

is a surprisingly comprehensive and fascinating mix ranging from behavioural ecology to the evolution of satellite DNA. There is nothing wrong with a book that takes this personal line: the result is warm and wet, idiosyncratic and opinionated but definitely alive. It would never do as a course text for a class of dull undergraduates — they might believe every word of it — but should sharpen the curiosity and the critical faculties of a would-be researcher.

This is no dusty history of distant battles, but a bundle of dispatches from the front. The first 3990 million years of the war are dismissed in a couple of paragraphs, so we are immediately confronted with the big questions: 'Why do tiger-moths click?' and 'How did the peacock get his tail?'. Before reaching the front we are invited to wade through a rather boggy chapter on mutation. This is a poorly signposted minefield littered with unstable devices like isochores and molecular drive; a fascinating area but best avoided unless you bring your own map. There follows a dutiful canter across the arid plain of formal population genetics, enlivened by the occasional outburst of rebellious facetiousness. 'Consider a fictitious species with a generation length of two years. Two centuries ago this unfortunate beast met with disaster. Oriental gurus suddenly realised that the only sure way to cure a sprained ankle was to apply a poultice containing extract of its left tear duct. Consequently, the species was hunted down to an effective population size of 1000, from which it never recovered.' Endearing or enraging?

Eventually we come face to face with the politics of war: selectionism, mutationism and neutralism. At first, life is a picnic with classic English cuisine. We are served lavish portions of swallowtail, scarlet tiger, meadow brown and banded snails. As our boys tuck into yet another helping of peppered moth, their healthy outdoor life is disturbed by the distant thunder of enzyme electrophoresis. However, this chemical trickery was largely perpetrated by foreigners and, like the Japanese deployment of the sinister but odourless neutral theory, merits no more than a sideways glance. Then it is back to the noble all-British virtues of altruism and co-operation, and the equally British, if less noble, obsession with sexual selection. After wide-ranging and informative forays into interspecific interactions and intragenomic conflict, the authors finally come clean about the dark secret we have suspected all along: they have been practising Molecular Methods. In a revealing account that pulls no punches, we are shown that such methods are nothing to be ashamed of and can, if properly used, enhance one's performance. The dangers, too, are laid bare: 'Any scientist who understands the basis of RAPDs, and so potentially could use them in an informative way, would almost certainly know enough to avoid them like the plague!'. It needed saying.

Our heroes then gallop across the fields of speciation, phylogeny and the evolution of sex, lashing out boldly and leaving their victims to lick their lacerations. Finally, they arrive at their destination and hitch their horses to the wagon of the future, gaily painted with the letters 'DNA'. For all its quirkiness, this book is flavoured with a vital

ingredient: the enthusiastic expertise of authors who have eclectic interests and first-hand experience of the subject. It is definitely a good read.

PETER YOUNG  
Department of Biology  
University of York  
PO Box 373  
York YO1 5YW  
U.K.

**Plant Gene Isolation — Principles and Practice.** Gary D. Foster and David Twell (eds). John Wiley and Sons, Chichester. 1996. Pp. 426. Price £35.00, paperback. ISBN 0 471 95539 6.

This book is an edited collection of articles describing the different experimental approaches that can be employed to isolate plant genes, ranging from the long-established cloning and screening techniques to the newer genetic strategies. In my view, it is one of the most useful methodological texts I have seen in recent years. A valuable feature is that virtually every approach that one may wish to employ in plant gene isolation is included in this one volume. The only method that I wanted to see given fuller coverage is the yeast two hybrid system. A second successful feature of the book is that each chapter manages to provide a detailed, readable account of the development and principles of the techniques described, as well as to give practical guidance and, in some cases, protocols. Integrating both aspects is not easy to achieve and the editors and authors deserve credit for striking the right balance.

The book starts with a review of the structure and organization of plant genomes which highlights recent progress in comparative genome analysis and provides a good background for some of the later chapters. There follow chapters on making cDNA and genomic libraries and an account of YAC, BAC and cosmid library construction. I found the latter article particularly useful and timely because of the key importance of these technologies in map-based cloning strategies. Subsequent contributions describe the various methods of screening libraries, including the use of heterologous and homologous probes, differential screening, and screening expression libraries with antibodies and oligonucleotide probes. A chapter is included on the application of functional complementation in yeast and *E. coli* to clone plant genes, an important and increasingly used technology. The next part of the book focuses on genetic approaches. There is a good account of mutagenesis and genetic analysis followed by a well-written exposition of chromosome walking and map-based cloning, not the easiest of topics to explain well. Further chapters describe insertional mutagenesis using T-DNA and transposons. At this point the book returns to non-genetic approaches with an informative chapter devoted to PCR techniques. There follows a review of subtractive methods and a final chapter on sequencing projects. In general I found the articles authoritative, accessible, informative, appro-

priately illustrated, and well referenced. The only significant criticism I have of the book is that the reproduction of illustrations is not consistently good. The paper is not glossy and several figures lose clarity as a result. However, this is not a major detraction.

