

GENETIC RECOMBINATION: UNDERSTANDING THE MECHANISM. Harold K. Whitehouse. John Wiley, Chichester. Pp. x+415. Price: £23.75.

This is the second authoritative book to have appeared on the subject of genetic recombination during the last few years. The two are strongly contrasted in several respects. Frank Stahl's "Genetic Recombination: Thinking about it in Phage and Fungi" was lively in style, occasionally amusing and provocative, and rather selective in its coverage. Harold Whitehouse's book is terse and unsensational in expression and tells us virtually everything that we might ever want to know about the data relevant to the mechanism of recombination. The main resemblance between the two books, apart from their overlapping subject matter, is that both demand a great deal of the reader. Stahl sets the reader overt puzzles and problems. Whitehouse provides no problems labelled as such, but the whole text is a challenge to understanding. It is a book that has to be worked through, but the persistent reader will emerge with a real understanding of the subject.

Dr Whitehouse deals, in successive chapters, with bacterial transformation, single-stranded phages, bacteriophage T4, bacteriophage lambda, *Escherichia coli* and eukaryotes (the last being a particularly long chapter, dealing with both fungi and *Drosophila*). There follows a chapter on General Conclusions, which ventures no grand new scheme but provides some clarifying discussion, particularly on recombination as a multi-step process. A final chapter on movable elements is comparatively lightweight and appears almost as if it were an afterthought; it does, however, provide a useful introduction to a rapidly moving subject.

One excellent feature of the book is the amount of primary data provided in the form of summarizing Tables and Figures. The author, in effect, invites us to work through them with him. His commentary is usually very clear and the presentation sometimes ingenious and only occasionally puzzling. I thought that Fig. 75 and other like it, illustrating polarity in gene conversion, might baffle some readers to begin with, but, once understood, they give a good impression of overall patterns. Here and there the text might have given the reader more help with definitions. For example, "rolling-circle" replication is referred to several times (and presented in a diagram), but I do not think it is ever made quite clear how the circle rolls. On another and more difficult point, I was a little unhappy about the use of the term "negative interference". There is always the danger with this term of confusion between what is observed (double or multiple exchanges within sequences of closely-linked markers) and the mechanism supposed to explain the observation (clustering of discrete recombinational events may seem to be implied, but single conversions will sometimes suffice). Dr Whitehouse is not confused, but some of his readers may be.

This is a valuable book, and likely to keep its value for many years. I doubt whether anyone has read the recombination literature more extensively and carefully than Dr Whitehouse and we should be grateful to him for such a clear and critical summary of such a large and difficult field. I am not sure how many undergraduates will find it within their grasp, but it will certainly be an essential book for their teachers.

J. R. S. FINCHAM

*Department of Genetics, University of Edinburgh*