доклады Акад. Наук Узб. ССР (Compt. Rend. Acad. Sci. Uzbek SSR), no. 2, p. 23]; abstr. in Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1959, vol. 88, p. 319 (Авиценнит, Avicennite). Minute black crystals; cubic, essentially Tl_2O_3; provisional formula $7Tl_2O_3.Fe_2O_3$, with a 9·12 Å and $z = 4$ [but artificial Tl_2O_3 has only 16 Tl_2O_3 per unit cell]. From Dzhuzumli, Mt. Zirabulaksk region, Bukhara. Named after the alchemist Avicenna (Abu Ali Ibn Sina), who lived in Bukhara, Tadzhikistan. [M.A. **14**–278.]

Bafertisite. Peng Ch'i-Jui, 1959. [Ti-chih K'o-hseuh, vol. 10, p. 289]; abstr. in Amer. Min., 1960, vol. 45, p. 754. Also in [Sci. Record (Pekin), vol. 3, p. 652]; abstr. in Amer. Min., 1960, vol. 45, p. 1317, and in Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 90, p. 105

(Бафертисит). $BaFe_2TiSi_2O_9$, in orthorhombic crystals distinct from taramellite. Named from the composition, Ba–Fe(r)–Ti–Si.

Baikovite. A. V. Rudneva, 1958. [Акад. Наук СССР, Инст. Геол. Руд. Месторожд. Петрог., Мин., Геохим., Инст. Хим. Силикат, 1958, p. 285]; abstr. in Amer. Min., 1959, vol. 44, p. 907; Hintze, Handb. Min., 1960, Erg.-Bd. II, p. 925 (Baikowit). The artificial spinel $MgTi_2O_4$. Named after A. A. Baikov. [M.A. **15**–45.]

Baotite. Peng Ch'i-Jui, 1959. [Ti-chih K'o-hsueh, vol. 10, p. 289]; abstr. in Amer. Min., 1960, vol. 45, p. 750 (Pao-t'ou-k'uang). V. I. Simonov, Кристаллография, 1960, vol. 5, p. 542 (Баотит), with reference to E. I. Semenov and Huan Wen-Sin, Ti-chih K'o-hsueh, vol. 10. E. I. Semenov, Huan Wen-Sin, and T. A. Kapitinova, Доклады Акад. Наук СССР, 1961, vol. 136, p. 915 (Баотит; p. 758, baotite). Silicate of Ba, Ti, and Nb, with chloride; tetragonal. Found at Paotow (Баотоу), Inner Mongolia; named from the locality.

Barium carbonate-apatite. Samad Mohseni-Koutchesfehani and Gerard Montel, 1961. Compt. Rend. Acad. Sci. Paris, vol. 252, p. 1161 (carbonate-apatite barytique). Synthetic $Ba_{10}(PO_4)_6CO_3$, obtained by the action of CO_2 on barium hydroxy-apatite.

Barium-lamprophyllite. O. B. Dudkin, 1959. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 88, p. 713 (Бариевый лампрофиллит); ibid., 1961, vol. 90, p. 111 (barium-lamprophyllite). An unnecessary name for barian lamprophyllite.

Barium-phosphuranylite. V. Ross, 1956. Amer. Min., vol. 41, p. 818. Artificial $Ba(UO_2)_4(PO_4)_2(OH)_4.8H_2O$, the barium analogue of phosphuranylite. Named from the composition. *See also* Bergenite.

Barium uranophane. L. N. Belova, 1958. Proc. 2nd U.N. Conf. Peaceful Uses Atomic Energy, vol. 2, p. 295. A silicate of Ba and U; X-ray data resemble those of cuprosklodowskite. [M.A. **14**–344.] Relation to uranophane uncertain and description incomplete; 'needs further study' (M. Fleischer, Amer. Min., 1959, vol. 44, p. 466). Cf. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 109 (Бариевый уранофан, barium uranophane).

Barnesite. Malcolm Ross, 1959. Amer. Min., vol. 44, p. 322. The unnamed sodium analogue of hewettite described by A. D. Weeks and M. E. Thompson (U.S.G.S. Bull. 1009–B, 1954, p. 57); named for W. H. Barnes. Much 'metahewettite' is barnesite.

Batisite. S. M. Kravchenko and E. V. Vlasova, 1959. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 128, p. 1046 (Батисит); ibid., 1960, vol. 133, p. 657. $Na_2BaTi_2(Si_2O_7)_2$, dark brown

orthorhombic crystals from the Inaglina pegmatite, Central Aldan. Isostructural with shcherbakovite, but contains no Nb. Named from the composition, Ba–Ti–Si.

Behierite. J. Behier, 1960. [Rep. Malgache, Rapport Annual Serv. Géol., p. 181]; abstr. in Amer. Min., 1961, vol. 46, p. 767. Two small crystals from Manjaka, Madagascar, are thought, on X-ray data, to be $TaBO_4$. Named after M. Jean Behier of the Serv. géol., Madagascar. A premature name.

Bergenite. H. W. Bültemann and G. H. Moh, 1959. Neues Jahrb. Min., Monatsh., p. 232 (Bergenit). Synonym of barium-phosphuranylite (q.v.); occurs naturally at Bergen an der Trieb, Saxony, with other uranium minerals; named from the locality, the older name being rejected as implying a barian phosphuranylite rather than the barium analogue.

Beryllosodalite. E. I. Semenov and A. V. Bykova, 1960. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 133, p. 1191 (Бериллосодалит). Abstr. Bull. Soc. franç. Min. Crist., 1961, vol. 84, p. 205 (Berillosodalite). Sodalite with partial replacement of Al_2 by BeSi, near $Na_4BeAlSi_4O_{12}Cl$, from the Lovozero massif, Kola peninsula. What is evidently the same mineral is also described, unnamed, from Ilimaussaq, Greenland, by H. Sørensen, Rept. 21st session Internat. Geol. Congr., Norden, 1960, part 17, p. 31; tetragonal.

Bilibinite. E. Z. Buryanova, 1958. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 87, p. 667 (Билибинит). A black amorphous hydrated silicate of uranium, lead, lanthanons, &c., near nenadkevite. Locality not given. Named after Ya. A. Bilibin. [M.A. **14**–280.] There are too many names for ill-defined amorphous uranium silicates already.

Birunite. S. T. Badalov and I. M. Golovanov, 1957. [Доклады Акад. Наук Узбек ССР (Compt. Rend. Acad. Sci. Uzbek SSR), no. 12, p. 17]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1959, vol. 88, p. 320 (Бирунит, Birunite). Silicate, carbonate, and sulphate of calcium, occurring with but distinct from thaumasite, from the Almylyk orefield, Uzbekistan. Named after the medieval Uzbek alchemist Abu-r-Raikhana Al-Biruni. [M.A. **14**–279.]

Bismuthmicrolite. N. E. Zalashkova, 1957. Труды Инст. Мин. Геохим. Крист. Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 77 (Висмутомикролит). Abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 479 (Висмутомикролит, bismuthmicrolite); Amer. Min., 1958, vol. 43, p. 1223; Bull. Soc. franç. Min. Crist., 1959, vol. 82, p. 90 (bismuthomicrolite); Hintze, Handb. Min., Erg.-Bd. II, 1960, p. 926 (Bismutomikrolith). A bismuthian

microlite (3% Bi_2O_3) from the Altai Mts. [M.A. **14**–276.] An unnecessary name.

Bleiantimonspießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 86, 109. A group name, including fülöppite, zinckenite, robinsonite, plagionite, heteromorphite, jamesonite, parajamesonite, semseyite, boulangerite, meneghinite, and sakharovaite (bismuth-jamesonite).

Bleiapatit. F. Machatschki, 1953. Spez. Min., Wien, p. 330. Syn. of Pyromorphite.

Bleiarsenapatit. F. Machatschki, 1953. Spez. Min., Wien, p. 330. Syn. of Mimetite.

Bleiarsenspießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 86, 108. A group name, including sartorite, baumhauerite, liveingite, rathite, dufrenoysite, lengenbachite, jordanite, geocronite, and gratonite.

Bleikupferspießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 86, 106. A group name, including seligmannite, bournonite, aikinite, hammarite, lindströmite, gladite, rézbányite, and wittite.

Bleiromeit. F. Machatschki, 1953. Spez. Min., Wien, p. 328. Syn. of Monimolite.

Bleisilberspießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp 86, 107. A group name, including hutchinsonite, fizélyite, ramdohrite, andorite, freieslebenite, diaphorite, owyheeite, schirmerite, and benjaminite.

Bleispießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 86, 108. A group name, subdivided into Bleiarsenspießglanze, Bleiantimonspießglanze, and Bleiwismutspießglanze (qq.v.).

Bleivanadatapatit. F. Machatschki, 1953. Spez. Min., Wien, p. 330. Syn. of Vanadinite.

Bleiwismutspießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 86, 111. A group name, including ustarasite, galenobismutite, cannizzarite, cosalite, kobellite, weibullite, bursaite, [and bonchevite].

Blixite. O. Gabrielson, A. Parwell, and F. E. Wickman, 1958. Arkiv Min. Geol., vol. 2, p. 411 (Blixit). A basic lead chloride, $Pb_4Cl_2O_3$ or $Pb_{16}Cl_8(O,OH)_{16-x}$ with x about 2·6, occurring as a fissure mineral at Långban, Sweden. Named after Dr. Ragnar Blix. [M.A. **14**–416.]

Bobkowit. German transliteration of Бобковит, bobkovite (21st List). (Hintze, Handb. Min., 1959, Erg.-Bd. II, p. 670.)

Böggildit. Variant of Bøggildite (20th List). (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 234.)

Böhmite. A more correct form of Boehmite (11th List), named by J. de Lapparent (1927) in honour of Dr. Johann Böhm of Berlin; corrected in Neues Jahrb. Min., 1928, Abt. A, Ref. I, p. 84 (Böhmit). The correct form has been fairly widely used in Germany (Hintze, Handb. Min., Erg.-Bd., p. 86; H. Strunz, Min. Tabellen, 2nd and 3rd edns; F. Machatschki, Spez. Min., Wien; &c.), but hardly ever in Britain or America; it is perhaps not too late to correct this spelling.

Bruyerite. G. Tacnet, 1956. [Soc. Hist. Nat. Creusot, vol. 14, no. 4]; abstr. Amer. Min., 1958, vol. 43, p. 624. Also [Feder. franç. Soc. Sci. Nat., no. 5, p. 121], abstr. Bull. Soc. franç. Min. Crist., 1958, vol. 81, p. 154. Black concretionary material, mainly calcite, from Queue de Bruyère, Breuil reservoir, Le Creusot, France. Named from the locality. An unnecessary name.

Buryktalskite. I. I. Ginzburg, 1960. Кора выветривания (Crust of weathering), vol. 3, p. 56 (Бурыктальскит). The X-ray patterns of the mixtures called nickelemelane, cobaltomelane, &c. (qq.v.), include lines of goethite, cryptomelane, and elizavetinskite (q.v.); Ginzburg subtracts these and defines buryktalskite by the pattern with lines at 4·88 (10), 4·66 (10), 4·61 (10), 1·482 (10), 9·17 (7), 3·09 (7), 1·834 (7), 1·689 (7). Named from its occurrence in the ores of Buryktal (Бурыктал). 'Many of the lines attributed to "buryktalskite" can be assigned to strong lines of pyrolusite, lithiophorite, or cryptomelane; others cannot be assigned with any confidence' (M. Fleischer, Amer. Min., 1961, vol. 46, p. 767). Inadequately defined and very doubtful; the name ought not to have been given.

Cadmium-dolomite. J. R. Goldsmith, 1958. Bull. Geol. Soc. Amer., vol. 69, p. 1570. A name for $CdMg(CO_3)_2$, the cadmium analogue of dolomite; obtained synthetically.

Cadmoselite. A better transliteration of Кадмоселит, Kadmoselite, since the name was given for the composition, *Cadm*ium *sel*enide (21st List). (Min. Mag. **31**–963, correction **31**–viiib; M.A. **14**–59; Bull. Soc. franç. Min. Crist., 1958, vol. 81, p. 238; Amer. Min., 1958, vol. 43, p. 623.)

Cafetite. A. A. Kukharenko, V. V. Kondratieva, and V. M. Kovyazina, 1959. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 88, p. 444 (Кафетит). Orthorhombic radiating crystals in a pyroxenite from Africanda, Kola peninsula; approximately $(Ca,Mg)(Fe,Al)_2Ti_4O_{12}.4H_2O$. Named from the composition, Ca–Fe–Ti. [M.A. **14**–501.]

Ca-hureaulite. A. Volborth, 1954. Geologi, Helsinki, vol. 2, no. 2, p. 5 (Ca-hureauliitti). $CaMn_5(PO_4)_4.4H_2O$, from Eräjärvi, Finland. Hureaulite is $H_2Mn_5(PO_4)_4.4H_2O$, and no evidence is adduced that the material is really a variety of or related to hureaulite.

Ca-Illite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 308 (Ca-Illit).

Calcio-chondrodite. E. R. Buckle and H. F. W. Taylor, 1958. Amer. Min., vol. 43, p. 818. $Ca_5(SiO_4)_2(OH)_2$, the calcium analogue of chondrodite; synthetic.

Calcio-jarosite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 197 (Calcio-Jarosit). Syn. of Calcium jarosite (19th List).

Calciotalc. D. P. Serdyuchenko, 1959. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 88, p. 298 (Кальциотальк). Abstr. Hintze, Handb. Min., Erg.-Bd. II, 1960, p. 926 (Calciotalk, Kalciotalk, Kalziotalk). A variety containing 13% CaO, occurring with normal talc replacing actinolite in the phlogopite deposit of the Medviezhy river, Aldan region, Yakutia. Named from the composition. [M.A. **14**–280.] N. V. Belov considers that the mineral is really a brittle mica, $CaMg_2Si_4O_{10}(OH)_2$, and would be better named Magnesium margarite (q.v.). [M.A. **14**–280.]

Calciumhilgardite-3Tc, Calciumhilgardite-2M(Cc). O. Braitsch, 1959. Beitr. Min. Petr., vol. 6, p. 233 (3Tc-Calciumhilgardit; 2M(Cc)-Calciumhilgardit). Systematic names for the anorthic polymorph parahilgardite and the monoclinic polymorph hilgardite. M. Fleischer (Amer. Min., 1959, vol. 44, p. 1102) points out that the letters and numbers serving to distinguish polymorphic structures should always be written as suffixes, not as prefixes (cf. wurtzite, the micas, and SiC).

Calciumuranospinite. M. E. Mrose, 1953. Amer. Min., vol. 38, p. 1159. Syn. of Uranospinite.

Calcium-urcilite (error), **Calcium-ursilite,** *see* Ursilite.

Calzirtite. T. B. Zdorik, G. A. Sidorenko, and A. V. Bykova, 1961. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 137, p. 681 (Кальциртит, calzirtite). $CaZr_3TiO_9$, tetragonal; from the East Siberian massif. Named from the composition, *cal*cium-*zir*conium-*ti*tanium.

Canasite. M. D. Dorfman, D. L. Rogachev, Z. I. Goroshchenko, and E. I. Uspenskaya, 1959. Труды Мин. Муз. Акад. Наук СССР (Trans. Min. Mus. Acad. Sci. USSR), vol. 9, p. 158 (Канасит). Silicate and fluoride of calcium and sodium, monoclinic; occurs associated with fenaksite (q.v.) at Khibina, Kola peninsula. Named from the composition, Ca–Na–Si. [M.A. **14**–414; Amer. Min. **45**–253.] May be the Mineral 6 of Dorfman (Amer. Min. **44**–910).

Carbocernaite. A. G. Bulakh, V. V. Kondratyeva, and E. N. Baranova, 1961. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 90, p. 42 (Карбоцернаит). A carbonate of Ca, Sr, Na, and lanthanons (mainly La and Ce), $(Na,Ca,Sr,Ln)CO_3$; orthorhombic. From Vuori-Yarvi, Kola peninsula. Named from the composition, *carbon-cer*ium-*na*trium. The name is uncomfortably near carbocer.

Cäsiumbiotit, variant of Caesium biotite (13th List). (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 305.)

Cefluosil. A. B. Rudneva and T. Ya. Malysheva, 1961. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 136, p. 191 (Цефтосил; p. 7, cephtosyl). Silicate and fluoride of cerium earths and Ca, from a slag. Named from the composition церий-фтор-силикат (*ce*rium-*fluo*r-*sil*icate).

Celanite. A. B. Rudneva and T. Ya. Malysheva, 1961. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 136, p. 191 (Целанит; p. 7, coelanite). Oxide of Ti, Al, and lanthanons, cubic, isolated from a slag. Named from the principal rare earths present, церия (ceria), лантана (lanthana), and неодима (neodymia). Composition, X-ray data, and origin agree exactly with ceraltite (this list), which has priority. The name is easily confused with ceylonite (Цейлонит).

Ceraltite. V. V. Lapin, H. H. Kyrtseva, and D. N. Knyazeva, 1960. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 134, p. 1195 (Цералтит). Oxide of Ti, Al, and lanthanons, with a perovskite structure, isolated from slags. Named from the composition, Ce(r)–Al–Ti.

Cephtosyl. Erroneous transliteration of Цефтосил, cefluosil, q.v.

Cererdensilikatapatit. F. Machatschki, 1953. Spez. Min., Wien, p. 330. Syn. of Britholite (2nd List).

