NEW BOOKS

Tratado de Quimica Organica. (Treatise on Organic Chemistry.) Vol. II, Parts II and III. By ENRIQUE V. ZAPPI, Professor of Organic Chemistry in the Universities of Buenos Aires and La Plata. El Ateneo, Buenos Aires, Argentine, 1942. Part II, xiii + 531 pp. Part III, xi + 510 pp. 16 × 23.5 cm. Price, 25 Pesos each Part.* Bound in stiff gray paper.

The subject matter of this treatise is presented under two major headings: Vol. I, Acyclic Series, and Vol. II, Cyclic Series. Vol. I will consist of two Parts which are expected to appear in 1943. Vol. II is divided into three separate Parts, the first of which, devoted to Aromatic Compounds, was published in March, 1941, and was reviewed at the time in THIS JOURNAL, **63**, 2539 (1941). Parts II and III were published in the Argentine in August, 1942, and have only recently arrived in this country. They cover, respectively, "Aromatic Derivatives of Fatty Functions" (Part II) and "Heterocyclic Compounds" (Part III).

In Part II, Chapters XIV to XXII inclusive, in addition to Alicyclic Compounds, discuss also rubber, carotenoids, sterols, hormones, vitamins, terpenes, essential oils, camphors, resins and plastics.

Of the field covered by Part III, Chapters XXIII to XXVI inclusive deal with the various heterocyclic systems and related natural products, the classification in the main resembling that of the well-known Richter–Anschütz textbook. Chapters XXVII and XXVIII present the chemistry of the alkaloids.

In both Parts graphic formulas are used generously, and there are numerous tables giving the physical properties of typical representatives of the groups described. Occasional footnotes give biographical data concerning many of the distinguished chemists mentioned in the text, and thus contribute to the human interest in the achievements recorded. Bibliographies and references to the original literature would be helpful, and it is to be hoped that they can be added to later editions. Part III closes with indexes of authors and of subjects for Vol. II, and a list of errata for the previously published Part I. With the publication of these two Parts, Vol. II of this treatise has thus been completed, and the author hopes that it will be possible to get out Vol. I during 1943. The work is published on excellent paper, the printing is well done, and the structural formulas, even the most complicated ones, are clearly illustrated. It is interesting to note that in the preparation of this great work the author is being assisted by his four sons, as well as by two of his own Ph.D. graduates. In this considerable task which Dr. Zappi has undertaken and is carrying through so energetically and so ably, it is perhaps appropriate to point out that organic chemistry is no longer a single science but a whole group of separate sciences which differ among themselves fully as much as the different branches of engineering, and that no one individual can hope to master all of its limitless detail and the enormous accumulation of knowledge which is rapidly mounting year by year.

Dr. Zappi has been for over thirty years one of the outstanding contributors to the chemical literature and scientific education of Spanish-speaking peoples of our Western Hemisphere. He is doing a fine work in providing a treatise which will be of inestimable value in one of the greatest and most urgent needs today of our Spanish-speaking neighbors of Central and South America. This is the training of a much larger army of scientists and technicians, particularly in theoretical and industrial organic chemistry, and its important applications in the service of medicine generally designated as biochemistry and chemotherapy. Spanish-speaking organic chemists throughout the world owe him a cordial debt of gratitude for supplying them with such an admirable treatise, scholarly, comprehensive and up-to-date, clearly and logically presented.

MARSTON TAYLOR BOGERT

* Unfortunately in the volumes themselves the price of each Part is given as $25 instead of 25 Pesos, which is likely to injure the sale of the books.

The Application of Absorption Spectra to the Study of Vitamins, Hormones and Co-enzymes. By R. A. MORTON, D.Sc., Ph.D., F.I.C., Dept. of Chemistry, The University of Liverpool. Second edition, 1942. Adam Hilger, Ltd., 98 St. Pancras Way, Camden Road, London, N.W. 1, England. 226 pp. Illustrated 14.5 × 22 cm. Price, $6.50 net.

Even a casual inspection of this new edition of Dr. Morton's monograph illustrates very clearly the growing importance of ultraviolet spectrophotometry as a tool in organic and biochemical research. Those who are familiar with both editions of this book will appreciate that, unlike some second editions, this is not a reissue of the earlier text with a few modifications; it is an entirely new book, much longer and much more comprehensive in content. Indeed, one might ask why Dr. Morton and his publishers have chosen to associate this book so closely with the small booklet which they produced several years ago. The owner of an earlier edition of a book is reluctant to purchase a later edition of the same text, but no individual or library would be justified in overlooking this book merely on the grounds of possessing the earlier edition.

The author explains in the Preface that his reasons for writing this book are twofold, to acquaint chemists with the methods of experimentation and the interpretation of spectrographic data, and to assist absorption spectroscopists to see their subject against a wider background. It contains material of interest to both these groups, but the chemist who is seeking specific information about various spectrographic techniques and a discussion of the pros and cons of various types of spectrographic equipment will find other recent monographs which deal more fully with this phase of the subject.

