Book review

Recombinant DNA. 2nd edition. J. D. Watson, M. Gilman, J. Witkowski and M. Zoller. Scientific American Books (W. H. Freeman and Company), Oxford, 1992. Pp. 626. Softback, price £21.95. ISBN 0 7167 2282 8.

This publication is described on the back cover as a completely updated and revised version of *Recombinant DNA (A short course)* (1983) and, indeed, the authors have managed to improve on an already excellent textbook. This edition has thirty chapters as opposed to its predecessor's eighteen, reflecting the speed at which this field is progressing. The book begins by dealing with the development of recombinant DNA technology through a historical appreciation of some of the major landmarks in this research area, using original experimental examples to introduce the basic principles of molecular biology. Armed with this knowledge, the reader is ready to venture further into the realms of molecular biology and to consider the analysis of cloned genes. The section is opened with a chapter devoted to the polymerase chain reaction (a demonstration of the timeliness of this book). Rather than mention this technique in passing, as might be expected in a less current book, the reader is left well aware of the impact that this development has had and its possible applications. However, it is a reflection of this book's balanced style that reference is made to the possible pitfalls that such a powerful technique has in store for the unwary experimenter. The subsequent chapters in this section are reworkings of ones that appeared in the first edition, covering isolation of cloned genes, genome complexity, control of eukaryotic gene expression and 'movable genes'. The progression of ideas is continued into the next section with consideration of more elaborate techniques for studying gene function, dealing with *in vitro* mutagenesis and the introduction and expression of genes in mammalian cells, yeast, mice and plants.

The remainder of the book represents the bulk of the new material. The section entitled 'Analysis of Important Biologi-

cal Processes by Using Recombinant DNA' describes how recombinant DNA techniques have been applied to answer questions concerning many aspects of cellular biology. The topic areas are wide-ranging, including antibody diversity, membrane proteins, intra-molecular signalling, oncogenes, the cell cycle, the control of development, genes involved in brain function and molecular aspects of evolution. Lastly, the reader is given an appreciation of the impact and applications of recombinant DNA technology on the areas of biotechnology and human genetics, including current issues such as AIDS research and the Human Genome Initiative. With regard to the latter topic, I was interested to read the subsection entitled 'Understanding our Genome will Benefit Humanity' and gathered from this that the author's word was final!

Overall the book's strengths lie in its readability and the description of original experiments to explain how the facts were arrived at. The copious use of colour graphics aided understanding and, I felt, meant that the book would be appreciated also by a less motivated reader. In summary, this textbook could prove to be invaluable to undergraduates with an interest in molecular biology and it is possible that it may well be the source of many of their lectures. The reasonable price also makes this a good choice for anyone simply with a desire to know more about this area of research.

Taking off my rose-coloured spectacles, one comment I must make is that the cover is a little too flimsy. Certainly, undergraduates are much more likely to buy the softback edition and, if the book is to get the usage the editors would wish, a tougher cover would be more practical.

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