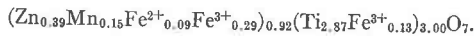# NEW MINERAL NAMES

M. Fleischer

Landauite

A. M. Portnov, L. E. Nikolaeva and T. I. Stolyarova, The new titanium mineral landauite. *Dolk. Akad. Nauk USSR* **166**, 1420–1421 (1966) (in Russian).

Analysis by T.I.S. gave TiO_2 73.46, Fe_2O_3 10.75, FeO 2.00, MnO 3.45, ZnO 9.97, sum 99.63%, corresponding to

$$(Zn_{0.39}Mn_{0.15}Fe^{2+}_{0.09}Fe^{3+}_{0.29})_{0.92}(Ti_{2.87}Fe^{3+}_{0.13})_{3.00}O_7.$$

Spectrographic analysis showed a little Ca, Mg, Nb, and Zr.

Laue and Weissenberg photographs by L.E.N. show the mineral to be monoclinic, space group Aa or $A2/a$, a 5.22, b 8.95, c 9.53 (all ± 0.05) Å., β 107°35′, Z=4. Indexed x-ray powder data are given (22 lines); the strongest lines are 2.83 (10) (031), 2.11 (9) (03̄3), 1.780 (8) (23̄3, 22̄4, 231, 222, 142), 1.582 (8) (14̄4, 30̄4), 1.429 (8) (402), 2.21 (7) (113, 004, 22̄2, 220, 21̄3), 3.36 (6) (120), 3.02 (6) (12̄2), 2.45 (6) (1.22). The x-ray pattern is unchanged by heating the mineral to 1200°.

The mineral occurs in fine-grained aggregates of irregular form up to about 1 mm in size. Color black, streak gray, luster high, semi-metallic. Opaque, except in thin splinters translucent brownish-green. No cleavage, fracture conchoidal, H 7.5, G 4.42 measured, 4.70 calculated. Very acid resistant, dissolves with difficulty in a mixture of nitric and sulfuric acid. Optically biaxial, $(-)$, α 2.373, γ 2.388 (determined in melts), 2V~60°, dispersion weak (r>v). Pleochroism strong, bottle-green on Z and X, green on Y, absorption Z>Y >X.

The minerals occurs in the Burpala alkalic massif, northern Baikal, in albite veinlets along the contact of the intrusive in massive quartz syenites and superposed on pegmatites of syenitic composition. It is associated with albite (An_{8-10}), polylithionite, brookite, strontian chabazite, monazite and bastnaesite.

The name is for the Soviet physicist, L. D. Landau.

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

Yaroslavite

M. I. Novikova, G. A. Sidorenko and M. N. Kuznetsova, Yaroslavite a new calcium aluminum fluoride. *Zapiski Vses. Mineralog. Obshch.* **95**, 39–44 (1966) (in Russian).

Microchemical analysis on 30 mg by MNK gave Al_2O_3 21.55, CaO 42.77, MgO 0.24, H_2O^+ 8.97, F 46.90, sum 120.43 − (O = F_2) 19.70 = 100.77%. Spectrographic analysis showed B 0.1, Be 0.01, Si, Fe, Ti, Y 0.001%, Cu, Yb, 0.0001%. The analysis corresponds to $Ca_{3.9}Al_{1.76}F_{10.08}$ (OH)$_2 \cdot H_2O$ or $Ca_4Al_2F_{10}$ (OH)$_2 \cdot H_2O$, differing from the previously known Ca-Al fluorides, prosopite and gearksutite.

Indexed x-ray powder data are given (59 lines); the strongest lines are: 3.445 (10) (210), 2.222 (8) (311), 3.653 (7) (011), 4.50 (6) (001), 1.454 (6) (600). 1.835 (6) (030), 2.827 (5) (300), 2.254 (5) (002), 1.964 (5) (401). The data were indexed by the Ito method, leading to an orthorhombic cell with a 8.74 ± 0.01, b 5.53 ± 0.03, c 4.51 ± 0.02 kX, Z = 4.05 = 4.

