NEW MINERAL NAMES*

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Arsenowaylandite

Electron microprobe analysis (one of three listed, all calculated to 100 wt%), gave Bi₂O₃ 34.59, SrO 0.83, Al₂O₃ 22.76, Fe₂O₃ 0.51, As₂O₃ 31.20, P₂O₅ 1.90, (H₂O)calc 8.13, corresponding to (Bi₁.₅₆Sr₀.₀₄)₂₁.₀₄(Al₁.₉₆Fe₀.₀₄)₂₂.₀₁₀⁻⁴[(AsO₄)₁.₀₄(PO₄)₁.₆₉(OH)₆], ideally Bi₁Al₃(AsO₄)₂(OH)₆, which is the As analogue of waylandite. The mineral occurs as fine-grained polymineralic intergrowths associated with waylandite and numerous other phosphates and arsenates of the crandallite group, predominantly crandallite and goyazite, which occur as interstitial cements in uraniferous Cretaceous sandstones of northern Bohemia.

Discussion. An analysis is also given for arsenoflorensite-(Nd), which is another unapproved name (Am. Mineral., 78, p. 672, 1993). An oddity is that, although the name arsenowaylandite is introduced, the authors state in two places that data are insufficient for a submission to the CNMMN (which is a prerequisite to the introduction of a new name). J.L.J.

Barium-zinc alumpharmacosiderite

The mineral occurs as colorless to yellow, euhedral, pseudocubic crystals up to 0.3 mm along an edge, associated with weillite, mansfieldite, zeunerite, metazeunerite, cornubite, paraunite, and olivenite at the Cap Garonne mine, Var, France. Transparent, vitreous luster, H = 2.5, imperfect {100} and {001} cleavages, irregular fracture, insoluble in dilute HCl, nonfluorescent, Dcalc = 2.8, Dmeas = 2.82 g/cm³ for Z = 8. Crystals are commonly zoned and divided into sectors; optically biaxial negative, α = 1.560(2), β = γ = 1.572(2). The mineral is unstable under an electron microprobe beam; one analysis (and the extremes for ten analyses) gave Al₂O₃ 26.67 (26–30.47), As₂O₃ 41.71 (34.38–41.71), BaO 6.88 (5.73–9.87), K₂O 0.86 (0.06–1.99), ZnO 2.68 (0.73–4.68), CuO 0.76 (0.33–2.03), Fe₂O₃ 0.97 (0–6.74), H₂O (by difference) 19.47 (16.7–24.2), sum 100 wt%, corresponding to (Ba₀.₃₅K₀.₆₅)(Zn₀.₃₇Cu₀.₀₃)₂₀.₃₅(Al₁.₉₅Fe₀.₀₅)(AsO₄)₂.₇₁(OH)₃.₃₈·5.₄H₂O, ideally (Ba,K)₀.₅(Zn,Cu)₀.₅(Al,Fe)₀.₅(AsO₄)₀.₅H₂O. Single-crystal X-ray study indicated tetragonal symmetry, space group I₄/m, a = 15.476(2), c = 15.675(4) Å by refinement from a Guinier powder pattern (CuKα radiation) with strongest lines of 7.824(100,002), 7.736(100,200), 3.916(40,004), 3.868(50,400), 3.163(50,422), and 2.745–(60,404).

Discussion. No discussion of the nomenclature is presented, and the new name and data have not been submitted to the CNMMN for a vote. J.L.J.

Doralcharite*

The mineral forms golden yellow, fine-grained, earthy masses, some of which are associated with colloform, brownish, compact masses of an amorphous iron manganese arsenate-sulfate. Electron microprobe analysis (mean of seven listed) gave Tl₂O 24.28, K₂O 1.23, Fe₂O₃ 39.54, SO₄ 26.52, As₂O₃ 1.19, (H₂O)calc 7.59, sum 100.35 wt%; after deduction of As and excess Fe, the simplified formula is (Tl₀.₈K₀.₂)Fe₃(SO₄)₃(OH)₉. The earthy masses consist of pseudocubic to pseudoctahedral crystals that are probably rhombohedra, 1–8 μm across. Yellow streak, distinct {0001} cleavage, Dcalc = 3.85 g/cm³ for Z = 3. Colorless in transmitted light, brownish yellow and nonpleochroic in aggregates, uniaxial negative, ω = 1.822, ε = 1.768. Rietveld refinement (Rw = 5.86%) indicated hexagonal symmetry, space group R₃m, a = 7.3301(3), c = 17.6631(7) Å. Strongest lines of the powder pattern (Guinier, CuKα₁ radiation) are 5.947(87,101), 3.666(34,110), 3.112(100,021,113,015), 2.9877(22,202), 2.5773(21,024), 1.9912(29,033,125), and 1.8329(23,220).

