NAME: After the discoverer of the deposit, Mr. Ross Lambert.

PHYSICAL PROPERTIES: Not specially described.

CHEMICAL PROPERTIES: Composition stated to be UO_3.

OCCURRENCE: Admixed with uraninite and uranophane in a quartzite lying between mica schist and granite at Silver Cliff Hill, 1.5 km. north of Lusk, Wyoming. S. G. G.

Lucianite

E. W. Hilgard: A peculiar clay from near the city of Mexico. *Proc. Nat. Acad. Sci.*, **2**, 8–12, 1916.

NAME: After the locality, Hacienda Santa Lucia.

PHYSICAL PROPERTIES: A clay; swells up enormously when wet.

CHEMICAL PROPERTIES: Shown by analysis to have the composition of a hydrated talc. [Probably a form of stevensite, A. F. Rogers. See *Am. Min.*, **3**, 158, 1918.]

OCCURRENCE: A weathering product of magnesian igneous rocks.

S. G. G.

Turyite

This mineral name has been usually spelled *turgite*, in accordance with the rule of priority. The original author of it, Hermann, subsequently discovered that this spelling was incorrect, and changed it [in German] to *turjit;* the exact English equivalent of this is *turyite*. Much later Samoilov used for it a Russian word the English transliteration of which is *turite*. Spencer in the paper above cited adopts the last. We prefer to use the *earliest correct spelling: turyite.*

E. T. W.

ABSTRACTS—CRYSTALLOGRAPHY

A METHOD OF GROWING LARGE PERFECT CRYSTALS FROM SOLUTION. R. W. MOORE. *J. Am. Chem. Soc.*, **41** (7), 1060–1066, 1919.

The method consists of placing seed crystals in a nearly saturated solution of the salt, cooling the solution until it is very slightly supersaturated, and maintaining a state of slight supersaturation by slowly cooling the solution about 0.1° per day by means of a thermostat, with greater decreases as the crystal grows larger. A clear perfectly developed crystal of Rochelle salt 8 cm long can be produced in a month. S. G. G.

THE USE OF THE GNOMONIC PROJECTION IN THE CALCULATION OF CRYSTALS. G. F. HERBERT SMITH. *Min. Mag.*, **18** (86), 317–323, 1919.

THE POSSIBLE AXES OF CRYSTAL SYMMETRY. JOHN W. EVANS. *Min. Mag.*, **18** (86), 324–326, 1919.

A simple general proof is given, on the hypothesis that crystals have a homogeneous cellular structure, that the only possible axes of symmetry are those with cyclic numbers 2, 3, 4, or 6. S. G. G.

COÖRDINATE TRANSFORMATION IN REGULAR POINT SYSTEMS. A. JOHNSEN. *Centr. Min. Geol.*, **1918**, 46–49.

A series of mathematical formulas for this purpose. E. T. W.

THE CRYSTAL STRUCTURE OF TIN. A. J. BIJL and N. H. KOLKMEIJER. *Chem. Weekblad*, **15**, 1077–1078, 1918; ———OF GRAY TIN. SAME AUTHORS and *journal*, **15**, 1264, 1918; INVESTIGATION BY MEANS OF X-RAYS OF THE CRYSTAL STRUCTURES OF WHITE AND GRAY TIN. THE SAME. *Proc. Acad. Sci. Amsterd m*, **21**, 405–408, 1919; thru *Chemical Abstracts*, **12**, 2533, 1918; **13**, 703, 1207, 1919.

The structure of ordinary white tin is found to be prism-face-centered tetragonal, with the horizontal prism edge 5.84×10^{-8} cm. long, and the axis $c = 0.406$ times as long. The usual crystal elements given for tin should accordingly be changed, making 100 = 110 and 111 = 403. The valence of the atoms is 2. Gray tin is cubic, with the diamond lattice, the side of the cube being 6.46×10^{-8} and the nearest atoms 2.80×10^{-8} cm. apart. Here the valence is 4. E. T. W.

THE GYROHEDRAL CHARACTER OF ROCK SALT. R. GROSZ. *Centr. Min. Geol.*, **1918**, 1–19.

The Bragg structure of NaCl, KCl, etc., is holohedral, and does not exhibit the "usual" valences of the elements concerned. The actual crystals of KCl are gyrohedral [in certain respects. Abstractor], and Grosz infers that NaCl should be similar [inference unjustified. Abstr.] He accordingly suggests a shift of the atoms in the structure as given by the Braggs, which would give the desired symmetry, but could not be detected by X-ray measurements. [The probability of such a shift in the case of KCl was pointed out some years ago by Pope and Barlow. Abstr.] As to valence, Grosz assumes that this is the same in the solid as in the liquid or gaseous states [a quite unreasonable, tho frequently made, assumption. Abstr.] and follows Smits and Scheffer (See abstr. in *Am. Min.* 3, 144–145, 1918) in regarding the atoms to be united by single valences into groups. The absence of valences between some of the atomic layers he regards as the origin of the cubic cleavage [but does not state why the substance does not fall apart itself if there is nothing to hold it together in these directions. Abstr.]. E. T. W.

THE SYMMETRY OF ICE CRYSTALS. O. MÜGGE. *Centr. Min. Geol.*, **1918**, 137–141.

From all the data available it is concluded that ice is certainly trigonal, and probably hemimorphic, in crystallization. E. T. W.

THE SYMMETRY OF CUPRITE. ANNI GRÜHN. *Centr. Min. Geol.*, **1918**, 85–97.

The available data indicates the crystal class of this mineral to be cubic tetartohedral, but the results of X-ray studies do not agree with this. The class may be plagihedral, however, altho proof of this would require a method for determining symmetry of individual atoms. [That this mineral is plagihedral in some respects is usually accepted. Abstr.] E. T. W.

THE CRYSTAL FORM OF BARIUM IODIDE HEXAHYDRATE. O. MÜGGE. *Centr. Min. Geol.*, **1918**, 105–107.

Recrystallization of commercial BaI_2 gives hexagonal prisms with tetartohedral striations. From occasional faces of 2021, $c = 0.538$. The crystals are uniaxial,—, but show no circular polarization. $SrBr_2.5H_2O$ is similar, with $c = 0.515$. E. T. W.

ARTIFICIAL TRANSLATION IN TITANITE. A. JOHNSEN. *Centr. Min. Geol.*, **1918**, 152–156.

Gliding planes connected with volume changes produced in titanite by pressure are described. E. T. W.

CALCULATION OF THE LIMITS OF ERROR OF OPTIC AXIAL ANGLES. H. PANEBIANCO. *Riv. min. crist. Ital.*, **49**, 46–8 (1917).

Mathematical. E. T. W.

DETERMINATION OF THE PRINCIPAL INDICES OF REFRACTION OF ANISOTROPIC SUBSTANCES BY OBSERVING THE RETARDATION OF THIN PLATES IN OBLIQUE PARALLEL LIGHT. A. LEDOUX. *Bull. soc. franc. min.*, **40**, 119–157, 1917.

A mathematical discussion, with directions for applying the method. E. T. W.

OPTICAL PHENOMENA IN CRYSTALS. PHOTOTROPIC PROPERTIES OF β-TETRACHLORO-α-KETONAPHTHALENE. FRITZ WEIGERT. *Z. Elektrochem.*, **24**, 222–237, 1918. See *Chem. Abstr.*, **13**, 1185, 1919.

ABNORMAL BIREFRINGENCE OF TORBERNITE. N. L. BOWEN. *Am. J. Sci.*, [4], **48**, (3), 195–198, 1919.

A torbernite examined optically had a mean n of 1.62, and weak positive birefringence, these properties being identified with torbernite which has lost 4 molecules of H_2O; normal torbernite with $12H_2O$ being optically – with strong birefringence. The interference colors shown were very abnormal; not far from the sensitive tint, tho sometimes showing blue in thin plates or red in thicker plates. The mineral was found to be positive for red, negative for blue and isotropic in the green at about 515 $\mu\mu$. These colors combine so as to give the abnormal colors shown. It is therefore a mistake to state that the interference color is always the simple complementary of that for which the mineral is isotropic. S. G. G.

ABSTRACTS—MINERALOGY

MINERALOGICAL CHARACTERS OF TURITE (= TURGITE) AND SOME IRON-ORES FROM NOVA SCOTIA. L. J. SPENCER. *Min. Mag.*, **18** (86), 339–348, 1919.

See *Am. Min.*, **4**, 41, 1919; also under heading "turite," in "New minerals," page 18.

THE HYDRATED FERRIC OXIDES. E. POSNJAK AND H. E. MERWIN. *Am. J. Sci.* [4], **47** (5), 311–348, 1919.

Eighteen analyses of hematite, turgite, goethite, xanthosiderite and limonite are given, with the results of optical, crystallographic and thermal studies, No series of ferric hydrates exists among natural minerals. The only existing ferric hydrate is the ferric oxide monohydrate, occurring in two polymorphic forms: goethite and lepidocrocite, and in an amorphous condition limonite.

Goethite is orthorhombic, $a : b : c = 0.91 : 1 : 0.602$, density 4.28, $\alpha = 2.26$, $\beta = 2.394$, $\gamma = 2.400$; streak dull orange yellow, pleochroism faint.

When crystallized in dense aggregates of thin blades and fibers enclosing much adsorbed and capillary water it has been known as limonite.

Lepidocrocite is orthorhombic, $a : b : c = 0.43 : 1 : 0.64$, density 4.09. $\alpha = 1.94$, $\beta = 2.20$, $\gamma = 2.51$, streak dull orange, pleochroism very strong.

The name limonite is retained for the essentially isotropic ferric monohydrate with adsorbed and capillary water.

The fibrous mineral turgite is variable in composition and considerable evidence is given that it probably represented solid solutions of goethite with hematite with enclosed and adsorbed water.

The genetic conditions of the hydrated ferric oxides and the stability relation of the two monohydrates are unknown. S. G. G.

THE PYRITIFEROUS DEPOSIT AT THE CONTACT OF THE GRANITE AT CHIZEUIL AND ITS METAMORPHIC ROCKS. A. LACROIX. *Bull. soc. franc. min.*, **41**, 14–21, 1918.

This geological article includes descriptions of andalusite, svanbergite, and other minerals. E. T. W.

THE MINERALS OF THE GRITS OF SEGALAS, TUNIS. P. GAUBERT. *Bull. soc. franc. min.*, **41**, 33–38, 1918; abstract reprinted by permission from *Chem. Abstr.*, **13** (9), 947, 1919.

This deposit contains an unusual number of heavy minerals, of which brief descriptions are given. It was found to be an easy matter to distinguish some of them by study under the microscope, after melting in sulfur.

E. T. W.

SOME FASHIONED OBJECTS FROM TIMBUCTU. P. GAUBERT. *Bull. soc. franc. min.*, **41**, 38–40, 1918; abstract reprinted by permission from *Chem. Abstr.*, **13** (9), 947, 1919.

By determinations of density and refractive index and by microchemical tests amazonite and lazulite were recognized. Neither has as yet been found in place in Africa. E. T. W.

NOTES ON JAPANESE MINERALS. VIII and IX. S. ICHIKAWA. *Am. J. Sci.* [4], **48** (2), 124–131, 1919.

Natural etchings of calcite crystals and pits on sphalerite crystals are described. S. G. G.

THE RELATION BETWEEN THE OPTICAL PROPERTIES AND CHEMICAL CONSTITUTION OF THE SCAPOLITES. NILS SUNDIUS. *Bull. Geol. Inst. Univ. Upsala*, **15**, 1–12, 1916.

New analyses of scapolites confirm the views of recent writers, except that the SO_3 is believed to be present as $NaHSO_4$ instead of Na_2SO_4 and $NaHCO_3$ instead of Na_2CO_3. The double refraction and refractive indices if considered together roughly indicate the composition of a given specimen. E. T. W.

DETERMINATION OF THE POWER OF REFRACTION OF A NUMBER OF ALLANITES. N. ZENZÉN. *Bull. Geol. Inst. Univ. Upsala*, **15**, 61–76, 1916.

See article in this number by Thomas L. Watson. (Page 6).

WEATHERING OF ALLANITE. THOMAS L. WATSON. *Bull. Geol. Soc. Am.*, **28**, 463–500, 1917.

An elaborate discussion of the occurrence of allanite, with long lists of its localities in the various states. Optical study of several occurrences (indices determined by E. S. Larsen) showed the existence of at least two minerals (see article in this number, page 6). When found at or near the surface allanite masses are frequently encrusted with a reddish brown alteration product. This has been studied in detail, both microscopically and chemically, and also found to be heterogeneous, altho the bulk of it is isotropic and of variable composition. E. T. W.

THE CHEMICAL COMPOSITION OF TOURMALINE FROM ÜTO. HJ. SJÖGREN. *Bull. Geol. Inst. Univ. Upsala*, **15**, 317–324, 1916.

Four analyses by N. Sahlbom are given. They support Penfield's formula $H_{20}B_2Si_4O_{21}$. E. T. W.

ANALYSES OF SWEDISH GLAUCONITES. NAIMA SAHLBOM. *Bull. Geol. Inst. Univ. Upsala*, **15**, 175–194, 1916.

Two analyses show Al_2O_3 9 to 12 percent., and K_2O 7 to 8 percent. E. T. W.

STUDIES ON CLAYS. GENERAL INTRODUCTION TO THE CHEMISTRY AND PHYSICAL CHEMISTRY OF CLAYS. SVEN ODÉN. *Bull. Geol. Inst. Univ. Upsala*, **15**, 175–194, 1916.

A good up to date discussion (in German) of the general features of clays, pointing out the importance of colloid chemistry in their interpretation. E. T. W.

THE OCCURRENCE AND ORIGIN OF THE BARITE ON THE PRESENT OCEAN FLOOR. K. ANDRÉE. *Centr. Min. Geol.*, **1918**, 157–165.

Two occurrences of barite nodules are described. Barium occurs in various oceanic deposits. The concentration may have been either organic or inorganic, the common presence of sulfates and the insolubility of $BaSO_4$ being perhaps favorable to the latter mode of origin. E. T. W.

ILSEMANNITE. H. F. YANCEY. *Chem. Met. Eng.*, **19**, 186–190, 1918.

Extraction tests of a blue water-soluble molybdenum mineral from Utah are thought to indicate that it is not a sulfate, as suggested by Schaller, but a combination of different oxides of molybdenum. The principal substance present is regarded as $MoO_2.4MoO_3.6H_2O$ [but in all the discussion by both authors the fact that colloids vary in composition appears to be overlooked. Abstr.]. E. T. W.

GEMS AND PRECIOUS STONES IN 1918. WALDEMAR T. SCHALLER. *Mineral Resources U. S.*, **1918**, II, 7–14, 1919.

A statistical report. An alphabetical list of some industria luses of precious stones is appended. S. G. G.