NEW MINERAL NAMES*

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Belendorffite*

H.-J. Bernhardt, K. Schmetzer (1992) Belendorffite, a new copper amalgam dimorphous with kolymite. Neues Jahrb. Mineral. Mon., 21–28.

Ten electron microprobe analyses gave a mean (and range) of Hg 74.06 (72.89–75.14), Cu 25.61 (24.37–26.91), sum 99.67 (99.29–100.20) wt%, corresponding to $Hg_{6.22}Cu_{6.78}$ for the mean and $Hg_{6.00-6.42}Cu_{6.57-6.99}$ for the range, ideally Hg_6Cu_7. The mineral occurs as a globular, 6.1-g nodule also containing a small amount of native mercury. Metallic luster, silvery streak, silvery color rapidly tarnishing to matte yellow and ultimately to blackish brown. $VHN_{25} = 125$, but values were clustered near both ends of a range between 45 and 206. $D_{meas} = 13.2(1)$, $D_{calc} = 13.15$ g/cm³ with $Z = 4$. Difficult to polish well. In reflected light, bright white with a yellowish tint, very weak anisotropy, incomplete extinction. Reflectance percentages are given in 20-nm steps in air and oil (WTiC standard); representative values are 400 66.2, 57.8; 440 67.6, 58.6; 480 69.2, 59.6; 520 71.0, 61.2; 560 72.8, 63.0; 600 74.1, 64.2; 640 75.3, 65.5; 680 76.4, 66.5. Color values in air relative to CIE illuminant C are $Y = 72.5\%$, $\lambda_d = 578$ nm, $P_e = 4.1\%$. The X-ray powder pattern (Guinier camera, $CuK\alpha_1$ radiation) is in good agreement with data for synthetic pseudocubic Cu_7Hg_6 (PDF 22–241) and has strongest lines (70 given) of 2.983(80,$\overline{1}$30), 2.966(80,130), 2.523(100,$\overline{3}$21), 2.227(100,$\overline{3}$30), 2.221-(100,$\overline{1}$41), and 2.208 Å (100,141); calculated rhombohedral dimensions are $a = 9.4082(4)$, $\alpha = 90.472(5)°$; $V = 832.67$ Å³.

The mineral is named for mineral collector Klaus Belendorff of Münster, Hesse, Germany, who provided the original sample, which is from the Moschellandsberg silver-mercury deposit in Rhineland-Pfalz, Germany, and which was probably collected in the last century. Type material is preserved at the Institut für Mineralogie, Ruhr-Universität, Bochum, Germany. **J.L.J.**

Deloryite*

H. Sarp, P.J. Chiappero (1992) Deloryite, $Cu_4(UO_2)$-$(MoO_4)_2(OH)_6$, a new mineral from the Cap Garonne mine near Le Pradet, Var, France. Neues Jahrb. Mineral. Mon., 58–64.

Electron microprobe analysis (ave. of three) gave CuO 33.36, UO_3 31.78, MoO_3 29.16, SO_3 0.27, Al_2O_3 0.10, H_2O (TGA) 5.8, sum 100.47 wt%, corresponding to $Cu_{3.96}(UO_2)_{1.05}Al_{0.02}(MoO_4)_{1.91}(SO_4)_{0.03}(OH)_{6.08}O_{0.06}$, ideally $Cu_4(UO_2)(MoO_4)_2(OH)_6$. Occurs as dark green to black rosettes to 6 mm, in which individual crystals are $3 \times 1 \times 0.3$ mm, tabular {010}, elongate [001], showing {010}, {100}, and with a rounded termination. Transparent to nearly opaque, vitreous to greasy luster, green streak, conchoidal fracture, cleavages perfect {010}, {100}, good {001}, $H = 4$, $D_{meas} = 4.9(1)$, $D_{calc} = 4.84$ g/cm³ with $Z = 2$, nonfluorescent, soluble in HCl. Optically yellowish green, nonpleochroic, biaxial positive, $2V_{meas} \simeq 90°$, $2V_{calc} = 91.3(1)°$, $\alpha = 1.90(3)$, $\beta = 1.93(3)$, $\gamma = 1.96(3)$, strong dispersion $r > v$, $\alpha \wedge c = 21.9°$, $\beta \wedge a = 36.2°$, $\gamma = b$. X-ray single-crystal study indicated monoclinic symmetry, space group $C2$, Cm, or $C2/m$, $a = 19.83(2)$, $b = 6.112(9)$, $c = 5.529(6)$ Å, $\beta = 103.9(1)°$ as refined from a Guinier pattern ($CuK\alpha_1$ radiation). Strongest lines of the powder pattern are 4.815(80,400), 4.425(40,310), 4.276(40,201), 4.100(100,$\overline{4}$01,$\overline{1}$11), 3.734(90,$\overline{3}$11), 3.254(40,510), 2.628(40,$\overline{4}$02), and 2.481(60,221,$\overline{3}$12).

