NEW MINERAL NAMES*

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Arakiite*


Electron microprobe analysis gave MgO 12.76, MnO 34.32, ZnO 4.48, As2O3 6.56 (partitioned for 1 As3+ per formula unit), calc = 3.41 g/cm3 for the empirical formula and cally biaxial negative, approved by the Commission on New Minerals and Mineral Names, International Mineralogical Association.

Chromceladonite*

The mineral occurs as rock-forming aggregates of laminae, to 1 cm, and as spherulites and veinlets. Electron microprobe and wet-chemical analyses gave K2O 10.42, Na2O 0.14, Li2O 0.13, MgO 7.82, MnO 0.19, ZnO 0.22, FeO 0.73, Fe2O3 0.58, V2O5 1.79, Cr2O3 17.01, Al2O3 3.25, TiO2 0.16, SiO2 53.20, H2O+ 3.38, F 0.57, O ≡ F 0.24, sum 99.35 wt%, corresponding to (K0.95Na0.02)12(Fe3+0.01Ti0.03)Cr2(Fe2+0.11Mg0.59Zn0.52Al0.07)Σ9[(Si15.78Al0.77Fe0.16Ti0.05)Σ32O68(OH)1.60F0.23O0.13]Σ22.68 ideally KCrMg[Si4O10](OH)2. Green color, pale green streak, vitreous to silky luster, H = 1–2, perfect [001] cleavage, flexible, Dmeas = 2.90, Dcalc = 2.95 g/cm3 for Z = 2. The X-ray pattern is similar to that of ferroceladonite. Optically biaxial negative, α = 1.605(1), β = 1.648(1), γ = 1.654(1), 2Vmeas = 12(1)°, a ≡ c < 5°; pleochroic, with X = pale green to colorless, Y, Z = green. The X-ray powder pattern (diffractometer, CuKα radiation) has strongest lines at 4.54(93,020), 3.638(64,112), 3.097(51,112), 2.588(100,131), 2.409(87,132), and 1.518 Å (58,331). Rietveld refinement (R = 0.054) indicated monoclinic symmetry, space group C2, 1M polytype, a = 5.267(1), b = 9.101(2), c = 10.162(3) Å, β = 100.67(2)°.

The mineral, which is the Cr analog of celadonite, is metamict-hydrothermal and is associated with dolomite, quartz, roscoeelite, chromphylite, calcite, hematite, uraninite, and other minerals at the Padma uranium-vanadium deposit, southern Karelia, Russia. Other occurrences of apparently the same mineral are known (e.g., Am. Mineral., 70, p. 219, 1985). Type material is in the Fersman Mineralogical Museum, Moscow, Russia. J.L.J.

Juanitaite*

The mineral occurs at the Gold Hill mine, western Tooele County, Utah, as square olive-green and grass-green plates, 1 µm thick and to 150 µm across, in sheaf-like subparallel aggregates and rosettes. The crystals are platy on {001} and are
bounded by (110), with modification of the resulting square by (310) to give ‘rounded’ corners. Resinous to dull luster, translucent, pale greenish yellow streak, H = ~1, flexible, no fracture observed, nonfluorescent, perfect (001) and (110) cleavages, good on (100); \(D_{\text{meas}} = 3.61(1)\), \(D_{\text{calc}} = 3.56 \text{ g/cm}^3\) for Z = 4. Uniaxial negative, \(\alpha = 1.785(5)\), \(\varepsilon = 1.705(5)\), \(\rho =\) olive brown, \(E =\) olive green; subparallel aggregates are bi-axial, \(2V = ~20^\circ\). Electron microprobe analysis gave CaO 8.64, FeO 2.32, CuO 35.97, Bi2O5 14.82, As2O5 29.35, H2O by difference 8.90, sum 100 wt\%, corresponding to (Cu2.99Ca2.99Fe0.52Bi0.99As0.97O1.99)2.22H2O, ideally (Cu2Ca4Fe50Bi2As0.97)2H2O. Bands at 3440 and 1600 cm\(^{-1}\) in the infrared spectrum confirm the presence of H2O. Single-crystal X-ray study indicated tetragonal symmetry, space group \(P4_1/nm\); \(a = 9.961(3), c = 29.19(2)\) Å as refined from a Debye–Scherrer powder pattern (114 mm, CuK\(\alpha\) radiation) with strongest lines of 14.6(100,002), 7.04(50,110), 6.34(70,112), 5.07(50,114), 3.146(60,310,303), and 2.535(50,228).

