REVIEW


This multi-authored (35 contributors) contribution to the Springer Series in Wood Science is intended to be an "up-to-date single source compilation of lignin methodology." It certainly appears to be that. You can learn a variety of techniques for determining the presence of lignin, its distribution, and type.

The nine chapters (divided into sections by different authors) are: 1) Introduction; 2) Detection and determination; 3) Isolation and purification; 4) Characterization in solid state; 5) Characterization in solution: Spectroscopic methods; 6) Characterization in solution: Chemical degradation methods; 7) Functional group analysis; 8) Determination of molecular weight, size, and distribution; and 9) Separation of identification of low-molecular weight fragments and model compounds.

Each chapter is partly lab manual, and gives the history of a given method, followed by specifics on sample preparation and techniques for analysis. The pros and cons of each method and the significance of the types of data that method yields appear discussed in an even-handed way. The sections that seem particularly relevant to wood anatomists are: 2.1. The detection of lignin (J. Nakano & G. Meshitsuka); 2.2. The determination of lignin (C.W. Dence); 3.1. Wood (K. Lundquist); 4.2. Ultraviolet microscopy (K. Fukazawa); 4.3. Interference microscopy (L.A. Donaldson); 4.4. Electron microscopy (S. Saka).

I must admit I found much of the book rather intimidating (particularly the chapters 7–9), and was very struck by the complexity of lignin and its variability. This book obviously is a valuable resource for anyone who needs to do lignin assays in any context, e.g., distribution of lignin within the cell wall and effects of chemical pulping or decay organisms on the cell wall. E.A. