

The data are given in both δ and τ units, and the chemical shift and simple spin-spin coupling phenomena are clearly explained. Useful tables of proton chemical shifts are also included. Because of the current rapid developments in this field, an instructor using the book in a course may want to supplement the material with some of the newer developments. Some cases in point might include the questionable validity of the theory of Karplus concerning interdependence of coupling constants with bond angles, the use of metal ions as aids in interpreting spectra, carbon-13 studies of carbon containing no hydrogen atoms, etc.

The chapter on mass spectrometry discusses the fragmentation patterns of different types of structures and explains how a mass spectrum can be used to deduce structural information and an empirical formula. Again, the rapidly developing field here places it in somewhat the same category as nuclear magnetic resonance. This technique should enjoy increasing interest among organic chemists as more mass spectrometers become available.

The ultraviolet absorption chapter contains a discussion of the different types of electronic transitions which can occur and explains B, E, K, and R bands. Unfortunately, the Woodward rules for calculating ultraviolet spectra are rather vaguely presented and some newer references as to their extensions and applications are not cited (*e.g.*, Fieser and Fieser, "Steroids," 1959, p. 15 ff; Fieser and Fieser, "Advanced Organic Chemistry," 1961, p. 201 ff.).

The information given on the four types of spectrometry is put to practical use in Chapters 6, 7, and 8, which contain sets of practice spectra on which the reader can test his interpretative skills. Chapter 6 contains the four types of spectral information for each of twenty compounds of increasing complexity, and the reasoning behind the systematic solution of each structure is clearly explained by the authors. Chapter 7 contains the spectral information for ten compounds, each with a Beilstein reference, so that the structures arrived at by the reader can be checked. Chapter 8 consists of ten additional compounds for which no structural references are given.

The book is written in large, readable type and has few typographical errors. The large pages (22.5 \times 29.5 cm.) allow convenient reproductions of spectra and wide tables without having to turn the book sideways to read them. Practicing organic chemists with a weak background in the potentialities of the instrumental techniques discussed will find the book particularly helpful. Because of its rather elementary style, it should also find wide acceptance among graduate students and as a supplemental test in such courses as qualitative organic analysis.

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O. R. RODIG

Keeping up with Pharmacology. Two new books. **Recent Advances in Pharmacology.** J. M. ROBSON and R. S. STACEY, Ed., University of London. Little, Brown & Co., Boston, Mass., 1962. x + 406 pp., 68 illustrations. **Annual Reviews of Pharmacology**, Vol. 3, W. C. CUTTING, Ed., Annual Reviews, Inc., Palo Alto, Calif. vi + 486 pp. \$8.50.

"Recent Advances," although labeled 3rd edition, is essentially a new book covering the highlights of pharmacological research of recent years. The 3rd volume of "Annual Reviews" covers essentially, in more detail, the events of the last year or so. Both books are remarkably up-to-date; it is not easy to discuss the latest papers if one has to meet an absolute deadline, and if the content of one's book is to present the newest thoughts and experiments. This is particularly true for the "Annual Reviews" series, and the haste of publication may serve as an excuse for the somewhat shallow proof-reading noticed in many chapters. The British book is almost free of typographical errors.

"Recent Advances" is addressed both to the professional pharmacologist and to chemists and biologists who want to survey current trends. Each subject is given the proper historic perspective which permits the reader to re-live the development of the field, the fumbling among alternative explanations, the decisive observation, the clearer understanding of a phenomenon, or the application of a useful procedure or drug. The recent preoccupation with central nervous system (CNS) events and drugs

is reflected in the first four chapters which discuss pharmacologically active substances in the CNS, psychotropic drugs (somewhat sketchy), catecholamines, and 5-HTA. The remaining nine chapters touch upon the following subjects: pharmacologically active polypeptides, antidiabetic agents, newer steroids as well as anticholesterolemic drugs, antihypertensives and diuretics, chemotherapeutics for bacterial and for tropical infections, and an assortment of newer pharmacodynamic drugs. The underlying theory of each condition and therapeutic attempt is discussed clearly, and even though not every opinion is presented at every turn, the prevailing thoughts are beautifully arranged for interesting reading and thorough understanding. The book should be useful to medicinal and biochemists, pharmacologists, and physicians alike.

The "Annual Reviews" volume is introduced by a nostalgic review of his own work by H. H. Dale, and concluded by the annual review of reviews by Chauncey D. Leake. Between these poles are 17 chapters covering reactions and inhibition of enzymes, the metabolic fate of drugs of recent interest, drugs active on the CNS, on lipid metabolism, on autonomic events, on the neuromuscular junction, and on cellular reactions in cancer. Even though almost all of the authors have been chosen because of their known ability to write good reviews, the task assigned to some of them has proved to be too much when a firm scientific basis for the respective discussion is not yet at hand. Drugs for the protection against ionizing radiation and the effects of drugs on behavior are examples of topics which cannot yet be discussed conclusively. There are several chapters on toxicology and pharmacological techniques, and these and the others reflect the high standards one has come to expect of the "Annual Reviews" series.

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ALFRED BURGER

Progress in Medicinal Chemistry. Vol. 2. G. P. ELLIS AND G. B. WEST, Editors. Butterworths, Inc., London, 1962. ix + 201 pp. \$11.25.

The complexity and the rapid progress in many areas of medicinal science make it increasingly difficult for an individual investigator to keep up with all developments even in a limited field. Perspective in such interdisciplinary subjects is gained best by broad reviews written by experts or teams of experts. The second volume in the present series offers an admirable attempt to cover four timely topics both in depth and in historical completeness. A. H. Beckett and A. F. Casy discuss their favorite subject, analgetic drugs; W. C. Bowman writes on mechanisms of neuromuscular blockade; and J. D. P. Graham surveys 2-halogenoalkylamines and other enimonium formers. These three topics are at a temporary plateau of activity and can be reviewed with some detachment. The fourth chapter by G. E. Davies, on anaphylactic reactions, treats a subject whose biochemical causes are still shrouded in mystery; obviously, it cannot be discussed on the same molecular level as other fields which are, or are believed to be, better understood. However, both the chapters on anaphylaxis and neuromuscular blockade are presented lucidly in the light of present knowledge and are suggestive of the next steps of research in these areas.

All these reviews will be of great interest to medicinal chemists and pharmacologists. A new circle of readers will, however, also want to use this volume. An excellent chapter on the patenting of drugs by F. Murphy will be interesting to lawyers and administrators in addition to medicinal scientists. Although written by a British patent attorney, the U. S. procedures are well set forth. Inventions, specifications, claims, and all other portions of a patent application are explained, many aspects of licensing are detailed, and procedures to secure overseas patents are listed. As in the purely scientific chapters of this book, this chapter lays the groundwork for further reading but will serve as an excellent brief introduction to patenting.

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