The mineral is white, transparent, luster vitreous. Cleavage pinacoidal, fracture irregular. Microhardness 264 kg/sq mm Sp. gr. 3.09. Luminesces very slightly in ultraviolet light in pale violet tones. Optically biaxial negative, 2V = +74° (measured), α 1.413, γ 1.423.

The mineral occurs in "one of the hydrothermal fluorite-rare metal deposits of Siberia"

in small amounts in the zone of oxidation of banded sellaite-tourmaline-fluorite ores. It is present in oval, spherical growths of radiating fibrous structure in cavities formed by leaching of sellaite.

The origin of the name is not stated.

Babefphite

A. S. NAZAROVA, N. N. KUZNETSOVA, AND D. P. SHASKIN, Babefphite, a barium beryllium fluoride-phosphate. *Doklady Akad. Nauk SSSR* **167**, 895–897 (1966) (in Russian).

Microchemical analysis by NNK on 150 mg gave BeO 11.63, BaO 56.50, Fe_2O_3 0.3, CaO none, P_2O_5 26.55, F 7.27, H_2O^- none, $H_2O+0.64$, sum $102.89-(0=F_2)3.05=99.84\%$. Spectrographic analysis showed Ca, Fe 0.1%, Mg 0.006%, Ti 0.003%, Mn 0.001%. The formula is $Be_5Ba_4(PO_4)_4OF_4\cdot0.3-0.4H_2O$. Thermal studies could not be made for lack of material and the role of the water is uncertain; heating at 1100° did not change the x-ray pattern. Insoluble in cold or warm HCl or HNO_3, soluble in aqua regia or HF.

X-ray study by DPS shows the mineral to be tetragonal, space group $I4/amd$, with a 4.89 ± 0.01, c 16.74 ± 0.03 Å, Z=1. Indexed x-ray powder data are given (52 lines); the strongest lines are 3.190 (10) (112), 2.163 (10) (211), 1.516 (10) (312), 2.760 (8) (105), 2.440 (7) (200), 2.033 (7) (213), 1.135 (7b) (31.10), 3.672 (6)(103), 2.109, (6)(204), 1.832 (6)(215), 1.618 (6)(301), 1.600 (6)(224), 1.345 (6)(307), 0.949 (6).

The mineral occurs as grains of isometric and rarely of flattened tabular form of sizes from 0.15×0.2 to 1×1.5 mm. No faceted crystals were found. White, luster vitreous to greasy. No cleavage was noted. Microhardness was difficult to measure because the mineral is very brittle and usually splits; approximate measurements gave 140–200 kg/sq.mm. G (meas.) 4.31, calc. from x-ray data 4.44. Optically uniaxial, (+), ω 1.629, ϵ 1.632, both ±0.002. Elongation negative. Not luminescent in cathode or infra-red rays.

The mineral was found in "a rare-metal fluorite deposit in Siberia" genetically associated with subalkalic syenites, in the eluvial deposits located directly above the ore body. It was found in heavy concentrates along with zircon, ilmenorutile, fluorite, phenakite and scheelite.

The name is for the composition. The mineral was approved before publication by the Commission on New Minerals and Mineral Names, IMA.

Sorensenite

E. I. SEMENOV, V. I. GERASSIMOVSKY, N. V. MAKSIMOVA, S. ANDERSEN AND O. V. PETER SEN, Sorensenite, a new sodium-beryllium-tin-silicate from the Ilimaussaq intrusion, South Greenland. *Medd. Grønland* **181**, (1), 1–19 (1965).