The mineral occurs as an oxidation product in the Allchar deposit, Republic of Macedonia. Known also as a synthetic, where K-Tl substitution is complete. The new name alludes to the type locality and the golden yellow
color (doré in French). Type material is in the Geological Museum of Copenhagen, Denmark. J.L.J.

Karasugite*


Electron microprobe analysis gave Na 0.43, Al 9.13, K 0.33, Ca 13.05, Sr 29.12, F 40.20, O 7.05, sum 99.31 wt%, H2O 0.44, corresponding to Sr1.00Ca0.02K0.02Na0.05Al0.05F3.02(OH)7, ideally SrCaAl[Fe(OH)]4, or SrCaAlF6(OH). Occurs as colorless rosettes to 1.5 x 1.5 x 1.0 mm, consisting of bladed crystals to 0.25 x 0.10 x 0.003 mm, elongate [001]. Transparent, vitreous luster, white streak, brittle, splintery fracture, twinned (100), H not determinable, cleavage or parting {100}, nonluminescent, D measured = 3.06–3.11, D calced = 3.206 g/cm3 for Z = 4. Optically biaxial positive, 2V = 94°, α = 1.4240(5), β = 1.4320(5), γ = 1.4415(5), Y = b, Xc = 7°, no dispersion. Single-crystal X-ray study indicated monoclinic symmetry, space group P21/c, a = 8.215(5), b = 11.989(3), c = 6.076(3) Å, β = 96.22(1)° as refined from a Gandolfi pattern (Cu radiation) with strongest lines of 6.76(70,110), 4.25(100,021), 3.64(80,121), 3.15(70,131), 3.06(80,221), 3.03(70,131,002), 2.840(70,221), and 2.125(80,151,042).

The mineral is associated with fluorite, quartz, barytocelestine (= barian celestite?), and gerekustite on limonite and hematite ore from the oxidation zone of the Karasug Fe-REE barite and fluorite deposit near the village of Karasug, south Siberia, Russia. Type material is in the Geological Museum, Copenhagen, Denmark, and in the Fersman Mineralogical Museum, Moscow. J.L.J.

Kieftite*


Electron microprobe analyses gave Co 12.8, Ni 0.7, Fe 0.3, Cu 0.2, Sb 85.8, Cl 0.3, sum 100.1 wt%, corresponding to (Co0.01Ni0.02Sb0.02Cu0.02Sb0.03Cl0.03)6(OH)4, ideally CoSb6. Opaque, metallic luster, tin white color, gray streak, brittle, conchoidal fracture. Occurs as subhedral to euhedral, equant crystals to 400 μm across, showing {100}, {110}, and {111}; VHN = 464 (420–514), D measured = 7.2, D calced = 7.63 g/cm3 for Z = 8. In reflected light, tin white in air and in oil, isotropic, reflectance percentages 59.0 at 470 nm, and 58.7 at 546, 589, and 650 nm. Single-crystal X-ray structure study (R = 0.045) indicated cubic symmetry, space group Im3, a = 9.0411(3) Å. Strongest lines of the powder pattern (14 mm Gandolfi, Cu radiation) are 2.86(100,310), 2.42(60,321), 2.02(80,420), 1.77(60,510), 1.55(60,530), 1.331(70,631), 1.186(60B,730), 1.052(60,750), 0.933(80,932), and 0.913(60B,770), in good agreement with data for synthetic CoSb6.

The mineral occurs in chalcoprite associated with bornite, galena, native bismuth, native silver, dyscrasite, gudmundite, and tetrahedrite in the Cu-Co sulfide ores of the Tunaberg skarn deposits near Nyköping, Sweden. The new name is for mineralogist Cornelis Kieft (b. 1924). Type material is in the Institut voor Aardwetenschappen, Vrije Universiteit, Amsterdam, the Netherlands. J.L.J.

