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NEW MINERAL NAMES*

PETE J. DUNN, LOUIS J. CABRI, ANDREW M. CLARK AND MICHAEL FLEISCHER

Chlormagaluminite*

A. A. Kashaev, G. D. Feoktisov, and S. V. Petrova (1982) Chlormagaluminite, $(Mg,Fe^{+2})_4Al_2(OH)_{12}(Cl,\frac{1}{2}CO_3)_2 \cdot 2H_2O$, a new mineral of the manasseite-sjögrenite group. Zapiski Vses. Mineralog. Obsh., 111, 121–127 (in Russian).

Analysis by N. G. Tashkina gave MgO 30.84, FeO 4.10, MnO 0.05, TiO_2 0.20, Fe_2O_3 1.15, Al_2O_3 21.20, Na_2O 0.36, H_2O^+ 27.19, H_2O^- 5.20, Cl 11.31, CO_2 1.10, sum 102.70 − (0 = Cl_2) 2.55 = 100.15%. This corresponds to $(Mg_{3.35}Fe^{+2}_{0.27}Na_{0.05})_{3.87}(Al_{1.93}\ Fe^{+3}_{0.07}\ Ti_{0.01})_{2.01}(OH)_{12}[Cl_{1.48}, \frac{1}{2}(CO_3)_{0.24}]_{1.72} \cdot 2.42H_2O$.

Weissenberg, oscillation, and rotation photographs showed the mineral to be hexagonal, space group *P6/mcm*, *P6cm*, or $P\bar{6}C2$, a = 5.29Å, c = 15.46Å., a member of the manasseite–sjögrenite group, D meas. 1.98, 2.09; calc. 2.06. The strongest X-ray lines (Fe-radiation, unfiltered) (31 given) are 7.67(10)(002), 3.86(8)(004), 2.60(8)(111), 2.34(9)(113), 2.17(9)(114), 1.839(10)(116), 1.555(8)(118), 1.526(9)(300), 1.496(9)(302).

The mineral occurs as aggregates of hexagonal dipyramids, colorless to yellow-brown, 0.X to X mm. Cleavage (0001) perfect. Optically uniaxial positive, ω = 1.540, ε = 1.560. It occurs in skarns from the Kapaev explosion pipe, Angara River, southern Siberian Platform, associated with magnetite and chlorite.

The name is for the composition. When first described in 1978 (Zapiski 107, 321, 325 (1978) (Mineralog. Abs. 31, 226 (1980)), it was called "chlor-manasseite," but the new data show it to be different from that compound. **M.F.**

Lotharmeyerite*

P. J. Dunn (1983) Lotharmeyerite, a new mineral from Mapimi, Durango, Mexico. Mineral. Record, 14, 35–36.

Microprobe analyses yielded CaO 11.9, 11.3; ZnO 17.5, 18.3; Mn_2O_3 16.3, 13.4; Fe_2O_3 1.1, 2.7; As_2O_5 45.8, 45.7; H_2O (by difference) 7.4, 8.6; sum = 100.0, 100.0%. The second analysis yields the formula, based on Σ (2+ and 3+ cations) = 3: $Ca_{0.96}Zn_{1.07}(Mn^{3+}_{0.81}Fe^{3+}_{0.16})(AsO_4)_{1.89}(OH)_{1.30} \cdot 1.63H_2O$, or ideally, $CaZnMn^{3+}(AsO_4)(OH) \cdot 2H_2O$. The water content is uncertain.

Single crystals were not found. The strongest lines in the X-ray powder diffraction pattern are: 2.557(100), 3.414(90), 3.175(90), 2.912(90), 2.710(80), 2.822(80), and 4.94(80).

Lotharmeyerite forms dark reddish-orange, equant crystals, which are invariably twinned. The hardness (Mohs) is approximately 3; the streak is orange; D (meas.) = 4.2. The luster is vitreous. Indices of refraction are above 1.80. Pleochroism is strong with pleochroic colors dark reddish-orange and light pinkish orange.

