Ninth list of new mineral names.[1]

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Anhydrokainite. [E. Jänecke, 1913. Kali, Zeits. Kalisalze, Halle a. S., vol. 7, p. 140.] M. Rózsa, Centralblatt Min., 1916, p. 510 (Anhydrokainit). Anhydrous chloride and sulphate of potassium and magnesium, $KMgClSO_4$, produced by the dehydration of kainite by the intrusion of basalt into the Prussian salt-deposits. M. Rózsa terms it also Basaltkainit.

Arakawaite. Y. Wakabayashi and K. Komada, 1921. Journ. Geol. Soc. Tōkyō, vol. 28, p. 211. Hydrated copper-zinc phosphate, $4CuO \cdot 2ZnO \cdot P_2O_5 \cdot 6\frac{1}{2}H_2O$, occurring as bluish-green, monoclinic crystals in the Arakawa mine, Japan. Named from the locality. Differs from Veszelyite in containing no arsenic. [Abstr., p. 250.]

Armangite. G. Aminoff and R. Mauzelius, 1920. Geol. För. Förh. Stockholm, vol. 42, p. 301. Ortho-arsenite of manganese, $Mn_3(AsO_3)_2$, occurring as black, rhombohedral crystals at Långban, Sweden. Named from the chemical composition. [Abstr., p. 124.]

Bäckströmite. G. Aminoff, 1919. Geol. För. Förh. Stockholm, vol. 41, p. 473 (Bäckströmit). Abstract in Amer. Min., 1920, vol. 5, p. 88 gives the form Baeckstroemite. An orthorhombic modification of manganous hydroxide, $Mn(OH)_2$, dimorphous with the rhombohedral pyrochroite. The two modifications occur together, often in regular intergrowth, at Långban, Sweden. The material examined had, however,

[1] Previous lists of this series have been given at the ends of vols. 11–18 (1897–1919) of this Magazine. The present list duplicates to a certain extent the information already given in *Mineralogical Abstracts* under the heading 'New Minerals.' The matter is, however, here presented, for purposes of reference, as a dictionary list of new mineral-names, rather than as a list of alleged-new minerals. Unfortunately for the science, neither of these would correspond at all closely with a critical list of genuinely-new minerals.

not only been transformed into pyrochroite, but had also suffered oxidation by exposure to the air, the manganese being mainly in the form of sesquioxide. The orthorhombic crystals therefore represent double pseudomorphs. Named after Professor Helge Bäckström, of Stockholm. Earlier referred to as pseudopyrochroite (q.v.). [Abstr., p. 3.]

Baeckstroemite. *See* Bäckströmite.

Barium-Hamlinite (Chem. Zentralblatt, 1918, pt. I, p. 858; Fortsch. Min. Krist. Petr., 1920, vol. 6, p. 68). Analyses of three phosphate pebbles ('favas') found with diamond in Brazil were given by O. C. Farrington, Amer. Journ. Sci., 1916, ser. 4, vol. 41, p. 356 [Abstr., p. 256]. One of these he identifies with gorceixite, another is clearly a mixture, whilst the third with the composition $2BaO.4Al_2O_3.3P_2O_5.11H_2O$ is regarded as doubtful. This 'composition suggests that of . . . hamlinite with barium replacing strontium'. In the German abstract of Farrington's paper it appears as Barium-Hamlinit.

Basaltkainit. *See* Anhydrokainite.

Bayate. (E. F. Burchard, Trans. Amer. Inst. Mining Metall. Engin., 1920, vol. 63, pp., 54, 58; D. F. Hewett and E. V. Shannon, Amer. Journ. Sci., 1921, ser. 5, vol. 1, pp. 492, 497.) A local name for a brown ferruginous jasper occurring with the manganese-ores of Cuba.

Becquerelite. A. Schoep, 1922. Compt. Rend. Acad. Sci. Paris, vol. 174, p. 1240 (becquerélite). Uranium hydroxide, $UO_3.2H_2O$, as minute, yellow, orthorhombic crystals and crusts on pitchblende from Katanga. Named after Antoine Henri Becquerel (1852–1908). [Abstr., p. 377.]

Benitoide. (J. Escard, Les pierres précieuses, Paris, 1914, p. 210 (Bénitoïde).) Variant of benitoite (G. D. Louderback, 1907).

Bismutoplagionite. E. V. Shannon, 1920. Amer. Journ. Sci., ser. 4, vol. 49, p. 166; Chem. News, 1920, vol. 120, p. 234; Proc. U.S. Nat. Museum, 1920, vol. 58, p. 598. A lead-grey, indistinctly fibrous mineral, perhaps orthorhombic, with the composition $5PbS.4Bi_2S_3$. This is the same ratio as in plagionite, but with bismuth in place of antimony; hence the name. Plagionite has, however, a granular, rather than a fibrous, structure. [Abstr., pp. 75, 151.]

Bismutosmaltite. E. T. Wherry, Journ. Washington Acad. Sci., 1920, vol. 10, p. 495. Variant of Bismutosmaltine (A. Frenzel, 1897).

Bobrovkite. N. K. Vuisotzkiĭ (= N. Wyssotzky), 1913. Mém. Comité Géol. St.-Pétersbourg, nouv. sér., livr. 62, p. 106 (бобровкитъ), p. 668 (Bobrowkit). L. Duparc and N. Tikonwitch, Le platine, Genève, 1920, p. 193 (Bobrowkite). An alloy of nickel and iron, Ni_5Fe_2, found as fine scales in the platiniferous sands of the Bobrovka river, Nijni-Tagil, Urals. Not proved to differ from awaruite, &c.

Bolivarite. L. Fernández Navarro and P. Castro Barea, 1921. Bol. Soc. Española Hist. Nat., vol. 21, p. 326 (bolivarita). A hydrous aluminium phosphate, $AlPO_4 . Al(OH)_3 . H_2O$, occurring as greenish-yellow, cryptocrystalline crusts on granite near Pontevedra, Spain. Named after the Spanish entomologist Ignacio Bolívar. [Abstr., p. 378.]

Bortz. (E. H. Kraus and W. F. Hunt, Mineralogy, 1920, pp. 188, 192.) A corruption of the plural (as often used in the trade) of bort.

Brannerite. F. L. Hess and R. C. Wells, 1920. Journ. Franklin Inst., vol. 189, pp. 225, 779; Chem. News, vol. 120, p. 253, vol. 121, p. 22. A complex titanate of uranium with small amounts of rare-earths; written as a metatitanate, the formula is $6(Ca,Fe,UO,TiO)TiO_3 + 8(Th,Zr,UO)Ti_2O_6 + Yt_2Ti_3O_9 + 3H_2O$. Found as grains and rough prisms (tetragonal or orthorhombic?) in gold placers in Stanley Basin, central Idaho. Named after Dr. John Casper Branner (1850–1922), formerly President of Leland Stanford University, California. [Abstr., pp. 22, 122.]

Caeruleofibrite. *See* Ceruleofibrite.

Calc-clinoenstatite, Calc-clinobronzite, Calc-clinohypersthene. G. T. Prior, 1920. Min. Mag., vol. 19, pp. 57, 62, 63. To replace the terms 'enstatite-augite', &c., of W. Wahl (1906; 5th List) for those varieties of clinoenstatite, &c., (W. Wahl, 1906; 5th List) that contain appreciable (though small as compared with diopside, &c.) amounts of lime. They are constituents of certain meteoric stones.

Calciobiotite. F. Zambonini, 1919. Mem. Descr. Carta Geol. Italia, 1919, vol. 7, pt. 2, p. 124. A pale-coloured variety of biotite rich in calcium (CaO 14·33 per cent.) occurring in blocks of metamorphosed limestone in the pipernoid tuff of Campania, Italy. [Abstr., p. 107.]

