

NEW MINERAL NAMES

MICHAEL FLEISCHER

Stenonite

HANS PAULY, Stenonite, a new carbonate-fluoride from Ivigtut, South Greenland. *Medd. om Grønland*, **169** (9), 1–24 (1962).

Analysis by Mrs. E. L. Mortensen of material judged optically to contain about 3% jarlite gave Sr 47.08, Ba 1.09, Ca 0.01, Na 0.58, Al 7.73, F 27.13, CO₂ 16.00 OH not detd., total 99.62%, which after deducting 3.08% jarlite, corresponds closely to (Sr, Ba, Na)₂AlF₆(CO₃). Spectrographic analysis by Ib Sørensen showed also traces of Si, Mg, Fe, Cu, Ti, Li and K. It is stated that CO₂ was determined after disintegrating the mineral in dilute HCl, although Bøggild, who gave a preliminary description of the mineral in 1953, stated that it does not seem to be attacked by hot acid.

Weissenberg and precession data show the mineral to be monoclinic, probably $P2_1/m$ (no piezoelectric effect observed), a 5.447 ± 0.002 , b 8.688 ± 0.004 , c $13.14 \pm 0.01 \text{ \AA}$, β $98^\circ 20' \pm 5'$, $Z=4(\text{Sr}_2\text{AlF}_6(\text{CO}_3))$. X-ray powder data (CoK α radiation) are given in terms of $\sin^2 \theta$, the strongest lines are 0.0697(s), 0.1706(s), 0.4326(s), 0.2158(ms), 0.1590(m), 0.1645(m), 0.2291(m), 0.2501(m), 0.2887(m), 0.4083(m), 0.4743(m).

The mineral is colorless to white, luster vitreous, G 3.86, H near 3.5. Optically biaxial (–), α 1.452, β 1.527, γ 1.538, $2V$ 43° , $X=b$, $Z:c = -32^\circ$. Cleavage in three directions, one basal (001), and two prismatic {120}. Goniometric measurements by H. Micheelsen gave $(120) \wedge (\bar{1}20) = 100^\circ 45'$, $(120) \wedge (001) = 102^\circ$.

The mineral occurs in small grains to individuals up to 4×1 cm in the cryolite mine at Ivigtut, mainly in the contact zone between siderite-cryolite ore and masses rich in fluorite. It is closely associated with jarlite, also with cryolite, weberite, fluorite, pyrite, sphalerite, chalcopyrite, galena and hydrous fluorides including ralstonite, pachnolite, prosopite and topaz. Jarlite may be replacing stenonite.

The name is for Nicholas Stenonis (Nicolaus Steno), the Latinized form used by Niels Steensen, 1638–1686, discoverer of the law of the constancy of interfacial angles.

DISCUSSION—Apparently not related to any known carbonate-fluoride, such as the bastnaesite group.

Tugtupite

HENNING SØRENSEN, On the occurrence of steenstrupine in the Ilimaussaq massif, southwest Greenland. *Medd. om Grønland*, **167** (1), 1–251 (1962) (esp. p. 218–219).

A preliminary description of the mineral was previously published without an analysis (*Am. Mineral.* **46**, 241 (1961)). Analysis by Miss Me Mouritzen gave SiO₂ 51.58, Al₂O₃ 11.15, Fe₂O₃ trace, BeO 5.40, MgO 0.20, Na₂O 25.52, K₂O 0.12, H₂O[–] 0.03, S 0.33, Cl 7.28 sum 101.61 (0 = Cl₂) 1.64 = 99.97%. This is very close to that of beryllsodalite of Semenov and Bykova, see abstract cited above.

The name is for the locality, Tugtup agtakorfia, Greenland.

DISCUSSION—A detailed paper is in preparation, with a discussion of the nomenclature. It would have been better not to give the new name until it was established that the Greenland mineral differs from beryllsodalite.

Roquesite

P. PICOT AND R. PIERROT, La roquesite, premier mineral d' indium: CuInS₂. *Bull. soc. franc. mineral.* **86**, 7–14 (1963).

The mineral occurs as inclusions, 0.2×0.3 mm, in bornite from the Cu-Sn-Fe deposit of Charrier, Allier, France. Associated minerals are chalcopyrite, wittichenite, chalcocite,

covellite and a little sphalerite. Analysis by the Castaing electron probe gave Cu 26.8 ± 0.5 , In 47.8 ± 1 , S 27.3 ± 1 , sum 101.9%, corresponding to CuInS_2 . Readily etched by concentrated HNO_3 , which brings out the common polysynthetic twinning.