Lotharmeyerite occurs as druse encrustations on adamite and manganese oxides which are cryptomelane in part. It occurs at the Ojuela Mine, Mapimi, Durango, Mexico. The name is for Julius Lothar Meyer (1830–1895), a German chemist who developed many of the concepts incorporated into the periodic table. Type material is in the Smithsonian Institution. **P.J.D.**

Monazite-Nd

Z. Masksimovic, and Gy. Panto (1980) Bastnasite-(La) and monazite-(Nd), a new variety of monazite, from the Marmara bauxite deposit (Greece). Bull. Acad. Serbe Sci. Art, 72, #20, 35–42.

Microprobe analysis yielded Y_2O_3 1.1, La_2O_3 16.4, Ce_2O_3 18.3, Pr_2O_3 6.0, Nd_2O_3 21.5, Sm_2O_3 3.6, Gd_2O_3 2.2, Dy_2O_3 0.5, CaO 1.7, SO_3 1.4, P_2O_5 26.8, sum = 99.5%. This yields the formula, on the basis of 16 oxygens: $(Nd, Ce, La, REE)_{\Sigma 4.04}Ca_{0.29}(P_{3.64}S_{0.17})_{\Sigma 3.81}O_{16}$.

Monazite-(Nd) occurs as fine-grained 1–3 μm pore fillings and fissure fillings up to 15 μm in brindleyite in the Marmara bauxite deposit in Greece.

Discussion

X-ray diffraction study is needed, together with a full description of physical and optical properties. **P.J.D.**

Peisleyite*

E. S. Pilkington, E. R. Segnit, and J. R. Watts (1982) Peisleyite, a new sodium aluminum sulphate phosphate. Mineral. Mag., 46, 449–452.

Chemical analysis yielded SiO_2 0.83, Al_2O_3 35.03, Fe_2O_3 0.17, MgO 0.02, CaO 0.71, Na_2O 3.83, K_2O 0.03, SO_3 7.33, P_2O_5 29.10, H_2O^+ 22.54, sum = 99.60%. This yields the chemical formula, calculated on the basis of S + P + Si = 12.00: $(Na_{2.88}\ K_{0.01}\ Mg_{0.01}\ Ca_{0.30})_{\Sigma 3.20}\ (Al_{16.00}\ Fe^{3+}_{0.05})_{\Sigma 16.05}\ (SO_4)_{2.13}\ (PO_4)_{9.55}\ (SiO_4)_{0.32}(OH)_{17.45} \cdot 20.40H_2O$; the idealized formula is $Na_3Al_{16}(SO_4)_2(PO_4)_{10}(OH)_{17} \cdot 20H_2O$.

Single-crystals were not found. The strongest reflections in the X-ray powder pattern are: 12.63(100)(010), 7.82(35)(11$\bar{2}$), 7.59(30)(111), 5.41(35)(004), 4.35(20)(005). The powder data can be indexed on a monoclinic unit cell with a = 13.31, b = 12.62, c = 23.14Å, β = 11.0°, with Z = 2.

Peisleyite occurs as massive, brittle, chalky material, with D (meas.) = 2.11 g/cm³. It is white in color with mean index of refraction n = 1.510. The darkness is approximately 3. Peisleyite was found associated with wavellite on an isolated block of rock on the dumps of Tom's Phosphate Quarry, near Kapunda, South Australia, Australia.

The name honors Mr. Vincent Peisley of South Australia.

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* Minerals marked with asterisks were approved before publication by the Commission on New Minerals and Mineral Names of the International Mineralogical Association.

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Type material is preserved at the National Museum of Victoria, Australia. **P.J.D.**

Phaunouxite*

H. Bari, M. Catti, G. Ferraris, G. Ivaldi, and F. Permingeat (1982) Phaunouxite, $Ca_3(AsO_4)_2 \cdot 11H_2O$, a new mineral strictly associated with rauenthalite. Bull. Mineral., 105, 327–332.

Wet-chemical analysis yielded CaO 28.2, As_2O_5 39.0, H_2O 31.5, corresponding to $Ca_3(AsO_4)_2 \cdot 11H_2O$, which was confirmed by structural study. At room temperature, phaunouxite dehydrates slowly to rauenthalite.

