New Books

RADIOACTIVITY APPLIED TO CHEMISTRY, edited by Arthur C. Wahl and Norman A. Bonner (published by John Wiley and Sons Inc., 440 Fourth avenue, New York, N. Y., 1951, $7.50, 604 pages). This excellent book, intended primarily as a reference volume, summarizes in Part II all applications of radioactivity to chemistry published and available by January 1950. Part I covers the theory and practice of the application of radioactivity to various branches of chemistry.

More specifically, Part I includes 10 chapters, each written by one or more of the 12 collaborating authors, each well known in his field. The subjects discussed include isotopic exchange reactions, radioactivity applied to chemical kinetics, structural chemistry, self-diffusion studies, analytical chemistry, discovery and investigation of newer elements, surface determinations, behavior of carrier-free tracers, chemical phenomena accompanying nuclear reactions, and finally emanation methods.

Part II consists of 18 tables arranged according to the subject matter discussed in Part I. The tables include references to the original work. Both Parts I and II are effectively indexed in the table of contents.

It seems unfortunate that such topics as radiochemical techniques, the preparation of tagged compounds, and the isolation of radioactive nucleides by use of isotopic carriers have been excluded. This however is consistent with the primary aim of the book in discussing the application of radioactivity to chemistry rather than chemical work with radioactive materials. Applications of stable isotopes are not included except for self-diffusion coefficients given in Table 4A.

Some subjects such as the behavior of carrier-free tracers which takes up some 75 pages seem over-emphasized at the expense of equally important ones such as radioactivity applied to structural chemistry which covers only 10 pages. This is perhaps an inevitable result of compiling the efforts of several collaborators.

The book is certainly of value to anyone dealing with tracer or nuclear chemistry. It affords a valuable reference source but should not be expected to replace more general texts such as Friedlander and Kennedy's Introduction to Radiochemistry.

FRANK L. JACKSON
Procter and Gamble Company
Ivorydale, O.

PHYSICAL CHEMISTRY OF LUBRICATING OILS, by A. Bondi (Reinhold Publishing Corporation, New York, N. Y., 380 pages, 1951, $10). This book contains eight chapters covering Pressure-Volume-Temperature (P-V-T) Properties, Rheology, Surface Phenomena, Optical and Electrical Properties, Hydrocarbon Type Analysis of Lubricating Oils, Phase Equilibria, Reaction Kinetics, and Synthetic Lubricants. Each chapter is a complete unit with abundant tables of data, illustrations, and bibliography. Dr. Bondi brings together in one book a summary of the many physiochemical methods and observations which have contributed in recent years to the understanding of varied problems in lubricant technology. The book provides a broad theoretical background on lubricating oils and will be indispensable to technical people specializing in this field. Bondi's book is not as restricted in scope as Bowden and Tabor's recent "Friction and Lubrication of Solids." The two books together go a long way toward filling the need for an up-to-date summary of theoretical aspects of lubricating oils and lubrication.

C. M. LOANE
Standard Oil Company
Whiting, Ind.

AN INTRODUCTION TO THE CHEMISTRY OF THE SILICONES, by Eugene G. Rochow (John Wiley and Sons Inc., New York, N. Y., XIV + 213 pages, 1951, $5). This is the second edition of a book on organosilicon chemistry which has been thoroughly revised, using new material up to the end of 1950. The author has done an excellent job in incorporating the new material in the text so that the second edition is just as clear and straightforward as the first edition. The chapters are well-titled and have numerous clear subheadings for easy reference. The index is concise but appears to be adequate for this book while the addition of an author index to the second edition is helpful. The format of the book is excellent for it is printed in neat, clear type on a high-gloss paper, which is firmly bound in an attractive binding.

The second edition still maintains the purpose of its predecessor, that of bringing a general approach to the subject of silicones, but, in addition, it has a certain reference value for the tables listing the physical properties of various organo-

silicon molecules have been enlarged. The value of these tables is much improved over that of the tables in the first edition because of the considerably larger listing, the presence of refractive index data, and the incorporation of references for all of these compounds.