The mineral occurs at the Cap Garonne mine near Pradet, Var, France, with metazeunerite, atacamite, paratacamite, malachite, tourmaline, and barite on a dendritic quartz gangue. The new name is for mineral collector Jean Claude Delory, who found the specimen, which is preserved in the Mineralogy Department of the Natural History Museum, Geneva, Switzerland. There is a crystallographic relationship to derriksite, which is orthorhombic, $Cu_4(UO_2)(SeO_3)_2(OH)_6$. **J.L.J.**

Ferrilotharmeyerite*

H.G. Ansell, A.C. Roberts, P.J. Dunn, W.D. Birch, V.E. Ansell, J.D. Grice (1992) Ferrilotharmeyerite, a new Ca-Zn-Fe³⁺ hydroxyl arsenate from Tsumeb, Namibia. Can. Mineral., 30, 225–227.

Electron microprobe analysis gave CuO 5.75 (range, 3.82–7.91), ZnO 13.94 (12.35–15.25), Fe_2O_3 13.96 (13.20–15.20), CaO 10.86 (10.50–11.23), PbO 2.13 (0.67–3.47), Al_2O_3 0.13 (0.02–0.30), As_2O_5 48.66 (48.38–48.90), H_2O (CHN analysis) 5.85, sum 101.28 wt%, corresponding to $(Ca_{0.92}Pb_{0.05})_{\Sigma0.97}(Zn_{0.66}Cu_{0.34})_{\Sigma1.00}(Fe_{0.83}Zn_{0.15}Al_{0.01})_{\Sigma0.99}$-$[AsO_{3.41}(OH)_{0.58}]_2(OH)_{1.90}$, ideally $Ca(Zn,Cu)(Fe^{3+},Zn)$-$(AsO_3OH)_2(OH)_3$. Occurs as aggregates, to 3 mm, consisting of subhedral crystallites averaging 0.2 mm in length; also tabular to wedge- or lozenge-shaped, averaging 0.6 mm. Brownish yellow color, adamantine to greasy luster,

transparent to translucent, pale yellow streak, uneven fracture, good $\{001\}$ cleavage, $H = 3$, nonfluorescent, $D_{meas} = 4.25$, $D_{calc} = 4.25$ g/cm³ for the empirical formula above, and $Z = 2$. Optically biaxial positive, $\alpha = 1.811(5)$, $\beta = 1.844(5)$, $\gamma = 1.88(1)$, $2V_{meas} = 85(5)°$, $2V_{calc} = 89°$; $Y = b$, $X \approx a$, strongly pleochroic from X = olive green, Y = pale green, to Z = colorless; distinct inclined dispersion, $r > v$. X-ray single-crystal study indicated monoclinic symmetry, $a = 8.997(7)$, $b = 6.236(2)$, $c = 7.390(3)$ Å, $\beta = 115.74(4)°$ as refined from the Debye-Scherrer powder pattern (114.6-mm camera, Cu$K\alpha$ radiation). Strongest lines are 4.95(70,110), 3.398(100,20$\bar{2}$), 3.175(100,11$\bar{2}$), 2.938(100,201), 2.823(70,021), 2.702(70,31$\bar{1}$), and 2.544(100,22$\bar{1}$); by analogy to lotharmeyerite, space group $C2$, Cm, or $C2/m$.