The absorption spectra of organic compounds are treated from a purely empirical point of view and, wisely, no

attempt is made to set the picture in a frame of quantum mechanics. The theoretical treatment of the electronic energy levels of polyatomic molecules has not yet developed very far, but, when the quantum physicist has acquired the necessary facility in handling complex molecular orbital problems, he will find a mass of accurate data available for him to work with, covering practically the whole field of organic chemistry. Such records are, at present, widely scattered in the literature and a monograph of this kind does a very valuable service in bringing some of these data together.

In writing a book of this scope it is natural for the author to emphasize the branches of the subject with which he is most familiar. It is not surprising, therefore, to find that Dr. Morton devotes one quarter of the whole text to an excellent discussion of the chemistry and spectrophotometry of the vitamins A and the carotenoid pigments, a subject in the development of which he, and the Liverpool school with which he is associated, played such a prominent part. The chemistry and spectroscopy of the sterols are also discussed in considerable detail although more space might have been given to the sex hormones in view of the growing importance of sex hormone assay in the diagnosis of endocrine misfunction and certain types of cancer; this is a field in which absorption spectroscopy is making quite an important contribution.

As no date is appended to the Preface, it is difficult for the reviewer to know to what extent he is justified in criticizing certain items in the text. Although the year of publication is 1942, a reference on page 38 to a paper published in 1940 is regarded as "very recent," suggesting that the book has been in the press for a considerable time. The sections on the cortical hormones, biotin, and pantothenic acid also suggest that this may have been the case, as the considerable progress which has been made in these fields during the last two years is not apparent from the text. On page 123 it is erroneously stated that vitamin K_1 is 2-*ethyl*-3-phytyl-1,4-naphthoquinone, although this chapter contains references to papers published in 1941, by which time the correct structure of this vitamin had been fully established.

The book is well printed and durably bound. It is profusely illustrated with diagrams, but, while many of these are good, some suggest a rather hasty preparation and are poorly lettered. On page 10 there is a misprint in a formula where, on line 15, $I_0e^{-a'l}$ should be $I_0\epsilon^{-al}$; on page 183 albumen is written where albumin is probably intended. These are minor quibbles and Dr. Morton has produced a book which should be in the hands of every spectroscopist and chemist interested in this borderline field between physics and organic chemistry.

R. NORMAN JONES

The Chemical Aspects of Light. By E. J. BOWEN, F.R.S., Fellow of University College, Oxford. Oxford University Press, 114 Fifth Avenue, New York, N. Y., 1942. vi + 191 pp. 37 figs. 14.5 × 22.5 cm. Price, $4.00.

This book should be helpful to students, teachers and research workers interested in the subject. It touches many of the physical as well as the chemical aspects of light.

The selection of subject matter is excellent for a book of its size. Among the topics covered are: Emission and Absorption Spectra of Atoms and Molecules, Fluorescence, Luminescence, Photosynthesis, The Photographic Process, The Reactions of the Eye to Light, and Photo Cells. Helpful leads are supplied by references to review articles and other recent publications.

The author states that his purpose in writing the book is an "attempt . . . to present the concepts found useful in theories of Light while omitting all formal mathematical matters." This he has done. Yet one feels that he might have made the book more readable, for he passes at times too rapidly from one topic to another, often he does not clearly state his thesis, and many readers would welcome explanations of some of the technical terms used, especially in Chapter I on Waves and Matter.

The book is an excellent refresher for those who have become absorbed in one branch of photochemistry and a guide to those not very familiar with the field. It brings together in a concise way a number of closely related phenomena and should be a worth-while addition to the library of a physical chemist.

LAWRENCE J. HEIDT

BOOKS RECEIVED

March 10, 1943–April 10, 1943

L. EARLE ARNOW and HENRY C. REITZ. "Introduction to Organic and Biological Chemistry." The C. V. Mosby Company, Pine Boulevard, St. Louis, Mo. 736 pp. $4.25.

JOSEPH A. BABOR and CHESTER B. KREMER. "How to Solve Problems in General Chemistry." Thomas Y. Crowell Company, 432 Fourth Avenue, New York, N. Y. 88 pp. $0.75.

JOSEPH A. BABOR and J. KENNETH W. MACALPINE. "How to Solve Problems in Qualitative Analysis." Thomas Y. Crowell Company, 432 Fourth Avenue, New York, N. Y. 93 pp. $0.75.

NORMAN V. CARLISLE. "Your Career in Chemistry." E. P. Dutton and Company, Inc., 300 Fourth Avenue, New York, N. Y. 251 pp. $2.50.

NICHOLIS D. CHERONIS, JAMES B. PARSONS, and CONRAD E. RONNEBERG. "The Study of the Physical World." Houghton Mifflin Company, 2 Park Street, Boston, Mass. 884 pp. $3.85.

FREDERICK H. GETMAN. "Outlines of Physical Chemistry." Seventh Edition. Revised by Farrington Daniels. John Wiley and Sons, Inc., 440 Fourth Avenue, New York, N. Y. 691 pp. $3.75.

RUSSELL D. HERROLD. "Chemotherapy of Gonococcic Infections." The C. V. Mosby Company, Pine Boulevard, St. Louis, Mo. 137 pp. $3.00.

F. F. NORD and C. H. WERKMAN, Editors. "Advances in Enzymology." Vol. III. Interscience Publishers, Inc., 215 Fourth Avenue, New York, N. Y. 408 pp. $5.50.