theory, Al_2O_3 43.0, SiO_2 38.0, H_2O 19.0, sum 100.0%. Analysis gave: Al_2O_3 44.13, Fe_2O_3 none, CaO 0.50, MgO 0.08, SiO_2 36.94, TiO_2 0.05, P_2O_5 trace, H_2O 18.94, sum 100.64%. The H_2O is given off at 725-800° in air, 775–950° in aqueous vapor.

Crystallographic properties: *System,* isometric. Forms, (100) modified by (111).

Physical and optical properties: Color white. Habit, granular aggregate of crystals up to 0.05 mm. in diam. Sp. gr. (15°) = 2.929; $n_D = 1.590$.

Occurrence: In Kōchi-mura, province of Rikuchu, Japan.

Discussion: Appears to be a well marked new species. There is a possibility that it may represent a pseudomorph after some member of the gehlenite group (the crystals of which might be pheno-isometric) analogous to an alteration product from Orawitza, (Dana, System, p. 476 and 694) which has the same Al_2O_3:SiO_2 ratio, and which being a colloid would be variable in H_2O content. E. T. W.

ABSTRACTS: MINERALOGY

REALGAR. R. Pilz, R. Schröder, and V. Thost. *Beitr. Kryst. Min.*, **1**, 173-80, 1918; thru *Mineralog. Absts.*, **1**, 343.

Realgar crystals rich in faces are described from Binnenthal, Felsö-Bánya, and China. Seventeen new forms are noted. The axial ratios are calculated as:

	a:b:c	β
Binnenthal	0.7207:1:.4859	66°15′
Felsö-Bánya	0.7205:1:.4855	66 15
Allchar (comparison)	0.7203:1:.4858	66 15.6

E. F. H.

PYRARGYRITE MULTIPLE TWINNING. O. B. Böggild, V. Goldschmidt, and R. Schröder. *Beitr. Kryst. Min.*, **2**, 17-25, 1919; thru *Mineralog. Absts.*, **1**, 344.

Complex cyclical groups are caused by multiple twinning on the plane *u* $(10\bar{1}4)$. E. F. H.

FURTHER GROWTH OF ORTHOCLASE IN SOIL. O. Mügge. *Centr. Mineral.*, **1917**, 121-3.

A new growth of orthoclase is recorded as occurring on fragments of the mineral found in soil near Carlsbad and in the Fichtelgebirge. E. F. H.

THE SYMMETRY OF HALITE. V. Rosický. *Beitr. Kryst. Mineral.*, **1**, 241-56, 1918; thru *Mineralog. Absts.*, **1**, 306.

Cleavage blocks of pure halite were etched with concentrated NaCl solutions, containing 1-2% added H_2O, Na_2CO_3, KCl, or HCl, etc. While the rectangular etch figures are usually parallel to cleavage edges, with added H_2O or Na_2CO_3 they are turned thru 6-27°. This is interpreted to indicate gyrohedral symmetry. E. F. H.

CRYSTALLOGRAPHIC OBSERVATIONS ON GYPSUM. V. Rosický. *Rozpravy České Akad.* cl. 2, 25, no. 13, 17pp. **1916**; thru *Mineralog. Absts.*, **1**, 311.

Natural etching on gypsum from Komořany, Bohemia, is similar to that

produced by HCl, but different from that with H_2SO_4. Another type of etch figure is produced by water and $MgCl_2$ or KOH solutions. All are holohedral in character.
E. F. H.

NOTICE RELATIVE TO THE MINERALOGY OF RUSSIA. P. N. CHIRVINSKY. *Bull. Polytechn. Inst. Novocherkassk,* **7,** sect. 2, 1-61, 1919; thru *Mineralog. Absts.,* **1,** 327.

The following minerals are described: quartz, chalcedony, epidote, delessite, mesolite, stilbite, datolite, calcite, tripolite, travertine, apatite, orthoclase- and microcline-perthites.
E. F. H.

ALPINE MINERAL DEPOSITS. J. KOENIGSBERGER. *Abh. Bayer. Akad. Wiss., Math.-phys. Kl.* **28,** no. 10, 25pp.; no. 11, 23pp.; no. 12, 108pp.; 1917-19; thru *Mineralog. Absts.,* **1,** 328.

A list is given of 39 minerals with the forms shown by crystals of various habits; also a detailed account of the occurrence of crystallized minerals in rock-crevices of the Swiss Alps, from the view point of paragenesis and association; likewise a bibliography.
E. F. H.

THE ROCKS AND MINERALS OF THE CROYDON REGIONAL SURVEY. G. M. DAVIES. *Trans. Croydon Nat. Hist. Sci. Soc.* **8,** 53-96, 1916; thru *Mineralog. Absts.,* **1,** 328.

The mineral constituents of a large series of sedimentary rocks from east Surrey and west Kent are described. Among these are glauconite, allophane, cassiterite, corundum, and spinel.
E. F. H.

NEW MINERAL OCCURRENCES IN BOHEMIA. F. SLAVÍK. *Časopis Musea Českého,* **92,** 38-42, 1918; **93,** 28-32, 1919; thru *Mineralog. Absts.,* **1,** 329.

