Book reviews

Human Sperm Competition: Copulation, Masturbation and Infidelity. R. Robin Baker and Mark A. Bellis. Chapman and Hall, London. 1995. Pp. 353. Price £45.00, hardback. ISBN 0 412 45430 0.

There has been an increasing realization over the past three decades or so that sexual selection acts not only prior to and during courtship, affecting aspects of gross morphology, but can continue once sperm from more than one male has been deposited within the female reproductive tract. The success of different sperm pools is affected by the physical and physiological environment within the female and by the relative fitness of individual sperm. It is this sperm competition which determines their probability of being in the fertilisation set. In invertebrates it has long been recognized that the co-evolution of sexual morphology and peri-reproductive behaviour represents a sort of arms-race between the individuals with regard to maximizing the fitness of their offspring. In mammals the fact that similar processes are involved has taken longer to dawn.

This book explores the influence of sperm competition on the evolution of human sexual behaviour, physiology and morphology. All human (sexual) life is here and it is argued that virtually all aspects have evolved as a consequence of sperm competition, such as internal fertilization, penis size and shape, cryptic ovulation, female ejection of sperm, orgasm and cryptic masturbation. It addresses questions one never thought of asking and in this respect makes an absolutely fascinating read even if one cannot agree with the sometimes wild speculations made regarding certain aspects of human sexual behaviour. For example, the authors suggest 'an adaptive explanation could be considered necessary' for the increased incidence of Down's syndrome children with maternal age. The one they come up with is that older women may increase their (inclusive) reproductive fitness by producing non-reproductive 'carers' who can help in the rearing of siblings, nephews and nieces, as well as looking after their ageing parents. The rationale behind this suggestion is that people suffering from Down's syndrome are 'affectionate, caring and helpful, their social skills exceeding their other abilities' (p. 80). This bizarre idea clearly takes no account, *inter alia*, of the very high death rate of such children in the not-too-distant past, let alone over evolutionary time, making the idea of a carer 'strategy' almost impossible to contemplate. Much of the information analysed in this book is taken from a largely unpublished survey carried out by the authors, *via* a women's magazine. Throughout, one has a sneaking feeling that the 0.84% (3679) of estimated female readers who replied are

probably not a representative cross-section of British womanhood — the magnitude of this possible bias is hard to judge but it is probably in the direction of making the incidence of opportunities for sperm competition appear greater than it really is.

What audience is the book aimed at? I'm not sure. Gratuitous drawings of naked men and women, just standing around, copulating, masturbating or voiding sperm accompany every diagram, as if the casual reader will become bored with simple titles. The statistical analyses of data are presented in a rather cavalier way, often without bothering to mention what is being compared with what, and together with some poorly labelled diagrams act as a constant niggle and frustration to those who wish to understand fully the bases of the arguments. These gripes aside, the book is difficult to put down. There can be few people who are not fascinated by their own sexual behaviour and the attempt here is to place the whole thing in an evolutionary framework determined, and driven, by sperm competition. Baker and Bellis may not be always right, but it is hell of a good story.

GEOFF OXFORD
Department of Biology
University of York,
P.O. Box 373,
York YO1 5YW
U.K.

Molecular Genetics in Fisheries. Gary R. Carvalho and Tony J. Pitcher (eds). Chapman and Hall, London. 1995. Pp. 141. Price £24.99, paperback. ISBN 0 412 62950 X.

Why is *Molecular Genetics in Fisheries* like the *Alexandrian Quartet*? Here is a book which, against all the best principles of sound publishing, makes a most useful and interesting contribution. It is against the principles because, probably more by accident than design, the four main chapters are to a marked degree overlapping and even repetitious. On many topics this could be a recipe for disaster, but curiously, in the context of the contentious question of the relationship between fishery management and molecular genetics, it provides a novel treatment. There is something here which could usefully be tried again, the next time by design rather than, if my suspicion is correct, the largely accidental format. So, editors of the future, take note. If the topic for a planned book is relatively discrete but contentious, instead of the routine recipe of several authors contributing separate bits which, at least by interest go to make up the well-

rounded comprehensive treatise, try asking a clutch of knowledgeable authors all to write on the *same* subject, knowing that the varied approaches will provide illumination of the same material from different directions. It's like a series of searchlights all being directed at the same object. The result is all round illumination. And thus the *Alexandrian Quartet* analogy — four books narrating the same incidents but from the standpoints of four different characters.

