

complexity. Fruit crops are omitted, as the author plans a second volume devoted especially to them.

Part 1, consisting of 109 pages, is an excellent condensed introduction to vegetable anatomy. In Part 2, the structure of the selected crops is treated in detail and full references to literature are given. It is, in effect, a series of monographs, and should prove very valuable to any research worker who requires an account of the basic anatomical structure of the plant he is dealing with. A special feature is the number of diagrams showing the course of vascular bundles in stems and other structures. Throughout the book the copious illustrations are, with one or two exceptions, clear and well drawn.

In matters not purely anatomical, the author's high standard is not always maintained. For example, in the discussion of the hybrid origin of 'Grimm' and other variegated alfalfas, the important genetical work of Urban (1877) and others, which puts this origin beyond doubt, is not mentioned. In the glossary, phylogeny is defined as "the developmental history of a race rather than an individual"; it would surely be preferable to substitute a broader term, such as 'group', for 'race', which has a too restricted connotation.

L'Acide ascorbique dans la cellule et les tissus
Par Prof. A. Giroud. (Protoplasma-Monographien, Band 16.) Pp. vi+187. (Berlin: Gebrüder Borntraeger, 1938.) 12 gold marks.

IN this monograph—the sixteenth of the well-known "Protoplasma" series—Prof. A. Giroud develops, from an account of his own and other histochemical studies on the distribution of ascorbic acid in plant and animal cells, an interesting general discussion of the biological function of the vitamin. Although his treatment is sometimes rather speculative and often superficial, it provides a highly stimulating review of the large literature that has grown up since Szent-Györgi announced the discovery of 'hexuronic acid' ten years ago. It well repays reading.

J. C. D.

CHEMISTRY

A History of Chemistry

By Dr. F. J. Moore. Revision prepared by Prof. William T. Hall. (International Chemical Series.) Third edition. Pp. xxi+447. (New York and London: McGraw-Hill Book Co., Inc., 1939.) 20s.

IN this revised edition of a well-known and valued work, the account of the earlier period has been greatly extended and new material has been added in most parts of the text. A valuable feature of the book is the attention given to American chemists; it is not generally known, for example, that Crafts was an American, although much of his work was done in France. The history is brought down to recent times, although some of the sections dealing with atomic structure are now in need of revision, and the statement on p. 406 as to the possible future use of the electron theory in organic chemistry needs rewording,

in view of the extensive applications which have been made in this field. The text is very accurate and very few slips have been noted; among these is the statement on p. 337 that Mitscherlich was Russian, and the name Rausch on p. 429 for Ruark. The book is most attractively written and displays a truly philosophical outlook throughout; the new edition may be cordially recommended both to students and also the general reader. The large number of interesting illustrations should be specially mentioned.

Hand- und Jahrbuch der chemischen Physik
Herausgegeben von A. Eucken und K. L. Wolf.
Band 10, Abschnitt 3: Starkeffekt, von B. Mrowka; Elektrischer Kerr-Effekt (Elektrische Doppelbrechung), von H. A. Stuart. Pp. 110+vi. (Leipzig: Akademische Verlagsgesellschaft m.b.H., 1939.) 12 gold marks.

THE first twenty-six pages are devoted to the Stark effect. This brief article will prove useful alike to physicists and physical chemists. It is written in a clear, straightforward style. After dealing with the Stark effect of hydrogen atoms and helium ions, consideration is given to the Stark effect of helium atoms, of atoms with more than two circum-nuclear electrons, and of molecules. The article concludes with a treatment of the relationship between the Stark effect and other phenomena.

All who are interested or engaged in problems of molecular structure will welcome Dr. Stuart's capable summary of the electro-optical effect first observed by Kerr in 1875 and named after him. A discussion of the theoretical aspects, occupying twelve pages, is followed by an account of the methods used in the investigation of the effect. Various factors which influence the effect are discussed and the magnitude of the influence of each is indicated. The last thirty pages illustrate the application of Kerr effect data to problems of molecular structure. Tables of selected reliable data and an extensive bibliography are given.

Both articles are treated in a clear, competent manner and can be recommended to all interested in these topics.

Inorganic Chemistry

By Fritz Ephraim. Third English edition. By Dr. P. C. L. Thorne and Dr. A. M. Ward. Pp. xii+912. (London and Edinburgh: Gurney and Jackson, 1939.) 28s. net.

IN preparing the new edition of this well-known book, the editors have made a number of useful additions covering recent work and have revised several parts of the text. There are still some parts of the old text which should be removed, as they are in contradiction with the new material. The point of view is more modern than was the case in previous editions, particularly in the sections dealing with co-ordination compounds, and the book is certain to maintain its well-deserved popularity with advanced students. It provides a very good survey of modern inorganic chemistry in a reasonable compass, and the references to the literature will enable