

as a process that would have greatly surprised Charles Darwin, and little of relevance to the concerns of geneticists.

BRIAN CHARLESWORTH
*Department of Ecology and Evolution,
 University of Chicago, 1101 E. 57th St.,
 Chicago, IL 60637-1573*

The Genetics of Populations. By JAY L. LUSH. Edited by ARTHUR B. CHAPMAN and ROBERT R. SHRODE, with an addendum by JAMES F. CROW. Iowa State University. 1994. Available from R. Willham, 239 Kildee, Iowa State University, Ames, IA 50011-3150. 900 pages. Price US\$45.00. No ISBN number.

Not many scientists have enough impact on their chosen discipline to have their books published twelve years after their death. Dr J. L. Lush (1896–1982) was, for most of his long life, the supreme authority on the application of quantitative genetics to animal breeding, and his influence through his research and teaching – particularly his teaching – was incalculable. His book *Animal Breeding Plans* was first published in 1937, so no one still at work has much experience of life before Lush. The book had reached its fourth edition by 1949, but by that time it was already being superseded by a set of mimeographed notes. These notes, initially prepared by Lush for his students, were much more explanatory than the book, and set out the statistical derivations in a much more satisfactory manner. They eventually became widely circulated though often difficult to obtain. Dr Lush, in his characteristic quest for perfection, kept on revising and improving them until his health failed, when he asked Dr Chapman to complete the task. With further help from Drs Shrode and Crow, this was finally achieved and the present volume is the result.

The editors wisely resisted the temptation to introduce extensive alterations, though they do supply some valuable footnotes and an addendum. The addendum, by Professor Crow, lists a number of points of clarification or correction. What we have is a book very much like what Lush himself might have written had he completed it himself. It is his thinking, and the clarity of his thought, that comes through the 900 pages. This is the strength of the volume.

The cover is adorned with a well-known formula on progress under family selection. Inside the covers, there are plenty more formulae of the same ilk, bringing the comfort of familiarity to those of us for whom this was bread and butter for most of our working lives. The material still is, and will remain, the essence of the teaching of animal breeding for some time to come. The text surrounding the formulae can still be read with pleasure, and few readers will fail to gain new insights into what they thought they understood. For all that, we are grateful. We should

be more grateful still had we been provided with a subject index. Despite a fairly detailed table of contents, not everything falls neatly into place. For instance, there are some incisive comments on the effect of linkage on genetic limits at the end of an early chapter on Mean and Variance – not at all where you might first think of looking.

However, nothing stands still. We are told in the preface that Lush himself had wanted to re-write certain parts of the book in the context of the developments in molecular genetics. It would be interesting to speculate what he might have said. Nor is that all. Since Lush died, there has been a spectacular explosion in the adoption of breeding methods that owe their power to advances in computing technology. Nowadays, if acronyms like BLUP and REML do not trip easily off your tongue, you cannot even hold an intelligent conversation about animal breeding. This is all post-Lush. As Professor Crow states in the introduction to his addendum, the book shows its age and is strikingly dated. This, as Professor Crow is anxious to point out, is no fault of the author. Still, it says everything.

Why then publish such a volume? The reasons are set out in the preface.

We believe it to be a valuable document for those with interest in a scientific approach to the genetic improvement of animals and plants. The book is of historical interest and importance because of the role this scientific approach played in Lush's contributions to research and teaching in the field of animal breeding.

Few reviewers, I imagine, will fail to echo these sentiments.

R. C. ROBERTS
*Roslin Institute,
 Edinburgh*

Animal Breeding. By GERALD WIENER. The Macmillan Press. 1994. 208 pages. Price £5.99. ISBN 0 333 57298 X.

Animal breeding (used here to imply genetic improvement rather than reproduction), is an essential component of any efficient production system in temperate or in tropical environments. There is, nevertheless, a dearth of good texts for students and for practical breeders at both the basic and advanced level. This book is a welcome addition to the literature.

It is published in a series entitled *The Tropical Agriculturalist*, intended as field guides and textbooks. The principles of improvement are not, of course, any different whether they are to be applied in a developing tropical country or a developed temperate country, although some variation in emphasis is appropriate. There are, however significant differences in the sorts of problems encountered in practice, and it is nice to see the critical ideas of genotype × environment interaction brought into the introductory chapter, for