

**Organic Colloids.** By BRUNO JIRGENSONS, Biochemist, University of Texas M. D. Anderson Hospital and Tumor Institute; Associate Professor, University of Texas Postgraduate School of Medicine and Baylor University School of Medicine, Houston, Texas. D. Van Nostrand Company, Inc., 126 Alexander Street, Princeton, New Jersey. 1958. xiv + 655 pp. 16 × 23.5 cm. Price, \$16.75.

In this book a very general survey of the science of organic colloids is presented, a colloid being defined by the author as "a particle composed of about  $10^3$  to  $10^9$  atoms." Within the scope of this definition two general classes of materials are discussed: true macromolecular substances and large aggregates of low molecular weight materials. The inclusion of such diversified materials in one text seems justified solely by the fact that similar experimental techniques are used in their study. The book is divided into two almost equal parts, the first portion of which consists of a discussion of the methods of preparation and study of organic colloids while the second part is concerned with a description of the properties of the different types of colloids. The style of the book is primarily descriptive with emphasis being placed on experimental results and relationships at the expense of the development of any underlying basic theory.

The wide variety of experimental techniques that have been developed to investigate the properties of these classes of materials are each discussed in a very brief and non-critical manner in the first portion of the book. It is somewhat lamentable that more emphasis was not paid to both the theoretical and practical limitations of the individual methods. Also included in this portion is a very cursory description of polymerization methods.

The deficiencies of the first portion are somewhat compensated by the remainder of the book which contains a vast amount of information on the properties of these substances. Included are discussions of synthetic polymers, polysaccharides, proteins, nucleic acids, emulsions and detergents and the author is to be congratulated on describing so well such a wide variety of substances.

Since the book is well written and the material is presented in a very elementary and concise manner it should be of utility to the beginner in the field. On the other hand, the reviewer would not consider it to be too useful to the advanced student or research worker.

POLYMER STRUCTURE SECTION  
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**Nickel and its Alloys.** National Bureau of Standards Circular 592. By J. G. THOMPSON, Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1958. iv + 87 pp. 20 × 26 cm. Price, 60 cents.

The large amount of information available on the subject of nickel and nickel-bearing alloys can be treated only briefly in a compilation 87 pages in length, but within this limitation the new NBS Circular 592, a revision of NBS Circular 485, covers most of the important material well. Over 800 references are included providing interested readers with material with which to peruse specific subjects. The subject matter is not indexed but the clear, detailed table of contents makes this unnecessary in so short a volume.

In the eight years since publication of the earlier circular, interest in new uses for nickel has resulted in the addition of material in Circular 592 on the subjects of nuclear properties, thermionic properties and nickel coating by spraying, vapor plating and electroless deposition. The latter information is of particular interest and is receiving close industrial attention since these methods offer means to achieve relatively low cost, corrosion resistant nickel coatings on geometrically complex surfaces. Electroless plating is currently in practical industrial application for chemical process vessels as well as for small, complex shapes.

The major use of nickel, as the commercially pure metal or as an alloying material, is associated with corrosion resistance. The newly revised Circular 592 contains short, well written sections on the corrosion resistance of nickel and ferrous and non-ferrous alloys containing nickel. However, considering the importance of the subject, these sec-

tions are rather too brief, particularly with reference to the commercially pure nickel and the non-ferrous alloys.

For those interested in almost any aspect of nickel use, this circular at sixty cents is a fine investment. Although necessarily brief, it is an excellent treatment of the subject and because of the large number of references will serve as a good starting point for more detailed reading.

THE PFAUDLER CO.  
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**Methyl Glucoside. Preparation. Physical Constants. Derivatives.** BY G. N. BOLLENBACK, Corn Products Refining Co., Argo, Illinois. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1958. 183 pp. 16 × 23.5 cm. Price, \$5.50.

Coal and petroleum have each long been sources for organic chemicals. The world's renewable carbohydrate crops offer promise as sources for the organic chemicals of the future. In this country the industry concerned with the wet milling of corn has been one of the most successful in pioneering such uses, mainly because its component companies have supported research and development. Methyl  $\alpha$ -D-glucopyranoside is an "organic" obtainable from corn and this treatise compiles the scientific data concerning it, its close relatives and their derivatives. The book serves as a successor to the one (Artz and Osman, 1950) by the same publishers on D-glucuronic acid, another compound obtainable from this plant source. The compilation is excellent and complete, the formulas and reactions are well depicted, and the nomenclature is modern and correct. The book contains many tables and diagrams, including infrared data. The treatment is critical and the patent literature is especially well handled. Considerable hitherto unpublished data from the files of the Corn Products Refining Company are included. The omission of an author index is unfortunate. This publication will indeed be useful to the carbohydrate chemist and it is to be hoped that the industrial chemist may find it a source of information which may eventually lead to new uses for the substances treated.

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**Electronic Theories of Organic Chemistry. An Introductory Treatment.** BY JOHN WILLIAM BAKER, Reader in the Mechanism of Organic Reactions in the University of Leeds. Oxford University Press, 114 Fifth Avenue, New York 11, N. Y. 1958. vii + 224 pp. 14.5 × 22 cm. Price, \$4.80.

Dr. Baker's objective in writing this volume was to bridge the gap between classical organic chemistry and modern comprehensive treatises on electronic theories of organic chemistry such as Ingold's monumental work. More specifically one could say that his interest lay more in showing the systematization brought into organic chemistry by the electronic theory than in the development and substantiation of a theoretical method which can be used to predict the course and products of organic reactions.

He has achieved his objective with remarkable success. The details of the theory are marshalled with the sure hand of the master and grouped with regard to economy of treatment and illumination of interrelations. Although but little experimental evidence is given for the basic principles employed, they are not for the most part presented dogmatically but are rationalized on the basis of well known theoretical concepts. This procedure gives a unity of approach which makes for easy comprehension.

The educational background expected of the reader is perhaps indicated by the following phrases which are used without explanation: ground state, quantum numbers, bond polarization, bond order, Thiele's theory of partial valence. It is further indicated by the inclusion at the end of Chapter V of an appendix explaining elementary details of chemical kinetics, *viz.*, "Kinetic Order of a Chemical Reaction," "Experimental Determination of the Velocity Coefficient of a Reaction" and "The Energy of Activation of a Chemical Reaction."