form that it has not been found advisable to display them in the exhibition cases. Recalling the identification of the smaller forms in the old collection, these were tested and found to consist almost entirely of carbonate of iron (siderite) without a trace of phosphoric acid. Under the microscope in thin section they show no concretionary or other structure than densely cryptocrystalline.

The question is: how do these peculiar forms occur and what is their origin? Their composition is certainly not what would be expected of coprolites. Do any readers of this magazine have information on the subject?

ABSTRACTS OF MINERALOGIC LITERATURE

ORIGIN OF FLINTS. FREDK. CHAPMAN. National Museum, Melbourne. *Nature*, No. 2501, 85, 1917.

Black flints with the characteristic white coating, indistinguishable from the English flints, occur in nodular and tabular form, with chalky Miocene limestone, in South Australia and Victoria. The flints are often crowded with silicified remains of organisms, representing a more or less complete replacement of chalky ooze. Below these Tertiary flint layers is an impervious bed, a factor which induced the deposition of diffused silica. S. G. C

GENESIS OF ASBESTOS AND ASBESTIFORM MINERALS. Discussion by J. C. BRANNER, J. A. DRESSER, R. P. D. GRAHAM, and G. P. MERRILL. *Bull. Am. Inst. Mining Eng.*, **1917**, 397–405.

Many objections to the conclusions of Taber (abstd. in *Am. Min.*, **2**, 69, May, 1917) are raised. In particular it is pointed out that vein-cavities are more likely due to shrinkage than to expansion, that instead of fibrous minerals pushing the walls apart it is more likely that they are replacements of the wall rock, and that serpentine is a deep-seated rather than superficially-formed mineral. E. T. W.

SPECTROGRAPHIC STUDY OF PORTUGUESE URANIUM AND ZIRCONIUM MINERALS. A. PEREIRA-FORJAZ. *Compt. rend.*, **164**, 102–103, 1917.

The minerals noted are autunite, torbernite, carnotite, walpurgite, troegerite, zeunerite, and zircon. On spectroscopic examination many elements were found in addition to those required by the formulas. E. T. W.

THE COLORS OF MOTHER-OF-PEARL. A. H. PFUND. *J. Franklin Inst.*, **183**, 453–464, 1917.

The colors are found to be due diffraction of light by edges of laminas and interference of light by reflection from parallel laminas. The thickness of the laminas ranges from 0.4 to 0.6 microns. E. T. W.

DIAMONDS IN CALIFORNIA. W. H. STORMS. *Min. Sci. Press*, **114**, 273–275, 1917.

The possible sources of the diamonds found in gold-bearing gravels in California are discussed. Basic igneous rocks and micaceous sandstones like those in which diamonds occur in other regions are present in the neighborhood, but the California gems have never been definitely traced to such a source.

E. T. W.

REFRACTIVE INDICES OF THE RHOMBOHEDRAL CARBONATES. P. GAUBERT. *Compt. rend.*, **164**, 46–49, 1917.

Measurements are given for a number of carbonate minerals, with some analytical data, altho the results are not sufficiently accurate to add much to previous knowledge. E. T. W.

PALAEOPHYSIOLOGY: THE ORGANIC ORIGIN OF SOME MINERALS OCCURRING IN SEDIMENTARY ROCKS. J. V. SAMOILOV. *Min. Mag.*, **18**, (84), 87–98, 1917.

Deposits of nodular barite occur at a number of Russian localities in sedimentary rocks, clays, etc. Attention is called to the occurrence of barium sulfate in certain Rhizopods, the *Zenophyophora*. Similar deposits of celestite are found, and are believed to be due to the accumulation of strontium from the skeletal parts (shells) of marine organisms. Copper is found in the blood of certain Crustacea and Mollusca, vanadium in the blood of Ascidia, and manganese in certain land and fresh water mollusca. These facts have an important bearing on the origin of sedimentary mineral deposits. Such deposits occur at definite geological horizons and probably imply an abundant and widespread development of the organisms during certain periods.

S. G. G.

THE NUMERICAL RELATION BETWEEN THE ZONES AND FACES OF A POLYHEDRON. E. S. FEDOROV. *Min. Mag.*, **18**, (84), 99–100, 1917.

See *Am. Min.*, **2**, (7), 96, 1917.

THE CRYSTALLIZATION OF PARAHOPEITE. A. LEDOUX, T. L. WALKER AND A. C. WHEATLEY. *Min. Mag.*, **18**, (84), 101–106, 1917.

See *Am. Min.*, **2**, (7), 96, 1917.

ON TAPIOLITE IN THE PILBARA GOLDFIELD, WESTERN AUSTRALIA. E. S. SIMPSON. *Min. Mag.*, **18**, (84), 107–121, 1917.

See *Am. Min.*, **2**, (5), 68, 1917.

THE USE OF ORTHOGRAPHIC PROJECTION IN CRYSTALLOGRAPHY. H. HILTON. *Min. Mag.*, **18**, (84), 122–129, 1917.

THE USE OF A SLIT IN DETERMINING REFRACTIVE INDICES WITH THE MICROSCOPE. J. W. EVANS. *Min. Mag.*, **18**, (84), 130–132, 917.

MAGNESIAN TOURMALINE FROM RENFREW, ONTARIO. E. L. BRUCE. *Min. Mag.*, **18**, (84), 133–135, 1917.

See *Am. Min.*, **1**, (3), 49, 1916.

