molecular research. There is undoubtedly a market for a good book on this subject.

It is unfortunate that this book represents a very mixed selection, in terms of both quality and quantity. If the reader will bear with me, I can best illustrate this by quoting figures. The entire book is 317 pages (excluding index but including references). Of this, 128 pages deal with vibrational spectroscopy (infra-red and Raman), 44 pages are devoted to visible and ultraviolet spectroscopy and 82 pages are given to nuclear magnetic resonance and electron spin resonance. This is not a balanced reflection of the use of the various forms of spectroscopy in biological research, as judged by the volume of the world's scientific literature in these fields, and I do not know of a better criterion for the application of research techniques. It seems that the editor has attempted to redress this imbalance in the final chapter, which is perhaps a trifle late.

The technical standard of exposition is generally good. It is somewhat surprising that the authors of the chapters on vibrational spectroscopy have not mentioned any work on nucleic acids. The chapter on electronic absorption and emission spectroscopy is very scant, with no example of the application of fluorescence polarisation techniques to macromolecules, currently a much-used technique. This chapter contains no references later than 1969. The nuclear magnetic resonance chapter makes a brave attempt to say a great deal in very little space, and I suspect that it would be very difficult reading for someone not in the field.

In spite of the above criticisms, there is much of value in this book. It is a pity that a cheaper paperback version is not available, since at the hardback price I could not recommend it to undergraduate students. However, it may prove a worthwhile purchase to biological scientists interested in acquiring knowledge into physical techniques.

G. E. Chapman

Lipid Biochemistry: An Introduction

Edited by M. I. Gurr and A. T. James
Chapman and Hall; London, 1977
viii + 244 pages. £ 6.50 (cloth) £ 3.95 (paper)

The authors state in the preface that the aim of this book is two-fold; first to aid students in learning about lipids and second to influence students towards research in this area. In my opinion they succeeded completely in this intention. Lipid biochemistry forms the basis of a good deal of biomembrane research and the number of investigators in these areas of biochemistry has increased tremendously during the last two decades. This implies that the number of students that become exposed to these areas of research will increase and this book is a very helpful guide to introduce them to the subject. This is done in a much more easily digestible way than can be obtained via review articles, especially since enough methodology is included to provide newcomers in the field with a sufficient feeling of how lipid biochemistry is studied. In addition, there are no other introductory texts available that cover such diverse aspects of lipid biochemistry.

Chapter 1 (17 pages) gives a general introduction to nomenclature, stereochemistry and analytical techniques such as extraction and chromatography. The longest chapter (65 pages) is devoted to fatty acids and contains information on their structure, biosynthesis, degradation via α-, β- and ω-oxidation and peroxidation. This chapter also discusses the role of essential fatty acids and their conversion into prostaglandins. For an introductory text, this chapter suffers from the tendency to pay too much attention to rather uncommon fatty acids and perhaps can be shortened somewhat if new developments are to be dealt with in future editions. Chapter 13 (31 pages) deals with neutral lipids. The section on glycerides

includes their stereospecific analysis, various pathways of their biosynthesis and their digestion. Regrettably, there is not even a short paragraph on the role of colipase in this latter process. The biosynthesis and degradation of phospholipids are treated in Chapter 4 (24 pages). Chapter 5 (22 pages) deals with glycolipids and sulpholipids and contains information on the structure and nomenclature of glycosylceramides and gangliosides and their accumulation in lipidoses. The physical and chemical properties of lipids and proteins and their association in soluble and membrane lipoproteins are discussed in Chapter 6 (35 pages). This chapter includes the composition and some structural features of lipoproteins as well as a brief discussion of membrane models. The final chapter (17 pages) concerns the diverse roles of lipids as structural materials, fuels, vitamins, emulsifiers and flavours in food.

The text reads very well and the treatment of each subject is loaded with historical remarks which help to illustrate the development in those areas of research. Partly due to this development some statements in the book are no longer correct. The statement, on page 2, which claims that all naturally occurring phospholipids have the same stereochemical configuration, does not hold true anymore since the elucidation of the stereochemical configuration of lysobisphosphatidic acid. The authors themselves have also provided another example of such stereochemical variation, on page 120, by giving the configuration of a diether phospholipid from *Halobacterium cutirubrum*. Only one of the two pathways for cardiolipin biosynthesis is mentioned, on page 128, and sphingomyelin biosynthesis is described in a rather incomplete way. The statement, on page 209, which says that xanthines activate the cAMP specific phosphodiesterase, should of course be corrected.

Despite these few critical notes, each chapter contains a lot of information (not only for students) in a condensed and comprehensive way in the form of tables. Where appropriate, such tables have information on the properties of the enzymes involved and a brief description of their assay procedures. Suggestions for further reading are given at the end of each chapter. Of course, specialists working in any part of lipid biochemistry dealt with in this book will not find much news on their own subject. Nevertheless, they may still find the information in other chapters worthwhile, especially if they teach a course on lipid biochemistry. The book is well produced and the paperback edition is low priced.

H. van den Bosch

Bacterial, Phage and Molecular Genetics; An Experimental Course

by U. Winkler, W. Rüger and W. Wackernagel
Springer-Verlag; Berlin, Heidelberg, New York, 1976
viii + 240 pages. $ 9.50 (paper)

Those teaching practical courses in molecular biology to university students have generally had to devise for themselves experiments based upon local practice or the original literature. This book could, to a certain extent, obviate that need. It contains 25 experiments under the headings of phage growth and ultracentrifugation, nucleic acids and transcription, mutation and photobiology, gene transfer and recombination, and phenotypic expression which the authors have used with a group of third year students. The materials and equipment required are straightforward, with only ultracentrifuge time likely to be a problem in busy departments. As well as the experiments themselves, the book contains a section on statistical methods, some useful tables and diagrams of equipment, and the results obtained for each experiment.

The style of the writing is very didactic, not in itself bad, but leading to two faults. Firstly, there is unnecessary inclusion of elementary material such as