Analyses by M. E. Kazakova from Nakalaq and by M. Mouritzen from Kvanefjeld gave, respectively, SiO_2 49.73, 50.41; SnO_2 20.07, 18.40; Nb_2O_5 0.75, 1.36; Fe_2O_3 0.04, tr.,; BeO 8.02, 7.43; Na_2O 15.95, 17.21; K_2O 0.34, 0.08; H_2O 5.24, 5.01, sum 100.14, 99.90%. Spectrographic analysis by N. V. Lizunov also showed traces of Ti, Mn, Mg, Ca, Al, Zr, La, Pb and Cu. The analyses correspond to the formula

$$Na_4SnBe_2Si_6O_{16}(OH)_4.$$

A DTA curve shows an endothermal reaction at 500–600°, corresponding to the loss of 4.3% H_2O on a TGA curve, and another at 920° (melting of mineral). The infra-red absorption curve shows distinct maxima at 3350 and 1440 cm^{-1}, indicating the presence of hydroxyl.

X-ray study showed the mineral to be monoclinic (Laue class $2/m$), space group $C2/c$ or Cc, a 18.58 ± 0.07, b 7.45 ± 0.03, c 12.05 ± 0.05 Å, beta 98°09′, Z=4. X-ray powder data are given for a sample from Nakalaq (Cr, K_α, V filter); 76 lines, strongest 2.918 (10), 3.41 (8.5),

2.960 (8.5), 3.06 (7.5), 6.31 (6), and for a sample from Kvanefjeld (Fe, K_α, Mn filter); 37 lines, strongest 2.92 (10), 2.87 (10), 3.36 (9), 6.25 (8), 3.83 (5), 3.01 (5), 2.64 (5), 1.70 (5, broad).

Sorensenite occurs in elongated tabular or acicular crystals up to $10 \times 1 \times 1$ cm in size. Cleavage distinct in 2 directions at $63 \pm 2°$. Colorless to pinkish, altering to milky white. Luster fine silky. Brittle. Microhardness 572–658, average 616 kg/mm² (=5.5 Mohs). G 2.9 meas., 2.90 calc. from x-ray data. Optically biaxial, (−) 2V, varying from small to 75°; ns (Kvanefjeld) at 5893 Å, α 1.576, β 1.581, γ 1.584 (all ±0.001), 2V calc. $76 \pm 5°$; ns (Nakalag) α 1.579, β 1.585, γ 1.586 (all ±0.001), 2V calc. 43°. Strong inclined dispersion with gray to anomalous yellow-brown and blue interference colors. Optic plane is parallel to (010).

Sorensenite occurs in the Ilimaussaq alkalic intrusive, south Greenland, at Nakalaq in hydrothermal veins associated with analcime, microcline, sodalite, neptunite and aegirine, and at Kvanefjeld in coarse-grained rock containing microcline, nepheline, analcime and arfvedsonite. Other minerals present include neptunite, apatite, sphalerite, and the Be minerals beryllite and chkalovite. The mineral alters readily on exposure.

The name is for Professor Henning Sørensen, Univ. Copenhagen. It was approved before publication by the Commission on New Minerals and Mineral Names, IMA.

Vanuranylite

E. Z. BURYANOVA, G. S. STROKOVA AND V. A. SHITOV, Vanuranylite, a new mineral. *Zapiski Vses. Mineralog. Obshch.* **94**, 437–443 (1965) (in Russian).

Analysis of the mineral by Yu. N. Knipovich gave UO_3 58.33, V_2O_5 18.25, Fe_2O_3 0.53, PbO 0.59, BaO 2.96, CaO 0.53, K_2O 0.38, H_2O^+ 6.23, H_2O^- 4.59, insol. residue (mainly quartz and a little hydromica) 7.00, sum 99.39%. Spectrographic analyses also showed traces of Mg, Al, Tl, and Cu. In calculating the formula, there is a deficiency of cations, and the presence of hydronium ions is postulated to give the formula (neglecting the Fe):

$$[(H_3O)_{1.20}Ba_{0.19}Ca_{0.09}K_{0.08}Pb_{0.03}]_{1.59}(UO_2)_2V_2O_8 \cdot 4.2H_2O$$
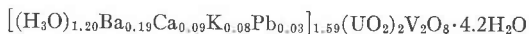
a hydronium member of the carnotite-tyuyamunite-francevillite group.

