

Advances in Chromatography. Volumes II and III. Edited by J. C. GIDDINGS and R. A. KELLER. Marcel Dekker, Inc., 95 Madison Ave., New York, NY 10016, 1966. 15.5 × 23 cm. Vol. II, xvi + 377 pp. Price \$14.50. Vol. III, xii + 271 pp. Price \$11.50.

Those who are actively interested in a particular phase of chromatography will maintain a continuous acquaintanceship with the developments in that realm. This series, as noted in the review of Vol. I [*J. Pharm. Sci.*, 55, 863(1966)] is intended to enable the reader who cannot keep up with the explosive growth in the entire field to maintain an over-all view of the progress of chromatography.

Since the reader will have a greater interest in the fields allied to his own, it is inevitable that any one chapter of the series will be regarded with varying degrees of interest by an individual reader. From the point of view of the pharmaceutical chemist, Volumes II and III succeed in fulfilling the aims of the Editors to about the same extent as did Volume I. Two chapters in each volume, devoted primarily to highly technical aspects of a limited area of chromatography, are perhaps too narrow and deep to provide the desired broad picture. It is recognized that without rigorous theoretical investigation of each aspect of chromatography we would be dependent upon empirical findings alone. Many readers whose interest lie in the applications of chromatography would, however, prefer less detailed, but broader, expositions of this theoretical groundwork as background for helping to evaluate the potentialities of a particular technique. At the other extreme are two chapters, one in each volume, which may be considered to be too shallow for a series of this type.

The remaining chapters do, for the most part, succeed in providing convenient and facile access to many facets of chromatography. Notable among the latter are chapters devoted to the chromatographic support, to ionization detectors, to gradient techniques, and to programmed temperature gas chromatography. Two chapters cover the chromatography of families of compounds—amino acids and carbohydrates—which are closely related to drugs, and are therefore of particular interest to the pharmaceutical chemist.

The topics covered in the two volumes are as follows. Vol. II: "Ion Exchange Chromatography of Amino Acids: Recent Advances in Analytical Determinations" by Paul B. Hamilton; "Ion Mobilities in Electrochromatography" by John T. Edwards; "Partition Paper Chromatography and Chemical Structure" by J. Green and D. McHale; "Gradient Techniques in Thin-Layer Chromatography" by A. Niederwieser and C. C. Honegger; "Geology—An Inviting Field to Chromatographers" by Arthur S. Ritchie; "Extracolumn Contributions to Chromatographic Band Broadening" by James C. Sternberg; "Gas Chromatography of Carbohydrates" by James W. Berry; "Ionization Detectors for Gas Chromatography" by Arthur Karmen; "Advances in Programmed Temperature Gas Chromatography" by Louis Mikkelsen.

Vol. III: "The Occurrence and Significance of Isotope Fractionation During Analytical Separations of Large Molecules" by Peter D. Klein; "Adsorption Chromatography" by C. H. Giles and I. A. Easton; "The History of Thin-Layer Chromatography" by N. Pelick, H. R. Bolliger, and H. K. Mangold;

"Chromatography as a Natural Process in Geology" by Arthur S. Ritchie; "The Chromatographic Support" by D. M. Ottenstein; "Electrolytic Conductivity Detection in Gas Chromatography" by Dale M. Coulson; "Preparative-Scale Gas Chromatography" by G. W. A. Rijnders.

Reviewed by Joseph Levine
Division of Pharmaceutical Chemistry
Food and Drug Administration
Washington, D. C.

Atomic Absorption Spectroscopy. By JAMES W. ROBINSON. Marcel Dekker, Inc., 95 Madison Ave., New York, NY 10016, 1966. xi + 204 pp. 15 × 23 cm. Price \$9.75.

As has been true of so many new analytical techniques, the development of atomic absorption spectroscopy into a practical laboratory tool has largely awaited the development of simple, reliable, and relatively inexpensive instrumentation. To a large extent this has now been accomplished. There are now a number of well-designed instruments on the market that meet these requirements rather adequately. So it is only fitting that a simplified text be made available to explain the theory and practice of atomic absorption spectroscopy in terms that the average analytical or pharmaceutical chemist, too rushed to delve deeply into the subject, can understand and use. Dr. Robinson has written just such a text.

Atomic absorption spectroscopy is an efficient procedure for assaying large numbers of samples for small amounts of metals. While it cannot entirely replace polarography, colorimetry, X-ray fluorescence, or arc, spark, or flame emission spectroscopy, it can, under appropriate conditions, be more rapid, more accurate, more reproducible, and more convenient than any of these. Selecting the appropriate conditions can, however, require considerable background, understanding, and experience. Dr. Robinson's book would certainly be an excellent place for a person unacquainted with the subject to start.

Addressed, according to the author, to the graduate student, to the research worker not well-versed in analytical chemistry, and to the analytical chemist interested in rapid and accurate analyses for research and industry, the book was apparently not designed to provide comprehensive coverage of the subject. Indeed, a more apt title for the book might be "An Introduction to Atomic Absorption Spectroscopy," for that is what it is. It is a short book, consisting of little more than 200 pages. Written in a simple straightforward style, it can be read in a few hours without unduly taxing the eye or the mind.

