REVIEWS

Autonomic Pharmacology: Experimental and Clinical Aspects. By MICHAEL D. DAY. Churchill Livingstone, 19 West 44th St., New York, NY 10036. 1979. 255 pp. 14 × 21 cm. Price $15.00 (soft cover).

This excellent small book, in the words of the author, "is intended primarily for undergraduate students of medical sciences." Students of medicine, pharmacy, dentistry, nursing, and other health sciences also should be included. Written for British students, this book contains many drug names that are not familiar to American students. This is due mainly to the fact that the FDA considers some of these drugs neither safe nor effective, even though they have been used in England for many years. The fact that drugs available on this side of the Atlantic are not identified may be a slight handicap. However, by describing these foreign drugs, this book gives the American student a better and more complete view of autonomic drug development.

There are three chapters covering the anatomy, physiology, and chemistry of the autonomic motor system and neurohumoral transmission. Ten chapters cover adrenergic and cholinergic agonists and blocking agents. For each drug class, one or two prototype compounds are described in detail. Other drugs of the same category then are briefly compared clinically to the prototype. The historical aspects of autonomic physiology and pharmacology are well covered. As far as the drugs that are included and the mechanism of actions described are concerned, this work is up to date. The only thing missing is some mention of radioligand studies of receptors. This book is recommended for all biomedical students.

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The Anticancer Drugs. By WILLIAM B. PRATT and RAYMOND W. RUDDON. Oxford University Press, 200 Madison Ave., New York, NY 10016. 1979. 323 pp. 15 × 23 cm. Price $18.95 hard cover or $12.95 soft cover.

The stated purpose of this text is to offer "a full, but concise description of anticancer drugs, both old and new." The authors have achieved their objective with respect to describing currently used agents for human neoplastic diseases. There is excellent integration of the proposed mechanism of action of the agent, its uses against specific tumor types, and toxicity of the agent in humans.

The first chapter is a cursory review of the incidence of cancer in the United States and the world, biochemical and genetic characteristics of malignant cells, and role of drugs in cancer therapy.

Historical milestones in the development of the major chemical categories of antineoplastic agents are dealt with in the second chapter.

The third chapter discusses Gompertizian cell growth of tumors, the cell cycle, fraction of cells in mitosis, development of drug-resistant states, and determinant factors of the host involved in drug response.

Chapter 4 reviews, as general concepts, the responsiveness of tumors to chemotherapy drugs, the choice of drugs for specific types of tumors, combination chemotherapy, adjuvant therapy, and toxicity of antineoplastics.

Individual alkylating agents, antimetabolites, antibiotics, hormones, plant alkaloids, enzymes, and miscellaneous drugs are delineated in Chapters 5–9. The chemical structure, mechanism of action, administration routes, absorption, bioactivation, metabolism, distribution, excretion, causes of resistant states, and toxicity are given.

The last chapter briefly describes how new drugs are established as antineoplastic agents in animal models. Thirteen new drugs are discussed that are currently in human clinical trials, potent in animal screens, or unique in structure as an approach to drug design. This chapter also includes a treatment of biological markers of neoplastic cells, *e.g.*, antigens or enzymes, which is more appropriately included in an earlier chapter.

There are several weaknesses of the book as a general text in academic instruction. There is no discussion of structure–activity relationships or the reasons some agents are restricted from use in this country. Only a limited conceptual discussion of immunotherapy agents and their uses in neoplastic therapy and the use of chemotherapy prior to and post-surgery and/or radiation is presented. Neither percentages of response in the clinic to a specific agent for a given tumor type nor the percentage of relapses from therapy is delineated in the text. Furthermore, no differentiation is made between singular and combination therapy in the discussion of the uses of an agent.

The primary emphasis of this book is on the mechanisms of action as seen from the viewpoint of both biochemistry and molecular biology. Few texts have achieved such a complete description of all major agents.

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Index of Antibiotics from Actinomycetes, Vol. 11. Edited by HAMAO UMEZAWA. University Park Press, 233 E. Redwood St., Baltimore, MD 21202. 1979. 1466 pp. 18 × 23 cm. Price $97.50.

