



## Book Reviews

***Tree Biotechnology: Towards the Millenium*; M.R. Davey, P.G. Alderson, K.C. Lowe, J.B. Power (eds). 396 pp. Nottingham University Press, 1998, £40.00. ISBN 1-897676-68-9**

There is increasing awareness in the biological community of the importance of trees. This is because of the increasing realisation that in addition to their traditional economic role as a source of timber and pulp, they are also the main source of renewable biomass for fuel. Planting more trees offers the best way of mopping up excess CO<sub>2</sub> in the atmosphere, and improving the environment in a host of aesthetic and practical ways. Trees also represent an alternative source of chemicals presently derived from oil. Despite the development of synthetic products, new uses for trees continue to appear, so that demands increase on an already over-stretched resource.

It has been said that the current state of tree breeding resembles that of wheat in ancient Egypt. The potential for improvement is enormous, both in terms of tree productivity and wood quality. There are several reasons for the slow rate of improvement in trees to date, not least of which was the tendency of foresters to remove the best trees for sale, while collecting seed from the poor trees left behind. More important than this, however, is the long generation time of forest trees, and the long time required for provenance trials to select superior trees for breeding, to produce seed from trees with desirable characters, and to test the progeny. The advent of biotechnology, and the potential to genetically transform trees, and to detect molecular markers of wood quality characteristics, offers the chance to speed up the process of tree improvement.

This book indicates the extent to which there has been an explosion in interest in tree biotechnology. It is a collection of papers based on oral and poster presentations made at the University of Nottingham at the 1997 annual symposium of the UK Tree

Biotechnology Group. Of the forty papers, thirty two are contributed by authors from United Kingdom institutions. This provides a measure of the increase in interest in trees, since only fourteen years ago, I was hard-pressed to find more than half a dozen people in the United Kingdom able to present papers at a one-day symposium on wood formation.

The techniques being applied to trees are still in their infancy, but are already being applied to a wide range of problems. The aim of the symposium was “to reflect a broad spectrum of current tree-related activities”. The scheme to plant a National Forest in the midlands of England was used as a topic for initiation of the symposium, and the first chapters describe this scheme, and the related Farm Woodlands Programme. The scientific chapters in the book deal with a range of plants including for example, roses, grapes, apple, quince, pistachio, tamarillo and cocoa, in addition to commercial forest species of importance in the UK such as Sitka spruce, oak and cherry. This reflects the way that the new technology has been adopted as a new way of tackling old problems. The reader therefore gains a good insight into the state of the art in terms of the application of biotechnology to a range of economically important plant species. The full range of techniques is represented here, from “low technology tree propagation”, *in vitro* propagation, to genetic transformation and the detection of molecular markers. There is an index, with a useful and separate species index.

The book has been well produced, and represents good value for money. It will appeal particularly to forestry, agricultural and horticultural researchers wishing to get “up-to-speed” with the type of work being done in this area, and the potential techniques available.

J.R. Barnett

*University of Reading, School of Plant Sciences,  
Department of Botany, Reading, UK*