

Book reviews

Protocols in Human Molecular Genetics (Methods in Molecular Biology, Volume 9). C. G. Mathew (ed.) John Wiley, Chichester, 1991. Pp. 461. Hardback, price £60.00. ISBN 0 89603 205 1.

'The recent explosion in molecular genetic technology has provided the tools to extend the analysis of inherited traits ...' (Farrell p. 365), and this has spawned an explosion of books describing protocols. The best of these books are invaluable, circumventing the often lengthy paper trail through references to track down the method, minus the crucial practical details, that the authors reported they had used. According to the book's editor, Chris Mathew, this is one of the purposes of *Protocols in Human Molecular Genetics*. The book is aimed at research workers, from students to 'clinical investigators', who have not used a particular technique previously.

The first two-thirds of the book deal almost exclusively with protocols and adhere to an excellent format of introduction, materials (with suppliers where relevant), detailed methods, and 'notes'. The combined wisdom of the many (56) eminent contributors is distilled in the notes to steer the uninitiated around the pitfalls of the polymerase chain reaction, DNA sequencing, a variety of methods for detecting gene mutations, Southern blotting, the manipulation of megabases of DNA and mapping human genes. Generally the contributions in this section of the book are up to date and well referenced, although the layout of the PCR troubleshooting table in chapter 1 is poor. Landergren's elegant description of automated gene detection using an oligonucleotide ligation assay engendered envy — the fulfilment of population screening without pain? Fully automated systems will no doubt be high on many priority lists in the future. Not all of the protocols require such sophisticated equipment, although I wonder how many laboratories have a salad spinner? Chapter 3 will be vital reading if you too had failed to appreciate the utility of this culinary gadget.

The final third of the book deals mainly with the application of molecular genetic techniques to the diagnosis of disease (infectious, inherited and oncological) and forensic medicine. The basics of genetic linkage analysis are described, as are the software packages that are available to perform the necessary statistical calculations to establish/exclude linkage. The chapter on 'Software for Genetic Linkage Analysis', prompted this semi-computer literate scientist to consider just how much jargon was used throughout the book. 'Intelligent knowledge-base management systems' remain a mystery but most abbreviations and technical terms, such as 'a NAFNAP' and 'a crash-family' (!), are explained fully.

The final chapter of the book considers what the preface describes as 'the neglected question of the ethical implica-

tions of modern molecular genetic research'. It highlights the issues with great clarity, considering not only 'Preventative and Predictive Medicine' and 'Eugenics' but also the wider issues of the application of our existing expertise to tackle problems that do not appear to be of major importance to the First World. Perhaps this should have been raised in the introduction to, rather than the conclusion of, the book in order to truly overcome the neglect the topic often receives.

In summary, the book is proving to be a useful first point of reference in our laboratory both for technical and ethical 'discussions'. It definitely warrants inclusion in the laboratory's library.

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The Ant and the Peacock. Helena Cronin. Cambridge University Press, Cambridge. 1992. Pp. 490. Hardback, price £27.50. ISBN 0 521 32937 X.

Evolution by natural selection is one of the cornerstones of modern biology. Yet, for many years after its announcement by Charles Darwin and Alfred Russell Wallace, the theory was controversial and its importance doubted. Helena Cronin's history of Darwinism traces the origin of the controversies and shows how modern biological thought is resolving many of the problems.

The 'ant' and the 'peacock' of the title are metaphors for two of the most persistent difficulties in evolutionary theory, altruism and sexual selection. Darwin and Wallace disagreed profoundly over the nature of the forces which produced such lavish structures as the peacock's tail. Darwin believed that they evolved through female preference, while Wallace claimed that they resulted from natural selection, a magnificent tail indicating a 'vigorous, defiant and mettlesome male'. Dr Cronin shows that this early dispute has echoed to the present day, although the debate over female choice versus male fitness has been transformed by theories which account for ornamentation through selection on genes rather than individuals.

A theme that runs through the book is the way in which some early disputes arose through ignorance of inheritance. Zoologists now account for altruism and stereotyped aggression by Hamilton's theory of kin selection. However, this consensus only came about after a century of woolly thinking by evolutionary biologists, who believed that social behaviour was for the good of the species. Dr Cronin traces this