MINERALOGICAL NOTES.

By WM. H. WAHL, PH.D.

In *mineralogy* the usual amount of activity has been displayed during the past year, though the record is not so interesting as that of the preceding year. In chemical mineralogy especially there have been some highly important researches that have added a number of new elements to science. The mineral samarskite, which has already yielded two new elements, phillipium and decipium, is affirmed by Boisbaudran to contain still another, to which he has given the name of *samarium*; while gadolinite, which in 1878 yielded ytterbium to Marignac, contains, according to Nilson, a new element, *scandium*. The same new radical is affirmed to have been detected in yttrititanite, and Cleve, who has investigated the earth cerbia, which yielded ytterbium to Marignac, affirms the existence therein of two other new metals, *holmium* and *thulium*. From the copper-nickel of Kragerö (Norway) Dahll has succeeded in isolating what he affirms to be a new metal, which he calls *norwegium*.—*Am. Jour. Sci. and Arts*, xvii, 478; xviii, 141, 400, *et seq.*

Delafontaine affirms that he has succeeded in detecting Marignac's ytterbium in the mineral sipylite from Amherst, Va., and W. G. Brown claims to have observed the spectrum lines characteristic of Delafontaine's phillipium in the same mineral. The existence of a new member of the platinum group from the Ural is also re-affirmed, and given provisionally the name *ouranium*. How many of these alleged discoveries will stand the test of future investigation it would be hazardous to predict. Time alone can bring order out of what appear, at least in the case of several of the above new (?) elements, to be conflicting discoveries.

Mr. S. B. Christy contributed an important paper to the California Academy of Sciences, on the *Genesis of Cinnabar deposits*, to determine the question whether these deposits were formed by deposition from solution or by sublimation. The author shows that cinnabar is soluble in alkaline sulphides at temperatures between 150° and 250°C. and at pressures of from 200 to 500 pounds per square inch. He holds that the preponderance of evidence is in favor of the view that the

deposits of cinnabar as they exist at present, *in situ*, are the result of deposition from solutions in alkaline menstrua, under conditions not unlike those by which he has succeeded in producing the mineral artificially.—*Proc. Acad.*, 1879.

The artificial production of *pyroxene* was accidentally accomplished and noticed by Messrs. Thomas and Gilchrist in the operation of manufacturing the basic bricks for lining the walls of the Bessemer converter which forms an important element of their process for manipulating phosphoretic pig iron. Those bricks are made of an aluminous magnesium limestone, subjected to a very high temperature in a furnace lined with siliceous fire-bricks; where the lower portion of the charge had come in contact with the siliceous lining a decomposition and partial fusion had taken place. Portions of the fused mass were distinctly crystallized in prismatic crystals of the monoclinic system, semi-transparent, and from colorless to green in color. Hardness 5+, and specific gravity 2.934. Analysis showed it to be a bi-silicate and a true pyroxene.

Of other contributions to chemical mineralogy, it will be useful to note the fact that F. D. Adams has determined the very general existence of chlorine in members of the *scapolite* family; C. Doelter has added considerably to our knowledge of the correct composition of *spodumene* and *petalite*, and Rammelsberg to that of the *lithia micas*; and Tisani shows that *wagnerite* is identical with *kjerulfine*. The following new localities and occurrences of minerals are worthy of notice. Genth has identified with *pyrophyllite*, a mineral found by Reinhold in the coal slates of the North Mahanoy Colliery, in Schuylkill Co., Pa., filling out cavities in the slates, and as the petrifying material of coal plants. (*Proc. Am. Phil. Soc.*, xviii, 279). As the result of Mr. Edison's circular of inquiry, the presence of *platinum* has been determined in numerous localities in Idaho, Dakota, Washington Terr., Colorado, Arizona, New Mexico and British Columbia. In some of these localities the metal is affirmed to exist in considerable quantities.

Dr. Genth's examination of a new locality of *uranium minerals* at the Flat Rock mine, N. C., has yielded some valuable facts concerning the genesis of these species. (*Am. Chem. Jour.*, i, 87). The rounded masses in which they occur were found to contain, in many cases, a nucleus of uraninite; surrounding this is an orange-colored mineral, gummite, and interpenetrating it and forming a crust over it, a light yellow mineral, identified as uranotil. Dr. Genth affirms that gum-

mite is a mixture of uranium hydrate (40.10 p. c.), uranotil (33.38 p. c.), lead uranate (22.66 p. c.) and barium uranate (4.26 p. c.). He also observes autunite at the same locality, associated with phosphuranylite—new species, described elsewhere. Dr. E. Goldsmith reports the occurrence of *amber and asphaltum* in the ash marl of the cretaceous, at Vincentown, N. J. The last named is found occasionally in masses of 100 pounds weight. The amber is thought to be related to the kranzite of Bergemann. (*Acad. Nat. Sci. Proc.*, 1879). *Percylite* and *schwarzenbergite* are reported to have been found at a new locality in Bolivia. Extensive deposits of a *mineral wax* have been discovered in Utah. The locality is in the Wasatch Range, on the head waters of the Spanish Fork, east from the south end of Utah Lake. The material, variously described as ozocerite and zietrisikite by Newberry and Wurtz respectively, who differ as to its identity, is found saturating beds of bluish shales of (probably) tertiary age, over a tract of country 50 to 60 miles in one direction by 20 miles in another.—*Eng. and Min'g Jour.*; Dec., 1878—Jan., 1879.

Claasen has identified *cacozenite* on the martite of Lake Superior. It appears in acicular crystals of brown yellow color, forming radiating tufts. Dr. J. Lawrence Smith has made an elaborate investigation of the *native iron* of Ofiyak and other localities in Greenland (*Ann. de Chim. et de Phys.* (V), xvi.) hitherto believed to be of meteoric origin, and affirms them to be terrestrial. B. Silliman notices that the rare mineral *jarosite* occurs quite abundantly in the quartz veinstone of the Vulture mine in Arizona.—*Am. Jour. Sci.*, xviii, 73.

Maskelyne describes rock masses from two localities in the Transvaal in South Africa, consisting solely of massive *enstatite*.

For the benefit of those readers of the JOURNAL who may be interested in the subject, an alphabetical list of the new mineral species and varieties that have been described in the journals during the year just passed is herewith appended, together with a brief description of the more important members of the list.

ABRIACHANITE—a doubtful species—described by Heddle, and named provisionally with several other substances, “which may prove to be new Scottish minerals.” It is described as an impure, bluish, clay-like mineral.—*Min. Mag.*, 1879, 57. *Am. Jour. Sci.*, xviii, 484.

ANIMIKITE, an antimoniuuret of silver, resembling metallic silver, which its discoverer holds to be a new member of the dichrasite family. Found at Thunder Cape, near Silver Islet, where it was taken for

native silver. Described by Dr. Henry Wurtz.—*Eng. and Min'g Jour.*, Feb. 22, 1879.

BERNARDINITE, a new mineral resin from San Bernardino Co., Cal. A light, porous, friable mass of yellowish-white color, that floats on water; dissolves readily in alcohol, ether or potassa, and forms an emulsion with water on boiling. It is probably a mixture of several resins. Described by J. M. Stillman.—*Min'g and Sci. Press*, 1879.

BHRECKITE, a chloritic mineral named provisionally by Heddle as a probable new Scottish mineral.—*Ref. Abriachanite ante*.

BRASS (native). Specimens of what appear to be a native brass are reported to have been found on the Yuba river in Sierra Co., Cal. They are described as being in the form of small, flattened, concretionary masses, destitute of crystalline structure, yellowish to red-brown in color, with a faint yellowish streak. Comp. 85.02 p. c. copper, 11.02 p. c. zinc. Described by J. M. Stillman.—*Ref. Bernardinite ante*.

CLINOCROCITE, a hydrous sulphate found at the Bauersberg, near Bischofsheim. Described by S. Singer.—*Ref. Abriachanite ante*.

CLINOPHAEITE, a hydrous sulphate. Same locality. Singer.—*Ref. Abriachanite ante*.

EGGONITE, a new silicate (containing cadmium?) occurring in minute crystals of a brown color on calamine from Altenberg, near Aachen. Described by Schrauf.—*Zeitsch. Kryst.* iii, 352.

FAIRFIELDITE, a hydrous phosphate of manganese and calcium with small quantities of iron and sodium; found associated with *reddingite* and *fillowite*, at the new mineral locality at Branchville, Fairfield Co., Conn. Its color is yellowish white to colorless and transparent, with adamantine lustre on the best cleavage planes. Described by Brush and E. S. Dana.—*Am. Jour. Sci. and Arts*, xvii, 259, *et seq.*

FILLOWITE, a hydrous phosphate of manganese, sodium and iron. Found at the same locality as the mineral just described. Occurs in crystalline masses, and rarely in distinct crystals of a wax yellow to brown color, at times almost colorless. Crystallization monoclinic. Described by Brush and E. S. Dana.—*Ibid.*

GEDONITE, a fossil resin occurring with the amber of the Baltic, and distinguished from the latter by its greater friability, lower point of fusion and more ready solubility. Described by Helm.—*Eng. and Min'g Jour.*, March 13, 1879.

HANNAYITE, a hydrous phosphate of magnesia and ammonia found

in the guano of the Skipton caves in Victoria, N. S. W. Crystallization triclinic, with perfect basal cleavage. Described by Vom Rath.—*Vide, Newberyite*

HERRENGRUNDITE, a basic cupreous sulphate, found associated with gypsum, malachite and calcite from Herrengrund, Hungary. Crystallization monoclinic (?) with perfect basal cleavage; color dark emerald green. Described by Bretzina.—*Zeitsch. Kryst.*, iii, 359. *Am. Jour.* xviii, 484.

HOFMANNITE occurs in colorless, tasteless, tabular crystals in lignite, with a composition $C^{20}H^{36}O$. Described by Bechi (Pisa).—*Ibid.*

HOUGHTONITE, a new species (?) of mica from the hornblendic gneiss of Roneval, Scotland. It has a jet black color, transmitting brown light in thin plates. Described by Heddle.—*Ibid.*

HUNTILITE, a new arsenide of silver found at Silver Islet, Lake Superior. Two varieties are found, the most abundant being amorphous or cryptocrystalline and of a slate gray to black color, while a crystalline variety is of a light slate color. Both varieties are somewhat malleable under the hammer, and take a burnish when rubbed with a knife blade. They give a lustrous bronze streak on ground glass. The discoverer holds the affiliations of huntelite to be with the dichrasites and domeykites, regarding it properly as a silver domeykite, but constituting the first member of a new series of mineral homologues. Described by Wurtz.—*Eng. and Min'g Jour.*, Jan. 25th, 1879.

LEUCOMANGANITE, a snow-white, foliated and radiated mineral, colorless in thin plates, but fusing readily before the blowpipe with brownish discoloration. Chemical composition not accurately known, but containing manganese and iron protoxides, alkalies and water. Described by Sandberger.—*N. Jahrbuch f. Min.*, 1879, 370.

LOUISITE, a hydrous silicate of lime and potassa with small quantities of iron (protoxide), found at Blomidon, N. S. It is a leek-green, translucent, vitreous mineral, brittle with splintery fracture, and gelatinizes with hydrochloric acid. Analyzed by H. Louis and named by D. Honeyman.—*Am. Jour. Sci.*, xviii, 484.

MALLARDITE, a new hydrous sulphate of manganese found at Lucky Boy silver mine, Utah. Occurs in small fibrous, monoclinic crystals, at first colorless and transparent, but which soon effloresce on exposure to the air, losing two equivalents of water. Described by A. Carnot.—*Jour. Chem. Soc.*

NEWBERYITE, found with hannayite in the guano of the Skipton

Caves, Victoria, N. S. W. A hydrous phosphate of magnesia; crystallization orthorhombic. Described by Vom Rath.—*Bull. Soc. Min. France*, 1879; *Am. Jour. Sci.*, xviii, 487.

PLAGIOCITRITE, a new hydrous sulphate from the Bauersberg, near Bischofsheim. Described by Singer.—*Am. Jour. Sci.*, xviii, 484.

PHOSPHURANYLITE, a new hydrous phosphate of uranium, found at the Flat Rock mine, in Mitchell Co., N. C., occurring in the mica-bearing portion of a large granite vein with other uranium minerals. Found as a thin coating on quartz, feldspar and mica. The mineral has a deep lemon yellow color, and under the microscope shows minute rectangular scales of a pearly lustre. Described by Genth.—*Am. Chem. Jour.*, i, 87.

RANDITE, a hydrous carbonate of calcium and uranium found as a lemon-yellow incrustation on granite near Philadelphia. The mineral is related to liebigite. Described by Koenig.—*Acad. Nat. Sci. Proc.*, 1878, 408.

REINITE, a tungstate of iron, isomorphous with scheelite and scheelite, brought from Japan (Kimposan) by Dr. Rein. Found associated with quartz, forming large, well-developed crystals of brownish-black color, closely resembling those of the above-named minerals. Described by Dr. Luedecke.—*N. Jahrbuch f. Min.*, 1879, 568.

TITANOMORPHITE, a titanate of lime, held to be the product of the alteration of titanium minerals (ilmenite and rutile). It is found in hornblende slate near Reichenbach, in Silesia, surrounding crystals of rutile. It has a yellowish-white color, and a granular or fibrous texture. Described by von Lasaulx.—*N. Jahrbuch f. Min.*, 1879, 568.

URUSITE, a hydrous sulphate of ferric oxide and soda, found in the Caucasus associated with gelbeisenerz and copperas. Color from lemon-yellow to orange, and is found in bulbous masses (or pulverulent), which, when crushed, show the glitter of the small crystals of which the mass is made up. Described by Frenzel.—*N. Jahrbuch f. Min.*, 1879, 89.

URVÖLGYITE (see Herrengründite, *ante*). Szabó, who describes this species, differs from Brezina in making the lime obtained in the analysis an essential constituent of the mineral, while the latter ascribes it to the presence of gypsum.—*Tsch. Min. Mittheil.*, ii, 311.

WATTEVILLITE, a hydrous sulphate found at the Bauersberg, near Bischofsheim. Described by Singer.—*Am. Jour. Sci.*, xviii, 484.

XANTHOLITE, a mineral having nearly the composition of staurolite,

but thought to have a monoclinic crystallization. Described and named provisionally by Heddle, as a probable "new Scottish mineral."—*Min. Mag.*, 1879, 57.

Of new varieties, the following are of special interest:

A *titaniferous crysolite*, having a red color, and containing 6.10 p. c. of titanitic acid, has been found at Zermatt, Switzerland. Described by Damour.—*Bull. Soc. Min. France*, ii, 15.

A *gelatinous silicate*, found near Lausanne, Switzerland, has the consistency of paste when taken out, but gradually solidifies. It has the composition of chabasite. Renevier, who described it, calls it "a mineral in an embryotic condition."—*Bull. Soc. Vaud*, xvi, 21; *Am. Jour. Sci.*, xviii, 72.

A *mangano-calcite*, carrying 2.04 p. c. of barium carbonate, occurs in a crystalline limestone at Laangban. Described by Sjogren.

A *barytic feldspar*, carrying over 7 p. c. of baryta, is described by Descloiseaux. Cleavage angles were identical with those of labradorite, while its optical properties allied it with albite and oligoclase. Locality was unknown, but the mineral resembled the albite from Steiermark.

LUCKITE, a new variety of ferrous sulphate. It is found in small distorted crystals, probably monoclinic, having a slight tinge of blue. The mineral carries a small percentage of manganese; composition $\text{SO}_4(\text{Fe Mn}) + 7\text{H}_2\text{O}$. Ratio of Mn to Fe as 1 : 10. It is regarded as being intermediate between melanterite and mallardite, but differs from both by not altering on exposure to air. It occurs at Lucky Boy silver mine, Utah, and is described by Carnot.—*Jour. Chem. Soc.*

In crystallographic mineralogy, it may be interesting to note that Streng, from a study of the optical characters and an accurate measurement of the angles of the crystals of *pyrostilpnite* (fireblende), pronounces this mineral to belong to the orthorhombic and not to the monoclinic system; and that Baumhauer, from an investigation of the etching figures produced on crystals of *boracite* by acids, is led to the conclusion of Mallard, that the species belongs to the orthorhombic and not to the isometric system.

Magnetic Influence on Atmospheric Polarization.—Henri Becquerel infers, from recent observations upon skylight polarization, the existence of a variable difference between the solar plane and the plane of polarization, and the manifestation of a magnetic influence by the earth upon the atmosphere.—*Comptes Rendus*. C.