Analytical Profiles of Drug Substances, Vol. 12. Edited by KLAUS FLOREY. Academic Press, 111 Fifth Avenue, New York, NY 10003. 1983. 735 pp. 15 × 23 cm. Price $47.00.

Continuing the yearly volumes in the series, analytical profiles of 17 drug substances are given in 713 pages. These are: amantadine, amikacin sulfate, benzocaine, dibucaine and dibucaine hydrochloride, estrone, etomidate, heparin sodium, hydrocortisone, metoprolol tartrate, phenylpropanolamine hydrochloride, pilocarpine, pyrazinamide, pyrimethamine, quinidine sulfate, quinine hydrochloride, rutin, and trimipramine maleate. There are also two profile supplements: dioctyl sodium sulfosuccinate (8 pp.) and isopropamide (12 pp.). The main profiles for each of these are in Volume 2.

This volume follows the pattern set in Volume 11. It has all of the strengths of the extensive data given in an analytical profile (including structures, spectra, tables of properties and chromatographic systems, and extensive references) and the lack of consistency inherent in having different authorships of each profile [see review of Vol. 11, *J. Pharm. Sci.*, **72,** 582 (1983)]. One reference which was looked for was found as reference 69 under pilocarpine; however, the authors listed are not correct. This volume, like the others in the series, is a valuable reference for those engaged in pharmaceutical formulation and quality control and those needing information on drug metabolism, biopharmaceutics, and pharmacokinetics.

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Cell Surface Receptors. Edited by P. G. STRANGE. John Wiley and Sons, Inc., One Wiley Drive, Somerset, NJ 08873. 1983. 298 pp. 16 × 24 cm. Price $79.95.

Dr. Strange has assembled a collection of some 15 reviews, average length 20 pages, dealing with a variety of membrane receptors and approaches to the study of receptor structure and function. Included are chapters on α_2-adrenoceptors, opiate, benzodiazepine, dopamine, and calcium receptors, focusing largely on structure–activity relationships seen through pharmacological and radioligand binding studies. Other chapters discuss receptor changes and regulation including neuroleptic–dopamine interactions, biogenic amine changes in schizophrenia, regulation of GnRH receptors, cyclase defects in pseudohypoparathyroidism, and the implications of coexistence of amine and peptide transmitters. Coupling mechanisms are considered in chapters on phospholipids and adenylate cyclase. Final chapters discuss the gene coding of the nicotinic acetylcholine receptor and radioreceptor assays in quantitative drug assay.

Despite the necessary brevity of the chapters, there is material of interest to expert and nonexpert alike. Each chapter is, at least, adequately written with decent illustrations and few misprints. Few will leave the book without both gaining some useful insights and a deepened appreciation for the rapid pace of development of the study of pharmacological receptors. However, it is difficult to determine the primary audience for this book. To the nonexpert, graduate student, or new worker in the field, the volume is simply not systematic enough; however, the volume could certainly be a helpful supplementary volume accompanying a more basic course. For this purpose, the book is highly priced. To the expert, the volume may be useful in providing brief reviews in a number of receptor areas, but probably not to the extent of individual purchase.

In summary, I enjoyed reading this book and obtained some useful insights into a number of receptor areas. I do not recommend it for individual purchase, but an institutional purchase would certainly be appropriate.

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Manufacturing Processes for New Pharmaceuticals. By MARSHALL SITTIG. Noyes Publications, Mill Road at Grand Avenue, Park Ridge, NJ 07656. 1983. 612 pp., 15 × 23 cm. Price $84.00.

This is Chemical Technology Review No. 220 from Noyes Publications. The book describes the processes for the manufacture of nearly 500 new-chemical-entity pharmaceuticals. The great majority of the compounds are undergoing some level of FDA review, with approval as new drugs being the ultimate goal. The author states in the foreword to the book that the information used in the reviews was obtained from the patent literature, and that the new drugs described have attained generic name status, but in most cases have not yet received trade names.

The arrangement within the reference is alphabetical by generic name. There is no index or cross-index of the compounds listed in the book by chemical name. The lack of such a chemical name index detracts from the value of the book, since its not possible to conveniently determine whether or not a particular compound is listed in the book, unless the generic name is known.

Under each entry in the book, the generic name is given first, followed by the therapeutic function of the compound, the chemical name, the empirical chemical formula, the structural formula, in some cases a product description (usually limited to the melting point), the code number of the compound, the manufacturer and country, the manufacturing process, and references. The manufacturing processes are described in detail. In some cases, several alternative syntheses are given. Where intermediates are involved, the syntheses of the intermediates are given. In addition to the one or more patent references given with each compound, other references are frequently given, where results of pharmacological studies or other data on therapeutic uses, adverse effects, or precautions may be found.

The book is intended as a guide to future drugs. The book should thus be of interest to scientists engaged in the design and development of new drugs. Furthermore, some of the chemical synthesis manufacturing methods reported for the wide range of compounds in the book will be of interest to medicinal and organic chemists.

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Antibiotics: An Introduction. By ROLAND REINER. Thieme-Stratton Inc., 381 Park Avenue South, New York, NY 10016. 1982. 172 pp. 12 × 19 cm. Price $9.95.

This small volume is intended to provide "a condensed introduction to the chemistry, biochemistry, biology, pharmacy, and medical usage of antibiotics." The book begins with a brief historical outline in tabular form of the discovery of important chemotherapeutic agents. This is followed by very brief discussions concerning the detection and determination of antibiotic activity and the production and isolation of antibiotics. The chapter entitled "Chemistry of Antibiotics" includes a limited discussion of the structure proof of penicillin and oxytetracycline, followed by a series of schemes illustrating the partial and total synthesis of several antibiotics. The synthetic pathways are not discussed. The chapter on "Mechanism of Action of Antibiotics" is presented in tabular form listing the antibiotic class and site of action with minimal discussion. A chapter entitled "Chemotherapeutic Properties of Antibiotics" provides a brief overview of the clinical use, antibacterial spectrum, administration and dosage, and bacterial resistance of important antibiotics. The information is presented primarily in tabular form. The final chapter, about one-third of the book, is entitled "Structural Formulas and Main Properties of Individual Antibiotics." This chapter consists primarily of the structural and empirical formulas and molecular weight of over 100 antibiotics. A bibliography containing an extensive listing of mono-

graphs is provided. However, failure to reference the material in the individual chapters is a serious omission.

This book may serve as a quick reference for chemical structures and chemotherapeutic properties of a large number of antibiotics. However, the handbook approach used to present the material makes this book unsuitable as a text.

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Solid-State Chemistry of Drugs. By STEPHEN R. BYRN. Academic Press, 111 Fifth Avenue, New York, NY 10003. 1982. 346 pp. 15 × 23 cm. Price $55.00.

The literature on solid-state chemistry is not abundant, and the topic of solid-state chemistry of drugs *per se* has not been treated previously in book form. (Granted, chapters in books and reviews in journals have appeared.) Dr. Byrn's book hence fills a void. It is refreshing to note, at the onset, that it does this very well.

The book is, first of all, self-contained. It commences with morphological descriptions and definitions, followed by a broad overview of what actually happens in a solid when the molecules contained in it (or some of them) undergo chemical change. It then gives examples of the various types of solid-state reactions documented in the literature (and of pharmaceutical interest).

A chapter is devoted to methods of analysis, in a somewhat different way than the casual reader might expect. The tools of trade in this field, if mechanistic understanding is the goal, are X-ray, spectroscopy, and thermal methods. In other words, the analysis section is not cluttered with specific assay methods, but rather with the specific tools. It might have been instructive to have a section dealing with high-vacuum techniques of gas analysis, since these are frequently used in solid-state kinetics in isothermal studies of gas-producing reactions.

The chapter on solid-state kinetics is excellent and covers all essential principles. Particularly useful is Table I, where one particular reaction is treated by a large number of different mechanistic models, leading to the conclusion (not surprisingly) that simply fitting the data to a model will not, in itself, serve as a selection criterion. That philosophy is true in general, but is well stated.

A large chapter is devoted to polymorphism, an important aspect not often thought of as "chemistry" (as implied in the title of the book). But, it certainly belongs in the book and should be of great usefulness to those working in this particular field.

The book contains a wealth of examples. It is written in a very pleasant style. A must for the pharmaceutical scientist involved in solid dosage forms.

