

survey of the materials, to be sure, but that is not chemistry. The chapter on X-ray contrast agents is better in this regard.

The introductory chapter of the book on subcellular actions of cortisol in liver is pharmacology and biochemistry and looks strange under the heading, "Theoretical Concepts." Does that mean that biochemical remarks about the mode of action of drugs are theoretical in one chapter and applied in another?

Fortunately, the "Applied Medicinal Chemistry" section of the book is medicinal chemistry. It contains several good chapters (antiinflammatory agents by T. Y. Shen, chemical modification of antibiotics by S. J. Childress, antiviral agents by T. S. Osdene, antihypertensive agents by A. D. Bender, and thyroid and antithyroid drugs by H. A. Selenkow and M. S. Wool). The chapter on cancer chemotherapy by M. B. Shimkin is purely descriptive, clinically oriented, and of not much help for future researches.

It is to be hoped that the editors and publisher will be more critical in future volumes what they call medicinal chemistry. Half of the present book has abused and diluted the term, and such expansionist thrusts into nonchemical areas will not aid our thinking and our selection of reading material even in these days of interdisciplinary growth of science.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

Dilemmas in Drug Therapy. By HARRY BECKMAN. W. B. Saunders Co., Philadelphia, Pa. 1967. xi + 404 pp. 19 × 26.5 cm. \$11.50.

A veteran American pharmacologist who serves as a consultant on drugs faces the following questions which almost any physician would ask an expert clinical pharmacologist: "Here is the patient and these are the circumstances. This drug has failed, and so has that. Who has used another unusual one and why? What are the risks? Is there something I should know and do not? What would you do?" The author offers experience, wisdom, and opinions in answers given by a physician, not by a computer. These answers cover 313 clinical subjects ranging over the whole area of medicine. Each subject is introduced by a detailed and straightforward question of several sentences. Then follows the author's answer, referenced where possible. Then comes another question and answer, and so forth. The opinions expressed are considerable, conservative, and carefully formulated and should be invaluable to the practicing physician in innumerable situations.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

Psychotropic Drugs and Related Compounds. By EARL USDIN and DANIEL H. EFRON. Sponsored by the Pharmacology Section, Psychopharmacology Research Branch, National Institute of Mental Health, Public Health Service, U. S. Department of Health, Education and Welfare. Public Health Service Publication No. 1589. U. S. Government Printing Office, Washington, D. C. 1967. iv + 367 pp. 24 × 16.7 cm. \$2.75.

When a major field of medicinal research reaches a plateau and offers the investigator and clinician a bewildering array of similar agents for several areas and conditions, a referenced tabulation of virtually all drugs and agents (690 of them) comes as a most welcome gift to guide us at a glance through the burgeoning list of names, dosage forms, and applications. The term "gift" is appropriate; this book is offered at one-sixth or one-seventh the standard publisher's price for the number of pages and formulas, and although we recognize the taxpayer's contribution, the low price evokes nostalgic recollections of the days when individuals, and not just institutions, could afford a shelf full of professional books.

Both clinical drugs and all experimental compounds reported to have psychotropic activity were to be included; this ambitious goal had to be cut back arbitrarily, e.g., all barbiturates were deleted. On the whole, however, almost all compounds with principally psychic activities can be found in this volume.

There exists no universally accepted system of nomenclature, and the authors have done a good job classifying compounds by popular naming schemes, by generic names, and by giving struc-

tural formulas. Virtually every synonym or trade name is listed, as well as names of manufacturers, distributors, and Registered Trade Mark users. Each entry contains LD_{50} values and human doses, where applicable, perhaps one of the most valuable features of this collection. Tranquilizing, antidepressant (energizing), and hallucinogenic activities are indicated, but no subclassification has been attempted. There are 985 literature references, 40 general references to media used in searching the literature of psychotropic drugs, an extensive compound index cross-referencing synonyms, an alphabetical list of manufacturers, and lists of abbreviations. Moreover, every owner of this book is promised a list of supplements until a new edition will be prepared. And all this for the price of a haircut.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

Problèmes Actuels de Biochimie Appliquée. Edited by M.-L. GIRARD. 1st series. Masson and Cie., Editeurs, Paris. 1967. vi + 368 pp. 16.5 × 24.5 cm. Paperback, 90 Francs.