The mineral, which is the Fe^{3+} analogue of lotharmeyerite, occurs with tennantite, scorodite, conichalcite, beudantite, and schneiderhöhnite at the Tsumeb mine, Tsumeb, Namibia. Type material is in the National Mineral Collection, Geological Survey of Canada, Ottawa, and in the Museum of Victoria, Melbourne, Australia. **J.L.J.**

Hejtmanite*

S. Vrána, M. Rieder, M.E. Gunter (1992) Hejtmanite, a manganese-dominant analogue of bafertisite, a new mineral. Eur. Jour. Mineral., 4, 35–43.

Electron microprobe analysis gave SiO_2 23.52, TiO_2 13.27, Nb_2O_5 1.4, Al_2O_3 0.37, FeO 11.29, MnO 14.12, MgO 0.13, BaO 30.20, Na_2O 0.06, K_2O 0.30, F 3.3, H_2O (calc.) 1.86, F ≡ O 1.39, sum 98.43 wt%; for 10 (O,OH,F) the formula ratios are $Ba_{1.035}K_{0.034}Na_{0.011}$ ($Mn_{1.046}Fe_{0.825}$ $Mg_{0.017})Ti_{0.973}Nb_{0.056}Al_{0.038}Si_{2.057(\Sigma \text{ cations } 5.992)}$ $(OH_{1.086}$ $F_{0.913})_{\Sigma 1.999}$, ideally $Ba(Mn,Fe)_2TiO(Si_2O_7)(OH,F)_2$. Occurs as lath-shaped crystals with large $\{100\}$, elongate [001] to 1 mm in length. Brownish to yellow color, brownish yellow streak, vitreous luster, translucent, H not determined, perfect $\{100\}$ cleavage, poor $\{0kl\}$ parting, irregular fracture, nonfluorescent, $D_{meas} = 4.016$ (range 3.975–4.060), $D_{calc} = 4.291$ g/cm³, with $Z = 8$. Absorption bands for H_2O-OH are present in the infrared spectrum. Optically biaxial negative, $\alpha = 1.814(1)$, $\beta = 1.846(1)$, $\gamma = 1.867(1)$, $2V_{meas} = 76.4(9)°$, $2V_{calc} = 76.8°$, pleochroism X = light green-yellow, Y = dark golden yellow, Z = light yellow; absorption $Y > Z = X$, orientation $X = b$, $Z \wedge a = 15.9°$, $Y \wedge c = 37.9°$ in obtuse angle β. Single-crystal X-ray study indicated monoclinic symmetry, $a = 11.748(4)$, $b = 13.768(5)$, $c = 10.698(4)$ Å, β 112.27(2)°, a subcell has $a' = a$, $b' = b/2$, $c' = c/2$, space group $P2_1/m$. Strongest lines of the powder pattern (diffractometer, Cu$K\alpha$ radiation) are 5.472(32,200), 3.455(17,11$\bar{3}$), 3.241 and 3.215 (combined 21; 322,013,320), 2.726(100,400), and 2.180 (16,500).

The mineral makes up <1% of arfvedsonite-bearing pegmatoidal veins (>90% arfvedsonite) in gneissic alkalic granite and syenite at Mbolwe Hill, Mkushi River area, Central Province, Zambia. The new name is for B. Hejt-

mas, Professor Emeritus at Charles University, Prague, Czechoslovakia. Type material is in the National Museum, Prague, and in the Department of Mineralogy, Charles University.