The mineral formed by oxidation of tennantite, chalcopyrite, pyriformite, and are associated with hongshiite and ferroan platinum in Au-Pt-bearing placer deposits of the Chybyda River (a tributary of the Vilyui River) and the Chara River (a tributary of the Lena River), in eastern Siberia, Russia. Electron microprobe analysis gave Pt 68.75 (67.82–71.23), Rh 0.16 (0.00–0.38), Pd 2.16 (1.80–2.49), Fe 0.14 (0.13–

**Discussion.** Total formula Na alone sums to 2.51, which is difficult to reconcile with the simplified formula. \textit{J.L.J.}

**Remondite-(La)***


The mineral occurs as bright orange-yellow, rough-prismatic segregations up to 0.5 x 0.8 x 2 mm, consisting of irregular grains which are ≤5 μm. Translucent, vitreous luster, brittle, white streak, no cleavage, conchooidal fracture, \(H = ~3\), \(D_{\text{meas}} = 3.5(1), D_{\text{calc}} = 3.57 \text{ g/cm}^3\) for Z = 2. Optically biaxial negative, \(\alpha = 1.615(2), \beta = 1.619(3), \gamma = 1.622(3), 2V_{\text{calc}} = 80(10), 2V_{\text{abs}} = 85(5)\)°, colorless, nonpleochroic. Electron microprobe analysis gave Na2O 15.48, K2O 0.58, CaO 5.13, SrO 2.93, BaO 0.18, La2O3 19.75, Ce2O3 16.67, Pr2O3 0.99, Nd2O3 2.27, Sm2O3 0.37, ThO2 0.13, CO3 (calc) 32.97, sum 98.66 wt%, corresponding to Na2.87(La0.805Ce0.68Ca0.61Na0.465Sr0.18Nd0.09K0.08Pr0.04Th0.03Sm0.01Pb0.01)2.58(OH,CO3)5. Bands at 3440 and 1600 cm\(^{-1}\) in the IR spectrum are similar to those of remondite-(Ce). Indexing of the powder pattern (57 mm Debye–Scherer) gave monoclinic symmetry, probable space group \(P2_1\), \(a = 10.49(1), b = 6.417(4), c = 10.50(1)\) Å, \(\beta = 119.8(1)\)°. Strongest lines are 3.70(70,012), 3.036(90,112,211,31T), 2.623(100, 204,022,420,220), 2.143(80,014,410), 2.041(60,222), and 1.939(60,032,230).

The mineral, which is the La analog of remondite-(Ce), is late-stage hydrothermal in a small, hyperagpaitic pegmatite at Mount Koashva, Khbinsy alkaline massif, Kola Peninsula, Russia. Among the associated minerals are aegirine, cancrinite, sodalite, microcline, thulite, natrolite, pectolite, lomonosovite, barytolamprophyllite, natron, thermonatrite, and catapleiite. Type material is in the Fersman Mineralogical Museum, Moscow, Russia. \textit{J.L.J.}

**PtCu1-xSb x**


The mineral occurs as well-rounded grains that are <0.2 mm and are associated with hongshiite and ferroan platinum in Au-Pt-bearing placer deposits of the Chybyda River (a tributary of the Vilyui River) and the Chara River (a tributary of the Lena River), in eastern Siberia, Russia. Electron microprobe analyses of six grains of the mineral from Chybyda, and of three from Chara, gave averages and ranges of Pt 68.75 (67.82–71.23), Rh 0.16 (0.00–0.38), Pd 2.16 (1.80–2.49), Fe 0.14 (0.13–
0.17), Cu 18.68 (18.28–19.55), Sb 8.49 (7.80–9.08), As 0.43 (0.06–0.85), sum 88.81 (89.02–100.04) wt%, and Pt 69.43 (69.10–69.96), Rh 0.32 (0.24–0.44), Pd 0.96 (0.94–0.99), Fe 2.13 (1.65–2.51), Cu 18.16 (17.81–18.56), Sb 7.08 (6.83–7.48), As 0.41 (0.11–0.61), sum 98.50 (98.15–99.05) wt%, corresponding to PtCu₉Sb₁₂ and PtCu₁₀Sb₁₇, respectively. The suggested formula is PtCu₁₉Sb₂₁, wherein 0.15 < x < 0.25. Grayish white color, opaque, brittle, VHN₅ₐ₅ = 359–567 for grains from Chybyda, and 550–567 for grains from Chara. White with a yellowish tint in reflected light, weakly anisotropic. Reflectance percentages (standard not stated) are given in 20 nm steps from 440–700 nm; representative Rₗ and Rₘ values are 56.7, 52.2 (480), 57.8, 52.8 (540), 60.0, 57.1 (600), and 59.3, 58.8 (660). Diffraction lines given for the X-ray powder pattern (57 mm Gandolfi camera, FeKα radiation) are 2.230(100), 2.026(15), 1.710(5), 1.412(40), 1.262(20), 1.195(40), and 1.032 Å (10). On the basis of the mineralogical observations and the phase relations in the Pt-Cu-Sb system, a high-temperature limited solid solution of Pt, Cu, and Sb is interpreted to have yielded the PtCu₉Sb₁₂ + hongshite paraergasis by ordering at lower temperatures. V.A.K.

Ag₅Cu₃Bi₃Pb(S,Se)₁₁


The Bi minerals occur as 0.001–0.35 mm grains in epithermal Au – base metal ores at the Beregovo and Muzievo deposits in the Beregovo ore field, Transcarpathia, Ukraine. The minerals are associated with galena, chalcopyrite, and fine-grained dense quartz, and replaced early-formed sulfide aggregates. Electron microprobe data indicate that the Bi-rich assemblage probably consists of bismuthinite, matildite, PbSₓ, sulfosalts of the ouarayite-mummeite and gostavite-lilianite series, treasurite(?), Ag-rich soucekite(?), Pb-rich benjaminite(?), berryrite(?), gladite-krupkaite, and an unnamed mineral suggested to be Ag₅Cu₃Bi₃Pb(S,Se)₁₁. Electron microprobe analysis of two grains of the unnamed mineral gave Ag 26.64, 26.86, Cu 2.70, 2.72, Pb 1.18, 1.19, sum 99.10, 99.10 wt%. Other properties are not given.

Discussion. For (S,Se) = 11, the two analyses correspond to Ag₅Cu₃Bi₃Pb₀₁₆Sb₁₂ (S₁₀₋₁₅Sb₂ₓ) and Ag₅Cu₃Bi₃Pb₀₁₆Sb₁₂ (S₁₀₋₁₅Sb₂ₓ), respectively. V.A.K.

(Tl,Ag)₉Pb₂(As,Sb)₆S₁₃


The mean of three listed electron microprobe analyses is Tl 6.51, Ag 2.10, Pb 31.34, As 22.36, Sb 12.86, S 25.11, sum 100.29 wt%, corresponding to (Tl₁₋₁ₓAgₓ)₉Pb₂(As,Sb)₆S₁₃, ideally (Tl₂₋₉Ag₉)₉Pb₂(As,Sb)₆S₁₃. Creamy yellow in reflected light, more strongly pleochroic, anisotropic, and lighter color than hutchinsonite. The mineral occurs as anhedral grains in orpiment and hutchinsonite in altered tuff breccia within Kuroko massive sulfide ore. J.L.L.J.

Monoclinic SiO₂


Wedge-shaped silica grains in Shergotty are 150–900 μm, each consisting of mosaics of domains, 10–60 μm in diameter, that display orthogonal sets of lamellae. An X-ray pattern of a silica grain gave 18 lines, 15 of which could be indexed on a monoclinic, baddelyite-like structure with a = 4.375(1), b = 4.584(1), c = 4.708(1) Å, β = 99.97(3)°, D_cal = 4.30(2) g/cm³. Strongest lines are 3.260(2011), 2.767(1011), 2.459(3111), 1.950(26210), and 1.629(24022). The three unindexed lines are interpreted as belonging to stishovite and the orthorhombic α-PbO₂ polymorph of silica.

Discussion. The mineral differs from the synthetic high-pressure, monoclinic phase-II of cristobalite described by Dove et al. (Mineral. Mag., 64, 569–576, 2000), which has a = 8.3780, b = 4.6018, c = 9.0568 Å, β = 124.949°, space group P2₁/c. J.L.L.J.

