

## NEW MINERAL NAMES\*

MICHAEL FLEISCHER AND J. A. MANDARINO

### Agrellite\*

J. GITTINS, M. G. BOWN AND B. D. STURMAN (1976) Agrellite, a new rock-forming mineral in regionally metamorphosed agpaite alkalic rocks. *Can. Mineral.* **14**, 120-126.

The mineral occurs as lenses and pods in mafic gneisses composed of albite, microcline, alkalic amphibole, aegirine-augite, eudialyte, and nepheline. Other minerals present are: hiortdahlite, other members of the wöhlerite group, mosandrite, miserite, britholite, vlasovite, calcite, fluorite, clinohumite, norbergite, zircon, biotite, phlogopite, galena, and a new unnamed mineral,  $\text{CaZrSi}_2\text{O}_7$  [see abstract in *Am. Mineral.* **61**, 178-179 (1976)]. The locality is on the Kipawa River, Villedieu Township, Témiscamingue County, Québec, Canada, at about Lat.  $46^\circ 47' 49''$  N, and Long.  $78^\circ 29' 31''$  W (Note by J.A.M.: The Lat. and Long. figures are interchanged in the paper, and the figure for the latitude should be  $46^\circ$  not  $45^\circ$ .)

Agrellite occurs as crystals up to 100 mm in length. They are elongated parallel to [001] and are flattened on either {010} or {110}. The color is white to greyish or greenish white. The luster on cleavages is pearly. Cleavages parallel to {110} and {110} are excellent; parallel to {010} it is poor. Hardness is  $5\frac{1}{2}$ ; sp gr (meas.) is 2.902 and (calc.) 2.887. Agrellite is biaxial negative with  $\alpha = 1.567$ ,  $\beta = 1.579$ ,  $\gamma = 1.581$ ,  $\gamma - \alpha = 0.014$ ,  $2V = 47^\circ$ . Orientation is defined by the following  $\phi$  and  $\rho$  angles for these directions:  $I$  (010)  $0^\circ$  and  $90^\circ$ ,  $I$  (110)  $66^\circ$  and  $90^\circ$ ,  $I$  (110)  $106^\circ$  and  $90^\circ$ ,  $X$   $274^\circ$  and  $88^\circ$ ,  $Y$   $184^\circ$  and  $84^\circ$ , and  $Z$   $23^\circ$  and  $6^\circ$ . (The optic axial plane is almost parallel to {010}.)

The mineral is triclinic with  $a = 7.773$ ,  $b = 18.942$ ,  $c = 6.984\text{\AA}$ ,  $\alpha = 90.148^\circ$ ,  $\beta = 116.84^\circ$ ,  $\gamma = 94.145^\circ$ ,  $V = 914.5\text{\AA}^3$ , lattice  $P$ ,  $Z = 4$ . Data are also given for a pseudomonoclinic true cell and subcell. Strongest lines in the x-ray powder diffraction pattern are:  $3.44\text{ S } 200$ ,  $1.50$ ,  $3.33\text{ S } 220$ ,  $3.19\text{ VS } 150$ ,  $0.51$ ,  $3.14\text{ VS } 220$ ,  $0.60$ ,  $2.02$ ,  $0.02$ , and  $2.58\text{ \AA } \text{S } 251$ ,  $110$ .

One electron microprobe and two wet-chemical analyses were performed. A "most probable" composition based on these analyses is:  $\text{SiO}_2$  58.83,  $\text{TiO}_2$  0.01,  $\text{Al}_2\text{O}_3$  0.10,  $\text{Fe}_2\text{O}_3$  0.11,  $\text{MnO}$  0.25,  $\text{CaO}$  25.70,  $\text{SrO}$  0.16,  $\text{BaO}$  0.06,  $\text{MgO}$  0.02,  $\text{ZrO}_2$  0.18,  $(\text{RE})_2\text{O}_3$  3.84,  $\text{Na}_2\text{O}$  7.90,  $\text{K}_2\text{O}$  0.22,  $\text{H}_2\text{O}^+$  0.4,  $F$  4.45, total 102.23, less  $\text{O} = F$  1.87, total 100.36 weight percent. The formula derived from these data is:  $(\text{Na}_{4.06}\text{K}_{0.07}) (\text{Ca}_{7.30}\text{RE}_{0.47}) (\text{Mn,Fe,Sr,Ba,Mg,Zr})_{0.14} (\text{Si}_{15.61}\text{Al}_{0.03})\text{O}_{39.70} [\text{F}_{3.73}(\text{OH})_{0.71}]$  or, ideally:  $\text{NaCa}_2\text{Si}_4\text{O}_{10}\text{F}$  (Note by J.A.M.: The theoretical analysis for this composition is:  $\text{Na}_2\text{O}$  7.86,  $\text{CaO}$  28.43,  $\text{SiO}_2$  60.92,  $F$  4.82, total 102.03, less  $\text{O} = F$  2.03, total 100.00 weight percent).