Samfowlerite*


The mineral occurs as crystals in andradite-lined vugs in franklinite and willemite ore from Franklin, Sussex County, New Jersey. Electron and ion microprobe analyses gave CaO 34.1, MgO 0.2, MnO 9.3, ZnO 9.5, BeO 5.6, SiO2 36.9, FeO 1.0, H2O (by difference) 3.8, O = F 0.4, sum 100 wt%, corresponding to (Ca32.6Mn1.4Zn1.3Be0.5S)3+ (Si2.28O7.28)2+ (Si2.02O7.02)(OH)12. Single-crystal X-ray structure study (R = 0.043) indicated that the Be value obtained by ion probe is low, and the structurally derived formula is Ca4Mn2Zn4(4Zn1.5Be0.5)Be12(Si2.28O7.28)2+(Si2.02O7.02)(OH)12. Occurs as colorless crystals, each about 0.05 mm across, in clusters to 0.5 mm in diameter; vitreous luster, white streak, H = ≤3, D measured = 3.28(5), D calced = 3.29–3.31 g/cm3 for Z = 2, weak red fluorescence in long-wave and short-wave ultraviolet radiation. Optically biaxial negative, α = 1.674(3), β = 1.680(3), γ = 1.681(3), 2V = 29.0(1)°, dispersion not observed. Y = b, X c = 44°, Z = 29°. Monoclinic symmetry, space group P21/a, c = 9.068(2), b = 17.992(2), c = 14.586(2) Å, β = 104.86(1)°. Strongest lines of the powder pattern (114 mm Gandolfi, Cu radiation) are 2.863(100,321,053), 2.771(40,125), 2.653(50,251), 2.388(50,334,172), 2.272(30,172,234, 402,155), and 1.832(30,374).

The mineral is associated predominantly with garnet, willemite, barite, clinohlore, and leucophenoenite. The name is for Samuel Fowler (1799–1844), in recognition of his promotion of scientific study of the Franklin deposits. Type material is in the Smithsonian Institution, Washington, DC. J.L.J.

Tangeite*


The name tangeite was introduced by Fersman in 1925 for a mineral of composition CaCu(OH)VO4, from Tyuya Muyun, Ferghana, Turkestan. The mineral is a well-defined member of the adelrite group and has been found in
numerous specimens from the type Ferghanal locality. The ideal formula for tangeite requires CuO 33.77, CaO 23.80, V2O5 38.60, H2O 3.83 wt%.

Tangeite has generally been regarded as synonymous with calciovolborthite, but the original analysis of calciovolborthite in 1848 gave CuO 44.15, CaO 12.28, V2O5 36.58, H2O 4.62 wt% (plus 1% others). The type locality is Friedrichsroda, Thuringia, but to date all specimens of so-called calciovolborthite from this locality have been found to be vésigneitite, BaCu7(VO4)3(OH)3. The CNMNN has accepted the proposal that tangeite has the composition CaCu(OH)VO3 and is distinct from the originally described calciovolborthite from Thuringia. The status of calciovolborthite requires clarification by examination of type material from Thuringia. J.L.J.

Yanomamite*


Electron microprobe analysis gave In2O3 45.80, Fe2O3 1.11, Al2O3 0.21, As2O3 40.10, H2O (by difference) 12.78, sum 100 wt%, corresponding to (In0.94Fe0.04Al0.01)As0.34O4·2.02H2O. Occurs as pale green to yellow-green, euhedral, dipyramidal crystals to 0.2 mm, always coated by a film of scorodite; intimately intergrown with scorodite in aggregates to 1 cm. Vitreous luster, whitestreak, VHN = 631 (571−743), soluble in strong HCl or H2SO4, Daile = 3.876 (3) g/cm3 for Z = 8. Colorless in transmitted light, biaxial positive, 2V = 55−76°, average n = 1.65, orientation X = a, Y = c, Z = b. Single-crystal X-ray study indicated orthorhombic symmetry, space group Pbca, a = 10.446 (6), b = 9.085 (4), c = 10.345 (6) Å as refined from the powder pattern; strongest lines (CoKα radiation) are 5.70(70,111), 4.53(100,020,210), 4.16(50,021), 3.87(60,121), 3.25(60,122), and 3.11(50,311), in good agreement with data for synthetic InAsO4·2H2O.

