$Cu_2S.2PbS$. The chemical processes resulting in the formation of these products may be inferred as follows: Copper solutions derived from the breaking down of tetrahedrite permeate the galena along the cleavages and the lead sulfide is partially replaced by copper sulfide. After oxidation the copper sulfate is taken away in solution, since it is much more soluble than the lead sulfate.

W. H. NEWHOUSE.

Attention is called to the XIIIth Session of the International Geological Congress to be held in Brussels, Belgium, August 10-19, 1922. Excursions will be conducted before the opening of the Session, also during and at the close of the Session. Fellows or members of the Mineralogical Society of America who expect to attend this Congress are requested to send their names to Secretary Whitlock so that the selection of official representatives of the Society can be made by the Council.

On May 1st the American Museum of Natural History announced the opening of the Morgan Memorial Hall of Minerals and Gems. This collection was presented to the City of New York by George Fisher Baker in memory of his friend, John Pierpont Morgan. Many new display cases have been installed and the specimens have all been remounted on pale buff fiber-board. The gems have been mounted on glass supports designed by Curator Whitlock, who will describe them in this JOURNAL in the near future.

A new major subdivision has been created in the United States Geological Survey by raising the division of Alaskan mineral resources to the status of a branch. The work will continue under the direction of Colonel A. H. Brooks, whose title is chief Alaskan geologist.

Dr. Maximilian Weber of the Munich Polytechnikum has been appointed Professor of petrography at the University of Munich, succeeding the late Professor Ernst Weinschenk.

ABSTRACTS—CRYSTALLOGRAPHY

THE INTERFERENCE COLORS OF QUARTZ IN POLARIZED LIGHT. T. LIEBISCH AND A. WENZEL. *Sitzungsb. preuss. Akad. Wiss.*, **1917**, I, 3; thru *Neues Jahrb. Min. Geol.*, **1919**, Ref. 17-8.

This is an investigation of the intensity, tone and saturation of the interference colors, for various thicknesses, of quartz wedges. EDW. F. HOLDEN.

THE RECOGNITION OF WEAK DOUBLE REFRACTION BY THE USE OF SENSITIVE TINTS. A. WENZEL. *Phys. Z.*, **18**, 472-9, 1917; thru *Neues Jahrb. Min. Geol.*, **1919**, Ref. 18-9.

The most sensitive tint with gypsum is the purple obtained with a plate of 0.056 mm. thickness. Somewhat less sensitive is the brighter purple obtained with a quartz plate, cut parallel to the optic axis, with a thickness of 0.0575 mm.

E. F. H.

THE FORMATION OF LARGE CRYSTALS IN RODS AND WIRES OF ZINC. W. FRAENKEL. *Z. Elektrochem.*, **23**, 302-4, 1917; thru *Neues Jahrb. Min. Geol.*, **1919**, Ref. 122.

Zinc which has been mechanically worked recrystallizes with ease at high temperatures. E. F. H.

A COLORLESS FORM OF MERCURY IODIDE. G. TAMMANN. *Nachr. Ges. Wiss. Göttingen*, **1917**, 292–293; thru *Neues Jahrb. Min. Geol.*, **1919**, Ref. 131.

HgI, condensed at a pressure of 0.1 atm., or cooled to the temperature of liquid air, presents a colorless modification. E. F. H.

THE VISIBILITY ABOVE THE TEMPERATURE OF ISOTROPIC FUSION OF THE CONTACT BETWEEN ANISOTROPIC LIQUIDS AND CRYSTALS. F. GRANDJEAN. *Compt. Rend.*, **164**, 431–4, 1917.

If an anisotropic liquid, resting on the surface of a solid crystal, be heated above the isotropic fusion point, and then cooled; the anisotropic condition will persist through a small temperature interval, due to the molecular forces at the surface of the crystal. E. F. H.

ORIENTATION OF THE SALTS OF CHOLESTEROL, AND THE ANISOTROPIC OLEATE LIQUIDS, ON CRYSTALS. F. GRANDJEAN. *Compt. Rend.*, **164**, 636–9, 1917; thru *Neues Jahrb. Min. Geol.*, **1919**, Ref. 139.

The orientation of cholestryl caprinate, -benzoate, ammonium- and trimethylammonium oleates on halite, sphalerite, and talc was studied. The optically positive phase of cholestryl caprinate orients itself with its optic axis parallel to the diagonal of (100) on halite; to the longer diagonal of (011) on sphalerite; and on (001) on talc, there were six positions. E. F. H.