Calcium lazulite. T. L. Watson, 1921. Journ. Washington Acad. Sci., vol. 11, p. 389. The variety of lazulite from Graves Mountain, Georgia, and Keewatin, Canada, containing about 3 per cent. of lime. [Abstr., p. 377.]

Camsellite. H. V. Ellsworth and E. Poitevin, 1921. Trans. R. Soc. Canada, ser. 3, vol. 15, sect. 4, p. 1. Hydrated borate of magnesium, $2MgO . B_2O_3 . H_2O$, forming white, fibrous (orthorhombic ?) masses in serpentine from British Columbia. Named after Mr. Charles Camsell, of the Geological Survey of Canada. [Abstr., p. 375.]

Carbite. V. Aymé, 1901. Essai de nomenclature minéralogique, Hanoi, p. 34. A. D. Gonsalves, Carbite o diamante; estudo geologico das zonas diamantiferas da Bahia, Bahia, 1911. A contraction of the word carbon with the mineral termination *ite*, applied to both diamond and graphite. Also used as a trade-name for an explosive. Aymé works through the whole mineral kingdom on these lines, producing such names as 'plochlocarboxite' [i. e. Pb,Cl,C,O] for phosgenite, 'hyalcalmanfersiloxite' for piedmontite. Unfortunately, some of his compound abbreviations have the appearance of real names, e. g. aloxite (for corundum; cf. 7th list), mersulite (HgS), merselite (HgSe), mertelite (HgTe), cusulite (Cu_2S or CuS), &c.

Carnotite. *See* Silico-Carnotite.

Ceruleofibrite. E. F. Holden, 1922. Amer. Min., vol. 7, p. 80 (on p. 47 of the same volume, the alternative spelling Caeruleofibrite is given). A basic chloro-arsenate of copper, $CuCl_2 . \frac{1}{3}Cu_3As_2O_8 . 6Cu(OH)_2$, forming blue, fibrous tufts of orthorhombic needles in cuprite from Bisbee, Arizona. Named from the Latin *caeruleus*, sky-blue, and *fibra*, a fibre.

Cesarolite. H. Buttgenbach and C. Gillet, 1920. Ann. Soc. Géol. Belgique, vol. 43, Bull., p. 239 (Cesàrolite). Acid lead manganate, $H_2PbMn_3O_8$, occurring as steel-grey, spongy masses in galena from Tunisia. Named after Prof. Giuseppe Cesàro of Liége. [Abstr., p. 201.]

Chromohercynite. A. Lacroix, 1920. Bull. Soc. franc. Min., vol. 43, p. 69. A mineral of the spinel group with the composition $FeCr_2O_4 . (Fe,Mg,Mn)Al_2O_4$, i. e. an isomorphous mixture in equal mole-

cular proportions of chromite and hercynite, hence the name. Occurs as black, granular masses in Madagascar. [Abstr., p. 123.]

Cobalt-chalcanthite. E. S. Larsen and M. L. Glenn, 1920. *See* Zinc-copper-chalcanthite.

Cobalt-melanterite. E. S. Larsen and M. L. Glenn, 1920. Amer. Journ. Sci., ser. 4, vol. 50, p. 230. Synonym of bieberite. *See* Zinc-copper-melanterite.

Cocinerite. G. J. Hough, 1919. Amer. Journ. Sci., ser. 4, vol. 48, p. 206. A massive, silver-grey mineral with the composition Cu_4AgS, from the Cocinera mine, Ramos, San Luis Potosi, Mexico. [Abstr., p. 18.]

Copper-melanterite; Copper-zinc-melanterite. E. S. Larsen and M. L. Glenn, 1920. *See* Zinc-copper-melanterite.

Corindite. (A. Bigot, Trans. Ceramic Soc. Stoke-on-Trent, 1918, vol. 17 (for 1917–18), p. 267). Trade-name for an artificial product consisting mainly of corundum (Al_2O_3 69 % with SiO_2,Fe_2O_3,TiO_2, &c.) prepared by a process (patented in France in 1914 by N. Lecesne) of fusing bauxite, and used as a refractory material and as an abrasive. (Compare Alundum, Aloxite, Adamite, &c.)

Cuproplumbite. F. K. Biehl, 1919. Inaug.-Diss. Münster (Westf.), pp. 50, 57 (Cuproplumbit). Basic copper-lead arsenate, $2R_3As_2O_8 . 3R(OH)_2 . xH_2O$, where $x = 0$, 1, or 2, occurring as green pseudomorphous crusts at Tsumeb, South-West Africa. Not the Cuproplumbite of A. Breithaupt, 1844. Compare Duftite and Parabayldonite. [Abstr., p. 203.]

Cupropyrite. (E. T. Wherry, Journ. Washington Acad. Sci., 1920, vol. 10, p. 494.) An impure form of chalcopyrite.

Cuprozincite. F. K. Biehl, 1919. Inaug.-Diss. Münster (Westf., p. 30 (Cuprozinkit), p. 37 (Cupro-Zinkit). Basic carbonate of copper and zinc, $(Cu,Zu)CO_3 . (Cu,Zu)(OH)_2$. Named from the composition, though not related to zincite. Compare Paraurichalcite. [Abstr., p. 203.]

Curite. A. Schoep, 1921. Compt. Rend. Acad. Sci., Paris, vol. 173, p. 1186. Hydrated uranate of lead and uranyl, $2PbO . 5UO_3 . 4H_2O$, occurring as orange-yellow, acicular crystals in Katanga, Belgian Congo. Named after Pierre Curie (1859–1906). [Abstr., p. 249.]

Daiton-sulphur. T. Wada, 1916. Minerals of Japan (in Japanese), 2nd edit., p. 19 (Daiton-sulphur). A monoclinic sulphur of prismatic habit, differing from β-sulphur and γ-sulphur, described by M. Suzuki (Journ. Geol. Soc. Tokyo, 1915, vol. 22, p. 343) from the volcano Daiton, Taiwan (= Formosa). [Abstr., p. 63.]

Dewindtite. A. Schoep, 1922. Compt. Rend. Acad. Sci., Paris, vol. 174, p. 623. Hydrated phosphate of uranium and lead, $8UO_3 . 4PbO . 3P_2O_5 . 12H_2O$, occurring as a canary-yellow powder at Kasolo, Katanga. Named after a Belgian geologist, the late Dr. Jean Dewindt. [Abstr., p. 377.]

Diopside-jadeite. H. S. Washington, 1922. Proc. U.S. Nat. Museum, vol. 60, art. 14, pp. 6, 9. A pyroxene (jade from Mexico) intermediate between jadeite and diopside in composition. The jadeite from Burma, being jadeite proper, is distinguished as soda-jadeite (q.v.). [Abstr., p. 382.]

Dixenite. G. Flink, 1920. Geol. För. Förh. Stockholm, vol. 42, p. 436 (Dixenit). Arsenite and silicate of manganese, $(MnOH)_2Mn_8 SiO_3(AsO_3)_2$, occurring as rhombohedral scales in haematite at Långban, Sweden. Named from $\delta\acute{\iota}\varsigma$, twice, and $\xi\acute{\epsilon}\nu\varsigma$, a stranger, in allusion to the unusual association of silica and arsenic trioxide. [Abstr., p. 149.]

Duftite. O. Pufahl, 1920. Centralblatt Min., p. 289 (Duftit). Basic copper-lead arsenate, $2Pb_3(AsO_4)_2 . Cu_3(AsO_4)_2 . 4Cu(OH)_2$, occurring as a pale olive-green, crystalline encrustation on chessylite from Tsumeb, South-West Africa. Named after G. Duft, director of the Otavi mines. [Near bayldonite.] Compare Parabayldonite. [Abstr., p. 150.]

