

made with these technologies, there shouldn't be too long to wait for what should be the very exciting sequel (or series!): 'Functions of the Human Genome'.

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In the Blood. Steve Jones. HarperCollins Publishers, London. 1996. Pp. 302. Price £20.00, hardback. ISBN 0 00 255511 5.

One of the factoids that university lecturers rapidly learn is that students have an attention span of about 20 minutes. The problem, then, is to find a way of filling the remaining half-hour of a notional one-hour lecture slot. Most of us do this by acquiring a collection of slides, overheads and anecdotes, related, or more often tangential, to the lecture topic, in order to keep the students entertained. In this book, Steve Jones has taken this process to its logical conclusion in that the bulk of the book is devoted to exactly the 'lecture-filler' material that experienced lecturers hoard like magpies, and the 'hard stuff' is relegated to 'boxes', that the less demanding reader can skip without losing the thread of Jones' arguments. The difference here, however, is that with the resources of researchers commensurate with a TV series, there is a lot more really good quality 'filler' than most lecturers could accumulate in a lifetime of sabbaticals, or rained-off field-work.

Although the book is primarily concerned with genetics, Jones' approach is that of contrasting scientific enquiry with religious belief (mostly Christian). I am in no position to question the theological veracity of some of Jones' contrasts, but for me the approach seems to work. Throughout the book, Jones' laconic style shines through — one can almost hear him speaking, particularly with his speciality of pithy throw-away lines.

Jones does not duck the social implications of modern genetics, especially where they impinge on legislation, often created for solid liberal reasons. Many of his genetic examples will be familiar but his style of presentation puts them in a new light. For example, the case of haemophilia in the royal houses of Europe is usually consigned to a pedigree (and sometimes a photograph of Queen Victoria) in most textbooks, but Jones puts the case in a different perspective with a narrative which describes the mores and conventions of the aristocracy of the period.

If I have a criticism it is that too often the 'boxes' of subsidiary information are too long (often several pages) and one has to search for where the main text resumes.

This is a ripping good read, well written and beautifully illustrated. Although I thought that I was fairly well equipped with genetic anecdotes, there were plenty of new things in the book to hold my attention and even old

friends were cast in a new light. There is plenty of material to fill out your lectures for years to come. At whatever your next festival is when gifts are exchanged, ask for a copy, you won't be disappointed, but keep it out of the hands of your students - they might just end up with too much stuff to pad out essays and examination answers.

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Nucleic Acids and Molecular Biology (vol. 9). Fritz Eckstein and David M. J. Lilley (eds). Springer-Verlag, Berlin. 1995. Pp. 376. Price £112.00, hardback. ISBN 9 783540 588245.

The problem (I imagine) with editing a series of books like this one is that you have to find new and exciting developments to fill 300 or so pages on an annual basis. Eckstein and Lilley have been lucky (or more likely far-sighted) in choosing an area of research where new and interesting things are not too hard to find. The title *Nucleic Acids and Molecular Biology* allows them to capture topics covering a pretty wide area, although in this volume (number 9) the topics are mainly limited to a fairly restricted definition of these terms. These include DNA structure (2 chapters), recombination (2 chapters) and a lot of coverage on DNA-protein interaction, including 3 chapters on DNA topoisomerases, 3 chapters on HMG-box proteins and 3 chapters on proteins involved in chromosome structure. The only 2 chapters which don't fit with this definition are one on ribonucleotide reductase and one on RNA splicing.

Although for most readers it does not matter, I found that the order of the chapters was not entirely logical. For example, it jarred a little to have a chapter on parallel-stranded guanine tetraplexes sandwiched between one on the unlinking of DNA by topoisomerases and one on DNA gyrase. Similarly the chapter on ribonucleotide reductase found itself between one on cyclic AMP receptor protein and one on the HMG box. However, this is probably only relevant if you read the book from cover to cover (like a reviewer has to!).

