problems such as drug degradation, microbiological growth (2), protein dilution (3), and lipolysis (4).

5. When spiking the buffer side is desirable, establish the time to equilibrium for the system with the smallest expected $\alpha$ value. The smallest $\alpha$ values do not always occur with healthy adult plasma. For example, the interaction of cationic drugs with $\alpha_1$-acid glycoprotein increased in certain disease states and under various stress conditions (5, 6). When spiking plasma under these conditions, the apparent $\alpha$ value would be smaller than the true equilibrium value, whereas the opposite would occur when spiking the buffer side.

(1) S. Øie and T. W. Guentert, *J. Pharm. Sci.*, **71**, 127 (1982).
(2) T. W. Guentert and S. Øie, *ibid.*, **71**, 325 (1982).
(3) T. Tozer, Abstracts of the Sidney Riegelman Memorial Symposium, San Francisco, Calif., April 1982.
(4) K. M. Giacomini, S. E. Swezey, J. C. Giacomini, and T. F. Blaschke, *Life Sci.*, **27**, 771 (1980).
(5) K. M. Piafsky, O. Borgå, I. Odar-Cederlöf, C. Johansson, and F. Sjögvist, *N. Engl. J. Med.*, **299**, 1435 (1978).
(6) D. J. Edwards, D. Lalka, F. Cerra, and R. L. Slaughter, *Clin. Pharmacol. Ther.*, **31**, 62 (1982).

*Patrick J. McNamara*[x]
*Joseph B. Bogardus*
College of Pharmacy
University of Kentucky
Lexington, KY 40536-0053

Received March 17, 1982.
Accepted for publication May 24, 1982.

# BOOKS

## REVIEWS

**The Peptides. Analysis, Synthesis, Biology. Vol. 4.** Edited by ERHARD GROSS and JOHANNES MEIENHOFFER. Academic, 111 Fifth Ave., New York, NY 10017. 1981. 309 pp. 15 × 23 cm.

The first three volumes of *The Peptides* were devoted to the methodology concerning the synthesis of peptides. The fourth volume is the first of several volumes planned, according to the editors, dealing with the analytical aspects of peptides. The fourth volume eminently succeeds in reaching the high standards set for it by its predecessors.

The six chapters are divided evenly among the physical and chemical methods for peptide–protein-structure determination. Of those concerned with the physical methods, the first two focus on the crystal structure analysis by X-ray studies. In the first chapter, I. L. Karle discusses the crystal structures of linear and cyclic peptides containing 2 to 15 peptide units. Several useful generalizations are mentioned; for example, "4 → 1 H-bonds begin to appear in cyclic hexapeptides" and "the possibility for several different conformations assumed by the same compound arises starting with the cyclic heptapeptides." The author has made liberal use of tables and figures, which also list pertinent references.

J. Gunning and T. Blundell present in Chapter 2 a crystal structure analysis of the larger peptide hormones. The crystal structures of insulin (A-chain, 21 residues; B-chain, 30 residues), glucagon (29 residues), and the pancreatic polypeptide (36 residues) have been determined. On the basis of the known homology with the amino acid sequence of insulin, the structures of proinsulin and relaxin have been proposed and are discussed.

The chiroptical method for the determination of the absolute configuration of $\alpha$-amino acids and small peptides is the topic of Chapter 3 by V. Toome and M. Weigle. The chiroptical properties of both the free $\alpha$-amino acids and of the free oligopeptides, as well as of their metal complexes and chromophoric derivatives, are discussed.

In the fourth chapter, S. Stein describes the technique of peptide and protein-analysis at the picomole level employing HPLC and fluorescence spectrophotometry. The combination of HPLC and fluorescence detection raises the possibility of determination of peptides and proteins in tissues and organs of individual animals. This combination of techniques has also been employed for the determination of the amino acid sequence.

Chapter 5, by J. R. Benson, P. C. Louie, and R. A. Bradshaw, deals with the single-column amino acid analysis of peptides. For the purpose of discussion, the authors have divided the amino acids into four categories according to whether they are (*a*) normally found in proteins, (*b*) formed *in vivo* from the first group by post- or cotranslation, (*c*) formed by chemical modification from Group 1, or (*d*) nonprotein amino acids. Several protocols are given for the separation of these amino acids.

