'Genetics and Conservation': A Reference for Managing Wild Animal and Plant Populations. Edited by CHRISTINE M. SCHONEWALD-COX, STEPHEN M. CHAMBERS, BRUCE MACBRYDE and LARRY THOMAS. Addison-Wesley. 1984. £21.20. ISBN 0 8053 7764 6.

After animal and plant breeding, the conservation and management of genetic resources should be the most fruitful area for application of advances in population and evolutionary genetics. That there has been almost no impact of advances in genetics is indicated by the title of the final chapter of this book: 'Guidelines to Management: A Beginning Attempt'. This book is a landmark; it indicated the growing involvement of population geneticists in resource management and a desire among managers to base decisions on sound scientific principles.

These 25 chapters and 5 appendices cover a very broad range of topics in both plants and animals. The basic genetics required are presented briefly and clearly by S. M. Chambers and there follow blocks of contributions on topics such as 'Founding and Bottlenecks' and 'Natural Diversity and Taxonomy'. The standard of contributions is generally very high, often presenting the best contemporary research. Papers concerned with the application of population genetics to managed or captive populations are relatively weak but are essential to include as indicators of the problems likely to be encountered.

The role of zoos in the management of genetic resources is given prominence throughout the book. However, I believe that captive breeding programmes will be of little value in conservation (preservation of resources is a separate objective) and their past record should be reviewed more critically. They maintain self-sustaining populations of only 26 of the 274 rare species of mammals, and genetic policy is more often dominated by gimmicks such as white tigers than by sound conservation policies.

This volume should be read by both population geneticists and resource managers. Although politics and economics may dominate resource management decisions, an understanding of current population genetics has much to contribute. The most important result of this volume's publication would be a greater recognition of the need for collaborative research between scientists in these disciplines. The only obvious omission in the volume is a discussion of the role of technologies such as freezing of germ cells, multiple ovulation and embryo transfer.

The editors have compiled a good index, an adequate glossary for beginners and an invaluable list of references.

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Experiments with Gene Fusions. Edited by T. J. SILHAVY, M. L. BERMAN and L. W. ENQUIST. Published by Cold Spring Harbor Laboratory, Fulfillment Department, P.O. Box 100, Cold Spring Harbor, New York 11724, U.S.A. 1984. 350 pages. Paperback $40 ($48 outside U.S.). ISBN 0 87969 163 8.

Experiments and procedures used in the Advanced Bacterial Genetics course at Cold Spring Harbor from 1981 to 1983 are described in this manual, which is designed to demonstrate the use of gene fusion, transposable elements and recombinant DNA methods for genetic analysis in *E. coli*.

The book is divided into three sections, the first of which describes fourteen experiments used in the course. These experiments include constructing both operon and protein fusions with the *lacZ* gene to analyse transcriptional and translational activity of a target gene, construction of λ transducing phage and their identification by hybridization and genetic complementation, and the use of the transposon Tn*10* for strain construction, mutant isolation and genetic mapping. Each experiment has a clear comprehensive introduction, specific comments, which often raise technical problems students have had with the experiments, and a timetable for carrying out the experiments.

The second section describes the experimental procedures required. This section brings together basic methods of bacterial and phage genetics which otherwise might be found in *Experiments in Molecular Genetics* by J. H. Miller (1972) and recombinant DNA techniques similar to those found in *Molecular Cloning: A Laboratory Manual* by T. Maniatis, E. F. Fritsch and J. Sambrook (1982) and adds a bit of protein biochemistry to the mixture. This is the largest section of the book.

The appendices contain media and solution recipes required for the experiments and useful general information on growth, storage, genotypes and phenotypes of *E. coli* and bacteriophage λ. Specific details are given on the cloning vectors, transposons, operons and regulons employed in the experiments. The experiments described use 46 *E. coli* strains and 42 bacteriophage, but with no mention of the availability of these strains for anyone wishing to set up these experiments.

I am not sure how useful this book will be, given that the books by Miller and Maniatis *et al.* already cover most of the techniques, but it might be useful to those people wishing to set up an advanced bacterial genetics teaching programme.

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