

## Book Reviews

### **Genetic perspectives in biology and medicine.**

Edward D. Garber (ed). University of Chicago Press, Chicago, 1985. Pp. vii+500. Price £25.50 HB; £10.25 PB.

This book is a collection of essays selected by Edward Garber from *Perspectives in Biology and Medicine*. His aim was to choose "those essays which most effectively tell the story of the latter twentieth-century advances". To some extent he has succeeded, but I get the feeling that his selection has had more to do with essays that he enjoyed. Why else include Bruce Wallace's pithy essay "Changes in the genetic mentality" in which he laments the scarcity of real geneticists in a world populated by ersatz geneticists, for example molecular geneticists (biochemists and physiologists) and developmental geneticists (embryologists), "scientists who once scarcely conversed with geneticists". J. B. S. Haldane's "A defense of beanbag genetics" is also there, but suitably sanitised for modern American sensitivities by the deletion of his epic poem "Cancer's a funny thing".

Garber has grouped the 28 essays under five headings: "History", "Two geneticists and a founding father", "Interdisciplinary genetics", "Human genetics", and "Futurism". These headings will give some idea of the scope of the collection. I need only say that I thoroughly enjoyed reading this book. It is well worth having for a bit of recreational scientific reading, and at £10.25 for the paperback, excellent value.

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**Animal behaviour: a concise introduction.** Mark Ridley. Blackwell Scientific Publications, Oxford. 1986. Pp. vi+210. Price £8.80 PB. ISBN 9 780632 014163.

In a memorable sketch from a memorable early series of *Monty Python's Flying Circus*, contestants in a quiz programme were obliged to summarise the works of Marcel Proust in 15 seconds. The result was a cleverly amusing, if verging on unintelligible, blast through the great man's character and writings. It left the viewer impressed but exhausted. While Mark Ridley has set himself the rather less heroic task of introducing the study of animal behaviour in 200 pages, the reader is left with something of the same sense of breathlessness by the time he gets to the end of the book. As he skips from mechanisms of behaviour to its development, function and evolution in this slim and copiously illustrated volume, Ridley manages to mention everything from

neurotransmission and the principles of Mendelian genetics to human culture and sexual selection. The result is a high-speed, if carefully directed, summary of the main fields of investigation.

On the whole, the book is well-written (an absolute necessity in this case) and Ridley makes his points with authority and some style (though pedants will be irritated by his consistent use of "less" where he means "fewer"). However, there is a price to be paid for brevity and in several places Ridley pays it. In his efforts to avoid space-wasting detail and qualification, he frequently leaves the reader, often undirected, to seek other sources to fill gaps in the background or look up counterarguments. In places, therefore, the book is not so much a self-contained introduction as a guide to what should be looked up elsewhere. The chapter on the machinery of behaviour (2) is particularly afflicted in this way. However, this is only a patchy problem. In other places Ridley explains difficult ideas with consummate skill; the first chapter on the biology of behaviour, for example, is quite simply one of the best introductions I have read.

A baffling aspect of the book is the almost complete lack of reference to cost-benefit analysis and optimality theory. While it is hinted at in various places, "optimality" does not appear in the index under anything and even in the chapter on finding food (5), it is mentioned for the first time only in the summary. Since the optimality approach derives logically from the idea of evolution by natural selection and has been responsible for some of the most profound insights of the last decade, its virtual invisibility here is extraordinary.

If omission is one cost of brevity, over-simplification is another. In the discussion of Rothenbuhler's bees (Chapter 3), for instance, Ridley implies that uncapping and removal behaviours are each controlled by a single gene. In fact the evidence suggests that these behaviours are coded for polygenically with the "U" and "R" alleles perhaps acting as switches. Similarly, it is a misleading simplification to say that kin recognition is necessary for the appropriate apportionment of altruism (Chapter 9) (even if this statement is weakly qualified later on). Some topics, such as motivation and the adaptiveness of migration, are dealt with so summarily that either little or no real insight is imparted or insight is imparted so sparingly that the reader is left confused rather than enlightened. The discussions of filial and sexual imprinting (Chapter 3) and the use of magnetic compasses and magnetic maps in navigation (Chapter 4) exemplify the latter problem.

Despite these difficulties, which all arise from trying to shoe-horn too much into too little space, there is no doubt that the book is a competent, informative and for the most part readable account. One has to ask, however,