

is precisely the first of those mentioned also by Donnay, that is, the condition which relates the indices of three faces in a zone. Subsequent to Sella's application of determinants to crystallography, the same method has been followed in Italy to the present day, in nearly all university courses of mineralogy, and in some treatises on morphologic crystallography.²

² For instance; R. Panebianco, *Trattato di cristallografia morfologica*, Padova, 1904.

PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY

Academy of Natural Sciences of Philadelphia, February 7, 1935.

Dr. Gillson presided at a stated meeting, 51 members and 35 visitors being present. Dr. Gillson spoke on "Some Mining Operations in England, Spain, and Sierra Leone." The lecture was illustrated by means of lantern slides. During 1935 he spent ten days at Cornwall, a month at Cologne, Germany, a week in Spain, and six weeks in Sierra Leone. The history and development of the tin mines of Cornwall were described, also the geologic origin of the deposits, and the financial difficulties of the various companies operating the mines. He visited the mercury mine at Almaden, which has been in operation since 1499, and produces ore averaging 7% quicksilver. Spain is also an important potash producer, a typical salt dome being located near Barcelona and Cardona. Sylvite and carnallite occur on the flanks of the dome. Dr. Gillson went to Sierra Leone to examine ilmenite deposits. The deposits are not commercially important and Sierra Leone, thought to be insignificant mineralogically, has been brought to our attention by Pollet, who has found deposits of diamond, gold, chromite, and platinum. At Marampa, 45 miles from the coast, there is an iron ore deposit estimated to contain 100,000,000 tons.

W. H. FLACK, *Secretary*

BOOK REVIEWS

EDELSTEINE UND SCHMUCKSTEINE. DR. ALFRED EPPLER. Second edition, revised and enlarged by Dr. W. Fr. Eppler. 554 pages, 317 illustrations, and 4 colored plates. Wilhelm Diebener, Leipzig, Germany. 1934.

This revision of the well-known Eppler text, first issued in 1912, is especially designed for gem dealers, jewelers, artists, collectors, and admirers of gem stones. Written in the environment of Idar, Germany, the historic center of the gem-cutting industry, the author has been able to draw upon the long experience and great wealth of material of the community. This edition is a very welcome, as well as an important contribution to the literature of gem stones.

The nine chapters of the book are devoted to the following topics: Historical Survey of the Use of Gems; Chemical and Physical Properties and the Usual Methods for the Recognition and Determination of Ornamental and Gem Stones; Imita-

tion Stones; Descriptions of the Various Stones; Occurrences and Production; Traffic in Uncut Stones; Ornamental and Gem Stone Industry; Names; and Determinative Tables.

The various chapters are well written. Emphasis is placed upon practical and commercially important matters, while highly technical features are held in the background. The descriptions of the gems are adequate and discriminating. Twenty pages are devoted to the pearl, forty to the stones of the quartz group, twenty-five to natural and synthetic corundum gems, and forty-four to the diamond and carbonado. A striking feature of the descriptions of the various gem stones is the space given to their behavior toward *x*-rays and to the properties of fluorescence and phosphorescence, which are now attracting so much popular attention. The different phases of the Idar gem-cutting industry are discussed in a very interesting manner.

The book is well illustrated. Some crystallographic drawings (Nos. 8, 16, 150, 173, and 193) are, however, not properly oriented. The four colored plates are superb. The colors of the stones are most faithfully reproduced. These plates are very beautiful and, in fact, the best of the kind the reviewer has ever seen.

EDWARD H. KRAUS

DIE LAGERSTAETTEN DER EDELSTEINE UND SCHMUCKSTEINE.

DR. O. STUTZER AND DR. W. FR. EPPLER. 567 pages, with 154 illustrations. Gebrueder Borntraeger, Berlin, 1935.

This volume, dealing with gem and ornamental stones, is the sixth in the series on the formation and occurrence of the non-metallic minerals that is being prepared under the editorial direction of Professor O. Stutzer, of the Saxon School of Mines at Freiberg.