Discussion. In an alternative setting the unit cell is identical to one of the two Mn-dominant bafertisite-type phases reported from Kirgiziya, USSR (*Am. Mineral.*, 77, p. 451, 1992). **J.L.J.**

Mrázekite*

T. Řidkošil, V. Šrein, J. Fábry, J. Hybler, B.A. Maximov (1992) Mrázekite, $Bi_2Cu_3(OH)_2O_2(PO_4)_2 \cdot 2H_2O$, a new mineral species and its crystal structure. Can. Mineral., 30, 215–224.

Electron microprobe analysis gave CuO 26.14, Bi_2O_3 51.97, P_2O_5 15.89, As_2O_5 0.11, H_2O and OH_{calc} 5.90, sum 100 wt%, corresponding to $Bi_{2.011}Cu_{2.962}P_{2.019}As_{0.008}O_{11.046} \cdot 1.954H_2O$, ideally $Bi_2Cu_3(OH)_2O_2(PO_4)_2 \cdot 2H_2O$ as determined by crystal-structure analysis ($R = 0.051$). Occurs as bright or cerulean blue needles up to 2 mm long, either isolated or loosely grouped as rosettes in a quartz matrix. Crystals are elongate [010], tabular $\{201\}$, translucent, vitreous luster, $H = 2$–3, cleavage $\{20\bar{1}\}$, $D_{meas} = 4.90(2)$, $D_{calc} = 5.013$ g/cm³ with $Z = 2$. The infrared spectrum shows absorption bands characteristic of H_2O, OH, and PO_4. Optically biaxial negative, refractive indices are between 1.8 and 1.9, $2V_{meas} = 68(2)°$, $X = b$, $Y \approx a$, $Z \approx c$, $Z \wedge c = 16°$. Single-crystal X-ray structural study indicated monoclinic symmetry, space group $C2/m$, $a = 12.359(6)$, $b = 6.331(4)$, $c = 9.060(4)$ Å, $\beta = 122.71(4)°$. Strongest lines of the Guinier powder pattern (Cu$K\alpha$ radiation) are 7.625(78,001), 5.410(43,100), 5.200(52,200), 5.145(45,11$\bar{1}$), 3.040(100,310), 3.014(63,20$\bar{3}$), and 2.924(83,021).

The mineral occurs in a secondary assemblage derived by oxidation of mainly chalcopyrite and tetrahedrite at the former Reinera mine, Ľubietová, near Banská Bystrica, Slovakia. The new name is for Zdenek Mrázek (1952–1984), codiscoverer of the mineral. Type material is in the National Museum, Prague, Czechoslovakia, and in the Faculty of Science, Charles University, Prague. **J.L.J.**

Tooeleite*

F.P. Cesbron, S.A. Williams (1992) Tooeleite, a new mineral from the U.S. mine, Tooele County, Utah. Mineral. Mag., 56, 71–73.

Electron microprobe analysis gave Fe_2O_3 43.56, As_2O_5 38.61, SO_3 7.26, H_2O (Penfield method) 9.80, sum 99.21 wt%, corresponding to $(Fe_{7.58}^{3+}\square_{0.42})_{\Sigma 8.00}[(As_{0.79}S_{0.21})O_4]_6$-$(OH)_6 \cdot 4.66H_2O$ for As + S = 6. The generalized formula is $Fe_{8-2x}[(As_{1-x}S_x)O_4]_6 \cdot 5H_2O$ with x about 0.2. Color and streak typically cadmium orange, $H = 3$, transparent with a greasy luster in crystals, nonfluorescent, $D_{meas} = 4.23(8)$, $D_{calc} = 4.15$ g/cm³ with $Z = 2$. Crystals are elongate [001] blades to 10 mm, bounded by $\{010\}$, $\{304\}$, and $\{100\}$.