Rhodochrosite, new for Bohemia, occurs in a deposit of Mn ores and pyrite at Chvaletice. Other brief notes on minerals of that country are included in the paper.
E. F. H.

TOPAZ FROM SCHLAGGENWALD, BOHEMIA. V. ROSICKÝ. *Rozpravy České Akad.,* cl. **2,** 25, no. 7, 20 pp., 1916; thru *Mineralog. Absts.,* **1,** 338.

Twenty-nine forms were recorded on topaz from Schlaggenwald, 9 are new for the locality, one (247) for the species. Sp. gr. 3.547. Anal. SiO_2 32.38, Al_2O_3 56.67, F 16.87, H_2O 1.28, sum (less O) 100.10. $\alpha_{Li} = 1.6117$, $\alpha_{Na} = 1.6147$, $\alpha_{Tl} = 1.6171$, $\gamma_{Li} = 1.6216$, $\gamma_{Na} = 1.6243$, $\gamma_{Tl} = 1.6265$. $2E_{Na} = 116°12'$.
E. F. H.

A STUDY OF DOLOMITES. C. L. HARDING, J. B. SHUMAKER, AND A. W. ROTHROCK. *Chem. News* **121,** 50-2, (1920); THE COMPOSITION OF DOLOMITES. IRENE EVERMAN, O'NEAL MASON, AND GLENN BROWNING. *ibid.* **122,** 109-10, (1921).

Analyses, with sp. gr. det'ns, of crystals and rocks from many localities are presented.
E. F. H.

RANCIEITE. J. O. HAAS. *Bull. soc. franc. min.,* **44,** 95-8, 1921.

A new analysis of pure rancieite from Lacampe, in Villerouge and Albas, Aude, led to the formula $MnO_2.2MnO.2H_2O$, with Mn'' partially replaced by Fe, Ca, Na_2 and K_2. Sp. gr. 3.25-3.30.
E. F. H.

RADIUM BEARING PEGMATITES OF ONTARIO: H. V. ELLSWORTH. Summary Report, **1921**, Part D, *Geological Survey, Department of Mines*, 20 pages, 2 figures, 2 prints.

Various rare earth localities are described, but that of lots 6-10, concessions IX and X of Conger township, Parry Sound, is the most interesting. Pegmatite dykes traversing granite were found carrying the rare mineral uraninite. This mineral, which occurs as isometric crystals or rounded grains varying from ⅛ to 1 inch, but mostly ¼ inch or less in diameter, is found associated with quartz, feldspar, mica, spessartite, and possibly allanite. An analysis of this uraninite was conducted in duplicate and yielded the following results: UO_2 53.63; UO_3 26.32; PbO 11.67; ThO_2 3.22; yttrium group oxides 2.19; cerium group oxides 0.98; CaO 0.41; (Fe_2O_3, Al_2O_3) 0.17; MnO (present less than) 0.01; SiO_2 0.29; H_2O 0.72; insol. 0.13; magnesium, zirconium, bismuth, potassium and sodium oxides, doubtful traces; total 99.74. Sp. Gr. 9.116 at 17.43°C. EUG. POITEVIN.

GERMANIUM. I. EXTRACTION FROM GERMANIUM-BEARING ZINC OXIDE. NON-OCCURRENCE IN SAMARSKITE. L. M. DENNIS AND JACOB PAPISH. *J. Amer. Chem. Soc.*, **43**, 2131-43, 1921.

A careful examination of American samarskite by a new method failed to reveal even a trace of Ge, though it had been reported to the amount of 1.5% by another chemist. E. F. H.

NOTE ON AUGITE FROM VESUVIUS AND ETNA. H. S. WASHINGTON AND H. E. MERWIN. *Am. J. Sci.* **1**, 20-30, (1921).

The Vesuvius augite: sp. gr. 3.242, β 1.700-1.711, SiO_2 47.60, Al_2O_3 6.01, Fe_2O_3 3.17, FeO 4.59, MgO 14.43, CaO 21.52, Na_2O 0.70, K_2O 0.76, H_2O+ 0.08, TiO_2 1.52, MnO 0.13, SrO none, sum 100.51. From Monti Rossi, Etna: sp. gr. 3.373, α 1.704, β 1.711, γ 1.732, SiO_2 50.09, Al_2O_3 3.71, Fe_2O_3 1.47, FeO 4.96, MgO 14.01, CaO 22.48, Na_2O 0.73, K_2O 0.01, H_2O+ 0.22, TiO_2 2.11, MnO 0.21, sum 100.00 (corrected for 4% magnetite). E. F. H.

HAUSMANNITE IN THE BATESVILLE DISTRICT, ARKANSAS. H. D. MISER AND J. G. FAIRCHILD. *J. Wash. Acad. Sci.*, **10**(1), 1-8, 1920.

