BOOK REVIEWS

MINERALOGISCHE TABELLEN

(Im Auftrage der Deutschen Mineralogischen Gesellschaft) by HUGO STRUNZ.

Akademische Verlagsgesellschaft Becker & Erler Kom.-Ges. Leipzig 1941, pp. ix+287. Lithoprinted by Edward Brothers, Ann Arbor, Mich., by authority of the Alien Property Custodian (1944), Price, $7.25.

This is one of the most important mineralogical books published in recent years. It should have a place in every mineralogical and geological library.

The title of this book is somewhat misleading. One might expect it to consist of a series of determinative tables, but for the most part it is a systematic list of minerals. It is essentially a new edition of the well-known *Tabellarische Übersicht der Mineralien* by Paul von Groth (1st edition, 1874; 4th edition, 1898).

It has the same title as the *Mineralogische Tabellen* of Groth and Mieleitner, 1921, to whom the book is dedicated. The determinative tables of the latter (pp. 135–162) are omitted.

An important part of the book is the introductory fifty-six pages consisting: (A) of definitions and "Grundgesetze." Five fundamental laws of crystal geometry are recognized instead of the usual two or three. Four fundamental laws of crystal chemistry (I. isotypy; II. isomorphism; III. diadochy; and IV. polymorphism) are mentioned.

(B) Principles of Classification. Nine classes are given. These are enumerated later in the review.

(C) Important Structure Types. This is a well-illustrated summary of our present knowledge of the structure of crystals. Since names of authors and dates are given, it is easy to look up most of them in such a work as Wyckoff's *The Structure of Crystals*.

Following (C) is section (D), which consists of a number of tables showing (1) atomic radii plotted against atomic numbers, (2) chemical elements in alphabetical order with atomic weights, (3) the periodic system of elements, (4) a table of 32 crystal classes with six systems and not the seven of Groth. (The only gap in the list of representatives of the 32 classes is the trigonal bipyramidal class), (5) the 14 Bravais lattices, and (6) a table giving the 230 space-groups with both the Schoenflies symbols and the normalized Mauguin symbols.

The major portion of the book "Systematik der Mineralien auf kristallchemischer Grundlage" occupies 164 pages.

The divisions (Klasse) are:

I. Elements, alloys, carbids, nitrids, and phosphids.
II. Sulfids and related compounds including oxysulfids. (The sulfo-salts are not treated separately as in Groth's *Tabellarische Übersicht*.)
III. Halids.
IV. Oxids and hydroxids (and along with them arsenites, selenites, tellurites, and iodates).
V. Nitrates, carbonates, and borates.
VI. Sulfates, tellurates, chromates, molybdates, and tungstates.
VII. Phosphates, arsenates, and vanadates.
VIII. Silicates. The order of silicates is (A) discrete-silica silicates, (B) self-contained-group silicates, (C) chain silicates, (D) sheet silicates, and (E) net work silicates. This is the order preferred by the reviewer (see *Am. Mineral.*, **27**, 232, 1942). Strunz uses the names: (A) Nesosilikate, (B) Sorosilikate, (C) Inosilikate, (D) Phyllosilikate, and (E) Tektosilikate for these five groups. These names were coined by him in 1938 (*Zeit. f. die gesamte Naturwissenschaft*, 4 Jahrgang, 1938, p. 187).

It should be remarked that Strunz departs from Berman, Winchell, and others in treating quartz and the other silica minerals under the oxids rather than along with the feldspars in the network silicates. The reviewer agrees with the viewpoint of Strunz.

IX. Organic compounds, which include salts of organic acids and hydrocarbons.

This is followed by a combined index and alphabetical list of mineral names which occupies 62 pages. This seems to be fairly complete (*ca.* 5600 names), but I note the omission of such names as aegirine-augite, argentine, diopside-jadeite, geolyte, kalaite, lamprobolite, leptochlorite, metabrucite, oxyhornblende, pseudotridymite, pseudowollastonite, serpophite, and shanyavskite.

About 2000 minerals are given species rank.

At the end of the book there is a list of 41 mineralogical museums. Of American museums only Harvard, U. S. National Museum, American Museum of Natural History, Ottawa, Toronto, Brazilian National Museum, and Argentine National Museum are mentioned.

Among points upon which there may be disagreements with the author are the following:

Gibbsite is the name used for hydrous aluminum phosphate instead of for $Al(OH)_3$.

Mohavite is used instead of tincalconite.

Niobite is preferred to columbite.

Hydromagnesite is given as rhombic-bipyramidal. The reviewer proved (*Am. Jour. Sci.* **6**, 37–47, 1923) that it is monoclinic.

Grünerite is used instead of grunerite.

The formula of ankerite is given as $CaFe(CO_3)_2$. It should be $Ca(Mg,Fe)(CO_3)_2$.

Mineral groups, usually restricted to isomorphous series, are used in a wider sense than is customary. For example, hexagonal glaserite, monoclinic glauberite, and rhombic anhydrite are placed in the same group.

Some synthetic products are included along with the minerals. For example, some of the Tutton'sche salze $R^I_2R^{II}(SO_4)_2 \cdot 6H_2O$ are given along with the three minerals: schönite (picromerite), cyanochroite, and boussingaultite.

In the opinion of the reviewer the author has done an excellent job. It is a worthy successor of Groth's *Tabellarische Übersicht der Mineralien*. If is especially useful in view of the fact that only one volume of the new seventh edition of *Dana's System of Mineralogy* has yet appeared.

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ROCKS AND ROCK MINERALS by LOUIS V. PERSON, third edition revised by ADOLPH KNOPF. John Wiley and Sons, Inc. vii+349 pages (1947). Price $4.00.

The first edition of this popular book came out in 1908 and served beginners in the field of geology for many years. The second edition was published in 1926. The second and third (the present) editions were revised by Professor Knopf. In his preface Professor Knopf says "To simplify, clarify, and condense were the guiding principles in making the revision." In that he has succeeded to the extent that the prospector will find the book readily understood and serviceable.

The arrangement of subject matter is almost entirely retained as in the earlier editions—about eighty pages being devoted to mineral descriptions and two hundred thirty pages devoted to the petrology, description and classification of the various rock types. Determinative tables of minerals and rocks are included.

The discussion of the petrology of rock types is highly conventional. Currently controversial aspects are avoided as perhaps they should be, even at the hazard of giving the beginning student a picture of a fixed and completed study rather than one which is suffering

severe growing pains. The statements on such topics as complementary dikes and the role of the critical temperature of water are carried forward from the earlier editions.

Though the subject matter has been little changed the text has been quite extensively rewritten to advantage. Several new analyses are added. If used as a class-room text, the subject matter can well be discussed further by the instructor, especially in the field of petrogenesis.

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JOINT CRYSTALLOGRAPHIC MEETING

The American Society for *X*-Ray and Electron Diffraction and the Crystallographic Society of America will hold their first joint meeting at Yale University, April 1st to 3rd inclusive, 1948. Joint and separate technical sessions will be held and the President of the Crystallographic Society will deliver his retiring address. Detailed notices have been sent to members of the two Societies. Non-members wishing further information may obtain it from either of the undersigned.

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