The DTA curve shows a large endothermic effect at 90° and smaller ones at 210–220° and 870°. The mineral fuses easily to a dark red liquid. The pH of a suspension of the minerals is 7.2. Easily soluble in acids.

The x-ray pattern was weak. The strongest lines are 5.00 (8) (004, 201), 3.23 (8) (221, 205, 024, 310), 2.11 (6) (423), 1.97 (6)(240). No lines above 7.00 could be measured because of strong hazing. Electron diffraction photographs indicate a unit cell with a 10.49, b 8.37, c 20.30 Å, β (90°) (?), close to published data for tyuyamunite. Space group and symmetry not determined.
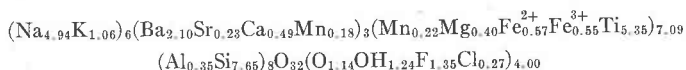
The mineral occurs as very small crystals (0.03–0.00 mm) of platy pseudohexagonal habit, occuring in association with uranophane and soddyite as fine crusts along fractures in sandstones in the oxidation zone. Locality is not given. Color intense yellow, hardness about 2, G 3.644, cleavage (001) very perfect. Does not luminesce in ultraviolet light. Optically biaxial, (−), with small 2V, α less than 1.710, β between 1.92 and 1.95, γ above 1.95. The acute bisectrix is perpendicular to the cleavage. Pleochroism weak, Z and Y yellow, X pale yellow. Shows aggregate polarization and highly anomalous interference colors.

DISCUSSION:—Further chemical and physical study (infra-red, for example) are needed to verify the proposed formula. The name is too close to vanalite (*Am. Mineral.* **48**, 1180 (1963)) and vanuralite (*Am. Mineral.* **48**, 1415 (1963)).

Barytolamprophyllite

TZE-CHUNG PENG AND CHIEN-HUNG CHANG, New varieties of lamprophyllite-barytolam-
prophyllite and orthorhombic lamprophyllite. *Scientia Sinica* 14, 1827–1840 (1965) (in
English).

Analysis by Po-huei King and Tsao-wu Chen gave SiO_2 28.53, Al_2O_3 1.12, TiO_2 26.60,
Fe_2O_3 2.72, FeO 2.63, MgO 1.00, MnO 1.75, CaO 1.70, Na_2O 9.52, K_2O 3.10, BaO 17.24,
SrO 1.47, F 1.60, Cl 0.51, H_2O^+ 0.70, P_2O_5 0.06, sum $100.12 - (0 = F_2, Cl_2)$ $0.78 = 99.34\%$.
Spectrographic analysis also showed Sn~50, V~30, Zr~30 ppm. This corresponds to the
formula:

$$(Na_{4.94}K_{1.06})_6(Ba_{2.10}Sr_{0.23}Ca_{0.49}Mn_{0.18})_3(Mn_{0.22}Mg_{0.40}Fe^{2+}_{0.57}Fe^{3+}_{0.55}Ti_{5.35})_{7.09}$$
$$(Al_{0.35}Si_{7.65})_8O_{32}(O_{1.14}OH_{1.24}F_{1.35}Cl_{0.27})_{4.00}$$

It is therefore the Ba analogue of lamprophyllite; the literature shows many analyses of
barian lamprophyllites.

Weissenberg photographs show the mineral to be monoclinic, space group C_2 (perhaps
Cm or C_2/n), with a 19.96 ± 0.06, b 7.07 ± 0.02, c 5.43 ± 0.01-Å, β $96°30'$, $Z = 1$. Lamprophyl-
lite had nearly the same b, c, and β, but a 19.44 ± 0.07 Å. X-ray powder data are given (20
lines); the strongest lines are 2.795 (10), 2.149 (9), 1.479 (9), 1.598 (8), 3.440 (7), 1.786 (7).
Weissenberg photographs of twinned lamprophyllite indicate spots caused by an inter-
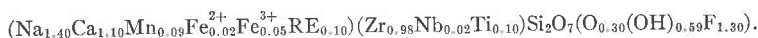grown orthorhombic dimorph.