One good cleavage normal to the shortest dimension of the crystals. Optically biaxial, straight extinction, $\alpha = 1.94$, $\beta = 2.04$, $\gamma = 2.05$, $2V_{meas} = 2-5°$, pleochroism Y = orange, $X = Z$ = lemon yellow, weak dispersion $r > v$. X-ray single-crystal study indicated orthorhombic symmetry, space group $Pbcm$ or $Pbc2_1$, $a = 6.416(4)$, $b = 19.45(17)$, $c = 8.941(8)$ Å. Strongest lines of the powder pattern (114-mm camera, $CrK\alpha$ radiation) are 9.75(100,020), 4.476(40,002), 3.208(90,200,132), 3.047(50,061,220), and 2.680(40,240,113).

The mineral occurs on waste dumps of the U.S. mine at Gold Hill, Tooele County, Utah. The mine formerly produced gold and arsenic from pyrite-arsenopyrite replacement ores in thermally metamorphosed limestone. Oxidation of the quartz-diopside host rock produced massive scorodite containing voids, some lined with jarosite, and both minerals are locally coated with tooeleite crusts up to 10 mm thick. The new name is for the locality. Type material is in the Ecole Nationale Supérieure des Mines, Paris, France. **J.L.J.**

AgPd

W. Zang, W.S. Fyfe, R.L. Barnett (1992) A silver-palladium alloy from the Bahia lateritic gold deposit, Brazil. Mineral. Mag., 56, 47–51.

One of two similar microprobe analyses gave Pd 49.70, Ag 49.19, Cu 0.13, sum 99.02 wt%, corresponding to $Pd_{1.004}Ag_{0.993}Cu_{0.003}$, close to PdAg. The alloy occurs as two angular grains, 5×15 μm, in a void within an iron oxide nodule consisting mainly of goethite and hematite. The nodule is from near the top of a ferruginous zone, about 30 m thick, in laterite at the Bahia lateritic gold deposit, Serra dos Carajas, Brazil. The angular shape and occurrence in a void suggest growth of the alloy in a lateritic environment. **J.L.J.**

Pd_5As_2 and $Pd_2(Sb,As)$

D.H. Watkinson, D. Ohnenstetter (1992) Hydrothermal origin of platinum-group mineralization in the Two Duck Lake intrusion, Coldwell Complex, northwestern Ontario. Can. Mineral., 30, 121–136.

Three electron microprobe analyses are given for grains corresponding to unnamed Pd_5As_2, and three for unnamed $Pd_2(Sb,As)$.

Discussion. See *Am. Mineral.* 74, 1218 (1989) for previous reports of Pd_5As_2, and *Am. Mineral.* 76, 1438 (1991) for Pd_2Sb. **J.L.J.**

Pd_2AgS_2 and $(Rh,Pt)(As,S)_2$

W.E. Stone, M.E. Fleet, J.H. Crocket, D.M. Kingston (1992) Platinum-group minerals in pyroxenite from the Boston Creek Flow basaltic komatiite, Abitibi greenstone belt, Ontario. Can. Mineral., 30, 109–119.

Electron microprobe analysis, normalized to 100 wt% after correction for beam overlap onto surrounding minerals, gave Pd 52.9, Ag 27.0, Cu 2.7, S 17.5, corresponding to $Pd_{37.2}Ag_{18.8}Cu_{3.2}S_{40.9}$, possibly Pd_2AgS_2. The grain is 0.8 × 0.5 μm and occurs in a silicate groundmass.

Analysis of a grain, approximately 1 × 1 μm and isolated in epidote, gave Rh 28.5, Pt 15.3, Fe 0.8, As 41.6, S 13.8 wt%, close to $(Rh,Pt)(As,S)_2$.

Discussion. The composition of the Rh-Pt sulfarsenide corresponds to $(Rh_{0.68}Pt_{0.19}Fe_{0.04})_{\Sigma0.91}(As_{1.36}S_{1.06})_{\Sigma2.42}$. $RhAs_2$ has been synthesized. **J.L.J.**

$SrMn_2[Si_2O_7](OH)_2 \cdot H_2O$

T. Armbruster, R. Oberhänsli, V. Bermanec (1992) Crystal structure of $SrMn_2[Si_2O_7](OH)_2 \cdot H_2O$, a new mineral of the lawsonite type. Eur. Jour. Mineral., 4, 17–22.

