

References

Bleuler, E. (1923). *Textbook of Psychiatry*, translated by A. A. Brill. London. George Allen and Unwin.

Applied Molecular Genetics of Fungi. British Mycological Society Symposium Series. Edited by J. F. PEBERDY, C. E. CATEN, J. E. OGDEN and J. W. BENNETT. Cambridge University Press. £29.95. ISBN 0 521 41571 3.

This volume arises from a symposium of the British Mycological Society held in April 1990. It consists of eleven chapters, the majority of which report on filamentous fungi, but four of which review aspects of molecular genetics of yeasts. One of the advantages of being asked to review symposium proceedings of this sort is the opportunity it presents to read about areas of research which are outside one's normal interests. Since this book contains reports on applied aspects of fungal genetics the majority of the articles were, for me, in this category. Three chapters on cloning vectors, strategies of gene cloning and novel methods of DNA transfer, the first two of which are extensive reviews of their respective subject areas, are followed by accounts of systems which have been developed for the production of foreign proteins through heterologous gene expression. Yeasts and filamentous fungi are dealt with separately, Jill Ogden reviewing *S. cerevisiae* and Wayne Davies covering all the published examples of heterologous gene expression in filamentous species. I was introduced to the possibilities of using methylotrophic yeasts for expressing foreign proteins in a chapter by Veale and Sudbury. Application of biotechnology to *Trichoderma reesei* and yeast is dealt with in three other chapters, whilst Oliver *et al.* contribute a brief account of molecular investigations into fungal plant pathogenicity. Overall, I was disappointed that several of the chapters could be classified as technical reports (promoter X is ten times more efficient than Y in species A); valuable, no doubt, in supplying a review of current status, but they failed to stimulate me. One notable exception to this criticism is a chapter on penicillin and cephalosporin biosynthesis by Skatrud *et al.* This presents an intriguing account of investigations into Ingolia's hypothesis that the β -lactam biosynthetic genes were transferred horizontally from prokaryote to eukaryote about 370 million years ago. Perhaps the fact that I found this chapter the most appealing shows that I am not an applied animal!

This volume is well produced, on high-quality paper, and containing, as it does, references to the 1991 literature, it is as up to date as can reasonably be expected. Can it be recommended to individual or library? It is reasonably priced by present standards and, for the individual working in this area, it will no doubt be a valuable source of reference and information. I have greater doubts, however, about its usefulness for libraries. Our library is surveying usage

of journals again, and so I am sensitive to the matter of book buying and journal subscription. Apparently we can continue to take only those journals which contain the most valuable and cost-effective words! In this economic climate, what is the merit of reports on conference proceedings? In competition for limited resources, where does this type of research monograph stand in relation to journal subscription?

The answer seems obvious. The impact of original research is unpredictable; some articles have a negligible effect on the course of research, others have an immediate and large spin-off, yet others may remain undiscovered, seminal works for a considerable period. The value of a complete, long-lasting record of research endeavour cannot be overemphasized, and libraries have to continue investing in this record, whether held in conventional form or on compact disc, and make it as complete as possible. Reports of conference symposia, on the other hand, are ephemeral. We all recognize that no one publishes original research solely in such volumes. Their immediate value as reviews might be high, but is almost inevitably followed by a sharp decline as the subject progresses. As the reviews become dated they must be superseded by others. This consideration leads to a second question. Why are reports published as such high-quality productions? Given their limited life why not publish in cheap paperback form on less high-quality paper? It must be assumed, of course, that publishers have carried out market research on this topic and know the market, but I still can't understand why limited budgets haven't forced a comprehensive and widespread change of publishing policy. Surely libraries in other countries are suffering the same economic pressures as those in the U.K., after all this is a world recession isn't it? If our library can buy any books it will be only those which have the highest priority, and I fear this purchasing restriction will prevent me recommending this volume.

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The Evolutionary Process (second edition). By VERNE GRANT. Columbia University Press. 1991. 487 pages. Hardback \$52.00. ISBN 0 231 07324 0.

Subtitled 'A critical study of evolutionary theory', this is an update of the first edition, which appeared in 1985. While this book does have some strengths, it is very idiosyncratic and I cannot recommend it.

Its major problem is that it is a very dogmatic view of evolution, rather than a critical review of the entire field. For example, Grant dismisses the suggestions by Gould and Lewontin that evolutionary biology has suffered from an overemphasis on adaptation in one sentence by saying that this attack is 'poorly founded'. Similarly, the neutralist view of molecular evolution

is dismissed by the statement that 'to our knowledge, selection is universal but drift if not'.

Woven in with such dogmatic statements are a number of logical inconsistencies. For example, Grant states that the five-kingdom system for organismal classification is misleading, and offers a ten-kingdom scheme in its place (prokaryotes, viruses, and eight eukaryotic kingdoms). At the same time, however, he takes Woese and colleagues to task for their suggestion that the prokaryotes be split into two kingdoms (eubacteria and archaeobacteria), when in fact these two groups are significantly older than any of the eight eukaryotic kingdoms he proposes.

Finally, Grant overlooks two of the most active areas of evolutionary biology, molecular evolution and quantitative genetics. The treatment of molecular evolution is very dated, dealing almost exclusively with allozyme data. Aside from a few paragraphs on DNA hybridization, there is no mention of DNA data. There is no discussion of the possible roles of

catalytic RNAs or the RNA-world ideas in the chapter on the origin of life. While molecular evolution is poorly presented, it is at least mentioned. There is no mention at all of quantitative genetics, even though Grant focuses almost entirely on the evolution of phenotypes.

This book is not entirely without merit, as it presents several interesting plant examples and gives a concise overview of the main features observed in macroevolution. Although the author acknowledges in the preface that the purpose of this new edition is 'to bring treatment of a fast-moving field up to date', he has clearly failed to do so, presenting instead a review of evolutionary biology in the early 1970s. Reading this book makes one realize just how much evolutionary biology has changed over the last twenty years. While it is interesting from this historical perspective, I cannot recommend this book as a current survey of modern evolutionary theory.

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