The mineral is dark brown, with vitreous luster. Cleavages {100} perfect, {011} less
so, {010} imperfect G 3.62–3.66. H 2–3 brittle. Optically biaxial, $(+)$, 2V 29–30°, ns α
1.742–1.743, β 1.754 (calc.), γ 1.776–1.778, c:Z$=6-7°$. Pleochroism strong, Z brown, X
light yellow, absorption $Z > Y > X$, dispersion distinct, $r > v$.

The mineral occurs in ijolite, Lovozero intrusive, Kola Peninsula, USSR, as foliated
aggregates of cleavage rhombs with angles of 128° and 104°. Associated minerals are
aegirine, nepheline, K feldspar, cancrinite and apatite.

Orthorhombic Lavenite

A. M. PORTNOV, V. I. SIMONOV AND G. P. SINYUGINA, *Dokl. Akad. Nauk S.S.S.R.* 166,
1199–1202 (1966) (in Russian)

Analysis by G. P. Sinyugina gave SiO_2 32.02, TiO_2 1.88, ZrO_2 29.00, (Nb, Ta)$_2O_5$ 0.68,
Rare Earth Oxides 1.20, Al_2O_3 1.09, Fe_2O_3 0.92, FeO 0.36, MnO 1.52, CaO 14.80, Na_2O
11.00, K_2O 0.09, H_2O^+ 1.29, H_2O^- 0.15, F 6.00, $-(0 \equiv F_2) = 2.52$, sum 99.48%. Analysis of
rare earths shows the following distribution: $La_{0.7}Ce_{1.4}Eu_{0.3}Gd_{0.9}Er_{0.3}Tm_{0.3}Yb_{3.3}Y_{92.1}$;
quantitative spectrographic analysis indicates 0.52% HfO_2. The chemical analysis, cor-
rected for the presence of minor albite and nepheline, and calculated on the basis of Si
$=2.00$, corresponds to the following formula:

$$(Na_{1.40}Ca_{1.10}Mn_{0.09}Fe^{2+}_{0.02}Fe^{3+}_{0.05}RE_{0.10})(Zr_{0.98}Nb_{0.02}Ti_{0.10})Si_2O_7(O_{0.30}(OH)_{0.59}F_{1.30}).$$

Orthorhombic with a 21.01 ± 0.10, b 10.05 ± 0.05, and c 7.23 ± 0.03 Å. Strongest x-ray
powder diffraction lines at 2.91 (10), 2.79 (9), 3.25 (6), 4.00 (5). Elongated crystals tabular
on (100), cleavage and polysynthetic twinning on (100). G 3.25 (meas.) and 3.27 (calc.). 6.
ns α 1.645, β 1.652, γ 1.656; $-2V = -86°$. Positive elongation; weak dispersion $r > v$. Pale
yellow, vitreous. Transparent in fine fragments; colorless in thin section.

The mineral occurs in a zone of nephelinization in massive quartz syenite at the contact
of the Burpala alkalic massif in northern Baikal.

The name is for the crystallography and the mineral lavenite, which it resembles in composition and x-ray diffraction pattern.

DISCUSSION:—This new name has been given on the basis of the mineral having an orthorhombic cell, in contrast to other minerals of the wöhlerite-lavenite group, which are all monoclinic or triclinic. Nickel *et al.* (1958), however, have shown that niocalite, one of the minerals of this group, gives an apparent orthorhombic cell similar to that reported by the authors if a twinned crystal is used in place of a true single crystal. Since orthorhombic lavenite is reported to be polysynthetically twinned, the reviewer considers that this situation may also account for the orthorhombic cell reported by the authors, especially since no space group or systematic extinctions are reported, and the powder pattern has not been indexed. Until this possibility has been eliminated, the reviewer considers it premature to adopt a new varietal name.

