

Generally animals . . .

Animal Physiology: Adaptation and Environment. By Knut Schmidt-Nielsen. Pp. xvi+699. (Cambridge University Press: London, March 1975.) £7.25.

No animal exists, or can exist, independently of an environment. It may logically be argued, therefore, that all physiology is environmental physiology, for physiology is concerned with the functions of living organisms. The book under review deals at an elementary level with the familiar subjects of physiology, such as respiration, circulation, digestion and so on. Its 13 chapters are grouped according to major environmental factors: oxygen; food and energy; temperature; and water. Finally, movement, information, and integration are discussed, and it is shown how these functions are correlated and controlled in the living organism. There are six appendices and a comprehensive index. Although published by the syndics of the Cambridge University Press, the book has been printed in the United States of America and uses trans-Atlantic conventions and spelling.

As in his earlier books, the Professor of Physiology at Duke University writes with a clarity that imparts beguiling simplicity to quite complex concepts. He states in the preface that his latest effort was written in "anger and frustration" because he was unable to give his students a book which, in simple words, says what he finds "exciting and important in

animal physiology, that deals with problems and their solutions, that tells how things work". He has succeeded in producing just such a book, and it will doubtless satisfy quite precisely the requirements of American undergraduate syllabuses. As far as the British market is concerned, however, I fear that the level may be a trifle too elementary.

The field of environmental physiology is now so vast that not even this large text-book can avoid being somewhat superficial. There are plenty of exciting ideas, but they are discussed too simply, and their documentation is rather inadequate. The selection of references, which "vary from brief and simple essays to large, comprehensive treatises", seems arbitrary and erratic. In places, too, there are signs of untoward haste in the writing; for example: "The degree of heating that a lizard can attain by heating up in the sun can be spectacular" (p. 358); and: "For aquatic insects the problem is to eliminate excess water and, as was mentioned above, this problem is usually handled by the kidney or equivalent excretory organ" (p. 418-9).

It is easy to cavil at the efforts of others: and the wider an author's vision, the easier it becomes to criticise his work on points of detail. There are, naturally, many aspects both of fact and of emphasis, with which other physiologists and zoologists may disagree—but this should not blind them either to the magnitude of Schmidt-Nielsen's conception or to the skill with which he has realised it. J. L. Cloudsley-Thompson

. . . particularly men

Physiology of the Human Body. By J. Robert McClintic. Pp. xxvii+588. (Wiley: New York and London, January 1975.) £6.80.

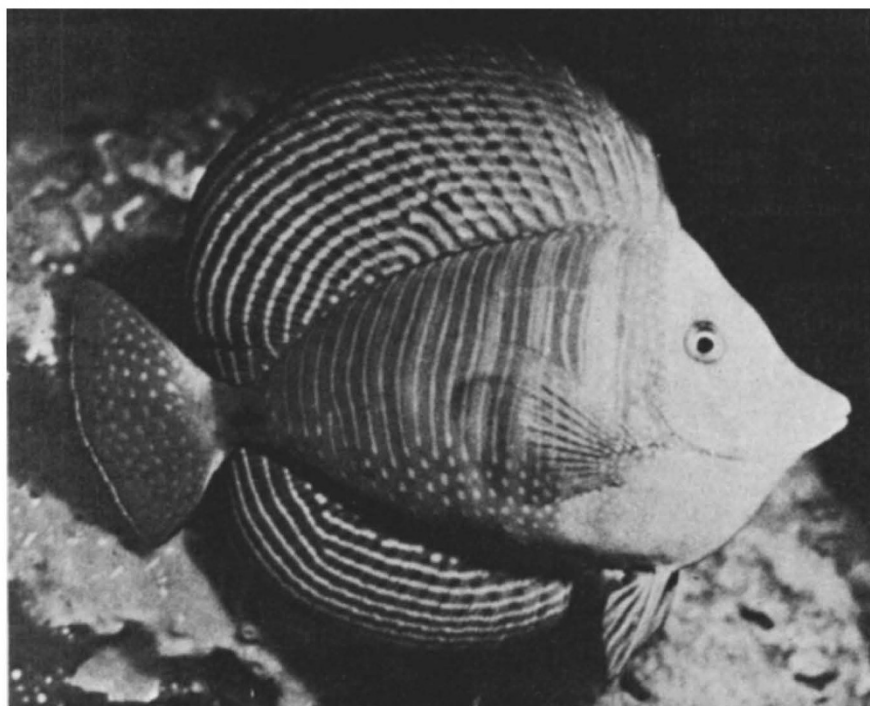
A MAJOR difficulty confronting any reviewer of this book is that of indicating clearly the type of reader to whom it should appeal, especially as the author states that it is directed at "all levels of reader" including those "planning to enter a health-orientated profession".

Among those professions, however, medicine is not specifically mentioned, and, in fact, the book is not one which could be recommended to a medical student as his working text since too many topics are treated superficially without sufficient attention to experimental evidence. The author has, however, produced a masterpiece of didactic compression which is commendably free from serious inaccuracies.

The text is liberally embellished with exceptionally clear tables and figures, often in the multicolour format familiar to readers of *Scientific American*, to which frequent reference is made in the bibliography. A most valuable feature of the book is a series of foldover plates depicting the structure of the human body layer by layer, and some might think that a study of these could save a great deal of time commonly spent in the dissecting room.

So much information is crammed into some 550 pages that redundancy is minimal and, therefore, great concentration is demanded of the reader. To aid him in monitoring his progress, however, each chapter concludes with a summary and a set of questions. Much attention is given to diseased states (presumably in the interest of "relevance") but the wisdom of including a thumb-nail sketch of the symptomatology of acute appendicitis is debatable. Likewise, an attempt to summarise biochemistry in a 12 page appendix, composed almost entirely of structural formulae, seems ill-judged, as does the inclusion of an elaborate table listing the symptoms of drug abuse and providing a key to junky slang; and the glossary at the end of the book usurps the function of the lexicographer by including such definitions as "quality—the nature and characteristic(s) of something". Misprints are rare but an eye-catching example amongst the questions on the digestive tract reads as "Discuss the importance of the lover in body function".

The growth in popularity of courses in human biology in both schools and universities may well ensure for this book a large market. R. V. Coxon



Zebrasoma, the sail-finned surgeon fish. From *The Guinness Guide to Underwater Life*. By Christian Petron and Jean-Bernard Lozet. 224 pages including over 100 colour illustrations and 280 in black and white. (Guinness Superlatives: Enfield, April 1975.) £6.95.