X-ray study showed phaunouxite to be triclinic, space group $P\bar{1}$ with a = 12.563(7), b = 12.181(6), c = 6.205(4)Å, α = 88.94(3), β = 91.67(3), γ = 113.44(4)°, Z = 2. The strongest lines in the X-ray powder diffraction pattern are: 11.49(10)(100), 6.23(9)($\bar{2}$10), 5.42(8)(011,101,0$\bar{1}$1), 3.276(9)(2$\bar{3}$1,310), and 2.443(7) (1$\bar{3}$2,$\bar{5}$30,$\bar{3}$02).

Phaunouxite occurs as vitreous, colorless, acicular 1.5 mm crystals, often in fan-shaped aggregates. Forms present are {100} and {010}. D (calc.) = 2.275, (meas.) = 2.28(2). Optically, phaunouxite is biaxial, positive, $2V$ = ~80° with indices of refraction α = 1.532, β = 1.542, and γ = 1.556. Phaunouxite was found in two parts of the Gabe-Gottes vein, Sainte-Marie-aux-Mines, Vosges, France. It is associated with ferrarisite and aragonite.

The name is from *Phaunoux*, the French name for the Rauenthal Valley in Vosges. Type material is at the University of Strasbourg, Ecole Nationale Seperieure des Mines, and Museum de Histoire, in France, and the University of Torino, Italy.

Discussion

Phaunouxite was previously described by Bari in *Pierre et Terre*, #23–#24, 101–106. **P.J.D.**

Tobelite*

S. Higashi (1982) Tobelite, a new ammonium dioctahedral mica. Mineralogical Journal (Japan), 11, 138–146.

Wet chemical analyses of tobellite yielded, after corrections for impurities, SiO_2 48.40, 48.34; TiO_2 0.02, 0.30; Al_2O_3 36.27, 37.87; Fe_2O_3 0.57, 1.02; MgO 0.52, 0.11; CaO 0.00, 0.00; Na_2O 0.04, −0.01; K_2O 2.30, 3.25; $(NH_4)_2O$ 3.51, 3.85; H_2O^+ 6.40, 4.96, H_2O^- 1.97, 0.31, sum = 100.00, 100.00%, for material from Tobe and Horo, respectively. The analysis of Tobe material yields the structural formula $((NH_4)_{0.53}K_{0.19}Na_{0.01}\square_{0.27})_{\Sigma 100}$ $(Al_{1.97}Ti_{0.00}Fe^{3+}_{0.03}Mg_{0.05})_{\Sigma 2.05}(Si_{3.17}Al_{0.83})_{\Sigma 4.00}O_{10}(OH)_2$.

X-ray powder data, indexed on a monoclinic cell gave a = 5.219(4), b = 8.986(3), c = 10.447(2)Å, β = 101.31(1)° for Tobe material. The strongest lines in the powder pattern are: 10.24(100)(001), 5.12(7)(002), 4.486(7)(020), 3.408(60)(003), 2.566(45)(13$\bar{1}$,004). Tobelite has D (calc.) = 2.617, D (meas.) = 2.58

Tobellite occurs as white to yellowish-green clayey material consisting of minute flakes and crystals up to 0.1 mm in diameter. Cleavage is perfect, parallel to {001}. Tobelite is biaxial, negative, with indices of refraction α = 1.555(2), β = 1.575(2) and γ = 1.581(2), $2V$ = −28°.

Tobelite is found coexisting with only quartz and is found in the Ohgidani deposit, Tobe, Ehime Prefecture, and at the Horo pyrophyllite deposit at Toyosaka, Hiroshima Prefecture, Japan. The name is for the locality. Type material is preserved at the National Science Museum, Tokyo. **P.J.D.**

Unnamed $CaAl_4O_7$

M. C. Michel-Lévy, G. Kurat, and F. Brandstätter (1982) A new calcium aluminate from a refractory inclusion in the Leoville carbonaceous chondrite. Earth and Planet. Lttrs., 61, 13–22.