The mineral is named for Dr. Stuart O. Agrell, University of Cambridge. Type specimens are preserved at: University of Toronto, Royal Ontario Museum, Smithsonian Institution, University of Cambridge, British Museum (Natural History), National

\* Minerals marked with an asterisk after the name were approved before publication by the Commission on New Minerals and Mineral Names of the International Mineralogical Association.

Museum of Canada, Geological Survey of Canada, and Institute for the Mineralogy, Geochemistry and Crystal Chemistry of the Rare Elements (Moscow). J. A. M.

### Fedorovskite \*

S. V. MALINKO, D. P. SHASHKIN AND K. V. YURKINA (1976) Fedorovskite, a new boron mineral, and the isomorphous series roweite-fedorovskite.

*Zap. Vses. Mineral. O-vo.* **105**, 71-85 (in Russian).

Microprobe and microchemical analyses of samples from Solongo, Buryat ASSR, gave Ca 18, 17, 4, 18, 17, 17; Mn 17, 14, 9, 6, 5; Mg 3, 4.5, 7, 9, 10; Fe 2, 1.0, 1, 1, 1; Zn not found, Al 0.6, not found; Si 0.6, not found; percent Mn/(Mn+Mg+Fe) 65, 55, 35, 20, 18. The first two samples are magnesian roweites, the last three manganous fedorovskite, the name given to the end member  $\text{Ca}_2\text{Mg}_2(\text{OH})_4[\text{B}_4\text{O}_7(\text{OH})_2]$ . Insoluble in  $\text{H}_2\text{O}$ , dissolved by dilute HCl.

X-ray powder data are given for the first 3 samples analyzed. For the third sample ( $\text{Mg}_{65}\text{Mn}_{35}$ ), the strongest lines (41 given) are  $3.92\text{ 10 } 201$ ,  $3.02\text{ 7 } 202$ ,  $2.59\text{ 10 } 042$ ,  $2.28\text{ 6 } 322$ ,  $2.119\text{ 7 } 043$ ,  $1.693\text{ 7 } 324$ ,  $1.630\text{ 7 } 244$ ; corresponding to a unit cell with  $a$   $8.96 \pm 0.02$   $b$   $13.15 \pm 0.02$ ,  $c$   $8.15 \pm 0.01\text{\AA}$ . All dimensions of the unit cell decrease with decreasing Mn content. Orthorhombic, space group *Pbam*.

The mineral occurs with sakhaita, with frolovite and uralborite, as monomineralic veinlets, and with datolite in garnet-vesuvianite-svabite skarns. Commonly fibrous. Color brown. Sp gr decreasing with decreasing Mn content: 2.90 (anal. 1) 2.73 (anal. 2), 2.65 (anal. 3). H 4.5, cleavage (100) perfect; shows polysynthetic twinning on (100). Optically biaxial, negative,  $n_s$  (anal. 1),  $\alpha$  1.643,  $\beta$  1.653,  $\gamma$  1.654,  $2V$  ( $596\text{ nm}$ )  $40^\circ$ ; (anal. 5)  $\alpha$  1.619,  $\beta$  1.627,  $\gamma$  1.629;  $r < v$  very strong;  $X = c$ ,  $Z = a$ ; pleochroic,  $X$  colorless to pale yellow,  $Z$  yellow to bright yellow.

