

## NEW MINERAL NAMES

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**Mohrite**

CARLO L. GARAVELLI, Mohrite: un nuovo minerale della zona borifera toscana. *Atti Accad. Nazl. Lincei, Rend., Classe sci. fis. mat. e nat.*, **36**, 524-533 (1964).

Pale green incrustations were collected by Professor A. Pelloux in 1927 from the boriferous soffioni of Travale, Val di Cecina, Tuscany, Italy. They consisted of irregular lamina and of minute quasieuhedral crystals; these were selected under the binoculars and analyzed separately, giving respectively: SO<sub>3</sub> 41.05, 42.69; FeO 17.49, 9.86; MnO 0.11, 0.34; MgO 0.56, 5.08; (NH<sub>4</sub>)<sub>2</sub>O 13.13, 13.40; H<sub>2</sub>O 27.10, 28.69; insol. in H<sub>2</sub>O 0.16, 0.15; sum 99.60, 100.21%. These correspond to (NH<sub>4</sub>)<sub>2</sub>(Fe<sub>0.94</sub>Mg<sub>0.05</sub>Mn<sub>0.01</sub>)(SO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O and (NH<sub>4</sub>)<sub>2</sub>(Fe<sub>0.51</sub>Mg<sub>0.47</sub>Mn<sub>0.02</sub>)(SO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O. The name mohrite is given to the end-member (NH<sub>4</sub>)<sub>2</sub>Fe(SO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O; a complete solid solution series probably exists with boussingaultite.

X-ray study shows the mineral to be monoclinic, space group *P2<sub>1</sub>/c*; the unit cell constants for the two analyzed samples are, respectively *a* 6.237, 6.234; *b* 12.613, 12.618; *c* 9.292, 9.290 Å,  $\beta$  106°53' 106°54', *G* calc. 1.870, 1.805; meas. 1.862, 1.800. X-ray powder data are given; the strongest lines for the first sample are 3.801 (100) (031), 4.200 (65) (102), 2.460 (28) (133), 3.153 (25) (040), 3.025 (20) (211), 5.40 (18) (110). Cleavages {102} perfect, and {010} distinct.

Color pale-green, luster vitreous. Optically biaxial, (+); the first sample analyzed had  $\alpha$  1.486,  $\gamma$  1.497, 2*V* about 75°; the second had  $\alpha$  1.480,  $\gamma$  1.486.

The name is for Karl Friedrich Mohr, 1806-1879, German analytical chemist. The compound has long been known as Mohr's salt. The name was approved before publication by the Commission on New Minerals and Mineral Names, I.M.A.

DISCUSSION.—Not to be confused with mooreite and moureite.

**Hydroxyl-bastnaesite**

A. S. KIRILLOV, A new variety of bastnaesite—hydroxyl-bastnaesite. *Doklady Akad. Nauk. SSSR*, **159** (5), 1048-1050 (1964) (in Russian).

Analysis by K. A. Baklanova gave La<sub>2</sub>O<sub>3</sub> 26.86, Ce<sub>2</sub>O<sub>3</sub> 37.50, Nd<sub>2</sub>O<sub>3</sub> 3.43, Sm<sub>2</sub>O<sub>3</sub> 1.59, (Y+Dy)<sub>2</sub>O<sub>3</sub> 1.47, ThO<sub>2</sub> 0.50, BaO 0.70, CaO 0.40, Na<sub>2</sub>O 0.13, MnO 0.06, MgO 0.16, Fe<sub>2</sub>O<sub>3</sub> 2.17, TiO<sub>2</sub> 0.04, H<sub>2</sub>O<sup>-</sup> 0.11, H<sub>2</sub>O<sup>+</sup> 3.96, F 1.15, CO<sub>2</sub> 19.70, SO<sub>3</sub> 0.040, P<sub>2</sub>O<sub>5</sub> 0.23, SiO<sub>2</sub> 0.30, sum 100.86—(O=F<sub>2</sub>) 0.50=100.36%. After deducting a little quartz, anatase, goethite, barite, and rhabdophane, this corresponds to (Ce, La)(CO<sub>3</sub>)(OH, F) with OH:F=0.87:0.14. DTA curve shows endothermal effects at 420-580° and 770-800°. Dissolves in cold HCl or H<sub>2</sub>SO<sub>4</sub>.

Goniometric and x-ray data are given. The powder data are very similar to those of bastnaesite, but with larger spacings. The strongest lines are 2.92 (10) (1122), 3.59 (9) (1120), 2.09 (9) (3030), 1.923 (9) (3032). The unit cell has *a* 7.23 ± 0.02, *c* 9.98 ± 0.05 Å, *c/a* 1.380.

Color waxy-yellow to dark brown; rarely colorless, luster vitreous to greasy. Cleavage {1120} imperfect. *H* about 4, *G* 4.745. Uniaxial, (+),  $\omega$  1.760 ± 0.003,  $\epsilon$  1.870 ± 0.006.

The mineral occurs in an unspecified massif of alkalic-ultrabasic rocks as reniform aggregates in cavities of late carbonatite veins, associated with barite, strontianite, monazite, ancylite, altered burbankite, pyrite and other sulfides.

**Raenthalite**

R. PIERROT, Contribution à la minéralogie des arsénates calciques et calcomagnésiens naturels. *Soc. franç. Minéral. Cristall. Bull.* **87**, 169-211 (1964).