X-ray powder data agree closely with those for synthetic CuInS_2 and are indexed on a tetragonal cell with a 5.51, c 11.05 Å. Roquesite is isostructural with chalcopyrite. The strongest lines are 3.19 (vvs)(112), 1.95 (vs)(220, 204), 1.66 (s) (312, 116).

Color gray with a slight bluish tint. Vickers hardness 241 ± 5 , intermediate between chalcopyrite ($201 = 3\frac{1}{2} - 4$) and tetrahedrite (395). Optically uniaxial (+); reflecting power (given for 8 wave lengths) ranges from 21 to 24%.

The name is for Professor Maurice Roques, Univ. Clermont-Ferrand, France.

The name was approved before publication by the Commission on New Minerals, IMA.

Huanghoite

E. I. SEMENOV AND P'EI-SHAN CHANG, Huanghoite, a new rare-earth mineral. *Scientia Sinica*, 10, 1007-1011 (1961) (in Russian).

P'EI-SHAN CHANG, Huanghoite and the series bastnaesite— β - BaCO_3 . *Scientia Sinica*, 11, 251-258 (1962) (in Russian).

Analyses of two samples by V. Klitina and A. V. Bykova gave, resp., BaO 36.46, 36.14; RE_2O_3 38.40, 37.35; CO_2 20.90, 18.90; H_2O 0.93, —; F 4.00, 3.45; sum 100.69, —, less ($0 = \text{F}_2$) 1.68, —, 99.01%, —, corresponding to $\text{BaRE}(\text{CO}_3)_2\text{F}$ or $\text{BaCe}(\text{CO}_3)_2\text{F}$ the barium analogue of synchisite. Spectrographic analysis showed Ti and Zr 0.00 n%. It is stated that the rare earths are partly replaced by thorium and barium by strontium but no determinations of these elements are given. X-ray spectrographic analysis by R. L. Barinskii of the rare earths gave La 22, 24; Ce 49.8, 46.9; Pr 6.4, 6; Nd 20, 19; Sm 1, 1.4; Eu 0.1, 0.2; Gd 0.5, 1.2; Tb —, 0.2; Dy 0.2, 0.2; Er —, 0.4; Yb —, 0.5. (Although given in this form, such analyses usually mean the oxides, not the elements, M.F.). The mineral is vigorously dissolved by HCl.

A DTA curve shows a small endothermal break at 400–470°, a large one at 620–680°, and a medium one at 760–800°. The second corresponds to a large loss in weight, presumably loss of CO_2 . X-ray study of the heated material shows two phases: a major cubic phase with a 5.54 Å. (perhaps a solid solution of CeO_2 with a 5.42 Å., Ln_2O_3 , and BaO with a 5.542 Å.), and a minor cubic phase with a 6.21 Å., probably BaF_2 ($a = 6.196$ Å.).

X-ray study by R. F. Matveev showed huanghoite to be hexagonal, a 5.1, c 19.6 Å., $c/a = 3.84$. There is a pseudoperiod of $c/2 = 9.8$ Å. Unindexed x-ray powder data by Yu. A. Pyatenko are given (15 lines): the strongest lines are 3.21 (10), 1.937 (10), 2.01 (9), 3.91 (7), 2.50 (7), 1.616 (7), 1.557 (7), 1.335 (7), 1.325 (6), 1.083 (6).

The mineral forms platy masses up to $10 \times 5 \times 1$ cm. Color honey-yellow to yellowish-green, translucent, luster greasy. Fracture irregular, cleavage (0001). Microhardness 411 kg/sq. mm. (about 4.7 on the Mohs scale). Specific gravity 4.67–4.51 (measured), 4.49 (calcd.). Optically uniaxial (–), ω 1.765, ϵ 1.603. Shows weak pleochroism in greenish-yellow shades.

The mineral is rather widely distributed in hydrothermal deposits, including calcite veins, genetically associated with alkalic grano-syenites and the enclosing hydrothermally altered dolomites. Associated minerals are aegirine, fluorite, magnetite, hematite, monazite, bastnaesite, parisite and eschynite.