Microprobe analysis yielded SiO_2 0.17, TiO_2 0.10, Al_2O 78.1, Cr_2O_3 < 0.02, FeO 0.63, MgO 0.04, CaO 21.0, sum = 100.04%, which is close to stoichiometric $CaAl_4O_7$. This compound occurs as 5–10 μm highly birefringent blebs enclosed in gehlenite within the meteorite given in the title. This phase was previously described from the "mottled zone" in Israel by Gross (see Am. Mineral., 63, 425–426). **P.J.D.**

Unnamed $Ca_{1-x}Th_{1-x}RE_{2x}(PO_4)_2 \cdot 2H_2O$

H. Kucha and A. Weiczorek (1980) $Ca_{1-x}Th_{1-x}RE_{2x}(PO_4)_2 \cdot 2H_2O$, a new mineral from Lower Silesia, Poland. Mineral. Polonica, 11, 123–136.

X-ray study of an undescribed mineral with the above general composition showed it to be orthorhombic, with a = 6.67, b = 12.06, and c = 6.46Å. This compound is suggested to be related to ningyoite. Electron diffraction data are given. **P.J.D.**

Unnamed Ca-Cl-borate = ekaterinite

L. E. Shul'tse and V. T. Dubinchuk (1981) Electron-diffraction and electron-microscopic studies of a new mineral, calcium chloroborate. Rentgen. Mineral. Syr'ya Stroenie Mineralov, 45–51. (translation of abstract in Ref. Zh. Geol. (1982), abstract #3v392 (in Russian).

The new Ca-chlorborate, $Ca_2B_4O_7(Cl,OH)_2 \cdot 2H_2O$, has space group $P6/m$ with a = 11.86, c = 23.88Å. Calculation of the crystal structure permits localization of the Ca atoms (x = 0, y = 0, z = 0).

Discussion

This mineral was described as a new species, ekaterinite, in 1980 by Malinko *et al.* (see Am. Mineral., 66, 437). **M.F.**

Unnamed $Cu_6Fe_6Sb_4S_{13}$

U. Hålenius and C. Ålinder (1982) Occurrence and formation of cuprostibite in a Zn–Pb–Ag mineralized siliceous dolomite at Långsjön, central Sweden. Neues Jahrb. Mineral., Monatsh., 201–215 (in English).

Microprobe analysis gave S 25.01, Sb 28.13, As 0.08, Fe 20.18, Co 0.05, Ni 0.04, Cu 24.12, Zn 0.09, Pb 0.76, Ag 0.60, sum 99.06%, corresponding approximately to the formula above. The mineral is found with tetrahedrite only in the center of large grains of galena or large composite galena–sphalerite grains. It is partly to completely decomposed to chalcopyrite + native Sb ± dyscrasite.

Discussion

This phase could be a tetrahedrite-like mineral with Cu and Fe ordered 1:1. **M.F.**

Unnamed Cu_2HgSnS_4

I. Burkart-Baumann and G. C. Amstutz (1982) New ore microscopic observations on a Hg-rich Cu–Sn sulfide from Quiruvilca/Peru. Neues. Jahr. Mineral. Abh., 144, 307–309.

Microprobe analysis of a stannite-like mineral yielded Cu 24.34, Fe 0.35, Zn 3.66, Hg 21.81, Sn 23.87, S 25.94, sum = 99.97%. This mineral has a weak pleochroic effect with colors yellowish olive-green to brownish olive. Under crossed nichols, in oil immersion, a district anisotropy, dependent upon crystal orientation, shows violet-blue to dark greenish blue colors. It occurs intimately associated with a Hg-bearing kesterite, enargite and pyrite. The coexistence of two stannite-group minerals suggests they are independent phases. They are found at Quiruvilca, Peru. **P.J.D.**

Unnamed $Cu(Zn,Fe)_2InS_4$
Unnamed $AgInS_2$

E. Ohta (1980) Mineralization of Izumo and Sorachi veins of the Toyoha Mine, Hokkaido, Japan. Bull. Geol. Surv. Japan, 31, 585–597. (in Japanese)

$Cu(Zn,Fe)_2InS_4$: Microprobe analyses yielded: S 29.92, 30.15; Fe 2.83, 1.08; Cu 14.17, 13.43; Zn 30.14, 29.19; Ag ---, 0.29; In 21.99, 24.39; Sn 1.73, 0.84; sum = 100.78, 99.37%. These correspond to $Cu_{0.96}(Zn,Fe)_{2.20}(In,Sn)_{0.88}S_4$ and $(Cu,Ag)_{0.91}(Zn,Fe)_{1.98}(In,Sn)_{0.93}S_4$. This phase occurs with cassiterite, stannite and wolframite.