In summary, this volume would be a valuable addition to any laboratory concerned with plant molecular genetics. Postgraduate students, postdoctoral researchers and group leaders will find that it may help them to decide which strategy to employ in gene isolation and will provide an informative introduction to the chosen techniques.

GARETH I. JENKINS  
*Plant Molecular Science Group*  
*Division of Biochemistry and Molecular Biology*  
*Institute of Biomedical and Life Sciences*  
*Bower Building*  
*University of Glasgow*  
*Glasgow G12 8QQ*  
 U.K.

**An Introduction to Recombinant DNA in Medicine (2nd edn).** Alan E.H. Emery and Sue Malcolm. John Wiley and Sons, Chichester. 1995. Pp. 206. Price £14.99, paperback. ISBN 0 471 93984 6.

Being asked by a senior medical consultant to justify why it is important that one of their MD students has a working knowledge of genes, promoters, PCR, linkage, and homologous recombination is a recurring nightmare for me. The obvious implication is that although this molecular biology stuff is interesting, most still see it as having no relevance to how the majority of patients are assessed and treated. In their excellent book, *An Introduction to Recombinant DNA in Medicine*, Alan Emery and Sue Malcolm show not only that recombinant DNA technology will have an enormous impact on medicine, but that it already does. What their book serves to do, and does well, is explain the basic technology of molecular biology while remaining focused on the application of this to medicine. This book wins high praise from me on four counts: (i) the basic science, both the concepts and the technical detail are described very clearly, (ii) although the book covers a wide variety of subjects, the weighting given to each is remarkably even, (iii) historical background is often used to explain developments allowing the reader to see why there has been such a huge expansion in this field in such a short time, and (iv), the consistent emphasis on how and why this technology is relevant clinically.

The first half of the book focuses on the science and techniques of recombinant DNA manipulation, whilst the second half describes the molecular pathology of both genetic and acquired diseases, prevention and treatment of disease using recombinant DNA and finishes with some discussion of the wider issues associated with the applica-

tion of molecular genetics to medicine. The text is very readable and assumes no prior knowledge of the field. Medical students and practising clinicians are likely to find the book most useful, but anyone with a general interest in the application of molecular biology to medicine would find it helpful. Some of the figures are not as sophisticated as we have become used to, but this might reflect the relatively low price compared to similar publications. There are perhaps a few areas I would have expanded. For instance, whilst the technology of transgenesis is described, a couple of examples of some of the disease models which have been created by this technology might have helped the reader to understand its importance more fully, and a little more on the human genome project would also have been useful.

The book is as up-to-date as publishing deadlines allow and should not date too quickly although some areas, for example, the chapter on treatment, may see more progress than others. What omissions I found were small, for example, I was surprised to see no mention of the cloning of antibodies as single chain molecules in the section on monoclonal antibodies and in the gene therapy section there was no mention of DNA vaccination which uses naked DNA alone. However, I am getting rather into the minutia of this field and away from the main thrust of the book which is an overview. I am about to lend my copy to the paediatric registrar who started in the laboratory today, because, and I have two witnesses, he said to me only this morning 'Is there a book about what I'm supposed to be doing for the next year or so?'. The answer now is yes.

NATASHA J. CAPLEN  
*Ion Transport Unit*  
*National Heart and Lung Institute*  
*Imperial College of Science, Technology and Medicine*  
*Emmanuel Kaye Building*  
*Manresa Road*  
*London SW3 6LR*  
 U.K.

**Visual Genetics CD Rom (demonstration disk).** Alan Day and Robert Dean. Jones and Bartlett, Massachusetts. 1996. Price £24.95. ISBN 07637 0140 8.

How will we cope with teaching genetics to ever-increasing numbers of students with ever-decreasing resources? Can the use of computer-based teaching methods solve our problems? With these mundane questions in mind, I inserted the *Visual Genetics CD Rom* demonstration disk with real interest. The demonstration disk had two representative sections from the Virtual Genetics Study Guide (on complementation and on structural chromosome abnormalities), selected from the normal range of topics in the full version which would be included in most basic genetics courses. It also had material on nutritional mutant isolation and characterization and on complemen-