The name is for Nikolai Mikhailovich Fedorov (1886-1956), former director of the All-Union Research Institute of Mineral Resources. Type material is at the Mineralogical Museum, Academy of Science, USSR, Moscow. M. F.

### Krutovite\*

R. A. VINOGRADOVA, N. S. RUDASHEVSKII, I. A. BUD'KO, L. I. BOCHEK, P. KASPAR AND K. PADERA (1976) Krutovite, a new cubic nickel diarsenide. *Zap. Vses. Mineral. O-vo.* **195**, 59-71 (in Russian)

Microprobe analyses (63!) were made of 2 samples, giving (range and average for each sample): Ni 23.5-26.7, 25.0; 25.8-28.5, 26.7; Co 0.12-0.43, 0.22; 0.18-0.43, 0.30; Fe 0.09-0.41, 0.15; 0.12-0.50, 0.21; Cu 0.60-1.13, 0.86; 0.77-0.97, 0.85; As 72.0-74.4, 73.4; 70.3-73.1, 71.9; S 0.02-0.18, 0.09; 0.06-0.34, 0.15; ratio (As + S)/total metals 2.21, 2.02, formula  $\text{Ni}_{1-x}\text{As}_2$  ( $x = 0-0.1$ ). Etching with  $\text{HNO}_3$  (1:1) gave a dark brownish-gray spot with iridescent borders. KOH, HCl,  $\text{FeCl}_3$ , and  $\text{HgCl}_2$  did not react.

Cubic,  $P2_13$ ,  $a$   $5.794 \pm .002\text{\AA}$  (sample 1),  $5.786 \pm .002\text{\AA}$  (sample

2) The strongest lines (22 given) for sample 1 are 2.897 6 200, 2.593 10 210, 2.365 8 211, 1.746 8 311, 1.548 6 321, 1.024 6 140.

Color grayish-white, somewhat paler than the associated nickel skutterudite, luster metallic. In polished section in reflected light, bright white with a rose tint compared to nickel skutterudite. Reflectances for the 2 samples are given at 18 wave lengths from 440 to 1100 nm; 460, 65.4, 64.7; 540, 64.7, 65.0; 580, 65.7, 65.8; 660, 66.8, 66.3; 780, 66.8, 66.0 percent. H (av.) 633, 624 kg/sq mm (=5.5 Mohs).

Krutovite occurs in ore from the Geshiber vein, Jachymov, Czechoslovakia, as grains up to 0.1 mm., usually in close intergrowth with nickel skutterudite, also with tennantite. It has also been found in samples of arsenides from the Khomahs deposit, Tuva ASSR.

The name is for Georgi Alekseevich Krutov, professor of mineralogy, Moscow Gosudarst University, for his studies of Ni-Co deposits. Type material is in the Mineralogical Museum of the Academy of Science, Moscow, the Mining Institute, Leningrad, and the National Museum, Prague. M. F.

#### Kulanite\*

J. A. MANDARINO AND B. D. STURMAN (1976) Kulanite, a new barium iron aluminum phosphate from the Yukon Territory, Canada. *Can. Mineral.* **14**, 127-131.

