

The book is devoted to the ABO system and in this it gives more than its title promises. It deals with all known aspects of the chemistry and immunochemistry of the A, B and O substances and thus fills a long standing gap in immunological and biochemical literature. The serological, general biological and even genetical significance of blood groups is given consideration to the extent necessary to make it comprehensible to the more chemically trained reader. The sources and methods of analysis are described and critically evaluated without being lost in detail. In spite of the wide scope, the whole is kept under the unifying concept of the immunochemical significance of these substances.

Other blood group systems, of which none is yet chemically defined, are viewed in their relation to the ABO system. In recent years, there has been some clarification on the relationship between the specificity and structure of the ABO substances to which the author made notable contributions.

With a few exceptions, this book is written clearly and concisely and can also be comprehended by people not working directly in the blood group field.

The essential references are cited extensively which make this treatise a storehouse of information. The author carefully avoids giving this book the appearance of a review and he does not hesitate to take part in controversial issues such as the question as to the origin and nature of the iso-antibodies in the ABO system. His criticism and arguments, however, are perfectly logical and fair, a feature which characterizes the whole volume.

The great importance of the quantitative immunoprecipitation technique of Heidelberger and his school in determining purity of antigens has been rightly stressed by the author who successfully adapted this technique to the studies of the A and B substances. There are a few minor criticisms, e.g., Chapter 7, table 1: it would be desirable to know the amount of minimum hemagglutinating doses throughout this extensive tabulation without having to resort to the original papers. In table 8, of Chapter 8, it would have been advantageous to assign a prefix to the sugars galactose, fucose and probably also N-acetylglucosamine since every reader may not be aware of the frequent absolute specificity of serological reactions toward enantiomorphous isomers. The formulas on p. 245-246 tend to point out the necessity of two hydroxyls in *cis* position in the periodate reaction (see also reaction (e) p. 246), although it was intended to stress *vicinal* rather than *cis* hydroxyl groups. In table 3 of Chapter 1, the last column heading omits the reference point."

The author makes it evident that we stand only at the beginning of our understanding of the structure, specificity and biological significance of the blood group substances.

The index and the physical aspects of the book, including formulas, type, paper and binding are good. There are occasional printing errors, including references, which should be eliminated in forthcoming issues of this excellent volume.

This book is highly recommended to chemists and all biologists interested in immunological science beyond the descriptive level.

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Annual Review of Nuclear Science. Volume 5. By JAMES G. BECKERLEY, Editor, Schlumberger Well Surveying Corporation, MARTIN D. KAMEN, Associate Editor, Washington University Medical School, and LEONARD I. SCHIFF, Associate Editor, Stanford University. Annual Reviews, Inc., Stanford, California. 1955. ix + 448 pp. 16 × 23 cm. Price, \$7.00.

Volume 5 of the Annual Review of Nuclear Science carries on the tradition of its predecessors in presenting to workers in the field critical review articles on timely topics more or less related to the nucleus. Of the fourteen articles, there are three on fundamental properties of the nucleus, two on techniques for obtaining fundamental data on the nucleus, two on the application of nuclear information or techniques to reactor design and shielding, two on the use of the mass spectrometer in the study of non-nuclear problems, one on radiation chemistry, and four on radiobiological studies.

The three articles on the nucleus give the theoretical background, and comparison of predictions from theory with experiment, on the charge distribution in the nucleus, the de-excitation of excited nuclei by emission of electromagnetic radiation, and reactions of nuclei with projectiles in the 10 Mev. energy range. The two articles on techniques used for obtaining fundamental data discuss particle detection by cloud chambers and bubble chambers, a relatively new method for particle detection based on the soda-pop principle, and radiochemical separation methods for isolation of radionuclides, a technique which has contributed handsomely to the discovery and characterization of new radionuclides as well as to the preparation of radionuclide sources for other studies. The two articles on reactors and shielding are especially timely in view of the expansion in pile construction in industrial and university sites.

The only other article this reviewer feels competent to comment upon is the one on the fundamentals of radioautography, in which, although the biological application is stressed, a simple discussion on the interaction of radiations with emulsion is given.

This volume will be appreciated by workers in the diverse disciplines of physics, chemistry, biology and nuclear technology as a contribution to their understanding of the many fields encompassed by "nuclear science."

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Simposio Internazionale di Chimica Macromolecolare
Organizers of the Symposium—ANTONIO NASINI, Professor, Istituto Chimico Università, Torino, Italy, GIULIO NATTA, Professor, Istituto di Chimica Industriale del Politecnico e Montecatini, S.p.a., Milano, Italy, and MARIO MILONE, Segretario generale, Istituto Chimico Università, Torino, Italy. (International Union of Pure and Applied Chemistry. International Symposium on Macromolecular Chemistry.) Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1955. xix + 954 pp. 18 × 24.5 cm. Price \$19.20.

This book contains 92 papers delivered in four languages at the 1954 International Symposium on Macromolecular Chemistry in Milan and Turin, reinforced by submitted comments, questions and authors' replies in the manner of the Faraday Society Discussions. The wide range of subjects treated is seen in the following list of sub-titles (actually, titles of sessions at the symposium), the parenthetical figures giving the number of papers under each: Building Reactions of Macromolecules (19), Transformation Reactions of Macromolecules (5), Preparation and Properties of Block and Graft Copolymers (7), Cellulose and Derivatives (8), Molecular Weight Distribution (11), Methods of Molecular Weight Determination (3), Branched Polymers (4), Fiber-forming Polymers (8), Crystallization and Transitions (8), Proteins (6), General Properties of Polymers (13). One may as well say that almost all aspects of polymer science are represented.

Recalling that the somewhat smaller output of the 1953 conference at Uppsala appeared as Volume 12 of the *J. Polymer Sci.*, one is impelled to compare the present work to a typical volume of a scientific journal. The content is not superior, the problem of synchronizing scientific discovery with the calendar being yet unsolved. The presentation appears less economical, as could be expected from the complete sacrifice of the referee system. The price is comparable, although for frequent use a sturdier binding would have been desirable. A safe conclusion is that the book will have to be in every library carrying the important polymer literature, but that at the present price few individuals will strive to own a copy.

On the positive side, there remains the international flavor which is after all the chief attraction of such meetings. There are five papers by the Russian scientists whose sudden and unexpected appearance was the conversation piece of the symposium. Heralding later events at Geneva, these papers by Andrianov, Bresler, Medvedev and Tsvetkov indicated more clearly than mere abstracts that polymer science in Russia is well advanced and similar to that in the West.

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