

*Principles of Biochemistry.* 3rd Ed. Edited by ABRAHAM WHITE, PHILIP HANDLER, and EMIL L. SMITH. The Blakiston Division, McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N. Y., 1964. xiv + 1106 pp. 16.5 × 24 cm. Price \$16.50.

This book, like the second edition, is a masterful and lucid compilation of facts and concepts in biochemistry. This is accomplished through the use of a well-indexed (111 pages) text of 993 pages, broken up into 56 chapters and organized into seven parts which include Chemical Composition of Cells, Catalysis, Metabolism, Body Fluids, Biochemistry of Specialized Tissues, Biochemistry of the Endocrine Glands, and Nutrition.

While no notations are made to specific references, there are books and review articles listed at the end of a chapter or series of associated chapters. These should serve the reader with sufficient source material to examine any subject in greater depth and with more concern for experimental procedures.

The most notable additions are the two chapters on the Genetic Aspects of Metabolism. These include recent work on deoxyribonucleic acid replication, ribonucleic acid synthesis and its relationship to protein biosynthesis, the coding of the amino acid sequences of proteins, and the induction and repression of enzymes. Other welcome additions include amino acid sequences in proteins, conformation of proteins, stereochemistry, the role of tetrahydrofolic acid, bacterial wall synthesis, and countercurrent multiplication mechanisms for the formation of hypertonic urine.

This book constitutes a very valuable addition to the reference library of a pharmaceutical scientist. Despite the unfortunate omission of the IUPAC 1957 Rules covering the nomenclature of steroids, it places most of the fundamental knowledge in biochemistry within arm's reach.

*Reviewed by Herbert Sheppard  
Ciba Pharmaceutical Company  
Summit, N. J.*

*Advances in Chemotherapy.* Vol. 1. Edited by A. GOLDIN and F. HAWKING. Academic Press Inc., 111 Fifth Ave., New York, N. Y., 1964. xi + 579 pp. 15 × 23 cm.

It is a pleasure to welcome this series of "Advances" in a field where such a diverse variety of disciplines must now be considered. This volume provides critical, comprehensive reviews of the monograph type, covering both theoretical and experimental considerations, and offers a common meeting ground for the various types of investigators in chemotherapeutic research.

Following a brief historical essay (E. K. Marshall, Jr.), the chapters included are as follows: Quantitative Concepts in the Clinical Study of Drugs (C. G. Zubrod), Mechanisms of Action of Phenanthridine and Aminoquinoline Trypanocides (B. A. Newton), Chemoprophylaxis and Chemotherapy of Viral Diseases (R. L. Thompson), The Vinca Alkaloids (N. Neuss, I. S. Johnson, J. G. Armstrong, and C. J. Jansen), Cell Culture and Cancer Chemotherapy (G. E. Foley and S. S. Epstein), Immunoreactions in Antiparasitic Chemotherapy (F. C. Goble), Drug Synergism in Antineoplastic Chemo-

therapy (J. M. Venditti and A. Goldin), and New Concepts in the Use of Inhibitors in Chemotherapy (N. O. Kaplan and M. Friedkin).

While the emphasis is not on clinical chemotherapy, the attempt is made to place clinical research on a more scientific basis. The biochemistry (and structural chemistry in the case of the vinca alkaloids) and possible mechanisms of action of chemotherapeutic agents are discussed as well. Some of the chapters succeed in the stated purpose of pointing to new generalizations and hypotheses, and all of them hold some interest for the pharmaceutical chemist. The manifold and interrelated biochemical, microbiological, and immunological problems discussed should provide new considerations for the design of chemotherapeutic agents.

*Reviewed by William O. Foye  
Massachusetts College of Pharmacy  
Boston, Mass.*

*Pharmaceutical Microbiology.* By M. HARRIS. Bailliere, Tindall & Cox Ltd., 7-8 Henrietta St., London, W.C. 2, England, 1964. U. S. Agent: The Williams & Wilkins Co., Baltimore 2, Md. 269 pp. Price \$7.00.

The reviewer shares the view of the author in that there is a definite important area of research and instruction which could be grouped under the heading of "Pharmaceutical Microbiology." Dr. Harris' aim in writing this book was to bridge the existing gap between microbiology and pharmaceuticals. Unfortunately, because the style of this book is primarily descriptive with far too much emphasis being placed on experimental procedures at the expense of the development of any underlying basic theory, Dr. Harris has failed to achieve his objective. The book is divided into two equal parts: the first portion consists of a discussion of basic aspects; the second part is concerned with the applied aspects of microbiology.

The treatment of the subject matter in the first section is superficial and purely classical, while modern developments in microbiology have been ignored. Basic important phenomena, such as genetic recombination, enzyme adaptation, permeability problems, protoplast formation, repression, and feedback control, etc., are not even discussed. On the other hand, a great deal of overemphasis is placed on procedures for medium preparation, staining methods, and graphical representations of elementary laboratory techniques. In fact, the contents of the first six chapters may be visualized as a condensed version of "Handbook of Bacteriological Technique" by R. J. Baker. But due to its lack of details, it is unsuitable as a laboratory manual.

