## Book Reviews

CHROM. 3808

*Methods in Enzymology, Vol. XI, Enzyme Structure*, edited by C. H. W. HIRS, Academic Press, New York and London, 1967, ix + 988 pp., price $ 33.

This is another good volume in a series which has established itself as a definitive reference for biochemists on practical matters. The logarithmic growth of biochemistry has tended to fragment biochemists into groups with highly specialised interests. However, such is nature that a research project will lead into an aspect of biochemistry in which the specialist has little practical knowledge. This series enables a rapid assimilation of the available specialised techniques, facilitating a more judicious choice of technique than might have been made had the research worker resorted to searching in the literature in the first instance.

In this volume amino acid analysis and related procedures occupy some 120 pages. Approximately one quarter of this section is devoted to descriptions of techniques which involve highly expensive and sophisticated equipment. It might be argued that such descriptions are out of place in this volume since they are of little use to those who have the apparatus. However, their inclusion is probably justified in that the scope and limitation of these methods are made clear sufficiently for the non-specialist to assess their potential value.

The following section (44 pp.) on end group analysis is presented in a direct and practical manner. It is an excellent introduction into the techniques and the appropriate literature.

The short section (28 pp.) on "chain or sub-unit separation" is variable in quality. The article on chromatographic separations is brief and apt; being restricted to specific examples, but some cross references to chapters on the general aspects of chromatography in other volumes of this series would have been helpful. There follows an article on countercurrent distribution methods, a technique which seems to be of limited use in this context. The article on zone electrophoresis using polyacrylamide gel is pedestrian. The analytical procedure is described adequately in six pages, but the more useful and pertinent preparative technique is discussed in two pages. The final article in this section describing the use of density gradient centrifugation is critically informative.

The presentation on the cleavage of disulphide bonds is short (14 pp.) but most practical in approach. The sections on the cleavage of peptide chains (116 pp.) and the separation of peptides (91 pp.) are critically sound and eminently practical.

The section on sequence determination (60 pp.) gives equal treatment to the use of some enzymes, *e.g.* papain, pepsin subtilisin, carboxypeptidase and leucine aminopeptidase, and to various aspects of the Edman procedure.

The modification of peptide chains are described in the next section (184 pp.). This is inevitably a mixed bag of techniques, for which a good deal of experimental

detail is given. The value of some of these techniques is not limited to their use in protein structure and this section will prove extremely useful to those interested in modifying highly intractable proteins, *e.g.* membrane constituents.

A very long article on the use of fluorescent measurements dominates the final section on the investigation of conformational changes. Variations in the fluorescence of proteins give useful information but the length of this article is quite out of scale with the space given to the other topics in this volume. There is an interesting article on the dialysis and diffusion properties of proteins together with others on acid-base titrations, susceptibility to proteolysis, reporter groups and general aspects of immunological techniques.

Inevitably in such a large compounded volume, one can find faults and unevenness in the treatment of the subject matter. Perhaps the most practical drawback to the book is the not very obvious crossreferencing between the various sections and also other volumes in this series containing relevant and related data. It is pointed out by the editor of this volume that the contents have been controlled to some extent by the presence of relevant material in other volumes, thus this volume in itself is not a comprehensive collection of appropriate techniques. However, with its companion volumes it is a very valuable compendium of information.

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CHROM. 3814

*Analytical Gel Permeation Chromatography*, edited by JULIAN F. JOHNSON AND ROGER S. PORTER, Interscience Publishers, New York, 1968, 343 pp., price 135 sh.

*Analytical Gel Permeation Chromatography* is the twenty-first volume of polymer symposia published as Part C by the *Journal of Polymer Science*. As in previous issues, the volume is a collection of papers which were presented, upon invitation, at a polymer symposium devoted to a narrow field of current polymer research. The symposium in case is the first American Chemical Society sponsored symposium on Gel Permeation Chromatography (GPC), held in Chicago, Illinois, in September, 1967.

The collection of twenty-seven papers represents a significant fraction of the present and rapidly expanding world literature on GPC. It provides the reader with insight into a diverse research situation which reflects the rapid growth and wide acceptance that the relatively new technique has experienced.

It is in the nature of any compilation of research papers that the reader is offered little in the way of background, context towards related research and critique. Such a volume, moreover, lacks fluency in content and style. However, the situation here has been relieved through the inclusion of J. C. MOORE's personal as well as historical account of his GPC research and through an attempt to list the papers with the subject matter following the theoretical to practical trend. On the other hand, the