

anisms of enzyme action. The third section, which classifies and describes types of coenzymes and enzymes, represents a useful, well-organized synthesis and summary of a large, diverse body of information and proposed classification schemes. Separate chapters are devoted to discussion of respiratory enzymes and of proteolytic enzymes. The fourth section, which deals with metabolic patterns at the enzyme level, begins with a very brief review of methodology in studies on metabolic processes and of the biological localization, organization and regulation of enzyme systems. Subsequent chapters survey some of the pathways of carbohydrate and fatty acid metabolism, oxidative phosphorylation, and the biosynthesis and metabolic functions of nucleotide derivatives. The extensively revised final chapter by Roger Stanier reviews succinctly the current knowledge and experimental approaches in the area of protein synthesis.

This book is well-written, clear and comprehensible to readers with a reasonable knowledge of chemistry and biochemistry. The coverage is deliberately uneven, with concentration on general properties of enzymes and with comparatively brief coverage of specific enzymes and of only selected areas of metabolism; the result is an emphasis on fundamental material of general significance which can later be applied by the student to specific cases. While the body of the text thus avoids the character of a catalog of specific enzymes, the appendix lists some 500 enzymes, together with a few properties and a key literature reference for each.

"Outlines of Enzyme Chemistry" will serve well its intended purposes: to introduce the senior undergraduate and beginning graduate student to the general field of enzymology, and to provide basic background material in enzymology for research workers in other fields.

DEPARTMENT OF BIOLOGICAL CHEMISTRY
HARVARD MEDICAL SCHOOL CORNELIUS F. STRITTMATTER
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The Theory of the Properties of Metals and Alloys. By N. F. MOTT, M.A., F.R.S., and H. JONES, Ph.D. Dover Publications, Inc., 920 Broadway, New York 10, N. Y. 1958. xiii + 326 pp. 14.5 X 21.5 cm. Price, \$1.85.

The above book is a paper bound reprint of the original published in 1936. The type size is large, and the quality of the printed page unusually good.

This volume covers, on an advanced quantum mechanical level, topics such as thermal properties of the crystal lattice, electron theory of metals, cohesion, crystal structure, magnetic properties, and electrical resistance. Many advances have been made in the science of metals since 1936, and hence some portions of the book would look different if they were rewritten today. Pauling's viewpoint on the intermetallic bond, for example, is not treated. Notwithstanding, the majority of subjects are introduced in a manner that will not be out of date for some time to come. The book is well worth the low price at which it is offered.

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Chemical Publications, Their Nature and Use. Third Edition. By M. G. MELLON, Ph.D., Sc.D., Professor of Analytical Chemistry, Purdue University. McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, N. Y. 1958. x + 327 pp. 15.5 X 23.5 cm. Price \$7.00.

Three decades ago it was not uncommon for a student of chemistry to finish college having an acquaintance with his chosen field which did not extend beyond the covers of his textbooks. Naturally, then, his introduction to graduate study was hampered by the necessity of learning the techniques and tricks of literature searching and study. Professor Mellon realized this long ago and his first "Chemical Publications" book in 1928 was a helpful guide for many students, although few colleges then could find a place in a

crowded chemical curriculum for another course in Chemical Literature.

At first glance and even on continued reading, this is not an orthodox sort of textbook, but the subject itself is not susceptible to an orthodox text treatment. Chapters 1 to 10 present an introduction to the history and forms of publishing chemical information, the latter classified as primary sources (periodicals, institutional publications, patents and miscellaneous), secondary sources (index-abstracting-review periodicals, bibliographies, reference works, monographs and textbooks), and tertiary sources (guides, lists and directories). These chapters do not and could not read like an absorbing novel, but the facts and information are there in well-organized superabundance. Chapter 11 is entitled "Making Searches in the Chemical Literature," and gives a systematic, instructive, usable outline of how to look for desired information on a topic, whether brief or extensive, narrow or broad in scope. Chapter 12, "Library Problems," comprises a series of library search projects for class use, ranging from a simple study and report on a periodical, to more complex assignments on general and special topics.

As noted earlier, the whole subject is not capable of a smooth, easy-reading, fascinating treatment, and the prospective user should not have any such expectations. This third edition has not been altered in any major way, but minor changes, additions and improvements are numerous. There is available no better introduction to the field, and Professor Mellon's latest revision will continue to aid chemistry students in a better approach to chemical literature, as it has for thirty years.

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Fortschritte der Chemie Organischer Naturstoffe (Progress in the Chemistry of Organic Natural Products). Volume XVI. Edited by L. ZECHMEISTER, California Institute of Technology, Pasadena. Springer-Verlag, Mölkerbastei 5, Wien I, Austria, 1958. vi + 226 pp. 16 X 23.5 cm. Price, \$9.50.

The latest member of this series is the smallest one yet to appear, but certainly no less interesting or varied in content than the preceding ones. In the current volume, K. Freudenberg and K. Weinges discuss "Catechine, andere Hydroxy-flavane und Hydroxy-flavene," giving a short, straightforward review of these compounds on the basis of structural classifications. "Recent Progress in the Chemistry of the Aconite-Garrya Alkaloids" is a clear exposition by K. Wiesner and Z. Valenta of the structural investigation of these remarkably complex alkaloids. E. E. van Tamelen summarizes the elucidation of structure and reactions of some 24 antibiotics in "Structural Chemistry of Actinomycetes Antibiotics." J. Bonner discusses the recent additions to our knowledge of "Protein Synthesis in Plants," and, finally, H. Kuhn gives a lucid review, largely of his own work, "The Electron Gas Theory of the Color of Natural and Artificial Dyes: Problems and Principles."

Even more than its predecessors, this volume illustrates how dependent progress in the field of natural products is on varied kinds of research: the beautiful biochemical techniques that are beginning to reveal how proteins are synthesized, quantum-mechanical calculations which quantitatively predict the absorption of dye molecules, and the intelligent use of almost every physicochemical tool known in unravelling the labyrinthine structures and rearrangements of the aconite alkaloids. On the other hand, the rich array of structural variation found even among the Actinomycetes antibiotics, which includes polypeptides, cyclic sulfides and disulfides, aliphatic azoxy and diazo compounds, modified sugars, nitrated and chlorinated aromatic rings, an optically active allene, and 12-, 14 and 17-membered rings, reminds us how much the chemist owes to the ingeniously constructed products of nature, which continue to demand his fullest effort of technique and theory.

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