The mineral alters readily on the surface to yellow and brown ochers, with considerable loss of barium.

The name is for the Huang Ho River, near which it occurs.

Vanalite

E. A. ANKINOVICH, A new vanadium mineral, vanalite. *Zapiski Vses. Mineralog. Obshch.* 91, 307-314 (1962) (in Russian)

Analysis by T. L. Vileshina gave V_2O_5 47.10, V_2O_4 1.80, Al_2O_3 21.00, Fe_2O_3 0.20, CaO, MgO, SiO_2 traces, Na_2O 1.40, H_2O^+ 27.10, H_2O^- 1.70, sum 100.30% (given as 100.20%) corresponding to $NaAl_3V_{10}O_{38} \cdot 30H_2O$. The DTA curve shows two sharp endothermal effects at 130° and 230° and one at 800-840° (melting of mineral), and 2 small exothermal effects at 500-620°. The mineral losses 3% H_2O at 50°, 7%, at 100°, 16% at 150°, 20% at 200°, 22% at 300°, 25% at 350°, 26% at 550°. It is easily soluble in cold dilute HCl; gives off acid H_2O in the closed tube.

Vanalite is bright yellow with an orange tint, luster waxy to vitreous, in friable material dull. G 2.3-2.4. Under the microscope or electron microscope, it is seen to consist of wedge-shaped crystals averaging 0.025 mm. Optical sign could not be determined; α 1.710, γ 1.735 (both ± 0.006). Elongation negative, extinction parallel, slightly pleochroic in shades of yellow.

X-ray powder data are given (19 lines). The strongest lines (in kX) are 3.313 (10), 2.262 (8), 1.518 (6), 1.904 (5).

The mineral occurs in weathered shales, northwestern Kara-Tau, Kazakhstan, as incrustations on joint planes and as veinlets and cavity fillings associated with hallosyite, montmorillonite and other clay minerals.

The name is for the composition.

Bokite

E. A. ANKINOVICH, A new vanadium mineral, bokite. *Zapiski Vses. Mineralog. Obshch.* 92, 51-59 (1963) (in Russian).

Microchemical analyses by T. L. Vileshina gave SiO_2 CaO, MgO, BaO, Na_2O traces; K_2O not detd. 1.50; Al_2O_3 3.90, 4.40; Fe_2O_3 15.30, 15.40; V_2O_4 14.10, 14.00; V_2O_5 50.30, 49.70; UO_3 , MoO_3 not detd.; SO_3 not detd., 0.60; H_2O^+ 7.70, 7.80; H_2O^- 6.60, 6.60; sum 98.20, 100.00%. Spectrographic analysis showed also Mo 0.1-0.3, Cr 0.1-0.3, Cu 0.01-0.03, Pb 0.002-0.01, Ti 0.001, Mn 0.001, Zr 0.003%. Study of the loss of weight when heated shows losses of 8.5% to 150°, 1.8% more to 300°, 2.2% more to 450°. DTA study shows a large endothermal effect at 80-160° and 3 smaller endothermal effects at 440°, 650° and 720°. The second analysis, neglecting H_2O^- and deducting a little jarosite, gives $KAl_3Fe_6V^{4+}_6V^{5+}_{20}O_{76} \cdot 30H_2O$.

The mineral is slightly soluble in cold acids with the formation of a pale green solution, dissolves completely in 40% KOH or NaOH. Heated in the closed tube gives off acid water. Melts at 950°.

X-ray powder data are given on two samples; the strongest lines are (kX): 10.20 (10), 3.44, 3.49 (9, 8); 2.61 (8, 7); 2.08, 2.11 (7, 3); 1.976, 1.974 (6, 4).

The mineral is black with black streak, in some cases with a brownish tint. Luster semi-metallic to dull. Hardness about 3, varying somewhat with direction. G 2.97-3.10. In transmitted light translucent only in finest splinters, showing strong pleochroism from dirty olive to deep reddish-brown with $X > Z$. Indices of refraction α' and γ' along the perfect cleavage are 2.01 to 2.06, both ± 0.005 . In reflected light gray with birefringence from gray ($R_p \sim 10-12\%$) to pale gray with bluish tint ($R_g \sim 13-15\%$). Under crossed nicols the mineral is strongly anisotropic with colors from brownish-yellow (R_p) to gray-blue (R_g). Extinction parallel to elongation and trace of cleavage, elongation negative. One perfect cleavage parallel to elongation, and another fair cleavage perpendicular to the plane of the perfect cleavage.

