of the phenomenon in the context of the life of bacteria in their natural environment, or in the evolution of micro-organisms. This in my view is to miss much of the interest on bacterial conjugation, particularly from the viewpoint of the medical microbiologist.

Stouthamer's book is about twice as long as the other two, and correspondingly more expensive. It is a thoughtful and highly detailed account of a very narrow and quantitative aspect of microbiology. Moreover, it is one of great interest only, I suspect, to those interested in growing micro-organisms for industrial purposes. Certainly I cannot see much here that is likely to interest the average medical microbiologist, but that (of course) is not the author's main intention.

In summary, therefore, each of these books offers something, at least to some microbiologists, and the prices are certainly modest by modern standards. So much is to the good. But the low price has not been achieved without cost. The pictures in Finnegan's book are really awful in the quality of their reproduction, and the tables in Stouthamer's are often printed in such small type that I, at least, find it hard to read them. Only Smith's book has no imperfections in this respect, but it has no illustrations or tables, and so does not perhaps provide a fair test.

Finally I wonder whether anyone will really want to buy these small books. Perhaps they will, but really the accounts do little more than recapitulate review articles already written by these authors or their colleagues; and since these reviews are all in accessible journals, I personally would read the reviews rather than buy the booklets. The exception, might perhaps be Smith's book on microbial pathogenicity, where the account is more in the form of a balanced essay on the topic than the other two.

MARK RICHMOND

Applied medical microbiology

Why another general text in Medical Microbiology? Professor Collee answers this question by stating that this small book is designed to "set the scene" for biologists, medical and dental students, nurses and paraclinical technicians. It provides a "gentle introduction" to laboratory diagnosis, infectious disease mechanisms, epidemiology, disinfection and sterilisation, and chemotherapy and immunity, and uses important infectious diseases to illustrate the principles. All this is well done, and the text is enlivened by excellent illustrations, although it must be admitted that some of the "stickmen's" antics are a little difficult to follow.

It provides little discussion of taxonomy, nomenclature, or identification of bacteria—perhaps because the student is expected to refer to other books for these. Curiously, however, there is much more detail on immunological, virological and even mycological procedures. Although most teachers will feel that the move away from systematic bacteriology is highly laudable in this context, others will regret the omission of any definition of such words as "Gram", "agar" and "phage". Perhaps a glossary of such terms could be included in the next edition.

All in all, this is an excellent little book, which should prove useful to teachers of elementary medical microbiology who wish to avoid discussion of technical matters.

I. PHILLIPS

Animals for medical research

About one-quarter of the volume, two chapters, is taken up with the nutrition, breeding and management of experimental animals and a brief description of their diseases under laboratory conditions. However, it is surprising that the authors found it necessary to
include such information in a book of this kind, since these topics are dealt with comprehensively and probably more appropriately in other specialist publications. The remaining chapters deal with experimental animals as models for the study of infectious, metabolic and hereditary diseases, for behavioural research, and for studies in endocrinology, reproductive physiology, toxicology, cancer, gerontology, teratology and environmental health hazards. The last chapter, entitled "Uniquely useful animal species for biomedical research", describes less commonly used species, such as the nine-banded armadillo and wild llama, that may contribute to the investigation of certain biomedical problems. Each chapter ends with a long list of references.

It is understandable that the editors necessarily had to be selective in what to include and what to omit. However, it seems a pity that, despite the importance of, for example, dental diseases, immunology and organ transplantation, there are no descriptions of suitable animal models for the study of these subjects. They, and possibly some others, would have been preferable to the chapters on nutrition, breeding, management and diseases of laboratory animals.

The quality of reproduction of the photographs throughout is not very good and the tables, summarising the conditions that can be studied in various species, appear to have been copied directly from type-written manuscripts. There is also a lack of uniformity of type between tables and sometimes even within tables, for example on p. 571. Uncommonly the Latin names of animals are incorrectly spelt or printed with the first letter of the trivial name as a capital instead of in lower case.

This relatively expensive book will be of interest to a wide range of biomedical scientists, and is a reasonable purchase for the reference section of a library. However, it is unlikely that many people will wish to purchase a catalogue of this kind for their personal use.

C. R. COID

Chemical microbiology: an introduction to microbial physiology

The third edition of "Chemical Microbiology", which deals with the chemical activities of prokaryotic and eukaryotic micro-organisms, follows the same basic format as previous editions. It is 8 years, however, since the 2nd edition was published, and all the chapters have been revised and up-dated. In particular, the sections dealing with chemical aspects of cell structure, transport of compounds into and out of the cell, electron transport, energetics of biosynthesis, growth and differentiation reflect recent advances in microbial physiology. The author is to be congratulated on summarising the essential aspects of a rapidly expanding field while adhering to his basic aim of presenting a comprehensive coverage of the subject in a relatively small volume.

This is a book that will help lecturers in Universities and Colleges to structure courses in microbial physiology and will provide students with an account of basic information which can be supplemented by more specialised texts and review articles. The author has included helpful lists of authoritative reviews at the end of each chapter.

The publishers have chosen a relatively cheap method of publication. This is probably an inevitable trend designed to offset the rising cost of textbooks but the loss of quality in presentation of some of the diagrams and photographs is to be regretted.

J. P. ARBUTHNOTT