With a book of 18 chapters it is probably pointless (and dull) to go through each chapter and comment on it, so, at the risk of being unrepresentative, I will comment on selected chapters. I think the value of books such as these is that they can serve to summarise for the non-expert recent developments in a particular field. A good example of this is the chapter on chromatin structure and transcription by Hayes and Wolffe. This presents a clear account of nucleosome structure and how this can influence transcription, and is illustrated with clear explanatory figures. The 2 chapters on recombination, one on branch migration and one on the RuvAB and RecG proteins,

work well together in helping to explain a potentially difficult area. The 3 chapters on topoisomerases (unlinking of DNA by topoisomerases, gyrase and reverse gyrase) mean that this book is very useful for those interested in this area. Similarly, this book is very good for those with an interest in HMG-box proteins, which are discussed in 3 chapters. Perhaps the nicest chapter in the book is on the *E. coli* cyclic AMP receptor protein by Busby, Kolb and Buc. This is a very focused chapter containing some very nice figures and is ideal for those wishing to get up-to-date in this area.

To my mind the value of a book such as this is to provide more or less up-to-date summaries of research areas that can be understood by the non-expert. For the most part this book is successful in this respect with most of the chapters being clear, straightforward and not overly long. Another opportunity that such a book provides is the possibility of utilising plenty of illustrations that wouldn't perhaps otherwise be allowed in a research article or review. I was pleased to see that the book has 101 figures (compared with 82 in the previous volume) and 12 of these are in colour. The use of colour illustrations is to be particularly applauded as these really help to bring certain chapters alive (notably the ones on gyrase and the cyclic AMP receptor protein).

In summary this book works well and is worthwhile. By necessity the topics covered are selective and, for example, RNA does not get much of an airing and drugs get almost none at all. But there is always next year!

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Gene Transfer to Plants. Ingo Potrykus and German Spangenberg (eds). Springer-Verlag, Berlin. 1995. Pp. 361. Price DM 128.00, ringbound paperback. ISBN 3 540 58406 4.

An important factor for progress in plant sciences, has been the continuously broadening spectrum of new plant transformation techniques. A laboratory manual that provides the latest update of DNA transfer protocols will therefore be highly appreciated both by beginners and veterans. Those who are not put off by the relatively high price of the book will find it most helpful for selecting and

applying the most appropriate transfer methods for their experimental system. The strength of this manual is that, in most of its parts, it addresses the three essential questions a laboratory manual should answer: What is the potential of a technique, how does it work, step-by-step, and what can go wrong? Surprisingly, the book does not contain an index, which certainly would have been helpful.

Updated protocols on *Agrobacterium*-mediated gene transfer and the various forms of direct DNA transfer into protoplasts, plastids or tissue, provide valuable and detailed sources of information. However, no laboratory manual is fully comprehensive, and this book is no exception. Some important transfer techniques are missing, such as the Ca-alginate method for embedding *Arabidopsis* protoplasts, first published by the Willmitzer lab, or the co-cultivation technique for plant protoplasts and *Agrobacterium*, as nicely applied for activation tagging by R. Walden and his co-workers. Also, no examples of the use of viral transformation vectors are given.

In addition to three small chapters on embryonic cell culture, genetic markers and biosafety aspects, the book contains a larger section with a summary of protocols for the analysis of transgenic plants, accompanied by a short discussion about the stability of transgenic traits. It is especially valuable for those molecular protocols that cannot readily be found in common molecular biology manuals, such as enzyme assays or *in situ* hybridization techniques. Other techniques, like Southern, Northern or Western blot hybridization, various modifications of which have been published elsewhere, might be used by the readers for comparison to choose the method most suitable for their particular plant system. For example, not everybody will find 20 μ l to be the optimum volume for digestion of 10 μ g genomic DNA.

The relatively poor quality of the discussion about transgene stability, probably reflects the lack of knowledge about this topic at the time the article was written. The book mentions terms like co-suppression and *trans*-inactivation, but it ignores many of the publications that have elucidated the underlying mechanisms in recent years. To address the area of gene silencing in a way suitable for a laboratory manual, it might be appropriate for a revised version to add plant-specific protocols for the analysis of DNA-methylation, transcription and RNA-turnover.

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