Ca₅Ce₄(SiO₄)₉


The minerals occurs as isometric [equidimensional?] grains, to 75 × 120 mm, in the early-formed, silicate-mineral portion of the phoscorite-carbonatite Loolekop complex in South Africa. One of 10 listed electron microprobe analyses has SiO₂ 22.0, La₂O₃ 9.9, Ce₂O₃ 29.2, Pr₂O₃ 4.7, Nd₂O₃ 16.9, Sm₂O₃ 3.0, Gd₂O₃ 1.6, CaO 10.2, P₂O₅ 1.9, sum 99.4 wt%, corresponding to Ca₅Ce₄(SiO₄)₉ Nd₁₃La₉Pr₁₁₁₄Sm₉Gd₂O₃·, ideally Ca₅Ce₄Si₇O₁₈.

Discussion. No X-ray data are given, but the mineral may be the Ce analog of synthetic hexagonal Ca₃La₆(SiO₄)₆, as in PDF 27-78. J.L.L.J.

K₃Li₂Zr₂Si₆O₁₉


The mineral, which has a quartz and aegirine association in pegmatites at Dara-i-Pioz, occurs as tabular crystals, to 5 mm, showing {001} and {100}. The grains are pseudomorphs after base metal ores at Dara-i-Pioz, occurs as tabular crystals, to 5 mm, showing {001} and {100}. The grains are pseudomorphs after base metal ores at Dara-i-Pioz, occurs as tabular crystals, to 5 mm, showing {001} and {100}. The grains are pseudomorphs after base metal ores at Dara-i-Pioz, occurs as tabular crystals, to 5 mm, showing {001} and {100}. The grains are pseudomorphs after...
Fourmarierite

Single-crystal X-ray structure study of 12 crystals from various localities in the Democratic Republic of Congo confirmed the previously determined orthorhombic unit-cell data and the presence of hydroxyl; the general structural formula is Pb$_{1-x}$(UO$_2$)$_4$O$_{3-2x}$(OH)$_{4+2x}$[(H$_2$O)$_{4-x}$, for which Pb was found to vary from 0.86 to 1.02, but was 0.50 for a synthetic crystal. J.L.J.

Tinticite

Rietveld refinement ($R_{wp} = 0.131$) of X-ray powder data for tinticite from Gavà Bruguers, near Barcelona, Spain, indicated triclinic symmetry, space group $P\overline{1}$, $a = 7.965(2)$, $b = 9.999(2)$, $c = 7.644(2)\ \text{Å}$, $\alpha = 103.94(2)$, $\beta = 115.91(2)$, $\gamma = 67.86(2)$°; $D_{\text{meas}} = 2.94$, $D_{\text{calc}} = 2.88 \text{g/cm}^3$ for Fe$_{3+}^{5.34}$[(PO$_4$)$_{3.62}$(VO$_4$)$_{0.38}$]$_{\Sigma 4.00}$·6.7H$_2$O. The mineral occurs as platy grains with a maximum dimension of about 1 µm.

Discussion. Previous studies had indicated the mineral to be monoclinic (Am. Mineral., 74, p. 1404) or orthorhombic (Am. Mineral., 77, 1308). J.L.J.

Umohoite

Single-crystal X-ray structure study ($R = 0.046$) of umohoite, from an unspecified locality in the former U.S.S.R. and obtained from the Fersman Mineralogical Museum, Moscow, gave triclinic symmetry, space group $P\overline{1}$, $a = 14.604(7)$, $b = 14.274(8)$, $c = 7.933(2)\ \text{Å}$, $\beta = 117.40(3)$°, $D_{\text{calc}} = 2.49 \text{g/cm}^3$ for $Z = 1$. The structural formula corresponds to (H$_3$O)$_4$Na$_2$K$_{(\text{Sr}_0.4 (\text{H}_2\text{O})_0.8)}$/{[(Ti$_{4.5}$Nb$_{3.5}$)(OH$_{4.5}$O$_{3.5}$)][Si$_4$O$_{12}$]}·4.2H$_2$O. The mineral occurs as colorless, transparent tabular crystals in a hydrothermally altered vein in the Khibina massif, Kola Peninsula, Russia. J.L.J.