tures have greatly expanded. In immobilized enzyme systems, owing to the possibility of coupling chemical reactions to transport (diffusion) processes, highly organized spatio–temporal structures may occur. Hardt et al. present their theoretical analysis on a membrane-containing immobilized papain and they also show the possibility of signal propagation in the plane of the membrane. Kernevez develops a numerical analysis to solve the problems of optimal control or to identify unknown kinetic parameters in reaction–diffusion coupled processes. Lefever gives a stochastic model for the investigation of dissipative structures and proves that in the phosphofructokinase reaction dissipative structures may occur, which is a novel feature in the theory of glycolytic oscillations. Bunow and Colton claim, on the ground of a numerical analysis of a model system, that in the case of a pH sensitive, base or acid consuming or producing system, if mass transport limitations are imposed, multiple steady states may appear.

In addition, there are articles about various themes, e.g., Monsan et al. deal with the mechanism of action of glutaraldehyde, Engasser and Horvath discuss the 'buffer shuttle mechanism', Gelff and Henry treat the performance of immobilized enzyme columns, etc.

Last but not least there are very useful review articles in this book, e.g., the one written by Porath about bioaffinity and hydrophobic chromatography, or the survey by Broun about the current trends in the field covered by the meeting. Thomas presents an excellent review of the results obtained with artificial enzyme membranes, including fundamental kinetic modelling, the new properties due to the membrane shape (active transport, memory, oscillation, etc.) and a survey of the applications.

Veronika Jancsik

Laboratory Techniques in Biochemistry and Molecular Biology
Volume 4: Part 1. Chemical Modification of Proteins
Part II. Separation Methods for Nucleic Acids and Oligonucleotides

Edited by T. S. Work and E. Work
North-Holland Publishing Company; Amsterdam, Oxford/American Elsevier; New York, 1976
xiii + 492 pages. Dfl. 130.00, $ 51.95

A new methods-oriented book is always welcomed by scientists. Now, a new volume of the well-known series edited by Work and Work has become available. Volume 4 consists of two parts, both designated for day-to-day bench use.

The first part written by A. N. Glazer, R. J. Delange and D. S. Sigman is about the chemical modification of proteins. The authors give the reader a fairly broad view of the most valuable methods in protein chemistry and biochemistry. Protein and amino acid analysis is carefully reviewed on an up-to-date basis. Probably the most useful section is the detailed interpretation of the various methods concerning the modification of protein side-chains. The application range of the particular techniques is critically discussed and the descriptions are detailed enough to be used without reference to the original papers. A special merit of this part is the review on the practical use of affinity and photoaffinity labels in protein chemistry.

The second part is entitled 'Separation Methods for Nucleic Acids and Oligonucleotides' written by H. Gould and H. R. Matthews. Nucleic acid research is still one of the most rapidly developing fields in molecular biology and it is difficult therefore to keep up with new methods. In an earlier volume of this series G. G. Brownlee summarized RNA sequencing methods which, of course, involve many separation techniques. It is a pity that this volume does not deal with some of the problems listed there because some powerful methods have been developed since the former book was written.

This review concentrates on the separation problems

of nonradioactive RNA. The different types of chromatographic and electrophoretic methods are very carefully described and a separate chapter deals with the choice of the proper method. The absence of newer methods of fractionation of oliginucleotides and DNA fragments limits the usefulness of an otherwise excellent book.

The price of this volume is a bit too high, though the separate parts are available also in paperback form.

B. Sain

Progress in Isoelectric Focusing and Isotachophoresis

Edited by F. G. Righetti
North-Holland Publishing Company; Amsterdam, 1975
425 pages. Dfl. 120.00, $ 47.85

This book covers the basic aspects as well as the recent developments of isoelectric focusing and isotachophoresis, two excellent analytical techniques of protein separation. The 31 lectures presented at the Third International Symposium on Isoelectric Focusing and Isotachophoresis are collected into three main parts:

I. General Aspects and Methodology
II. Application of Isoelectric Focusing
III. Isotachophoresis.

Biomedical applications of the two methods are well treated both in routine diagnosis and in research: screening of human sera, sweat, isoenzymes in normal and pathological tissues, etc. A new approach, the separation of nucleic acids (mRNAs for α- and β-globin chains) is reported, applications to the analysis of membrane and mitochondrial proteins and in separations of whole cells, subcellular particles, bacteria and viruses are presented. Problems due to extreme pH, artifacts and the stability of pH gradient are extensively discussed. Fortunately, the advantages as well as limitations and pitfalls of the methods are presented in several papers. Particular emphasis is placed on the use of isoelectric focusing as a probe for interacting proteins.

A round table discussion is included on the fundamental and practical aspects of isoelectric focusing and isotachophoresis, containing valuable hints on ampholines, spacers, additives extreme pH, micromethods and interacting molecules.

To make the symposium volume approach the value of a manual, a detailed list of the most important papers published in the field of isoelectric focusing and isotachophoresis and a subject index is added at the end of the book.

The publication of the material of this symposium is a 'fit for life' certificate of these excellent, however somewhat expensive analytical methods developed by LKB-Producter in the last ten years. The volume will be useful for people working in the fields of biochemistry, microbiology, cell biology and other related parts.

József Batke