Cererdenthoriumeuxenit. F. Machatschki, 1953. Spez. Min., Wien, p. 319. Syn. of Aeschynite.

Chalcokyanite. H. Strunz, 1961. Amer. Min., vol. 46, p. 758. Variant of chalcocyanite; synonym of hydrocyanite. The substitution of kyan- for cyan- in those mineral names where it represents Greek κυανός, to avoid the mispronunciation sian-, is too late by a century or more, in view of the innumerable chemical names involving the radical CN. Moreover, chalcokyanite suggests a variety of kyanite.

Chalcopentlandite. H. Pauly, 1958. Medd. Grønland, vol. 157, no. 2, p. 32. An assumed high-temperature phase, now represented by aggregates of pentlandite and chalcopyrite (about 10% of the latter),

which are believed to be the product of exsolution. From a nickeliferous pyrrhotine deposit at Igdlukúnguaq, Greenland. Named from the composition.

Chalkocyanit. Germanized version of Chalcocyanite (19th List). (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 193.)

Chalkonatrit, Chalkonatronit. Erroneous and corrected Germanized variants of Chalconatronite (21st List). (Hintze, Handb. Min., Erg.-Bd. II, p. 682; H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 179.)

Chavesite. J. Murdoch, 1958. Amer. Min., vol. 43, p. 1148. An anorthic hydrated calcium manganese phosphate (not analysed quantitatively for lack of sufficient material) occurring in the Boqueirao pegmatite, Borborema, Paraíba, Brazil; characterized by optical and X-ray data; perhaps isostructural with monetite. [M.A. **14**–199.] Named after Dr. Onofre Chaves of Brazil.

Chrombiotit. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 304 (Chrombiotit). Hypothetical chromian biotite; an unnecessary name.

Chrommuscovit. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 304 (Chrommuskovit). Syn. of Fuchsite.

Chrome-pyrophyllite. H. Meixner, 1961. Chemie der Erde, vol. 21, p. 1 (Chrom-Pyrophyllit). Unnecessary name for a green chromian pyrophyllite (3% Cr_2O_3) from Mühlbach, Salzburg.

Chudobaite. H. Strunz, 1960. Neues Jahrb. Min., Monatsh., p. 1 (Chudobait). $(Na,K)(Mg,Zn)_2H(AsO_4)_2.4H_2O$, in anorthic crystals from the second oxidation zone at Tsumeb, South-West Africa. Named after Prof. K. F. Chudoba. [M.A. **14**–500.]

Chukhrovite. L. P. Ermilova, V. A. Moleva, and R. F. Klevtsova, 1960. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 89, p. 15 (Чухровит). A cubic mineral occurring in the Kara-Oba molybdenum deposit, Central Kazakhstan, approximates to $Ca_6Al_3(Y,Ln)_2(SO_4)_2F_{23}.20H_2O$. Named after Dr. F. Kh. Chukhrov. Perhaps the same as an unnamed cubic mineral from Greenland described by O. B. Bøggild (Zeits. Kryst. Min., 1913, vol. 51, p. 608).

Clino-anthophyllite. W. Layton and R. Phillips, 1960. Min. Mag., vol. 32, p. 659. The doubtful, synthetic, monoclinic polymorph of anthophyllite; distinct from cummingtonite, to which calcium is essential.

Cobalt chrysotile. W. Noll, H. Kircher, and W. Sybertz, 1958. Naturwiss., vol. 45, p. 489 (Kobaltchrysotil). Beitr. Min. Petr., 1960,

vol. 7, p. 232. An artificial product, $Co_3Si_2O_5(OH)_4$, isostructural with chrysotile.

Cobaltomelane, Cobalto-nickelemelane. I. I. Ginzburg and I. A. Rukavishnikova, 1951 (кобальтомелан, кобальто-никелемелан). *See* Alumocobaltomelane (this List).

Cobalt pentlandite. O. Kuovo, M. Huhma, and Y. Vuorelainen, 1959. Amer. Min., vol. 44, p. 897. The cobalt analogue of pentlandite, Co_9S_8, from Northern Karelia.

Coelanite. Erroneous transliteration of Целанит, celanite, q.v.

Columbotantalite. L. Van Wambeke, 1958. Bull. Soc. belge Géol., vol. 67, p. 383 (colombotantalite). A non-committal term for members of the columbite–tantalite series.

Copper vermiculite. W. A. Bassett, 1958. Amer. Min., vol. 43, p. 1112. Vermiculite from the Roan Antelope mine, Northern Rhodesia, contains up to 7% Cu replacing Mg; similar material with up to 10% Cu has been obtained artificially. An unnecessary name for cuprian vermiculite.

Cousinite. J. F. Vaes, 1958. [Geol. en Mijnbouw, vol. 20, p. 449 (Cousiniet)]; abstr. Amer. Min., 1959, vol. 44, p. 910. An inadequately described molybdate of uranium or of uranium and magnesium. Compare Moluranite (21st List), Umohoite (20th List).

Cryptonickelemelane. K. K. Nikitin, 1960. Кора выветривания (Crust of weathering), vol. 3, p. 42 (криптоникелемелан). *See* Alumocobaltomelane (this List).

Cuprobismuthit, variant of Cuprobismutite (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 104).

Custerite. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 76; Bull. Soc. franç. Min. Crist., 1958, vol. 81, p. 154. Improper transliteration of Кёстерит (Kësterite or Kyosterite). Not to be confused with Custerite of Umpleby, Schaller, and Larsen (7th List).

D'Ansite. H. Autenreith and G. Braune, 1958. Naturwiss., vol. 45, p. 362 (D'Ansit). See also H. Strunz, Neues Jahrb. Min., Monatsh., 1958, p. 152. A name for the cubic artificial product $MgSO_4.3NaCl.9Na_2SO_4$, near to but distinct from hanksite. Named after Prof. J. D'Ans. [M.A. **14**–283.]

Delatorreite. F. S. Simons and J. A. Straczek, 1958. U.S. Geol. Surv. Bull. no. 1057, p. 1. Synonym of Todorokite (14th List). (Amer. Min., 1960, vol. 45, p. 1175.)

Delhayelite. Th. G. Sahama and Kai Hytönen, 1959. Min. Mag., vol. 32, p. 6. Orthorhombic laths in a melilite-nephelinite lava from Mt. Shaheru, Kivu, Congo; near $(Na,K)_4Ca_5Al_6Si_{32}O_{80}.18H_2O.3(Na_2,K_2)(Cl_2,F_2,SO_4)$. Named after F. Delhaye, a Belgian geologist and a pioneer in the exploration of North Kivu.

Delrioite. M. E. Thompson and A. M. Sherwood, 1959. Amer. Min., vol. 44, p. 261. $CaSrV_2O_7.3H_2O$, as a microcrystalline efflorescence on sandstone on a dump of the Jo Dandy mine, Montrose Co., Colorado. Named after A. M. del Rio, who first discovered vanadium (erythronium) in North America. [M.A. **14**–282.]

Dixeyite. V. Marmo, 1959. Schweiz. Min. Petr. Mitt., vol. 39, p. 125 (Dixeyit). Isotropic grains in an amphibolite from Belihun, Kangeri hills, Sierra Leone, are believed to be a cubic hydrated aluminium silicate, near $Al_2O_3.4–5SiO_2.3–4H_2O$. Named after Dr. F. Dixey.

Djouloukoulite, French transliteration of Джулукулит, dzhulukulite, q.v. (Bull. Soc. franç. Min. Crist., 1958, vol. 81, p. 334).

Dnieprovskite. P. I. Skornyakov, 1944. Reported by M. N. Ionov, [Труды Всесоюз. Магадан. Н.-И. Инст. (Trans. All-Union Magadan Sci. Res. Inst.), 1957, no. 19, p. 9]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1959, vol. 88, p. 311 (Днепровскит, dneprovskite). A wholly unnecessary name given to wood-tin of a radial structure. Named from the Dniepropetrovsk deposit. [M.A. **14**–278.]

α-Duftite, β-Duftite. C. Guillemin, 1956. Bull. Soc. franç. Min. Crist., vol. 70, p. 70. Duftite is divided into two species, α-Duftite, space-group *Pnma* (D_{2h}^{16}), isomorphous with mottramite, and β-Duftite, space-group $P2_12_12_1$(D_2^4), isomorphous with conichalcite. The material from Cap Garonne, Var, is α-Duftite, while that from Mapimi, Mexico, from Brandy Gill, Cumberland, and from St. Nicholas, Ter-de-Belfort, is β-Duftite. The β-Duftite from Mapimi, studied in detail, contains 3% CaO and has lower refractive indices and density and slightly different cell-dimensions from lime-free α-Duftite from Tsumeb.

Dzhulukulite. N. N. Shishkin, 1958. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 121, p. 724 (Джулукулит). Superfluous name for a nickelian cobaltite from Lake Dzhulu-kul, south-west Tuva; named from the locality. [M.A. **14**–140.]

Eisenchrysotil. F. Machatschki, 1953. Spez. Min., Wien, p. 350. Syn. of Greenalite (4th List).

Eisenenstatit. F. Machatschki, 1953. Spez. Min., Wien, p. 313. Syn. of Hypersthene.

Eisen-magnesium-retgersite. K. F. Chudoba, 1960. Hintze, Handb. Min., Erg.-Bd. II, p. 928 (Eisen-magnesium-retgersit). The ferroan magnesian retgersite of E. N. Eliseev and S. I. Smirnova (Зап. Всесоюз. Мин. Общ. [Mem. All-Union Min. Soc.], 1958, vol. 87, p. 3).

Eisenwolframit. F. Machatschki, 1953. Spez. Min., Wien, p. 314. Syn. of Ferberite.

Ekanite. B. W. Anderson, G. F. Claringbull, R. J. Davis, and D. K. Hill, 1961. Nature, vol. 190, p. 997. $(Th,U)(Ca,Fe,Pb)_2Si_8O_{20}$; metamict, recrystallizing on heating to a tetragonal phase. From Eheliyagoda, Raknapura district, Ceylon. Named after the discoverer, Mr. F. L. D. Ekanayake.

Elizavetinskite. V. I. Mikheev, 1957. [Рентгометрический оредрелитель минералов (X-ray determinative tables for minerals), Госгеолтехиздат, Moscow, p. 409 (елизаветинскит)]; abstr. Amer. Min., 1961, vol. 46, p. 767. A black powdery material in clay from the Elizavetinsk deposit, Sverdlovsk; the X-ray pattern is near that of lithiophorite, but the composition is assumed to be (Mn,Co)OOH. 'The name has no standing. Every strong line of the X-ray pattern corresponds closely to the published data for lithiophorite, a mineral known to contain appreciable amounts of cobalt and nickel' (M. Fleischer, Amer. Min., 1961, vol. 46, p. 767).

Ellweilerite. H. W. Bultemann, 1960. [Der Aufschluss, vol. 11, no. 11, p. 281]; abstr. Amer. Min., 1961, vol. 46, p. 465. Thin tabular crystals with zeunerite from Bühlskopf, Ellweiler, Birkenfeld, Germany, contain Na, U, and As, and appear to be identical with Sodium uranospinite (19th List); named from the locality. The name Sodium uranospinite has priority.

Emeraldite, error for Smaragdite ((Доклады Акад. Наук СССР [Compt. Rend. Acad. Sci. URSS], 1960, vol. 130, p. 485).

Eskolaite. O. Kouvo and Y. Vuorelainen, 1958. Amer. Min., vol. 43, p. 1098. Chromium oxide, Cr_2O_3, isomorphous with hematite, from Outokumpu, Finland. Named after Prof. Pentti Eskola. [M.A. **14**–198.] Essentially identical with Merumite (18th List), which has priority, but merumite was imperfectly described and was believed to be hydrated; the name eskolaite is to be preferred.

Fauserite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 202. An hypothetical orthorhombic polymorph of $MnSO_4.7H_2O$; not to be confused with Fauserite of Breithaupt (1865), which appears to have been a manganoan epsomite (Min. Mag. **22**–511).

Fauyasit. Error for Faujasit (F. Machatschki, Spez. Min., Wien, pp. 345, 362).

Fenaksite. M. D. Dorfman, D. L. Rogachev, Z. I. Goroshchenko, and A. V. Mokretsova, 1959. Труды Мин. Муз. Акад. Наук СССР (Trans. Min. Mus. Acad. Sci. USSR), vol. 9, p. 152 (Фенаксит). A pale rose monoclinic silicate of ferrous iron and alkalis from a pegmatite associated with an ijolite–urtite intrusion at Khibina, Kola peninsula. Named from the composition, Fe–Na–K–Si. [M.A. **14**–414.] May be identical with the Mineral 5 of Dorfman (Amer. Min. **44**–910). The name is easily confused with phenakite.

Fenghuanglite. Peng Ch'i-Jui, 1959. [Ti-chih K'o-hsueh, vol. 10, p. 289]; abstr. Amer. Min., 1960, vol. 45, p. 754 (feng-huang-shih); Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 108 (Фынченит [fȳnchenit], feng-huang-shih). Unnecessary name for a thorian britholite.

Ferri-berthierine. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 323 (Ferri-Berthierin). An oxidized product obtained by heating berthierine (= ferro-berthierine) to 400° C. in air. The ferric chamosite of G. W. Brindley and R. F. Youell (Min. Mag. **30**–57).

Ferrichlorite. L. O. Stankevich, 1957. Минер. Сборник Львовск. Геол. Общ. (Min. Mag. Lvov Geol. Soc.), no. 11, p. 159 (Феррихлорит). A group name. [M.A. **14**–141.] Internationalized form of Eisenchlorit (of Holzner, 1938).

Ferri-hidalgoite. K. F. Chudoba, 1959. Hintze, Handb. Min., Erg.-Bd. II, p. 702 (Ferri-Hidalgoit). An unnecessary name for the ferrian hidalgoite of R. L. Smith, F. S. Simons, and A. C. Vlisidis (1953).

Ferri-metahalloysite. Yu. F. Pekun, 1956, according to H. Strunz (Min. Tabellen, 3rd edn, 1957, p. 325). An unnecessary name for ferrian metahalloysite.

Ferripalygorskite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 328 (Ferripalygorskit). Internationalized form of Eisenpalygorskit (Koechlin).

Ferriphengite. K. Kanehira and S. Banno, 1960. Journ. Min. Soc. Japan, vol. 66, p. 654. A variety of muscovite from the Iimori district, Japan, near $K_2(Mg,Fe)Fe'''Al_3Si_7O_{20}(OH)_4$.

Ferri-phlogopite. M. Sambonsugi, 1958. Journ. Min. Soc. Japan, vol. 3, pp. 634 (Japanese), 801 (English summary). A brown mica from Teshirogi district, Fukushima prefecture, having 15% Fe_2O_3 and very little FeO. [M.A. **14**–343.]

Ferrisaponite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 313 (Ferri-Saponit). A group name to include griffithite and lembergite (of Sudo).

Ferrisepiolite. H. Strunz, 1956. Fortschr. Min., vol. 34, p. 48 (Ferrisepiolith). Group name to include gunnbjarnite and xylotile.

Ferri-sericite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 372 (Ferri-Sericit). Internationalized form of Iron-sericite (20th List).

Ferriserpentines, mistaken translation of Железистые серпентины, ferruginous serpentines (Доклады Акад. Наук СССР [Compt. Rend. Acad. Sci. URSS], 1960, vol. 130, p. 1325).

Ferro-berthierine. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 323 (Ferro-Berthierin). Syn. of Berthierine. The ferrous chamosite of G. W. Brindley and R. F. Youell (Min. Mag. **30**–57).

Ferro-friedelite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 327 (Ferro-Friedelit). To replace the name Ferroschallerite (12th List), as this mineral is regarded as a variety of friedelite and not of schallerite (cf. M.A. **13**–125).

Ferroglaucophane. A. Miyachiro, 1957. Journ. Fac. Sci. Univ. Tokyo, sect. 2, vol. 11, p. 57. A name for the clino-amphibole end-member $Na_2Fe^{..}_3Al_2Si_8O_{22}(OH)_2$.

Ferrohexahydrite. J. Kubisz, 1958. Bull. Acad. Polon. Sci., Sér. sci. chim., géol., géogr., vol. 6, p. 459. A name for the hypothetical monoclinic end-member $FeSO_4.6H_2O$.

Ferro-johannsenite. K. F. Chudoba, 1959. Hintze, Handb. Min., Erg.-Bd. II, p. 705 (Ferro-Johannsenit). An unnecessary name for the ferroan johannsenite of V. T. Allen and J. J. Fahey (1953).

Ferroniobite. K. F. Chudoba, 1959. Hintze, Handb. Min., Erg.-Bd. II, p. 705 (Ferroniobit). Syn. of Ferrocolumbite (of Simpson).

Ferropargasite. J. F. G. Wilkinson, 1961. Amer. Min., vol. 46, p. 341. This name is preferred to hastingsite for the clino-amphibole end-member $NaCa_2(Fe_4Al)(Si_6Al_2)O_{22}(OH)_2$, 'inasmuch as the term hastingsite for many years has referred to Fe-rich amphiboles with small amounts of MgO, or else to various calciferous amphiboles with variable FeO/MgO ratios' [hastingsite has also been used for the end-member $NaCa_2Fe^{..}_4Fe^{...}Al_2Si_6O_{22}(OH)_2$ (M.A. **10**–70)]. There are already too many names for particular 'end-members' of the clino-amphibole series.