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Dermatological Formulations: Percutaneous Absorption. By BRIAN W. BARRY. Marcel Dekker, 270 Madison Avenue, New York, NY 10016. 1983. 479 pp. 16 × 23.5 cm. Price $55.00 (20% higher outside the U.S. and Canada).

This is a concise, single-authored overview of percutaneous penetration as it relates to dermatological formulations. Demonstrating the breadth and depth of his personal reading and experience, Dr. Barry singlehandedly tackles many different areas. He starts with a brief overview of the structure, function, diseases, and topical treatment of human skin. The second chapter is a classical review of the principles of diffusion through membranes. He next discusses the facts and theory related to skin transport and properties influencing percutaneous absorption. Following a brief review of methods for quantitating absorption, he ends with two strong chapters on formulation and rheology of dermatological vehicles.

This book is heartily recommended for the novitiate as well as the expert. Being a personal statement, you will enjoy the author's strengths and weaknesses in terms of understanding the field. The index is unique in that it allows you to find the primary places where each author is mentioned throughout the book. In the short time that I have had it, I easily justified the cost of the book by rapidly finding author references.

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Alkaloids, Volume 1: Chemical and Biological Perspectives. Edited by S. WILLIAM PELLETIER. Wiley-Interscience, 605 Third Avenue, New York, NY 10158. 1983. 398 pp. 16 × 24 cm. Price $60.00.

Alkaloids never seem to cease attracting the interest of chemists. Since the turn of the century, numerous books and series have been published on the subject. This is another ambitious, comprehensive treatise intending to add new perspectives to the subject. The series takes a new topic-oriented approach, departing from the traditional descriptive system based on the class of compounds.

The first volume begins with the nature and definition of an alkaloid by the editor and includes such mixed topics as "Arthropod Alkaloids: Distribution, Functions, and Chemistry," by T. H. Jones and M. S. Blum; "Biosynthesis and Metabolism of the Tobacco Alkaloids," by E. Leete; "The Toxicology and Pharmacology of Diterpenoid Alkaloids," by M. H. Benn and J. M. Jacyno; and "A Chemotaxonomic Investigation of the Plant Families of Apocynaceae, Loganiaceae, and Rubiaceae by Their Indole Alkaloid Content," by M. V. Kisakurek, A. J. M. Leeuwenberg, and M. Hesse. All were written by unquestionable experts in their particular field and provide not only first-hand information by researchers themselves, but also deep insights into the individual subjects.

Dr. Pelletier's devotion to the chemistry of alkaloids, especially diterpenoid alkaloids, is widely known, and his ability to cover this broad topic is also well-proven by his earlier publication in *The Royal Society of Chemistry—Specialist Periodical Reports* on alkaloids. In the first volume he has certainly exercised his knowledge of the topics and taken advantage of his close acquaintance with top researchers in the individual fields. However, it remains to be seen in future volumes how successful the series will be in raising the interest of interdisciplinary readers in such diversified areas as medicinal chemistry, natural products chemistry, pharmacology, pharmacognosy, biochemistry, phytochemistry, plant taxonomy, oncology, forensic science, and medicine as originally intended. At any rate, in conjunction with recent research interest in natural products chemistry, books taking the multidisciplinary approach as, for example, a series on marine natural products with the same subtitle (*Marine Natural Products: Chemical and Biological Perspectives*, P. J. Scheuer, Ed., Academic Press, Volumes I–V), are seen more and more on the bookshelves.

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Annual Review of Pharmacology and Toxicology, Volume 23. Edited by ROBERT GEORGE, RONALD OKUN, and ARTHUR K. CHO. Annual Reviews Inc., 4139 El Camino Way, Palo Alto, CA 94306. 1983. 713 pp. 15 × 22 cm. Price $27.00.

This review of pharmacology and toxicology continues a successful series of monographs in these areas. The book contains 27 different reviews and a review of the reviews. Each of the reviews is written by a person familiar with the area of research. The reviews are normally concise and well referenced; important tables and figures are included in many of the reviews. The initial review by Leslie Iversen on "Nonopioid Neuropeptides in Mammalian CNS" provides some insight into the re-