The mineral occurs as veinlets in fissures and as reniform crusts in carbonaceous va-

nadiferous shales, Balasauskandyk area, Kara-Tau. The crusts have radiating fibrous structure; individual grains (0.1–0.3 mm long) are platy to columnar or wedge-shaped.

The mineral is similar to the ill-defined corvusite, but differs somewhat in ratio V^{4+}/V^{5+} and in the high contents of Fe and Al.

The name is for the Kazakhstan geologist, Ivan Ivanovich Bok.

DISCUSSION—The whole corvusite group needs much more study.

Moncheite, Kotulskite

A. D. GENKIN, N. N. ZHURAVLEV AND E. M. SMIRNOVA, Moncheite, and kotulskite—new minerals—and the composition of michenerite. *Zapiski Vses. Mineralog. Obshch.* **92** (1), 33–50 (1963) (in Russian).

A preliminary report on these minerals was abstracted in *Am. Mineral.* **47**, 809–810 (1962). The minerals occur in chalcopyrite from the Monchegorsk deposits. Moncheite occurs in grains mostly hundredths of a mm, rarely up to 0.2 mm. Color steel-gray, luster metallic. White in polished section, with high reflecting power (~60%). Strongly anisotropic except in sections close to (001). Relative relief somewhat lower than that of chalcopyrite, higher than those of kotulskite and michenerite. Cleavage on (0001).

Microspectrographic analyses of 4 samples (1–15 micrograms) gave Pt 22.3, 27.4, 25.9, 30.8; Pd 7.0, 9.2, 6.9, 4.6; Bi 31.7, 29.9, 12.9, 9.2; Te 39.0, 33.5, 54.3, 55.4%, corresponding to (Pt, Pd)(Te, Bi)₂, with Te:Bi ranging from 1.34:0.66 to 1.82:0.18 and Pt:Pd from 0.50:0.29 to 0.67:0.18. A compound with very similar x-ray data was obtained from 4-component melts.

X-ray powder data are given (28 lines). The strongest lines are 2.93 (10)(101), 2.11 (8)(102), 2.02 (7)(110), 1.462 (7)(202), 1.282 (7)(211), 5.32 (6)(001), 1.664 (6)(201). The mineral is hexagonal with a 4.049 ± 0.004 , c 5.288 ± 0.005 Å. The data are close to those for synthetic PtTe₂ (Gronvold *et al.*, *Acta Chem. Scand.*, **14** (9) (1960)).

Etch reactions with HCl, HNO₃, KOH, KCN, FeCl₃ and aqua regia were negative.

Moncheite is named for the Monchegorsk deposit and Monche Tundra, in which it is located.

Kotulskite occurs in chalcopyrite, often intergrown with moncheite and michenerite. It has a creamy color in reflected light. Reflecting power 66%. Strongly anisotropic with color effects from brownish-to gray-blue. Cleavage absent. Etched by HNO₃ and FeCl₃ after 5 minutes; KOH, HgCl₂, KCN, HCl negative.

Microspectrographic analysis on 2 micrograms gave Pd 31.1, Bi 24.9, Te 44.0% (Pd:Bi:Te=1.0:0.4:1.2), corresponding to Pd(Te, Bi)₁₋₂.

Indexed x-ray powder data (18 lines) are similar to those for a phase isolated from Pt-Pd-Bi-Te melts and for synthetic PdTe and PdTe₂. The strongest lines are 3.05 (100) (101), 2.24 (90)(102), 2.09 (90)(110), 1.24 (80)(212), 1.17 (80)(—), 1.53 (70)(202), 1.33 (70)(—), 1.21 (70)(300). The mineral is hexagonal, a 4.19 ± 0.01 , c 5.67 ± 0.01 Å., but perhaps c could be twice as large.

The name is for the Russian geologist, Vladimir Klement'evich Kotul'skii, student of copper-nickel sulfide deposits.