Ferrophlogopite. V. A. Frank-Kamenetsky, 1958. Referred to by R. C. Mackenzie, Clay Min. Bull., 1959, vol. 4, p. 61. Undefined; presumably a variety of biotite.

Ferrospinel. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 137 (Ferrospinell). Syn. of Hercynite (of Zippe).

Ferrozincrhodochrosite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 173 (Ferrozinkrhodochrosit). Syn. of Capillitite (19th List).

Fe-spodumene. S. Šćavničar and G. Sabatier, 1957. Bull. Soc. franç. Min. Crist, vol. 80, p. 308 (spodumène-Fe); M.A. **13**–636 (Fe-spodumene). The synthetic compound $LiFeSi_2O_6$, the iron analogue of spodumene.

Fleischerite. C. Frondel and H. Strunz, 1960. Neues Jahrb. Min., Monatsh., p. 132; Amer. Min., 1957, vol. 42, p. 747. $Pb_3Ge^{\cdot\cdot}(SO_4)_2(OH)_4 \cdot 4H_2O$, hexagonal, from Tsumeb, South-West Africa. Not to be confused with the fleischerite of G. Gagarin and J. R. Cuomo (19th List), which is an unacceptable name for 6*H* polymorph of wurtzite. Named after Dr. Michael Fleischer of the U.S. Geol. Survey. [M.A. **15**–43.]

Fouchéit, error for Foucherit (Hintze, Handb. Min., Erg.-Bd. II, pp. 544, 707).

Freudenbergite. G. Frenzel, 1961. Neues Jahrb. Min., Monatsh., p. 12 (Freudenbergit). $Na_2Fe_2Ti_7O_{18}$, hexagonal, black crystals in the syenite of Katzenbuckel, Odenwald, Germany. Named after Prof. Wilhelm Freudenberg, author of a monograph on the Katzenbuckel rocks. [M.A. **15**–135.]

Frolowit, German transliteration of Фроловит, frolovite (Hintze, Hand. Min., Erg.-Bd. II, p. 708).

Froodite. J. E. Hawley and L. G. Berry, 1958. Canad. Min., vol. 6, p. 200. A monoclinic palladium bismuthide, identical with artificial α-$PdBi_2$, from the Frood mine, Sudbury, Ontario. Named from the locality. [M.A. **14**–343.]

Fynchenite, standard English transliteration of the Russian transliteration of Fenghuanglite (q.v.).

Gallite. H. Strunz, B. H. Geier, and E. Seeliger, 1958. Neues Jahrb. Min., Monatsh., p. 241 (Gallit). Grains and inclusions in germanite, renierite, blende, and other ore minerals from Tsumeb, South-West Africa, contain Cu, Ga, and S, and are identical with artificial $CuGaS_2$; tetragonal, related to chalcopyrite. Also from the Kipushi mine, Katanga. The name refers to its being the first mineral with gallium as an essential constituent. [M.A. **14**–279.] It is the Mineral O of H. Strunz, G. Söhnge, and B. H. Geier, Neues Jahrb. Min., Monatsh., 1958, p. 85.

Garronite. G. P. L. Walker, 1960. Min. Mag., vol. 32, p. 505. Tentative name for a zeolite related to phillipsite, occurring in the basalts of the Garron plateau, Co. Antrim. Named from the locality.

Gastunite. R. M. Honea, 1959. Amer. Min., vol. 44, p. 1047. The names Gastunite 1, Gastunite 1a, Gastunite 1b were given by H. Haberlandt and A. Schiener (1951) to three imperfectly characterized uranium minerals (cf. 20th List); gastunite 1b proves to be β-uranotile, while gastunite 1a has since been described under the name of Haiweeite (q.v.); gastunite 1 appears to be a lower hydrate of haiweeite, but is not identical with the dehydrated haiweeite named Meta-haiweeite (q.v.) (K. Walenta, Neues Jahrb. Min., Monatsh., 1960, p. 37). Unfortunately, R. M. Honea has described another mineral, distinct from any of the three named by Haberlandt and Schiener, under the name of gastunite; this fourth 'gastunite' proves to be identical with Weeksite (this List) (M. Fleischer, priv. comm.; E. Fejer, priv. comm.). In view of the prior uses of gastunite the name weeksite is to be preferred. Honea also describes artificial analogues, Ammonium-, Hydronium-, Potassium-, and Sodium-gastunites.

Gel-anatase. E. I. Semenov, 1957. Труды Инст. Мин., Геохим., Крист., Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 41 (Гельанатаз). Finely divided anatase, a component of leucoxene pseudomorphs after ilmenite in the Lovozero massif, Kola peninsula. An unnecessary name. [M.A. **14**–278.]

Gel-bertrandite. E. I. Semenov, 1957. Труды Инст. Мин., Геохим., Крист., Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 64 (Гельбертрандит). A glassy, apparently colloidal mineral (no X-ray data), with the composition of bertrandite plus extra water, from pegmatites in the Khibina and Lovozero tundras, Kola peninsula. [M.A. **14**–277.] Inadequately characterized.

Gel-rutile. E. I. Semenov, 1957. Труды Инст. Мин., Геохим., Крист., Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 41 (Гельрутил). Finely divided rutile, a component of leucoxene pseudomorphs after ilmenite in the Lovozero massif, Kola peninsula. [M.A. **14**–278.] An unnecessary name.

Gerasimovskite. E. I. Semenov, 1957. Труды Инст. Мин., Геохим., Крист., Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 41 (Герасимовскит). The niobium analogue of belyankinite (19th List), occurring in an ussingite pegmatite from the Lovozero massif, Kola peninsula. Named after V. I. Gerasimovsky. [M.A. **14**–278.]

Germanate-analcime, -celsian, -leucite, -natrolite, -nepheline, -sodalite. H. Strunz and E. Ritter, 1961. Neues Jahrb. Min., Monatsh.,

Abt. A, p. 22 (Germanat-Analcim, &c.). Artificial germanium analogues of the silicate minerals.

Geversite. E. F. Stumpfl, 1961. Min. Mag., vol. 32, p. 833. $PtSb_2$, cubic with pyrite-type structure, intergrown with native platinum at the Dreikop mine, Transvaal, South Africa. Named after T. W. Gevers.

Ghaussoulith, error for Ghassoulith (Hintze, Handb. Min., Erg.-Bd. II, p. 930).

Giulekhite, variant of Gyulekhite (Amer. Min., 1958, vol. 43, p. 1222).

Gowerite. R. C. Erd, J. F. McAlister, and H. Almond, 1959. Amer. Min., vol. 44, p. 911. $CaB_6O_{10}.5H_2O$, monoclinic, from Furnace Creek, Death Valley, California. Named after Harrison P. Gower. [M.A. **15**–501.]

Greenolith, error for Greenalith (F. Machatschki, Spez. Min., 1953, pp. 350, 362).

Grönlandit. M. H. Klaproth, 1809. Tasch. Min., vol. 3, p. 198. A. Breithaupt, 1858. Berg. Hütt. Zeitung, vol. 17, p. 61. Original form of Greenlandite (of Klaproth, = almandine) and of Greenlandite (of Breithaupt, = columbite).

Gutsevichite. E. A. Ankinovich, 1959. [Сб. Науч. Тр. Казахск. Горнометалл. Инст., 1959, no. 18, Геология, p. 125]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 104 (Гуцевичит, gutsevichite). Phosphate and vanadate of Al, Fe, &c.; formulated $(Al,Fe)_3\{(P,V)O_4\}_2(OH)_3.7\frac{1}{2}$–$8\frac{1}{2}H_2O$, but this overlooks some 10% of MgO, CaO, BaO, SO_3, and SiO_2. Named for V. P. Gutsevich.

Haggite, error for Häggite (Bull. Soc. franç. Min. Crist., 1961, vol. 84, p. 209).

Haiweeite. T. C. McBurney and J. Murdoch, 1959. Amer. Min., vol. 44, p. 839. $CaU^{iv}_2Si_6O_{17}.5H_2O$, pale yellow, probably monoclinic, from above the Haiwee reservoir, Coso Mtns., California. Named from the locality. [M.A. **14**–415.] Appears to be identical with gastunite 1a (20th List), but though the latter name has priority the description was inadequate and the name haiweeite is preferred (K. Walenta, Neues Jahrb. Min., Monatsh., 1960, p. 37). *See* Gastunite (this List).

Hanuschit, Germanized form of Hanušite (Hintze, Handb. Min., Erg.-Bd. II, p. 142).

Hasingtonit, error for Haringtonit (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 378).

Heinrichite. E. B. Gross, A. S. Corey, R. S. Mitchell, and K. Walenta, 1958. Amer. Min., vol. 43, p. 1134. The arsenic analogue of uranocircite, $Ba(UO_2)_2(AsO_4)_2.10$–$12H_2O$ and its dehydration product with $8H_2O$

(metaheinrichite, q.v.) occur near Lakeview, Oregon, and in the Black Forest, Germany. Named after Prof. E. William Heinrich. [M.A. **14**–199.] *See also* Arsenuranocircite.

Hellyerite. K. L. Williams, 1958. [Australian Inst. Min. Met., Stilwell Anniv. vol., p. 263]; abstr. Amer. Min., 1959, vol. 44, pp. 533 and 1103. Normal nickel carbonate, $NiCO_3.6H_2O$, occurring with zaratite at the Lord Brassey nickel mine, Heazlewood, Tasmania. Named after Henry Hellyer, surveyor and explorer. [M.A. **14**–414.]

Hexabolite. H. Strunz, 1949. Min. Tabellen, 2nd edn, p. 206. Syn. of basaltic hornblende.

Högbohmit, error for Högbomit (Hintze, Handb. Min., Erg.-Bd. II, p. 893).

Hormites. R. H. S. Robertson, 1959, in R. C. Mackenzie, Clay Min. Bull., vol. 4, p. 64. An unnecessary group-name for the sepiolite–palygorskite family.

Horobetsuite. K. Hayase, 1955. Min. Journ. (Japan), vol. 1, p. 189. $(Bi,Sb)_2S_3$, intermediate between stibnite and bismuthinite, with 30 to 70 mol. % Bi_2S_3. Occurs at the Horobetsu mine, Hokkaido, Japan. Named from the locality. 'Nom inutile' (Bull. Soc. franç. Min. Crist., 1959, vol. 82, p. 91).

Hovaxite, erroneous transliteration of Ховахсит, khovakhsite (Зап. Всесоюз. Мин. Общ. [Mem. All-Union Min. Soc.], 1959, vol. 88, p. 317).

Hsianghualite. Wen-Hui Huang, Shao-Hua Tu, K'ung-Hai Wang, Chun-Lin Chao, and Cheng-Chih Yu, 1958. [Ti-chih-yueh-k'an, vol. 7, p. 35]; abstr. Amer. Min., 1959, vol. 44, p. 1327 (hsiang-hua-shih); Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 105 (Сянхуанит, hsiang-hua-shih). $Ca_3Be_3Li_2Si_2O_{10}F_2$; cubic, occurring with taaffeite in metamorphosed limestone in Hunan. See also A. A. Beus, [Акад. Наук СССР, Инст. Мин., Геохим., Крист., Редк. Элем., 1960, p. 60], abstr. Amer. Min., 1961, vol. 46, p. 244 (hsianghualite).

Hydroamesite. J. Erdélyi, V. Koblencz, and N. S. Varga, 1959. [Acta Geol. Acad. Sci. Hung., vol. 6, p. 95]; abstr. Amer. Min., 1959, vol. 44, p. 1328, and Bull. Soc. franç. Min. Crist., 1960, vol. 83, p. 149. An unnecessary name for a porcellaneous mineral identified as amesite with some excess H_2O^+.

Hydroantigorite. J. Erdélyi, V. Koblencz, and N. S. Varga, 1959. [Acta Geol. Acad. Sci. Hung., vol. 6, p. 65]; abstr. Amer. Min., 1959, vol. 44, p. 1328. An unnecessary name for an antigorite with a small excess of H_2O^+.

Hydro-cassiterite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 151 (Hydro-Cassiterit). A name for varlamoffite and souxite.

Hydrocerite. K. A. Vlasov, M. V. Kuzmenko, and E. M. Eskova, 1959. [The Lovozero Alkaline Massif (Moscow, Acad. Sci. USSR), p. 427]; abstr. Amer. Min., 1960, vol. 45, p. 1132. Amorphous, pseudomorphous after manganosteenstrupine (q.v.) in the pegmatite of Mt. Karnasurt, Lovozero massif, Kola peninsula, are formulated (Ln,Th,Ca)(Al,Fe,Ti,Nb)$(Si,P)_2O_7.5H_2O$. The composition is very near that of karnasurtite (q.v.). Not to be confused with the hydrocerite of Glocker (1831, = lanthanite) or of Glocker (1847, = bastnäsite).

Hydrolepidolite. V. A. Frank-Kamenetsky, 1960. Clay Min. Bull., vol. 4, pp. 162, 170. Name for a group of clay minerals; incompletely defined.

Hydronium gastunite, see Gastunite (of Honea).

Hydronium jarosite. J. Kubisz, 1960. Bull. Acad. Polon. Sci., Sér. géol. géogr., vol. 8, p. 95. A mineral of the jarosite family from Staszic mine, Holy Cross Mt., Poland, contains only 0·21 (Na,K) to 3 Fe; the author considers the name carphosiderite inappropriate since A. A. Moss has shown (Min. Mag. **31**–407) that the original carphosiderite and many occurrences subsequently described as carphosiderite are in fact jarosite or natrojarosite. On the other hand, the name carphosiderite is widely accepted for the artificial material.

Hydroparagonite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 307. An unnecessary new name for Brammallite (16th List), cf. M. Fleischer, Amer. Min., 1958, vol. 43, p. 1222, and 1959, vol. 44, p. 1329.

Hydropolylithionite. E. I. Semenov, 1959. Труды Мин. Муз. Акад. Наук СССР (Trans. Min. Mus. Acad. Sci. USSR), vol. 9, p. 107 (Гидрополилитионит). A brownish-white massive variety of the lepidolite 'polylithionite', high in water. An unnecessary name.

Hydroscarbroite. W. J. Duffin and J. Goodyear, 1960. Min. Mag., vol. 32, p. 357. A more highly hydrated phase than scarbroite, $Al_2(CO_3)_3.12Al(OH)_3$, occurring along with scarbroite at South Bay, Scarborough, and dehydrating irreversibly on exposure to air.

Hydroserpentine. V. A. Frank-Kamenetsky, 1960. Clay Min. Bull., vol. 4, pp. 162, 168. $Mg_6Si_4O_{10}(OH)_8.nH_2O$; a 'swelling serpentine'.

Hydrosodalite. K. A. Vlasov, M. V. Kuzmenko, and E. M. Eskova, 1959. [The Lovozero Alkaline Massif. (Moscow, Acad. Sci. USSR), p. 272]; abstr. Amer. Min., 1960, vol. 45, p. 1131. See also V. I. Gerasimovsky, A. I. Polyakov, and L. P. Voronina, Доклады Акад. Наук СССР (Compt.

Rend. Acad. Sci. URSS), 1960, vol. 131, p. 402. A constituent of the syenites of the Lovozero massif, Kola peninsula, is variously formulated $Na_{10}Al_6Si_6(O,OH)_{25}(O,Cl)_2$ and $2NaAlSiO_4.H_2O$. Perhaps a variety of sodalite with Cl′ partially or wholly replaced by OH′; its relation to lembergite (of Lagorio; 1st List) and to the hydrosodalite of Wyart and Michel-Lévy (19th List), an artificial product containing OH′ and CO_3'' in place of Cl′, remains uncertain.

Idaite. G. Frenzel, 1959. Neues Jahrb. Min., Monatsh., p. 142 (Idait). A sulphide mineral, Cu_5FeS_6, hexagonal and related to covelline, occurring with bornite at the Ida mine, Khan, South-West Africa; named from the locality. [M.A. **14**–279.] Perhaps a ferroan covelline, E. N. Eliseev, Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1960, vol. 89, p. 128; cf. G. Frenzel, ibid., p. 490, and Schweiz. Min. Petr. Mitt., 1960, vol. 40, p. 243.

Igdloite. M. Dano and H. Sørensen, 1959. Medd. Grønland, vol. 162, no. 5, p. 27; see also A. Safiannikoff, Bull. Acad. Roy. Sci. d'Outre-mer (Bruxelles), 1959, new ser., vol. 5, p. 1253. An imperfectly described mineral of perovskite type from Igdlúnguaq, Greenland, formed during the alteration of eudialyte; spectroscopic analysis shows major amounts of Ti, Nb, Na, Ca, and Al. Perhaps essentially $NaNbO_3$, but with some SiO_2, differing in this and in its mode of formation from Lueshite (this List). The differences seem hardly adequate to justify separate names.

Ikunolite. A. Kato, 1959. Min. Journ. (Japan), vol. 2, p. 397. $Bi_4(S,Se)_3$, with S:Se near 12, rhombohedral, from the Ikuno mine, Hyôgo prefecture, Japan; very similar to josëite but contains no Te. Named from the locality. [M.A. **15**–43.] Cf. Laitakarite (this List).

Imanite. A. V. Rudneva, 1958. [Акад. Наук СССР, Инст. Геол. Руд. Месторожд., Петрог., Мин., Геохим., Инст. Хим. Силикат., p. 285]; abstr. Amer. Min., 1959, vol. 44, p. 907. The artificial cubic compound $Ca_3Ti_2Si_3O_{12}$. Named from the initials of Inst. Metallurg., Akad. Nauk. [M.A. **15**–45.]

