

New Books

CURRENTS IN BIOCHEMICAL RESEARCH, 1956, by David E. Green, editor (Interscience Publishers, New York, 1956, 697 pp., \$10). This book is not a revision of the original "Currents in Biochemical Research," 1946, but is a completely new book. The editor has done an excellent job in bringing together essays concerning major advancements in the active fields of biochemistry. The book is not intended to be a comprehensive review such as the "Annual Reviews." Rather it is a collection of very readable, well-documented essays. Though there is no index, the book will be of great value as a review and source of inspiration to workers in the fields of fundamental biochemistry discussed as well as a source of orientation for non-specialists and workers in allied fields.

The titles and authors of the 27 essays which comprise the book are as follows: "Chemistry and Viral Growth" by A. D. Hershey, "Photosynthesis" by J. A. Bassham and M. Calvin, "Bacterial Fermentations" by H. A. Barker, "Some Aspects of Vitamin- and Growth-Factor Research" by Esmond E. Snell, "The Significance of Induced-Enzyme Formation" by S. Spiegelman and A. M. Campbell, "Certain Problems in the Biochemistry of Disease" by DeWitt Stetten Jr., "The Hormones, Their Present Significance, Their Future" by Gregory Pincus, "Problems of Cellular Biochemistry" by Carl F. Cori, "Enzymes as Reagents" by Efraim Racker, "Attempts at the Formulation of Some Basic Biochemical Questions" by Fritz Lipmann, "Enzyme Complexes and Complex Enzymes" by Henry R. Mahler, "Relations Between Prosthetic Groups, Coenzymes, and Enzymes" by Hugo Theorell, "Enzyme-Substrate Compounds and Electron Transfer" by Britton Chance, "On the Nature of Hemoprotein Reactions" by Philip George, "Aspects of Protein Structure" by Barbara W. Low and John T. Edsall, "The Structure of Insulin" by F. Sanger, "A New Concept of Ribonucleic Acids" by Waldo E. Cohn, "Chemical Structure as a Guide to the Study of Biochemical Syntheses" by Konrad Bloch, "The Role of Nucleotides and Coenzymes in Enzymatic Processes" by Frank M. Huennekens, "The Biosynthesis of Porphyrins; the Succinate-Glycine Cycle" by David Shemin, "Problems in the Study of Multiple-Enzyme Systems" by G. Robert Greenberg, "Enzyme Kinetics" by Robert A. Alberty, "The Interconversion of Sugars in Nature" by Luis F. Leloir, "A Theory of the Primary Event in Muscle Action" by Manuel F. Morales and Jean Botts, "Trends in the Biochemistry of Nerve Activity" by David Nachmansohn and Irwin B. Wilson, "Blood: Some Functional Considerations" by Douglas M. Surgenor, and "An Integrated Concept of Carcinogenesis" by Harold P. Ruseh.

Each author is actively engaged in research on the frontiers of the subject of his essay. Each discusses the progress in his field during the last 10 years with a commentary on the prospects and problems for future research. General emphasis is placed on the major role in the rapid progress of biochemistry by the development and application of new methods and techniques. The book contains critical reviews of methods in current use with mention of the pitfalls involved. The increasing importance of enzymes is amply brought out. The final essay on carcinogenesis indicates that many areas of work are being brought together in a concerted effort to conquer disease.

The book will be a valuable addition to the library of a biochemist and should inspire non-biochemists as well since it is evident from the essays that nearly all fields of science are involved in the solution of biochemical problems.

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THE 1955 BOOK OF A.S.T.M. STANDARDS, including Tentative (a Triennial Publication), Part 4, Paint, Naval Stores, Cellulose, Wax Polishes, Wood Acoustical Materials, Sandwich and Building Construction Fire Tests (American Society of Testing Materials, 1916 Race street, Philadelphia, Pa., 1383 pp. plus XXVIII pp., copyright January 1956). Supplements are to be issued in 1956 and 1957. The 1955 edition of the Book of Standards comprises over 11,000 pages and is issued in seven parts. In this book are included all the A.S.T.M. Standards and Tentatives in effect at the time of publication.

There are several new classes of materials: wax polishes, cellulose and cellulose derivatives, acoustical materials. Standards comprise those specifications and methods of test that have been formally adopted by the Society, requiring a letter ballot approval by the entire membership.

Tentatives have been approved by the Sponsoring Committee



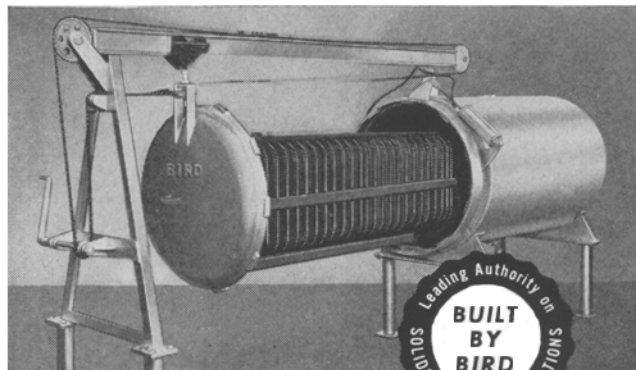
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as representing the latest thoughts and practices and have been accepted by the Society in accordance with established procedures for use pending adoption as standard.