Echellite. N. L. Bowen, 1920. American Mineralogist, vol. 5, p. 1. A zeolitic mineral occurring as small, white, spheroidal masses of radiating fibres in a basic igneous rock from northern Ontario. The optical characters point to orthorhombic symmetry. $(Ca,Na_2)O . 2Al_2O_3 . 3SiO_2 . 4H_2O$. Named from the French échelle, ladder, in allusion to the stepped ratios, 1, 2, 3, 4, in the chemical formula. [Abstr., p. 25.]

Eisen-Åkermanit. K. Hofmann-Degen, Sitzungsber. Heidelberg. Akad. Wiss. Math.-naturw. Kl., 1919, Abt. A, Abh. 14, p. 39; abstract in Zeits. Krist., 1922, vol. 57, p. 105. A crystallized slag approximating

to the composition $2CaO . FeO . 2SiO_2$, corresponding with åkermanite ($2CaO . MgO . 2SiO_2$).

Eisengedrite. C. Doelter, 1913. *See* Iron-gedrite.

Eisenpyrochroit. G. Flink, 1919. Geol. För. Förh. Stockholm, vol. 41, p. 436. An iron-bearing variety of pyrochroite from Långban, Sweden, differing from the ordinary type in the acicular habit of its crystals and in the mode of alteration. [Abstr., p. 124.]

Ferrazite. T. H. Lee and L. F. de Moraes, 1919. Amer. Journ. Sci., ser. 4, vol. 48, p. 353; Chem. News, London, 1921, vol. 122, p. 54. Hydrated phosphate of lead and barium, $3(Pb,Ba)O . P_2O_5 . 8H_2O$, occurring as compact, dark yellowish-white pebbles ('favas') in the Brazilian diamond deposits. Named after Dr. Jorge Belmiro de Araujo Ferraz, of the Geological Survey of Brazil. [Abstr., p. 18.]

Ferri-gehlenite. P. Niggli, 1922. Abstract in Zeits. Krist., vol. 57, p. 105 (Ferri-Gehlenit). A hypothetical end-member, $2CaO . Fe_2O_3 . SiO_2$, of the melilite group, corresponding to gehlenite ($2CaO . Al_2O_3 . SiO_2$).

Ferri-sarcolite. P. Niggli, 1922. Abstract in Zeits. Krist., vol. 57, p. 105 (Ferri-Sarkolithe). Hypothetical end-members, $3CaO . Fe_2O_3 . 3SiO_2$ and $3Na_2O . Fe_2O_3 . 3SiO_2$, of the melilite group, corresponding to sarcolite ($3CaO . Al_2O_3 . 3SiO_2$) and soda-sarcolite ($3Na_2O . Al_2O_3 . 3SiO_2$). The possibility of a 'ferric iron sarcolite' ($3CaO . Fe_2O_3 . 3SiO_2$) was suggested by W. T. Schaller, Bull. U.S. Geol. Survey, 1916, no. 610, p. 119.

Ferroanthophyllite. E. V. Shannon, 1921. Proc. U.S. Nat. Museum, vol. 59, p. 397. The iron end-member of the anthophyllite series, occurring as greyish-green, asbestiform fibres in Idaho. Similarly, magnesioanthophyllite (p. 401) for the magnesium end-member. The same as iron-anthophyllite (C. H. Warren, 1903) and Eisenanthophyllite (J. Palmgren, 1917; 8th list). [Abstr., p. 253.]

Ferrochromite. J. Beckenkamp, 1921. *See* Talc-spinel.

Ferroferrite. J. Beckenkamp, 1921. *See* Talc-spinel.

Ferrosilite. 'Iddings and Washington, 1903', according to E. V. Shannon, Amer. Min., 1921, vol. 6, p. 87; H. S. Washington, Proc. U.S. Nat. Mus., 1922, vol. 60, art. 14, p. 6. The ferrous silicate molecule,

$FeSiO_3$, used as a 'normative' or standard pyroxene mineral in the calculation of rock analyses.

Flagstaffite. F. N. Guild, 1920. Amer. Min., vol. 5, p. 169; ibid., 1921, vol. 6, p. 133. Colourless, transparent, orthorhombic crystals identical with terpin hydrate, $C_{10}H_{20}O_2 . H_2O$; found with resin in the radial cracks of buried pine trees near Flagstaff, Arizona. [Abstr., pp. 122, 260.]

Fluor-diopside. H. von Eckermann, 1922. Geol. För. Förh. Stockholm, vol. 44, p. 355. *See* Mansjöite.

Fluormanganapatite. H. Laubmann and H. Steinmetz, 1920. Zeits. Kryst. Min., vol. 55, p. 563 (Fluormanganapatit). A variety of apatite containing some manganese (MnO 4·93 per cent.) and no chlorine. [Abstr., p. 125.]

Fluor-meionite. E. V. Shannon, 1920. Proc. U.S. Nat. Mus., vol. 58, p. 482. Fluorine (2·74 per cent.) in a scapolite from Trumbull, Connecticut, is assumed to be present as a fluor-meionite in isomorphous mixture. [Abstr., p. 213.]

Gavite. E. Repossi, 1919. Atti Soc. Ital. Sci. Nat., vol. 57, p. 154. A variety of talc from the Gava valley, near Voltri, Genoa, Italy, distinguished by its composition, $H_4(Mg,Fe)_4Si_5O_{16}$, and its solubility in acids. [Abstr., p. 20.]

Geldolomite. K. A. Redlich, 1911. Doelter's Handbuch d. Mineralchemie, vol. 1, p. 260 (Geldolomit). A synonym of gurhofian for the amorphous colloidal form of dolomite.

Gelmagnesite. K. A. Redlich, 1911. Doelter's Handbuch d. Mineralchemie, vol. 1, p. 260 (Gelmagnesit); H. Leitmeier, Neues Jahrb. Min., 1916, Beil.-Bd. 40, p. 678. The amorphous colloidal form of magnesite occurring in serpentine-rocks.

Gillespite. W. T. Schaller, 1922. Journ. Washington Acad. Sci., vol. 12, p. 7. Silicate of barium and ferrous iron, $Fe''BaSi_4O_{10}$, occurring as red, mica-like scales in a rock from Alaska. Named after the collector, Mr. Frank Gillespie, of Richardson, Alaska. Compare Taramellite (E. Tacconi, 1908; 5th List). [Abstr., p. 375.]

Glaucodotite. E. T. Wherry. Journ. Washington Acad. Sci., 1920, vol. 10, p. 496. Variant of Glaucodot.

'Green John'. B. Blount and J. H. Sequeira, 1919. Journ. Chem. Soc. London, Trans., vol. 115, p. 707. Green fluorspar, named from analogy to 'Blue John'. [Abstr., p. 68.]

Higginsite. C. Palache and E. V. Shannon, 1920. Amer. Min., vol. 5. pp. 155, 159. A mineral of the olivenite group with the composition $2CuO\ 2CaO\ .\ As_2O_5\ .\ H_2O$, found as green, orthorhombic crystals in the Higgins mine, Bisbee, Arizona. [Abstr., p. 122.]

Hilgenstockite. V. A. Kroll, 1911. Journ. Iron and Steel Inst., vol. 84 (No. II for 1911), pp. 128, 185. Tetrabasic calcium phosphate, $4CaO\ .\ P_2O_5$, occurring as yellow, orthorhombic plates in the basic slag of the Thomas-Gilchrist process for the dephosphorisation of iron. Named after Gustav Hilgenstock, who was the first to describe these crystals in 1883. *See also* Silico-carnotite, Steadite, and Thomasite.