The mineral occurs as blue to green plates and rosette-like aggregates in a sideritic iron-formation in the northeastern portion of the Yukon Territory (at approximately 68°34'N, 136°50'W), Canada. The plates are tabular parallel to  $\{101\}$ . The hardness is 4, streak is very pale green, and there are two fair to good cleavages parallel to  $\{010\}$  and  $\{100\}$ . The density (Berman balance) is 3.91 g/cm<sup>3</sup>; the density calculated from the analysis and cell parameters is 3.92 g/cm<sup>3</sup>. The mineral is transparent to translucent, has a vitreous luster, and is non-fluorescent. Kulanite is biaxial (+),  $\alpha = 1.703$ ,  $\beta = 1.705$ ,  $\gamma = 1.723$ ,  $2V$  (meas.) = 32°,  $2V$  (calc.) = 38°, birefringence = 0.020. Dispersion is very strong with  $r \gg v$ . The optical orientation is:  $b \cong \beta$ ,  $c \wedge \gamma = -8^\circ$ . An optic axis is almost normal to  $\{101\}$ . The mineral is pleochroic with  $\alpha =$  brownish green,  $\beta =$  green, and  $\gamma =$  very pale brown; absorption  $\alpha \cong \beta \gg \gamma$ . The unsymmetrical dispersion indicates that the mineral is triclinic, although crystals are pseudomonoclinic. The unit cell data are: triclinic, space group  $P\bar{1}$ ,  $a = 9.032$ ,  $b = 12.119$ ,  $c = 4.936$  Å,  $\alpha \sim 90^\circ$ ,  $\beta = 100^\circ 23'$ ,  $\gamma \sim 90^\circ$ ,  $Z = 2$ ,  $V = 531.4$  Å<sup>3</sup>,  $a:b:c = 0.7453:1:0.4073$ . The following forms (in monoclinic notation) were observed:  $\{001\}$ ,  $\{100\}$ ,  $\{120\}$ ,  $\{110\}$ ,  $\{011\}$ ,  $\{031\}$ ,  $\{101\}$ ,  $\{301\}$ ,  $\{111\}$ ,  $\{121\}$ ,  $\{131\}$ , and  $\{161\}$ . The strongest lines in the x-ray powder diffraction pattern are (for  $\text{CuK}\alpha$ , Guinier camera): 8.84 6 100, 3.108 10 031, 2.21, 3.044 7 131, 2.927 8 211, and 2.659 Å 7 311, 320.

Chemical analysis gave: Na<sub>2</sub>O 0.02, MgO 3.08, CaO 0.77, MnO 6.32, FeO 10.50, BaO 23.66, Al<sub>2</sub>O<sub>3</sub> 14.30, Fe<sub>2</sub>O<sub>3</sub> 2.14, P<sub>2</sub>O<sub>5</sub> 33.28, H<sub>2</sub>O 3.83, SiO<sub>2</sub> 0.19 (quartz impurity), total 98.09 weight percent. These data give a chemical formula: Ba<sub>1.00</sub>(Fe<sub>0.34</sub><sup>2+</sup>Mn<sub>0.57</sub><sup>2+</sup>Mg<sub>0.49</sub>Ca<sub>0.09</sub>)(Al<sub>1.81</sub>Fe<sub>0.17</sub><sup>3+</sup>)(PO<sub>4</sub>)<sub>3.02</sub>(OH)<sub>2.74</sub> or, ideally, Ba(Fe,Mn,Mg,Ca)<sub>2</sub>(Al,Fe)<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub>(OH)<sub>3</sub>.

Simultaneous TGA and DTA showed a simple one-stage weight loss curve. An endothermic peak is present at 710°C.

Kulanite is the triclinic, ferrous iron-dominant analogue of bja-rebyite. Type material (the manganoan, magnesian variety) is preserved at the Royal Ontario Museum. The name is in honor of Mr.

Alan Kulan of Ross River, Yukon Territory, who supplied the material. J. A. M.

#### Tvalchrelidzeite\*

V. S. GRUZDEV, N. M. MCHEDLISHVILI, G. A. TEREKHOVA, Z. YA. TSERTSVADZE, N. M. CHERNITSOVA AND N. G. SHUMKOVA (1975) Tvalchrelidzeite, Hg<sub>12</sub>(Sb,As)<sub>8</sub>S<sub>15</sub>, a new mineral from the Gomi arsenic-antimony-mercury deposit, Caucasus. *Doklady Akad. Nauk SSSR*, **225**, 911-913 (in Russian).

Analysis by N.G.S. gave Hg 64.60, 64.94; Sb 14.32, 14.12; As 7.60, 7.75; S 12.83, 12.71, sum 99.35, 99.52 percent, corresponding to Hg<sub>12</sub>(Sb<sub>4.38</sub>As<sub>3.78</sub>)S<sub>14.92</sub> and Hg<sub>12</sub>(Sb<sub>4.30</sub>As<sub>3.84</sub>)S<sub>14.69</sub>. Spectrographic analysis showed Ag, Pb, Cu 0.001-0.01 percent. Insoluble in solutions of alkali sulfides. Etch tests with standard reagents gave no positive results.