The book is divided into two parts. The first portion contains 216 pages and is devoted to the most important gem, the diamond. It was written by Dr. Stutzer. The second portion discusses those minerals other than the diamond that are useful as gems and ornamental stones. This part was prepared by Dr. Eppler.

Throughout the text the formation and important occurrences of the various gem minerals are described in a comprehensive and authoritative manner. Their uses and reliable statistics of production are also given. Bibliographic references are numerous, and especially in the second part are they conveniently listed together for each mineral.

This book should prove most helpful to mineralogists, economic geologists, and others interested in the formation, occurrence, and uses of gem minerals.

EDWARD H. KRAUS

GEOLOGY OF THE WESTERN SAN GABRIEL MOUNTAINS OF CALI-

FORNIA. WILLIAM J. MILLER. Publications of the University of California at Los Angeles, Vol. 1, No. 1, pp. 1-114, 13 plates, 6 figures, 1 map. University of California Press, Berkeley, Calif.

The San Gabriel Mountains are located immediately north and northeast of Los Angeles. Geologically they are a great block 4,000 to 10,000 feet high of pre-Cretaceous metamorphic and igneous rocks, bordered on all sides by Tertiary and

Quaternary sediments. The block is clearly a horst broken internally by many minor faults. The San Andreas fault bounds it on the northeast. The mountains were lifted to their present height in Quaternary time.

The major part of the study is concerned with the petrology of the crystalline rocks of the area, but also contributes valuably to the Cenozoic history and geomorphology of the district. A semi-detailed geologic map in colors accompanies the report. It is well written and illustrated.

A. J. EARDLEY

NEW MINERAL NAMES

Manganilmenite

EDWARD S. SIMPSON, Contributions to the Mineralogy of Western Australia. *Jour. Roy. Soc. W. Australia*, vol. 15, p. 103, 1929.

CHEMICAL PROPERTIES: A manganese bearing ilmenite: Fe₂O₃ 12.12, FeO 21.27, MnO 14.40, MgO tr., TiO₂ 51.79, SiO₂ 0.80. Total 100.38.

PHYSICAL PROPERTIES: Brownish black with light brown coating. Imperfect cleavage. G=4.63.

OCCURRENCE: As pebbles up to several centimeters in diameter from granite terrain traversed by pegmatite veins, a few miles south-east of Cunmagnunna, Trig. (B4) on Woodstock Station (Lat. 21°48'S. Long. 115°55'E).

W. F. FOSHAG

Scawtite

TILLEY, C. E., Scawtite, a new mineral from Scawt Hill, Co. Antrim. With chemical analysis by M. H. Hey. *Mineral. Mag.*, vol. 22, No. 128, pp. 222-224, 1930.

NAME: From the locality, Scawt Hill.

CHEMICAL PROPERTIES: Calcium silicate-carbonate. 4CaO · 3SiO₂ · 2CO₂. Analysis (on .0812 gms.) CaO 46.4, SiO₂ 34.2, CO₂ 18.0; total 98.6. Readily decomposed by weak hydrochloric acid with marked effervescence, leaving a gelatinous residue.

CRYSTALLOGRAPHIC PROPERTIES: Probably monoclinic. Cleavage (001) perfect, (010) trace.

PHYSICAL AND OPTICAL PROPERTIES: Colorless, luster vitreous. Biaxial positive. $2V=74^\circ$. $\alpha=1.597$, $\beta=1.606$, $\gamma=1.621$. $Y=b$. $Z:c=29^\circ$.

Hd. = $4\frac{1}{2}$ -5. G=2.77.

OCCURRENCE: Found in vesicles in the melilite bearing types of hybrid rocks at Scawt Hill, Co. Antrim, associated with calcite, thomsonite and an unknown zeolitic mineral.

W. F. F.

Ginorite

D'ACHIARDI, GIOVANNI, Ginorite, nuovo borato di calcio di Sasso Pisano. *Periodico Min. Roma*, vol. 5, pp. 22-32, 1934, 1 pl.

NAME: In honor of Prince Piero Ginori-Conti, who contributed to the progress of the borax industry of Italy.