Hydroclinohumite. F. Zambonini, 1919. Bull. Soc. franç. Min., vol. 42, pp. 273, 279 (foot-note 2). Clinohumite in which fluorine is replaced by hydroxyl. *See* Titanhydroclinohumite (hydroclinohumite titanifère). Abstract in Amer. Min., 1920, vol. 5, p. 136, proposes the same name as a synonym of 'Titanhydroclinohumite', without regard to the author's previous use.

Hydro-glockerite. E. Greenly, 1919. Mem. Geol. Survey, The Geology of Anglesey, vol. 2, p. 832. An ochreous, hydrated basic ferric sulphate, $2Fe_2O_3\ .\ SO_3\ .\ 8H_2O$, from Parys Mountain, Anglesey, analysed by A. H. Church (Min. Mag., 1895, vol. 11, p. 13), and containing more loosely-held water than the glockerite of Naumann ($2Fe_2O_3\ .\ SO_3\ .\ 6H_2O$). [Abstr., p. 328.]

Iron-copper-chalcanthite. E. S. Larsen and M. L. Glenn, 1920. *See* Zinc-copper-chalcanthite.

Iron-gedrite. C. Doelter, 1913. Handbuch d. Mineralchemie, vol. 2 (i), p. 352 (Eisengedrite). H. von Eckermann, Geol. För. Förh. Stockholm, 1922, vol. 44, p. 268 (iron-gedrite). The gedrites (aluminous anthophyllites) richer in iron.

Jurupaite. A. S. Eakle, 1921. Amer. Min., vol. 6, p. 107. Hydrated calcium (and magnesium) silicate, $H_2(Ca,Mg)_2Si_2O_7$, forming compact spheres of white, radiating fibres, which are probably monoclinic. It resembles pectolite in appearance, and occurs in metamorphic limestone

in the Crestmore Hills, Jurupa Mountains, California. Named from the locality. [Abstr., p. 253.]

Justite. K. Hofmann-Degen, 1919. Sitzungsber. Heidelberg. Akad. Wiss. Math.-naturw. Kl., 1919, Abt. A. Abh. 14, p. 29 (Justit), p. 99 (Justitfamilie). A polysilicate $(Ca,Mg,Fe,Zn,Mn)_3Si_2O_7$ present as tetragonal crystals in a furnace-slag. It is allied to melilite, åkermanite, and gehlenite. Named after Mr. W. Just, of Zellerfeld, Harz, who supplied the material. The name justite was earlier used as a synonym of koenenite (4th List).

Kalicinite. P. Groth, Tabell. Übersicht der Mineralien, 4th edit., 1898, p. 57; C. Hintze, Handbuch der Mineralogie, 1916, vol. 1, p. 2752 (Kalicinit). Variant of Kalicine (F. Pisani, 1865) for monosymmetric $HKCO_3$.

Kalicite. C. F. de Landero, Sinopsis Mineralógica, Mexico, 1888, p. 255 (Kalicita). Variant of Kalicine. *See* Kalicinite.

Kasolite. A. Schoep, 1921. Compt. Rend. Acad. Sci. Paris, vol. 173, p. 1476. Hydrated silicate of uranium and lead, $3PbO.3UO_3.3SiO_2.4H_2O$, forming ochre-yellow, monoclinic crystals. Named from the locality Kasolo, Katanga, Belgian Congo. [Abstr., p. 249.]

Katangite. H. Buttgenbach, 1921. Mém. (in-8°) Acad. Belgique, Cl. d. Sci., ser. 2, vol. 6, fasc. 8, p. 26. A hydrated copper silicate, $CuH_2SiO_4.H_2O$, containing more water than dioptase. Occurs abundantly as a bluish, amorphous mineral with dioptase in Katanga, Belgian Congo. Named from the locality. [Abstr., p. 250.]

Kreuzbergite. H. Laubmann and H. Steinmetz, 1920. Zeits. Kryst. Min., vol. 55, p. 551 (Kreuzbergit). Small, colourless to pale yellowish, orthorhombic crystals occurring with other phosphates in the pegmatite of the Kreuzberg at Pleystein, Oberpfalz, Bavaria. Qualitative tests show it to be essentially a hydrated aluminium phosphate (near lucinite of W. T. Schaller, 1914). Named from the locality. *See* Pleysteinite. [Abstr., p. 125.]

Lambertite. S. C. Lind and C. W. Davis, 1919. Science, New York, new ser., vol. 49, p. 443. An undetermined uranium mineral, perhaps UO_3, occurring as canary-yellow crystals in quartzite at Lusk, Wyoming. Named after Mr. Ross Lambert, of Casper, Wyoming, who discovered this deposit of uranium-ore. [Abstr., p. 22.]

Linneite. (E. T. Wherry, Journ. Washington Acad. Sci., 1920, vol. 10, p. 495). Variant of Linnæite. Linneit in German; Linnéite in French.

Magnesioanthophyllite. E. V. Shannon, 1921. Proc. U. S. Nat. Museum, vol. 59, p. 401. *See* Ferroanthophyllite.

Makensite. F. Kretschmer, 1917. Archiv f. Lagerstätten-Forschung, Preuss. Geol. Landesanst., Heft 24, pp. 56, 126 (Makensit). The form 'Makensenit' is also mentioned, but rejected on account of length. The same as Mackensite (F. Kretschmer, 1918; 8th List.) Named after the Prussian field-marshal August von Mackensen. [Abstr., p. 255.]

Manganese-chalcanthite. E. S. Larsen and M. L. Glenn, 1920. *See* Zinc-copper-chalcanthite.

Manganoferrite. J. Beckenkamp, 1921. *See* Talc-spinel.

Manganspinel. P. Groth, 1874. Tabell. Übers. d. Mineralien, p. 24 (Manganspinell). A member of the spinel group with the composition $(Mn, Mg)\,O\,.\,(Fe, Mn)_2O_3$, evidently intended as a synonym of jacobsite (but in later editions jacobsite, $MnO\,.\,(Fe, Mn)_2O_3$, appears in addition). The same name was later applied by J. S. Krenner (Magyar Chem. Foly. Budapest, 1907, vol. 14, pp. 81, 83; Zeits. Kryst. Min., 1907, vol. 43, pp. 473, 571) to brown, octahedral crystals with the composition $(Mn, Mg)O\,.\,(Al, Mn)_2O_3$ from an iron-furnace slag. J. Beckenkamp (C. Hintze's Handbuch d. Min., 1921, vol. 1, part 4, p. 30) follows Krenner but simplifies the formula to $MnAl_2O_4$ (*see* Talc-spinel).

Mansjöite. H. von Eckermann, 1922. Geol. För. Förh. Stockholm, vol. 44, p. 355. A variety of diopside (fluor-diopside) containing fluorine (0·63 per cent.). Named from the locality, Mansjö Mtn., Sweden.

Melanovanadite. W. Lindgren, 1921. Proc. Nat. Acad. Sci. U.S.A., vol. 7, p. 249; Amer. Journ. Sci., 1922, ser. 5, vol. 3, p. 195. Calcium and vanadium vanadate, $2CaO\,.\,2V_2O_4\,.\,3V_2O_5$ (hydrated ?), occurring as black, monoclinic needles on shale at Minasragra, Peru. Named from μέλας, μέλανος, black, and vanadium. [Abstr., pp. 250, 376.]