Innelite. S. M. Kravchenko, 1960. Quoted in Yu. A. Balashov and N. V. Turanskaya, [Геохимия (Geokhimya), 1960, no. 7, p. 618]; abstr. Amer. Min., 1961, vol. 46, p. 769. Mention is made of a new barium silicate from a pegmatite from the Inagli massif, Aldan, containing about 40% BaO, to be described by Kravchenko. Status doubtful pending full description.

Isostannin, variant of Isostannite (21st List) (H. Strunz, Min. Tabellen, 3rd edn, p. 95).

Itoite. C. Frondel and H. Strunz, 1960. Neues Jahrb. Min., Monatsh., p. 132 (Itoit). $Pb_3[GeO_2(OH)_2](SO_4)_2$, orthorhombic and isostructural

with anglesite. From Tsumeb, South-West Africa. Named after Prof. Tei-ichi Ito of Tokyo. [M.A. **15**–43.]

Jiningite. Cheng-Chi Kuo, 1959. [Kexue Tongbao (Scientia), 1959, no. 6, p. 206]; abstr. Amer. Min., 1960, vol. 45, p. 755 (jiningite); Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc., 1961, vol. 90, p. 108 (Жинингит, jiningite)). A variety of thorite or thorogummite with 6% P_2O_5, 1% V_2O_5, 7% CaO, 17% Fe_2O_3, found in a muscovite-granite from Inner Mongolia. An unnecessary name.

Julukulite, erroneous transliteration of Джулукулит, dzhulukulite, q.v. (Зап. Всесоюз. Мин. Общ. [Mem. All-Union Min. Soc.], 1959, vol. 88, p. 309).

Junkerite, variant of Junckerite (T. Thomson, Outlines Min., 1836, vol. 1, p. 448).

Kalciotalk, Kalziotalk, variant transliterations of Кальциотальк, calciotalc, q.v. (Hintze, Handb. Min., Erg.-Bd. II, p. 926).

Kaliumstruvit. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 243. The artificial compound $KMgPO_4.6H_2O$, analogous to struvite.

Kalknatronplagioklas. F. Machatschki, 1953. Spez. Min., Wien, p. 321. Syn. of Andesine.

Kanasite, erroneous transliteration of Канасит, canasite (q.v.).

Kaolin-Chamosit. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 323. Syn. of Berthierine.

Karnasurtite. M. V. Kuzmenko and S. I. Kozhanov, 1959. [Труды Инст. Мин., Геохим., Крист., Редк. Элем. (trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 2, p. 95]; abstr. Amer. Min., 1960, vol. 45, p. 1133; Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 107 (Карнасуртит, karnasurtite). A metamict mineral from Mt. Karnasurt, Lovozero massif, Kola peninsula, approximates to $(Ln,Th)(Ti,Nb)(Al,Fe)(Si,P)_2O_7(OH)_4.3H_2O$. Named from the locality. It had previously been named Kozhanovite without a description. The composition is very near that of hydrocerite (of Vlasov *et al.*), q.v.

Karrenbergite. E. Walger, 1958. [Inaug. Diss., Freiburg, p. 52]; abstr. Hintze, Handb. Min., Erg.-Bd. II, 1959, p. 739 (Karrenbergit). A clay mineral intermediate between nontronite and saponite, from Karrenberg, Reichweiler, Pfalz, Germany. Named from the locality.

Karrooite. O. von Knorring and K. G. Cox, 1961. Min. Mag., vol. 32, p. 676. Artificial $MgTi_2O_5$, isomorphous with pseudobrookite. Named from the Karroo volcanic series of Southern Rhodesia, in which there

occurs a mineral Kennedyite (q.v.) containing nearly 50% of this end-member. [M.A. **15**–134.]

Katophorit, variant of Catophorite (H. Strunz, Min. Tabellen, 1957, 3rd edn, p. 295).

Kennedyite. O. von Knorring and K. G. Cox, 1961. Min. Mag., vol. 32, p. 676. $Fe_2MgTi_3O_{10}$, isostructural with pseudobrookite, occurring in the Mateke Hills, Southern Rhodesia. Named after Prof. W. Q. Kennedy of Leeds. [M.A. **15**–134.]

Kesterite, Kêsterite, further variant transliterations of Кёстерит, kësterite (Amer. Min., 1958, vol. 43, p. 1222).

Khovakhsite. N. N. Shishkin and V. A. Mikhailova, 1956. [Сборн. Мат. Тех. Инф. (Collect. Mat. Techn. Inform.), no. 6, Gipronickel, p. 5]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc., 1959), vol. 88, p. 317 (Ховахсит, hovaxite). Imperfectly characterized brown oxidation product of smaltite and safflorite from the Khovakhs deposit, Tuva; named from the locality. [M.A. **14**–278; Amer. Min. **45**–256.] Cf. Yellow earthy cobalt (Dana, Syst. Min., 6th edn, p. 78). A wholly unnecessary name.

Kilchoanite. S. O. Agrell and P. Gay, 1961. Nature, vol. 189, p. 743. $Ca_3Si_2O_7$, a polymorph of rankinite, replacing rankinite at Kilchoan, Ardnamurchan, Scotland. Named from the locality. [M.A. **15**–135.]

Kimzeyite. C. Milton and L. V. Blade, 1958. Science, vol. 127, p. 1343; Amer. Min., 1961, vol. 46, p. 533. A zirconiferous garnet (ZrO_2 20%) from the Kimzey calcite quarry, Magnet Cove, Arkansas. Named after the Kimzey family. [M.A. **15**–43.]

Kivuïte. L. Van Wambeke, 1958. Bull. Soc. belge Géol., vol. 67, p. 383. Proc. 2nd U.N. Internat. Conf. Peaceful Uses Atomic Energy, vol. 3, p. 541. Minute yellow orthorhombic plates, isostructural with phosphuranylite and renardite, associated with phosphuranylite, renardite, cyrtolite, and columbotantalite in a pegmatite from Kobokobo, Kivu, Congo. Probable formula $ThH_2(UO_2)_4(PO_4)_2(OH)_8.7H_2O$. A plumbian variety is also described. [M.A. **14**–281.] Needs confirmation and tests for homogeneity (M. Fleischer, Amer. Min., 1959, vol. 44, p. 1326).

Klinotscheffkinit, variant of Clino-chevkinite (20th List). (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 282.)

Kobaltchrysotil, original spelling of Cobalt chrysotile, q.v.

Kobaltullmannit. F. Machatschki, 1953. Spez. Min., Wien, p. 311. Syn. of Willyamite (1st List).

Kobokobite. J. Thoreau, 1957. Bull. Acad. Roy. Belge, Cl. Sci., ser. 5, vol. 43, p. 705. An intermediate member of the rockbridgeite–frondelite series with $Fe'' \approx Mn$, named from the locality, Kobokobo, Congo. [M.A. **14**–59.] A superfluous name. 'Should not have been named. The formulas of all these minerals are uncertain because of doubt as to the degree of oxidation of FeO' (M. Fleischer, Amer. Min., 1958, vol. 43, p. 795).

Koiwinit, German transliteration of Койвинит, koivinite (20th List). (Hintze, Handb. Min., Erg.-Bd. II, p. 569.)

Kosterite, Kösterite. Further variant transliterations of Кёстерит, késterite. (Amer. Min., 1958, vol. 43, p. 1222; Hintze, Handb. Min., Erg.-Bd. II, pp. 743, 932.)

Koutekite. Z. Johan, 1958. Nature, vol. 181, p. 1553; Chemie der Erde, 1960, vol. 20, p. 217. Arsenide of copper, near Cu_2As. Distinct from β-Domeykite. Hexagonal, occurring intergrown with an unnamed copper arsenide at Černy Důl, Krkonoše, Bohemia; also obtained artificially. Named after Prof. J. Koutek of Prague. [M.A. **14**–279.]

Kozhanovite. L. L. Shilin, 1956. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 107, p. 739 (Кожановит). Provisional name for an undescribed mineral later named Karnasurtite (q.v.).

Kratochwilit, Germanized variant of Kratochvílite (14th List). (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 347.)

Kremenchugite. M. N. Dobrokhotov, 1957. Минер. Сборник Львовского Геол. Общ. (Min. Mag. Lvov Geol. Soc.), no. 11, p. 295 (Кременчугит). A highly pleochroic chlorite, apparently a thuringite, from the Kremenchug region, Ukraine. Named from the locality. [M.A. **14**–141.] A superfluous name.

Krementschugite. Erratic French transliteration of Кременчугит, kremenchugite (Bull. Soc. franç. Min. Crist., 1958, vol. 81, p. 335).

Kryshanowskit, variant of Kryschanowskit (Kryzhanovskite, 19th List). (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 246.)

Kupfer-Saponit, syn. of Medmontite (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 313).

Kupferspießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 86, 104. Group name, including chalcostibite, emplectite, cuprobismutite, and wittichenite.

Laitakarite. A. Varma, 1959. Geologi, Helsinki, vol. 3, no. 11, p. 11 (Laitakariitti); Bull. Comm. géol. Finlande, 1960, vol. 188, p. 1. Bi_4Se_2S,

rhombohedral and isostructural with josëite. Named after Aarne Laitakari, who collected the material in 1932 at Orijärvi, Finland. [M.A. **14**–139; **15**–134.] Cf. Ikunolite (this List).

Lazarevićite. C. B. Sclar and M. Drovenik, 1960. Bull. Geol. Soc. Amer., vol. 71, p. 1970 (abstract). Microscopic grains of a cubic mineral in copper ore from the Tilva Mika deposit, Bor, Serbia, are identified as Cu_3AsS_4, the arsenic analogue of sulvanite, and named after M. Lazarević, pioneer in the study of the Bor deposits. It would have been better to extend the name Arsenosulvanite (20th List) to include all members of the series $Cu_3(As,V)S_4$ with As > V.

Levyine, Levyite, variants of Levyne (T. Thomson, Outlines Min., 1836, vol. 1, p. 335).

Li-feldspar. S. Šćavnićar and G. Sabatier, 1957. Bull. Soc. franç. Min. Crist., vol. 80, p. 308 (Feldspath-Li). Artificial $LiAlSi_3O_8$; tetragonal. [M.A. **13**–637 (Li-felspar).]

Lilianit, error for Lillianit (Hintze, Handb. Min., Erg.-Bd. II, p. 578).

Lorenzit, error for Lorenzenit (Hintze, Handb. Min., Erg.-Bd. II, p. 579).

Lueshite. A. Safiannikoff, 1959. Bull. Acad. Roy. Sci. d'Outre-mer (Bruxelles), new ser., vol. 5, p. 1251. $NaNbO_3$, cubic, with perovskite structure, occurring with mica at the contact of a carbonatite and a cancrinite-bearing syenite at Lueshe, Goma, Congo. Cf. Igdloite (this List).

Lusungite. L. Van Wambeke, 1958. Bull. Soc. belge Géol., vol. 67, p. 162. A deep-brown coating, associated with limonite, from Kobokobo, Kivu, Congo, contains Fe, Pb, Sr, and P; it is rhombohedral and isostructural with the alunite–beudantite group, and is formulated $(Sr,Pb)Fe_3(PO_4)_2(OH)_5.H_2O$. Named from the river Lusungu, near Kobokobo. [M.A. **14**–282.]

Lybianit, error for Libyanit (Hintze, Handb. Min., Erg.-Bd. II, p. 579).

Magnesiaspat. F. Machatschki, 1953. Spez. Min., Wien, p. 313. Syn. of Magnesite.

Magnesio-arfvedsonite. A. Miyashiro, 1957. Journ. Fac. Sci. Tokyo Univ., sect. 2, vol. 11, p. 57. Also Yu. K. Andreev, 1957. Труды Инст. Геол. Руд., Месторожд., Петрог., Мин., Геохим. (Trans. Inst. Geol. Ore-deposits, Petr., Min., Geochem., vol. 10, p. 12); abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc., 1958, vol. 87, p. 486) (Магнезио-арфведсонит, magnesio-arfvedsonite). The same

name is proposed by Miyashiro for the end-member $Na_2Ca_{\frac{1}{2}}Mg_{3\frac{1}{2}}Fe^{\cdots}_{1\frac{1}{2}}Al_{\frac{1}{2}}Si_{7\frac{1}{2}}O_{22}(OH)_2$ of the arfvedsonite series [M.A. **14**–144], and by Andreev for an amphibole near $Na_3Mg_4FeSi_8^{\cdots}O_{22}(OH)_2$ (between arfvedsonite and eckermannite) found in a serpentinite near a granite intrusion. [M.A. **14**–281.]

Magnesiokatophorite. A. Miyashiro, 1957. Journ. Fac. Sci. Tokyo Univ., sect. 2, vol. 11, p. 57. A name for the end-member, $Na_2CaMg_4FeAlSi_7O_{22}(OH)_2$, of the catophorite series. [M.A. **14**–144.]

Magnesioriebeckite. A. Miyashiro, 1957. Journ. Fac. Sci. Tokyo Univ., sect. 2, vol. 11, p. 57; A. Miyashiro and M. Iwasaki, Journ. Geol. Soc. Japan, 1957, vol. 63, p. 698. A name for the end-member, $Na_2Mg_3Fe_2Si_8O_{22}(OH)_2$, of the riebeckite series, or for natural minerals near this. [M.A. **14**–144.] Syn. of Magnesian riebeckite (21st List).

Magnesiospinel. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 137 (Magnesiospinell). Syn. of Spinel.

Magnesium chrysotile. W. Noll, H. Kircher, and W. Sybertz, 1960. Beitr. Min. Petr., vol. 7, p. 232 (Magnesiumchrysotil). Syn. of Chrysotile.

Magnesium-glauconite. H. Urban, 1957. Tonindustrie-Zeitung, vol. 81, p. 363; abstr. Hintze, Handb. Min., Erg.-Bd. II, 1960, p. 835 (Magnesium-Glaukonit). Syn. of Celadonite.

Magnesium-hexahydrite. J. Kubisz, 1958. Bull. Acad. Polon. Sci., Sér. sci. chim., géol., géogr., vol. 6, p. 459. Syn. of Hexahydrite (6th List).

Magnesium-hydromuscovite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 308 (Magnesium-Hydromuskovit). Syn. of Gümbelite.

Magnesium margarite. N. V. Belov, 1959. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 88, p. 305 (Магниевый маргарит). Proposed as a more appropriate name for the Calciotalc of D. P. Serdyuchenko (q.v.).

Magnesium szomolnokite. J. Kubisz, 1960. Bull. Acad. Polon. Sci., Sér. chim., géol., géogr., vol. 8, p. 101. An unnecessary name for magnesian szomolnokite. Not intended as a synonym of kieserite.

Magnesium urcilite, error for **Magnesium ursilite**; see Ursilite (this List).

Mangan-antigorite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 323 (Mangan-Antigorit). An unnecessary name for manganoan antigorite.

Mangan-belyankinite. E. I. Semenov, 1957. Труды Инст. Мин., Геохим. Крист. Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 41 (Манган-белянкинит). Abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1959, vol. 88, p. 312 (Манган-белянкинит, manganbelyankinite); Amer. Min., 1958, vol. 43, p. 1220 (Mangano-belyankinite). A manganiferous variety of belyankinite (19th List), occurring in brownish-black platy crystals, highly pleochroic, from the Lovozero massif, Kola peninsula. [M.A. **14**–278.] An unnecessary name.

Mangan-chrysotile. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 323 (Mangan-Chrysotil). An unnecessary name for manganoan chrysotile.

Manganogel. H. Strunz, Min. Tabellen, 3rd edn, p. 154. Amorphous MnO_2, present in many occurrences of Wad.

Manganoniobite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 155. Syn. of Manganocolumbite.

Manganoplesite. D. P. Bobrovnik, 1959. Мин. Сборник Львов. Геол. Общ. (Min. Mag. Lvov Geol. Soc.), vol. 13, p. 343 (Манганоплезит). A manganoan chalybite from the Volhynian coal basin; syn. of Oligon spar. An unnecessary name.

Manganosideroplesite. D. P. Bobrovnik, 1959. Мин. Сборник Львов. Геол. Общ. (Min. Mag. Lvov Geol. Soc.), vol. 13, pp. 340, 348 (Мангансидероплезит, manganosideroplesite). A manganoan sideroplesite from the Volhynian coal basin. An unnecessary name.

Manganosteenstrupine. K. A. Vlasov, M. V. Kuzmenko, and E. M. Eskova, 1959. [The Lovozero Alkaline Massif (Moscow, Acad. Sci. USSR), p. 421]; abstr. Amer. Min., 1960, vol. 45, p. 1132. Amorphous (metamict?) material in pegmatites on Mr. Karnasurt, Lovozero massif, Kola peninsula, is formulated $(Ln,Th,Ca)MnSiO_3(OH)_3.2H_2O$ and regarded as a manganese analogue of steenstrupine.

Manganstilpnomelane, variant of Manganostilpnomelane (19th List); syn. of Parsettensite. (Hintze, Handb. Min., Erg.-Bd. II, p. 584.)

β-Manganous sulphide. G. Baron and J. Debyser, 1957. Compt. Rend. Acad. Sci. Paris, vol. 245, p. 1148 (Sulfure manganeux β). Minute black bipyramids in recent sediments from the Baltic Sea were identified by X-ray data as hexagonal β-MnS (Wurtzite group).

