

free of these interferences and only measures the "true" creatinine.

The boiling alkaline picrate method has been claimed to measure the true creatinine (5). The results of the present study do not support the claim. In a previous study (3), the "apparent" recovery of the spiked creatinine in plasma was only 81% and, after heat treatment, certain components in plasma were thought to suppress the creatinine-picrate complex reaction or to interfere with the color formation. Thus, the reason for the higher creatinine values by the boiling alkaline picrate method remains to be determined.

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Win L. Chiou<sup>x</sup>  
Geoffrey W. Peng  
M. A. F. Gadalla

Clinical Pharmacokinetics Laboratory  
College of Pharmacy  
University of Illinois at the Medical Center  
Chicago, IL 60612

Samuel T. Nerenberg

Department of Pathology  
College of Medicine  
University of Illinois at the Medical Center  
Chicago, IL 60612

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## BOOKS

### REVIEWS

**Practical Clinical Pharmacy.** Edited by CHARLES A. WALKER and JOHN R. FOXX. Stratton, 381 Park Avenue South, New York, NY 10016. 1977. x + 142 pp. 15 × 23 cm. Price \$16.95.

The reader approaches a book called "Practical Clinical Pharmacy" with expectations of gaining insight into techniques of monitoring drug therapy, strategies for improving pharmacist-prescriber and pharmacist-patient communications, and data on the clinical pharmacology and therapeutic use of drugs. What the reader receives in lieu of this critical information is a collection of philosophical discussions on the role and potential for clinical pharmacy practice.

The book contains 14 presentations delivered at the "First Annual Symposium on a Clinical Pharmacy Program" sponsored by the School of Pharmacy at Florida A & M University; the date of the symposium is not disclosed. The presentations are organized under three themes: (a) the clinical curricula, (b) the role and liabilities of a clinical pharmacist, and (c) other health professionals' view of clinical pharmacy. The most informative discussions are by Roger Palmer on "The Role of Clinical Pharmacology and Pharmacokinetics in a Clinical Pharmacy Program" and by Charles Walker and Karam Soliman on "The Clinical Pharmacist's Role in Research and Therapeutics."

Perhaps the book is an appropriate addition to health professions libraries. It is an unlikely choice for personal purchase.

Reviewed by Gerald E. Schumacher  
College of Pharmacy and Allied Health  
Professions  
Wayne State University  
Detroit, MI 48202

**Design of Biopharmaceutical Properties through Prodrugs and Analogs.** Edited by EDWARD B. ROCHE. American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington, DC 20037. 1977. 455 pp. 16 × 23 cm. Price \$20.00, \$13.00 Member Rate.

This series of 15 papers was presented at Orlando in November 1976 and published less than 1 year later! Congratulations to the editor, authors, and APHA.

Papers of particular interest are "Structural Aspects of Selective Distribution" by Roche with 34 references, which provides a good background for "Structural Effects of Partitioning Behavior of Drugs" by Dunn (13 references), and "Correlation Analysis in the Design of Pharmacodynamic Properties of Drugs" by Hansch (12 references). Also of special interest are "Alteration of Pharmacokinetics through Structural

Modification" by Notari (34 references), "Novel Approaches for the Design of Membrane Transport Properties of Drugs" by Bodor (38 references), and "Physical Model Approach to the Design of Drugs with Improved Intestinal Absorption" by Ho, Park, Morozowich, and W. Higuchi. The latter, with 91 pages (89 references), is well worth the price of the book. It should be of particular value to students.

"The Prediction of Chemical Liability through Substituent Effects" by Charton (68 references) contains a wealth of tabulated data and constants. In "Alteration of Drug Metabolism through Structural Modification" by Nelson is a very useful list of 112 pertinent references. Finally, Morozowich, Cho, and Kezdy put it all together in "Application of Physical Organic Principles to Prodrug Design" (93 references).