ORIENTATION OF ANISOTROPIC LIQUIDS ON THE CLEAVAGES OF CRYSTALS. F. GRANDJEAN. *Compt. Rend.*, **164**, 105–7, 1917.

Anisotropic liquids placed upon the cleavage surfaces of solid crystals orient themselves in a manner that bears a simple relationship to the symmetry of the solid crystals. C. B. S.

THE VELOCITY OF CRYSTALLIZATION IN UNDER-COOLED PURE FUSIONS. R. NACKEN. *Centr. Min. Geol.*, **1917**, 191–203.

The rate of growth of the crystal faces in salol increases as the temperature falls below its melting point (41.75°). E. F. H.

CRYSTALLIZATION OF SODIUM CHLORIDE ON MICA. GEORG KALB. *Centr. Min. Geol.*, **1917**, 145–146.

Salt crystallizes on mica in such a way that a trigonal axis of the cube is perpendicular to the basal plane of the mica, and a zone(100) $\wedge$ (111) of the salt is parallel to the zone (001) $\wedge$ (010) of the mica. E. F. H.

MERCURY IODIDE. III. A. SMITS. *Z. phys. Chem.*, **92**, 345–350, 1917; thru *Neues Jahrb. Min. Geol.*, **1919**, Ref. 131-132.

A theoretical discussion of the relations between yellow and red HgI_2. E. F. H.

ELECTRIC CONDUCTION IN ANISOTROPIC LIQUIDS. T. SVEDBERG. *Ann. Phys.*, **49**, 437–55, 1916; thru *Chem. Abst.*, **11**, 1078, 1917. SVEDBERG'S OBSERVATIONS CONCERNING ELECTRICAL CONDUCTIVITY IN ANISOTROPIC LIQUIDS. W. VOIGT. *Ann. Phys.*, **52**, 222–8, 1916; thru *Chem. Abst.*, **11**, 1069, 1917.

The last paper is a mathematical discussion of Svedberg's conclusions, that the temperature coefficient of electrical conductivity of anisotropic liquids decreases abruptly at the temperature of isotropic fusion. C. B. S.

CRYSTALLINE LIQUIDS OBTAINED BY THE EVAPORATION OF A SOLUTION. P. GAUBERT. *Compt. Rend.*, **163**, 392–4, 1916.

The formation of anisotropic liquids from solutions by evaporation produces spherulitic liquid crystals which differ from those produced by fusion of the solid.

C. B. S.

MINERALOGY

CRISTOBALITE. H. LE CHATELIER. *Bull. soc. franc. min.*, **40**, 44–57, 1917.

THE INVERSIONS IN SILICA BRICKS. A. SCOTT. *Trans. Eng. Ceram. Soc.*, **17**, I, 137–52, 1917.

The two articles above relate to the artificial formation of tridymite and cristobalite. C. B. S.

PHOSPHORESCENT ZINC SULFIDE. E. MAC DOUGALL, A. W. STEWART, AND R. WRIGHT. *J. Chem. Soc.*, **111**, 663, 1917.

The maximum phosphorescence of ZnS occurs at the stage of incipient crystallization. C. B. S.

A PECULIAR TYPE OF CLAY. H. REIS, *Am. J. Sci.*, **44**, 316–18, 1917.

A peculiar clay composed of 98.5% minute crystals of dolomite is described.

C. B. S.

A METHOD FOR THE DETERMINATION OF THE DISSOCIATION PRESSURES OF SULFIDES, AND ITS APPLICATION TO COVELLITE AND PYRITE. E. T. ALLEN AND R. H. LOMBARD. *Am. J. Sci.*, **43**, 175–195, 1917.

The origin of pyrite and covellite is discussed. C. B. S.

SOME MINERALS FROM DRUSES IN THE NEPHELINE-PHONOLITE FROM NESTOMITZ AT AUSSIG ON THE ELBE. J. E. HIBSCH. *Tscher. Min. Petr. Mitt.*, **34**, 266–71, 1917; thru *Min. Abst.*, **1**, 155, 1921.

The minerals include fluorite, analcite, mesolite, thomsonite, calcite, and wad.