The standards in this book are assembled in a sequence determined by the specific material or products to which they apply. The Table of Contents in each part is presented in duplicate: one a list of the standards classified according to the materials covered, the other printed on green stock, a list of the standards in numeric sequence of their serial designations. A subject index of the standards and tentatives in this part appears in the back of this volume. This index should be the most convenient means of locating any standard appearing in the volume, especially if only the general subject-matter covered is known. Anyone working with the materials covered should have Part IV as a reference book. The following table summarizes the kind of subject-matter in these standards.

	Specs.	Methods of Test	Recom- mended Practices	Def. of Terms
Paint, Varnish, Lacquer, and Related Products, Including Naval Stores.....	88	174	3	5
Cellulose and Cellulose Derivatives.....	1	8 + 1 7	....	....
Wax Polishes.....	....	7	....	....
Wood and Wood Preservatives.....	13	45	....	4
Acoustical Materials.....	....	1	1	....
Structural Sandwich Constructions.....	....	8	....	1
Methods of Testing Building Constructions.....	3	1
Fire Tests.....	13
Thermometers.....	1	1
General Testing Methods.....	1	7	4	5

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1955 VACUUM-SYMPOSIUM TRANSACTIONS, Committee on Vacuum Techniques (Committee on Vacuum Techniques Inc., Box 1282, Boston 9, Mass., 101 pp., 1956, \$10). The second annual symposium conducted by this committee was held to disseminate knowledge about vacuum technique and technology and to standardize both technique and terminology. The number of papers was reduced from 35 in 1954 to 20 in order to allow

more discussion; none of this discussion is reported in the Transactions.

The four classifications of the technical program included fundamental developments, methods and techniques, systems applications and processes, and standards and nomenclature. The 12 founder companies (of the committee) represent primarily the fields of electronics, metallurgy, optical engineering, and vacuum equipment; most of the papers are in these fields.

Progress has been made in the submission of the fourth draft of a "Glossary of Terms." Efforts toward standard nomenclature include recommendation of "Torr" as a unit of pressure approximately equivalent to the more familiar and more involved "millimeter of mercury at defined standard conditions." These standards, including also performance ratings and techniques of measurement, are being worked out in cooperation with many west European nations.

Most oil chemists will not obtain these transactions for personal libraries, but availability as reference material is recommended for those who have occasions to obtain or measure greatly reduced pressures.

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ATOMS AND ENERGY, by H. S. Massey (Philosophical Library Inc., 174 pp., 1956, \$4.75). This book is 8 5/8 x 5 1/4 in. in size and is bound with a modest black cover with gold lettering. It contains six chapters, namely: Electrons, Protons, Neutrons, and Atoms; The Combination of Atoms—Chemical Energy; Changing the Atomic Nucleus; The Large-Scale Release of Atomic (Nuclear) Energy; Atomic Energy at the Service of Man; and Present-Day Research in Pure Atomic Physics.

"Atoms and Energy" attempts to give a non-technical account of the discoveries and developments in atomic physics which led to the construction of the uranium fission bomb and the hydrogen fusion bomb. It succeeds in doing this fairly well although the average chemist will probably find some of the simplifications a distraction rather than an aid in reading this book. "Atoms and Energy" is not considered to be as good a casual presentation of atomic physics behind the uranium and hydrogen bomb as is "New Atoms" by Otto Hahn (1950). It is true however that "Atoms and Energy" covers a wider range of subjects than does "New Atoms."

This book would be comprehensible to anyone who has had one year of college chemistry or its equivalent. Members of the American Oil Chemists' Society who have an interest in this subject would find it worthwhile to read "Atoms and Energy."

Probably the greatest criticism of this book is that, although it is being published in 1956, it only covers information available to June 1952.

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DIELECTRIC BEHAVIOR AND STRUCTURE, by Charles Phelps Smyth (McGraw Hill, 441 pp., 1955, \$9). In this book Professor Smyth has provided a worthwhile addition to the International Chemical Series. The physical arrangement of the book is orderly with the material organized into 14 chapters, each divided into several convenient subheadings. The reader is led through a logical sequence of general theory, specific details, and methods of use as he goes from page one to page 422. A minimum number of references are made to previous or following portions of the book, which helps to maintain continuity for the reader with little knowledge of the subject. In addition, the detailed breakdown of the table of contents with the subject-index makes it possible for the reader to find specific information without extensive reading in other sections.

This book appears to be the most extensive treatment of the dielectric properties and dipole moments yet published, and it presents the material in a convenient, concise manner which makes it very useful as a textbook, particularly for graduate programs. In the development of the dielectric theory the author omits the derivation of most of the equations, but this does not reduce the value of the book for most readers. Certainly these derivations could not have been included without a great expansion, and they have already been covered in two modern books devoted exclusively to the fundamentals of dielectrics.

The greatest use of this book will be as a reference for research workers in the application of dielectric principles. More than one-third of the book is devoted to the application of dipole moment in the determination of molecular structure and, as such, is probably the most extensive treatment available on this important subject.

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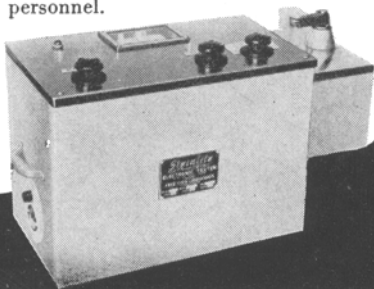
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