The author deals in a logical manner with the simple covalent compounds of silicon, the carbonsilicon bond, the synthesis of the organosilicon compounds, the organosilicon monomers, the types of organosilicon polymers, the properties of the specific silicone polymers, the physical chemistry of silicones, water repellent films and protective coatings from organosilicon materials, some production considerations, analytical methods, and tables of physical properties of organosilicon compounds.

This book will be of greatest value to those chemists who wish to obtain a concise summary of the most important developments in this rapidly expanding field. It will also be of some value to those who may wish to make some use of one of the organosilicon compounds for the text and the tables will form an adequate starting point for further study.

This book is very well done and can be recommended both to those who are interested in this field for the first time and to those who already possess the first edition.

D. E. WHYTE
S. C. Johnson and Son Inc.
Racine, Wis.

1950 SUPPLEMENT TO BOOK OF A.S.T.M. STANDARDS INCLUDING TENTATIVES. PART 4. (American Society for Testing Materials, X plus 340 pages, 1951, $3.50). The volume covers "Paint, Naval Stores, Wood, Adhesives, Paper, Shipping Containers." Its purpose is to bring the A.S.T.M. Standards for 1949, Part 4, on these subjects up-to-date. The paper-bound supplement is written in the usual clear type and form followed by the other A.S.T.M. publications. Included are specifications, methods of chemical analysis, and methods of test for a number of paint materials including pigments, drying oils, varnishes, and lacquers. Of interest is the section on definitions relating to paint.

There are three methods of test for naval stores and a number for wood. Included are also two new methods of test for paper products. Shipping containers are treated with four new methods. A recommended practice for measurement of sound damping of building floors and walls as well as several fire tests on construction material is given. Two methods for verification of testing machines and a new specification for A.S.T.M. thermometers are included. The volume is indexed both according to materials as well as the contents given in numeric sequence. A yellow sheet of stickers for insertion in the 1949 book of A.S.T.M. Standards, Part 4, is included in order to bring this book up-to-date where only minor changes have been made. These stickers also refer the user of the 1949 Standard Book to the Supplement being reviewed.

This supplement is desirable for all laboratories and persons following the American Society for Testing Materials specifications and methods. In addition, along with the A.S.T.M. 1949, Part 4 Standards, it is a useful reference for procedures in fields covered. Since the A.S.T.M. procedures and specifications are the result of a collaborative effort by experts in their respective fields, they are widely used, convenient, and recommended where applicable.

DON S. BOLLEY
Baker Castor Oil Company
Bayonne, New Jersey

DIE BIOGENEN AMINE, by M. Guggenheim. (S. Karger, Basel and New York, 619 pages, 1951, $19.50). This large, handsomely bound volume is the fourth edition of Guggenheim's well-known book on amines occurring in the animal and plant kingdoms. The common property of the biogenic amines, as defined by the author, is their basicity and low molecular weight. They are discussed in the following order: alkylamines, alkanolamines, betaines, polymethylene diamines, arginine and guanidine derivatives, histidine and imidazole derivatives, phenylalkyl amines, indole-alkyl amines, and amines of unknown structure. The author reports on the occurrence, the biogenesis, the physiological functions, the biochemical properties, the pharmacological activity, the chemical properties, and the isolation and determination of each of the amines.

The value of this exhaustive report is greatly increased by numerous quotations of the original papers. The book contains more than 4,000 references. In the introductory chapter the mechanism of biological transamination, amination, methylation, decarboxylation, and of other reactions leading to the formation of amines is discussed. This is followed by a discussion of the enzymatic decomposition of amines and of general procedures used for their isolation and determination. In the next special part of the book the reader will find an extensive treatment of many important amines. More than 100 pages are devoted to a discussion of ethanolamine, choline, and acetylcholine; the first two of these bases are important components of the phospholipids. Other interesting amines, discussed extensively are spermine, histamine (including a detailed report on its pharmacological action and on antihistaminics), ephedrine, chloromycetin, and adrenaline. The book is an indispensable source of knowledge for all those who are interested in the biogenic amines and their derivatives. Professor Guggenheim is to be congratulated for this meticulous report on a vast group of interesting substances.

FELIX HAUROWITZ
Indiana University
Bloomington, Ind.