Considering the applied nature of this approach to designing useful agents, the editor might have given greater emphasis to the practical consideration that such modifications result in new compounds in the sense of requiring extensive and costly safety studies and provide no short cut in this critical area of testing. Also, it would have been helpful for those interested in this general approach to have at least listed the related approaches of molecular complexes, alternate salts, solid solutions, liposomal transport, etc., as means of achieving useful drug modification.

Reviewed by Henry C. Caldwell  
Research and Development  
Smith Kline & French Laboratories  
Philadelphia, PA 19101

**Aspirin and Related Drugs: Their Actions and Uses.** Edited by K. D. RAINSFORD, K. BRUNE, and M. W. WHITEHOUSE. Birkhauser Verlag, P. O. Box 34, CH-4010 Basel, Switzerland. 1977. 118 pp. 17 × 24 cm.

The 11 papers and introductory comments contained in this volume comprise the Symposium on Aspirin and Related Drugs held in conjunction with the Physiology Section, 47th Congress of the Australian and New Zealand Association for the Advancement of Science, on May 14, 1976 at the University of Tasmania, Hobart, Australia. The compilation of these papers provides a useful overview of the current research trends in Australia in the areas of salicylate pharmacology and toxicology.

While this book is not a comprehensive review of the pharmacology of nonsteroidal anti-inflammatory agents, it does provide insight into some current theories of anti-inflammatory and gastrotoxic mechanisms of action. Theories of anti-inflammatory modes of action discussed in this book include both the inhibition and stimulation of microsomal

prostaglandin synthetase systems and their subsequent effects on smooth muscle, and the nonclassical concept of unspecific interference with physiological membrane function, similar to the barbiturates, resulting in both anti-inflammatory response and GI irritation. The latter theory accounts for the fact that all attempts, to date, to develop acidic non-steroidal anti-inflammatory agents without gastrototoxicity have met with limited success.

Four chapters are devoted to studies on GI side effects of aspirin and related drugs, with emphasis on postulated biochemical mechanisms resulting in subsequent physiological damage. Additional findings are presented concerning the pharmacokinetics of salicylates in rheumatoid arthritis; drug interactions; naturally occurring salicylates as alternatives to aspirin; and copper-salicylate complexes with enhanced anti-inflammatory potency.

As expected with any work by 12 different authors, the writing style is far from uniform; little effort was made to organize the varied papers into standard book form. However, pharmacologists interested in non-steroidal anti-inflammatory drug research will find this book a useful addition to their technical library.

*Reviewed by William P. Heilman  
Diamond Shamrock Corporation  
T. R. Evans Research Center  
Painesville, OH 44077*

#### **Cannabinoid Assays in Humans. NIDA Research Monograph 7.**

Edited by ROBERT E. WILLETTE. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1976. 120 pp. 21 × 27 cm. Price \$6.00. Available from National Technical Information Service, Springfield, VA 22161.

This seventh monograph of the continuing series on drug abuse research describes recent developments in the determination of the levels of cannabinoids in the human body. The monograph consists of 12 papers dealing with three major methods of cannabinoid assay: immunoassay techniques, chromatographic (gas-liquid and high-pressure liquid) methods, and mass spectrometric techniques.

This monograph is highly recommended for a wide range of marijuana researchers. The techniques described would be useful for marijuana screening procedures, forensic toxicology, and pharmacokinetic and pharmacological research.

*Reviewed by David J. Slatkin  
University of Pittsburgh  
School of Pharmacy  
Pittsburgh, PA 15261*

#### **Testing and Screening for Drugs of Abuse: Techniques, Issues and Clinical Implications.** By G. G. De ANGELIS. Dekker, 270 Madison Ave., New York, NY 10016, 1976. 152 pp. 15 × 23 cm. Price \$17.50.

Urine analysis has become an integral part of our society. Its results affect the private sector as well as the Governmental sector, but its greatest impact is in the treatment centers for drug abuse. "Testing and Screening for Drugs of Abuse" takes a hard look at the issues and clinical implications of urine analysis. The chemical techniques are superficially discussed so that the nonscientific person is able to obtain a fair understanding of the methodologies used in drug screening laboratories.

