

Book reviews

The Pony Fish's Glow. George C. Williams. Basic Books (Harper Collins Publishers), New York. 1997. Pp 184. Price US\$20.00, hardback. ISBN 0 465 07281 X.

When I was asked to review a book on the *Adaptationist Paradigm* by George Williams, who is both one of the foremost thinkers on adaptation over the past 50 years, and an excellent author to boot, I looked forward to a really enjoyable read. Perhaps my expectation was too great, but I ended up feeling dissatisfied and disappointed.

As one might expect, the book includes a number of sections discussing examples of clear adaptation, including the eponymous 'Pony Fish's Glow'. (The pony fish is a deep sea fish that produces a glow on its underside so that it disappears against the brighter light of the upper waters when seen from beneath by a potential predator.) It also makes the point that evidence for evolution is often most clearly seen by examples of maladaptation or make-do-and-mend (for example the back-to-front arrangement of the retina producing a blind spot as the optic nerve passes through it). The role of history and historical contingency is not omitted.

So what is wrong with it? Though many sections are stimulating and informative, far too often, if this had been even a first year undergraduate's essay, I would have been scribbling in the margin 'more detail needed' or even 'muddled and confused'. Really important issues are dismissed in a couple of sentences leaving the knowledgeable reader dissatisfied, and the ignorant none the wiser. For instance, there is a chapter entitled 'Medical Implications'. There is a rather muddled explanation of why we choke (muddled because of its dependence on a rather confusing diagram); a nice explanation of why men suffer from prostate problems; and a few pages on 'Medical Darwinism', which partly fail to explain the issue being discussed because of the reliance on an unexplained table. Given George Williams's role in developing this stimulating area, I was particularly surprised by this opaqueness. My overall impression was of swift writing and poor editing.

This book is aiming at the popular science market. In this arena, it is facing some pretty formidable competition, particularly from Stephen J. Gould and Richard Dawkins. It does not have the elegance of style of Gould, or the rigour of Dawkins. I do not think, therefore, it will be as successful as either.

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Genetical Analysis of Quantitative Traits. Michael J. Kearsy and Harpal S. Pooni. Chapman and Hall, London. 1996. Pp 381. Price £27.50, paperback. ISBN 0 19 509975 3.

The title of the book alone should be enough to make many of us sit up and take interest. A book from the well established 'focus of genetics' in Birmingham that uses a title containing 'Quantitative' instead of 'Biometrical' to describe its contents! In fact the 'minor' change in wording in the title reflects very directly the substantial changes in approach that the authors have taken in preparing this book.

There have been two major 'forces' of researchers, primarily based on nomenclature, since Fisher made his major contributions to the analysis of continuously varying characters. Thus there was an m , d and h 'force' which was strongly academically led from Birmingham. While the other 'force', with a number of centres, but in the UK clearly focused on Edinburgh, used an m , a and d parameterization. As many will be aware the differences in nomenclature became rather closely connected with the different emphases on plant (m , d , h) and animal (m , a , d) breeding. Thus what started out as minor differences in nomenclature, became enshrined as almost different philosophical approaches. On the one hand, the power that the potential to use inbred lines in plants meant a direct impact on the development of very sophisticated quantitative analyses of detailed genetic effects that characterize these complex systems of genes and their interactions. While, on the other hand, the intricate population dynamics which characterize animal populations meant a very clever, detailed yet embracing approach had to be developed to allow breadth as well as flexibility to be interwoven in a powerful but predictive way.

This difference in nomenclature, reinforced by approach, has survived up to present and has been a stumbling block running across the research into the genetical behaviour and analysis of continuously varying characters — which have no fundamental biological divisions in their own right. This book represents a first, and positive, attempt to bridge this divide. In discussions with others of us involved in the subject the 'momentous decision' was taken to translate the m , d , h model into the more easily understood logic of m (mid-parent), a (additive genetic) and d (dominance) nomenclature. This book thus provides the first 'translation' — a translation in terms of nomenclature but also, as the authors state, an attempt also to make the subject more easily accessible ("... we have tried to make the text chatty and more readable while being reasonably rigorous").

The book is certainly one I would recommend to all those involved in this area and to those who are starting out in the subject. It should also be pointed out that the