VISCOSITY AND PLASTICITY, by E. N. da C. Andrade (Chemical Publishing Company Inc., 212 Fifth avenue, New York, N. Y., 82 pages, 1951). This little book comprises the three lectures from the fifth series of Post-Graduate Lectures arranged by the London Section of the Oil and Colour Chemists' Association and delivered by the Quain Professor of Physics in the University of London.

The aim of the lectures, in the words of the author, is "to try to find out what general principles can be established and how general principles may be sought, and to endeavor to indicate how, from these principles, an understanding — perhaps only a first understanding — of the very complex behaviour of flowing liquids and solids may be built up."

The first lecture, entitled "Nature and Theories of Liquid Viscosity," includes definition of flow, as distinguished from elastic behavior, and discussions of various types of flow. The theoretical basis for viscosity, its variation with temperature, and the behavior of real substances are considered. This lecture is concluded with critical comparisons of the theoretical views of the author with those of Eyring.

The second lecture, "The Flow of Simple Liquids, Suspensions, and Gels," treats, in particular, descriptions of viscometers and methods of measurement of viscosity while the third lecture, "The Flow of Solids," is mainly a description of work that has been done on those types of solids where the permanent deformation markedly exceeds the elastic recovery. In particular, glasses, metals, and single crystals are considered.

Even when results of specific workers are described in some detail, no references are given to the original sources. In fact, with the exception of credit lines in some of the figures, which

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IN GALA MOOD are these convention guests: N. L. Dickinson, S. R. Ames, Eileen A. Welch, Noel H. Kuhrt, Mrs. Dickinson, and John Lie.

Index to Advertisers

Sorensen Named to Board

ELECTION of Samuel O. Sorensen to the board of directors of Archer-Daniels-Midland has been announced, following the company's annual stockholders' meeting on October 9, 1951. A native of Maine, Sorensen first joined ADM as a chemist in March 1923. During the following years he served successively as chief chemist, technical director and since 1947 vice president in charge of research.

S. O. Sorensen

Under his direction ADM's research division has made important contributions in many industrial fields. Recent products developed and improved in ADM's laboratories include industrial cereals, fatty acids, fish oils, flours, paint specialties, lacquer plasticizers, livestock and poultry feeds, foundry products, chemical specialties, soybean and linseed oils and oilseed by-products.

Sorensen is a member of the American Chemical Society and a past president of the American Oil Chemists' Society. Locally he is a member of the Minneapolis Atheltic club and Interlachen Country club. He lives on McGinty road, Hopkins, Minn.

New Books

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contain specific literature citations, no references of any kind are cited. The author disclaims any attempt at complete coverage of the field of rheology. As a condensed review of the achievements and present status of specific regions of the vast field of viscosity and plasticity the book is of merit. Since the stated purpose of the lectures is to arouse interest and awaken curiosity in the issue in question, the omission of bibliographical references to encourage, or even to afford further study of problems of particular interest is, to this reviewer, particularly regrettable.

ROBERT T. O'CONNOR
Southern Regional Research Laboratory
New Orleans, La.

Meetings

The American Society for Testing Materials will hold its 50th anniversary meeting in New York City, June 23-27, inclusive, 1952.

The fall meeting of the Society of Cosmetic Chemists will be held in New York on December 6, 1951, at the Biltmore hotel. Communications concerning technical papers should be addressed to the chairman of the program committee, Donald H. Powers, Warner-Hudnut Inc., 113 West 18th street, New York, N. Y.

The Scientific Apparatus Makers Association, national organization of the industrial and laboratory instrument and apparatus industry, has announced the following meetings for 1952: May 6-9 annual meeting of all sections, Edgewater Beach hotel, Chicago, Ill.; November 5-9, midyear meeting of industrial instrument, laboratory apparatus, laboratory equipment, optical, aeronautical and military instruments sections, The Homestead, Hot Springs, Va.

The fall issue of Progress Thru Research contains an article on drying oils from diglycerol based on research conducted in General Mills' laboratories by members of the Northwestern Club. This paper was first presented by the Northwestern Paint and Varnish Production Club at the 1950 national meeting of the Federation of Paint and Varnish Production Clubs in Chicago, Ill. It shared an American Paint Journal award as one of the two most significant contributions to the meeting.