

Book Reviews

Method of Biochemical Analysis. Volume XIV. Edited by DAVID GLICK. Interscience Publishers, Inc., New York, N. Y. 1966. ix + 562 pp. 15.5 × 23.5 cm. \$15.00.

It has been a matter of some concern to many analytical chemists that more of the newer instrumental techniques are not replacing certain less satisfactory classical procedures in biochemical analysis. It is therefore of considerable value to have available a series such as "Methods of Biochemical Analysis" which is designed to cover methods and techniques in an attempt to help the biochemical analyst "keep abreast of the manifold experimental innovations and improvements which constitute the limiting factor in many cases for the growth of experimental sciences". Volume XIV in this series contains nine varied chapters which fit comfortably into the suggested framework.

"Methods for Estimating Magnesium in Biological Materials" (N. W. Alcock and I. MacIntyre) includes in its 52 pages a commendable section on the use of atomic absorption as a sensitive and accurate analytical tool. However, coverage of the much less useful flame emission technique could have been reduced. Gravimetric, colorimetric, and volumetric procedures are also discussed. Sample preparation and prior treatment for each of several techniques, including atomic absorption, are described. "Microbiological Assay of Vitamin B₁₂" (H. R. Skeggs), a short nine-page chapter, concerns itself mainly with problems encountered in the assay technique, such as lack of reproducibility. "Fluorometric Analysis of Corticoids" (R. H. Silber), 15 pages, reviews the history of cortical steroid analysis and then describes a fluorometric technique complete with discussions of procedures, variations, sensitivity, and accuracy. "Preparation and Analysis of Basic Proteins" (N. O. Lindh and B. L. Brantmark), 32 pages, presents a survey of the current analytical methods used to study the basic proteins associated with RNA and DNA. Described in excellent detail are a new preparative process using Reinecke salt and an acrylamide electrophoresis technique. "The Determination of Nucleic Acids" (H. N. Munro and A. Fleck), 63 pages, succeeds admirably in reviewing the methods for estimating nucleic acids. After preliminary sections dealing with preparation, extraction, and separation procedures, methods are described for the determination of nucleic acids by phosphorous estimation, sugar reactions, ultraviolet absorption, fluorimetry, electrophoresis, and chromatography.

"Determination of Amino Acids by Ion Exchange Chromatography" (S. Jacobs), 25 pages, covers the uses of both cation- and anion-exchange resins as separation agents and describes, very briefly, the spectrophotometric determination of the acids. The discussion of amino acids is amplified in the extensive chapter, "Separation and Determination of Amino Acids and Peptides by Gas-Liquid Chromatography" (B. Weinstein), 120 pages, attesting to the importance of gas-liquid partition chromatography in separating amino acids, peptides, and proteins. The bulk of the chapter concerns the multitude of chemical derivatives which may (and must) be formed in order to produce compounds of sufficient volatility for glpc. Gas chromatography receives further extensive recognition in the next chapter, "Newer Developments in Determination of Bile Acids and Steroids by Gas Chromatography" (A. Kuksis), 129 pages. The author, in addition to describing separations and quantitative determinations, devotes 16 pages to valuable information about instrumentation and column considerations as applied to steroid analyses. The volume is completed with "Gel Electrophoresis in Buffers Containing Urea" (M. D. Podlik), 40 pages, a rather specialized discussion.

Most chapters in this volume and the series are (for scientists)

well written. As with any series treating such diverse topics, the selection of individual subject matter with a single volume seems rather haphazard. The chapters are outlined in excellent fashion, each preceded by a detailed table of contents. An effective single volume subject index at the back is followed by a cumulative index, both author and subject, to the entire fourteen volume series. This book will find a limited individual audience, appealing to those whose specialty or interest happens to be touched upon by one of the contributors. However, the series is invaluable and should be available in every library frequented by biochemical analysts.

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Control of Energy Metabolism. Edited by B. CHANCE, R. W. ESTABROOK, and JOHN R. WILLIAMSON. Academic Press Inc., New York, N. Y. 1965. xii + 441 pp. 16 × 23.5 cm. \$10.50.

This is the proceedings of a Colloquium of the Johnson Research Foundation of the School of Medicine at the University of Pennsylvania held May 20-21, 1965. It deals with the nature of integrated metabolism with special emphasis on metabolic pathways and processes which are concerned with energetics. Considerable attention is therefore given to glycolysis, the Krebs cycle, and electron transport. Some examples include the properties of phosphofruktokinase, the point at which various inhibitors act between oxygen and organic substrate, control characteristics in tumors and in particular tissues such as brain and heart, the role of cations, the influence of enzyme levels, and the special problem of muscular contraction. In addition, there are papers on subjects which are only partly related to energetics. These include such topics as active transport across membranes, the use of computer analysis in the dynamics of metabolism, and activation of enzymes during fertilization of eggs.

While this book contains a great deal of detailed information which is undoubtedly useful to the specialist, it is the antithesis of a textbook. This is a common and unavoidable shortcoming of books of this kind. The discussions are too short to allow significant review of the subject, and the information presented is frequently so technical as to be of no value to the reader who is not already expert in the field. The last section of the book does have what appear to be summaries of five main lectures which would probably be the most meaningful to the medicinal chemist.

The printing is unfortunately done from photography of the typewritten page. There are not many errors, but it is disconcerting to find the title of lectures on p 372 at the beginning of the final section different from the title of the lectures as they appear in the section itself, and one of the lectures which is supposed to be in the section is found elsewhere. Scientifically, the book covers a wide field of endeavor, but despite its title concerning energy there is almost nothing on oxidative phosphorylation.

It is not recommended for a person who wants to know where we stand in our knowledge of the control of energy metabolism. On the other hand, it does contain many literature references which could serve as a point of departure for the ambitious scientist. It also has the names and addresses of people in the field which could be a valuable aid in seeking further information, lectures, consultations, etc.

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