injection in livestock by Ebert and Selgarth in which they place this approach into the context of conventional breeding schemes. There is no discussion of the possibility of gene targeting in stem cells. In a later chapter there is a description of embryonic stem cells in mice and a rather cursory introduction to gene targeting, but little discussion of the nature of such cells nor of the possible reasons for the present failure to establish embryonic stem cell lines from livestock species.

Perhaps the most expensive biological experiment ever to be conducted is now being carried out to map the genome in several livestock species. Only in this way will it be established how many genes of major effect influence traits of economic importance. These may then be exploited either by gene manipulation or marker assisted selection. This complex area of molecular biology and conventional genetics is well described by Georges. His concluding section discusses the potential value of taking oocytes from the fetal gonad for maturation, fertilisation and transfer to recipients, so reducing the generation interval significantly while also permitting the use of techniques of selection or transfer of genes. While this approach seems ambitious at present it suggests that there are many potential applications of these techniques that remain to be considered.

There are a number of areas that may be considered important that are not reviewed. I am surprised that there is no discussion on embryo freezing, as embryo freezing is already contributing to the use of embryo transfer and the large-scale application of embryo transfer procedures will depend upon being able to store embryos in such a way that they can be thawed and transferred on farm immediately before transfer, in much the same way that semen is frozen and thawed at present. There is, however, a detailed discussion of recent research on oocyte cryopreservation. Similarly, the only aspect of embryo culture to be considered is the influence of the ionic environment upon development. There are no chapters on capacitation of spermatazoa or *in vitro* fertilization, upon the separation of X- and Y-bearing sperm or on the determination of the sex of embryos, despite the fact that these are all areas of active research.

Although this area of biology is extremely important there have been very few reviews of the entire area and this volume meets a clear need. It will provide an invaluable source of information for those working in related areas and an excellent introduction to the subject for honours and post-graduate students. It should be found in the libraries of genetic, agricultural and veterinary departments and on the shelves of many research workers.

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Statistical Genetics. By PREM NARAIN. Wiley New Delhi, India. xv + 599 pages. £26.

This book gives a very comprehensive review of statistical genetics. After an introductory chapter on Mendelian genetics the rest of the book is devoted to the statistical principles of population genetics, quantitative genetics, selection and cross-breeding with particular emphasis on animal and plant breeding. No other book covers such extensive ground: it covers most of the material in Kempthorne and some of that in Crow and Kimura, some of Falconer, all at the bargain price of £26.

Topics from population genetics include analysis of segregation and linkage, random mating, inbreeding and effects of finite population size. I found the presentation of the now neglected area of path coefficients informative and the chapter on finite population size made instructive use of conditional diffusion equations.

In quantitative genetics there is a comprehensive discussion of genetic components of variation between relatives and heritability. Five chapters consider selection in detail, including individual, family and combined selection, selection limits and selection for improving several characters. There is too much emphasis in this chapter on the use of auxiliary traits. A long chapter on crossbreeding, in my opinion, is more interesting because it builds on the author's extensive experience in cross-breeding schemes in India. Two chapters consider the analysis and construction of diallel and partial diallel crosses.

The author says he planned writing the book in 1979, and the book does not do full justice to recent work, less than 5% of the references are to work in the eighties. For example the power and unification offered by Best Linear Unbiased Prediction with individual animal models is now well recognised, but the discussion in this book is only six pages with concentration on sire evaluation.

However, the book gives a relatively inexpensive introduction to the classical principles of statistical genetics.

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