SPHÄRISCHE TRIGONOMETRIE FÜR NATURWISSENSCHAFT UND TECHNIK. FRANZ RAAZ. 66 pages and 11 text figures. Published by Theodor Steinkopff, *Dresden*, **1928**. Price 6 RM.

This is a book for the technician who occasionally, must solve a spherical triangle. The mathematics is rigorous but is not an end in itself. In 15 pages, the author derives the necessary formulas and proves that they will work for the general, unrestricted, (Möbius) triangle. He then gives a systematic classification of Euler ($180° < A+B+C < 540°$) triangles with sufficient emphasis on the impossible and ambiguous cases. Standard methods for solving and checking along with helpful hints from a computer's experience are given. The half-angle formulas are derived and examples are given to show how the use of them simplifies the solution of acute-angled triangles.

Applications to astronomy and to mathematical geography are not mentioned. A final chapter of 7 pages shows the application to crystallography. The orientation of any plane of a crystal, *i.e.*, the direction-cosines of its normal, can be mapped as a point on a unit sphere and the relations of intersecting planes can be found from a study of the points representing them. This chapter contains one of the few numerical examples which are worked out to the last digit.

The printing and style are satisfactory but some well-drawn figures have been so reduced that the lettering is indistinct. There is a three-page summary of formulas but no index. A bibliography lists 12 titles, 5 in trigonometry, 3 in astronomy, and 4 in crystallography; none are in English.

NORMAN ANNING

NEW MINERAL NAMES

Bismutotantalite

E. J. WAYLAND AND L. J. SPENCER: Bismutotantalite, a new mineral from Uganda. *Mineral. Mag.*, **22**, 185–192, 1929.

NAME: From its relation to the tantalite group.

CHEMICAL PROPERTIES: A tantalate of bismuth, $Bi_2O_3.(Ta, Nb)_2O_5$. Analysis by W. O. R. Wynn gave: Bi_2O_3 52.26, Ta_2O_5 40.12, Nb_2O_5 6.63, MnO 0.12, $(Fe, Al)_2O_3$ 0.11, $SnO_2+Sb_2O_3$ 0.04, ign. loss 0.33, ZrO_2 trace, TiO_2 trace, ThO_2, etc., and U_3O_8 not detected. Sum 99.61. A partial analysis is also given. Insoluble in acids.

CRYSTALLOGRAPHICAL PROPERTIES: Orthorhombic. Habit prismatic. $a=0.7813$, $c=1.1363$. Forms a (100), m(110), g(130), δ(011), k(103), ω(133) x(141). Parting in three directions observable.

PHYSICAL AND OPTICAL PROPERTIES: Color black, luster sub-metallic. Streak black. Fracture sub-conchoidal. Hd. 5–5½. Sp. Gr. 8.15. Under the microscope, transparent in thin splinters; color smoke gray. Extinction parallel. Biaxial. n high, birefringence 0.1 to 0.15.

OCCURRENCE: Found in rough masses or crystals up to several pounds in weight in a pegmatite at Gamba Hill, 25 miles W. N. W. of Kampala, Uganda.

W. F. FOSHAG

Fülöppite

I. DE FINÁLY AND SÁNDOR KOCH: Fülöppite, a new Hungarian mineral of the plagionite-semseyite group. *Mineral. Mag.*, **22**, 179–184, 1929.

NAME: In honor of Béla Fülöpp, Hungarian mineral collector.

CHEMICAL PROPERTIES: A sulfantimonide: 2PbS. $3Sb_2S_3$. Analysis: S 24.10, Sb 47.50, Pb 28.29, SiO_2 0.09; Sum 100.08. Before the blowpipe readily fusible. On charcoal it gives a yellow and white coating. Melts easily in an open tube yielding sulfur fumes and a deposit of Sb_2S_3. Not attacked by concentrated hydrochloric or nitric acid.

CRYSTALLOGRAPHICAL PROPERTIES: Monoclinic. Habit rhomboidal. $a:b:c=1.1087:1:0.7011$. $\beta=85°15\frac{1}{2}'$. Forms $c(001)$, $a(100)$, $d(\bar{1}01)$, $e(112)$, $p(111)$, $t(\bar{2}23)$ $o(\bar{1}11)$, and $s(\bar{2}21)$.

PHYSICAL AND MINERAGRAPHICAL PROPERTIES: Color lead gray. Luster bright metallic, sometimes with a steel blue or bronzy tarnish. Streak reddish gray. Fracture uneven. Hardness greater than 2. Negative results with HNO_3 (1:1), HCl (1:1), KCn (20%), $FeCl_3$ (20%), and $HgCl_2$ (5%). With KOH (40%) a light brown tarnish is formed after 60 seconds, but rubs off. With aqua regia a brownish yellow tarnish but later a bluish tarnish is developed.

OCCURRENCE: Found on III level, Kereszthegy mine at Nagybánya, Comitat Szatmár (now Baia Mare, Satul-Mare, Roumania) with dark colored sphalerite, quartz, dolomite, sulfur and a mineral referred to as keeleyite.

W. F. F.

Ameletite

PATRICK MARSHALL: The occurrence of a mineral hitherto unrecognized in the phonolites of Dunedin, New Zealand. *Mineral. Mag.*, **22**, 174–178, 1929.

NAME: From the Greek *ameles*, neglected, referring to the fact that it has been overlooked so long.

CHEMICAL PROPERTIES: A silicate of sodium and aluminum, $6\ Al_2O_3 \cdot 9\ Na_2O.\ 12\ SiO_2 \cdot \frac{1}{2}NaCl$. Three analyses (made on soluble portion of the rock) gave: SiO_2 36.67, 36.40, 35.96; Al_2O_3 34.70, 34.70, 34.11; CaO 1.80, 2.49, 2.12; Na_2O 24.18, 24.90, 23.03; K_2O 0.86, 0.96, 0.53; SO_3 0.30; Cl 2.15, 3.15, 1.58. Soluble in acids.

CRYSTALLOGRAPHICAL PROPERTIES: Hexagonal, sections show rectangular and hexagonal sections. Cleavage parallel to one side of the rectangles, distinct; less distinct in hexagonal sections.

OPTICAL PROPERTIES: n very low, birefringence .003. Stains violet with silver nitrate solution.

OCCURRENCE: Found abundantly in trachytoid phonolites of the volcanic region of Dunedin, New Zealand. Also at Taipara, Rarotonga, Cook Islands and Huahine and Raiatea, Society Islands.

W. F. FOSHAG

Magnesio-Cronstedtite

Name given to the hypothetical molecule $H_4Mg_2Fe_2^{III}SiO_9$, corresponding to cronstedtite. [A. N. Winchell, *Am. J. Sc.*, **11**, 284, 1926.]

Magnesium-Orthite

A variety of allanite (orthite) from Norberg, Sweden, containing much magnesia and fluorine, perhaps present as the group MgF_2. [P. Geijer, *Sveriges Geol. Unders. Årsbok*, **20**, No. 4, p. 7, 1926.]

Picrocollite

Name given to a hypothetical molecule $H_4MgSi_3O_8 \cdot 2H_2O$, one of the end members of the pilolite-paligorskite group. [E. S. Simpson, *J. Roy. Soc. Western Australia*, **13**, 43, 1927.]

Iron-Andradite

The name given to a hypothetical garnet molecule, $3FeO \cdot Fe_2O_3 \cdot 3SiO_2$. [W. Fischer, *Bol. Acad. Nac. Cienc. Argentina*, **28**, p. 153, 1925; *Centr. Min.*, Abt. A., p. 36, **1926**.] Called skiagite by L. L. Fermor. *Records Geol. Surv. India*, **59**, 202, 1926. (*Cf. Am. Mineral.*, Vol. **13**, p. 33, 1928.)

Lovchorrite

A colloidal glassy variety of rinkolite, named from the locality Lovchorr plateau in the Khibinsky tundra, Kola peninsula, north Russia. [E. M. Bonshtedt, *Bull. Acad. Sci. U.S.S.R.*, [6] **20**, 1181, 1926].

Rafaelite

A vanadiferous asphaltum (the ash $\frac{1}{4}$–$\frac{1}{2}$%, contains 21–44% V_2O_5) found in 1890 near San Rafael, Argentina. [A. Windhausen and P. T. Vignau, Informes Preliminares de la Direccion General de Minas, *Geologia e Hidrologia*, Buenos Aires, No. **1**; G. Fester and F. Bertuzzi, *Zs. angew. Chem.*, **38**, 364, 1925.]

J. F. Schairer

Plaffeiite

A fossil resin from the Flysch at Plaffeien, Switzerland. [Tschirch und Kato, *Mitt. Naturfor. Gesell. Bern*, p. 13, **1925**.]

Weisbachite

A variety of anglesite from Chile containing $BaSO_4$. Probably the same as hokutolite. [F. Kolbeck in C. F. Plattner's Probierkunst mit dem Lötrohre, 7th edit., *Leipzig*, **1907**, pp. 241, 253; 8th edit., **1927**, pp. 235, 246; K. Hlawatsch, *Ann. Naturhist. Mus. Vienna*, **38**, 19, 1925.]

Magnetoilmenite-Titanomagnetite

Hexagonal mixed crystals of ilmenite with magnetite are called magnetoilmenite. Cubic mixed crystals of magnetite in ilmenite at the other end of the solid solution series are called titanomagnetite. [P. Ramdohr, *150 Festschr. Bergakad. Clausthal*, p. 324, **1925**, *Neues Jahrb. Min.*, Abt. A, **54**, 345, 1926.]

Normannite

This is a name left in the manuscript in the Freiberg Collection of minerals by A. Weisbach, for a basic bismuth carbonate $3\ Bi_2O_3 \cdot CO_2$, occurring as brown globular aggregates in the Wolfgang Maasen mine at Neustädtel near Schneeburg, Saxony. [A. Tetzner and F. Edelmann, *Jahrb. Berg.- und Hüttenw. Sachsen*, **100**, A 49–A 72, 1926; **101**, A 70–A 122, 1927.] (The properties and composition of the so called normannite' are identical with those of bismutosphärite, Dana No. 283, *System of Mineralogy*, p. 290, 6th edition, **1892**. Abstr.).

J. F. Schairer

NOTE

THE NATURE OF PYROMELANE. WILLIAM F. FOSHAG. *U. S. National Museum.* In the *American Journal of Science*, 2d. series, volume **22,** p. 96, 1856, C. U. Shepard has briefly described as a new mineral species "a titanate of alumina, iron with only traces of glucina and lime" to which he gave the name *pyromelane.* The locality is given as the gold washings of McDowell County, North Carolina. Dana refers this mineral to titanite. A specimen of this mineral in the Roebling Collection of the United States National Museum contains, besides the small angular fragments a few rough crystals of a typical brookite habit like that shown in Dana's No. 4. Measurement of one of these crystals has established its essential identity with brookite and since the other properties attributed to pyromelane are identical with those of brookite, this mineral should be referred to brookite and the name pyromelane dropped.