circumspection. The reason that batteries of short-term tests are recommended by regulatory authorities is very apparent. On the theoretical side, the close correlation between DNA damage and carcinogenesis further strengthens the case for the somatic mutation hypothesis of tumour initiation. The book is well produced and contains few errors. However, the reviewer (a chemist) takes exception to the description, on p. 97, of 4-nitro-quinoline oxide as a "water-soluble hydrocarbon".

M. M. Coombs

The biochemistry and pharmacology of antibacterial agents


This is a modest little book, hardly more than a long article, in which the barest skeleton of an account of the biochemistry and pharmacology of antibacterial agents is laid out. Within its compass the text is clear and simple and its coverage is really the minimum of what many in medicine and paramedical subjects might be expected to know about the molecular basis of how antibacterial agents work. The subject is tackled from the point of view of the targets that antibacterial agents attack in the microbial cell. There are sections on agents active against the folic acid pathway, peptidoglycan biosynthesis, protein synthesis and nucleic acid synthesis, but one lacks a chapter on agents active on membranes. In particular, I find no consolidated account of how chemical molecules interact with enzymes. So the fundamental molecular basis of the great majority of antibacterial action is missing. As a result, the story told here is somewhat anecdotal.

Within the various sections, the coverage is patchy, with certain recent advances receiving priority over others in a rather quixotic way. Thus, in the β-lactam section, thienamycins (a wrong structure here) are mentioned but not clavulanic acid or the olivanic acids. The aminoglycosides are treated only very cursorily (gentamicin is called gentamycin), and this can hardly reflect the relative importance of these agents in clinical terms—at least when balanced against the space given to phosphonomycin, cycloserine and puromycin, to name only a few largely unused antibacterials.

Overall, one cannot escape the conclusion that anyone really interested in this topic will rather quickly move on to sterner stuff.

M. H. Richmond

Manual of macrophage methodology: collection, characterisation and function


Nobody disputes the burgeoning importance of macrophage function in normal host defence mechanisms and a variety of diseases. With the increasing numbers of scientific investigators working with these cells or interested in the general problem, it was clearly a good idea to produce a technical manual on the subject. The series of conferences on the macrophage organised by Van Furth have given rise to some majestically comprehensive publications but these scarcely rank as handbooks. Given that the editors set out primarily to produce a laboratory manual, this book must be rated a partial success. Some of the chapters are clear and precise descriptions of how to perform such practical tasks as preparing macrophages, assaying their function, and measuring their secretory products. After all, the real test of such a book's usefulness is whether or not a tyro can use its instructions to do a laboratory exercise without more guidance than that provided in its pages. The early chapters on collecting and purifying macrophage populations are the best in this respect and many hitherto difficult techniques such as the preparation of monocyte-macrophages of human origin are dealt with particularly successfully. However, the book suffers from two drawbacks. First, some general immunological and biological topics are included because the macrophage is to some extent involved, but by this criterion it would be possible to make a book on the macrophage or indeed any other cell type encyclopaedic in its scope. Thus, it is doubtful that a discussion of methods for assaying interleukins really comes within the scope of this book. Second, if all the possible applications
of any technology are described in a practical handbook, that book must inevitably and rather profitlessly be lengthened. There may be enough workers interested in measuring the cytostatic effects of macrophages on tumour cells to justify treating this topic separately, but one doubts whether there are enough scientists working on the antiviral activity of macrophages to treat this subject as a separate technical exercise. The result is to make the book much longer and more expensive than would have been necessary if the editors had stuck to a description of the basic techniques and had eliminated more discursive descriptions of their applications. Rather surprisingly, given the important and technically demanding subject of macrophages as secretory cells, this topic receives much less attention than, for example, kinetic studies of monocyte-macrophages. The book can certainly be recommended for the third of its contents that truly sticks to the editor's intentions; strict adherence to these objectives would make a second edition more truly useful as a laboratory handbook and certainly less expensive for this purpose.

A. M. DENMAN