R. A. Laursen in Chapter 6 probes in exquisite detail the solid-phase sequencing technique, which would help overcome problems (such as overlap, increased-background, amino-terminal blocking) experienced with the Edman method.

Both the editors and the authors are to be congratulated for the excellence of this volume, which is a must for those concerned with any and all aspects of proteins and peptides, and for those contemplating a start in this area of research.

*Received by* Amrit Kapoor
*College of Pharmacy*
*St. John's University*
*Jamaica, NY 11439*

---

**Medicinal Chemistry VI (Proceedings of the 6th International Symposium on Medicinal Chemistry).** Edited by M. A. SIMKINS. Wiley, 605 Third Ave., New York, NY 10016. 1979. 477 pp. 16 × 24 cm. Price $94.00.

*Medicinal Chemistry VI* is a collection of papers presented at the 6th Internation Symposium on Medicinal Chemistry held in Brighton, England in 1978. They were chosen for this volume by the members of the Society for Drug Research and cover a wide range of interests, many being a blend of chemistry, biology, biochemistry, and medicine. The majority of the papers are based on disease states while others discuss theoretical concepts relating to substrate–receptor interactions or predicting activity of molecules based solely on structure.

This volume is divided into plenary lectures and symposium papers. The plenary lectures are given by Dr. Linus Pauling, who speaks of "orthomolecular medicine," a new concept in treating diseases, which he defines as the achievement and preservation of the best of health and the prevention and treatment of disease by using substances (right molecules in the right amounts) that are normally present in the body; professor Sir John Cornforth provides the reader with a greater awareness of

structural characteristics of enzymes; and Sir Arnold Burgen along with N. J. M. Birdsall and E. C. Hume introduce the reader to modern techniques which provide a better understanding of receptors.

In the foreword J. F. Cavalla and M. A. Simkin offer an interesting proposal about what it takes for a medicinal chemist to become successful. They propose that the medicinal chemist must associate himself/herself with a biologist, and for further success, must acquire a working knowledge of basic pharmacology in the area in which he/she is working, coupled with a detailed awareness of structure–activity relationships; then, they say, the medicinal chemist should succeed in discovering new and better medicines. This reviewer finds himself in agreement with their offer, except that I would propose the use of the adjective "molecular" before biologist (and pharmacologist) to describe the needs of medicinal chemists today. Much more knowledge at the molecular level is needed, and it is a pleasure to find the theoretical papers of this volume fulfilling this need.

Overall, the volume is quite good and makes a worthwhile contribution to medicinal chemistry and allied fields. The authors are experts in their field and their papers are well-written, containing sufficient references. The organization of this book is not unlike most proceedings of meetings and symposia in which there is the absence of major sections and chapter numbers.

The greatest use of this volume will be by graduate students and researchers in the areas for which this volume was intended: medicinal chemistry, pharmacology (pharmacokinetics), and medicine. It also can be recommended as an important source for new ideas and for use in many graduate courses.

*Reviewed* by Robert A. Magarian
*Department of Medicinal Chemistry*
*College of Pharmacy*
*Health Sciences Center*
*University of Oklahoma*
*Oklahoma City, OK 73190*

---

**Textbook of Adverse Drug Reactions. 2nd ed.** Edited by D. M. DAVIES. Oxford University Press. 200 Madison Ave., New York, NY 10016. 1981. 693 pp. 18 × 25 cm. Price $67.50.

This second edition is an expansion of the first that originally filled the void that had existed for an authoritative reference source for all major and minor adverse drug reactions. It is the work of 36 contributors authoring 30 chapters and 4 appendixes. The newest chapter discusses disorders of temperature regulation brought upon by disease, hypersensitivity, and drugs. The remaining chapters have been slightly rewritten with the addition of material and updated references.

This reference text makes it clear that perhaps 10% of patients suffer from physicians' efforts to treat them and that iatrogenic diseases and side-effects are certain consequences to drug therapy. Therefore, the public should be made aware that risk in any treatment is always there, and particularly so when new drugs and regimens come along that have not been used extensively in large numbers of patients. In addition, the problem of risk *versus* benefit is compounded when there is excessive or even irresponsible prescribing.

Most chapters use a classification of adverse drug reactions that divides them into two types. The first, Type A, are augmented effects but predictable on their known pharmacologic action and affect many people but cause few deaths. The second, Type B, are bizarre effects, not predictable from their known pharmacologic action when administered in regular doses to patients with average metabolic processes. These types of adverse drug reactions have a low incidence but, when they occur, often are lethal. It is also pointed out that some adverse drug reactions must be tolerated, because for a drug to work, it always shows toxicity at some dosage level. So, some reactions to medications are a necessary cross to bear in order to remedy the myriad of maladies that affect mankind.

This edition maintains the clarity of the earlier edition. Its first appendix lists the drugs alphabetically with the most outstanding possible untoward effects and includes the pages on which they are discussed. This makes it a quick reference source without having to resort to the index, which often leads to delay.

This book is recommended for individuals requiring the most up-to-date information on adverse drug reactions. Specifically, hospital pharmacists; clinical pharmacologists; internists; medical clinics; and all pharmacy, medical, and dental libraries.

*Reviewed by* Ronald F. Gautieri
*Department of Pharmacology*
*Temple University*
*School of Pharmacy*
*Philadelphia, PA 19140*

---

**Tableting Specifications Manual.** American Pharmaceutical Association, Washington, DC 20037. 1981. 39 pp. 20 × 28 cm (three-holed punch, loose-leaf format). Price $42.00 ($28.00 for APhA members).

This extensively updated and revised version of the original (1971) book, *IPT Standard Specifications for Tableting Tools*, contains the latest information available on tablet tooling and available equipment. *The Tableting Specifications Manual* is a new book prepared by the Industrial Pharmaceutical Technology Section of the American Pharmaceutical Association's Academy of Pharmaceutical Sciences with the cooperation of tableting tool suppliers.

The manual supplies the standards needed by both drug manufacturers and tool suppliers: Drug manufacturers will find the publication useful in preventing premature tool wear and costly work stoppages, while improving tablet quality and production rate. Pharmaceutical tool suppliers will benefit from the reduced lead times and manufacturing costs possible and the smaller inventory that standardization allows.

The manual also includes: a set of dimensional specifications and tolerances for rotary tableting machines in both graphic and tabular forms; a tool interchangeability chart with the five most commonly used tablet machines in the United States; a list of tool manufacturers and suppliers; and additional information on the bisection bar.

With numerous tables and IPT drawings and a loose-leaf, shrink-wrapped format for greater convenience and ease of updating, this manual will be a useful resource for those needing the most up-to-date information on tableting.

*Staff Review*

---

## NOTICES

*Adolescent Marijuana Abusers and Their Families. (NIDA Research 40—9/81).* By HERBERT HENDIN, ANN POLLINGER, RICHARD ULMAN, and ARTHUR C. CARR. National Institute on Drug Abuse, Division of Research, 5600 Fishers Lane, Rockville, MD 20857.

*Amino Acids, Peptides and Proteins. Vol. 12.* Senior Reporter, R. C. SHEPPARD. Royal Society of Chemistry, Burlington House, London, WIV OBN, England. 1982. 634 pp. 13 × 22 cm. Price $153.00.

*The Aminoglycosides: Microbiology, Clinical Use and Toxicology. (Kindley Disease Series, Vol. 2).* Edited by ANDREW WHELTON and HAROLD C. NEU. Dekker, 270 Madison Ave., New York, NY 10016. 1982. 640 pp. 17 × 26 cm. Price $75.00.

*Assessment of Public Health and Social Problems Associated with the Use of Psychotropic Drugs.* (Report of the WHO Expert Committee on Implementation of the Convention on Psychotropic Substances 1971). World Health Organization, 1211 Geneva 27, Switzerland. 1981. 54 pp. 14 × 20 cm. Price Sw. fr. 4.

*Bailey's Industrial Oil and Fat Products. Vol. 2. 4th Ed.* Edited by DANIEL SWERN. By ROBERT R. ALLEN, MARVIN W. FORMO, R. G. KRISHNAMURTHY, G. N. McDERMOTT, FRANK A. NORRIS, and NORMAL O. V. SONNTAG. Wiley, 605 Third Ave., New York, NY 10016. 1982. 603 pp. 15 × 23 cm.

*Behavioral Pharmacology of Human Drug Dependence. (NIDA Research Monograph 37, 7/81).* Edited by TRAVIS THOMPSON and