X-ray powder data (57 lines), unfiltered Fe-radiation, are given, the strongest lines being 3.49 100 210, 3.29 71 204, 2.92 100 014, 2.98 100 310, 400, 2.080 100 122. These are indexed on a monoclinic cell with  $a$  11.51 ± 0.04,  $b$  4.39 ± 0.02,  $c$  14.62 ± 0.06 Å,  $\beta$  92.14°.

The mineral occurs in granular aggregates, without well-formed crystals. Cleavage perfect in one direction, fracture uneven and conchoidal. H 143-220, av. 172 kg/sq nm = somewhat less than 3, Mohs. Sp gr 7.38 ± 0.005. Color lead-gray, streak nearly black with a dark reddish tint. Luster adamantine. A poor conductor of electricity. Polishes well.

In transmitted light, dark cherry-red, translucent. In reflected light bright, on  $R_p$  white to grayish-white with a very weak lilac tint, on  $R_g$  a distinctly greenish tint. Bireflectance distinct, strong dark-red internal reflections. Anisotropic, with color effects from dark olive to dark violet.

Reflectances are given at 12 wave lengths (440-660 nm):

	460	540	580	640
$R_g'$	40.0	39.5	36.7	33.5
$R_p'$	41.6	36.7	34.7	32.6

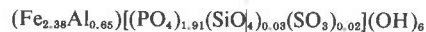
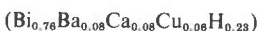
The mineral occurs in the Gomi deposit, Georgian SSR, associated with cinnabar, metacinnabar, realgar, and dickite.

The name is for A. A. Tvalchrelidze, founder of the Georgian mineralogical-petrographic school. Type material is preserved in the Mineralogical Museum, Academy of Sciences, USSR, Moscow. M. F.

#### Zaïrite\*

L. VAN WAMBEKE (1975, publ. 1976) La zaïrite, un nouveau mineral appartenant a la serie de la crandallite. *Bull. Soc. fr. Mineral. Cristallogr.*, **98**, 351-353.

Analysis of purified material gave P<sub>2</sub>O<sub>5</sub> 21.93, SiO<sub>2</sub> 0.33, SO<sub>3</sub> 0.29, TeO<sub>3</sub> 0.220, Fe<sub>2</sub>O<sub>3</sub> 30.75, Al<sub>2</sub>O<sub>3</sub> 5.35, Bi<sub>2</sub>O<sub>3</sub> 28.71, BaO 1.98, CaO 0.72, CuO 0.82, ZnO 0.05, H<sub>2</sub>O 9.05, sum 100.18 percent. Also present SrO 0.05-0.10 percent. Some samples contained up to 1.5-2 percent CuO. The analysis corresponds to the formula:



or ideally Bi(Fe,Al)<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>(OH)<sub>6</sub>. It is a member of the crandallite group, the ferric iron analogue of waylandite.

X-ray study shows it to be rhombohedral, space group  $R\bar{3}m$ ,  $a$

7.015 ± .005,  $c$  16.365 ± 0.015 Å,  $Z = 3$ , Sp gr (calc) 4.42, (meas) 4.37 ± 0.05 (pycnometer). The strongest X-ray lines (13 given) are 5.710 **95 101**, 3.503 **40 110**, 2.945 **100 113**, **021**, 2.727 **20 006**.

Color greenish.  $H$  4.5, optically uniaxial, negative,  $n_s$  somewhat variable, 1.82 and 1.83, birefringence weak to moderate.

The mineral occurs in small masses, associated with mica and another bismuth phosphate, apparently new, in the zone of weathering of quartz veins containing wolframite, at Eta-Etu, northern Kivu, Republic of Zaïre.

The name is for the county of origin. Type material is preserved at the Commission des Communautés Européennes, Brussels. **M.F.**

## UNNAMED MINERALS

KURT WALENTA (1975) The secondary minerals of the barite veins of the Clara Mine near Oberwolfach in the central Schwarzwald. *Aufschluss*, **26**, 369–411 (in German).