The mineral has been found only at Sainte-Marie-aux-Mines, France (Alsace); the type locality is the 40-m level of the Gabe Gottes vein. It occurs in two principal habits: (1) little rounded, irregular, polycrystalline, snow-white spherules; and (2) tiny colorless crystals either perched on type 1 spherules or separate. Radial structures were not observed. Two analyses (180 and 140 mg, respectively) gave:  $\text{As}_2\text{O}_5$  39.67, 40.21; CaO 28.43, 29.42; MgO 0.00, 0.00;  $\text{H}_2\text{O}$  31.89, 30.20; Sum 99.99, 99.83. These are in good agreement with the formula  $\text{Ca}_3(\text{AsO}_4)_2 \cdot 10\text{H}_2\text{O}$ . Optical properties: biaxial positive,  $2V_Z = 85^\circ \pm 2^\circ$ ;  $\alpha$  (calc.) = 1.540,  $\beta = 1.552 \pm 0.002$ ,  $\gamma = 1.570 \pm 0.002$ ; Y and Z lie in the plane of flattening of the crystals, and  $Y \wedge$  (elongation) of  $5^\circ$ – $10^\circ$ . The mean index of refraction is 1.554, compared with 1.559 calculated from the rule of Gladstone and Dale and the observed density,  $2.36 \text{ gm cm}^{-3}$ .

The symmetry is not known, but from the optical properties must be monoclinic or triclinic. The repeat distance parallel to the crystal elongation is  $6.18 \pm 0.02 \text{ \AA}$  ( $\text{CuK}\alpha_1$ ,  $\lambda = 1.54051 \text{ \AA}$ ). The powder pattern is in permissive agreement with a poor pattern of synthetic material. The rauenthalite pattern shows 48 spacings between 10.8 and 1.339  $\text{\AA}$ ; the strongest six and their intensities are: 10.8, vvs; 3.36, vs; 2.44, s; 6.2, ms; 2.58, ms; 2.06, ms.

The name is for the Rauenthal vein system, to which the Sainte-Marie-aux-Mines deposit belongs. The type specimens are in the mineralogical collection of the École Nationale Supérieure des Mines de Paris. The name was approved by the I.M.A. Commission on New Minerals and Mineral Names.

P. TOULMIN

#### Sainfeldite

R. PIERROT, Contribution à la minéralogie des arsénates calciques et calcomagnésiens naturels. *Soc. franç. Minéral. Cristall. Bull.* **87**, 169–211 (1964).

The mineral was first noted in 1958 by F. Permingeat in material from Jachymov, Bohemia; a powder diagram agreed with data for the synthetic compound  $5\text{CaO} \cdot 2\text{As}_2\text{O}_5 \cdot 5\text{H}_2\text{O}$  but insufficient material prevented a complete description. The type material is from the –40 m level of the Gabe Gottes vein, Sainte-Marie-aux-Mines, Alsace.

Sainfeldite is transparent, colorless or light pink (said to reflect small amounts of Co), and occurs in little flattened rosettes or radiating crystals. The crystals are monoclinic, elongate parallel to  $c$ , flattened on (100).  $X = b$ ,  $Y \wedge c \sim 20^\circ$ ;  $\alpha = 1.600 \pm 0.002$ ,  $\beta = 1.610 \pm 0.002$ ,  $\gamma = 1.616 \pm 0.002$ ;  $2V_X = 80^\circ \pm 2^\circ$ . Analysis of a colorless specimen from Ste-Marie-aux-Mines (80 mg) gave:  $\text{As}_2\text{O}_5$  54.7, CaO 33.4,  $\text{H}_2\text{O}$  11.5, sum 99.6, in reasonable agreement with the formula  $\text{H}_2\text{Ca}_5(\text{AsO}_4)_4 \cdot 4\text{H}_2\text{O}$ .  $D = 3.04 \pm 0.02 \text{ gm cm}^{-3}$  (meas.),  $3.00 \pm 0.08 \text{ gm cm}^{-3}$  (calc.).

The space group is  $C2/c$ .  $a = 18.64 \pm 0.08$ ,  $b = 9.81 \pm 0.03$ ,  $c = 10.12 \pm 0.04 \text{ \AA}$ ;  $\beta = 97 \pm 1^\circ$  (all spacings relative to  $\gamma$  ( $\text{CuK}\alpha_1$ ) =  $1.54051 \text{ \AA}$ ). The unit-cell contents are  $4(\text{Ca}_5\text{H}_2(\text{AsO}_4)_4 \cdot 4\text{H}_2\text{O})$ . The 35 largest spacings in the powder pattern (9.2–1.685  $\text{\AA}$ ) are given; the 8 strongest of these lines are (hkl,  $d$  in  $\text{\AA}$ , intensity): 420– $\bar{2}22$ , 3.37, vvs; 402– $\bar{2}22$ , 3.18, vs; 110, 8.7, s; 400– $\bar{2}02$ , 4.64, s; 600, 3.06, s; 020, 4.86, ms;  $\bar{1}12$ , 4.45, ms; 415, 1.744, ms. The pattern agrees well with that of synthetic material.

The name is for P. Sainfeld, who collected the type material. The type specimens are in the mineralogical collections of the École Nationale Supérieure des Mines de Paris. The name was approved by the I.M.A. Commission on New Minerals and Mineral Names.

P. TOULMIN

#### Gaufroyite

G. JOURAVSKY, (deceased) AND F. PERMINGEAT, La gaufroyite, une nouvelle espèce minérale. *Soc. franç. Minéral. Cristall. Bull.* **87**, 216–219 (1964).

Gaufroyite, the first known borate-carbonate of calcium and manganese, was found on the dumps of vein no. 2, Tachgagalt, Morocco, 17 km SSW of Ouarzazate. It occurs in a