A hand specimen consisting of sugulite embedded in fibrous serandite-pectolite is cut by serandite-pectolite veinlets, 2–5 mm wide, containing the unnamed strontium mineral in irregular aggregates up to 1 mm in diameter, less commonly as a feltlike matrix in sugilite-rich parts of the specimen. Electron microprobe analysis gave SiO_2 28.22, Mn_2O_3 37.82, Fe_2O_3 0.53, SrO 24.32, BaO 0.46, CaO 0.02, sum 91.37 wt%, corresponding to $(Sr_{0.98}Ba_{0.01})_{\Sigma0.99}(Mn_{2.01}Fe_{0.03})_{\Sigma2.04}Si_{1.97}$ for 5 cations; the ideal formula given above requires 8.62 wt% H_2O, and absorption bands in the infrared spectrum appear at frequencies characteristic of H_2O-OH. Yellow-brown in thin section. Single-crystal X-ray structural study ($R = 0.048$) indicated orthorhombic symmetry, space group $Cmcm$, $a = 6.255(1)$, $b = 9.034(2)$, $c = 13.397(2)$ Å, $Z = 4$. The structure is of the lawsonite type, with Al completely replaced by Mn^{3+}, and Ca by Sr. The mineral, which is thought to be of hydrothermal origin, is from the Wessels mine, Kalahari manganese fields, South Africa. **J.L.J.**

V-dominant pumpellyite

Y. Pan, M.E. Fleet (1992) Vanadium-rich minerals of the pumpellyite group from the Hemlo gold deposit, Ontario. Can. Mineral., 30, 153–162.

Green mica schist from the main ore zone of the Hemlo gold deposit, Ontario, contains abundant V-bearing pumpellyite-(Mg) with up to 13.6 wt% V_2O_3; as well, a second pumpellyite-group mineral occurs sparsely as grains <15 μm in maximum dimension. V_2O_3 in the seven reported electron-microprobe analyses of the second mineral ranges from 18.89 to 25.67 wt%; results for the most V-rich grain are SiO_2 33.23, TiO_2 1.13, Al_2O_3 4.55, Cr_2O_3 0.56, V_2O_3 25.67, total Fe as FeO 3.34, MgO 2.10, MnO 0.50, CaO 20.56, BaO 0.09, Na_2O 0.14, K_2O 0.09, sum 91.96, corresponding to $(Ca_{7.93}Na_{0.10}K_{0.04}Ba_{0.01})_{\Sigma8.08}(V_{7.39}Al_{1.87}Mg_{1.13}Fe_{1.00}Ti_{0.30}Cr_{0.16}Mn_{0.15})_{\Sigma12.00}(Si_{11.94}Al_{0.06})_{\Sigma12.00}$. The mineral is greenish brown, vitreous, transparent, brittle. Optically biaxial negative, $2V_{est} = 50(5)°$, strongly pleochroic with α = colorless, β = brown to deep brown, γ =

pale brown; strong dispersion, $r < v$. Closely associated with vanadian titanite and barian tomichite. The end-member composition is calculated as $Ca_8(V,Mg,Fe)_4(V, Al)_8Si_{12}O_{56-n}(OH)_n$, with V dominant both in X and Y positions. **J.L.J.**

New Data

Pseudoboleite

G. Giuseppetti, F. Mazzi, C. Tadini (1992) The crystal structure of pseudoboleite: $Pb_{31}Cu_{24}Cl_{62}(OH)_{48}$; its relations with the structures of boleite and cumengeite. Neues Jahrb. Mineral. Mon., 113–126.

