

Book reviews

An Introduction to Molecular Biology. Robert C. Tait. Horizon Scientific Press, Wyomondham. 1997. Pp. 346. Price £34.99, paperback. ISBN 1 898486 08 5

Clarity and simplicity are the main qualities of this primer in molecular biology. It is virtually a self-contained book for the complete novice. The target audience is stated to be US high school and community college instructors and presumably their students are meant to read it too. It could certainly be fruitfully used by first year undergraduates at UK universities.

The book is coherently and logically structured. The first chapter on scientific method is an easy read but is rather trivial and probably unnecessary. The next 11 chapters develop the topic of molecular biology in a step-by-step fashion. Thus, the reader is led, gently, from the structure and function of DNA through the 'nuts and bolts' of gene isolation by traditional cloning methodology and on to PCR methods. All the basic principles and methods are described in such simple language, yet so accurately, that hardly a word is wasted. The culmination is a chapter on the applications of this technology which is notable for its wide range of examples and its succinctness of exposition.

The final chapter describes a useful series of nine simple practical protocols which demonstrate many of the principles and practices employed in recombinant DNA-based experiments. These range from simple gel analysis through to DNA fingerprinting and include transformation techniques and analysis of recombinant molecules. These experiments support the text and are a valuable addition to the theoretical treatment. There is also a procedure for building an electrophoresis tank which is probably well meant but I would advise that at today's prices commercially available apparatus is affordable and preferable.

There are two main problems with this book. First, the illustrations are of appalling quality. By this I mean that they are poorly reproduced as though the publishers do not have access to state-of-the-art equipment. Much of the graphic work looks as though it was produced on a primary school computer and dot matrix printer. This is a real shame as the diagrams are in general well-designed and informative. Secondly, the price is outrageously high. At £34.99 one expects quality. I am afraid at this price the book is simply not worth buying despite its educational value.

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Behavioral Genetics (3rd edn). Robert Plomin, John C DeFries, Gerald E McClearn and Michael Rutter. W H. Freeman and Co., New York. 1997. Pp. 367. Price £26.95, hardback. ISBN 0 7167 2824 9.

The genetics of normal and abnormal behaviour is a rapidly expanding field of research which increasingly attracts both scientific and public attention. In the past few years there have been no less than three new journals established that are devoted mainly or entirely to genetic aspects of psychiatric disorders, and studies of behavioural traits in humans and in animals are increasingly finding their way into mainstream genetic and general scientific journals. Nevertheless this area has probably provoked more antipathy and controversy than any other aspect of genetics; and the reasons for this are not too difficult to discern. For many behavioural scientists the very term 'behavioural genetics' sounds like an oxymoron and carries with it incredible notions such as the environment having no influence on shaping behaviour or individuals having no freewill. At the opposite extreme, enthusiastic believers in genetic influences on behaviour have sometimes swallowed deterministic arguments whole and then have regurgitated them to support eugenic policies, to explain ethnic differences or to predict the inevitable creation of social underclasses.

Fortunately the new edition of *Behavioral Genetics* by Plomin and his co-authors provides a palatable remedy for both incredulity and gullibility. The key questions in behavioural genetics are not of course whether genes or environmental factors shape behaviour but rather how do nature and nurture combine and interact and how can we detect and identify genes that contribute to behavioural traits? The emerging rapprochement between quantitative and molecular genetics is particularly well presented in this book and the greater emphasis on molecular aspects is one of the more important differences from previous editions. This, together with recruitment of Michael Rutter, a psychiatrist, as co-author enhancing the coverage of clinical topics, provide new strengths to what, in the first two editions, was already a first rate short text.

As the target readership includes psychology undergraduates and non-biologists *Behavioral Genetics* inevitably starts with some fairly basic material on Mendelian and molecular genetics but quickly gets on to more complicated areas and covers quantitative genetics in a readable and lucid way with a minimum of algebra. This is partly achieved by referring the reader who requires more technical detail to the two short appendices on statistical genetics and model fitting. Liveliness and readability is also boosted by the frequent use of boxes and 'summing up' sections together with 'close-ups' consisting of photographs and biographical sketches of current researchers in behavioural genetics and genetic epidemiology.

All-in-all this is an excellent new edition which I think justifies the claim in the publishers blurb that this is 'more a sequel than a revision'. Although fairly brief it succeeds in being comprehensive. It is highly recommended for readers who want to be introduced to the subject and is essential reading for those already initiated but who want to be updated. I predict that it will prove popular. My review copy rapidly 'walked' after it arrived on my desk

and did not re-materialize until several departmental copies had been purchased.

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Books received

Adaptation. Michael R. Rose and George V. Lauder (eds). Academic Press, San Diego. 1996. Pp. 511. Price £24.95, paperback. ISBN 0 12 596421 8.

Metapopulation Biology — Ecology, Genetics and Evolution. Ilkka A. Hanski and Michael E. Gilpin (eds). Academic Press, San Diego. 1997. Pp. 512. Price £34.95, paperback. ISBN 0 12 323446 8.

The Study of Gene Action. Bruce Wallace and Joseph O. Falkinham III. Cornell University Press, Ithaca. 1997. Pp. 260. Price £13.50, paperback. ISBN 0 8014 8340 9.

Biotechnology and Plant Genetic Resources — Conservation and Uses. J. A. Callow, B. V. Ford-Lloyd and H. J. Newbury (eds). CAB International, Wallingford. 1997. Pp. 308. Price £49.95, hardback. ISBN 0 85199 142 4.