

## REVIEWS

**Instrumental Applications in Forensic Drug Chemistry: Proceedings of the International Symposium, May 29-30, 1978.** Edited by MICHAEL KLEIN, ALICE V. KRUEGEL, and STANLEY P. SOBOL. U.S. Government Printing Office (stock number 027-000-00770-8), Washington, D.C. Soft cover, 20 × 26 cm.

This volume records the papers presented at an international symposium hosted by the Drug Enforcement Administration in Arlington, Va. on May 29 and 30, 1978. This symposium brought together international forensic scientists to highlight recent advances in instrumentation and methodology that have been applied to forensic drug analysis. The volume contains topics of interest to forensic scientists and clinical analysts. Twenty-three papers are included in four areas: spectroscopy, computer applications, chromatographic advances, and special topics. Contributors include recognized experts in their respective fields.

In the spectroscopy section, a review (72 references) of mass spectrometry is presented, and specific papers address the use of stable isotopes for quantitation and the development of negative-ion mass spectrometry for forensic applications. Papers on Fourier transform IR and NMR applications complete this section. The computer applications section includes several papers on drug identification which emphasize spectra retrieval systems. Numerous general laboratory information systems used by various national and state government agencies also are described.

Chromatographic instrumentation, methodology, and specific drug analyses are discussed. One paper describes a direct liquid inlet interface for coupling a high-performance liquid chromatograph with a quadrupole mass spectrometer. An extensive review (73 references) is given on the application of derivatization techniques in forensic drug analysis. In addition, GLC profiling of drug seizures using selective detectors is described. Chromatographic techniques used by the forensic toxicologist also are discussed. The final section of the volume includes papers on drug reference standards, a review of immunoassay with a detailed bibliography (445 references), and papers on light microscopy and the scanning electron microscope.

This volume assimilates much useful information pertaining to drug analysis and captures the forensic perspective. An additional benefit is the list of symposium attendees, which provides many contacts for people working in this discipline.

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**Body Temperature: Regulation, Drug Effects, and Therapeutic Implications** (Modern Pharmacology-Toxicology Series, Vol. 16). Edited by PETER LOMAX and EDWARD SCHONBAUM. Dekker, 270 Madison Ave., New York, NY 10016. 1979. 680 pp. 16 × 24.5 cm. Price \$59.75.

This reference is the outcome of an awareness that the time was right for thorough consideration of the current understanding of the physiological mechanisms that affect body temperature and their modification by certain neuroregulators and several specific drug classes. It is the collective work of 40 contributors and contains 25 chapters with an added section on recent developments.

The introductory chapters lead the reader through an extensive historical development of thermoregulation from the first article published in 1797 up to 1940 when the hypothalamus was generally acknowledged as the center for thermoregulation in mammals including humans. This introduction is followed by six chapters concerning postulated neural models for neuroregulation, hypothalamic and extrathalamic thermoregulatory centers, heat production, heat transfer and loss, the effect of ions on body temperature, and the effect of drugs on thermoregulatory behavior. These chapters are followed by 12 chapters on specific body chemicals and drug classes and one chapter each on pyrexia, thermoregulation in the newborn, malignant hyperthermia, accidental hypo-

thermia, body temperature during general anesthesia, and clinical hypothermia.

Convincing evidence published during the last 20 years is cited for the existence of extrahypothalamic thermosensitive neurons throughout the central nervous system. In addition, the data presented show clearly that there is an interaction of certain nodal points in the spinal cord, medulla oblongata, midbrain-pons, and the hypothalamus in the very complex physiological maintenance of thermoregulation.

The material concerning the neurotransmitters serotonin, dopamine, norepinephrine, histamine, and acetylcholine is exhaustive and points out the varied hypothermic and hyperthermic responses observed among different species as well as in the same species and the variations observed when these agents are used *via* different administration routes and at different ambient temperatures. Specific sites and/or cells that appear to respond to these chemicals are well documented. The reader should be aware that the reference material is filled with not only the most recent research articles but also contains enough of the past literature to use as a guide for future research.

This book should be of value to anyone involved in thermoregulation, including clinicians and researchers in the pathophysiology or pharmacotherapeutics of fever.

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**The Alkaloids. Chemistry and Physiology. Vol. XVII.** Edited by R. H. F. MANSKE and R. G. A. RODRIGO. Academic, 111 Fifth Ave., New York, NY 10003. 1979. xx + 611 pp. 14 × 23 cm. Price \$55.00.

R. G. A. Rodrigo became coeditor of this classic series on alkaloids upon the death of the series' founder, Dr. R. M. F. Manske, who commissioned the reviews found in this volume. The high standards required by Dr. Manske are maintained in this excellent book.

S. W. Pelletier and N. V. Mody wrote the first chapter which covers work published since July 1968 dealing with the structure and synthesis of C<sub>19</sub>-diterpenoid alkaloids. One section gives references to the <sup>13</sup>CMR spectra of these alkaloids, and another section discusses some mass spectral fragmentation schemes since these two methods are invaluable in structural elucidation. Of particular interest is a catalog of 73 known C<sub>19</sub>-diterpenoid alkaloids with their correct structures, physical properties, plant sources, and key references.

Chapter 2, by M. F. Grundon, deals with quinoline alkaloids related to anthranilic acid (*o*-aminobenzoic acid) which were reviewed in Vol. IX. Since then, more than 70 new quinoline alkaloids have been isolated, and this review brings the alkaloid chemist up to date on their occurrence and structural determination. Syntheses for new quinolines and improvements in existing syntheses are presented. The quinolines covered include 4-methoxy-2-quinolones, 3-prenyl-2-quinolones and related tricyclics, furoquinolines, 1,1- and 1,2-dimethylallyl alkaloids, and 2-alkyl- and 2-aryl-4-quinolones.

In Chapter 3, G. A. Cordell reviews the monomeric *Aspidosperma* alkaloids. This chapter is organized especially well considering the vast quantity of material generated since Vol. IX. The isolation and structural elucidation of new alkaloids are presented in detail. Particularly helpful are two tables that summarize the isolation of new and previously known *Aspidosperma* alkaloids, giving their plant sources, physical data, and references. Cordell devotes a section to the chemistry of these alkaloids and then discusses the syntheses developed by various authors. The use of <sup>13</sup>CMR and X-ray crystallography for structural determination is covered, including a table of <sup>13</sup>CMR chemical shifts for selected *Aspidosperma* alkaloids. The chapter format facilitates access to selected information, which should make this review a favorite for those interested in *Aspidosperma* alkaloids.

The Papaveraceae alkaloids are reviewed in Chapter 4 by F. Santavy, who reviewed this group in Vol. XII. Alkaloids in this family are grouped by structure for the discussion of their structures, syntheses, biosyntheses,