

classical categories of psychotropic agents but has a positive effect on brain integrative mechanism without affecting limbic and reticular excitability; hence, it is assumed that functional telencephalic selectivity is involved, and on this basis piracetam is characterized as a "nootropic" agent because it affects noetic functions.

The topics on the central nervous system conclude with a discussion of a novel series of annelated benzodiazepines. Noticing that the imine function is not the principal site of metabolism of the benzodiazepines, it was rationalized that appropriate annelations might render the imine function more susceptible to metabolism and inactivation. Some of the compounds reported herein show interesting pharmacological properties.

Cardiovascular agents are reviewed from various standpoints: inhibitors of the renin-angiotensin system, new prospects in coronary theory,  $\beta$ -adrenergic antagonists, and central sites of action in the development of antihypertensive drugs.

The contribution of immunology to medicinal chemistry is the theme of the discussion of natural and synthetic immunostimulants related to the mycobacterial cell wall, immunopharmacology and immunotherapy of residual disease in cancer patients, and the biochemistry of thymic hormones.

Gerontology is surveyed in three articles. First, the pharmaceutical research aspects include illustrations of how biological aging can be studied experimentally and discussion of pharmaceutical aspects of aging based on age-associated deficiencies. Second, molecular and cellular mechanisms of aging of intercellular matrix are outlined. The third paper is organized on the basis of four categories: evidence that free radicals are involved in pathological processes occurring upon exposure to high oxidative stress, evidence that free radicals are involved in normal and abnormal cellular processes under conditions of normal oxidative stress, reactions of radicals expected to proceed *in vivo*, and speculation about the role of radical reactions in human aging and carcinogenesis.

The synthetic methodology included in this volume is another significant contribution to medicinal chemistry; *i.e.*, it emphasizes silyl enol ethers, the transformation of carboxylic acids to heterocycles, and new methods applied to the synthesis of natural products.

The round-table discussion of strategy in drug research is the final section. This discussion proved to be very fruitful because it included, among other topics: a manual method for applying the Hansch approach to drug design, correlation studies with antimycotics and fungicides of the azole group, and a strategy for the design of potent hormones. This section effectively concluded the symposium and provides an excellent finale to an excellent volume.

This reviewer recommends this book to every medicinal chemist and pharmacologist. The coverage of the topics noted is adequate and can serve as the basis for further research of the current literature.

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**Analytical Profiles of Drug Substances, Vol. 6.** Edited by KLAUS FLOREY *et al.* Academic, 111 Fifth Ave., New York, NY 10003. 1977. 16 x 23.5 cm. ix + 600 pp. Price \$27.50.

This book is the sixth (although erroneously referred to in the Preface as the fifth) in a series of monograph compilations under the sponsorship of the Pharmaceutical Analysis and Control Section of the APhA Academy of Pharmaceutical Sciences. The objective of this series is to provide, in a single source, information about drug substances not ordinarily included in the official compendia and which may not always be readily retrievable from the literature. The official compendia generally contain tests and specifications for drugs and drug products related to identity, purity, quality, and strength plus other information of greater value to the practitioner than to the pharmaceutical scientist.

In this series, each drug profile presents useful data in the following categories: description, physical properties, synthesis or method of manufacture, stability and degradation, metabolism and pharmacokinetics, analytical methods, and literature references. Included under physical properties are spectral data, melting characteristics, solubility data, crystal properties, and solution characteristics. Analytical methods are thoroughly reviewed and encompass colorimetry, spectrophotometry, fluorometry, titrimetry, chromatography, polarography, coulometry, and also microbiological methods where applicable. Identification tests and

elemental analyses are also included. Of particular significance are analytical methods applicable to the drug substance and its metabolites in body fluids.

As noted for the previous volumes, each drug profile is well organized and is presented in a systematic and uniform manner. Each profile is introduced by a table of contents. It would be helpful if each entry of the table of contents were page referenced. This table is followed in orderly sequence by each category covered for that particular drug. The monograph is concluded by a listing of quoted references which, in most cases, is extensive and comprehensive. As is true with the previous volumes of this series, this one is printed clearly and is replete with tables, figures, and graphical presentations. Space is used economically and to maximum advantage.

Volume 6 contains 17 drug profiles which brings to a total of 114 the number of drugs for which profiles are now available. An excellent format has been developed for the presentation of the "vital statistics" on drugs, and hopefully a pattern has been established for a continuous flow of monographs for drug substances currently in the marketplace, drugs in the process of development, and drugs yet to be discovered. Pharmaceutical scientists are reminded of the Editor's standing invitation for the contribution of monographs of drugs in which they have an interest. The continued success of this series will depend on such participation.

"Analytical Profiles" serves well as a companion volume to the official compendia and is an essential addition to the library of those engaged in pharmaceutical research.

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## NOTICES

*Findings of Drug Abuse Research. Vols. 1 and 2. NIDA Research Monograph 1.* National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1975. 20 x 27 cm. Price \$7.00, Vol. 1; \$5.05, Vol. 2. Available from Superintendent of Documents, U.S. Government of Printing Office, Washington, DC 20402.

*The Epidemiology of Drug Abuse: Current Issues. NIDA Research Monograph 10.* Edited by LOUISE G. RICHARDS and LOUISE B. BLEVENS. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1977. 259 pp. 15 x 24 cm. Price \$2.60.

*Cholesterol.* By JOHN R. SABINE. Dekker, 270 Madison Ave., New York, NY 10016. 1977. 489 pp. 15 x 23 cm. Price \$25.00.

*Immunology Of The Gut. Ciba Foundation Symposium 46 (new series).* Elsevier North-Holland, 52 Vanderbilt Ave., New York, NY 10017. 1977. 376 pp. 7 x 25 cm.

*Antifungal Compounds. Vol. 1.* Edited by MALCOLM R. SIEGEL and HUGH D. SISLER. Dekker, 270 Madison Ave., New York, NY 10016. 1977. 600 pp. 15 x 23 cm. Price \$55.00.

*Environmental Cancer. Advances in Modern Toxicology Vol. 3.* Edited by H. F. KRAYBILL and MYRON A. MEHLMAN. Wiley, 605 Third Ave., New York, NY 10016. 1977. 388 pp. 15 x 23 cm. Price \$24.50.

*Immunology: A Programmed Text.* By J. WAYNE STREILEIN and JOHN D. HUGHES. Little Brown, 34 Beacon St., Boston, MA 02106. 1977. 337 pp. 21 x 28 cm.

*Rational Management of Diabetes.* By HABEEB BACCHUS. University Park Press, Chamber of Commerce Bldg., Baltimore, MD 21202. 1977. 221 pp. 15 x 23 cm. Price \$16.50.

*The Fetus and Birth. Ciba Foundation Symposium 47 (new series).* Elsevier Scientific, 52 Vanderbilt Ave., New York, NY 10017. 1977. 481 pp. 17 x 25 cm.

*Psychopharmacology: A Biochemical and Behavioral Approach.* By LEWIS S. SEIDEN and LINDA A. DYKSTRA. Van Nostrand Reinhold, 450 W. 33rd St., New York, NY 10001. 1977. 451 pp. 15 x 23 cm. Price \$19.95.

*Reagents for Organic Synthesis. Vol. 6.* By MARY FIESER and LOUIS F. FIESER. Wiley, 605 Third Ave., New York, NY 10016. 1977. 765 pp. 15 x 23 cm. Price \$29.50.

*An Introduction to Clay Colloid Chemistry. 2nd Ed.* By H. van OLPHEN. Wiley, 605 Third Ave., New York, NY 10016. 1977. 318 pp. 15 x 23 cm. Price \$21.50.