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

sections on the structure of DNA and on the nature of mutation and recombination. Secondly, and more seriously, however, very definite statements are made which are not correct such as (page 121) 'phage λ transduces only genes next to its prophage insertion site' or (page 127) that the spontaneous excision of *F* from an *Hfr* always gives rise to an *F'* carrying bacterial DNA. This is in part because the text suffers from the under-use of the qualifying adverbs sometimes, generally and possibly, creating the impression that the process being described is the only one that can occur in the circumstances.

Of the experiments included, about a quarter are not likely to find favour in other laboratories either because the material chosen (*Serratia marcescens* and its phage *Kappa*) are not in general use or because the techniques are somewhat esoteric (5-flourouracil phenocopying, transfection to spheroplasts, auanography: an unfamiliar term). In a book of this sort greater concentration on popular techniques would have been preferable. It would have been very desirable, for instance, to have included some gel work. (Incidentally, I would never trust a group of 3rd year students to handle dangerous carcinogens such as nitrosoguanidine!)

This book inevitably invites comparison with Jeffrey Miller's 'Experiments in Molecular Genetics'. Miller's book is compelling reading and a superb research tool. It is, however, too specialised and too expensive for use other than as a reference work in a course for undergraduates.

Bearing these limitations in mind, I think 'Bacterial, Phage and Molecular Genetics' could find considerable use as a text. Though fairly expensive it is not prohibitively so. It includes workable experiments involving techniques and materials commonly in use. It contains problems, results and pertinent discussion on how to record data. I think a student who had used this book would have had a good introduction into the research methods used currently in molecular biology.

Millicent Masters

The Specificity and Action of Animal, Bacterial and Plant Toxins

Edited by Pedro Cuatrecasas
Chapman and Hall; London. Halstead Press; New York, 1977
ix + 345 pages. £ 15.00

This book, the first in the specialised series B of 'Receptors and Recognition', discusses a number of selected toxins from different organisms and describes the way they interact with their target cells, and how they specifically inhibit cellular processes.

There are eight chapters in this book. Five are devoted to protein exotoxins of microbial origin. Although some articles include information on more than one toxin, those primarily discussed are, cholera toxin (choleragen) and its universal stimulation of adenyl cyclase in the plasma membrane; diphtheria toxin which inhibits protein synthesis by catalysing an adenosyl diphosphoribosylation of elongation factor-2 (EF-2) using NAD^+ as substrate; colicin E_3 which cleaves 16 S ribosomal RNA in the intact ribosome of sensitive Enterobacteriaceae, the cleavage being at one specific site near the 3′-end of the RNA where sequences for the binding of mRNA to the 30 S subunit are located; tetanus toxin and its blocking of neurotransmitter release in the inhibitory neuronal pathways of the central nervous system; and various cytolytic toxins from Gram positive and Gram negative bacteria which disrupt membrane integrity either by physical or a variety of different chemical methods. Half of one chapter is devoted to a discussion of botulinum toxin and its inhibition of acetyl choline release from peripheral nerve endings, the second part deals with β-bungarotoxin, from the venom of the Formosan banded krait. Both toxins cause spastic paralysis, but β-bungarotoxin alters the Ca^{2+}