

## BOOK REVIEWS

### TISSUE CULTURE IN FORESTRY

Edited by J. M. Bonga and D. J. Durzan

Martinus Nijhoff/Dr W. Junk, The Hague. 1982. 420 pages.

ISBN 90-247-2660-3. US\$49.50

This book is the first to be published on tissue culture in forestry. It provides a much-needed review of current research (in a rapidly developing field) which ultimately I am sure can be put to large-scale industrial use. Anyone involved in this area of research and development who wants a comprehensive background, or a look to the future, should be prepared to purchase this book.

There are 12 chapters, each written by an acknowledged expert – Tissue Culture Techniques; Cell and Tissue Culture in Forest Industry; *In Vitro* Propagation of Gymnosperms; Vegetative Propagation of Dicotyledonous Trees; Vegetative Propagation of *Eucalyptus*; Vegetative Propagation of Palm Trees; Phytopathology and Tissue Culture Alliances; Action of Growth Regulators; Nitrogen Metabolism and Vegetative Propagation of Forest Trees; Carbohydrate Utilization and Metabolism; The Use of *In Vitro* Techniques for Genetic Modification of Forest Trees; Vegetative Propagation in Relation to Juvenility, Maturity, and Rejuvenation. The first chapter, Tissue Culture Techniques, is similar in content to material found in other tissue culture books. However, it is useful to have it here for the beginner in tissue culture of forest species. The other chapters can be divided into basic and applied tissue culture in forestry, even though the editors have not attempted to do this. In the excellent “applied” chapters on *in vitro* propagation of gymnosperms and vegetative propagation of dicotyledonous trees, *Eucalyptus*, and palm trees, micropropagation methods to produce plantlets of various species are reviewed. There is not a lot of information on laboratory techniques during the cultural and rooting stages; a need still exists for this but readers will have to look elsewhere for recipes. It is pleasing to see that the chapters *In Vitro* Propagation of Gymnosperms and Vegetative Propagation of *Eucalyptus* are written by French experts. In the past a lot of the French work has not been widely known because it was often published only in French. The chapter on Vegetative Propagation of Dicotyledonous Trees covers the costing aspects of micropropagation. This is indicative of the commercial potential of tissue culture in forestry.

The other chapters, discussing basic principles and the future, have a more “textbook approach”. The key chapter on Cell and Tissue Culture in Forest Industry is a little disappointing. It fails to pinpoint the areas where *present* proven tissue culture technology could be applied in the near future. Rather, it concentrates on more futuristic unproven aspects. The chapter on Action of Growth Regulators is good and, like the first chapter on Tissue Culture Techniques, is a good one to have in this book for the beginner. As a result of the two different types of chapters the book is well balanced and should capture both the experienced tree tissue culturists and the university student or researcher who is learning about tissue culture in forestry for the first time.

There is great variety in the styles of presentation which range from well thought out to difficult to follow. Some of the tables are over-complicated and only an expert will be able to decipher them. Unconventional references have also been allowed, e.g., Ad Hoc Panel, 1980. One feature warranting special recognition is the summaries and tables of references which appear in almost every chapter. These should prove invaluable.

It was disappointing to see that our work on tissue culture of radiata pine in New Zealand, which is as advanced as any overseas research on forest species, is not well covered in this book.

Jenny Aitken-Christie

## WOOD IN AUSTRALIA

by Keith R. Bootle

McGraw-Hill Book Company, Sydney. 1983. 443 pages.

ISBN 0 07 451047 9. A\$18.95.

This is one of those delightful but sadly uncommon books, which combines considerable scholarship with observations from a lifetime of practical experience, and illuminates both through a gift for straightforward language. The description of compression failures as "localised creases in the wood" is just one example of a familiar phrase used to good effect. For those of us who have tended to rely on the somewhat outmoded "Commercial Timbers of Australia" by I. H. Boas (published 1947) it is good to have an updated book that promises to serve as faithfully for many years to come.

Part 1 of the book, entitled "Wood: Characteristics and applications", covers a wide range of subjects in 21 chapters. Starting with The Nature of Wood (anatomy, morphology, chemistry, and wood formation), other chapters touch on matters as diverse as corrosion in timber, use of sawmill residues (how would you use "mudguts"?), and Australian Standards for the timber industry.

Part 2 deals with properties of species, and offers notes on uses. This contains separate descriptions, covering origins, properties, uses, and availability, of more than 400 timber species or groupings of species. Australian timbers are naturally given generous coverage, but it is especially valuable for descriptions of timbers imported into Australia (and a few well-known timbers that are not), including major New Zealand species. It is an extremely valuable reference for anyone interested in timber. There are also useful Appendices covering Metric Conversion, Moisture Meter Corrections, and a table of Mechanical Properties.

The condensation necessary to cover so much territory within a handy-sized book of less than 450 pages may well attract some criticism from specialists who feel that "their" subject has been dealt with inadequately. However, given that local usage may account for minor oddities, there are few obvious errors of fact.

For those wishing to pursue matters further each chapter concludes with titles for "Further Reading". However, if there is unevenness in the presentation this is where