Ref. E. H. NICKEL, J. F. ROWLAND AND J. A. MAXWELL (1958) The composition and crystallography of niocalite. *Can. Mineral.* **6**, 264–272.

<div align="right">E. H. NICKEL</div>

Volkovskite

V. V. KONDRAT'EVA, I. V. OSTROVSKAYA AND YA. YA. YARZHEMSKII, A new hydrous calcium borate, volkovskite: *Zapiski Vses. Mineralog. Obshch.* **95**, 45–50 (1966) (in Russian; abstract based on an English translation by M. Fleischer).

Analysis gave CaO 14.12, SrO 4.06, B_2O_3 59.80, H_2O 16.30; sum 94.28%. Two separate samples yielded, respectively, K_2O 2.42, Na_2O 0.14, Cl 1.98, and K_2O 3.17. Thus, the deficiency of 5.72% is referred to admixed KCl, and the analysis recalculated to 100% gives CaO 14.98, SrO 4.31, B_2O_3 63.42, H_2O 17.29, corresponding to the formula (Ca, Sr)$0.3B_2O_3 \cdot 3H_2O$ (analysts, L. S. Abramova, G. E. Kalenchuk, N. A. Kas'yanova, N. B. Nikitina, and R. A. Telesheva). Semiquantitative spectrographic analysis by A. S. Dudykina gave (in %): Sr 1–3, Mg 0.1–0.6, Na 0.1–0.3, La 0.04–0.06; Fe, Be, Sc, Ni 0.001; Al 0.004–0.006; Mn 0.001–0.003; Cu 4–6 ppm. Thermal analysis by K. V. Kostryukova showed one endothermal effect at 380° due to loss of H_2O.

Single-crystal x-ray analysis showed that volkovskite is monoclinic, space group $P2_1$ (piezoelectric), a 6.57, b 48.30, c 6.51Å; β 119°05′; Z=8. Calculated and observed x-ray powder data are in excellent agreement. Most intense x-ray lines are 8.1(10), 3.28(9), 2.63(8).

Colorless (with vitreous luster) plates, up to $1.5 \times 0.5 \times 0.05$ mm thick, with perfect cleavage on (010), parallel to plates. Secondary good cleavage on (001); material brittle and crushes to small splinters. G 2.29-2.34 (meas.), [2.39 calc., C.L.C.]. Biaxial (+), α 1.536, β 1.539, γ 1.603; Y=b, Z$\wedge a$=31°; 2V(calc.)=+24°.

Plates of elongated outline with angles near 60° and 120°, sometimes rhomb-like, dispersed in mass of hard salt with anhydrite, sylvite, hilgardite and boracite (no locality given).

The mineral belongs to the series $MO \cdot 3B_2O_3 \cdot xH_2O$ (M=Ca^{2+}, Sr^{2+}, Mg^{2+}) and is most closely related to p-veatchite in all its physical properties, including infrared absorption spectrum.

Named for A. I. Volkovskaya, petrographer, who first found the mineral in water-insoluble residues from drill cores.

It is not clear whether this is the same as the incompletely described borate volkovite (*Am. Mineral.* **40**, 551–552, 1955), for which the optical and x-ray data are somewhat different.

<div align="right">C. L. CHRIST</div>

Malayaite

J. B. ALEXANDER AND B. H. FLINTER, A note on varlamoffite and associated minerals from the Batang Padang district, Perak, Malaya, Malaysia. *Mineral. Mag.* **35,** 622–627 (1965)

Brief mention is made of the mineral malayaite, said to have a composition of $CaSnSiO_5$. Data on this mineral were abstracted earlier by Fleischer (*Am. Mineral.* **46,** 768–769, 1961). The only other new information given is that the mineral is isostructural with sphene. The full description will be published shortly.

DISCUSSION:—It is regrettable that mineralogists are still naming minerals prior to the publication of complete descriptions.