### Unnamed copper carbonate

The mineral occurs in blue-green aggregates up to 0.2 mm on barite. Radiating fibrous. Optically uniaxial to slightly biaxial, negative, dispersion strong  $r > v$ ,  $\alpha$  1.645,  $\gamma$  1.751 (both ± .002), pleochroism  $X$  colorless,  $Z$  pale green to bluish-green. Dissolved by dilute  $HNO_3$  with effervescence, gave microchemical tests for Cu, some Mn and Zn, and a little sulfate. Perhaps monoclinic or triclinic, extinction up to 30°. X-ray powder data (24 lines) show strongest lines 13.47 **10**, 7.84 **9**, 5.17 **6**, 3.65 **8 diff.**, 3.25 **5**, 2.96 **6**.

### Unnamed copper arsenate-sulfate

The mineral previously described from Wittichen (*Am. Mineral.* **58**, 561, 1973) has also been found at the Clara Mine. Pleochroism  $X$  colorless,  $Y$  and  $Z$  pale green to bluish-green,  $X$  perpendicular to plates.

### Unnamed lead arsenate-sulfate

Probable formula  $Pb_2Fe(AsO_4)(SO_4)(OH)$ . Microchemical tests showed arsenate, sulfate, Pb, Fe, less Cu, and very little Ca. The X-ray pattern (41 lines) has strongest lines 6.03 **5**, 4.90 **6**, 3.68 **5**, 3.27 **10**, 3.00 **10**, 2.78 **9**, 2.31 **5**, 2.12 **6**. It resembles those of the arsenate analogue of tsumebite,  $Pb_2Cu(AsO_4)(SO_4)(OH)$ , and of fornacite,  $Pb_2Cu(AsO_4)(CrO_4)(OH)$ , hence the formula above is assumed. Probably monoclinic.

The mineral forms yellow to greenish crusts, some reniform, on barite, with mimetite, beudantite, and stolzite. Birefringence distinct,  $n_s$  between 2.0 and 2.1,  $\alpha < 2.04$   $\gamma > 2.04$ .

### Unnamed copper tungstate (Cuprotungstite?)

The mineral occurs as grass-green crusts on quartz crystals, associated with scheelite, wolframite, and bastnaesite. Electron microprobe analysis showed major Cu and W, also Fe and Si. Under the microscope the mineral appeared as aggregates of crystals of steep rhombic form, max. length 30 microns. Elongation negative,  $n_s$  somewhat above 2.1, birefringence moderately high, not notably pleochroic. X-ray powder data (16 lines) showed strongest lines 4.74 **5**, 4.07 **8 diff.**, 3.84 **8 diff.**, 2.54 **10**, 2.36 **5**, 2.24 **5**, 1.468 **8**, not agreeing well with published data for cuprotungstite. **M. F.**

### Unnamed $K_2Zn(SO_4)_2 \cdot 2H_2O$

M. DELEINS (1975) Volcanic sublimates of Rugarama, Kivu region, Republic of Zaïre. *Repub. Rivandaise, Bull. Serv. Geol.*, no. 8, 1–11 (in French).

Chemical analyses and X-ray data are given for 5 sublimates emitted in May, 1971, by the Rugarama cone of the volcano Nyamuragira. One of these consisted of pale green to blue reniform crusts; analysis showed Cu 13.50, Zn 7.90, Pb 2.91, Na 3.66, K 7.10, S total 18.70 percent. The X-ray data are considered to be due to chalcantite ± 50 percent,  $K_2Zn(SO_4)_2 \cdot 2H_2O$  (ASTM 17–482) ± 25 percent, anglesite ± 5 percent,  $Na_2SO_4$  ± 10 percent, S and other sulfates ± 10 percent. Strongest lines (the synthetic compound and those measured on the mixture) are resp.: 4.15 **80**, 4.16 **40**; 4.04 **55**, 4.05 **30**; 3.68 **90**, 3.69 **100**; 3.29 **100**, 3.31 **30**; 2.972 **65**, 3.00 **60**. **M. F.**

### Unnamed sulfides of Pt metals

V. D. BEGIZOV, L. F. BORISENKO AND E. D. USKOV (1975) Sulfides and natural solid solutions of platinoids from the ultrabasites of the Gusevogor massif, Urals. *Doiklady Akad. Nauk SSSR*, **225**, no. 6, 1408–1411 (in Russian).

