

Invertebrates seem to show significantly more heterozygosity than do vertebrates. An extensive bibliography is provided of the very scattered literature in this field.

Altogether it makes a substantial volume of 568 pages, which could usefully find a place in genetical and zoological libraries outside France. Subsidised by C.N.R.S., at 75 Fr. (about £7) it is cheap enough by present-day standards, though the book would need binding for library use—the paper-backed review copy, weighing a kilogram, was already beginning to come to bits after a single reading.

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NATURAL SELECTION AND HEREDITY. P. M. Sheppard. Hutchinson, London. Pp. 239 + 9 text figures. Hardback £3.95. Paper-back £2.75.

The first edition of Professor Sheppard's book was published in 1958. In the meantime it has proved exceptionally popular, not least because of the care and clarity of the writing in illustrating both the principles of heredity and the power and scope of their application to problems of selection and adaptation. I would single out in particular the chapter on polygenic inheritance as a model of brevity, uncontaminated either with oversimplification or condescension. A particularly attractive feature of the book is that it gives emphasis to observations on natural populations so that, for students especially, there is no room for doubt that selection and adaptation are things which are taking place, so to speak, under their very noses and not matters merely of speculation and of model making in the scientific literature.

As a cytologist, there is one criticism that comes readily to my mind. The organisation and behaviour of chromosomes along with the implications are issues given less attention than they deserve. To take one point, Professor Sheppard devotes considerable attention, in a new chapter, to the question of "neutral" genes. The problem is unquestionably important as well as fashionable. Consider, however, the information now at hand which shows quite enormous differences in the amount of genetic material, of chromosomal DNA, between very closely related species. If there is an element of doubt as to whether mutation of a single base pair within a gene may be neutral in effect or otherwise, what are we to make of the variation involving many picograms of DNA that commonly accompanies the divergence and evolution of species? What, specifically for example, are we to make of the hundred-fold variation in nuclear DNA amount between diploid species of flowering plants? How much neutrality here? I know of no firm answers to the question but it is a matter of more than passing interest to biologists concerned with natural selection and evolution.

It is, of course, easy to make a list of topics omitted or, according to the interest of the reader, those given less emphasis than one would wish. It is manifestly and obviously impossible to please everyone. At the same time this book has pleased more readers than most books on the subject. It is of proven worth. Now brought up to date it will, I am quite sure, continue to command a wide readership, particularly among university students. The price is reasonable, the value for money excellent.

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