Table I—Some Parameters Defining the Pharmacokinetics of Amphetamine in Man

Subject	Weight, kg.	Half-life, hr. Blood	Half-life, hr. Urine	% Dose Excreted Unchanged	Vol. of Distribution, l.	Renal Clearance, ml./min.
A	66	12.5	13.5	42	275	103
B	71	11.0	12	46	250	115
C	63	13.0	13.5	48	290	139

the initial or maintenance dose can obviously lead to the patient still being stimulated at night, in which case they would offer no advantage over the readily adjustable uncoated tablet dosage regimen.

Simple tablets or capsules of amphetamine are probably absorbed within 4 hr. after administration, whereas this may take up to 12 hr. with prolonged-release dosage forms (5). Extensive samples are therefore required during this period so that the absorption kinetics can be adequately defined. This is readily achieved using blood studies but, for reasons discussed above, meaningful urinary excretion studies are inconvenient especially in extensive clinical evaluations. Consequently it is recommended that blood studies be carried out and that excretion data be used mainly to confirm the half-life of amphetamine beyond levels which are conveniently measured in the blood. Similar arguments hold for other basic drugs which behave in an analogous manner to amphetamine. At present a more complete pharmacokinetic study of amphetamine is being conducted in man.

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Received December 16, 1968.
Accepted for publication January 6, 1969.
This work was supported in part by research funds from the Academic Senate and School of Medicine, University of California, San Francisco, Calif.

Books

Biological Oxidations. Edited by THOMAS P. SINGER, Interscience Publishers, A Division of John Wiley and Sons, 605 Third Avenue, New York, N.Y. 10016, 1968. ix + 722 pp. 15 × 22.5 cm. Price $19.75.

Due to the wealth of information that is available today in many different research areas, it is probably true that multiauthored books will increasingly become the standard method of publication. Two difficulties arise with this type of book: (*a*) one tardy contribution delays publication of the whole book and (*b*) there may be considerable overlap of subject matter in the several related chapters. There was, in fact, a long delay in the submission of certain chapters for this book, but the editor has avoided the frequent pitfall of unnecessary overlap of discussion in the various chapters.

The organization of the book is excellent; it fulfills the goal of allowing the nonexpert to gain an overview of this important field. The book is divided into two parts. The first third of the book is devoted to the gross processes in biological oxidations whereas the last two thirds of the volume is devoted to the enzyme and coenzymes involved in the biological oxidations. Many, but not all chapters contain a summary or concluding remarks. There is an abundance of structural formulas, tables, and graphs which allow one to visualize easily the reactions or inspect the experimental data. Mechanisms of the catalytic reactions are emphasized and usually speculations are clearly distinguishable from rather firmly established mechanisms. Limited information concerning the importance of enzyme inhibitors as a tool to study reaction mechanism is described.

In reviewing this book, it becomes abundantly clear that the term "mechanism" is used differently in the various chapters. In some cases mechanism means the sequence of reactions that occur; in other cases it means a detailed description of the reaction of the substrate and/or the coenzyme but, in few cases, is there invoked a detailed mechanistic role for the enzyme. These statements are not meant as a criticism but rather a description of the present state of knowledge. Thus, for those who would study this book an appreciation of the elegant research in a difficult field will be developed and a recognition of future areas of research will be apparent.

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The Biochemistry of Foreign Compounds. By DENNIS V. PARKE, Pergamon Press Inc., 44-01 21st St., Long Island City, NY 11101, 1968. ix + 269 pp. 14.5 × 22 cm. Price $10.00.

This is Volume 5 of the International Series of Monographs in Pure and Applied Biology, Biochemistry Division. The book is divided into two sections, Biochemical Mechanisms and Applications. In general, the book is well written but gives only a telescoped view of

the field which it covers. For pharmacologists and other students of the subject who are already initiated, the subject matter will not be new since much of the material, in particular that found in Section I, can be found in enumerable existing books and journals.

In Chapter 2, Figs. 2, 3, and 4 are multicolored schematic drawings depicting enterohepatic circulation and parts of the liver. This adds color and probably cost to the book but in this reviewer's opinion it is doubtful whether it serves any great purpose.

Section I deals with absorption, excretion and tissue distribution, and the various metabolic transformations of foreign compounds. This is followed in Section II by illustrative examples garnered from classes of compounds used as food additives, drugs, pesticides, and industrial chemicals.

The usefulness of this monograph is in its conciseness. Initiates to the subject will find the book useful and the bibliography will lead them to a more detailed study. Particularly useful for the student is the alphabetical listing by authors and titles of 351 references employed in collating the materials for the book.

The book jacket indicates that the monograph should serve as a valuable introduction to the subject. The book highly succeeds in serving this purpose.