This volume contains seven chapters concerned with some biochemical analytical processes, their background in physical chemistry, immunochemistry, pathology, biosynthetic pathways, and their application to diagnosis. In a discussion of gas exchanges on the pulmonary and cellular level, R. Bourdon touches upon phases of diabetes, anoxia, and other disorders traceable to contributory disturbances of acid-base equilibria. J. Canal takes up acid-base equilibria again in his chapter, the determination of the amount of NH_4^+ in biology, concentrating on ammonium ion metabolism and enzyme activity affected by it. A conservative chapter on serotonin and the biochemical exploration of its metabolism, well written, avoids speculation about the role of 5-HTA in organs where its significance is in question. However, the description of selective analytical methods for 5-HTA should aid in locating this compound and distinguishing it from accepted neurotransmitters. The remaining chapters also emphasize the analytical approach to biochemical researches. They are the exploration of electrophoretic results by the analyst and clinician (M.-L. Girard); errors in carbohydrate metabolism (F. Paolaggi); paraproteinemias: diagnosis, biochemistry, and immunochemistry (F. Rousselet); and dehydration states (J. Yonger and J. Saada) which so often cause infant mortality.

Any practicing biochemist who uses modern analytical techniques will find this book useful, especially if he can read elegant Parisian French with enjoyment.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

Design of Active-Site-Directed Irreversible Enzyme Inhibitors. By B. R. BAKER. John Wiley and Sons, Inc., New York, N. Y. 1967. xiii + 325 pp. 18 × 24.5 cm. \$13.50.

Any scientist who publishes over 30 major articles per year in a field for whose growth he is principally responsible should assess his own work and that of others in the same area at given intervals. The book by "Bill" Baker, as he is known fondly among American medicinal chemists, fulfills this purpose in the field of irreversible enzyme inhibitors.

The first 15-20 years of metabolite antagonist studies centered around essentially reversible inhibitors, but scored successes only in a few selected cases. The reason for this over-all failure was lack of selectivity. In an irreversible inhibitor attached to the active site of an enzyme plus some other location at the enzyme surface, an extra dimension of specificity has been introduced which can distinguish between even closely related isoenzymes. Since the three-dimensional conformation of enzymes is still mostly unknown, we cannot design an antagonist *a priori* to fit a site surrounded by those spatially neighboring groups to which the enzyme owes its rapid rate of reaction. Therefore, patient mapping of such amorphously visualized humps or cavities is necessary by systematic alteration of the structure of the inhibitor and by carrying out thousands of kinetic measurements of residual enzyme activity. From these data at least some conclusions have been drawn concerning the structure of selective inhibitors and the role and location of polar, bulky, and hydrophobic groups in their molecules. It is a tedious way of mapping

active enzyme sites, but at present the most profitable one; on the way there dangle hopes of selective drugs for some therapeutic use. Since Baker has chosen enzymes concerned with the synthesis and hydrolysis of nucleotides and proteins, the complex field of antineoplastic chemotherapy may benefit soonest from these efforts.

When an organic chemist works on problems of "pure" biochemistry, he is bound to encounter objections from biochemists who have been trained at the opposite end of the working spectrum that joins the two approaches. Not all of Baker's conclusions are beyond dispute, but nobody can deny that he has instilled new zest into the study of inhibitors which was down and out 10 years ago. The book is written in the author's clear though somewhat extended style and reads well. No modern medicinal chemist who believes in the future predictability of selectivity can afford not to read and not to ponder this book.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

Principles of Scientific and Technical Writing. By JACKSON F. MORRIS. McGraw-Hill Book Co., Inc., New York, N. Y. 1966. xvii + 257 pp. 23.4 × 16.4 cm. \$6.95.

The foremost feature in a manuscript wanted by every editor of our crowded journals is concise and clear expression, without rambling and padding. A textbook on scientific writing may thus be expected to serve as a model of clarity and brevity of diction. The present book does everything but this; it rambles along, sidetracks the reader's attention to some witticisms or unrelated thoughts, and makes it necessary that one read over every paragraph several times to cull out the meaning of its words. Perhaps it tries to teach too much, from elementary school grammar to library research and lecture audience evaluation. The book is said to have evolved from the author's teaching at UCLA. This reviewer senses that much of the book reflects lecture notes which have not been scaled down to essentials and have not had time to ripen. Many of the chapters leave the reader confused and annoyed.