Mendelyeevite. V. I. Vernadsky, 1914. Bull. Acad. Sci. St.-Pétersbourg, ser. 6, vol. 8 (pt. 2), pp. 1368, 1366 (менделѣевитъ). Also mentioned by Vernadsky in P. G. Mezernitsky 'Physical Therapeutics',

vol. 3, p. 177, foot-note 1, and coloured plate at p. 193, Petrograd (published by the journal 'Practical Medicine'), 1915. A calcium uranotitano-niobate (U_3O_8 25, CaO over 15 per cent.) referred to the betafite group and occurring as black rhombic-dodecaheda in pegmatite near Slyudianka, Lake Baikal. Named after the Russian chemist Dmitri Ivanovich Mendelyeev (1834–1907).

Merwinite. E. S. Larsen and W. F. Foshag, 1921. Amer. Min., vol. 6, p. 143. Calcium-magnesium orthosilicate, $Ca_3Mg(SiO_4)_2$, forming with gehlenite, &c., a granular aggregate in contact-metamorphic limestone at Crestmore, California. The optical characters show it to be monoclinic, thus distinguishing it from monticellite. Named after Dr. Herbert E. Merwin, of the Geophysical Laboratory, Washington. [Abstr., p. 254.]

Metaparisite. F. Rinne, 1921. Zeits. Metallkunde, Berlin, vol. 13, p. 405 (Metaparisit). Parisite from which carbon dioxide has been artificially expelled by heat without the destruction of the crystalline structure.

Natronsarkolith. Abstract in Zeits. Krist., 1922, vol. 57, p. 100 (Natronsarkolith), p. 105 (Natron-Sarkolith). A German form of Soda-sarcolite (W. T. Schaller, 1916; 8th List).

Nickel-linnæite. F. Zambonini, 1916. Riv. Min. Crist. Italiana, vol. 47, p. 48 (nichellinneite). An alternative name for polydymite, which is regarded as belonging to the linnæite group. [Abstr., p. 259.]

Oakermanite. Amer. Min. 1920, vol. 5, p. 81. An Anglicized form of the Swedish name åkermanite.

Orientite. D. F. Hewett and E. V. Shannon, 1921. Amer. Journ. Sci., ser. 5, vol. 1, p. 491. Hydrous silicate of manganese and calcium, $4CaO \cdot 2Mn_2O_3 \cdot 5SiO_2 \cdot 4H_2O$, occurring as small, brown, orthorhombic crystals in manganese-ores in Oriente province, Cuba. [Abstr., p. 201.]

Owyheeite. E. V. Shannon, 1921. Amer. Min., vol. 6, p. 82. Sulphantimonite of lead and silver, $5PbS \cdot Ag_2S \cdot 3Sb_2S_3$, forming indistinctly fibrous masses and orthorhombic (?) needles. The needles are brittle with basal cleavage and the mineral was in consequence previously described as 'silver jamesonite' (q. v.). Named from the locality, Owyhee County, Idaho. [Abstr., p. 150.]

Parabayldonite. F. K. Biehl, 1919. Inaug.-Diss. Münster (Westf.), pp. 47, 57 (Parabayldonit). Basic copper-lead arsenate, $2R_3As_2O_8 . R(OH)_2 . \frac{1}{2}H_2O$, differing from bayldonite in containing slightly less water; occurs as green pseudomorphous crusts at Tsumeb, South-West Africa. Compare Cuproplumbite and Duftite. [Abstr., p. 203.]

Paracoquimbite. J. Klvaňa, 1882. Sitzungsber. böhm. Gesell. Wiss. Prag, 1882, vol. for 1881, p. 272 (Paracoquimbit). A hydrated ferric sulphate forming minute rhombohedral crystals and occurring as a siskin-green encrustation on phyllite at Troja near Prague. It differs from coquimbite in the proportions of its constituents (Fe_2O_3 21·70, Al_2O_3 2·02, MgO 3·44, SO_3 33·22, H_2O 36·65 per cent.).

Parathenardite. P. N. Chirvinsky, 1906. P. Tchirwinsky, Reproduction artificielle de minéraux au XIX^e siècle (Russ.), Kieff, 1903–6, p. 583 (паратенардитъ, parathénardite). The same as Metathenardite (A. Lacroix, 1910; 6th List).

Paraurichalcite. F. K. Biehl, 1919. Inaug.-Diss. Münster (Westf.), pp. 24, 28, 34 (Paraurichalcit). Basic carbonate of copper and zinc, $3(Cu,Zn)CO_3 . 4(Cu,Zn)(OH)_2$ or $4(Cu,Zn)CO_3 . 5(Cu,Zn)(OH)_2$, approximating to aurichalcite in composition. It is formed by the alteration of malachite and is perhaps a mixture of malachite and hydrozincite. From Tsumeb, South-West Africa. Compare Cuprozincite. [Abstr., p. 203.]

Patagosite. S. Meunier, 1917. Compt. Rend. Somm. Soc. Géol France, 1917, p. 84. A variety of calcite forming the material of fossil crinoids, &c., which shows some indications of organic structure and contains some black organic matter. Named from *πάταγος*, a clattering, because the material decrepitates when heated. [Abstr., p. 257.]

Paternoite. F. Millosevich, 1920. Rend. R. Accad. Lincei, Roma, ser. 5, vol. 29, sem. 2, p. 286. Hydrated magnesium tetraborate, $MgO . 4B_2O_3 . 4H_2O$, occurring as white nodules, composed of minute orthorhombic or monoclinic scales, with bloedite in salt deposits in Sicily. Named after the Italian chemist Emanuele Paternò. [Abstr., p. 149.]

Phosphoferrite. H. Laubmann and H. Steinmetz, 1920. Zeits. Kryst. Min., vol. 55, p. 569 (Phosphoferrit). An acid phosphate of ferrous

iron (magnesium, calcium, &c.), $4\frac{1}{2}R''.3PO_4.H_3PO_4$, occurring as cloudy-white or greenish, crystalline masses with greasy lustre in pegmatite at Hagendorf, Bavaria. [Abstr., p. 125.]

Phosphophyllite. H. Laubmann and H. Steinmetz, 1920. Zeits. Kryst. Min., vol. 55, p. 566 (Phosphophyllit). Hydrated phosphate and sulphate of ferrous iron, magnesium, calcium, potassium, and aluminium, $3R_3P_2O_8.2AlOHSO_4.9H_2O$, forming colourless or pale-blue, monoclinic crystals with perfect micaceous cleavage (hence the name). Occurs in pegmatite at Hagendorf, Bavaria. [Abstr., p. 125.]

Picrochromite. E. S. Simpson, 1920. Min. Mag., vol. 19, pp. 100, 104. The hypothetical molecule $MgO.Cr_2O_3$ of the spinel-chromite series of minerals: it is present in predominating amount in a 'chromite' from Quebec. Named from the composition (πικρός, bitter, alluding to the magnesia).

Pizit. (A. Rzehak, Verh. naturforsch. Ver. Brünn, 1920, vol. 57, p. 142). Alternative spelling of Picite (E. Bořický, 1869, Sitzungsber. Math.-Naturwiss. Cl. Akad. Wiss. Wien, vol. 59, Abth. I, p. 591; A. Nies, 1880; from 'Picites resinaceus' of A. Breithaupt, 1847).

Plazolite. W. F. Foshag, 1920. Amer. Min., vol. 5, p. 183. Hydrated silicate (and carbonate) of calcium and aluminium, $3CaO.Al_2O_3.2(SiO_2,CO_2).2H_2O$, occurring as small, colourless rhombic-dodecahedra in metamorphic limestone at Crestmore, California. Named from πλάζω, to perplex [and λίθος, stone], in allusion to the difficulty of interpreting the chemical composition. A. S. Eakle (Amer. Min., 1921, vol. 6, p. 109) points out a similarity to garnet. [Abstr., pp. 151, 254.]

Pleysteinite. P. Groth, 1916. Zeits. prakt. Geol., vol. 24, p. 190. Mentioned in a preliminary announcement as 'ein wohlkristallisiertes neues Phosphat (Pleysteinit)'. Evidently the same mineral as that later described under the name Kreuzbergite (q.v.). From the Kreuzberg (or Kreuzstein) at Pleystein, Oberpfalz, Bavaria.

Pseudo-jadeite. F. W. Clarke, 1906. H. R. Bishop, Investigations and Studies in Jade, New York, 1906, vol. 1, p. 157 (pseudo-jadeite). H. S. Washington, Proc. U.S. Nat. Museum, 1922, vol. 60, art. 14, p. 6 (pseudojadeite). For the chemical molecule $(Ca,Mg,Fe)Al_2(SiO_3)_4$

assumed to be sometimes present in isomorphous replacement with the normal jadeite molecule $NaAl(SiO_3)_2$. The same name was also used independently by A. W. G. Bleeck in 1907 in a different sense (5th List).

Pseudo-mendipite. E. Rimann, 1918. Anal. Soc. Quím. Argentina, vol. 6, p. 326 (Pseudo-mendipita). Defined as an orthorhombic lead oxychloride, $3PbO \cdot PbCl_2$, but this formula is based on a misquoted old analysis. [Abstr., p. 121.]

Pseudo-orthoclase. A. Cathrein, 1915. Neues Jahrb. Min., 1915, vol. 1, p. 32 (Pseudo-Orthoklas). Crystals of felspar with the appearance of orthoclase, but found on examination to be anorthoclase. [Abstr., p. 238.]

Pseudopyrochroite. G. Aminoff, 1918. Geol. För. Förh. Stockholm, vol. 40, p. 427 (Pseudopyrochroit). Later described under the name Bäckströmite (q. v.).

Pyrobelonite. G. Flink, 1919. Geol. För. Förh. Stockholm, vol. 41, p. 433 (Pyrobelonit). Vanadate of lead and manganese, $4PbO \cdot 7MnO \cdot 2V_2O_5 \cdot 3H_2O$, found at Långban, Sweden, as fire-red, needle-shaped (orthorhombic) crystals. Named from $\pi\hat{\upsilon}\rho$, fire, and $\beta\epsilon\lambda\acute{o}\nu\eta$, needle. [Abstr., p. 124.]

Rubber-sulphur. T. Wada, 1916. Minerals of Japan (in Japanese), 2nd edit., 1916, p. 21 (Rubber-Sulphur). Amorphous, plastic sulphur from the Kobui sulphur mine, prov. Oshima, Japan. [Abstr., p. 63.]

Schafarzikite. J. A. Krenner, 1921. Zeits. Krist., 1921, vol. 56, p. 198 (Schafarzikit). Red, tetragonal crystals found with kermesite (and resembling this in appearance) at Pernek, Hungary, contain iron and phosphorus, and, since they are isomorphous with trippkeite, the composition suggested is a ferrous phosphite, $nFeO \cdot P_2O_3$. Named after Professor Ferencz Schafarzik, of Budapest. [Abstr., p. 200.]

Schanjawskit. (Zeits. Kryst. Min., 1915, vol. 55, p. 178; Fortsch. Min. Krist. Petr., 1920, vol. 6, p. 89). Another spelling of Shanyavskite, Шанявскитъ (T. A. Nikolaevsky, 1912; 6th List).

Scleroclasite. E. T. Wherry and W. F. Foshag, 1921. Journ. Washington Acad. Sci., vol. 11, p. 3. Variant of scleroclase (Skleroklas, W. Sartorius von Waltershausen, 1855); synonym of sartorite.

Selenobismutite. V. I. Vernadsky, 1918. Opuit Opisatelnoi Mineralogii, Petrograd, vol. 2, p. 34 (Селенобисмутит). Synonym of guanajuatite; a translation of the German Selenwismuthglanz. The same name has also been used by E. T. Wherry (Journ. Washington Acad. Sci., 1920, vol. 10, p. 490) in a restricted sense for the orthorhombic Bi_2Se_3 as distinct from guanajuatite, $Bi_2(Se,S)_3$.

Siderazotite. E. T. Wherry, Journ. Washington Acad. Sci., 1920, vol. 10, p. 492. Variant of Siderazot or Siderazote.

Silico-Carnotite. V. A. Kroll, 1911. Journ. Iron and Steel Inst., vol. 84 (No. II for 1911), pp. 126, 185; on pp. 172–175 the name appears simply as Carnotite. Calcium silico-phosphate, $3CaO.P_2O_5 + 2CaO..SiO_2$, occurring as blue, orthorhombic crystals with vivid pleochroism in the basic slag of the Thomas-Gilchrist process for the dephosphorisation of iron. Named after Professor Adolphe Carnot (1839–1920), of Paris, who first described the material in 1883. Not the Carnotite of C. Friedel and E. Cumenge, 1899 (2nd List).

Silver Jamesonite. E. V. Shannon, 1920. Proc. U.S. Nat. Museum, vol. 58, p. 603. At first described as a variety of jamesonite, but later named owyheeite (q. v.). [Abstr., p. 151.]

Simonellite. G. Boeris, 1919. Rend. Accad. Sci. Ist. Bologna, n. ser., vol. 23 (for 1918–19), p. 87. R. Ciusa and A. Galizzi, Gazzetta Chim. Italiana, 1921. vol. 51, pt. i, p. 57. A hydrocarbon, $C_{15}H_{20}$, found as a white crystalline (orthorhombic) encrustation on lignite from Fognano, Tuscany. Named after the geologist, Professor Vittorio Simonelli, who collected the material. [Abstr., pp. 202, 376.]

Sincosite. W. T. Schaller, 1922. Journ. Washington Acad. Sci., vol. 12, p. 195. Hydrous phosphate of calcium and vanadyl, $CaO.V_2O_4.P_2O_5.5H_2O$, occurring as green tetragonal plates at Sincos, Peru. Named from the locality. [Abstr., p. 375.]

Soda-glauconite. A. F. Hallimond, 1922. Min. Mag., vol. 19, p. 333. A variety of glauconite in which part of the potash is replaced by soda.

Soda-jadeite. H. S. Washington, 1922. Proc. U.S. Nat. Museum, vol. 60, art. 14, pp. 7, 9 (soda jadeite). Synonym of jadeite. *See* Diopside-jadeite.

Soddite. A. Schoep, 1922. Compt. Rend. Acad. Sci. Paris, vol. 174, p. 1066. Hydrated silicate of uranium, $12UO_3 . 5SiO_2 . 14H_2O$, as pale-yellow, orthorhombic crystals forming with curite (q.v.) fine-grained aggregates at Kasolo, Katanga. Named after Prof. Frederick Soddy, F.R.S., of Oxford. [Abstr., p. 377.]

Sphaeromagnesite. A. Sigmund, 1909. Die Minerale Niederösterreichs, p. 71 (Sphäromagnesit); K. A. Redlich, Zeits. prakt. Geol., 1909, vol. 17, p. 307. Radial aggregates of magnesite crystals forming large (10 cm. diam.) spheres in a crystalline magnesite on the Eichberg near Gloggnitz, Austria.

Sphenomanganite. G. Flink, 1919. Geol. För. Förh. Stockholm, vol. 41, p. 329 (Sphenomanganit). Crystals of manganite from Långban, Sweden, belong to the sphenoidal class of the orthorhombic system. Until this is proved to be a constant character of the species, the name sphenomanganite is provisionally applied to these crystals. [Abstr., p. 123.]

Spinellide. A. Lacroix, 1910. Minéralogie de la France, vol. 4, p. 297 (Groupe des spinellides). Group name for the spinel group.