One of the principal ores of this district agrees in properties with the rare mineral hausmannite, which has been definitely identified in the U. S. only in California. It occurs in clay residual from a limestone, and it is intimately associated with psilomelane. One new property is noted, namely, that it is weakly but distinctly magnetic. Material for analysis was carefully selected, but subsequent study of polished surface showed the presence of psilomelane in grains and crack fillings too minute to be observed by a pocket lens on a rough fractured surface. Psilomelane is considered to be Mn_2MnO_5 and the ratio of MnO to available oxygen is correspondingly 1.5, the corresponding ratio in hausmannite, Mn_3O_4, is 3. As the two analyses of the hausmannite given show ratios of 2.65 and 2.30, the first must have contained 13% psilomelane, the second 31%. Optical study by E. S. Larsen showed the finely crushed mineral to be reddish brown, nonpleochroic, and optically uniaxial, —, with $\omega_{Li}=2.45$ and $\epsilon_{Li}=2.15$, both ± 0.02; this corresponds closely to data obtained on material from other localities. E. T. W.

THE CHEMICAL COMPOSITION OF HYDROTALCITE AND THE HYDROTALCITE GROUP OF MINERALS. WM. F. FOSHAG. *Proc. U. S. Nat. Museum* **58**, 147-53, (1921).

New analyses of hydrotalcite and stichtite are given. The general formula for the group is: $MgCO_3.5Mg(OH)_2.2R(OH)_3.4H_2O$. For hydrotalcite R=Al, stichtite Cr, pyroaurite Fe. The composition of brugnatellite remains in doubt. The first three are formed by the alteration of the corresponding members of the spinel group. The *n*'s are: hydrotalcite 1.510, pyroaurite 1.55, stichtite 1.542, brugnatellite 1.533.
E. F. H.

ANALYSIS OF PARADOXITE FROM EUBA, SAXONY.

WALTHER SCHÜLER. *Centr. Mineral.*, **1921**, 737-8.

The mineral occurred with fluorite in quartz and porphyry veins. The forms present were (110), (101), and (001); sp. gr. 2.425-2.430. Analysis gave: SiO_2 65.24, Al_2O_3 17.73, FeO 0.14, Fe_2O_3 0.09, K_2O 12.57, Na_2O 1.05, CaO 2.86, MgO 0.24, BaO 0.06, SO_3 0.04, F trace, sum 100.02. It is practically a K-feldspar.
E. F. H.

CONTRIBUTIONS TO THE CHEMICAL CONSTITUTION AND GENESIS OF THE NATURAL IRON SULFATES. X.

R. SCHARIZER. *Z. Krist.* **56**, 353-85, 1921.

Rhomboclase, $(FeOH)(HSO_4)_2$ is monoclinic, $a:b:c=0.4633:1:0.7416$, $\beta=89°6'$. $\beta=1.551$, $\gamma=1.650$, opt. —, birefr. high. On heating in dry air both H_2O and H_2SO_4 are given off, and the mineral passes finally to $Fe_2S_3O_{12}$, through two intermediate stages of hydration. When rhomboclase, coquimbite and copiapite are placed in funnels in a moist atmosphere, they absorb so much H_2O as to dissolve, and the resulting liquids seem to have definite compositions. The end-product towards which the hydrolysis of Fe''' sulfates tends is $Fe_2S_2O_9$ (with $7H_2O$ this is amarantite). The genesis of this series of sulfate minerals can now be worked out by definite reactions. On concentration of a dilute solution more and more H_2SO_4 unites with Fe''', forming the three minerals successively or together. E. T. W.

THE SPECTROSCOPIC ANALYSIS FOR BORON, AND ITS PRESENCE IN SEVERAL NATURAL ALUMINUM SILICATES.

A. LACROIX AND A. DE GRAMONT. *Bull. soc. franc. min.*, **44**, 67-77, 1921.

A spectroscopic examination of the flames of sodium carbonate fusions of certain aluminum silicates showed the presence of boron. This was in several cases confirmed quantitatively. Dumortierite from Soavina, Madagascar contained 5.00% B_2O_3; idocrase from the Pic de Péguères in the Pyrenees, 0.63%. Negative results were obtained with some idocrases, and with andalusite, sillimanite, cyanite, topaz, corundum, diaspore, hydrargyllite, staurolite, prehnite, cordierite, pollucite, ilvaite, and euclase. Sapphirine and kornerupine from Itrongay, and grandidierite from Andrahomana, all in Madagascar, contained respectively 0.75, 3.59, and 2.81% B_2O_3, and the complete analyses led to the following new formulae:—Sapphirine, $9MgO.10(Al, Fe, B)_2O_3.4SiO_2$; Grandidierite, $2Na_2O.4FeO.8(Al, Fe, B)_2O_3.5SiO_2$; and Kornerupine, $Mg_8[(Al, Fe, B)O]_{12}(SiO_4)_7$. E. F. H.

THE SPECTRUM OF SILICATE MINERALS FUSED WITH SALTS, PRINCIPALLY IN THE ULTRA-VIOLET.

A. de GRAMONT. *Bull. soc. franc. min.*, **44**, 77-95, 1921.

G. gives the position and intensity of the lines for the principal constituents of the silicate minerals and the impurities introduced in the fusion and manipulation.
E. F. H.