This update of a 1966 index lists the antibiotics produced by Actinomycetes reported mainly between 1966 and 1976. Chapter I lists generic names, common names, trivial names, and selected trade names, including those from the previous volume, in alphabetical order followed by those antibiotics designated by letter and numerical arrangement. The group to which the antibiotic belongs and its synonyms are given along with a page reference to an entry in the previous or present volume.

Chapter II gives data on the antibiotics. A typical compound entry includes the antibiotic group, synonyms and similar compounds, molecular weight and formula, structure, isolation, physical properties such as melting point and solubility, elemental analysis, UV characteristics, IR spectrum, activity, LD_{50} value, and literature references.

Staff Review

Analytical Profiles of Drug Substances, Vol. 8. Edited by KLAUS FLOREY. Academic, 111 Fifth Ave., New York, NY 10003. 1979. 558 pp. 15.5 × 23.5 cm.

This ongoing series is concerned with reporting supplemental information on drug substances that are listed in the official compendia but for which the compendia do not provide detailed physical or chemical data, methods of synthesis, or pathways of physical or biological degradation and metabolism.

Volume 8 contains individual monographs for the following drugs: aspirin, bromocriptine methanesulphonate, calcitrol, chlortetracycline hydrochloride, dobutamine hydrochloride, erythromycin, gramicidin, griseofulvin, halcinonide, hydralazine hydrochloride, calcium leucovorin, methimazole, nalidixic acid, neomycin, pseudoephedrine hydrochloride, triprolidine hydrochloride, and sodium valproate and valproic acid. The monographs contain some or all of the general headings such as introductory information (*e.g.*, history, appearance, and odor), physicochemical properties (*e.g.*, elemental analysis, spectra, crystal properties, solubility, and partition coefficients), synthesis, stability and degradation, biopharmaceutics (*e.g.*, pharmacokinetics and metabolism), toxicology, analytical methods, and literature references. Most of the monographs seem to have surveyed the drug literature through 1977 or 1978. The spectra and other analytical curves in the book have been reproduced in a clear and uncluttered fashion.

The entire series should be available in libraries of drug firms, FDA laboratories, toxicology laboratories, and schools of medicine and pharmacy. The volumes are not organized for use as textbooks in courses such

as drug analysis or pharmaceutics, although the information contained in each volume can be used as reference material.

The volumes are highly recommended to any scientist who is actively involved in drug research and development.

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Handbook of U.S. Colorants for Foods, Drugs, and Cosmetics. By DANIEL M. MARMION. Wiley-Interscience, One Wiley Drive, Somerset, NJ 08873. 1979. 350 pp. 13.5 × 21 cm.

The purpose of this book is to give a general survey of the colorants used in the United States in foods, drugs, and cosmetics. The author divided his book into three approximately equal parts. The first one offers a concise, well-written summary of the regulations related to coloring agents. It deals with the permanent and temporary listing of the colorants and sums up their properties, specifications, permitted uses, and limitations.

The second part of the book is a useful survey of the qualitative and quantitative analytical procedures applied for the colorants and their impurities. The author describes a wide range of techniques such as column, paper, and thin-layer chromatography, thermal analytical methods [differential thermal analysis (DTA) and differential scanning calorimetry (DSC)], spectrophotometry, IR spectrometry, and NMR spectroscopy. Model spectra and thermograms help the reader to understand the interpretation of the plotted data. The selected examples are presented in simple, clear language with good diagrams where needed, and they can be followed easily by chemists or technicians with appropriate training in analytical laboratory techniques. A reasonably up-to-date bibliography in each chapter assists those who desire more theoretical background or technical details.

The last section of the book basically is an extended biography, with ample comments by the author, on the analysis of colorant mixtures and commercial products such as beverages, cosmetics, drugs, and meat. These chapters, of course, were not intended to cover every possible product or application; nevertheless, the selection is a good starting point for the analyst who has to solve problems in the analysis of color additives.

In summary, this book is a first in this area. While the scope is restricted to color additives used in the United States, the book also may help professionals in other countries who are manufacturing, controlling, or using colorants.

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CRC Handbook Series in Clinical Laboratory Science, Section B: Toxicology, Vol. 1. Edited by DAVID SELIGSON and IRVING SUNSHINE. CRC Press, 2255 Palm Beach Lakes Blvd., West Palm Beach, FL 33409. 1978. 414 pp. 19 × 26 cm. Price $54.95 ($62.95 outside the United States).

The preface states that "in the last few years, there has been a flood of scientific articles dealing with use and misuse of chemical agents. From this surfeit has come a plethora of data which need to be at the fingertips of many scientists." This volume is an attempt to fill that need.

The book consists of five chapters. The first and major chapter encompasses slightly over 300 pages or 75% of the book. This chapter is a detailed presentation of the chromatographic separation of drugs and chemicals. It is divided into several subsections including a basic introduction to chromatography, a presentation of GC, a presentation of TLC, and a final section on high-pressure liquid chromatography (HPLC). These sections include extensive tables on the methodology to be employed to separate hundreds of chemicals of interest to the analytical toxicologist. These tables include listings of numerous solvent systems, which are frequently indexed according to their R_f values. The section on HPLC is the least extensive of the sections on chromatography but is still a valuable introduction to the technology.

The second major chapter is on the immunoassay of drugs and includes a brief description of the development of radioimmunoassay. This chapter lists 70 drugs that can be quantitated by this technique and includes over 400 references.

The third chapter has microcrystalline tests for approximately 250 drugs and chemicals with references and explanations for each particular test.

The fourth chapter is a tabulation of solubilities of numerous antibiotics arranged in two tables. One table gives the solubility of 76 antibiotics in 24 solvents at 28°. The second table includes 53 additional antibiotics and their solubilities at 21° in 24 solvents.

The last chapter is a tabulation of approximately 600 chemicals arranged in ascending order of their melting points.

In summary, as stated in the preface, this book is a compilation of a large number of tables dealing with the separation and identification of toxic chemicals. The one drawback is that it takes a fair amount of time to become familiar with its organization since the tables frequently are extremely long. However, this book should be valuable to individuals involved with identifying chemicals in biological systems.

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Sustained and Controlled Release Drug Delivery Systems, Vol. 6. Edited by JOSEPH R. ROBINSON. Dekker, 270 Madison Ave., New York, NY 10016. 1978. 773 pp. 15 × 23 cm. Price $59.75.

The book starts with a standard overview of controlled-release delivery systems, but the inclusion of the role of disease states and of circadian rhythm makes the chapter stimulating. Chapter 2 also gives standard material with a brief discussion of liposomes. Reference 200 in this chapter is cited incorrectly. Salicylate, not aspirin, has a biological half-life of 6 hr. Chapters 3 and 4 discuss physical methods of obtaining a sustained-release drug delivery system.

Chapter 5, as written, seems totally irrelevant to the rest of the book and should have been omitted. Chapters 6 and 7 give interesting accounts of the prodrug and biomedical engineering approach. Chapters 8 and 9 give the classical pharmacokinetic picture of sustained-release systems.

In general, the book provides a current and comprehensive picture of the sustained-release product area and is recommended to anyone interested in understanding the principles, technologies, and applications of controlled-release drug delivery systems.

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Microcapsule Processing and Technology. By ASAJI KONDO. Edited and revised by J. WADE VAN VALKENBURG. Dekker, 270 Madison Ave., New York, NY 10016. 1979. 182 pp. Price $22.50.

This hard-bound book represents an edited English revision of the original text published in Japanese by Asaji Kondo in 1970. The first four chapters provide an in-depth discussion into the history, general principles, and applications of microencapsulation. The remaining 14 chapters examine various methods of preparing microcapsules. In all cases, the author attempted to simplify each system, with detailed explanations of the various procedures employed to manufacture microcapsules. Schematic diagrams, tables, and scanning electron micrographs are scattered liberally throughout the text and adequately illustrate the concepts under discussion. The bulk of the book is devoted to explana-