The book is divided into three main sections. The first section deals with general considerations, such as the rationale behind the choice of urine over blood as the body fluid for drug screening. Other nonchemical tests such as the Himmelsbach test and the pupillary test are discussed and compared to urine analysis. The author also discusses the use of diagnostic tests such as serum amylase, serum glutamic-oxaloacetic transaminase, 17-ketosteroids, serum uric acid, blood sugar, and cholesterol for determining whether or not a drug abuse problem exists. The author suggests that this type of testing would be much more effective in determining whether a patient is a beginner or chronic drug user.

The second section deals with the analytical methodologies employed by drug screening laboratories. Techniques such as TLC, spectrophotofluorometry, GLC, and the immunoassays (FRAT, EMIT, RIA, and HI) are briefly discussed. These analytical methods are compared for

sensitivity, specificity, false positives, false negatives, productivity, and cost. The concepts of sensitivity, specificity, false positives, and false negatives are developed so that the nonscientific individual can follow the comparisons. Possible sources of analytical error are investigated, and methods of recognizing and correcting them are mentioned.

The third section deals with the clinical implications of urine screening. Problems related to the stigmatism of urine analysis with illegal behavior are revealed. Urine analysis scheduling is also discussed. The author refers to Goldstein and Brown who published a thorough analysis of testing schedules. The sociological effects of urine analysis are investigated. The author discusses various parallel studies involving treatment with and without urine screening. Based on the results of these studies, he evaluates the effects of urine screening and the manner in which urine screening data should be utilized. The idea of urine surveillance *versus* urine screening is also developed. Other important factors such as the client's rights, vocational screening, the role of the drug user in the testing program, and the community role are presented.

"Testing and Screening for Drugs of Abuse" is written with a non-scientific reader in mind. It translates technical language into simple terms, making the book valuable to program directors, clinicians, staff members, and any other nontechnical personnel. The problems associated with drug screening are accurately presented and possible solutions are suggested, thus making this book worthwhile reading for the technical staff as well. In my opinion, this book is a valuable reading experience for students and personnel involved in drug treatment programs irrespective of their position.

*Reviewed by Thomas Catalano  
Scientific Research Division  
New York City Police Department  
New York, NY 10003*

#### **NOTICES**

*Handbook of Injectable Drugs.* By LAWRENCE A. TRISSEL. American Society of Hospital Pharmacists, 4630 Montgomery Ave., Washington, DC 20014. 1977. 431 pp. 15 × 23 cm. Price \$15.00.

*Narcotic Antagonists: Naltrexone Progress Report. NIDA Research Monograph 9.* Edited by DEMETRIOS JULIUS and PIERRE RENAUULT. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1976. 181 pp. 20 × 27 cm. Price \$7.50. Available from National Technical Information Service, Springfield, VA 22161.

*Rx: 3X/Week LAAM: Alternative to Methadone. NIDA Research Monograph 8.* Edited by JACK D. BLAINE and PIERRE F. RENAUULT. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1976. 127 pp. 20 × 27 cm. Price \$6.00. Available from National Technical Information Service, Springfield, VA 22161.

*Effects of Labeling the "Drug-Abuser": An Inquiry. NIDA Research Monograph 6.* By JAY R. WILLIAMS. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1976. 39 pp. 20 × 27 cm. Price \$1.05. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

*Young Men and Drugs—A Nationwide Survey. NIDA Research Monograph 5.* By JOHN A. O'DONNELL, HARWIN L. VOSS, RICHARD R. CLAYTON, GERALD T. SLATIN, and ROBIN G. W. ROOM. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1976. 144 pp. 20 × 27 cm. Price \$2.25. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

*Aminergic Hypotheses of Behavior: Reality Or Cliche? NIDA Research Monograph 3.* Edited by BRUCE KENNETH BERNARD. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1975. 148 pp. 20 × 27 cm. Price \$2.25. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

*Operational Definitions in Socio-Behavioral Drug Use Research 1975. NIDA Research Monograph 2.* Edited by JACK ELINSON and DAVID NURCO. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1975. 58 pp. 20 × 27 cm. Price \$2.50. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.