as such only when dry; but aragonite containing other substances in solid solution may thereby be enabled to persist in the presence of certain solutions. There are indications that the μ-form (hexagonal) often occurs as an intermediate step in the precipitation of the other forms, but it soon transforms in the presence of water. The properties of these three forms and of the hexahydrate are described, and their solubility discussed. S. G. G.

SOME MINERALS FROM THE FLUORITE-BARITE VEIN NEAR WAGON WHEEL GAP, COLORADO. ESPER S. LARSEN and ROGER C. WELLS, of the U. S. Geological Survey. *Proc. Nat. Acad. Sci.*, **2**, (7), 360–365, 1916.

Description of gearksutite and *creedite*—a new fluoride-sulfate (see below under NEW SPECIES), occurring at Wagon Wheel Gap, Colorado.

GEARKSUTITE

Color: snow-white. Form: powdery balls, becoming plastic when wet, and without grit. Under the microscope homogeneous, composed of an aggregate of threads. Sp. Gr. 2.768. $n = 1.454 \pm 0.003$, with moderate birefringence.

An analysis by Wells gave: Al_2O_3 28.49, Fe_2O_3 tr., CaO 31.37, MgO tr., Na_2O .05, K_2O .08, F 41.00, $-H_2O$ .44, H_2O 15.20; less O for F 17.27, total 99.36, agreeing with $CaF_2.Al(F,OH)_3.H_2O$; F:OH = 2:1.

The gearksutite is believed to have been formed by metasomatic alteration of the rhyolitic wall rock by the hot ascending solutions which deposited the fluorite in the vein [hydrothermal metamorphism of rhyolite]. S. G. G.

NEW SPECIES

Creedite

Esper S. Larsen and Roger C. Wells, of the U. S. Geological Survey: SOME MINERALS FROM THE FLUORITE-BARITE VEIN NEAR WAGON WHEEL GAP, COLORADO. *Proc. Nat. Acad. Sci.*, **2**, (7), 360–365, 1916.

Name: From the Creede quadrangle, Colorado, where it occurs.

PHYSICAL PROPERTIES

Color: white to colorless. Form: grains and crystals. H.= about 3.5 Sp. gr.=2.730.

CRYSTALLOGRAPHIC PROPERTIES

Monoclinic, with the faces (110), perfect cleavage (100), tw. pl. (100). $110 \wedge 110 = 59° - 60°$ Habit: stout prismatic, with an acute rhombic section. Faces are usually dull, curved, and imperfect; one crystal showed curved and striated pyramidal faces.

OPTICAL PROPERTIES

Optically $-$. $\alpha = 1.461$, $\beta = 1.478$, $\gamma = 1.485$.

$Y = b$; $Z \wedge c = 41°$. 2V computed 65°, measured:

$2V_{Li} = 64°30' \pm 10'$; $2V_{Na} = 64°22' \pm 10'$; $2V_{Tl} = 64°20' \pm 10'$.

Cleavage fragments show $\parallel$ extinction.

CHEMICAL PROPERTIES

Comp. $CaSO_4.2CaF_2.2Al(F,OH)_3.2H_2O$; F:OH = 2:1; requiring Al 11.0, Ca 24.4, SO_4 19.5, O 3.2, H_2O 11.0, F 30.9 = 100.0. Analyses by Wells gave: Al 11.58, Ca 23.98, SO_4 18.32, O 3.97, $-H_2O$ 0.72, H_2O 11.08, F 30.35; O and F calculated on basis of summation of 100%. Creedite intumesces B.B. and finally fuses to a white enamel. Slowly but completely soluble in acid.

The creedite is imbedded in an isotropic kaolinite-like mineral with rather unusual properties. Sp. gr. 2.548, n 1.557±0.003. A partial analysis gave Wells SiO_2 44.2, Al_2O_3 40.2, CaO 0.3, MgO tr., Ign. 15.5, total 100.2 S. G. G.

Margarosanite

W. E. Ford and W. M. Bradley: MARGAROSANITE, A NEW LEAD-CALCIUM SILICATE FROM FRANKLIN, N. J. *Am. J. Sci.*, [4], **42**, (2), 159–162, 1916.

Name: From the Greek *margarites*, pearl and *sanis*, tablet, referring to its luster and structure.

PHYSICAL PROPERTIES

Colorless. Transparent. Luster, pearly. Form: lamellar masses of thin plates closely packed together, showing a rhombic outline due to cleavages. H 2.5–3. Sp.gr. 3.991.

CRYSTALLOGRAPHIC PROPERTIES

Probably triclinic. Principal cleavage || to tabular development, with two others, apparently but not exactly, perpendicular to the first. Traces of these latter cleavage directions make approximate angles of 102° and 78° with each other on the surfaces of the plates.

OPTICAL PROPERTIES

The two extinction directions in the sections make angles of about 44° and 46° with one of the cleavage directions, and of 34° and 56° with the other. $n = 1.730 \pm .002$ and $1.795 \pm .005$; the latter must be close to β.

CHEMICAL PROPERTIES

Comp. $PbCa_2(SiO_3)_3$, SiO_2 35.10, PbO 43.17, CaO 21.73 = 100. CaO replaced by a little MnO. Analysis by Bradley, recalculated after eliminating the water (hydroscopic) and substituting CaO for a little MnO: SiO_2 33.77, PbO 43.57, CaO 22.66 = 100. Pyr. Fuses with some difficulty in O.F. assuming an amethyst color; but in R.F. fuses easily and quietly at about 2 to an opaque grayish glass. In R.F. gives a pale azure-blue flame with a pale green border. With fluxes on charcoal it gives a metallic globule of lead accompanied by a lead oxide coating. It gives the characteristic Mn color tests, and is decomposed by HNO_3 yielding separated silica.

Observed on specimens of almandite, hancockite, roeblingite, nasonite, franklinite, willemite, axinite, datolite, manganophyllite, and barite from about the 1000 foot level of the Parker Shaft, at Franklin, N. J. S. G. G.

EXCHANGES OFFERED

Exchange notices will be printed free of charge to our subscribers in this column for three months or three times a year, as desired. Goods for sale must be offered in the advertising columns.

B. C. Beegle, 52 Chadwick Ave., Newark, N. J. Apophyllite, thaumasite, prehnite, stilbite, red quartz, heulandite, calcite.

John Holzman, 182 Ridgewood Ave., Newark, N. J. Heulandite, prehnite, pectolite, red and smoky quartz, fine twin crystals of calcite. Write for list.

J. P. Wintringham, 153 Henry St., Brooklyn, N. Y. Wanted: triclinic, monoclinic, or orthorhombic crystals for crystallographic measurement or for sections; pericline twins—single or polysynthetic or plagioclases of known composition. Please state what is wanted in return.