PRESSURE PHENOMENA ACCOMPANYING THE GROWTH OF CRYSTALS. STEPHEN TABER. Univ. S. Carolina. *Proc. Nat. Acad. Sci.* **3**, 297–302, 1917.

The crystallization of solutions of ammonium nitrate in porous vessels was studied and evidence found that considerable pressure was exerted by the growing crystals. The author extends the theories derived from such observations to explain the phenomena accompanying crystallization of various minerals in the earth. E. T. W.

ZONAL GROWTH IN HEMATITE AND ITS BEARING ON THE ORIGIN OF CERTAIN IRON ORES. R. B. SOSMAN AND J. C. HOSTETTER. Geophys. Lab. *Bull. Am. Inst. Min. Eng.*, **1917**, 933–942.

A good crystal of hematite from Elba was found to contain considerable FeO, arranged in zones, being highest toward the base. This indicates deposition from vapor or solution, and continuously changing conditions of temperature, pressure and concentration during crystal growth. E. T. W.

THE FERROUS IRON CONTENT AND MAGNETIC SUSCEPTIBILITY OF SOME ARTIFICIAL AND NATURAL OXIDES OF IRON. R. B. SOSMAN AND J. C. HOSTETTER. *Bull. Am. Inst. Min. Eng.*, **1917**, 907–931.

Hematites containing magnetite in solid solution show magnetic susceptibility proportional to the FeO content. There is also a rare highly ferromagnetic form of Fe_2O_3. Martite gives evidence of being usually a pseudomorph after magnetite, its consitutent granules or fibers being such solid solutions, and the susceptibility suggests its formation at high temperatures. E. T. W.

THE CONSTITUTION OF PYRITE AND ALLIED MINERALS. W. H. GOODCHILD. *Mining Mag.*, **16**, 253–258, 1917.

By a study of specific gravity and volume relations, the author concludes that the formulas of such minerals as pyrite are much more complex than the usual formula, FeS_2, would indicate; that the sulfur in pyrite represents the maximum amount in the minimum space; and that the sulfur in pyrite is in the rhombic form, while that in marcasite corresponds to the monoclinic. While pyrite, marcasite, and arsenopyrite are formed with contraction in volume, in the case of chalcopyrite there is an increase, thought to be due the Fe and Cu atoms competing for the extra sulfur. E. T. W.

THE ULTRAVIOLET TRANSPARENCY OF CERTAIN COLORED MEDIA. H. W. L. ABSALOM. *Phil. Mag.*, **33**, 450–455, 1917.

Most colored substances are opaque toward the extreme violet end of the spectrum, but minerals such as zircon and topaz are transparent there, showing that their colors are due to colloidal metals. A similar relation holds for solutions of metals in liquid ammonia. E. T. W.

ARTIFICIAL COVELLITE. J. M. FRANKEL. *Eng. Mining J.*, **104**, 252, 1917.

In contact with rubber both chalcocite and metallic copper have been found to change into covellite. E. T. W.

DO FIRECLAYS CONTAIN HALLOYSITE OR CLAYITE? J. W. MELLOR. *Trans. Engl. Ceram. Soc.*, **16**, 73–84, 1917.

The term "clayite" is used for colloidal kaolinite. This shows a transformation at 500°, indicated by a change in the thermal curve, while halloysite shows no marked change at this point. Mixtures of colloidal Al_2O_3 and SiO_2 act like halloysite. The mineral makeup of various natural clays can accordingly be determined by heating them to this temperature and noting whether or not a break occurs. A number of English fireclays are found to consist chiefly of "clayite." E. T. W.

TRIBOLUMINESCENCE. A. IMHOF. *Physik. Z.*, **18**, 78–91, 1917; thru *Science Abstracts*, (A), **20**, 266–267, 1918.

The subject of light produced by friction was studied, chiefly from the physical and chemical points of view. A table of 88 substances showing this phenomenon is given, several minerals being included. The color of the light is most often blue, often yellow or orange, and rarely violet, white, or red; the last is in fact shown only by a few minerals. E. T. W.

DIAMONDS FROM THE MOLTENO BEDS. E. H. L. SCHWARZ. *Trans. Geol. Soc. S. Africa*, **19**, 33–35, 1916.

Minute fragments of diamond have been found in wash at Molteno, S. Africa, associated with the heavy minerals garnet, rutile, monazite, etc. E. T. W.

SCAPOLITE-BEARING BOMBS FROM THE LAKE LAACH DISTRICT; REFRACTIVE INDICES OF SULFATE-SCAPOLITE. R. BRAUNS. *Neues Jahrb. Min. Geol.*, **1917**, I, 9–44; thru *J. Chem. Soc.*, **112**, II, 325, 1917.

A number of analyses of scapolite and the rocks containing it are given, with the optical constants of silvialite or sulfate-scapolite. E. T. W.

AUGITE FROM STROMBOLI. S. KOZU AND H. S. WASHINGTON. *Am. J. Sci.*, [4], **45**, (6), 463–469, 1918.

Augite occurs abundantly as loose crystals in the fine ashes that cover the slope encircling the active crater terrace. The optical characters and an analysis are given. S. G. G.

IDENTIFICATION OF MOLYBDENITE. T. S. FUCHS. *Eng. Min. J.*, **105**, (22), 991, 1918.

The following accurate and rapid method is given for identifying molybdenite, and also getting it into solution: A piece of caustic potash is melted, and the mineral added. In five minutes, molybdenite swells, dissolves, giving the mass an intense reddish-yellow color. S. G. G.