$AgInS_2$: Microprobe analyses yielded S 21.74, 21.49; Fe 0.24, 0.18; Cu 0.80, 0.52; Zn 1.37, 1.31; Ag 36.28, 37.48; In 39.18, 39.19; sum = 99.61, 100.17%. These correspond to $Ag_{0.99}(Zn,Cu,Fe)_{0.11}In_{1.01}S_2$ and $Ag_{1.04}(Zn,Cu,Fe)_{0.09}In_{1.02}S_2$. This phase is associated with hocartite and pyrargyrite. **P.J.D.**

NEW DATA

Ilvaite

L. W. Finger, R. M. Hazen, and J. M. Hughes (1982) Crystal structure of monoclinic ilvaite. Ann. Rept. Geophy. Lab., (1981–1982), 386–388.

Crystal structure refinement of ilvaite of composition $CaFe_{2.73}Al_{0.12}Mn_{0.07}Mg_{0.04}Si_2O_8(OH)$ found it to be monoclinic with space group $P2_1/a$, and unit cell parameters $a = 13.0103(5)$, $b = 8.8039(4)$, $c = 5.8517(3)$Å, $\beta = 90.209(5)°$. **P.J.D.**

Isomertieite

L. J. Cabri and J. H. G. Laflamme (1979) Mineralogy of samples from the Lac des Iles area, Ontario. CANMET Report 79-27.

L. J. Cabri (1980) Determination of ideal formulae for new minerals of the platinum-group. Proc. 11th Gen. Meeting I.M.A., Novosibirsk, 157–165.

L. J. Cabri (1981) The platinum-group minerals. In The Platinum-Group Elements: Mineralogy, Geology, Recovery (L. J. Cabri Ed.) Can. Inst. Min. Metall., Spec. Vol. 23, 83–150.

A. M. Clark and A. J. Criddle (1982) Palladium minerals from Hope's Nose, Torquay, Devon. Mineral. Mag. 46, 371–377.

Y. Vuorelainen, T. A. Häkli, E. Hänninen, H. Papunen, J. Reino and R. Törnroos (1982). Isomertieite and other platinum-group minerals from the Konttijärvi layered mafic intrusion, Northern Finland. Econ. Geol. 77, 1511–1518.

J. F. Rowland (in Cabri 1980) confirmed space group $Fd3m$ but revealed that the structure contains a total of 120 atoms (88 Pd, 16 As, 16 Sb) requiring an empirical formula of $Pd_{11}Sb_2As_2$. This composition was synthesized and used to analyse new occurrences of isomertieite from Lac des Iles, Ontario, Canada and from Konttijärvi, Finland with following results: Lac des Iles (8 analyses): Pd 74.2 (73.8–74.5), Au 0.35 (< 0.04–0.74), Sb 13.9 (13.3–15.4), Te 1.8 (0.20–2.6), As 9.5 (9.3–9.5), sum 99.75 (99.23–100.0) corresponding to $(Pd_{10.96}Au_{0.03})_{\Sigma=10.99}(Sb_{1.80}Te_{0.22})_{\Sigma=2.02}As_{1.99}$. Konttijärvi: Pd 71.35, Pt 0.61, Au 0.81, Ag 1.10, Cu 2.73, Fe 0.05, S 0.03, As 9.43, Sb 15.08, Bi 0.38, sum 101.57. (The empirical formula recalculated on 15 atoms, is $(Pd_{10.22}Cu_{0.65}Ag_{0.16}Au_{0.06}Pt_{0.05}Fe_{0.01})_{\Sigma=11.15}(As_{1.92}Sb_{1.89}Bi_{0.03}S_{0.01})_{\Sigma=3.85}$ **L.J.C.**). A new occurrence of isomertieite from Hope's Nose, Devon, United Kingdom and type isomertieite from Itabira, Brazil (Amer. Mineral., 59, 1330, 1974) have been analyzed and reanalyzed, respectively, against pure metal standards as follows: Hope's Nose; Pd 74.03, 74.12; Au 0.54, 1.56; Cu 0.20, 0.07; Sb 15.72, 15.59; As 9.52, 9.54; Sums 100.01, 100.88 corresponding to (av) $(Pd_{10.89}Au_{0.08}Cu_{0.03})_{\Sigma=11.00}(Sb_{2.01}As_{1.99})_{\Sigma=4.00}$. Type isomertieite gave Pd 72.53, Au 0.37, Cu 1.08, Sb 14.61, As 10.42, sum 99.01 corresponding to $(Pd_{10.66}Cu_{0.27}Au_{0.03})_{\Sigma=10.96}(Sb_{1.86}As_{2.17})_{\Sigma=4.05}$. Full spectral data (400–700 nm) at 20 nm intervals, in air and in oil, are reported for Hope's Nose and type isomertieite (the only isotropic grain from the type locality for which no reflectance data were originally reported). The color values match closely and, for type isomertieite are: (Air,oil) x 0.331, 0.339; y 0.337, 0.344; Y% 54.3, 41.4; λd 578, 578; Pe% 11.2, 15.2. They also closely match the spectral data of Z. Johan (in Cabri 1981).

