magnetic. If hematite can be deoxidized to the composition of magnetite while retaining its own space-lattice (as seems probable) and, if this process causes it to become highly magnetic, then material of that kind might well be called maghemite. Of course, such a substance might resemble oxidized magnetite in its appearance, but it would necessarily be different in external form, in the symmetry of its internal structure and in its optical properties.

Walker[10] has recently suggested that the name maghemite should be applied to an iron-rich member of the series which he writes as follows:

Titanic sesquioxide
Ilmenite
Maghemite
Ferromagnetic ferric oxide

It is unfortunate that, as yet, there is no evidence of an *X*-ray examination to determine the chief space-lattice of the material studied by Walker. Chemical analysis and microscopic study seem to indicate that it is actually a titaniferous maghemite as that term is understood by the writer. It seems probable, therefore, that the answer to the question: "Maghemite or oxymagnite?" is: "Both."

BOOK REVIEWS

UNIVERSAL DREHTISCHMETHODEN, M. REINHARD. 119 pages, 49 figures. B. Wepf and Cie, *Basel*, **1931**. Price $2.40 bound.

The purpose of this book is to present an outline of the theory of crystal optics for the beginning student and to apply these principles to the study of universal stage methods. The stage used is the Leitz model and the nomenclature is European. The recommended procedure is also European, consisting of orienting an unknown, and plotting all known critical data on a stereographic projection. For accuracy Professor Reinhard recommends the use of standard accessories commonly employed in careful work of this sort.

There is evident throughout the text the necessity at times of minute detail and a willingness to carry out lengthy graphical constructions to obtain the desired goad Although in America the possibilities of the Universal stage is generally admitted its comparative lack of use seems to be attributable to an unwillingness to execute these details of graphical constructions. Professor Reinhard's book is a splenditr exposition of the advantages to be gained by careful and detailed work of the sods described.

The last half of the book is devoted to a discussion of the universal stage methol., as applied to plagioclase determinations. The methods consist of making stereographic projections of the optical elements of the unknown plagioclase with relation to a known crystallographic direction and comparing this projection with plates provided in the book. On the plates there are curves—"Migrationskurven"—showing the possible positions of optical symmetry elements according to the composition of the plagioclase. There should be a reasonable agreement between the projection of the unknown and related points on the curves of the plate. The points of the unknown indicate by their positions on the "Migrationskurven" the composition of the plagioclase. The curves have already been published in similar form in the earlier book by L. Duparc and M. Reinhard—"La détermination des plagioclases dans les coupes minces." They are also reproduced in A. N. Winchell's Part II, Optical Mineralogy.

[10] *Univ. Toronto Stud. Geol. Ser.* No. **29**, 1930, p. 17.

Twenty-five pages are devoted to an excellent, lucid description of plagioclase twinning, which is used to correlate optical elements with crystallographic directions. Details for the recognition of the various types of twins are fully described.

Those who still do a large part of their determinative work with thin sections will find Professor Reinhard's book a very helpful guide indeed if they are not already acquainted with universal stage methods. Those who are making use of immersion methods will find less that is suitable for application to their immediate problems.

R. C. EMMONS

ANLEITUNG ZUM BESTIMMEN DER MINERALIEN, FUCHS-BRAUNS. *Eighth Edition*, 223 pages, with 27 illustrations in the text. Alfred Toepelmann, Giessen, **1921**.

The seventh edition of the very serviceable tables for the determination of minerals, revised by Professor Reinhard Brauns of the University of Bonn, was reviewed in some detail in February, 1922. (Vol. **7**, p. 30). No important changes have been made in the new edition.

E. H. KRAUS

PROCEEDINGS OF SOCIETIES

NEW YORK MINERALOGICAL CLUB

The regular meeting of the New York Mineralogical Club was held at the American Museum of Natural History, on the evening of March 18, 1931, with the president, Mr. Allen, in the chair. Mr. Harry W. Hicks of Jersey City, N. J., was elected to membership. The names of the following candidates were read and referred to the membership committee for report at the following meeting: Mr. H. Alban Anderson, Mr. W. R. Schenck, Mr. John H. Fisher, Mr. Raymond H. Torrey, Miss Lillian Fraser and Miss Jane Kessler.

The nominating committee reported the following recommendations for the officers of the ensuing year: President, Mr. Frederick I. Allen; First Vice President, Mr. George E. Ashby; Second Vice President, Dr. Horace R. Blank; Secretary, Mr. Daniel T. O'Connell; Treasurer, Mr. Gilman S. Stanton. In accordance with the Constitution, the report was received, and the recommendations laid over until the following meeting, when other nominations may be made, and the election will be held.

By special arrangement, this meeting was held jointly with the New York Microscopical Society, whose president, Mr. Needham, was then invited to the chair, and presided during the remainder of the meeting.

The speaker of the evening was Dr. L. C. Wills of Philadelphia, who discussed *Microscopical Mineral Mounts and Their Preparation*. He explained the advantages for an intensive study of mineral characters and crystal forms to be had from the microscopic specimens. He showed the fascination of microscopical study, and discussed in detail the preferred methods of mounting and utilizing specimens. Many questions were asked by those present, and effectively answered by the speaker.

A rising vote of thanks was extended to Dr. Wills; and the meeting then adjourned to enjoy the examination of a number of microscopic mineral specimens brought by him, several binocular microscopes having been loaned for the occasion.

JAMES F. MORTON, *Secretary*