E. F. H.

COMPACT ZEOLITES. J. E. HIBSCH. *Tscher. Min. Petr. Mitt.*, **34**, 262–5, 1917; thru *Min. Abst.*, **1**, 155, 1921.

Compact natrolite, analcite, and apophyllite from Bohemia, apparently end-products of the solidification of phonolitic magmas, are described.

E. F. H.

PRELIMINARY REPORT ON THE SYSTEM LIME-FERRIC OXIDE. R. B. SOSMAN AND H. F. MERWIN. *J. Wash. Acad. Sci.*, **6**, 532–7, 1916.

The optical properties of the compounds $CaO.Fe_2O_3$ and $2CaO.Fe_2O_3$ are given.

E. F. H.

NEWER MINERAL SYNTHESES. P. NIGGLI. *Forts. Min. Krist. Petr.*, **5**, 131–72, 1916; **6**, 35–66, 1920; thru *Min. Abst.*, **1**, 235, 1921.

A summary of the literature is given; and the paragenesis of minerals at high temperatures with the constitution of magmatic solutions, is discussed.

E. F. H.

MIXED CRYSTALS $(Mg,Zn)SO_4.7H_2O$. C. VIOLA. *Atti. Accad. Lincei*, (5) **25**, 285–99, 1916; thru *Chem. Abst.*, **11**, 1344, 1917.

Mixed crystals of $MgSO_4$ and $ZnSO_4$ are composed of alternate layers of each salt and therefore are not solid solutions but only physical mixtures. C. B. S.

WATERGLASS AND ALKALI SILICATES. W. PUKALL. *Ber. d. Chem. Ges.*, **49**, 397–436, 1916; thru *Neues Jahrb. Min. Geol.*, **1918**, Ref. 252.

Several crystalline hydrated silicates of K and Na were produced synthetically. E. F. H.

ARTIFICIAL TWINNING IN MAGNETITE. ANNI GRÜHN. *Neues Jahrb. Mineral. Geol.* **1918**, 99–112.

Pressure produced gliding parallel to (111) in magnetite; the path of the atoms during the gliding is given. E. F. H.

SEVERAL NEW MIXED CRYSTALS AND COMPOUNDS OF NICKEL OXIDE WITH OXIDES OF OTHER METALS. J. A. HEDVALL. *Z. anorg. allg. Chem.* **103**, 249–52, 1918; thru *Neues Jahrb. Min. Geol.* **1919**, Ref. 270.

Mixed crystals of the oxides of Mg, Zn, Mn, Al, and Sn with NiO were obtained by heating mixtures of the oxides at 900° C. with an excess of KCl. E. F. H.

NON-METALLIC INCLUSIONS; THEIR CONSTITUTION AND OCCURRENCE IN STEEL. A. MCCANCE. *J. Iron & Steel Inst.* **47**, 239–86, 1918.

By fusing $FeCO_3$ and SiO_2 small crystals were obtained which were identified by metallographic methods as grünerite. C. B. SLAWSON.

THE EFFECT OF CERTAIN IMPURITIES IN CAUSING MILKINESS IN OPTICAL GLASS. C. N. FENNER AND J. B. FERGUSON. *J. Am. Ceram. Soc.* **1**, 468–76, 1918.

The "milkiness" produced by the devitrification of certain types of crown glass is ascribed to the presence of sub-microscopic cristobalite. C. B. S.

THE HYDROTHERMAL SYNTHESIS OF MINERALS. W. J. MÜLLER AND J. KOENIGSBERGER. *Z. anorg. allgem. Chem.*, **104**, 1–26, 1918.

Leucite and orthoclase were synthesized by heating the constituents with mineralizers under pressure; the latter mineral formed only above 360°C. E. T. W.

THE PLATINUM OF MADAGASCAR. A. LACROIX. *Bull soc. franc. min.*, **41**, 98–99, 1918.

Occurrences are noted at 3 localities, with analysis of material from one of them. E. T. W.

THE NATURE OF WATER IN ZEOLITES. G. STOKLOSSA. *Neues Jahrb Min. Geol. Beil.-Bd.* **42**, 1–64, 1918; thru *Min. Abst.* **1**, 153, 1921.

Heulandite, scolecite, natrolite, harmotone, and chabazite showed during rehydration a distinct hydrate for each molecule of water present in the original mineral; the water was probably chemically combined. With analcite only the mono- and tetrahydrates were formed; in apophyllite rehydration did not occur. E. F. H.