Discussion

New empirical formula of $Pd_{11}Sb_2As_2$ confirmed and better spectral data presented. Problem of weak anisotropy for majority of type isomertieite grains from Itabira remains, but could be explained by greater departure from (Sb,Te):As of 1:1. **L.J.C., A.M.C.**

Johannite

K. Mereiter (1982) The crystal structure of johannite, $Cu(UO_2)_2(OH)_2(SO_4)_2 \cdot 8H_2O$. Tschermaks Min. Petr. Mitt., 30, 47–57.

Crystal structure analysis with refinement to $R = 0.039$ shows johannite to have the formula $Cu(UO_2)_2(OH)_2(SO_4)_2 \cdot 8H_2O$, which has two more H_2O than previously known. **P.J.D.**

Machatschkiite

H. Effenberger, K. Mereiter, M. Pimminger, and J. Zeeman (1982) Machatschkiite: crystal structure and revision of the chemical formula. Tschermaks Min. Petr. Mitt., 30, 145–155.

Crystal structure study found machatschkiite to be hexagonal, space group $R3c$, with $a = 15.127(2)$ and $c = 22.471(3)$Å, after refinement to $R = 0.040$. The new chemical formula is $Ca_{6-x}Na_x(AsO_4)(AsO_3OH)_3(PO_4)_{1-x}(SO_4)_x \cdot 15H_2O$ ($x \sim 0.3$), with Z = 6.

Discussion

An abstract concerning this mineral recently appeared in Am. Mineral., 67, 418. **P.J.D.**

Makatite

H. Annehed, L. Fälth and F. J. Lincoln (1982) Crystal structure of synthetic makatite $Na_2Si_4O_8(OH)_2 \cdot 4H_2O$. Zeitschrift für Kristallographie, 159, 203–210.

Crystal structure analysis of synthetic crystals yielded a monoclicic unit cell with $a = 7.3881(5)$, $b = 18.094(3)$, $c = 9.5234(5)$Å, $\beta = 90.64(1)°$, space group $P2_1/c$. The given formula is $Na_2Si_4O_8(OH)_2 \cdot 4H_2O$ with Z = 2. The structure was refined to $R = 0.051$ for 834 independent reflections, **P.J.D.**

Melanothallite, Unnamed $CuCl_2$

L. P. Bergasova and S. K. Filatov (1982) The chemical formula and crystallochemical characteristics of melanothallite, Cu_2OCl_2. Zapiski Vses. Mineralog. Obsh., 111, 562–565.

Melanothallite was described in 1870 by Scacchi as a black, platy mineral found among sublimates of Vesuvius, associated with eriochalcite, chalcokyanite, euchlorine, and dolerophanite. It was unstable, altering to green minerals. Its composition was variously given as CuCl(OH) and $CuCl_2$. The mineral had been classed as doubtful in all standard references.