J. A. MANDARINO

Unnamed Ruthenium Sulfide

E. F. STUMPFL AND A. M. CLARK, Electron-probe microanalysis of gold-platinoid concentrates from southeast Borneo. *Trans. Inst. Mining Metall.,* **74,** 933–46 (1965)

Electron probe analysis gave Ru 33.0, Os 20.9, Ir 11.4, S 21.4% "is far from satisfactory," but suggest the composition (Ru, Os, Ir)S_2, related to laurite. X-ray powder data are similar to those for laurite, but show some distinct differences and the anisotropy suggests a lower symmetry than cubic, perhaps due to the presence of Os and Ir. The strongest x-ray lines are 1.700 (100), 2.16 (80), 2.07 (80), 1.228 (60), 1.082 (60), 2.80 (50), 3.22 (40), 1.984 (40), 1.449 (40).

Color gray, reflectivity high, about 60–65% in white light. Under crossed polars in oil immersion, shows weak anisotropy with colors from dark golden-yellow to dark bluish-gray. Some grains show distinct twinning. Vickers hardness values vary, due to anisotropy, from 1270–1450, av. 1380, at 100 g load.

The mineral occurs in concentrates from placers, Riam Kanan River, southeast Borneo.

Hydromolysite

Name given by A. S. Povarennykh in the Russian translation of Strunz' *Mineralogische Tabellen* to the unnamed $FeCl_3 \cdot 6H_2O$ (see *Am. Mineral.* **44,** 908 (1959)). From an abstract by E. M. Bonshtedt-Kupletskaya in *Zapiski Vses. Mineralog. Obshch.* **94,** 189 (1965).

Ottemannite, Berndtite

G. H. MOH, Das binäre System Zinn-Schwefel und seine Minerale (abs.) *Fortschr. Mineral.* **42,** 211 (1966).

Two minerals previously described without names (see *Am. Mineral.* **50,** 2107 (1965)) are named: ottemannite for orthorhombic Sn_2S_3, and berndtite for hexagonal SnS_2.

NEW DATA

Samiresite

S. A. GORZHEVSKAYA, G. P. LUGOVSKOI AND G. A. SIDORENKO, The first find of samiresite in the Soviet Union. *Doklady Akad. Nauk SSSR,* **162,** 1148–1151 (1965) (in Russian).

Samiresite occurs in granite pegmatites cutting granite at an unspecified locality in Siberia. Pegmatites in riebeckite granite contain accessory samiresite and lead and zinc varieties of riebeckite and ilmenite. Pegmatites in alaskaite granite contain accessory fluorite, pyrochlore, lead and zinc-free ilmenite but with galena and sphalerite.

Samiresite occurs as brown grains and octahedra up to 2 cm diameter. Isotropic, index

of refraction 2.00–2.075, colorless to golden brown in transmitted light, G 3.6–4.5. The mineral is metamict but after ignition of some samples to 300° and others to 500° C. a non-cubic x-ray diffraction pattern is produced. This pattern is tetragonal ($a=6.38\pm0.02$, $c=6.06\pm0.02$ Å) and bears a close resemblance to the zircon pattern. Strongest lines are (in Å): 3.18 (10) (200), 4.00 (9) (011), 2.49 (9) (112), 1.835 (8) (113), 1.360 (4) (024). The authors maintain that synthetic UTa_2O_8 of Gasperin (*Bull. Soc. fr. Min.*, **83**, 1–21) is isostructural and best indexed with tetragonal elements. A second group of samples crystallize during the exothermic reaction at 655–690° C yielding the tetragonal phase as well as a cubic phase with $a=10.37$–10.39 Å. After lengthy heating at 1200° C, the cubic phase breaks down to a new cubic phase with $a=10.31$–10.32 Å and a rutile-type phase. Samiresite from the type locality in Madagascar behaves in a manner similar to the second group.

