

calcium promotes, whilst increased PKC prevents, apoptosis in different cell types.

The genetic control of programmed cell death provides a central thread to the theme of this book. The term 'programmed' implies ultimate regulation from within the cell, and several of the chapters refer to experimental evidence of genetic control of cell-death processes. However, two of the most important genetic systems of relevance to cell death, although occasionally referred to, are sadly missed from this volume: death genes in the nematode *C. elegans* and the mammalian cell survival gene, *bcl-2*. It is likely that this area of cell death research will develop particularly rapidly over the forthcoming years.

In their introductory chapter, Tomei and Cope state the objective of this book: 'to provide graduate students and scientists an introduction to the concept of apoptosis and an opportunity to consider how scientific hypothesis functions'. In my view they achieve both of this objectives and, in so doing, will probably also succeed in convincing some of the sceptics that there is more to cell death than downhill thermodynamics.

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The Molecular Pathology of Alcoholism. Molecular Medicine Series. Edited by T. NORMAN PALMER. Oxford University Press, 1991. 293 pages. Paperback £22.50. ISBN 0 19 261903 9.

Bleuler's classic work on psychiatry (1923) devoted only 13 of its over 600 pages to the causation of mental disease. Until recently few more modern textbooks could justifiably claim that our factual knowledge allowed a greater ratio to be given, although hypotheses as to aetiology are as legion as they have always been. Of the psychiatric illnesses the anatomy of alcoholism, with its multifaceted social and medical dimensions, has always led it to be the most difficult to dissect. By far the most commonly used stimulant of man is also his most common poison and a *sine qua non* of one of his most common diseases. Attempts to cover the subject in depth have not always therefore been successful.

It was a pleasant surprise then to receive a jolly good book devoted to telling us what is known of the molecular aspects of alcoholism. I have read many of the chapters several times over and the softback covers of the review copy are in a rather sorry state, surely the hallmark of something well worth perusing. The first two chapters of the book, taking up nearly 50% of the total, both involve the part or whole authorship of Charles Lieber. After a brief social introduction the first chapter gives a comprehensive review of alcohol-related pathology and pathophysiology by human organ system. Not only are the primary toxic effects of alcohol discussed, but also the

cascading series of events leading to clinical phenotypes as far as these are known. The following chapter on the liver is equally lengthy, reflecting the pivotal importance of this organ in the metabolism of alcohol. Current views on all aspects of the biochemical events leading to hepatocyte injury are presented, and not just the part that the various systems of alcohol-degrading enzymes have to play. The effects of drugs on these systems and the reciprocal effect these systems have on drug metabolism are covered, as are ideas about how alcohol may be involved in carcinogenesis. There follow two chapters on the alcohol and aldehyde dehydrogenases. The first describes the basic biochemistry of these enzymes, although I am not convinced that printing pages of full amino acid sequence data (nor the cDNA sequence data found in the next chapter) for the variant types serves a useful purpose in this sort of volume. Bleuler himself noted that the susceptibility to the intoxicating effects of alcohol was far from uniform and noted that 'whoever gets drunk on small quantities will hardly ever become an alcoholic'. Yoshida covers the genetics of the ADH and ALDH systems, including their role in the alcohol sensitivity of those of Oriental extraction, which is associated with a low risk of developing alcoholism. There is a deal of overlap here with Agarwal and Goedde's rather more detailed chapter on this very subject, which might have been avoided. The direct neurotoxicity of alcohol is not neglected and Littleton discusses ideas of ethanol's interaction with inhibitory (γ -aminobutyric acid) systems and touches also on excitotoxic (NMDA) systems in the brain, his main postulate being the modulation of voltage-dependent calcium channels as a common denominator in the development of tolerance, dependence and toxicity. Finally, and unusually, the book deals with the foetal alcohol syndrome, which serves to remind us that alcohol can unfortunately severely damage other lives by a direction action as well as by its social and economic ill-effects.

So here at last is a useful book on the molecular aspects of alcoholism. Criticism can only be minor, and the book would be worth buying for the chapters by Lieber alone. There are few typographical errors and the reference lists are comprehensive and mostly up to date to 1990. The Molecular Medicine series now has several excellent volumes to its credit, though by the nature of the field some already need to be brought up to date. This reasonably priced paperback should suit the pocket and minds both of clinicians who want to learn more about the molecular aspects of one of the diseases they most commonly treat, and of scientists who want to learn how the molecular aspects can be integrated with and be explanatory for the huge variety of clinical manifestations.

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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