The present paper describes material, corresponding closely to the Vesuvius material, found as the result of the fissure eruption of Tolbachin Volcano, Kamchatka, in 1975–1976. It is black to bluish-black, luster vitreous, deep brown in fine fragments. Plates up to 1 × 0.5 × 1 cm were found. Brittle, with a perfect cleavage probably prismatic. The mineral is partly dissolved by water, completely in warm dilute acids. It alters rapidly in a few days to green material. When heated in air, decomposes to tenorite at about 400°C.

Analysis by T. A. Cherepova gave Cu 59.41, Cl 28.33, O calc. 8.55, Pb 0.01, Zn 0.07, Na 0.04, K 0.06, Li 0.04, SO_4 1.20, H_2O^- 1.75, H_2O^+ 0.05, total 99.51%. O was calculated to correspond to Cu_2OCl_2. The analysis gave 8.63% excess Cu, probably present as tenorite.

X-ray powder data showed complete correspondence with data for synthetic Cu_2OCl_2. The strongest lines (38 given) are 5.041(100)(111), 2.947(44)(202), 2.518(77)(222). They are indexed on an orthorhombic cell, space group $Fddd$, $a = 9.595$, $b = 9.693$ $c = 7.461$Å, Z= 8, D calc. 4.08.

Associated minerals include euchlorine, chalcokyanite, dolerophanite, tenorite, and "a felt-like mineral, $CuCl_2$, of gold-brown color".

Discussion

The close resemblance of the material to that described as melanothallite justifies re-instatement of that mineral as a valid species. It would be reassuring to have type Vesuvius material checked, if any unaltered material can be found. **M.F.**

Roeblingite

P. J. Dunn, J. A. Norberg, and P. B. Leavens (1982) Roeblingite: new chemical data. Mineral. Mag., 46, 341–342.

New chemical analyses of roeblingite from Franklin, New Jersey, and Långban, Sweden, suggest that Mn is essential to roeblingite. The average of 4 microprobe analyses of Franklin material yield: SiO_2 24.9, CaO 23.8, SrO 2.4, MnO 2.4, PbO 30.2, SO_3 10.4, H_2O (by Penfield method) 6.13, sum = 100.23%. The suggested new formula is $(Mn,Ca)_2(Ca,Sr)_{12}Pb_4(SO_4)_4Si_{12}O_{28}(OH)_{20}$, assuming ordering on a site of rank 2. **P.J.D.**

Roggianite

E. Galli (1980) The crystal structure of roggianite, a zeolite-like silicate. Proc. 5th Int. Conf. on Zeolites, 205–213.

Crystal structure analysis found roggianite to be tetragonal, space group $I4/mcm$, with $a = 18.332(10)$ and $c = 9.164(5)$Å, Z = 1, with refinement to $R = 0.102$ the structure study revised the chemical formula to: $Ca_{16}[Al_{16}Si_{32}O_{88}(OH)_{16}](OH)_{16} \cdot \sim 26H_2O$. **P.J.D.**

Walpurgite

K. Mereiter (1982) The crystal structure of walpurgite, $(UO_2)Bi_4O_4(AsO_4)_2 \cdot 2H_2O$. Tschermaks Min. Petr. Mitt., 30, 129–139.

Crystal structure analysis with refinement to $R = 0.041$ finds the formula of walpurgite to be $(UO_2)Bi_4O_4(AsO_4)_2 \cdot 2H_2O$, which is one more H_2O than was previously known. **P.J.D.**

BOOK REVIEWS

CLASSIC MINERAL LOCALITIES OF THE WORLD: ASIA AND AUSTRALIA by Philip Scalisi and David Cook. Van Nostrand Reinhold, Co., Inc., New York, 1983. vii + 226 pages. $29.95.

To many people a gemstone or a spectacular mineral specimen is a "thing of beauty and a joy forever," irrespective of their professional persuasion. P. Scalisi and D. Cook in compiling "The Classical Mineral Localities of the World" into a series of volumes by geographic area are addressing the needs of collectors, historians and mineralogists.

This first volume on Asia and Australia documents the sites and sources of some of the marvelous, and often well-known and prized, mineral materials usually observed as part of museums or private collections. Since many of the deposits that provided the specimens are exhausted, the book should appeal to both scientists and historians. Ancient photographs (many from 1910) of mining areas in Japan, China, Burma, Sri Lanka, India, Afghani-