Mangan-uralite. S. Kilpady and A. S. Dave, 1958. Journ. Univ. Geol. Soc. Nagpur, vol. 1 (for 1955–6), no. 3, p. 4. A pink amphibole

formed by alteration of blanfordite, from Ponia, Balaghat District, Madhya Pradesh, India. Near magnesio-arfvedsonite with 3% MnO. 'An unnecessary name . . . somewhat inappropriate' (M. Fleischer, Amer. Min., 1959, vol. 44, p. 692).

Matraite. S. Koch, 1958. [Acta Univ. Szegediensis, vol. 11, p. 11]; abstr. Amer. Min., 1960, vol. 45, p. 1131. A mineral occurring at Gyöngyösoroszi with blende and pyrite is identical with the third polymorph of ZnS (γ-ZnS) prepared artificially by Buck and Strock (Amer. Min., 1955, vol. 40, p. 192); this polymorph is termed β'-ZnS by Koch. [M.A. **14**–279.]

Medziankite. Author?, quoted by C. Guillemin, Bull. Soc. franç. Min. Crist., 1956, vol. 79, p. 29. Error for Miedziankite (10th List), a synonym of sandbergerite (of Breithaupt).

Meta-arsenuranocircite, *see* Arsenuranocircite.

Meta-bassetite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 253 (Meta-Bassetit). The lower hydrate of $Fe(UO_2)_2(PO_4)_2$, with $8H_2O$ or less. The name appears to be attributed by Strunz (loc. cit., p. 254) to C. Frondel (Min. Mag., 1954, vol. 30, p. 343), but was not used by Frondel.

Metaceinerite, error for Metazeunerite. (L. N. Belova, Proc. 2nd U.N. Conf. Internat. Uses Atomic Energy, 1958, vol. 2, p. 294; M.A. **14**–344.)

Meta-haiweeite. T. C. McBurney and J. Murdoch, 1959. Amer. Min., vol. 44, p. 839. K. Walenta, Neues Jahrb. Min., Monatsh., 1960, p. 37. Artificial, produced by dehydration of Haiweeite (q.v.) at 300° C. or higher [M.A. **14**–415]. Walenta considers that the name would more appropriately have been given to the partially hydrated phase formed by dehydration of haiweeite at 100° C., which occurs naturally and was described by Haberlandt and Schiener (1951) as Gastunite 1 (see Gastunite, this List).

Metaheinrichite. E. B. Gross, A. S. Corey, R. S. Mitchell, and K. Walenta, 1958. Amer. Min., vol. 43, p. 1134. K. Walenta, Jahresheft geol. Landesamt Baden-Württemberg, 1958, vol. 3, p. 23. The arsenic analogue of meta-uranocircite, $Ba(UO_2)_2(PO_4)_2.8H_2O$, occurs along with the fully hydrated mineral near Lakeview, Oregon, and in the Schwarzwald, Germany. Named after Prof. E. William Heinrich. [M.A. **14**–199.] L. N. Belova, 1958, gave the name Arsenuranocircite to this lower hydrate; M. Fleischer, Amer. Min., 1959, vol. 44, p. 466, points out that Meta-arsenuranocircite would be more appropriate. It is not clear which name has priority.

Metakahlerite. K. Walenta, 1958. Jahresheft geol. Landesamt Baden-Württemberg, vol. 3, p. 17 (Meta-Kahlerit). $Fe(UO_2)_2(AsO_4)_2.8H_2O$, the lower hydrate of Kahlerite (20th List), found in the Sophia shaft, Baden.

Meta-kirchheimerite. K. Walenta, 1958. Jahresheft geol. Landesamt Baden-Württemberg, vol. 3, p. 34 (Meta-Kirchheimerit). $Co(UO_2)_2(AsO_4)_2.8H_2O$, a member of the meta-torbernite group, from the Sophia shaft, Baden, on pitchblende. Named after Dr. F. Kirchheimer.

Metalaumontite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 342 (Metalaumontit). Syn. of Leonhardite.

Metamontmorillonite. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 310, 325 (Metamontmorillonit). The product of dehydration of montmorillonite at 400° C., with c about 10 Å.

Meta-otenite, error of transliteration for Meta-autunite (Доклады Акад. Наук СССР [Compt. Rend. Acad. Sci. URSS], 1960, vol. 132, p. 493).

Metasandbergerite. K. Walenta, 1958. Techn. Hochschule, Stuttgart; abstr. Bull. Soc. franç. Min. Crist., 1958, vol. 61, p. 68. $Ba(UO_2)_2(PO_4)_2.8H_2O$; later renamed metaheinrichite (q.v.), the name sandbergerite having twice been used before (1866 and 1883).

Metascarbroite. W. J. Duffin and J. Goodyear, 1960. Min. Mag., vol. 32, p. 358. An artificial product obtained by heating scarbroite $[Al_2(CO_3)_3.12Al(OH)_3]$ to between 130° and 230° C.; still contains carbonate.

Metaschoderite. D. M. Hausen, 1960. Bull. Geol. Soc. Amer., vol. 71, p. 1883. $Al_2PO_4VO_4.3H_2O$, a dehydration product of Schoderite (q.v.). [M.A. **15**–44.]

Metaschoepite. C. L. Christ and J. R. Clark, 1960. Amer. Min., vol. 45, p. 1059. Schoepite (= Schoepite–I) is unstable in air, and dehydrates spontaneously to two lower hydrates, Metaschoepite (= Schoepite–II) and Paraschoepite (18th List; also called Schoepite–III).

Meta-uranospinite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 254 (Meta-Uranospinit). The lower hydrate of Uranospinite; occurs naturally at the Sophia shaft, Baden (K. Walenta, Jahresheft geol. Landesamt Baden-Württemberg, 1958, vol. 3, p. 30).

Metavandendriesscheite. C. L. Christ and J. R. Clark, 1960. Amer. Min., vol. 45, p. 1059. Vandendriesscheite (= Vandendriesscheite–I) is unstable in air, and dehydrates spontaneously to a lower hydrate, Metavandendriesscheite (= Vandendriesscheite–II).

Metavermiculite. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 311, 325 (Metavermiculit). The product of dehydration of vermiculite at 400° C., with c about 10 Å.

Metazeolith. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 325. A general name for partially dehydrated zeolites.

Michejewit, German transliteration of Михеевит, mikheevite (Hintze, Handb. Min., Erg.-Bd. II, p. 588).

Michenerite. J. E. Hawley and L. G. Berry, 1958. Canad. Min., vol. 6, p. 200. A palladium bismuthide, cubic with pyrite structure, probably $PdBi_2$, occurring in the ores of the Frood mine, Sudbury, Ontario. Named after C. E. Michener, who discovered the mineral in 1940. [M.A. **14**–343.]

Monalbite. T. R. Schneider and F. Laves, 1957. Zeits. Krist., vol. 109, p. 241 (Monalbit). Since re-examination of the type barbierite shows it to be a microcline, the name monalbite is proposed for the monoclinic modification of $NaAlSi_3O_8$, not yet found in nature.

Mozambikite. J. M. Cotelo Neiva and J. M. Correia Neves, 1960. Internat. Geol. Congr., Rept. 21st session, Norden, pt. 17, p. 53. Yellow-brown octahedra, near $ThSiO_4$ but hydrated; cubic, X-ray pattern unaltered by heating at 1 000° C. From the pegmatites of Alto-Ligonha, Mozambique. Named from the locality.

Nakaséite. Tei-Ichi Ito and H. Muraoka, 1960. Zeits. Krist., vol. 113, p. 93. Near $Pb_4Ag_3Sb_{12}S_{24}$; X-ray powder data are essentially identical with those of andorite, and the mineral is admitted to be 'a structural variety of andorite', but a new name is proposed 'because, apart from the difference in the chemical compositions, it has a very complicated twinned lattice essentially different from that of andorite'. Named from the locality, the Nakasé mine, Japan. A new name should not have been proposed while the status of webnerite and fizelyite remains uncertain. M. Fleischer (Amer. Min., 1960, vol. 45, p. 1314) suggests that the material, which has a c-axis $24 \times 4{\cdot}26$ Å., should be provisionally called andorite–XXIV. [M.A. **15**–44.]

Nasledovite. M. R. Enikeev, 1958. [Доклады Акад. Наук Узбек. ССР (Compt. Rend. Acad. Sci. Uzbek SSR), no. 5, p. 13]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc., 1958, vol. 88, p. 313 (Наследовит, nasledovite). A hydrous carbonate and sulphate of Pb, Mn, Mg, and Al, from the Altyn-Topken mining field, Sardob, Central Asia. Named after B. N. Nasledov. [M.A. **14**–278.]

Natronmanganwollastonit. F. Machatschki, 1953. Spez. Min., Wien, p. 314. Syn. of Schizolite (2nd List).

Natron-mesomicrocline. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 334 (Natron-Mesomikroklin). Syn. of Natronorthoklas.

Natronwollastonit. F. Machatschki, 1953. Spez. Min., Wien, p. 314. Syn. of Pectolite.

Neighborite. E. C. T. Chao, H. T. Evans, jr., B. J. Skinner, and C. Milton, 1961. Amer. Min., vol. 46, p. 379. $NaMgF_3$, orthorhombic and isostructural with perovskite, occurs in dolomitic oil-shale at South Ouray, Uintah Co., Utah, as rounded grains and as octahedral crystals. Named after Mr. Frank Neighbor, District Geologist of the Sun Oil Co.

Nenadkewitschit, German transliteration of Ненадкевичит, nenadkevichite (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 278).

Nichtspießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 111. A term covering proustite, pyrargyrite, xanthoconite, and pyrostilpnite.

Nickel-antigorite. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 323, 385 (Nickel-Antigorit). An unnecessary name for nickelian antigorite. Karpinskite (21st List) is 'vielleicht ein Nickel-Saponit oder Nickel-Antigorit'.

Nickelbleipyrit. F. Machatschki, 1953. Spez. Min., Wien, p. 306. A sulphide of nickel and lead with some Ag, Cu, and Co, formulated $(Ni,Pb,Ag,Cu,Co)S_2$, is mentioned; its specific gravity is given as 6·01, but no reference, note of origin, or other data are given. Doubtful. Cf. Penroseite (11th List).

Nickelchlorite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 317 (Nickelchlorit). Some of the natural nickel silicates may be members of the chlorite group (cf. M.A. **8**–14).

Nickel-cobaltomelane. K. K. Nikitin, 1960. Кора выветривания (Crust of weathering), vol. 3, p. 41 (Никель-кобальтомелан). *See* Alumocobaltomelane (this List).

Nickeleisenkies. F. Machatschki, 1953. Spez. Min., Wien, p. 310. Syn. of Violarite.

Nickeleisenpyrit. F. Machatschki, 1953. Spez. Min., Wien, p. 306. Syn. of Bravoite.

Nickelemelane. I. I. Ginzburg and I. A. Rukavishnikova, 1951 (никелемелан). *See* Alumocobaltomelane (this List).

Nickelkobaltkies. F. Machatschki, 1953. Spez. Min., Wien, p. 310. Syn. of Siegenite.

Nickel-montmorillonite. K. Kinoshita, N. Tanaka, and T. Honda, 1958. Journ. Min. Soc. Japan, vol. 3, pp. 468, 791. (Nickeliferous montmorillonite, pl. 3 and p. 792; nickel-montmorillonite, p. 792.)

A pale blue mineral previously classed as garnierite, from the Niu mine, Oita prefecture, Japan. [M.A. **14**–281.] Unnecessary name for a nickelian montmorillonite.

Nickelspinel. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 137 (Nickelspinell). A name for artificial $NiAl_2O_4$.

Ningyoite. T. Muto, R. Meyrowitz, A. M. Pommer, and T. Murano, 1959. Amer. Min., vol. 44, p. 633. $CaU(PO_4)_2.1\frac{1}{2}H_2O$, with some replacement of Ca and U by lanthanons; orthorhombic. Occurs in an unoxidized zone of the Ningyo-toge mine, Tottori prefecture, Japan. Named from the locality. [M.A. **14**–415.]

Niobanatase. E. I. Semenov, 1957. Труды Инст. Мин., Геохим., Крист., Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 41 (Ниобоанатаз, Nb-анатаз). Abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1959, vol. 88, p. 311 (Ниобанатаз, niobanatase). An incompletely analysed mineral (TiO_2 31·1, Nb_2O_5 21·6%) from natrolite-lined cavities in the Lovozero massif, Kola peninsula. X-ray powder photographs resemble those of anatase. [M.A. **14**–278.] The name is premature with only 53% of the composition accounted for.

Niobobelyankinite. E. I. Semenov, 1957. Труды Инст. Мин., Геохим., Крист., Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 41 (Ниобобелянкинит, Nb-белянкнит). Syn. of Gerasimovskite (q.v.).

Niobozirconolite. L. S. Borodin, A. V. Bykova, T. A. Kapitonova, and Yu. A. Pyatenko, 1960. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 134, p. 1188 (Ниобоцирконолит). An unnecessary name for a niobian zirconolite from the Vuorijarvi massif, Kola peninsula.

Nobleite. R. C. Erd, J. F. McAllister, and A. C. Vlisidis, 1961. Amer. Min., vol. 46, p. 560. $CaB_6O_{10}.4H_2O$, monoclinic crystals with other borates from Furnace Creek, Death Valley, California. Named after Dr. Levi F. Noble of the U.S. Geol. Survey.

Norsethite. C. Milton, M. E. Mrose, E. C. T. Chao, and J. J. Fahey, 1959. Bull. Geol. Soc. Amer., vol. 70, p. 1646 (abstract); Amer. Min., 1961, vol. 46, p. 420. $BaMg(CO_3)_2$, in rhombohedral crystals in the Westvaco trona mine, Wyoming. Named after Mr. Keith Norseth, engineering geologist. [M.A. **14**–343.]

Novacikit, error for Nováčekit (F. Machatschki, Spez. Min., Wien, 1953, pp. 348, 370).

Novákite. Z. Johan and J. Hak, 1959. Chemie der Erde, vol. 20, p. 49 (Novákit). Arsenide of Cu and Ag, occurring in carbonate gangue

at Černy Důl (Schwarzenthal), Czechoslovakia. Named after Prof. Jiři Novák of Prague. The formula is given as $(Cu,Ag)_4As_3$ or $(Cu,Ag)_{11}As_8$, but 'the constants given lead to a cell content of $(Cu,Ag)_{26\cdot5}As_{19\cdot9}$' (M. Fleischer, Amer. Min., 1959, vol. 44, p. 1321).

Obvenite, error for Olivenite (Amer. Min., 1959, vol. 44, p. 1321).

Octobolite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 291 (Oktobolit). Syn. of Augite.

Orcelite. S. Caillère, J. Avias, and J. Falgueirettes, 1959. Compt. Rend. Acad. Sci. Paris, vol. 249, p. 1771 (Orcélite). Bull. Soc. franç. Min. Crist., 1961, vol. 84, p. 9. A vein in serpentinized harzburgite in the Tiebaghi massif, New Caledonia, consists almost wholly of a new mineral, Ni_2As, distinct from maucherite and niccolite. Named after Prof. J. Orcel. [M.A. **14**–342.] Probably identical with the artificial phase $Ni_{5-x}As_2$ (M. Fleischer, Amer. Min., 1960, vol. 45, p. 753).

Ordite. Yu. M. Abramovich, 1956. [Вопросы мин. осад. образ. (Problems Min. Sedim. Formations), Lvov Univ., Book 3–4, p. 80]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc., 1959, vol. 87, p. 481 (Ордит). A name for a pseudomorph of gypsum from Orda, Perm region; named for the locality. [M.A. **14**–277.] An unnecessary name; confusion with Орлит (Orlite, 21st List) is likely.

Oregonite. P. Ramdohr and M. Schmitt, 1959. Neues Jahrb. Min., Monatsh., p. 239 (Oregonit). Probably Ni_2FeAs_2; hexagonal. From Josephine Creek, Josephine Co., Oregon. Named from the locality. [M.A. **14**–500.]

Orthochamosite. F. Novák, J. Vtelensky, J. Losert, F. Kupa, and Z. Valcha, 1957. [Czech Acad. Sci., F. Slavík Memorial Vol., p. 315]; abstr. Amer. Min., 1958, vol. 43, p. 792. The orthorhombic polymorph described by Brindley (Min. Mag. **29**–502).

Orthopinakiolite. R. Randmets, 1961. Arkiv Min. Geol., vol. 2, p. 551. Orthorhombic polymorph of pinakiolite, $Mg_3Mn^{\cdot\cdot}Mn_2^{\cdot\cdot\cdot}B_2O_{10}$, as black needles in dolomite from Långban, Sweden. The 'pinakiolite' of Bäckström (1895) was in fact orthopinakiolite.

Orthotorbernite. H. Strunz, 1961. Der Aufschluss, p. 25 (Orthotorbernit). Syn. of Torbernite.

Oxykaersutite. K. Aoki and H. Matsumoto, 1959. Journ. Japan Assoc. Min. Petr. Econ. Geol., vol. 43, p. 248. A variety of kaersutite from Iki island, Nagasaki prefecture, Japan, characterized by a high Fe_2O_3 : FeO ratio, high refractive indices, and strong pleochroism. [M.A. **15**–44.]