The book starts with a historical review of literature in general, from Homer (sic!) to aerospace engineers (20 pp). Even if one skips this chapter, one is then treated to Hemingway and Dr. Spock's information on baby care. Now at last comes a survey of "language," but the examples are taken *inter alia* from Egyptian and Chinese papyri, and *The New Yorker*. A whole chapter is devoted to the use of person and tense; these are important in scientific writing but could have been discussed in 2 instead of 14 pp. It goes on and on like this. One cannot escape the impression that the author wishes to teach technical expression to persons trained in literary writing. In that he has failed, and he has offered advice too diffuse to be applied by standard scientists or engineers who have to render a readable, concise, and accurate report of their work.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

Organic Photochemistry. Volume I. Edited by ORVILLE L. CHAPMAN, Department of Chemistry, Iowa State University, Ames, Iowa. Marcel Dekker, Inc., New York, N. Y. 1967. xi + 339 pp. 16 × 23.5 cm. \$15.75.

During the first half of this decade progress in organic photochemistry proceeded at a rate such that knowledge in the field from primary sources had far outstripped compilation and critical reviews of the data. The past few years have narrowed the gap considerably so that now texts and reviews are available which range from elementary to comprehensive treatments. This first volume of a projected series represents Marcel Dekker's

entry into the field, a potpourri of topics of varying degrees of quality, several of which are treated in other photochemistry books and reviews.

The topics are the following: "Photochemical Transformations of Cyclohexadienones and Related Compounds" by Paul J. Kropp, "Photochemical Transformations of Small-Ring Carbonyl Compounds" by Albert Padwa, "Photo-Fries Reaction and Related Rearrangements" by Virgil I. Stenberg, "Photochemistry of Troponoid Compounds" by Daniel J. Pasto, "Photochemistry of Olefins" by G. J. Fonken, "The Photocyclization of Stilbenes" by F. R. Sternitz, and "Photocycloaddition Reactions" by O. L. Chapman and G. Lenz.

Dr. Kropp is one of the most active workers in the field of cyclohexadienone photochemistry and has written a most interesting account of the work in it including a complete discussion of santonin chemistry. He has reviewed the literature carefully and critically and covered his subject from earliest observations to a lucid discussion of possible mechanisms.

On the other hand, the chapter by Professor Padwa is useful mainly as a source of literature references by virtue of the fact that Padwa exercises no selectivity whatever in his treatment of the reported facts. He treats all products, regardless of quantum or isolated yields, as being of equal importance in defining reaction paths available to photochemically excited small-ring compounds. With one exception (p 93) his discussion is devoid of any reference to either quantum yields or isolated yields of pure product. His preoccupation with speculating about mechanisms leads him to the conclusion (p 118) that photolysis of a certain class of compounds may constitute a "convenient source of singlet carbenes" and advocates "greater use of this technique in the future." This seems like a rather bold statement in view of the fact that the product formed from the hypothetical "singlet carbene" is found in 13% yield and other, less exciting, routes may be envisioned as leading to its formation.

The other chapters in the book are of generally good quality and cover the literature to 1965 or 1966 (with Addenda). The exception to this is the chapter by Professor Pasto in which none of the literature citations are later than 1963 even though some aspects of the topic may be explained in terms of the Woodward-Hoffman criteria for electrocyclic reactions put forth in 1965. This is disappointing in view of Professor Chapman's introduction in which he states that vigorous activity in the field "especially within the last five years" has established a need for critical summaries of topics in organic photochemistry.

DEPARTMENT OF CHEMISTRY
UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

FRANCIS A. CAREY

Problems in Laboratory Evaluation of Antianginal Agents. Edited by MARTIN M. WINBURY. North-Holland Publishing Co., Amsterdam. 1967. vi + 65 pp. 15.5 × 24 cm. \$4.50.

This is part of the reports presented at an international symposium (Milan, 1965) and contains five chapters: Coronary and Peripheral Hemodynamics (R. Kadatz); Autoregulation of Coronary Blood Flow, Possible Role of Adenosine (R. M. Berne); the Role of Collateral Circulation (W. M. Fam and M. McGregor) and of Myocardial Nutritional Circulation (M. M. Winbury) in Evaluation of Antianginal Agents; and the Sympathetic Nervous System (R. G. Shanks). A rather illuminating discussion by the participants concludes this booklet.

The theme of the papers is a reevaluation of the fundamental role of drugs used in angina pectoris. The basic pharmacologist interested in the explanation of the role of cardiac drugs, and in the possible extension of such findings to new drug discovery, should find this book highly useful.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER