

Microdiffusion Analysis and Volumetric Error

by Prof. Edward J. Conway. Fourth revised edition. Pp. xviii+465. (London: Crosby Lockwood and Son, Ltd., 1957.) 42s. net.

ONE may speculate as to the extent to which microdiffusion analysis is practised, but there can be little doubt of the existence of a widespread interest in the subject. This fourth revised edition of Prof. Conway's book contains accounts of many new applications of microdiffusion analysis as well as enlarged and revised sections on the apparatus used and the principles involved. New methods described include determinations of blood ammonia, total nitrogen, using a mercury catalyst, glutamine, enzymes, including acetylcholinesterase, formaldehyde, a group of volatile poisons, and organically bound halogens. A description is also given of the method of Burbridge, Hine and Schick (1950) for the determination of acetaldehyde in blood. It may be mentioned that recent work by Lundquist published since the appearance of the work under review throws doubt on the specificity of this method. Acetoacetate in the blood may, under the conditions of the analysis, give rise to amounts of acetone which interfere in the measurement.

Part 3 of the book, a section of about 100 pages, deals with volumetric error. An analysis of the errors of micro methods compared with macro volumetric methods reveals many of the reasons which make micro work a practical possibility.

The book is clearly written and well printed. It should be read not only by those who have an immediate interest in microdiffusion but also by all who use volumetric methods of any kind. Most of the text shows an intimate practical knowledge of the processes described and no analyst could fail to profit from a study of it. The author is not always orthodox in his opinions, but where controversial issues are raised, all the evidence and the opinions of others are clearly and fairly given. The book is well illustrated and has a good bibliography and index.

E. I. JOHNSON

Introduction to the Mechanics of Stellar Systems

By Rudolf Kurth. Pp. ix+174. (London and New York: Pergamon Press, 1957.) 55s. net.

THIS book is intended to serve as an introduction to the subject for advanced students. After a discussion of the observational data, chapters are devoted to the mechanics of systems of mass-points, stellar systems as assemblies of gravitating mass-points, stellar systems as gravitating continua, and statistical mechanics of stellar systems. The book as a whole is written from a refreshingly novel point of view, and there is relatively little overlap with other text-books on the subject. Especially noteworthy are the treatments of the recurrence theorem of Poincaré, the little-known theorems of Hopf, similarity transformations and Poisson's equation. Although a study of the book would be of considerable educational value to an advanced student, it would nevertheless give a very one-sided view of the subject without a supplementary study of its more practical aspects. The possibility that the observations of stellar motions in our own Galaxy should be interpreted not as properties of an almost stationary stellar system but as well-preserved evidence of initial conditions during the formation of the Galaxy suggests that much of the book may remain of academic interest only. The reviewer feels that the

kinematical rather than the dynamical approach to the study of stellar systems may well prove to be more fertile for further development. Nevertheless, it is important to appreciate the achievements of the dynamical approach as well as its limitations, and this book serves as a useful aid to this end.

R. H. GARSTANG

Cytochemical Methods with Quantitative Aims

Biophysical and Biochemical Approaches. Proceedings of the Symposium held September 27-29, 1956, by the Institute for Medical Cell Research and Genetics, Karolinska Institutet, Stockholm, Sweden. Edited by Dr. B. Lindström and Dr. R. Brown. (Experimental Cell Research, Supplement 4.) Pp. viii+296. (New York: Academic Press, Inc.; London: Academic Books, Ltd., 1957.) 9.50 dollars.

THIS is a report of a conference held at the Karolinska Institute, Stockholm, in September 1956, which was sponsored by the Institute of Medical Cell Research and Genetics. It consists of twenty-seven papers on different aspects of quantitative cytochemical techniques, the majority of which are physical methods, based on optical, absorption and interference microscopy, and on X-ray techniques, which are taken to include quantitative autoradiography using radioactive tracers. These papers are a mine of information which will be invaluable to all workers in these fields. The chemical techniques are less exhaustively dealt with, but nevertheless some very useful discussions of the micro-determination of nucleic acids by a number of the workers in this field are included. These form a valuable addition to the information given in existing text-books. The supplement is quite reasonably priced and would form a useful addition to libraries which do not subscribe to the whole of *Experimental Cell Research*.

Introduction to Enzymology

By Alan H. Mehler. Pp. viii+425. (New York: Academic Press, Inc., 1957.) 10.80 dollars.

IN this book the author has provided an outline of the main metabolic pathways by a description of the individual enzymes and cofactors concerned. He has not attempted to provide a comprehensive review of each enzyme, with the result that rather arbitrary and sometimes inaccurate descriptions are given (for example, the section dealing with the general properties of flavins and flavoproteins ascribes a spurious ionization constant at pH 1.7 to flavins, and contains generalizations concerning the fluorescence, redox potentials and absorption spectra not justified by the experimental evidence available). As the book gives many references to recent publications, it is undoubtedly useful as a guide to current metabolic trends. It is difficult, however, to find any real justification for the title of "Introduction to Enzymology". Little or no discussion is devoted to the general properties and theoretical principles of enzymic catalysis; hence very few unifying hypotheses of the type valuable to a student are developed. To those people who have been awaiting publication of a book illustrating in detail the general principles of enzyme chemistry this work will therefore be disappointing. It can be recommended only as a reasonably up-to-date book on metabolism at the level of the individual enzymes. Contrary to its title, it should be of more use to the experienced investigator than to the beginner.

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