Stasite. A. Schoep, 1922. Compt. Rend. Acad. Sci. Paris, vol. 174, p. 875. Hydrated phosphate of uranium and lead, $8UO_3 . 4PbO . 3P_2O_5 . 12H_2O$, dimorphous with dewindtite (q. v.), from which it differs in density, colour, and form of the minute crystals. From Kasolo, Katanga. Named after the Belgian chemist, Jean Servais Stas (1813–1891). [Abstr., p. 377.]

Steadite. A. Sauveur, 1902. Journ. Iron and Steel Inst., vol. 61 (no. I for 1902), p. 118; The Metallography of Iron and Steel, New York, 1912, lesson xx, p. 3; 2nd edit., 1916, p. 391. A eutectic consisting of iron phosphide (Fe_3P about 61 per cent.) with iron, the latter containing some phosphorus in solution. As a constituent of grey cast-iron it was first observed in 1900 by Dr. J. E. Stead, F.R.S., of Middlesbrough.

The same name was also later applied by V. A. Kroll (Journ. Iron and Steel Inst., 1911, vol. 84 (no. II for 1911), pp. 130, 186) to a basic calcium silico-phosphate, $3(3CaO . P_2O_5) . 2CaO . (2CaO . SiO_2)$, occurring as yellow, hexagonal needles in the basic slag of the Thomas-Gilchrist process for the dephosphorisation of iron, and first described by J. E. Stead and C. H. Ridsdale (Journ. Chem. Soc. London, 1887, vol. 51, p. 605). *See also* Hilgenstockite, Silico-Carnotite, and Thomasite.

Stuetzite. E. T. Wherry, Journ. Washington Acad. Sci., 1920, vol. 10, p. 491. Variant of Stützite.

Talc-spinel. J. Beckenkamp, 1921. C. Hintze's Handbuch d. Min., vol. 1, part 4, pp. 3 et seq. Synonym of spinel; named from Talkerde (Ger.) = magnesia. Similar chemical names are given for other members of the spinel group; the following are new (*see also* Manganspinel, above):

Talc-spinel (Talkspinell),	$Mg(AlO_2)_2$,	synonym of spinel.	
Ferroferrite (Ferroferrit),	$Fe(FeO_2)_2$,	,,	magnetite.
Manganoferrite (Manganoferrit),	$Mn(FeO_2)_2$,	,,	jacobsite.
Zincoferrite (Zinkoferrit),	$Zn(FeO_2)_2$	,,	franklinite.
Ferrochromite (Ferrochromit),	$Fe(CrO_2)_2$	,,	chromite.

Tellurobismuthite. E. T. Wherry, Journ. Washington Acad. Sci., 1920, vol. 10, p. 490. Translation of the German Tellurwismuth. Applied to rhombohedral Bi_2Te_3, as distinct from tetradymite ($Bi_2S_3 . 2Bi_2Te_3$).

Thomasite. V. A. Kroll, 1911. Journ. Iron and Steel Inst., vol. 84 (no. II for 1911), pp. 163, 187. Basic calcium silico-phosphate, $(6CaO . P_2O_5) . (2FeO . SiO_2)$, as minute, bluish-green, hexagonal pyramids aggregated as needles and larger rough crystals. A constituent of the basic slag of the Thomas-Gilchrist process for the dephosphorisation of iron. Named after Sidney Gilchrist Thomas (1850–1885).

Titanbiotite. W. Freudenberg, 1919. *See* Wodanite.

Titanhydroclinohumite. F. Zambonini, 1919. Bull. Soc. franç. Min., vol. 42, p. 279 (titanhydroclinohumite or hydroclinohumite titanifère). The 'titanolivine' of A. Damour (1879) is proved to be identical with clinohumite, but containing some titanium (TiO_2 1·92 per cent.) and hydroxyl in place of fluorine. *See* Hydroclinohumite. [Abstr., p. 106.]

Toernebohmite. *See* Törnebohmite.

Torendrikite. A. Lacroix, 1920. Compt. Rend. Acad. Sci. Paris, vol. 171, p. 596; Minéralogie de Madagascar, 1922, vol. 1, p. 541. A bluish-black, strongly pleochroic, monoclinic amphibole containing ferric (and ferrous) iron, magnesium, and sodium, and occurring as a constituent of syenite in Madagascar. Named from the locality Itorendrika (the definite article being omitted). [Abstr., p. 376.]

Törnebohmite. P. Geijer, 1921. Sveriges Geol. Undersökning, Årsbok 14 (for 1920), no. 6, p. 16. Abstract in Amer. Min., 1921,

vol. 6, p. 118, gives the spelling Toernebohmite. Silicate of cerium, lanthanum, and didymium with some aluminium, $R_2(ROH)(SiO_4)_2$, observed as green, pleochroic grains in micro-sections of the cerite ore from Bastnäs, Sweden. It differs from cerite in its optical characters Named after Alfred Elis Törnebohm (1838–1911), a former Director of the Geological Survey of Sweden. [Abstr., p. 251.]

Trigonite. G. Flink, 1920. Geol. För. Förh: Stockholm, vol. 42, p. 436 (Trigonit). Acid arsenite of lead and manganese, $Pb_3MnH(AsO_3)_3$, occurring as sulphur-yellow to brownish, monoclinic (domatic class) crystals at Långban, Sweden. Named from *τρίγωνον*, a *triangle*, because of the triangular, wedge-shaped habit of the crystals. [Abstr., p. 149.]

Turyite. E. T. Wherry, 1920. Amer. Min., vol. 5, p. 18. An alternative spelling of Turgite = Turite, Турьитъ (compare 8th List). This only adds to the existing confusion. It would be better to replace the name turgite (R. Hermann, 1845) by its synonym hydrohaematite (A. Breithaupt, 1847).

Ulmite. T. Steel, 1921. Proc. Linnean Soc. New South Wales, vol. 46, p. 213; Chem. News, London, vol. 123, p. 293. A form of humus coating the grains of a black, friable sandstone from New South Wales. Evidently named from ulmin, a constituent of humus. [Abstr., p. 257.]

Ultrabasite. V. Rosický and J. Štěrba-Böhm, 1916. Rozpr. České Akad., class 2, vol. 25, no. 45; Zeits. Kryst. Min., 1920, vol. 55, p. 430 (Ultrabasit). Black metallic, orthorhombic crystals with the ultrabasic formula $Sb_4Ag_{22}Pb_{28}Ge_3S_{53}$; from Freiberg, Saxony. [Abstr., p. 149.]

Uranspat. Neues Jahrb. Min., 1920, Ref. p. 146; Fortsch. Min. Krist. Petr., 1922, vol. 7, p. 170. Variant of uranospathite (A. F. Hallimond, 1915; 7th List).

Villamaninite. W. R. Schoeller and A. R. Powell, 1919. Nature, London, vol. 104, p. 326; Min. Mag., 1920, vol. 19, p. 14; 1921, vol. 19, p. 273. Disulphide of copper, nickel, cobalt, and iron, $(Cu,Ni,Co,Fe)S_2$, with some selenium (1·5 per cent.), occurring as small, black, cubic crystals and as nodular aggregates in crystalline dolomite near Villamanín, prov. León, Spain. Named from the locality. E. Thomson (Univ. Toronto Studies, Geol. Ser., 1921, no. 12, p. 39) suggests that it is a mixture of two undetermined minerals (but the original material is definitely crystallized). [Abstr., pp. 24, 260.]