Svitalskite

A. P. NIKOL'SKII AND A. N. EFIMOV, Geological and metallogenetic features of the eastern part of the Ukrainian shield. *Trudy V.S.E.G.E.I.* **37**, 1–164 (esp. 142–143) (1960), from an abstract by E. M. BONSHTEDT-KUPLETSKAYA. *Zapiski Vses. Mineralog. Obshch.* **92**, 213 (1963) (in Russian).

A magnesium-iron mica, occurring in plates not more than 0.5–2 mm in diameter. Analysis of a "mica concentrate" by M. M. Stukalova gave SiO₂ 56.20, TiO₂ 0.10, ZrO₂

0.03, Al₂O₃ 2.05, Fe₂O₃ 19.18, FeO 3.19, MgO 5.42, MnO trace, CaO 0.27, Na₂O 0.64, K₂O 8.26, H₂O⁺ 4.86, H₂O⁻ 0.25, sum 100.45%. The formula is given as: (K_{0.74}Na_{0.08}(H₃O)_{0.16})_{0.88}(Mg_{0.53}Fe²⁺_{0.13}Ca_{0.02})_{0.78}(Al_{0.13}Fe³⁺_{1.01}Ti_{0.01})_{1.14}(Al_{0.06}Si_{3.94})O₁₀(OH)₂. The X-ray diagram is similar to those of the phlogopite-biotite series. Bright green. Biaxial (—), α 1.625, γ 1.661, 2V small. Pleochroic, pale yellow on X, emerald-green on Z. Extinction parallel, elongation positive. The mineral replaces aegirine and riebeckite in rocks of the Krivoi Rog ore region, amounting to 15–20% of the rock.

The name is for geologist N. I. Svitl'skii.

DISCUSSION—Bonshtedt-Kupletskaya considers the name to be premature. Dr. Margaret D. Foster has kindly recalculated the analysis in conventional form; she obtains (K_{0.74}Na_{0.08}Ca_{0.02})_{0.84}(Al_{0.12}Fe³⁺_{1.01}Fe²⁺_{0.13}Mg_{0.57})_{1.90}(Al_{0.06}Si_{3.94})O_{9.73}(OH)_{2.27}. She points out that this is clearly a dioctahedral mica and that this is very close to some celadonites in composition. The name is therefore unnecessary.

Zirsite

I. D. DORFMAN, Mineralogy of pegmatites and the zone of weathering in ijolite-urtites of Yukspor Mountain, Khibina massif. *Izd. Akad. Nauk SSSR*, 1962, 1–168, esp. 125–131; from an abstract by E. M. BONSHTEDT-KUPLETSKAYA; *Zapiski Vses. Mineralog. Obshch.* 92, 214 (1963) (in Russian).

A weathering product of eudialyte. Analyses of brown (analyst E. I. Kul'chitskaya) and ash-gray (analyst A. V. Mokretsova) varieties gave, resp. SiO₂ 44.08, 43.20; TiO₂ 0.91, 0.80; ZrO₂, 17.11, 18.84; Nb₂O₅ 0.24; —; Al₂O₃ 1.30, 1.00; Fe₂O₃ 2.58, 1.47; BeO 0.02, —; MgO 0.43, 0.25; MnO 3.16, 2.89; CaO 8.46, 3.82; RE₂O₃ 1.34, 0.78; Na₂O 8.12, 5.97; K₂O 3.29, 9.34; H₂O⁻ 2.77, 3.77; H₂O⁺ 7.13, 7.40, sum 100.94, 99.53%. Gives water when heated in the closed tube. Sinters at about 900° to a dark brown mass. DTA shows endothermic breaks at 130°, 350°, 760° and 970°.

Occurs in fine aggregates. Soft, scratched by the nail. Color variable from gray to pale brown to dark brown. *n* about 1.592. X-ray amorphous. A "potassium zirsite" with K₂O 14.3, Na₂O 3.1% is also mentioned.

Considered by Dorfman to be a variety of zirfesite (*Am. Mineral.* 31, 514 (1946)). The name is for the composition.

DISCUSSION—Bonshtedt-Kupletskaya considers the name to be unnecessary and proposes to extend the name zirfesite to include this, despite the low iron content. Certainly a new name was unjustified.

Magnocolumbite

V. V. MATHIAS, L. N. ROSOVSKII, A. N. SHOSTATSKII AND N. M. KUMSKOVA, Magnocolumbite, a new mineral. *Doklady Akad. Nauk SSSR*, 148, 420–423 (1963) (in Russian).