The mineral occurs in quartz + topaz griesen veins associated with topaz-, albite-, and lithian mica-bearing granite in the Mangabeiro tin deposit, Goiás State, Brazil. The deposit contains several In-bearing minerals, including sphalerite with up to 11 wt% In. The maximum In content found in scorodite overgrowths is 6 wt% In2O3, corresponding to Fe0.99In0.01. Maximum Fe substitution in yanomamite is In0.93Fe0.07, suggesting a possible miscibility gap. The origin of yanomamite is thought to be related to a hydrothermal event rather than later oxidation. The new name relates to the Yanomami Indians of the Amazon. Type material is in the museum of the Ecole Nationale Supérieure des Mines de Paris, France, and in the Mineralogical Collection of the Instituto de Geociências, Universidade de Brasilia, Brazil. J.L.J.

CuFe5S4


A sample of isocubanite (CuFe5S4) from the Mid-Atlantic Ridge at 23°N transformed after a few months to a mixture of similar amounts of chalcopyrite and a phase of composition close to CuFe5S4. The mixture is an orthogonal network of alternate lamellae, each about 0.5 μm wide. The CuFe5S4-like phase is deduced to be pseudocubic with a tetragonal superstructure, probably space group I42m, a = 5.326, c = 10.564 Å. J.L.J.

AgFeS4, Ag(Sb,As)Te2S4, Au-Pb-Te-Sb-S mineral


Electron microprobe analysis (one of two listed) gave Cu 25.33, S 26.95, sum 99.75 wt%, corresponding to Ag1.05Fe1.08S2.00. The mineral occurs as inclusions, <20 μm, in hessite and pyrite in a veinlet 50 μm wide. Yellow color, moderate reflectance, isotropic or weakly anisotropic.

Microprobe analysis (one of two listed) of a second unidentified mineral gave Cu 1.94, Ag 62.65, Sb 6.66, As 0.87, Te 19.55, S 8.44, sum 99.78 wt%, corresponding to Ag6.76Cu0.46Sb0.81As0.18Te0.31Sb0.91. Approximating (Ag, Cu)x(Sb,As)(S,Te)y in the other analysis the ratio of Sb to As ≈ 0.51±0.49. Occurs as anhedral grains, 5−10 μm in length, coexisting with hessite and tetrahedrite. Reflectance ~20–25%, gray with a brownish tint, isotropic to weakly anisotropic.

Two analyses of a mineral referred to as nayagite gave Au 7.46, 5.53, Pb 57.13, 68.55, Te 17.30, 12.89, Sb 8.02, 1.42, S 10.39, 10.43, sum 100.29, 98.82 wt%, for S + Te
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11, these respectively correspond to \( \text{Au}_0.91 \text{Pb}_{6.60} \text{SbI}_{1.58} \text{Te}_{3.24} \text{S}_{7.76} \) and \( \text{Au}_{n} \text{Pb}_{8.55} \text{Sb}_{2.29} \text{Te}_{2.61} \text{S}_{8.39} \). Occurs with sylvite, altaite, and galena.

**Discussion.** See the abstract for nagyagite in *New Data*, in which it is proposed that the ideal formula for nagyagite is \( \text{Pb}_2 \text{Au} \text{Sb,Bi} \text{Te}_2 \text{S}_6 \). For \( n + S = 8 \), the above analyses correspond to \( \text{Pb}_{4.80} \text{Au}_{0.66} \text{Sb}_{1.15} \text{Te}_{2.36} \text{S}_{6.64} \) and \( \text{Pb}_{6.22} \text{Au}_{0.52} \text{Sb}_{0.87} \text{Te}_{1.90} \text{S}_{6.10} \). For the unnamed phases, a mineral with the composition \( \text{Ag}_6 \text{Sb,As} \text{Te}_2 \text{S}_4 \) also occurs in the Långdal deposit, Boden, Sweden (Am. Mineral., 76, p. 670, 1991).

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**CoAl_2O_4**


A composite inclusion in a greenish blue sapphire consists of glass and a deep blue, transparent, isotropic Co- and Al-rich phase up to 150 x 250 \( \mu \)m; as well, small euhedra of the Co-Al phase occur in glass at the periphery of the inclusion. Electron microprobe analysis (one of 16 listed, all with Co > 19 wt%) gave TiO_2 0.67, Al_2O_3 49.61, Cr_2O_3 11.57, FeO 9.55, MnO 0.44, CoO 22.38, sum 99.82 wt%, corresponding to \( \text{(Co}_{0.52} \text{Mg}_{0.26} \text{Fe}_{0.22})\text{Al}_{2.02} \text{Cr}_{0.26} \text{Ti}_{0.01} \text{S}_{1.98} \text{O}_{4} \), ideally \( \text{(Co, Mg, Fe)}_2\text{Al}_2\text{Cr}_2\text{S}_4 \). The sapphire is from the Bo Ploi, alluvial-eluvial deposits, which are about 130 km west of Bangkok, and which are Thailand’s major producer of sapphires. The source rock is Cenozoic nepheline hawaiite. J.L.J.