The applied section is equally unsatisfactory. The chapter on chemotherapy is far from being comprehensive. With the possible exception of the section on penicillin, more information on antibiotics could be obtained from the "Merck Index." Virtually nothing is said concerning the mode of action, biosynthesis, stability, and chemistry of antibiotics. Such pertinent topics as drug resistance and combined use of antibiotics also are not mentioned. The chapter on chemistry of bacteria is poorly handled. One could hardly expect a

beginning student to understand all the intimate details of energy yields in carbohydrate metabolism and the terminal electron transport system when the subject matter is treated in such a condensed manner. On the other hand, students who have had a course in biochemistry will undoubtedly find this chapter a bore. Instead of explaining the metabolic reactions more in detail, trivial diagrams and tables are scattered throughout this chapter. Metabolism of amino acids, lipids, nucleic acids, and bacterial nutrition are not discussed at all. Aside from minor misprints, such as the formula for FAD (p. 242) and the enzyme phosphohexoisomerase instead of hexoseisomerase (p. 246), a more serious error appears on page 249. The author described the conversion of succinyl-CoA to succinyl phosphate and then to succinic acid on transference of phosphate to ADP. To the reviewer's knowledge, the compound, succinyl phosphate, has yet to be recorded in the biochemical literature. The chapter on immunity is again not rigorously discussed, with too much attention devoted to details of procedures. Little information is available on the basic mechanisms of antigen-antibody reactions, mechanisms of antibody formation, specificity of antigens, etc.

This book is unsuitable as a beginning text for microbiology students or as a textbook of microbiology for pharmacy students. It is too elementary and does not cover and emphasize the important modern concepts of microbiology. It certainly could not be compared with the standard textbooks of microbiology, such as "Microbial World," by Stanier, Doudoroff, and Adelberg, or "Modern Microbiology," by Umbreit, or "Fundamentals of Microbiology," by Frobisher. Because of the limited information it contains, the reviewer would not consider it useful as a reference book for the advanced student or the research worker. On the other hand, since the book is clearly written, the material is presented in a very elementary and concise manner, and it is relatively free from serious errors, it should be of utility as a general introductory monograph of microbiology for the general community.

Reviewed by Charles J. Sih  
School of Pharmacy  
The University of Wisconsin  
Madison

*Pharmacy: A Synthesis of Sciences.* By JOHN T. FAY, JR. D. C. Heath & Co., Boston, Mass., 1964. viii + 134 pp. 13.5 × 20 cm. Price \$1.27. Paperbound.

Pharmacy is a specialized science dependent on the basic sciences—chemistry, biology, physics, and mathematics. In this detailed discussion, the author stresses the interrelationship of each of these sciences, their ramifications, and how each contributes to pharmaceutical sciences.

Included in the book are clear definitions of pharmaceutical and medical terms with reference to disease, drug categories, mathematical symbols, and dosage forms; descriptions of manufacturing procedures and equipment; research; quality control; and antibiotic production.

The very readable text provides an informative introduction to pharmacy for use in career guidance programs and a comprehensive refresher for practicing pharmacists.

## NOTICES

*Contribution à l'Analyse Coulométrique, Applications aux Sciences Pharmaceutiques, English Summary.* Par G. PATRIARCHE. Editions Arscia S.A., 60, rue de l'Etuve, Bruxelles, 1964. 218 pp. 16 × 24 cm. Price 420 Fr. B. Paperbound.

*Methods of Biochemical Analysis.* Vol. 12. Edited by DAVID GLICK. Interscience Publishers, New York, N. Y., 1964. ix + 499 pp. 15.5 × 23 cm.

*Travaux des Laboratoires de Matière Médicale et de Pharmacie Galénique de La Faculté Pharmacie de Paris.* Publiés sous la Direction de MM. LES PROFFESSEURS M.-M. JANOT et R. PARIS. Tome XLVIII—Année 1963. Vigot Frères, Editeurs, 23 Place de L'Ecole-de-Médecine, 1964. 15.5 × 24 cm. Paperbound.

*Experimental Chemotherapy.* Vol. III, Chemotherapy of Bacterial Infections. Part II, Chemotherapy of Rickettsial and Viral Infections. Edited by R. J. SCHNITZER and FRANK HAWKING. Academic Press Inc., 111 Fifth Ave., New York, N. Y., 10003, 1964. xviii + 647 pp. 15.5 × 23.5 cm.

*Pharmacology of Smooth Muscle.* Edited by EDITH BULBRING. Pergamon Press Book, The Macmillan Company, 60 Fifth Ave., New York 11, N. Y., 1964. ix + 161 pp. 16 × 23 cm. Price \$7.50.

*The Nature and Chemistry of High Polymers.* By KENNETH F. O'DRISCOLL. Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y., 1964. ix + 111 pp. 12.5 × 18.5 cm. Price \$1.95. Paperbound.

*Hawley's Technical Speller.* Compiled by G. G. HAWLEY and A. W. HAWLEY. Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y., 1964. 146 pp. 12.5 × 18.5 cm. Price \$2.50. Paperbound.

*Aniline.* National Aniline Div., Allied Chemical Corp., 40 Rector St., New York, N. Y. 10006, 1964. ix + 109 pp. 22 × 28 cm. Single copies free upon request.

*Kurzes Lehrbuch der Pharmakologie.* Von G. KUSCHINSKY und H. LULLMANN. Georg Thieme Verlag, Stuttgart, Germany, 1964. viii + 331 pp. 17.5 × 26.5 cm. Price DM 33.

*The Pharmacopeia of Japan.* Seventh Edition, Part II, 1962, including revision to Part I through April 1964. Ministry of Health and Welfare, Tokyo, Japan. 19 × 26 cm.