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The Wiswesser Line-Formula Chemical Notation. By ELBERT G. SMITH. McGraw-Hill Book Co., 330 West 42nd Street, New York, NY 10036, 1968. 15 × 22.5 cm. xv + 302 pp. Price $15.00.

This book represents a comprehensive treatment of the revised Wiswesser notation, which is one of three systems developed to represent the structure of chemical compounds by unique and unambiguous linear sequences of letters and numbers. This sort of notation is an efficient means for chemical structure input into both manual and computer-based retrieval systems. This book provides a detailed explanation with rules, examples, and problems for self-teaching of the notation system. An advantage of the Wiswesser notation is that the notations are intelligible at sight to a chemist who has given the symbols and basic rules a small amount of study, making it possible for him to make generic structure searches without always using the computer. One feature of the revision is that only the capital letters, 10 digits, and three punctuation marks are used all of which have a 2-hole punching pattern on IBM cards and appear on the simplest of punched card and computer equipment. The Wiswesser notation encodes a structural formula from one end to the other, orients the symbols based on their position in the alphabet, and uses a blank space as a symbol which breaks up the notation into smaller group characteristics which make it easier to read and to encode.

Staff review ■

Membrane Models and the Formation of Biological Membranes. The Proceedings of the 1967 meeting of the International Conference on Biological Membranes. Edited by LIANA BOLIS and B. A. PETHICA. North-Holland Publishing Company, Amsterdam, Holland. U. S. distributor: John Wiley & Sons, Inc., New York, NY 10016, 1968. xv + 337 pp. 15.5 × 23 cm. Price $14.75.

As the book is a collection of papers on a wide variety of topics, it makes an interesting review of a subject which is receiving a lot of study at present. The proceedings are divided into eight parts, each containing papers pertaining to specific aspects of biological membranes. The sections are arranged in a logical sequence starting with the physical state of membrane constituents and proceeding through properties of lipid bilayers, biosynthesis, interactions of proteins and lipids, formation, problems and perspectives of membranology, to end with structural and thermodynamic properties. Some parts consist of four to seven papers while others, such as those on the physical and electrical properties of lipid bilayers and on the formation of the endoplasmic reticulum, contain one contribution. There are two papers in the case of the section entitled, "Formation of Other Membranes," where specific aspects including permeability and genetics are discussed.

Within each section the papers are chiefly discussions of published results. Each of the longer sections contains reviews of a general and specific nature, together with some presentations of experimental work performed by the authors. To illustrate this statement in the first part, on the physical state of membrane constituents, Pethica gives a short generalized review; Chapman discusses physical studies of biological membranes and their constituents reviewing mesomorphs, monolayer studies, and the use of IR and NMR techniques; Clifford, Pethica, and Smith contributed a paper on NMR investigations containing some of their own results; and other authors discussed the structure of water, wide-angle X-ray techniques, and effect of cations, proteins, and lipids. The composition of mitochrondrial and bacterial membranes are covered in the fourth part. To indicate further the topics covered, mention need only be made of the papers on electrical and permeability properties of lipid bilayers by Haydon, on synthesis by Van Deenen, thermodynamic properties by Katchalsky, and structural studies by Paresgian, Wallack, and Mauro. It is difficult to give more than a guide to the contents of this book, but it would provide a useful introduction to the study of biological membranes particularly of recent advances, since besides material published in 1968, many of the references cited were printed since 1960.

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Selected Pharmacological Testing Methods. Vol. 3. Edited by ALFRED BURGER. Marcel Dekker, Inc., 95 Madison Avenue, New York, NY 10016, 1968. xiv + 515 pp. 16 × 23.5 cm. Price $23.75.

This unusual book of pharmacological methodology stresses not only the procedure of testing methods but the principles on which the testing methods are based. The anatomical, biochemical, and physiological backgrounds of the testing methods described are detailed enough to give readers a good understanding of the basic concepts of experimental designs. The critical appraisals of the advantages and disadvantages of each method give the readers a guide for selecting desirable testing systems. The experimental procedures described are not detailed enough for the readers to follow directly. However, pertinent references to the literature are given and accordingly the readers will have no difficulty in finding the testing procedures described in the original literature.

The concise presentation of medical statistics gives big help to those who are not familiar with biostatistics which is so important in designing the experiments and in analyzing the results. The testing methods discussed in this book are "selected" as stated in the title of this book. It would be nice to have another volume in "Medicinal Research Series" to discuss other important pharmacological testing methods which could not be included in this volume.

This book is valuable not only to pharmacologists, but to biologists, physiologists, psychologists, and clinical researchers as well. Graduate students working with biological systems will find this book enjoyable reading and rewarding.

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