Similarly, the extension of the study of adherence from host-bacterial relationships to cellular relationships in eukaryotic cells and multicellular organisms (chapter 13) is a fascinating area of research which will be unfamiliar to most microbiologists.

This is a well edited, readable book, which provides a good summary of current knowledge about bacterial adherence. Its price will place it beyond the reach of many individuals, but in these inflationary times it is good value for money.

C. S. F. EASMON

**Bacterial outer membranes: biogenesis and functions**


This is an excellent book which I thoroughly enjoyed reading. It is remarkably free from printers' errors and unexpectedly uniform in presentation, despite the involvement of 18 contributors in compiling 14 chapters. Up-to-date, containing many references to as yet unpublished work, it usefully summarises certain areas of established knowledge, highlights the growth points and the extant problems in others, with pointers to possible ways ahead where relevant.

In Part I, the biosynthesis, translocation and assemblage of phospholipids, membrane proteins and peptidoglycan are dealt with in a generally lucid manner from contemporary biochemical, genetic, morphological and cell-physiological standpoints. The facts, functions and speculations on membrane adhesion and fusion sites are described and illustrated with a judicious selection of excellent electronmicrographs. The brilliant exploitation of genetical techniques, both of the now classical and newer (e.g., hybrid gene fusion) types in studies on the recognition, synthesis, mechanisms of transport and location of membrane proteins, is the subject of two chapters.

In Part II, certain functional aspects are considered. The evolutionary paradox of the persistence of organisms sensitive to colicins and phages can now be explained, in part at least, by recognition of the fact that receptors for these cidal agents have important physiological functions in the uptake of nutrient molecules. Non-specific transport of small hydrophobic and hydrophilic molecules by a multiplicity of pathways, and the differences between enteric and non-enteric bacteria in this respect are dealt with in an excellent chapter. A refined model of the gram-negative bacterial mating cycle and its derivation from genetic data, the identification and cellular location of some of the gene products involved in this complex cellular interaction, a comment on the role of outer membranes in motility and chemotaxis and a review of outer membrane components of gram-negative bacteria in the context of pathogenicity, complete the coverage of this timely book.

It should appeal to those active in the field and to those seeking to read their way into a fascinating area.

J. STEPHEN

The two following reviews were printed in our November 1980 issue under the wrong headings. We reproduce them correctly here, with apologies to the authors, publishers and reviewer.

**MCQ tutor for students of microbiology**


This book is intended for undergraduate medical students but it is also hoped that it will be useful for student microbiologists and MLSOs and those preparing for primary examinations of the Royal Colleges. It perhaps fulfils best the first of these intentions, having too little fundamental microbiology to answer the complete need of undergraduate scientists and trainee scientific officers.