Two new sulfides were found as minute crystal inclusions in polyxene (Pt containing 6.9–8.2 percent Fe), isolated from pyroxenites of this massif. The first was gray, optically isotropic, sometimes occurring in intergrowth with laurite. Probe analysis gave Ir 44.6, Rh 29.2, S 24.1, sum 97.9 percent, corresponding to  $(Rh_{1.13}Ir_{0.93})S_{3.00}$ .

The second was found as an oval deposit 15 microns in diameter, dark gray with a bluish tint, isotropic under crossed Nicols. Probe analysis gave Ir 48.2, Rh 11.0, Cu 13.1, S 26.6, sum 98.9 percent, corresponding to  $(Ir_{0.91}Cu_{0.74}Rh_{0.39})S_{3.00}$ . **M. F.**

## NEW DATA

### Fraipontite

ANDRE-MATHIEU FRANSOLET AND POL BOURGUIGNON (1975, publ. 1976) New data on the fraipontite of Moresnet, Belgium. *Bull. Soc. fr. Mineral. Cristallogr.*, **98**, 235–244.

A new chemical analysis by J. M. Speetjens on type material gave  $SiO_2$  20.86,  $Al_2O_3$  16.62,  $Fe_2O_3$  0.52, ZnO 47.04, MgO 0.07, CuO 0.50, CaO 0.35,  $H_2O$ – 1.13,  $H_2O$ + (loss on ignition at 1000°) 13.13, sum 100.22 percent, corresponding to  $(Zn_{2.96}Al_{0.66})(Si_{1.35}Al_{0.65})O_5(OH)_4$ . The TGA curve shows loss of weight 2 percent, 25–200°, 4.75 percent 200–470°, 7.40 percent 470–1000°. The DTA curve shows a small endothermic break at 350°, a large one at 395–430°, and an exothermic break at 730–775°. Zincite appears at 600°, willemitite and gahnite at 1000°. Infrared data are given.

X-ray study shows the mineral to be monoclinic,  $a$  5.372,  $b$  9.246,  $c$  7.273 Å,  $\beta$  103°33'. The strongest X-ray lines (20 given) are 7.03 **100 001**, 3.53 **70 002**, 2.650 **40 130, 207**, 2.385 **30 131**, **207**.

Optically biaxial, negative,  $2V$  15–20°,  $n_s \beta = \gamma = 1.624$ . The mineral is the zinc analogue of berthierine in the kaolinite-serpentine group. **M. F.**

### Kegelite\*

O. MEDENBACH AND K. SCHMETZER (1976) Kegelite, a new lead silicate from Tsumeb. *Neues Jahrb. Mineral. Monatsh.* 110–114 (in German)

A preliminary report was abstracted in *Am. Mineral.* **61**, 175(1976). New data: Microprobe analysis, using as standards  $\text{PbO}_2$ , synthetic diopside, barite, chromite, and synthetic  $\text{ZnO}$ , gave  $\text{SiO}_2$  16.2,  $\text{SO}_3$  7.9,  $\text{Al}_2\text{O}_3$ , 5.4,  $\text{PbO}$  65.7,  $\text{ZnO}$  2.8,  $\text{FeO}$  0.95,  $\text{CaO}$  0.04,  $\text{MnO}$  0.01, sum 99.10 percent. S was distributed homogeneously, and no inclusions such as anglesite were present, so sulfate is part of the formula. Infrared spectra showed no bands of OH or  $\text{H}_2\text{O}$ . Formula  $\text{Pb}_{12}(\text{Zn,Fe})_2\text{Al}_4\text{Si}_{11}\text{S}_4\text{O}_{54}$ .

X-ray powder data (26 lines) show strongest lines: 21.06 **70**, 7.036 **100**, 3.826 **75**, 3.736 **60**, 3.010 **95**, 2.594 **75**, 2.340 **50**. M. F.

## DISCREDITED MINERAL

### Isostannite = Kesterite

S. A. KISSIN AND D. R. OWENS (1975). New data on stannite and related sulphide minerals. *Can. Mineral.* **13**, 309 (abstr.).

The authors have studied stannite and kesterite specimens from a number of world-wide localities. They conclude that isostannite is identical to kesterite. J. A. M.