Microchemical analysis by T. I. Stolyarova on 50 mg gave Nb₂O₅ 70.59, Ta₂O₅ 10.45, TiO₂ 4.61, WO₃ 0.86, Al₂O₃ 1.12, Fe₂O₃ 0.30, FeO 2.21, MgO 9.00, MnO 0.17, SiO₂ 0.46, sum 99.77%, corresponding to (Mg_{0.71}Fe²⁺_{0.10}Mn_{0.10}Al_{0.07}Fe³⁺_{0.01})_{0.90}(Nb_{1.68}Ta_{0.15}Ti_{0.18}W_{0.01})_{2.03}O₆, the Mg-analogue of columbite.

The mineral occurs as acicular and tabular crystals 0.1–0.2 cm with rough surfaces; faces giving good signals are rare. Goniometric measurements are given. Observed: *a* (010), *b* (210), *c* (130), *d* (100), *e* (012), *m* (131), *n* (111), *o* (201), *f* (110). X-ray powder data (by N.M.K.) are given; the strongest lines are 2.955 (10), 1.723 (9), 1.535 (9), 1.470 (9), 1.454 (9), 1.197 (9), 1.105 (9), 1.771 (8), 1.738 (8), 3.63 (7), 1.897 (7), 1.139 (7). Heating at 900° for 30 minutes gave a similar, much weaker pattern. From the x-ray pattern, the unit cell has *a* 5.02, *b* 14.17, *c* 5.65 Å, close to the published data for synthetic MgNb₂O₆.

The mineral is black to brownish-black, streak dark brown, luster semi-metallic. In fine splinters translucent brownish-red. Fracture uneven. G 5.17 (by suspension), 5.23 (x -ray). In transmitted light brown to reddish brown; pleochroism distinct, from brownish yellow on X to brownish-red on Z . Optically $(-)$, $2V \sim 80^\circ$; (measured in melts) α 2.33 ± 0.05 , γ' 2.40 ± 0.05 , $X=c$, $Y=b$. Two cleavages, $\{010\}$ and $\{100\}$. Twinning commonly observed; angle between extinction directions of twins is 25° .

The mineral occurs in a pegmatite at Kugi-Lyal, southwest Pamir, in dolomitic marbles which have been partly assimilated with the formation of cordierite, dravite, spinel, andalusite, kyanite and others. The mineral is commonly intergrown with ilmenorutile.

The name is for the composition.

Aluminobetafite

TEIKICHI KAWAI, Betafite from Kaijo (Hicheng) Manchuria. *Jour. Chem. Soc. Japan, Pure Chem. Sec.* **81**, 1219-1220 (1960), (in Japanese), from *Mineral. Abs.*, **16**, 62-63 (1963).

Dark gray crystals showing σ $\{111\}$, d $\{110\}$ and m $\{311\}$, associated with euxenite, zircon, fergusonite and allanite in mica-bearing pegmatite, were analyzed, giving (Nb, Ta)₂O₅ 11.54, TiO₂ 14.88, SnO₂ 7.94, Fe₂O₃ 2.76, Al₂O₃ 15.68, MgO 0.92, MnO 1.83, CaO 4.35, Y₂O₃+ThO₂ 1.56, UO₂ 3.63, UO₃ 18.06, H₂O 13.80, SiO₂ 3.01, sum 99.96%.

DISCUSSION—Data inadequate.

NEW DATA

Ahlfeldite, Cobaltomenite

G. GATTOW AND O. J. LIEDER, Über Ahlfeldit und Cobaltomenit. *Naturwissenschaften*, **50**, 333-334 (1963)

X -ray study was made of samples from Pacajake, Bolivia, including pale rose to brown ahlfeldite and rose-red cobaltomenite. The x -ray patterns were essentially identical with one another and with synthetic NiSeO₃·2H₂O and CoSeO₃·2H₂O. X -ray spectrographic analysis by K. H. Wedepohl showed Ni/Co=about 4:1 for ahlfeldite and about 1:1 for cobaltomenite. Presumably both minerals are solid solutions of nickel-cobalt selenites. Since cobaltomenite has priority, it is suggested that ahlfeldite should be considered to be the nickel-rich variety of cobaltomenite.