This is not to indicate that it is a superficial book. In fact, it covers the subject matter quite well for a book of this size. Among the more important subjects included are a brief description of the sources of atomic absorption spectra, a short discussion of advantages and disadvantages of atomic absorption, an extensive discussion of instrument components and parameters, a fairly comprehensive discussion of analytical parameters such as atomizer effects, effects of anions and other cations, solvents, sensitivity,

interferences, etc. Most of the second half of the book is devoted to a listing of analytical procedures metal-by-metal for some 49 common metals. The last section of the book includes a description of most of the commercially produced instruments now on the market with some discussion of advantages and disadvantages of each. It also includes a brief discussion of special topics related to atomic absorption spectroscopy such as atomic fluorescence, vacuum ultraviolet techniques, etc.

While the important aspects of the subject appear to have been covered quite adequately, one gets the impression that the author has leaned rather too heavily on a few well-known sources for his information and so has not given his work a broad enough base. Certainly, his discussion of currently available instruments more strongly reflects information gleaned from instrument manufacturers than from personal experience either of the author or of other workers in the field. Incidentally, much of this section is already outdated since it does not mention the rapidly growing field of automated atomic absorption analysis and the many partially or completely automated instruments now on the market.

Notwithstanding its deficiencies, the book can be highly recommended to almost any beginner in the field who would like to know what atomic absorption spectroscopy will do for him, how and when to use it, what equipment is available, what pitfalls to avoid, and how to get the most out of equipment already purchased. It should serve most analysts well, at least until they have gotten their bearings in the field. After that they are on their own.

Reviewed by Irving B. Eisdorfer
Smith Kline & French Laboratories
Philadelphia, Pa.

Quantitative Pharmaceutical Chemistry. Sixth Edition. By GLENN L. JENKINS, ADELBERT M. KNEVEL, and FRANK E. DIGANGI. Blakiston Div., McGraw-Hill Book Co., 330 West 42nd St., New York, NY 10036, 1967. xxi + 519 pp. 16 × 23.5 cm. Price \$12.

The latest revision of this reference and instruction text reflects significant trends which are evident in the methods of analysis included in "The United States Pharmacopeia XVII" and in "The National Formulary XII." The presentation remains relatively unchanged with an introductory discussion for each topic and a classification of U.S.P. and N.F. monographs according to general assay methods. However, specialized areas including potentiometry and pH and hydronium ion concentration are noted for expanded coverage. The addition of new sections on nonaqueous titrations and complexation methods is indicative of the extensive use accorded such procedures. There are approximately 150 official assays which employ nonaqueous titration and about 50 monographs involving complexation techniques. The reagent of choice for the latter group is disodium ethylenediaminetetraacetate (EDTA). Increased emphasis toward instrumental methods is shown by new entries on infrared spectroscopy, polarography, and gas chromatography. The general section of chromatography has been extended to include thin-layer chromatography.

The book is recommended as a companion volume for information pertaining to U.S.P. and N.F. articles, especially in view of the physical impossibility of incorporating complete instructional background material in the compendia.

Staff review

NOTICES

International Encyclopedia of Pharmacology and Therapeutics. Sponsored by the International Union of Pharmacology. Sec. 6, Vols. I and II, *Clinical Pharmacology.* Edited by L. LASAGNA. Pergamon Press, Inc., 44-01 21st St., Long Island City, NY 11101, 1966. 667 pp. 15.5 × 23.5 cm. Price: Vol. I \$12.50, Vol. II \$9.50.

American Drug Index 1967. By C. O. WILSON and T. E. JONES. J. B. Lippincott Co., E. Washington Square, Philadelphia, PA 19105, 1967. x + 785 pp. 14 × 21 cm. Price \$7.50

Arzneimittelübersicht IV. Zusammengestellt und bearbeitet. By K. Gerecke and J. Richter. VEB Verlag Volk und Gesundheit, Absatzabteilung, DDR-Jena, Villengang 2/PostschlieBfach 176, Germany, 1966. 138 pp. 20.5 × 29.5 cm. Price MDN 4.80. Paperbound.

Medicinal Plant Glycosides. An Introduction for Pharmacy Students. By STEPHEN K. SIM. University of Toronto Press, Toronto 5, Ontario, Canada, 1967. v + 76 pp. 17.5 × 24 cm. Price \$1.50. Paperbound.

Prufung von Drogen. By MARTIN LUCKNER. VEB Gustav Fischer Verlag, DDR-Jena, Villengang 2/PostschlieBfach 176, Germany, 1966. 357 pp. 15 × 20.5 cm. Price MDN 24.40.

Pharmakologie-Fibel. Tafeln zur Pharmakologie-Vorlesung. Heidelberger Taschenbucher, Band 18. By F. LEMBECK and K. F. SEWING. Springer-Verlag, 1 Berlin 31 (Wilmersdorf), Heidelberger Platz 3/Berlin-West, Germany, 1966. viii + 117 pp. 13.5 × 20 cm. Price DM 5.80. Paperbound.

The Uptake and Storage of Noradrenaline in Sympathetic Nerves. By LESLIE L. IVERSEN. Cambridge University Press, 32 E. 57th St., New York, NY 10022, 1967. xiv + 253 pp. 14.5 × 22 cm. Price \$11.