Pageit, error for Paigeite (Hintze, Handb. Min., Erg.-Bd. II, 1959, p. 673).

Pandaite. E. Jäger, E. Niggli, and A. H. van der Veen, 1959. Min. Mag., vol. 32, p. 10. A member of the pyrochlore group containing Ba and Sr, with only small amounts of other bases, and much water, occurring in a carbonatite at Panda Hill, Mbeya, Tanganyika. Named from the locality.

Pao-t'ou-k'uang, *see* Baotite.

Papagoite. C. O. Hutton and A. C. Vlisidis, 1960. Amer. Min., vol. 45, p. 599. Near $CaCuAlSi_2O_6(OH)_3$; monoclinic blue crystals from Ajo, Pima Co., Arizona. Named from the tribe that formerly inhabited the region. [M.A. **15**–44.]

Para-autunite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 254 (Para-Autunit). Anhydrous $Ca(UO_2)_2(PO_4)_2$; artificial.

Paradamin, variant of Paradamite (21st List). (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 228.)

Parapechblende, *see* Parapitchblende.

Parapitchblende. J. Geffroy and J. A. Sarcia, 1954. [Sciences de la terre, Univ. Nancy, vol. 2, p. 1]; abstr. in Amer. Min., 1958, vol. 43, p. 792; Hintze, Handb. Min., Erg.-Bd. II, p. 810 (Parapechblende). A black, isotropic alteration product of pitchblende from Bauzot and Ruaux, Saône-et-Loire, France. Inadequately described, and probably not a valid species.

Paratellurite. G. Switzer and H. E. Swanson, 1960. Amer. Min., vol. 45, p. 1272. The tetragonal modification of TeO_2, found at Cananea, Sonora, Mexico.

Para-uranite. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 252, 254 (Para-Uranit). The fully dehydrated, anhydrous series of compounds corresponding to the autunite group.

Parbigite. Y. V. Mirtov, 1958. [Вес. Зап.-Сиб. Новосиб. Геол. Упр. (Bull. West-Siberian and New Siberian Geol. Dept.), no. 1, p. 72]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1959, vol. 88, p. 318 (Парбигит, Parbighite). Incompletely characterized; a phosphate of the collinsite-fairfieldite family, but optically negative. Found in sandstone from a borehole near Parbig, Tomsk, Siberia. Named from the locality. [M.A. **14**–278.] Probably messelite; evidence for a new name quite inadequate (M. Fleischer, Amer. Min., 1960, vol. 45, p. 256).

Paulingite. W. B. Kamb and W. C. Oke, 1960. Amer. Min., vol. 45, p. 79. A cubic zeolite, forming rhombic dodecahedra, from the Columbia River at Rock Island Dam, Wenatchee, Washington. Chemical analyses unsatisfactory. Named after Prof. Linus Pauling. [M.A. **15**–135.]

Paulite. H. W. Bultemann, 1960. [Der Aufschluss, vol. 11, no. 11, p. 281]; abstr. Amer. Min., 1961, vol. 46, p. 465. Thin light yellow tablets from uranium deposits at Bühlskopf, Ellweiler, Birkenfeld, Germany, contain Al, U, and As; it is suggested that they are the As analogue of sabugalite, and the name Paulite is proposed after Hans Paul. The name paulite has been used before (Werner, 1812), and the material is not adequately characterized.

Perite. M. Gillberg, 1961. Arkiv Min. Geol., vol. 2, p. 565. $PbBiO_2Cl$, small orthorhombic plates with hausmannite, calcite, &c., from Långban, Sweden, and artificial. Named after Prof. Per Geijer.

Petersberg-Illite. R. A. Koch, 1958. Neues Jahrb. Min., Monatsh., p. 168 (Petersberg-Illit). A variety of illite distinguished by birefringence, exchange capacity, staining reactions, d.t.a. curve, &c., from typical illite.

Phosphate-schultenite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 224 (Phosphat-Schultenit). Artificial $PbHPO_4$, the phosphate analogue of schultenite.

Plattnerite, error for Planerite (Hintze, Handb. Min., Erg.-Bd. II, 1960, p. 815).

Potassium boltwoodite, syn. of Boltwoodite (21st List). *See* Ammonium boltwoodite.

Potassium gastunite, *see* Gastunite (of Honea).

Poterite, error for Potarite (Mellor, Treatise Inorg. Chem., vol. 15, p. 649).

Praguite. R. Barta and C. Barta, 1956. [Журн. прикл. хим. (Journ. Appl. Chem.), vol. 29, p. 341]; referred to by S. O. Agrell and J. V. Smith, Acta Crist., 1957, vol. 10, p. 761 (Praguite). Syn. of β-Mullite.

Proto-amphibole. G. V. Gibbs, F. D. Bloss, and H. R. Shell, 1960. Amer. Min., vol. 45, p. 974. A name for a series of artificial orthorhombic fluor-amphiboles having only half the a-dimension of anthophyllite. The presence of Li and absence of Ca appears to be essential to their formation. Named because of a structural relation to proto-enstatite.

Pseudochlorite. V. A. Frank-Kamenetsky, 1958. Referred to by R. C. Mackenzie, Clay Min. Bull., 1959, vol. 4, p. 61. A term for the cronstedtite–amesite–berthierine group; syn. of septechlorite (q.v.).

Pseudolussatine. O. Braitsch, 1957. Heidelberger Beitr. Min. Petr., vol. 5, p. 331 (Pseudolussatin). A structural modification of low-cristobalite differing from lussatine.

Pseudo-quartzine. O. Braitsch, 1957. Heidelberger Beitr. Min. Petr., vol. 5, p. 331 (Pseudoquarzin). A structural modification of quartz, differing from quartzine.

Pyrochlore-wiikite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 147 (Pyrochlor-Wiikit). Wiikite (3rd List) is subdivided into pyrochlore-wiikite, samarskite-wiikite, and silicate-wiikite (qq.v.).

Ranquilite. M. Jimenez de Abeledo, M. Rodriguez de Benyacar, and E. E. Galloni, 1960. Amer. Min., vol. 45, p. 1078. Near $3CaO.4UO_3.10SiO_2.24H_2O$, microcrystalline, orthorhombic, with gypsum from the Ranquil–C6 area, Portezuelo Hill, Malargue Dept., Mendoza Prov., Argentina. Named from the locality.

Rassoulite, error for or syn. of Ghassoulite (20th List) (Bull. groupe franç. argiles, vol. 8, p. 37).

Rathite–I, Rathite–II, Rathite–III. Marie-Thérèse Le Bihan, 1959. Compt. Rend. Acad. Sci. Paris, vol. 249, p. 719; ibid. 1960, vol. 251, p. 2196. Three distinct structures: Rathite–I 'parait s'identifier au minéral nommé "Rathite" ou plutôt au minéral "sans nom" . . . decrit par Solly (1919)'; it has formula $Pb_7As_9S_{20}$, *a* 8·43, *b* 25·80, *c* 7·91 Å., β 90° 15′. Rathite–II is also $Pb_7As_9S_{20}$ but has *a* 8·43, *b* 72, *c* 7·91 Å., β 90° 15′. Rathite–III has *a* 8·43, *b* 7·91, *c* 24·40 Å., β 90° 15′, and composition $Pb_6As_{10}S_{20}$.

Reinerite. B. H. Geier and K. Weber, 1958. Neues Jahrb. Min., Monatsh., p. 160 (Reinerit). Pale yellow-green orthorhombic crystals from Tsumeb, South-West Africa, have the composition $Zn_3(AsO_3)_2$; a sea-blue variety contains 2% CuO. Named after Mr. Willy Reiner. [M.A. **14**–282.] An unfortunate name, easily confused with renierite (18th List, also from Tsumeb).

Revoredite. G. C. Amstutz, P. Ramdohr, and F. De Las Casas, 1957. [Soc. Geol. Peru, Ann., pt. 2, p. 25]; abstr. Amer. Min., 1958, vol. 43, p. 794. Cf. C. Milton and B. Ingram, Amer. Min., 1959, vol. 44, p. 1070. A natural Pb–S–As glass from Cerro de Pasco, Peru. There appears to be a continuous amorphous series from As_2S_3 to $2As_2S_3.PbS$ and probably beyond. The name was proposed by Amstutz, Ramdohr, and De Las Casas, after Dr. J. F. A. Revoredo, 'in case a crystalline sample should be found'; Milton and Ingram consider the name should be rejected.

Rezhikite. M. V. Soboleva and N. D. Sobolev, 1959. Совет. Геол.,

no. 9, p. 94. A deep blue amphibole asbestos near magnesioriebeckite and magnesioarfvedsonite but differing somewhat in optics. A premature name.

Rozenite. J. Kubisz, 1960. Bull. Acad. Polon. Sci., Sér. sci. géol. géogr., vol. 8, p. 107. $FeSO_4.4H_2O$, isomorphous with ilesite and leonhardtite, from Ornak, western High Tatra, Poland, and from the Staszic mine, Rudki, Poland. Optical data show that it is identical with siderotile, the water content of which has hitherto been uncertain. An unnecessary name.

Rusakovite. E. A. Ankinovich, 1960. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 89, p. 440 (Русаковит). Abstr. ibid. 1961, vol. 90, p. 443 (Русаковит, rusacovite), and Bull. Soc. franç. Min. Crist., 1961, vol. 84, p. 1075 (Rusacovite). $(Fe,Al\{(V,P)O_4\}_2(OH)_9.3H_2O$, from Balasauskandyk, Karatau, Kazakhstan. Named after M. P. Rusakova (Михаила Петровича Русакова).

Rustenite, error for Ruténite (Hintze, Handb. Min., Erg.-Bd. II, 1958, p. 612).

Rustonite. K. F. Chudoba, 1958. Hintze, Handb. Min., Erg.-Bd. II, p. 612. Said to be a synonym of Ruthenosmiridium.

Sakharovaite. Ivan Kostov, 1959. Труды Мин. Муз. Акад. Наук СССР (Trans. Min. Mus. Acad. Sci. USSR), vol. 10, p. 148 (Сахароваит). The mineral named bismuth-jamesonite by M. S. Sakharova (21st List) is regarded as a distinct species and named after its describer. [M.A. **13**–164; **14**–500.]

Samarskite-wiikite. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 147, 158 (Samarskit-Wiikit). *See* Pyrochlore-wiikite (this List).

Sandbergerite. K. Walenta, 1958. [Techn. Hochschule, Stuttgart]; abstr. Bull. Soc. franç. Min. Crist., 1958, vol. 81, p. 69. The mineral later re-named heinrichite (q.v.), the name sandbergerite having been used twice before.

Satpaevite. E. A. Ankinovich, 1959. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 88, p. 157 (Сатпаевит). Abstr. Hintze, Handb. Min., Erg.-Bd. II, p. 934 (Satpajewit); M.A. **14**–280 (Satpayevite). A yellow aluminium vanadyl vanadate near $6Al_2O_3.V_2O_4.3V_2O_5.30H_2O$ in minute weakly pleochroic flakes in the argillaceous anthraxolitic vanadiferous deposits of Kurumsak and Balasanskandyk, Karatau, Kazakhstan. Named after K. I. Satpaev. [M.A. **14**–280.] The colour is unexpected for a mineral containing both V^{4+} and V^{5+} (M. Fleischer, Amer. Min., 1959, vol. 44, p. 1326).

Sc-beryl. G. Bergerhoff and W. Nowacki, 1955. Schweiz. Min. Petr. Mitt., vol. 35, p. 410 (Sc-Beryll). Syn. of Bazzite (7th List).

Schapbacite, error for Schapbachite (Econ. Geol., 1960, vol. 55, pp. 762, 763, 782).

Scherbakowit, erroneous German transliteration of Щербаковит, shcherbakovite (20th List) (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 278).

Schoderite. D. M. Hausen, 1960. Bull. Geol. Soc. Amer., vol. 71, p. 1883. Orange microcrystalline coatings on sandstone from Eureka, Nevada, have the composition $2Al_2O_3.V_2O_5.P_2O_5.12H_2O$. Named after William P. Schoder. [M.A. **15**–44.]

Schoepite–I, Schoepite–II, Schoepite–III. C. L. Christ and J. R. Clark, 1960. Amer. Min. vol. 45, pp. 1027, 1028. Synonyms respectively of Schoepite (10th List), Metaschoepite (this List), and Paraschoepite (18th List).

Schorsuit, German transliteration of Шорсуит, shorsuite (21st List) (Hintze, Handb. Min., Erg.-Bd. II, p. 614).

Schtscherbakowit, German transliteration of Щербаковит, shcherbakovite (21st List) (Hintze, Handb. Min., Erg.-Bd. II, p. 833).

Schuetteïte. E. H. Bailey, F. A. Hildebrand, C. L. Christ, and J. J. Fahey, 1959. Amer. Min., vol. 44, p. 1026 (Schuetteite). Basic mercuric sulphate, $HgSO_4.2HgO$, yellow, hexagonal, from Nevada, California, Oregon, and Idaho. Named after Curt Nicolaus Schuette. [M.A. **14**–501.]

Scotite, error for Scawtite (12th List) (Crystallography, a translation of Кристаллография, 1961, vol. 5, p. 659).

Seidozerite. E. I. Semenov, M. E. Kazakova, and V. I. Simonov, 1958. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 87, p. 590 (Сейдозерит). V. I. Simonov and N. V. Belov, Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), 1958, vol. 122, p. 473. Abstr. Bull. Soc. franç. Min. Crist., 1959, vol. 82, p. 93 (Seidoserite). Fan-like clusters of brownish-red needles embedded in microcline in an alkali pegmatite from near Lake Seidozero, Lovozero tundra, Kola peninsula, near $Na_8Zr_3Ti_3Mn_2Si_8O_{32}F_4$. Named from the locality. [M.A. **14**–198.] A member of the wöhlerite family, and in need of full examination (M. Fleischer, Amer. Min., 1959, vol. 44, p. 468).

Selenide-spinel. F. Machatschki, 1958. Tschermaks Min. Petr. Mitt., ser. 3, vol. 6, p. 402 (Selenidspinell). A name proposed for the unnamed cobalt–nickel–copper selenide of S. C. Robinson and E. J. Brooker (1952). *See* Tyrellite.

Septeamesite. W. R. Phillips, 1954. Syn. of Amesite; *see* Septechlorite, this List.

Septeantigorite. W. R. Phillips, 1954. [Ph.D. Thesis, Univ. Utah]; quoted by W. M. Tuddenham and R. J. P. Lyon, Anal. Chem., 1959, vol. 31, p. 377. A member of the amesite–cronstedtite–berthierine family having a composition near that of antigorite. *See* Septechlorite, this List.

Septechamosite. B. W. Nelson and R. Roy, 1958. Amer. Min., vol. 43, p. 721. Syn. of Berthierine. *See* Septechlorite, this List.

Septechlorite. B. W. Nelson and R. Roy, 1954. [Clays and clay minerals. Publ. Nat. Acad. Sci. & Nat. Res. Council, Washington, no. 327, p. 335]; abstr. Amer. Min., 1958, vol. 43, p. 707. A group name for the amesite–cronstedtite–berthierine family, dimorphous with the chlorites; the name refers to the 7 Å. *c*-spacing characteristic of this family.

Septekämmererite. W. R. Phillips, 1954. [Ph.D. Thesis, Univ. Utah]; quoted by W. M. Tuddenham and R. J. P. Lyon, Anal. Chem., 1959, vol. 31, p. 377. A member of the amesite–cronstedtite–berthierine (septechlorite) family having the same composition as kämmererite.

Sewerginit, German transliteration of Севергинит, severginite (21st List) (Hintze, Handb. Min., Erg.-Bd. II, p. 838).

Shentulite. Peng Ch'i-Jui, 1959. [Ti-chih K'o-hsueh, vol. 10, p. 289]; abstr. Amer. Min., 1960, vol. 45, p. 755 (Shen-t'u-shih). (Th,Fe,Ca,Ce) $\{(Si,P,As)O_4,CO_3OH\}$; metamict. An unnecessary name for a variety of thorite or thorogummite. *See* Arsenothorite (this List).

Sherwoodite. M. E. Thompson, C. H. Roach, and R. Meyrowitz, 1958. Amer. Min., vol. 43, p. 749. Near $Ca_3V_8O_{22}.15H_2O$, blue-black tetragonal prisms from numerous vanadium mines on the Colorado plateau. Named after Dr. Alexander M. Sherwood of the U.S. Geological Survey. [M.A. **14**–141.]

Silberspießglanze. H. Strunz, 1957. Min. Tabellen, 3rd edn, pp. 86, 105. A group name, including smithite, trechmannite, pavonite, bolivian, tapalpite, stephanite, pearceite, and polybasite. Not to be confused with Silberspießglanz of early German authors (Dana, Syst. Min., 6th edn, p. 42), a synonym of dyscrasite.

Silicate-wiikite. H. Strunz 1957. Min. Tabellen, 3rd edn, pp. 147, 158 (Silikat-Wiikit). *See* Pyrochlore-wiikite (this List).

Silicoglaserite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 263 (Silicoglaserit). A name for high-temperature α-Ca_2SiO_4 (Strunz inverts

the usual designations, calling the low-temperature form α-Ca_2SiO_4 and the high γ).

Silikatsulfatapatit. F. Machatschki, Spez. Min., Wien, p. 330. Syn. of Wilkeite.