X-ray crystal-structural study ($R = 0.049$) gave tetragonal symmetry, space group $I4/mmm$, $a = 15.24(2)$, $c = 30.74(5)$ Å, $D_{calc} = 5.07$ g/cm³ for $Pb_{31}Cu_{24}Cl_{62}(OH)_{48}$ with $Z = 2$. The formula, notably the absence of structural H_2O, is new. **J.L.J.**

Rhodesite

K.-F. Hesse, F. Liebau, S. Merlino (1992) Crystal structure of rhodesite, $HK_{1-x}Na_{x+2y}Ca_{2-y}\{lB,3,2^2_\infty\}[Si_8O_{19}]\cdot(6 - z)H_2O$, from three localities and its relation to other silicates with dreier double layers. Zeits. Kristallogr., 199, 25–48.

X-ray structural study ($R = 0.036$) of rhodesite from Zeilberg, Unterfranken, Germany, gave orthorhombic symmetry, space group $Pmam$, $a = 23.416(5)$, $b = 6.555(1)$, $c = 7.050(1)$ Å, $D_{calc} = 2.268(1)$ g/cm³ for $HKCa_2Si_8O_{19}\cdot 5H_2O$ and $Z = 2$. Similar results were obtained for rhodesite from Trinity County, California ($R = 0.055$), and San Venanzo, Rieti, Italy ($R = 0.045$). Electron microprobe analyses of the specimens from Zeilberg and Trinity County, and of another from Kimberly, South Africa, gave maximum Na_2O contents of 0.33 wt%, and structural study indicated that no specific cation position is fully or largely occupied by Na. The ideal formula is $HKCa_2Si_8O_{19}\cdot 6 - xH_2O$, where $x = 0.75–1.0$. The structure is closely related to those of delhayelite, hydrodelhayelite, macdonaldite, and monteregianite. **J.L.J.**

Stillwellite

A. Callegari, G. Giuseppetti, F. Mazzi, C. Tadini (1992) The refinement of the crystal structure of stillwellite: $RE[BSiO_5]$. Neues Jahrb. Mineral. Mon., 49–57.

X-ray structural study ($R = 0.015$) of stillwellite-(Ce) gave trigonal symmetry, space group $P3_1$, $a = 6.844$, $c = 6.700$ Å, $Z = 3$. The common occurrence of [100] twins probably accounts for the space groups previously assigned to the mineral.

Discussion. Also reported as space group $P3_1$ by P.C. Burns et al., who refined the structure to $R = 0.027$ (*Geol. Assoc. Can.—Mineral. Assoc. Can. Program Abstracts*, 17, p. A14, 1992). **J.L.J.**

Tinticite

K. Sakurai, S. Matsubara, A. Kato (1991) Tinticite from the Suwa mine, Chino City, Nagano Prefecture, Japan. Mineral. Jour. (Japan), 15, 261–267.

Electron microprobe analysis gave Fe_2O_3 50.49, P_2O_5 29.57, V_2O_5 0.60, SO_3 0.38, sum 81.04 wt%, corresponding to $Fe_{5.95}P_{3.92}V_{0.06}S_{0.04}O_{19}$, simplified as $Fe_6P_4O_{19}$. The original formula for tinticite, $Fe_3(PO_4)_2(OH)_3\cdot 3.5H_2O$, requires 19.16 wt% H_2O. Trial and error indexing of the powder diffractometer pattern (Co radiation) gave an orthorhombic cell with $a = 20.85$, $b = 13.51$, $c = 15.82$ Å. Strongest lines of the pattern are 6.87(27,012), 6.17(28,021,310), 5.78(40,311,212), 4.62(30,411,321,222), 3.949(100,004), 3.310(70,041), 2.988(45,341), 2.365 (25,525), and 1.948(25,164,118). The new cell and the original formula with $Z = 16$ give $D_{calc} = 2.76$ g/cm³, which is close to the original $D_{meas} = 2.8$ g/cm³.

Discussion. The formula, symmetry, and cell dimensions differ from those abstracted in *Am. Mineral.*, 74, p. 1404, 1989. **J.L.J.**

Tuperssuatsiaite

O. von Knorring, O.V. Petersen, S. Karup-Møller, E.S. Leonardsen (1992) Tuperssuatsiaite, from Aris phonolite, Windhoek, Namibia. Neues Jahrb. Mineral. Mon., 145–152.

