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BOOKS

REVIEWS

Essentials of Toxicology, 3rd Ed. By TED A. LOOMIS. Lea & Febiger, 600 Washington Square, Philadelphia, PA 19106. 1978. 245 pp. 15 x 24 cm. Price \$12.50.

The newest edition of this basic toxicology text differs little from the previous edition in both form and content. The type is slightly larger and thus easier to read. Many chapters have few, if any, alterations. Some of the additional or revised material to be found includes: updated statistics on poisoning and mortality from chemical exposure; an amplified section on the influence of the microsomal P-450 enzyme system on chemical toxicity; a table of genetically based alterations which account for individual variations in response to drugs and chemicals; a section differentiating the concepts of biological half-life of a compound *versus* "half-life for toxicity," using as an example fatty deposition in liver after exposure to ethanol; and a brief description of behavioral toxicity studies in animals.

A table on page 60 lists formaldehyde as the toxic metabolite of methanol, although recently published data indicated that formate, and not formaldehyde, is responsible for ocular toxicity in monkeys and presumably in humans.

Each chapter is adequately referenced to provide the interested student with sources of more detailed information. This book cannot be compared to other texts such as Casarett and Doull's "Toxicology, The Basic Science of Poisons" (Macmillan) or portions of Goldstein, Aronow, and Kalman's "Principles of Drug Action" (Wiley), both of which deal more extensively with toxicologic subject matter. However, "Essentials of Toxicology" provides a well-organized introductory approach to toxicology and can serve a useful purpose in an orientation course to this highly diversified science.

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Blood Drugs and Other Analytical Challenges (in Methodological Surveys in Biochemistry), Vol. 7. Edited by E. REID. Ellis Horwood Ltd., Market Cross House, 1 Cooper Street, Chichester, Sussex, England (U.S. distributor: Halstead Press, a division of John Wiley & Sons, 605 Third Avenue, New York, NY 10016). 1978. 355 pp. 14.8 x 22.6 cm. Price \$47.50.

This volume (Volume 7) compliments its predecessor (Volume 5) and is based on the papers presented at Bioanalytical Forum held at the University of Surrey in 1977. The book provides practical information of value to the bioanalytical researcher and attempts to present methodological rationale rather than mere recipes. The first four chapters are subdivided into sections, and the fifth chapter represents the notes, comments, and discussion in the form of questions and answers on the preceding four chapters.

The first chapter, "The Framework," sets out the general philosophy

for development of analytical methods, discusses quality control and sources of errors in assays, and presents an overview on analytical method evaluation. The second chapter describes aspects of gas chromatography (GLC) with problems associated with capillary and packed columns and detectors (AFID and ECD). Their applications in drug analysis as well as derivatization procedures are discussed also.

In the third chapter, mass spectrometric methods for drug and endogenous compound analyses in biological fluids are presented, with suitable examples, together with considerations concerning accuracy and precision. Discussions of more recent approaches in this field such as negative-ion mass spectrometry and HPLC—mass spectrometry are particularly valuable.

The fourth chapter discusses the applications of HPLC to drug analysis. Interesting and useful discussions with relevant examples are provided on ion-pair HPLC of acid and basic drugs, metabolites, and endogenous compounds. Various aspects of HPLC such as electrochemical detection, sample handling, chemical derivatization including fluorescence labeling, and prechromatographic methods in biomedical trace analysis are presented with useful comments and suitable examples.

The analytical case histories on the assays of bendrofluzide, biperidin, and labetalol and its metabolites are interesting and informative. The notes and comments in the fifth chapter along with analytical case histories of drugs including metoclopramide, procetofenic acid, tienilic acid, practolol, amitriptyline, nortriptyline and benzodiazepines make particularly enjoyable reading for the analyst.

In summary, the reviewer found this book to be a well-balanced blend of the theoretical and practical aspects of present techniques and their potential applications of trace drug analysis in biological fluids.

The book is effective in its scope, variety of experiments, and presentation style. It is well planned, emphasizes the rationale of developing successful analytical methods for drug analysis by chromatographic techniques, and should be useful to analytical chemists working with biological fluids.

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Lange's Handbook of Chemistry, Twelfth Edition. Edited by JOHN A. DEAN. McGraw-Hill, New York, NY 10020. 1978. 1470 pp. 15 x 23 cm. Price \$28.50.

This new edition of *Lange's Handbook of Chemistry* is a valuable updating of a classic one-volume reference.

A major improvement on the previous edition is the revised section on thermodynamics. The new section reflects currently recommended values for heats of formation and Gibbs energies of formation, entropies, heat capacities at five different temperatures, and heats of melting, vaporization, and sublimation for 2400 inorganic and 1500 organic compounds.