This smallish book boasts eight chapters, but the last four are of only a few pages each and are styled as 'points of view'. Apart from the Jonathan Wright and Paul Bentzen short chapter on microsatellites, which is specific and evangelical, the other three are like mini versions of the more substantial chapters. Although each of the four main contributions is about the application of molecular genetics to problems of fishery management, the four searchlights do highlight different angles of the subject. The first by Linda Park and Paul Moran reviews the range of molecular genetic techniques available and compares their merits. The second, by Robert Ward and Peter Grewe, is written more from the standpoint of the fisheries, and the questions which need answering at the interface of population genetics and management. Gary Carvalho and Lorenz Hauser's chapter is more individual, and considers the pro's and con's of the stock concept in fishery management and the extent to which it is realistic in the light of molecular genetics. Moira Ferguson's chapter on the role of genetic markers in aquaculture is the last of the four main contributions, and is partly on breeding strategies and partly about keeping track of the genetic parameters in breeding programmes.

Here then is a small book which should make an interesting aeroplane read for those jetting off to give genetics advice to fishery managers in exotic locations. It probably won't tell them much that they don't already know but it will certainly leave its readers the better for reading it, simply because they will know that they have seen the argument approached from different personal stances. Quite how the book came to be organized in this way I am not at all clear, but the outcome is a not unhappy one.

Does it have a serious fault? I am not sufficiently expert in the fisheries management side to be sure if the material is all as good as it could be. Certainly the techniques are all accurately described and their strengths and weaknesses appropriately indicated. My main reservation is that the vexed question about the practical value of maintaining stock purity, or, to put it in reverse, about the true hazards of allowing stock mixing, is not pushed to a conclusion. The common view of impending doom following mixing is, of course, based on the assumption that much stock differentiation is adaptive. My suspicion is that such genetic adaptation is often exaggerated.

NORMAN MACLEAN
Department of Biology
University of Southampton
Bassett Crescent East
Southampton SO9 3TU
U.K.

Nucleic Acid Blotting: The Basics. D. C. Darling and P. M. Brickell. IRL Press at Oxford University Press, Oxford. 1994. Pp. 111. Price £9.99, paperback. ISBN 0 19 963446 7.

This book to some degree acts as a friend, easing the reader from undergraduate notes to detailed protocols in established laboratory manuals. The text helps you to follow and understand such manuals. You are invited to benefit from the authors' combined experience in performing nucleic acid blotting.

The book begins with a foreword by Professor Southern who rationalizes the popularity of the method due to low cost and simplicity. 'It is satisfying to arrive at some biologically significant result through the use of a strong solution of salt, a slab of vegetarian jelly, and a pile of paper towels.' The authors clearly state that the book is in no way meant to replace suppliers literature and laboratory manuals. Detailed recipes, for example, are not included and other sources are in fact frequently referred to throughout the book.

A brief chapter is devoted to the origins of nucleic acid transfer. The reader is then whisked through the methods covered, before being provided with more detailed explanations, arranged in a step-by-step guide. Explanations of what is happening, why it is happening and how to make it happen for you, are accompanied by a multitude of diagrams, photographs and autoradiographs. 'Nice' little touches in the form of flow charts which break down a particular methodology and highlight individual steps, together with side notes providing extra tips or paragraph summaries, are included. The lack of colour is not missed.

The book covers Southern, northern, dot and slot blotting, plaque and colony screening and a discussion of the relative advantages of nylon or nitrocellulose membranes. It finishes with a glossary which describes everything in short, uncomplicated words. In fact the whole book is superbly clear and well explained. I imagine it would enable a complete novice to perform the protocols. There are, however, some irritating inclusions. For example, a list on what can go wrong with electrophoresis includes the omission of agarose, dropping of gels and contamination of loading buffer. Whilst such points as those reminding the reader to label plates on the base and not the lid can be helpful, telling me that I really didn't want to drop that gel doesn't help, and reminds me of the annoying Harry Enfield character. Useful charts, such as the relative migrations of different dyes and the agarose concentrations to use for the definition of particular sized DNA fragments, are however available.

References to further reading, original papers and the latest refinements are given at the end of each chapter. Unfortunately, I have to buy the accompanying volume *Nucleic Acid Hybridization: The Basics*, in order to finish my experiment. However, I am looking forward to reading the DNA sequencing book in the same series. It is a shame to realize that some beginners may not have the laboratory support from which to pick up the majority of the information in this book. I personally enjoy learning