Vonsenite. A. S. Eakle, 1920. Amer. Min., vol. 5, p. 141. A coal-black, lustrous mineral from a granite-limestone contact at Riverside, California. It has the ludwigite formula $(3Fe,Mg)O \cdot B_2O_3 + FeO \cdot Fe_2O_3$ with ferrous oxide largely in excess of magnesia, but it appears to differ crystallographically from ludwigite, being orthorhombic or monoclinic. Named after Mr. M. Vonsen, of Petaluma, California, who collected the material. (Cf. Ferroludwigite of B. S. Butler and W. T. Schaller, 1917; 8th List.) [Abstr., p. 122.]

Wodanite. W. Freudenberg, 1919. Mitt. Badisch. Geol. Landesanst., vol. 8, p. 317 (Titanbiotit (Wodanit)). A biotite (meroxene) rich in titanium (TiO_2 12·5 per cent.) from the mica-nepheline porphyry of the Katzenbuckel, Odenwald, Baden. Evidently named from the Teutonic deity Wodan = Woden = Odin.

Xanthoxenite. H. Laubmann and H. Steinmetz, 1920. Zeits. Kryst. Min., vol. 55, p. 580 (Xanthoxen). A basic ferric phosphate with some manganese and calcium forming small, wax-yellow, monoclinic crystals. Occurs with cacoxenite and dufrenite in pegmatite at Rabenstein, Bavaria. Named from *ξανθός*, yellow, and *ξένος*, a stranger, on account of its relation to cacoxenite. [Abstr., p. 125.]

Zinc-copper-chalcanthite. E. S. Larsen and M. L. Glenn, 1920. Amer. Journ. Sci., ser. 4, vol. 50, p. 228 (Zinc-copper chalcanthite, &c.). Abstract in Amer. Min., 1922, vol. 7, p. 74 (zinc-copper-chalcanthite). Members of the triclinic chalcanthite group, $RSO_4 \cdot 5H_2O$, in which copper is replaced by other metals. Zinc-copper-chalcanthite results by the partial dehydration (on exposure to dry air) of zinc-copper-melanterite (q.v.); iron-copper-chalcanthite from pisanite; cobalt-chalcanthite from bieberite; and manganese-chalcanthite was prepared artificially. [Abstr., p. 121.]

Zinc-copper-melanterite; Zinc-melanterite. E. S. Larsen and M. L. Glenn, 1920. Amer. Journ. Sci., ser. 4, vol. 50, p. 225 (Zinc-copper melanterite, &c.). Abstract in Amer. Min., 1922, vol. 7, p. 74 (zinc-copper-melanterite, &c.). Members of the monoclinic melanterite group, $RSO_4 \cdot 7H_2O$, in which iron is replaced by other metals, are named zinc-, zinc-copper-, copper-zinc-, and cobalt-melanterites, according to the relative preponderance of the replacing metals. Zinc-copper-melanterite is described as a secondary mineral from Colorado; the remainder are hypothetical. [Abstr., p. 121.]

Zincoferrite. J. Beckenkamp, 1921. *See* Talc-spinel.

SYSTEMATIC CLASSIFICATION OF NEW MINERALS.[1]

Elements.

Daiton-sulphur.
Rubber-sulphur.
Bobrovkite, Ni_5Fe_2.

Sulphides.

Cocinerite, Cu_4AgS.
Villamaninite, $(Cu,Ni,Co,Fe)S_2$.

Sulpho-salts.

Bismutoplagionite, $5PbS.4Bi_2S_3$.
Owyheeite, $5PbS.Ag_2S.3Sb_2S_3$.
Ultrabasite, $Sb_4Ag_{22}Pb_{28}Ge_3S_{53}$.

Oxides, Hydroxides.

Lambertite, UO_3?
Bäckströmite, $Mn(OH)_2$.
Sphenomanganite, $Mn_2O_3.H_2O$.
Becquerelite, $UO_3.2H_2O$.

Carbonates.

Cuprozincite, $(Cu,Zn)_2(OH)_2CO_3$.
Paraurichalcite, basic carb. Cu,Zn.

Sulphates.

Anhydrokainite, $KMgClSO_4$.
Hydro-glockerite, $2Fe_2O_3.SO_3.8H_2O$.
Zinc-copper-chalcanthite, &c.
Zinc-copper-melanterite, &c.

Borates.

Camsellite, $Mg_2B_2O_5.H_2O$.
Paternoite, $MgB_8O_{13}.4H_2O$.
Vonsenite, $3(Fe,Mg)O.B_2O_3+Fe_3O_4$.

Aluminates, &c.

Chromohercynite, $FeCr_2O_4.RAl_2O_4$.
Picrochromite, $MgCr_2O_4$.

Manganates.

Cesarolite, $H_2PbMn_3O_8$.

Uranates.

Curite, $2PbO.5UO_3.4H_2O$.

Phosphates, Arsenates, &c.

Fluormanganapatite.
Higginsite, $HCuCaAsO_5$.
Ferrazite, $3(Pb,Ba)O.P_2O_5.8H_2O$.
Bolivarite, $AlPO_4.Al(OH)_3.H_2O$.
Kreuzbergite, hyd. phosp. Al.
Xanthoxenite, basic phosp. Fe‴.
Arakawaite, $4CuO.2ZnO.P_2O_5.6\frac{1}{2}H_2O$.
Duftite,
$2Pb_3As_2O_8.Cu_3As_2O_8.4Cu(OH)_2$.
Cuproplumbite, basic arsen. Cu,Pb.
Parabayldonite, ditto.
Ceruleofibrite,
$CuCl_2.\frac{1}{3}Cu_3As_2O_8.6Cu(OH)_2$.
Phosphoferrite, $H_6Fe_9(PO_4)_8$.
Phosphophyllite,
$3R_3P_2O_8.2\dot{A}lOHSO_4.9H_2O$.
Stasite } $8UO_3.4PbO$.
Dewindtite } $3P_2O_5.12H_2O$.
Sincosite, $CaO.V_2O_4.P_2O_5.5H_2O$.
Melanovanadite, $2CaO.2V_2O_4.3V_2O_5$.
Pyrobelonite,
$4PbO.7MnO.2V_2O_5.3H_2O$.

Phosphites, Arsenites.

Schafarzikite, $nFeO.P_2O_3$?
Armangite, $Mn_3(AsO_3)_2$.
Dixenite, $Mn(OH)_2Mn_2SiO_3(AsO_3)_2$.
Trigonite, $Pb_3MnH(AsO_3)_3$.

Niobates, &c.

Mendelyeevite.

Silicates.

Diopside-jadeite.
Mansjöite, fluor-diopside.
Torendrikite, var. of amphibole.
Calciobiotite.
Wodanite, var. of biotite.
Fluor-meionite.
Merwinite, $Ca_3Mg(SiO_4)_2$.
Jurupaite, $H_2Ca,Mg)_2Si_2O_7$.
Justite, $(Ca,Mg,Fe)_3Si_2O_7$.
Echellite, $(Ca,Na_2)Al_4Si_3O_{13}.4H_2O$.
Gillespite, $Fe''BaSi_4O_{10}$.
Gavite, $H_4(Mg,Fe)_4Si_5O_{16}$.
Katangite, $H_2CuSiO_4.H_2O$.
Plazolite,
$3CaO.Al_2O_3.2(SiO_2,CO_2).2H_2O$.
Orientite, $4CaO.2Mn_2O_3.5SiO_2.4H_2O$.
Kasolite, $3PbO.3UO_3.3SiO_2.4H_2O$.
Soddite, $12UO_3.5SiO_2.14H_2O$.
Törnebohmite, $Ce_3(OH)(SiO_4)_2$.

Titanates.

Brannerite, hyd. tit. U, &c.

Hydrocarbons.

Flagstaffite, $C_{10}H_{20}O_2.H_2O$.
Simonellite, $C_{15}H_{20}$.
Ulmite.

[1] Only a selection of the names given in the preceding alphabetical list are here included.