Three complete new chemical analyses are given with major constituents Nb_2O_5 37.20, 40.09, 40.74; U_3O_8 15.43, 12.69, 16.05; TiO_2 10.18, 5.51, 8.06; RE 9.83, 6.01, 7.00; PbO 4.02, 16.83, 0.15%. Silica (up to 5.02%) is claimed to be present as SiO_4 groups within the structure on the basis of infrared absorption bands at 1000–1200 cm^{-1}. Ce and Nd are the most abundant rare earth elements with Ce>Nd. Water is of three types as shown by DTA endothermic maxima: adsorbed water (185–200° C), structural water in vacant cation sites (430–460° C) and hydroxyl (1100–1150° C). The formula can, by analogy to UTa_2O_8, be written as $A_{1-x}B_2X_{8-y}\cdot(x\text{-}y)H_2O$ with A representing large cations (U, TR, Pb etc.), B representing smaller cations (Nb, Ti, Si etc.), X anions (O, F, OH) and x and y defect sites in the structure. A formula derived from the lead-poor analysis gave (on the basis of $B=2.00$) $x=0.50$ and $y=2.41$. In the calculation all iron was taken as Fe_2O_3, uranium as UO_2 (despite the fact that an identical value was previously listed as U_3O_8 and uranium in UTa_2O_8 must be present as U^{6+}). It is inferred that the name samiresite be restricted to a niobotantalate that on ignition produces a phase isostructural with synthetic UTa_2O_8.

DISCUSSION:—Ignition of this metamict mineral with cubic morphology would appear to produce a synthetic tetragonal phase that has not been recorded in nature and for this reason the name seems to be unnecessary. The analogy of UTa_2O_8 to $A_{1-x}[NbO_8]_{-y}$ and to $ZrSiO_4$ is itself somewhat doubtful. Nb is probably in 6-fold coordination, Si in 4-fold coordination. For the same reason 5 per cent SiO_2 in the structure of a niobate is suspect. It is regrettable that the name is not defined on a chemical basis—one of the analyses shows more Pb than any other cation in the A position and as such this material would certainly seem to warrant species status.

D. D. HOGARTH

DISCREDITED MINERALS

Karamsinite (= Tremolite)

ATSO VORMA AND PENTTI OJANPERÄ, A restudy of karamsinite. *Bull. Comm. Géol. Finlande* **218**, 149–152 (1965)

Karamsinite (*Dana's System* v. 6, p. 1039 (1892)) was described by Ramelsberg in 1860 on the basis of an oral report by A. E. Nordenskiöld as a potassium calcium magnesium silicate from Finland. A sample from the Nordenskiöld collection, Univ. of Helsinki, labelled Karamsins quarry, Nizhnyi Tagilsk, Urals, was found by optical and x-ray study to be tremolite with some malachite and Fe oxides. A new analysis is that of tremolite and corresponds fairly well with the original, except that MgO is 21.9 instead of 6.86%, and K_2O is 0.3 instead of 10.08%. A second sample labelled karamsinite from Nizhnyi Tagilsk proved to be palygorskite.

The name karamsinite should be dropped.

Adelpholite (=Samarskite)

ATSO VORMA AND VÄINÖ HOFFREN, On adelpholite and its relation to the minerals of the yttrotantalite-samarskite series: *Bull. Comm. Géol. Finlande* **218**, 201–14 (1965)

X-ray fluorescence analysis and *x*-ray powder data on unheated and heated material collected from the type locality, Laurinmäki, Torro, Tammela, Finland, showed it to be samarskite. Another sample from the collection of the Univ. of Helsinki, labelled adelpholite, locality unknown, corresponded more closely to yttrotantalite.

The name adelpholite should be dropped.

CORRECTION

Barringtonite

In my abstract of the new mineral barringtonite (*Am. Mineral.* **50**, 2103–2104 (1965)) the inter-axial angle γ was given as 108°72'. Dr. L. G. Berry has kindly pointed out that a typographical error appeared in the original description. Dr. Nasher informed him that the correct figure is 108° 42'.

J. A. MANDARINO