

compilation of papers from the Symposium on the Economics of Valuation and Conservation of Genetic Resources for Agriculture held in Rome in May 1996. It addresses some of the key issues involved in the estimation of the economic value of conserving genetic resources for agriculture. It covers the modelling of the value of plant genetic resources (PGRs), empirical studies of PGRs (including field diversity and yield vulnerability), seven empirical studies of PGR breeding values, property rights in PGRs and the implications of modern biotechnology methods for PGR values.'

The Foreword and Introduction competently set the scene and provide an excellent overview of the topics covered. The book is then conveniently and sensibly divided into five parts, each containing a varying number of chapters, each chapter being a paper from one or more contributors. The first part (comprising four chapters) deals with modelling the role of genetic resources in plant breeding, the second (two chapters) and third (seven chapters) deal with empirical studies related to plant breeding and field diversity, and to breeding values, the fourth (four chapters) with property rights and the final part (two chapters) deals with the implications of developments in biotechnology.

The book attempts to address the subjectivity often associated with the accumulation, maintenance and utilization of plant genetic resources and replace it with well-argued cases, empirical models and economic justifications, to provide an objective system for determining the value of plant genetic resources and a balanced, critical view of the choices to be made. It addresses in depth and considerable detail, and with well-supported arguments and examples, many of the problems and decisions that must be faced when attempting to put a value on plant genetic resources, particularly when justifying their cost and requirements for funding.

Mostly I enjoyed the book — it contains many interesting ideas and some novel approaches to sensible, relevant and valid questions, and it will, no doubt, contain something for everyone involved in the various aspects of plant genetic resources. However, as a biologist with little training in mathematics, I did find much of the economics modelling quite incomprehensible — the equations and parameters are poorly explained for the uninitiated and little attempt is made to put their purpose and effects into words or a practical context. There is also the danger that, having acknowledged that determining the value of genetic resources is very complex, the effort goes into getting the model to work rather than providing practical solutions. Despite this, I would expect

the book to provide a novel approach and a fresh way of thinking for anyone involved in the collection, conservation and characterization of plant genetic resources, or less directly through their utilization as sources of valuable traits.

Ultimately, the question has to be whether anyone can put a value on something for which the use is, as yet, unknown and for which the potential cannot be foreseen. The final sentence of the book states: 'These economic calculations showed that the economic returns to agricultural research will continue to be high in future decades, that plant breeding will continue to be of crucial importance, and that the collection, evaluation and maintenance of genetic resources will continue to be vital to the effectiveness of agricultural resources.' This is a reassuring conclusion to anyone involved in plant genetic resources.

A. E. ARTHUR
John Innes Centre
Norwich Research Park
Colney
Norwich NR4 7UH
U.K.

Books received

Human Gene Evolution. David N. Cooper. BIOS Scientific Publishers, Oxford. 1999. Pp. 490. Price £75.00, hardback. ISBN 1 859961 51 7.

Transgenic Mammals. John Bishop. Longman, Harlow. 1999. Pp. 294. Price £19.99, paperback. ISBN 0 582 35730 6.

The Human Inheritance: Genes, Language, and Evolution. Bryan Sykes (ed.). Oxford University Press, Oxford. 1999. Pp. 195. Price £19.99, hardback. ISBN 0 19 850274 5.

Fundamentals of Molecular Evolution (2nd edn). Dan Graur and Wen-Hsiung Li. Sinauer Associates Inc., Sunderland, Massachusetts. 2000. Pp. 481. Price £27.95, paperback. ISBN 0 87893 266 6.

Foundations of Mathematical Genetics (2nd edn). Anthony W. F. Edwards. Cambridge University Press, Cambridge. 2000. Pp. 121. Price £12.95, paperback. ISBN 0 521 77544 2.