that Eldredge cites are indeed impressive, but the evidence that gradual change never occurs within species is less compelling. Counter-examples are explained away with arguments that seem to me to leave plenty of room for dissent. But, aside from the fossil evidence, Eldredge believes that he has found strong theoretical backing for his central contention that evolutionary change can occur only at the birth of species and not at all for the rest of their lives. The theory comes from Sewall Wright's concept of species split between small incompletely isolated sub-populations. Eldredge argues that selection acting on the sub-populations in their various habitats pulls in different directions which, over the whole species, average out to zero. Only when a sub-population becomes reproductively isolated from the rest will it be able to respond effectively to selective forces peculiar to its own habitat, changing and speciating at the same time. This allopatric view of speciation is reasonable, if not very novel, but averaging-out seems very chancy as a basis for species stability. I would still prefer Gould's earlier suggestion that stasis is due to tight internal integration and the consequent difficulty of changing any single component without disrupting the whole system.

In the punctuated equilibrium context, Eldredge accuses the 'ultradarwinians' of an irrational commitment to gradualism and a lack of appreciation of the importance of speciation, though I have no doubt that they would deny these charges. As an apparently separate point of disagreement, he cites the relationship between the life of organisms, their 'economic' activity as he puts it, and their genetics ('genealogical systems'). He is convinced that the opposition have it the wrong way round. To naturalists like himself, he says, 'genealogical systems are passive reflectors of what worked and what didn't in the economic arena', or 'what worked better than what'. The 'ultra-darwinians', on the other hand, see biological systems as 'structured, driven and powered through an ineluctable competition for reproductive success'. It is difficult for the bystander to get worked up over this chicken-and-egg pseudo-dispute. Stripped of the slanted verbiage, the two supposedly opposed views both boil down to what for any darwinian (not just 'ultras') is a truism: natural selection favours those genotypes that confer greater Darwinian fitness, that is ability to leave viable and fertile progeny. It should be obvious that the reasons for differential fitness are many, various and complicated, often explicable only by references to development and ecology – the economic sphere in Eldredge's terms. Although, at one point, Eldredge seems to say that competition for reproductive success means sexual selection and nothing else – stags locking antlers and so on – he surely cannot really mean that.

Although this is an interesting and provocative book, but there is less to it than meets the eye. The proclaimed great debate seems less a disagreement of real substance than an exercise in academic belligerence.

J. R. S. FINCHAM

Mouse Genetics: Concepts and Applications. By LEE SILVER. Oxford University Press. 1995. 362 pages. Price £40.00 ISBN 0 195 07554 4.

This is a book I really wish I'd written. There has been a major gap in the market for a book about mouse genetics for some time now; it has been very difficult to point new PhD students and the like to an appropriate text. However, this book has filled the gap very neatly. It is aimed at a diverse range of people, from undergraduates right through to lab heads who are embarking on mouse genetic analysis after experience in other fields. This seems a tall order for any book, but Lee Silver has succeeded in these aims. In fact, there is much in this book that is worth reading for anyone studying genetics at any level, even if the mouse is not their organism of choice, since basic principles of genetics are lucidly and concisely explained.

So, how does he do this? After an endearingly quirky start (covering nursery rhymes, and with a photo of a range of mouse trinkets), the book has chapters which cover the whole history of mouse genetics and the setting up of inbred strains, the evolution of mouse species, essential background information on animal husbandry, organization of the mouse genome and mutagenesis. It then goes on to cover mouse gene mapping in great detail, concluding with appendices that contain all the statistical tables you are likely to need for genetic analysis on the mouse, and details of resources (from electronic databases to, for example, suppliers of backcross DNA) commonly used by mouse geneticists. Whilst this latter section is inevitably somewhat out-of-date, it serves as a starting place for newcomers to the field. I'm hoping it will save me from having to explain for the millionth time what you do once you have mapped a mouse gene and think it might correspond to a fantastically interesting mouse mutant!

Overall, then, this is an extremely clearly written and comprehensive text containing nuggets of information which even experienced mouse geneticists will appreciate. It will be an invaluable source book for new postgraduates and postdocs embarking on a career in mouse genetics, not least because of the infectious enthusiasm of the author for the subject. It should also find a home in the many labs which have come into mouse genetics via knockout technology. If the number of people who have borrowed this book while I have been reviewing it is anything to go on, it should become a classic.

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