Sinicite. Ho Chen-Tsi and Chun Chi-Chen, 1957. [Kexue Tongbao (Scientia), no. 12, p. 378]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 479 (Синисит, sinicite) and Amer. Min., 1959, vol. 44, p. 467. A tantaloniobate of rare earths and Th from an undefined locality in China. A species of doubtful validity.

Smirnowit, German transliteration of Смирновит, smirnovite (21st List) (Hintze, Handb. Min., Erg.-Bd. II, p. 842).

Smirnowskit, German transliteration of Смирновскит, smirnovskite (21st List) (Hintze, Handb. Min., Erg.-Bd. II, p. 843).

Smoljaninowit, German transliteration of Смоляниновит, Smolyaninovite (21st List) (Hintze, Handb. Min., Erg.-Bd. II, p. 844).

Sodium boltwoodite, *see* Ammonium boltwoodite.

Sodium gastunite, *see* Gastunite (of Honea).

Sokolovite. A. K. Sharova and A. K. Gladovsky, 1958. [Отдел геол.-геогр. Наук, Акад. Наук СССР, 1958, p. 70]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 103 (Соколовит, sokolovite) and Amer. Min., 1961, vol. 46, p. 243. Near $2(Ca,Sr)O.4Al_2O_3.P_2O_5.11H_2O$, in cavities in the Sokolov bauxite deposits, middle Urals. Named from the locality. Doubtful; the composition is near to goyazite and crandallite, but the X-ray data agree rather closely with svanbergite and woodhouseite. It is not stated whether $SO_4^{\cdot\cdot}$ was tested for.

Spencite. C. Frondel, 1961. Canad. Min., vol. 6, p. 576. A dark brown metamict borosilicate of Ca and Y, near $(Ca,Fe)_2Y_3B_3(Si,Al)_5(O,OH)_{20}$, from Cardiff township, Haliburton Co., Ontario. Named after Hugh S. Spence who collected the material in 1934.

Spherobertrandite. E. I. Semenov, 1957. Труды Инст. Мин., Геохим., Крист., Редк. Элем. (Trans. Inst. Min. Geochem. Cryst. Rare Elements), no. 1, p. 64 (Сферобертрандит). Abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 485 (Сферобертрандит, spherobertrandite), Amer. Min., 1958, vol. 43, p. 1219 (spherobertrandite), and M.A. **14**–277 (sphaerobertrandite). Bertrandite high in BeO and low in SiO_2, from pegmatites in the Khibina and Lovozero tundras, Kola peninsula. 'L'individualité de la sphérobertrandite n'est pas démontrée' (Bull. Soc. franç. Min. Crist., 1959, vol. 82, p. 91).

Stepanowit, German transliteration of Степановит, stepanovite (20th List) (Hintze, Handb. Min., Erg.-Bd. II, p. 848).

Stottite. H. Strunz, G. Söhnge, and B. H. Geier, 1958. Neues Jahrb. Min., Monatsh., p. 85 (Stottit). Ferrous germanate, $Fe^{\cdot\cdot}Ge(OH)_6$, tetragonal, occurring with tennantite and renierite at Tsumeb, South-West Africa. Named after Mr. Charles E. Stott. [M.A. **14**–281.] *See also* J. Zemann, Neues Jahrb. Min., Monatsh., 1959, p. 67, and H. Strunz and M. Giglio, Fortschr. Min., 1960, vol. 38, p. 40.

Stranskiite. H. Strunz, 1960. Naturwiss., vol. 47, p. 376 (Stranskiit). $Zn_2Cu(AsO_4)_2$, anorthic, blue crystals, from Tsumeb, South-West Africa, and synthetic. Named after Prof. I. N. Stranski of Berlin.

Strontioborite. V. V. Lobanova, 1960. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 135, p. 173 (Стронциоборит). Near $(Sr,Ca)_2MgB_{12}O_{21}.4\frac{1}{2}H_2O$, in soils from the Caspian region. 'Requires verification. Some of the data could be construed as indicating a mixture of strontioginorite, boracite, and anhydrite' (M. Fleischer, Amer. Min., 1961, vol. 46, p. 768).

Strontioginorite. O. Braitsch, 1959. Beitr. Min. Petr., vol. 6, p. 366. A strontian variety of ginorite, $(Sr,Ca)_2B_{14}O_{23}.8H_2O$, from the 'Old Halite' bed of the Königshall-Hindenburg mine, Reyershausen, Germany. The unit cell and refractive indices are near those of volkovite (20th List). Cf. Strontium ginorite (this List).

Strontiohilgardite-1Tc. O. Braitsch, 1959. Beitr. Min. Petr., vol. 6, p. 233 (1Tc-Strontiohilgardit). $(Ca,Sr)_2B_5O_8(OH)_2Cl$, from the Königshall-Hindenburg mine, Reyershausen, Germany. Apart from a higher strontium content (not in itself a good reason for a new name), this anorthic mineral differs from parahilgardite (calciumhilgardite-3Tc) by having a *c*-axis of 6·61 Å instead of 17·50 Å.

Strontium apatite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 235 (Strontium-Apatit). An unnecessary name for strontian apatite.

Strontium ginorite. O. Braitsch, 1959. Beitr. Min. Petr., vol. 6, p. 370 (Strontiumginorit). The strontium analogue of ginorite, $Sr_2B_{14}O_{23}.8H_2O$, as distinct from Strontioginorite (q.v.).

Subglaucophane. A. Miyashiro, 1957. Journ. Fac. Sci. Univ. Tokyo, sect. 2, vol. 11, p. 57. A name for the clino-amphibole end-member $Na_2Mg^{\cdot\cdot}_{1\frac{1}{2}}Fe(Al,Fe^{\cdot\cdot\cdot})Si_8O_{22}(OH)_2$ with $Fe^{\cdot\cdot\cdot}$ 0·3 to 0·7.

Sulunite. A. A. Nyrkov, 1959. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 88, p. 571 (Сулунит). Hydrous alumino-silicate of alkalis and ferric iron, described as a new mineral of the

chlorite group, from the Sulin region of the Donetz basin; named from the locality. The X-ray data are said to be comparable to gümbelite, a hydromuscovite. [M.A. **14**–501; Amer. Min., **45**–478.] The analysis is unsatisfactory, and the material, which is high in alkalis, may well be a mixture. Cf. D. P. Serdyuchenko and N. V. Belov, Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1960, vol. 89, p. 367.

Tacharanite. J. M. Sweet, 1961. Min. Mag., vol. 32, p. 745. $(Ca,Mg,Al)(Si,Al)O_3.H_2O$, with gyrolite, tobermorite, and mesolite in dolerite from Portree, Isle of Skye. Readily changes to a mixture of tobermorite and gyrolite. Named from the Gaelic *tacharan*, a changeling.

Tacherite. German transliteration of Тахерит, takherite (Hintze, Handb. Min., Erg.-Bd. II, p. 858).

Takovite. Z. Maksimović, 1957. [Zapis. srp. geol. drustva zo 1955 god. (Compt. Rend. Soc. serbe Géol., ann. 1955), p. 219]; abstr. M.A. **13**–624 and Hintze, Handb. Min., Erg.-Bd. II, p. 858 (Takowit). A blue-green massive clay-like mineral, $Ni_5Al_4O_2(OH)_{18}.6H_2O$, from Takovo, Serbia. Named from the locality.

Talmessite. P. Bariand and P. Herpin, 1960. Bull. Soc. franç. Min. Crist., vol. 83, p. 120. $Ca_2(Mg,Ba)(AsO_4)_2.2H_2O$, anorthic and isomorphous with β-Roselite. Named from the locality, the Talmessi mine, Anarak, Iran. [M.A. **15**–45.]

Tangaite. D. McKie, 1958. Records Geol. Surv. Tanganyika, vol. 5 (for 1955), p. 81. $AlPO_4.2H_2O$ (with $3\frac{1}{2}\%$ Fe_2O_3, 1% Cr_2O_3) from Gerevi Hill, Tanga district, Tanganyika, is essentially a low-iron redondite and not a variscite. Named from the locality. The name is liable to confusion with tangeïte.

Tarankite, error for Taranakite (Amer. Min., 1959, vol. 44, p. 138).

Thiospinels. J. Flahaut, L. Domange, and M. Ourmitchi, 1960. Compt. Rend. Acad. Sci. Paris, vol. 250, p. 134 (thiospinelles). A general term for compounds AB_2S_4 with spinel-type structures.

Titanohaematite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 144. Another variant of Titanohematite. The attribution of this variant to L. J. Spencer in Hintze, Handb. Min., Erg.-Bd. II, p. 867, is in error.

Titanomaghemite. E. Z. Basta, 1959. Econ. Geol., vol. 54, p. 698. An unnecessary varietal name for titanian maghemite.

Tomazit, error for Tombazit (H. Strunz, Min. Tabellen, 3rd edn, p. 421).

Transvaalite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 51 (Transvaalit). Cobaltous hydroxide, $Co(OH)_2$; no natural occurrence

mentioned. Not to be confused with transvaalite of McGhie and Clark (Dana, Syst. Min., 6th edn, p. 260), a hydrous cobaltic oxide near heterogenite.

Trevolite, error for Trevorite (Journ. Min. Soc. Japan, 1959, vol. 4, p. 137).

Tschkalowit, German transliteration of Чкаловит, chkalovite (H. Strunz, Min. Tabellen, 3rd edn, p. 149).

Tungsto-powellite, variant of Tungsten-powellite (19th List) (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 216, Tungsto-Powellit).

Tuvite. N. N. Shishkin and V. A. Mikhailova, 1956. [Сборн. Мат. Тех. Инф. (Collect. Mat. Tech. Inform.), no. 6, Gipronickel, p. 5]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1959, vol. 88, p. 317 (Тувит, tuvite). Imperfectly characterized yellow oxidation products of smaltite and safflorite from the Khovaks deposit, Tuva. Named from the locality. [M.A. **14**–278; Amer. Min. **45**–256.] Cf. Yellow earthy cobalt, Dana, Syst. Min., 6th edn, p. 78. A wholly unnecessary name.

Tyrrellite. I. D. Sindeeva, 1959. [Минералогия (Mineralogy), publ. Acad. Sci., USSR, p. 58]; quoted in Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 92 (Тирреллит, tyrrellite); Index to the X-ray powder data file, 1960, p. 298. The unnamed $(Cu,Co,Ni)_3Se_4$ of S. C. Robinson and E. J. Brooker, 1952, named by S. C. Robinson after Joseph Burr Tyrrell. Д. У. Тиррелл in Bonshtedt-Kupletskaya's list is an error. *See also* Selenide-spinel (this List).

Uramphite. Z. A. Nekrasova, 1957. [Вопросы Геол. Уран. (Problems Geol. Uranium), Атомиздат., p. 67]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 483 (Урамфит, uramphite). Proc. 2nd U.N. Internat. Conf. Peaceful Uses Atomic Energy, 1958, vol. 2, p. 286. $NH_4UO_2PO_4.3H_2O$, occurring as bottle-green flakes in the oxidation zone of a uranium–coal deposit; locality not given. Named from the composition, *ur*anium *am*monium *ph*osphate. [M.A. **14**–277, 344.]

Uran-apatite. I. G. Chentzov, 1956. [Атом. Энерг. (Atomic energy), no. 5, p. 113]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 482 (Уран-апатит, uran-apatite). An unnecessary name for a uranian apatite with 1 to 4% UO_2.

Urquhartite. M. F. Heddle, 1878. Trans. Roy. Soc. Edinburgh, vol. 28, p. 310. A name for a wholly undefined mineral in the gneiss of Milton, Glen Urquhart, Scotland. Named from the locality.

Ursilite. A. A. Chernikov, O. V. Krutetzkaya, and V. D. Sidelnikova, 1957. [Вопросы Геол. Уран (Problems Geol. Uranium), Атомиздат.,

p. 73]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 486 (Урсилит, ursilite). $2(Ca,Mg)O.2UO_3.5SiO_2.9H_2O$, earthy masses or spherulites in quartz-porphyry (locality not given). Two varieties occur, calcium-ursilite (кальцийурсилит) with $Ca \gg Mg$ and magnesium ursilite (магнийурсилит) with $Mg \gg Ca$. Named from the composition, *ur*anium *sil*icate. See also Proc. 2nd U.N. Internat. Conf. Peaceful Uses Atomic Energy, vol. 2, p. 295 (Calcium urcilite, magnesium urcilite). [M.A. **14**–277, 344.] Calcium ursilite is very near haiweeite (q.v.) in composition but has a different powder pattern (K. Walenta, Neues Jahrb. Min., Monatsh., 1960, p. 37).

Vandendriesscheite–I, Vandendriesscheite–II. C. L. Christ and J. R. Clark, 1960. Amer. Min., vol. 45, p. 1031. Synonyms respectively of Vandendriesscheite (18th List) and Metavandendriesscheite (this List).

***p*-Veatchite.** O. Braitsch, 1959. Beitr. Min. Petr., vol. 6, p. 352 (*p*-Veatchit); C. A. Beevers and F. H. Stewart, Min. Mag., 1960, vol. 32, p. 500. A polymorph of veatchite, crystallizing in space-group $P2_1/m$ or possibly $P2_1$; the space-group of veatchite is $A2/a$ or perhaps Aa. The prefixed p is for 'einfach-*p*rimitivem Raumgitter'. It would have been preferable to use a suffix and avoid any danger of displacement in an index.

Vibertite. N. R. Goodman, 1957. [The geology of Canadian industrial mineral deposits, p. 110]; abstr. Amer. Min., 1958, vol. 43, p. 791. Syn. of Bassanite (6th List).

Vlasovite. R. P. Tikhonenkova and M. E. Kazakova, 1961. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 137, p. 944 (Власовит, vlasovite). $Na_2ZrSi_4O_{11}$, colourless monoclinic crystals from the contact zone of the Lovozero massif, Kola peninsula. Named after K. A. Vlasov.

Vulcanite. E. N. Cameron and I. M. Threadgold, 1961. Amer. Min., vol. 46, p. 258. CuTe, with rickardite and native tellurium, as coatings on rock fragments from the Good Hope mine, Vulcan, Gunnison Co., Colorado; also synthetic. Orthorhombic. Named from the locality.

Wawellit, error for Wavellite (Hintze, Handb. Min., Erg.-Bd. II, p. 543).

Weeksite. W. F. Osterbridge, M. H. Staatz, R. Meyrowitz, and A. M. Pommer, 1960. Amer. Min., vol. 45, p. 39. $K_2(UO_2)_2(Si_2O_5)_3.4H_2O$, orthorhombic, from the Thomas range, Juab Co., Utah, and elsewhere. Resembles uranophane in appearance. Named after Dr. Alice D. Weeks.

Woodfordite. J. Murdoch and R. A. Chalmers, 1958. Bull. Geol. Soc. Amer., vol. 69, p. 1620 (abstract); Amer. Min., 1960, vol. 45, p. 1275.

A variety of ettringite containing significant amounts of SiO_2 and CO_2, with afwillite and calcite from the Commercial quarry, Crestmore, California. Named after Prof. A. O. Woodford who found the mineral. The name was later withdrawn.

Wolfram-Powellit, Germanized version of Tungsten-powellite (19th List) (H. Strunz, Min. Tabellen, 3rd edn, 1957, p. 216).

Wyartite. C. Guillemin and J. Protas, 1959. Bull. Soc. franç. Min. Crist., vol. 82, p. 80. The 'ianthinite' of Bignand [M.A. **12**–587] is distinct from the type ianthinite of Schoep, and is named wyartite after Prof. J. Wyart. It is a calcium uranium carbonate, near $3CaO.UO_3.6UO_3.2CO_2.12$–$14H_2O$, and occurs with ianthinite on uraninite from Shinkolobwe, Katanga. [M.A. **14**–280.]

Yanshynshite. Cheng-Chi Kuo, 1959. [Kexue Tongbao (Scientia), no. 6, p. 206]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 108 (Яншайншит, yanshynshite). An unnecessary name for a variety of thorogummite with 12% P_2O_5, 14% CaO, and 4% Fe_2O_3.

Yavapaiite. C. O. Hutton, 1959. Amer. Min., vol. 44, p. 1105. $KFe(SO_4)_2$, monoclinic crystals on one specimen from the United Verde copper mine, Jerome, Arizona. Named after the Yavapai tribe, who inhabit the region around Jerome. [M.A. **14**–502.]

Yoderite. D. McKie, 1959. Min. Mag., vol. 32, p. 282. Near $Mg_2Al_6Si_4O_{18}(OH)_2$; a monoclinic, highly pleochroic purple mineral occurring as a quartz–yoderite–kyanite–talc schist at Mautia Hill, Kongwa, Tanganyika. Named after Dr. Hatten Schuyler Yoder of the U.S. Geological Survey.

Yoshimuraite. T. Watanabe, 1959. Min. Journ. (Japan), vol. 2, p. 408; T. Watanabe, Y. Takéuchi, and J. Ito, ibid., 1961, vol. 3, p. 156. Orange-brown tabular crystals or stellate groups in an alkali-pegmatite from the Noda-Tamagawa mine, Iwate prefecture and the Taguchi mine, Aichi prefecture, Japan; anorthic, near $(Ba,Sr)_2Mn_2(Ti,Fe)\{(P,S)O_4\}Si_2O_8OH$. Named after Prof. Toyofumi Yoshimura.

Yttererdensilikatapatit. F. Machatschki, 1953. Spez. Min., Wien, p. 330. Syn. of Abukumalite.