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**CeO_2F_2** (Ce,La)OF


The minerals occur as intimately intergrown aggregates interstitial to quartz and zinnwaldite in drill core from the Cinovec (Zinnwald) granite cupola. Aggregates are up to 200 \( \mu \)m. The three minerals composing the aggregates are \( \text{(La,Ce)}\text{F}_2\text{O}_{1.35} \), whose hexagonal cell parameters of \( a = 7.134 \) and \( c = 7.365 \) Å approximate those of fluorocerate, and the following two phases.

\( \text{CeO}_2\text{F}_2 \)

Electron microprobe analysis (four analyses listed) gave ThO_2 3.91, La_2O_3 3.66, Ce_2O_3 75.93, Pr_2O_3 1.56, Nd_2O_3 6.55, Sm_2O_3 2.13, Dy_2O_3 0.10, Y_2O_3 0.49, CaO 2.02, F 6.22, O = F 2.62, sum 99.95 wt%, corresponding to \( \text{(Ce}_{0.69} \text{Nd}_{0.06} \text{Ca}_{0.06} \text{La}_{0.02} \text{Th}_{0.02} \text{Sm}_{0.30} \text{Pr}_{0.16} \text{Y}_{0.07} \text{Dy}_{0.01})\text{O}_{1.210} \text{F}_{0.544} \) for \( x_{\text{cation}} = 1 \), ideally \( \text{CeO}_2\text{F}_2 \). In the composite X-ray pattern of the aggregates (23 lines listed), lines at 3.160(100), 2.739(40), 1.934(50), and 1.649(40) and four weaker ones are assigned to a fluorite-type cubic cell with

\( a = 5.470(8) \) Å; the possibility of a hexagonal or tetragonal superstructure is not excluded.

\( \text{(Ce,La)OF} \)

Electron microprobe analysis (two analyses listed) gave ThO_2 4.20, La_2O_3 15.70, Ce_2O_3 58.28, Pr_2O_3 3.01, Nd_2O_3 8.38, Sm_2O_3 2.10, Dy_2O_3 0.11, Y_2O_3 0.26, CaO 2.03, F 11.24, O = F 4.73, sum 100.61 wt%, corresponding to \( \text{(Ce}_{0.60} \text{La}_{0.16} \text{Nd}_{0.07} \text{Ca}_{0.06} \text{Pr}_{0.01} \text{Th}_{0.032} \text{Sm}_{0.21} \text{Y}_{0.045})\text{O}_{1.978} \text{F}_{1.008} \), ideally \( \text{(Ce,La)OF} \). Eighteen lines of the composite X-ray pattern are assigned to this phase, which is indexed with a basisite-type hexagonal cell, \( a = 7.007(10), c = 9.840(15) \) Å, \( D_{\text{alc}} = 6.25 \) g/cm^3, \( Z = 9 \).

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**Na-Mg-Ca borate-carbonate**


The mineral occurs as disseminated crystal inclusions, to \( 10 \times 30 \times 100 \) \( \mu \)m, in borax and kernite at the Tincalayu borax mine, Salta, Argentina. Crystals are euhedral tabular, flattened (010) and bounded by (101) and minor (100); elongate (101), to equant tabular. Colorless, transparent, vitreous luster, \( H = 3 \), perfect (010) and good (101) cleavages, \( D_{\text{meas}} = 2.15 \) g/cm^3; soluble with effervescence in 1:1 HCl and gives a strong reaction for B. Optically biaxial positive, \( \alpha = 1.503(1), \beta = 1.523(1), \gamma = 1.559(1), 2V = 75^\circ \), dispersion \( r < v \); orientation \( Z = a, X = b, Y = c \). Single-crystal X-ray study indicated orthorhombic symmetry, possible space group \( \text{Pccm}, a = 9.85(2), b = 13.54(2), c = 8.01(2) \) Å. Strongest lines of the powder pattern (114 mm Debye-Scherrer, Cu radiation) are 7.94(100,110), 3.95(60,031), 3.83(50,012), 3.54(80,234), 3.32(80,230), 2.10(60,402,043), 2.04(50,313,342), 1.92(50,024), and 1.85(50,024). The mineral is thought to be a hydrated borate-carbonate of Na or Na-Mg-Ca. J.L.J.