The second occurrence of tuperssuatsiaite has permitted better definition of its properties and composition. The mineral is monoclinic, space group $C2/c$ or Cc, $a = 13.92(7)$, $b = 17.73(5)$, $c = 5.30(3)$ Å, $\beta = 104.78(1)°$; strongest lines of a (reindexed) Gandolfi powder pattern (Cu$K\alpha$ radiation) are 10.78(vs,110), 4.12(m,22$\bar{1}$), 3.39(sB,221,400), 2.63(m,20$\bar{2}$,35$\bar{1}$), and 2.51(m,22$\bar{2}$, 26$\bar{1}$,31$\bar{2}$). Optically biaxial positive, $\alpha = 1.5388(5)$, $\beta = 1.5596(5)$, $\gamma = 1.595(1)$, $2V_{meas} = 103.5(1.5)°$, $2V_{calc} = 103.6(2.6)°$, $\alpha \wedge a = 20–22°$ in the obtuse angle β, $\beta = b$, $\gamma \wedge c = 5–7°$, pleochroism α = colorless, β = pale yellowish brown, γ = dark reddish brown. The average of ten electron microprobe analyses gave Na 4.97, K 0.06, Mg 0.11, Ca 0.08, Fe 18.37, Mn 0.51, Zn 0.09, Si 26.02, Al 0.08, Ti 0.11, F 0.09, Cl 0.13, O (calc.) 39.62 wt%, corresponding to $Na_{1.85}K_{0.01})_{\Sigma1.86}(Fe^{3+}_{2.83}Mn^{2+}_{0.08}Mg_{0.04}Ca_{0.02}Zn_{0.02})_{\Sigma2.99}(Si_{7.96}Al_{0.03}Ti_{0.02})_{\Sigma8.01}O_{20}[(OH)_{2.47}F_{0.04}Cl_{0.03}]_{\Sigma2.54}(OH_2)_4$, ideally $Na_2Fe_3Si_8O_{20}(OH)_2(OH_2)_4$. The new empirical formula and cell give $D_{calc} = 2.28$ g/cm³. **J.L.J.**

Discredited Minerals

Rezbanyite

L. Žák, L. Megarskaya, W.G. Mumme (1992) Rézbányite from Ocna de fier (Vaskö): A mixture of bismuthinite derivatives and cosalite. Neues Jahrb. Mineral. Mon., 69–79.

A sample $5 \times 3 \times 2$ cm of holotype or cotype rezbanyite from Vaskö, Rumania, is part of the original collection of S. Koch now housed in the Mineralogical Collection of the University of Szeged, Hungary. The material was used by Koch to redefine the composition of rezbanyite as $Pb_3Cu_2Bi_{10}S_{19}$. Electron microprobe analyses and Guinier X-ray powder patterns indicate that the material, which is homogeneous by optical microscopy, consists of a mixture of minerals in the bismuthinite-aikinite group (hammarite and krupkaite) and subordinate Cu-bearing cosalite. The results confirm previous studies (Mumme and Žák, *Neues Jahrb. Mineral. Mon.*, 557–567, 1985) that indicate no mineral with the composition of rezbanyite is known.

Discussion. The authors conclude that rezbanyite should be discredited as a mineral name, but no application to do so was made to the CNMMN. **J.L.J.**

Sulrhodite

P. Bayliss, Keqiao Chen, A.J. Criddle, G.A. Desborough (1992) Mineral nomenclature: Sulrhodite. Mineral. Mag., 56, 125–126.

For the solid solution Rh_2S_3-Ir_2S_3, the Rh-dominant and Ir-dominant members are named bowieite and kashinite, respectively. The previously proposed name sulrhodite for Rh_2S_3 (*Am. Mineral.*, 74, p. 1216, 1989) is discredited. **J.L.J.**