Zinalsite. F. V. Chukhrov, 1956. [Кора выветривания, vol. 2, p. 107]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1958, vol. 87, p. 487 (Цинальсит, zinalsite). A zinciferous clay, much higher in Zn than sauconite and apparently not of the montmorillonite family. Named from the composition, Zn, Al, Si. 'Parait être identique à la moresnetite' (Bull. Soc. franç. Min. Crist., 1958, vol. 81, p. 337).

Zinc chrysotile. W. Noll, H. Kircher, and W. Sybertz, 1960. Beitr. Min. Petr., vol. 7, p. 240 (Zinkchrysotil). The hypothetical zinc analogue of chrysotile.

Zinc-ferro-hexahydrite. J. Kubisz, 1958. Bull. Acad. Polon. Sci., Sér. sci. chim., géol., géogr., vol. 6, p. 459. Syn. of Bianchite (12th List).

Zinc-ferro-magnesio-hexahydrite. J. Kubisz, 1958. Bull. Acad. Polon. Sci., Sér. sci. chim., géol., géogr., vol. 6, p. 459. An unnecessary name for magnesian bianchite.

Zinc-hexahydrite. J. Kubisz, 1958. Bull. Acad. Polon. Sci., Sér. sci. chim., géol., géogr., vol. 6, p. 459. A name for monoclinic $ZnSO_4 . 6H_2O$, not known in nature.

Zinc-lavendulan. H. Strunz, 1959. Fortschr. Min., vol. 37, p. 89 (Zinklavendulan). An unnecessary name for zincian lavendulan from Tsumeb, $(Ca,Na)_2(Cu,Zn)_5(AsO_4)_4Cl . 4–5H_2O$.

Zinc-pisanite. H. Strunz, 1957. Min. Tabellen, 3rd edn, p. 428 (Zinkpisanit). An unnecessary name for zincian pisanite.

Zincrosasite. H. Strunz, 1959. Fortschr. Min., vol. 37, p. 89 (Zinkrosasit). A variety of rosasite having Zn > Cu; from Tsumeb, South-West Africa.

Zincsilite. N. N. Smolyaninova, V. A. Moleva, and N. I. Organova, 1960. [Rept. Meeting Internat. Comm. Study Clays, p. 45]; abstr. Amer. Min., 1961, vol. 46, p. 241. The aluminium-free end-member of the montmorillonite–sauconite series, near $Zn_3Si_4O_{10}(OH)_2 . nH_2O$; from Batystau, Kazakhstan. Named from *zinc sili*cate.

Zink-Högbohmit, erroneous German form of Zinc-högbomite (20th List). (Hintze, Handb. Min., Erg.-Bd. II, p. 893.)

Zinkmontmorillonit. F. Machatschki, 1953. Spez. Min., Wien, p. 349. Syn. of Sauconite (2nd List).

Zinkvredenburgit. H. Strunz, 1949. Min. Tabellen, 2nd edn, p. 106. An unnecessary name for the zincian vredenburgite of B. Mason (1946).

Zinkwolframit. F. Machatschki, 1953. Spez. Min., Wien, p. 315. Syn. of Sanmartinite (18th List).

Zodite. I. G. Magakyan, 1956. [Доклады Акад. Наук Арм. ССР (Compt. Rend. Acad. Sci. Armen. SSR), vol. 23, p. 215]; abstr. Зап. Всесоюз. Мин. Общ.(Mem. All-Union Min. Soc.), 1958, vol. 87, p. 76 (Зодит). A provisional name for the mineral later named Stibiotellurobismutite (21st List). Named from the locality.

CLASSIFIED LIST OF NEW MINERALS

Sulphides, Arsenides, &c.

Koutekite, Cu_2As.
Orcelite, Ni_2As.
Oregonite, Ni_2FeAs_2.
Novákite, $(Cu,Ag)_4As_3$.
Cobalt pentlandite, Co_9S_8.
Vulcanite, CuTe.
Idaite, Cu_5FeS_6.
Tyrrellite, $(Cu,Co,Ni)_3Se_4$.
Michenerite, $PdBi_2$, cubic.
Froodite, $PdBi_2$, monoclinic.
Geversite, $PtSb_2$.
Gallite, $CuGaS_2$.

Halides

Blixite, $Pb_4O_3Cl_2$.
Perite, $PbBiO_2Cl$.
Neighborite, $NaMgF_3$.

Borates

Nifontovite, $CaB_2O_4.3\frac{1}{2}H_2O$.
Nobleite, $CaB_6O_{10}.4H_2O$.
Gowerite, $CaB_6O_{10}.5H_2O$.
Orthopinakiolite, $Mg_3Mn^{\cdot\cdot}Mn^{\cdot\cdot\cdot}_2B_2O_{10}$.
Strontium ginorite, $Sr_2B_{14}O_{23}.8H_2O$.

Sulphates

Schuetteïte, $HgSO_4.2HgO$.
Fleischerite, $Pb_3Ge(SO_4)_2(OH)_4.4H_2O$.
Itoite, $Pb_3GeO_2(OH)_2(SO_4)_2$.
Chukhrovite,
$Ca_6Al_3(Y,Ln)_3(SO_4)_2F_{23}.20H_2O$.
Nasledovite, sulphate and carbonate of Pb, Mn, Mg, and Al.

Oxides

Eskolaite, Cr_2O_3.
Avicennite, Tl_2O_3.
Manganogel, amorphous MnO_2.
Paratellurite, TeO_2.
Metaschoepite, oxide of U.
Metavandendriesscheite, oxide of Pb and U.
Stottite, $Fe^{\cdot\cdot}Ge(OH)_6$.
Freudenbergite, $Na_2Fe_2Ti_7O_{18}$.
Kennedyite, $Fe_2MgTi_3O_{10}$.
Cafetite, $(Ca,Mg)(Fe,Al)_2Ti_4O_{12}.4H_2O$.
Pandaite, hydrated Ba-Sr pyrochlore.
Gerasimovskite, hydrated oxide of Nb, Zr, Ti, and Ca, with some Si, which may not be essential.

Carbonates

Norsethite, $BaMg(CO_3)_2$.
Hellyerite, $NiCO_3.6H_2O$.
Carbocernaite, $(Ca,Sr,Na,Ln)CO_3$.
Hydroscarbroite,
$Al_2(CO_3)_3.12Al(OH)_3.nH_2O$.
Zincrosasite, $(Zn,Cu)CO_3(OH)_2$.
Widenmannite, carbonate of Pb and U.
Benstonite, $Ca_7(Ba,Sr)_6(CO_3)_{13}$.
Wyartite,
$3CaO.UO_2.6UO_3.2CO_2.12$–$14H_2O$.

Vanadates

Barnesite, $Na_2V_6O_{16}.3H_2O$.
Delrioite, $CaSrV_2O_7.3H_2O$.
Satpaevite, aluminium vanadyl vanadate Sherwoodite, $Ca_3V_8O_{22}.15H_2O$.
Alvanite, $Al_3VO_4(OH)_6.2\frac{1}{2}H_2O$(?).
Schoderite, $Al_2VO_4PO_4.6H_2O$.
Gutsevichite,
$(Al,Fe)_3\{(P,V)O_4\}_2(OH)_3.7\frac{1}{2}$–$8\frac{1}{2}H_2O$.
Rusakovite,
$(Fe,Al)_5\{(V,P)O_4\}_2(OH)_9.3H_2O$.

Arsenates

Stranskiite, $Zn_2Cu(AsO_4)_2$.
Angelellite, $Fe_4As_2O_{11}$.
β-Duftite, $CuPbAsO_4OH$.
Chudobaite,
$(Na,K)(Mg,Zn)_2H(AsO_4)_2.4H_2O$.
Talmessite,
$Ca_2(Mg,Ba)(AsO_4)_2.2H_2O$.
Metauranospinite,
$Ca(UO_2)_2(AsO_4)_2.8H_2O$.
Heinrichite,
$Ba(UO_2)_2(AsO_4)_2.10$–$12H_2O$.
Metaheinrichite,
$Ba(UO_2)_2(AsO_4)_2.8H_2O$.
Metakahlerite,
$Fe(UO_2)_2(AsO_4)_2.8H_2O$.
Meta-kirchheimerite,
$Co(UO_2)_2(AsO_4)_2.8H_2O$.
Arsenuranylite,
$Ca(UO_2)_4(AsO_4)_2(OH)_4.6H_2O$.
Hallimondite, $Pb_2UO_2(AsO_4)_2.nH_2O$.
Weilerite, $BaAl_3AsO_4SO_4(OH)_6$.
Betpakdalite, arsenomolybdate of Ca and Fe.

Silicates

Kilchoanite, $Ca_3Si_2O_7$.

Zincsilite, $Zn_3Si_4O_{10}(OH)_2.nH_2O$.
Vlasovite, $Na_2ZrSi_4O_{11}$.
Fenaksite, silicate of Fe and alkalis.
Bafertisite, $BaFe_2TiSi_2O_9$.
Batisite, $Na_2BaTi_2Si_4O_{14}$.
Ekanite, $(Th,U)(Ca,Fe,Pb)_2Si_8O_{20}$.
Weeksite, $K_2(UO_2)_2(Si_2O_5)_3.4H_2O$.
Boltwoodite, $K_2(UO_2)_2(SiO_3)_2(OH)_2.5H_2O$.
Haiweeite, $CaU_2Si_6O_{17}.5H_2O$.
Ranquilite, $Ca_3(UO_2)_4Si_{10}O_{27}.24H_2O$.

ARSENITE

Reinerite, $Zn_3(AsO_3)_2$.

PHOSPHATES

Chavesite, hydrated phosphate of Ca and Mn.
Uramphite, $NH_4UO_2PO_4.3H_2O$.
Metabassetite, $Fe(UO_2)_2(PO_4)_2.8H_2O$.
Barium-phosphuranylite, $Ba(UO_2)_4(PO_4)_2(OH)_4.8H_2O$.
Ningyoite, $CaU(PO_4)_2.1\frac{1}{2}H_2O$.

ALUMINOSILICATES

Ajoite, $Cu_6Al_2Si_{10}O_{59}.5\frac{1}{2}H_2O$.
Papagoite, $CaCuAlSi_2O_6(OH)_3$.
Beryllosodalite, $Na_4BeAlSi_4O_{12}Cl$.
Yoderite, $Mg_2Al_6Si_4O_{18}(OH)_2$.
Tacharanite, $(Ca,Mg,Al)(Si,Al)O_3.H_2O$.
Paulingite, aluminosilicate of Ca and alkalis.
Orthochamosite, aluminosilicate of Mg and Fe.
Ferriberthierine, aluminosilicate of Mg and Fe.
Septeantigorite, aluminosilicate of Mg.
Septekämmererite, aluminosilicate of Mg, Fe, and Cr.
Kimzeyite, a zirconiferous garnet.

SILICATES WITH OTHER ANIONS

Hsianghualite, $Ca_3Be_2Li_2Si_2O_{10}F_2$.
Canasite, silicate and fluoride of Ca and Na.
Birunite, silicate, sulphate, and carbonate of Ca.
Delhayelite, $(Na,K)_4Ca_5Al_6Si_{32}O_{80}.3(Na_2,K_2)(Cl_2,F_2,SO_4)$.
Baotite, silicate and chloride of Ba, Ti, and Nb.

ADDENDA

Benstonite. F. Lippmann, 1961. Naturwiss., vol. 48, p. 550 (Benstonit); preliminary note in Fortschr. Min., 1961, vol. 39, p. 81. A rhombohedral carbonate from a baryte mine in Hot Spring Co., Arkansas, U.S.A., has unit-cell contents $3[Ca_7(Ba,Sr)_6(CO_3)_{13}]$. Named after Mr. O. J. Benston. The name is unfortunately near bentonite.

Betpakdalite. L. P. Ermilova and V. M. Senderova, 1961. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 90, p. 425 (Бетпакдалит). Near $CaO.Fe_2O_3.As_2O_5.5MoO_3.14H_2O$; perhaps essentially an arsenomolybdate of Ca and Fe, as minute lemon-yellow crystals in a muscovite-quartz greisen from the oxidation zone of the Karaoba tungsten deposit (Central Kazakhstan).

Eardlyite. Author? Filer's C 15 Mineral Catalog, Redlands, California, 1961. A dull blue-green massive mineral from Utah is believed to be $(Ni,Zn)_6(Al,Fe)_2CO_3(OH)_{16}.4H_2O$, the nickel-zinc analogue of hydrotalcite.

Hallimondite. K. Walenta and W. Wimmenauer, 1961. Jahresheft geol. Landesamt Baden-Württemberg, vol. 4, p. 21 (Hallimondit).

Yellow crystalline crusts from the Michael vein, Weiler bei Lehr, Schwarzwald, Germany, contain Pb, U, and As; they give an X-ray powder photograph (not quoted!) near that of parsonsite, and are presumed to be $Pb_2UO_2(AsO_4)_2.nH_2O$. Named after Dr. A. F. Hallimond of London. Final acceptance of this as a valid species must await publication of the X-ray data, particularly as there is no quantitative chemical analysis (cf. Bull. Soc. franç. Min. Crist., 1961, vol. 84, p. 100, recommendations of the Commission on New Minerals of the International Mineralogical Association).

Halurgite. V. V. Lobanova, 1960. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 135, 173 (Галургит); abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 448 (Галургит, halurgite). Mentioned as a new mineral accompanying strontioborite (q.v.) without any description.

Jaffaite. J. Paclt, 1953. [Israel Expl. Journ., vol. 3, p. 242]; abstr. M.A. **15**–136. A gum-resin found in calcareous aeolian rock, and believed to originate from a species of Pistacia. From the plain of Sharon, Israel.

Nifontovite. S. V. Malinko and A. E. Lisitsin, 1961. Доклады Акад. Наук СССР (Compt. Rend. Acad. Sci. URSS), vol. 139, p. 188 (Нифонтовит). $CaB_2O_4.3\frac{1}{2}H_2O$, small anhedral grains in skarn deposits in the Urals. Named after the geologist P. V. Nifontov (П. В. Нифонтов.)

Silicorhabdophane. E. I. Semenov, 1959. [Матер. мин. Кольск. полуостр., no. 1, p. 102]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 444 (Силикорабдофанит, silicorhabdophane). Spherulites in a pegmatite from the Lovozero massif give a powder photograph near that of rhabdophane but contain much SiO_2; near $(Ce,Al,Fe)(P,Si)(O,OH)_4.H_2O$.

Silicosmirnovskite. E. I. Semenov, 1959. [Матер. мин. Кольск. полуостр., no. 1, p. 102]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 446 (Силикосмирновскит, silicosmirnovskite). Massive and metamict material in a pegmatite from the Lovozero massif is formulated $(Th,Ln,Ca)_3[(P,Si)(O,OH)_4]_4.4H_2O$, but contains only 3% P_2O_5, and is not obviously related to smirnovskite (21st List); a doubtful species.

Sulphate-monazite. A. A. Kukharenko, A. G. Bulakh, and K. A. Baklanova, 1961. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), vol. 90, p. 373 (Сулфат-монацит). $(Ce,Ca)(P,S)O_4$, with some Fe, Th, and H_2O, occurring as small nodules in a carbonatite in the Kola peninsula; the powder pattern is close to that of monazite, the refractive indices considerably lower. Named from the composition.

An unnecessary name; there is only 3% SO_3, and sulphatic monazite would have been a better term.

Titanorhabdophane. E. I. Semenov, 1959. [Матер. мин. Кольск. полуостр., no. 1, p. 102]; abstr. Зап. Всесоюз. Мин. Общ. (Mem. All-Union Min. Soc.), 1961, vol. 90, p. 445 (Титанорабдофанит, titanorhabdophane). Spherulites from a pegmatite near Nepkha in the Lovozero massif contain 48% Ln_2O_3, 13% TiO_2, 9% SiO_2, 15% H_2O, and only 3·6% P_2O_5, but are regarded as a member of the rhabdophane group on the ground of a certain resemblance in the powder patterns. An unsatisfactory name.

Weilerite. K. Walenta and W. Wimmenauer, 1961. Jahresheft geol. Landesamt Baden-Württemberg, vol. 4, p. 29 (Weilerit). White earthy crusts of microscopic rhombohedra with mimetite and adamite contain Ba, Al, SO_4'', AsO_4'', and H_2O; they give a powder pattern (not quoted!) similar to that of the beudantite group, and are presumed to be $BaAl_3AsO_4SO_4(OH)_6$, the barium analogue of svanbergite. Named from the locality, the Michael vein, Weiler bei Lehr, Schwarzwald, Germany. Cf. note under Hallimondite, this List.

Widenmannite. K. Walenta and W. Wimmenauer, 1961. Jahresheft geol. Landesamt Baden-Württemberg, vol. 4, p. 22 (Widenmannit). Yellow tabular orthorhombic crystals with cerussite and galena from the Michael vein, Weiler bei Lehr, Schwarzwald, Germany; a carbonate of Pb and U. X-ray powder data (not quoted!) differ from all known uranium carbonates. Named after J. F. Widenmann (1764–1798), who first discovered uranite in the Schwarzwald. Cf. note under Hallimondite, this List.

Wismutantimon. A. Volborth, 1960. Neues Jahrb. Min., Abh., vol. 94, p. 140. An unnecessary name for a bismuthian antimony from Viitaniemi, Eräjäarvi, Finland. [M.A. **15**–134.]