DISCUSSION—The existence of a mineral in this series with Co>Ni has not yet been proved, but it is certainly probable and it would seem more logical to keep both ahlfeldite for members with Ni>Co and cobaltomenite for those with Co>Ni.

Mauritzite

L. TOKODY, Mauritzit, ein selbständiges Mineral. *Ann. Hist.—Nat. Musei Natl. Hung.* **54**, 27-30 (1962).

The description of the mineral mauritzite was abstracted by me in *Am. Mineral.* **42**, 704 (1957). The present paper is a refutation of my comments, but no new data are given. The statement is made, "Der Mauritzit lagert sich stets auf Quarzin, bildet auf ihm einen Überzug, vermischt sich aber nie mit ihm und verwächst auch nicht innerlich mit ihm (Abb. 1)." I was therefore wrong in my statement that the mineral is intimately mixed with chalcedony ("Quartzin"). This, however, scarcely lends support to Tokody's belief that the 38.62% SiO₂ shown by the analysis does not belong to the mineral but must be deducted as "Quartzin." The absence of quartz lines is ascribed to the diffuse pattern of the "Quartzin," whose line at 4 Å. is concealed by the 4.54 Å. line of the mauritzite, but nothing is said of the absence of the strongest quartz line at 3.34 Å.

The principal argument is that the DTA pattern, showing a single endothermic break

at 150°, differs greatly from those of nontronite, griffithite, etc. This is a valid point. Nevertheless, I still believe that new data are required before the mineral can be accepted as a valid species.

Michenerite

A. D. GENKIN, N. N. ZHURAVLEV AND E. M. SMIRNOVA, Moncheite and kotulskite—new minerals—and the composition of michenerite. *Zapiski Vses. Mineralog. Obshch.* 92(1), 33–50 (1963) (in Russian).

Michenerite was described from Sudbury by Hawley and Berry in 1958 (abs. in *Am. Mineral.* 44, 207 (1959)) as probably $PdBi_2$. The mineral was found in the Monchegorsk deposit. Microspectrographic analyses on 13 and 8 micrograms gave Pd 11.7, 16.9; Pt 8.4, 9.3; Bi 42.3, 45.0; Te 37.6, 28.8%, corresponding nearly to $(Pd, Pt)BiTe$ with $Pd/Pt \sim 3$. X-ray powder data agree closely with those for the Sudbury mineral; cubic, a 6.654 ± 0.002 Å (pyrite type).

Attempts to synthesize a similar phase succeeded only when all four elements were present.

The mineral from Monchegorsk is grayish white, isotropic, reflecting power 56%. The mineral is blackened by 1:1 HNO_3 ; HCl, $FeCl_3$, KCN, and KOH negative.

DISCUSSION Re-analysis of Sudbury michenerite is desirable.

DISCREDITED MINERALS

Zeiringite (Zeyringite) = Aragonite + Aurichalcite

H. MEIXNER, Über die Aragonitabart "Zeiringit" von Oberzeiring bei Judenburg (Ob. Murtal, Steiermark).—*Fortschr. Mineral.* 40, 60 (1962) (Publ. 1963).

The sky-blue to blue-green sinter named in 1811 and variously described in the literature as nickeloan strontianite, nickeloan aragonite or strontian aragonite is found to consist of aragonite containing about 0.5% aurichalcite oriented with (010) of aurichalcite parallel to [001] of aragonite.

Calafatite = Alunite

A. HOYOS DE CASTRO AND L. J. ALFAS, Identidad de calafatita y alunita. *Inst. Invest. Geol. "Lucas Mallada," Estudios Geol.* 18 (1–2), 11–115 (1962).

Study of material from the type locality, Benhadux, Almeria, Spain, by x-ray, DTA and 2 chemical analyses shows that calafatite of Calderon (1910) is, as previously suspected (*Dana's System*, 7th Ed., 2, 559) identical with alunite. Quartz, illite and halloysite were present.

Almeriite = Natroalunite

A. HOYOS DE CASTRO AND L. J. ALFAS, The identity of almeriite with natroalunite. *Mineral Mag.* 33, 353–357 (1963).

Two specimens of almeriite (Calderon, 1910) from the type locality, Adra (Almería), Spain, have been restudied. Data obtained from chemical analyses, differential thermal analyses and x-ray powder patterns indicate that almeriite is identical with natroalunite. Small amounts of illite and a mineral of the kaolinite group also are present.

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