

watering book and having deposited the review copy in our library, I went out and bought my own. I have never discovered how American publishers manage to produce these wonderful texts at such competitive prices; perhaps the size of the college market in the USA is an important factor.

As the title suggests, *Genes and Genomes* is about molecular biology. Part I is an historical overview of the status of molecular genetics in the early 1970s, that dimly remembered era before the advent of the recombinant DNA concept. Part II describes the tools for and the products of DNA manipulation; it is not quite Maniatis level but there is much more detail and better explanations than you will find in Old and Primrose. Part III moves on to the anatomy, expression and regulation of eukaryotic genes. Part IV is concerned with understanding and manipulating biological systems. This last is the weakest part of the book, as though, after 850 pages of densely argued material, the authors became exhausted.

I presume that the book is primarily directed at graduate students in the USA, and will be used in the course work that features in the first year of an American Ph.D. In this country, with its greater degree of student specialization, the book is more likely to appeal to the specialist researcher. But at £27.50 for the paperback version, it could be on any scientist's shelf. Genes might still be largely the property of geneticists but genomes are not, and I would encourage anyone in the biological sciences to buy this book and to dip into it periodically to get a sense of the discovery and excitement that runs through the molecular biological world.

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Fundamentals of Molecular Evolution. By WEN-HSIUNG LI and DAN GRAUR. Sinauer Associates Inc. 1991. 284 pages. £16.95. ISBN 0 87893 452 9

This is a nicely sized tome of eight chapters covering most of the major areas of molecular evolution. The first two chapters are introductions to the two disciplines that molecular evolution brings together, the molecular biology of genes and population genetics. Both chapters are thorough but err on the dry side with no examples. It might have been interesting for instance to illustrate the different types of mutation with examples from human diseases.

The third chapter covers some of the methods by which the amount of evolutionary change in a sequence is estimated. However, neither the title of the chapter nor the first section mentions 'estimation'. Instead we are treated to some simple models of the evolutionary process which although useful later, I found unhelpful with no mention of the ultimate intent. There is also no discussion of the assumptions made in estimating the number of nucleotide changes.

However, there is an excellent section on estimating the number of insertions and deletions which rightly emphasizes the subjective nature of such estimations; and more than competent introductions to estimating divergence from restriction enzyme work and DNA-DNA hybridization.

It is in the fourth chapter on the 'Rates and patterns of nucleotide substitution' that the book starts to come alive with the first data. All aspects of rate variation are covered except, sadly, the intriguing differences in the rates of X and autosomally linked genes, and rather criminally, the variation in rate during time.

The fifth and sixth chapters, covering molecular phylogeny and evolution by gene duplication and exon shuffling, are both excellent introductions illustrated with good examples. The seventh chapter deals with transposable elements and is good except for a very weak section on the control of transposable element copy number. Finally genome organization and evolution are covered in the eighth chapter.

Overall the book is factually very strong and will serve well as an introduction to the molecular side of Molecular Evolution. However, the population genetics aspects of the subject are short changed. There is no real discussion for instance of the neutralist/selectionist debate, of episodic clocks and mechanisms which control transposable element copy number. These are weaknesses which I hope will be remedied in the next edition, which I hear is already in preparation.

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Chromosome Anomalies and Prenatal Development: An Atlas. Oxford Monographs on Medical Genetics No. 21. By DOROTHY WARBURTON, JULIANNE BYRNE and NINA CANKI. Oxford University Press. 1991. 104 pages. £65.00 ISBN 0 19 505145 9.

Intended by its authors for those who are interested in abnormal prenatal development either as a research pursuit or as applied to clinical practice, the atlas is based on material collected over a period of twelve years as part of a study of spontaneous abortion. The gross morphology of all specimens was recorded systematically. Dissection procedures were standardized but a full necropsy was performed routinely only in the last third of the study.

The book comprises five chapters, a reference list and index. The first section details the background and study methods, source of cases, the results of cytogenetic analysis and the definitions used for morphological classification of the abortion material. The proportions of different types of specimen are depicted as histograms according to karyotype and some clinical information is presented in the same format. The authors present much of their data as