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**Ni carbonates**


Among the secondary Ni minerals formed by oxidation of a komatiite-hosted nickel sulfide deposit near Widgiemooltha are two unnamed Ni carbonates. Electron microprobe and CHN analyses of one mineral gave NiO 45.1, MgO 1.3, CO_2 34.1, H_2O 21.5, sum 102.0 wt%, possibly corresponding to (Ni,Mg)(HCO_3)_2(CO_3)_2·8H_2O for (Ni,Mg) = 5. Occurs as bluish green cross-fiber veinlets, \( D_{\text{meas}} = \) variable to 3.24 g/cm^3; optically length slow, \( n = 1.66 \) parallel to fiber length and 1.65 normal to it. The X-ray powder pattern is similar to that of widgiemoolthalite, but the composition differs.

Electron microprobe and CHN analyses of vitreous, emerald green coatings gave NiO 60.2, MgO 0.4, CaO...
0.7, CO₂, 27.3, SO₂, 1.2, H₂O 12.0, sum 101.8 wt%, possibly corresponding to Ni₃(CO₃)₂(OH)₂·2.5H₂O. Optically isotropic, n = 1.61. The X-ray pattern has only a few diffuse lines: 5.95(100), 3.33(50), 2.58(10), 2.42(10), 2.25(20), 2.10(30), and 1.97(10) Å. J.L.J.

**New Data**

**Kulanite**


Single-crystal X-ray structure study (R = 0.021) of kulanite showed it to be monoclinic, space group P2₁/m, a = 9.014(1), b = 12.074(1), c = 4.926(1) Å, β = 100.48(1)°, Z = 2. The symmetry is new (see also *Am. Mineral.*, 75, p. 245, 1990). J.L.J.

**Kuznetsovite**


Kuznetsovite is cubic, a = 8.4013(2) Å, space group P2₁3. The formula is revised from Hg₆As₂Cl₂O₉ to Hg₃Cl₂[AsO₄].

**Discussion.** With the new formula, Z is doubled to 4; D_{calc} = 8.691 g/cm³, in good agreement with D_{meas} = 8.64–8.82 (*Am. Mineral.*, 66, p. 110, 1981). J.L.J.

**Mackinawite, smithite**


Sixteen electron microprobe analyses of smithite and ten analyses of mackinawite from the Moschellandsberg mercury deposit, southwestern Germany, gave Ni + Cu + Co + Cr contents from <1.5 wt% to less than the limits of detection; the results confirm that incorporation of Ni in these minerals is not essential and that their formulas can be written as Fe₉S₈ or Fe₇S₇₁₋ₓ for mackinawite and Fe₁₁S₁₀ for smithite. J.L.J.

**Nagyagite**


Nagyagite occurs as lamellar subhedral crystals in intimate intergrowth with buckhornite in a quartz gangue containing pyrite, tellurobismuthite, altaite, galena, calaverite, and native gold at the Bohulliby mine, Jilové gold district, Czech Republic. Reflected-light optical properties of nagyagite and buckhornite are similar, and the two are not mutually distinguishable in polished section. Electron microprobe analyses of nagyagite (mean of 14) gave Pb 56.58, Au 10.41, Bi 2.87, Sb 5.66, Te 14.27, S 10.27, sum 100.06 wt%, corresponding to Pb₀.₉₅Au₀.₀₅(Sb₀.₈₅Bi₀.₁₅)₂₁.₁₃Te₂₀.₇₆S₉₂₀. ideally PbAu(Sb,Bi)Te₆S₁₀. The formula is new, and it is suggested that Te and S occupy distinct structural sites. J.L.J.

**Parisite-(Ce)-42R, 48R, 16H**


TEM and lattice-image studies of a crystal of parisite-(Ce) from the M rare-earth deposit at Changbei, southwestern Sichuan Province, China, revealed the presence of the 6R polytype and the new polytypes 42R (c = 59.346 Å), 48R (c = 67.824), and 16H (c = 22.608). J.L.J.

**Discredited Mineral**

**Staringite**


Staringite, reported previously from several localities and thought to be (Fe⁺²,Mn⁺²⁺)(Ta⁺⁵⁺,Nb⁺⁵⁺),Sn₄₋ₓO₁₂, is shown to consist of a submicroscopic intergrowth of cassiterite and tapiolite. J.L.J.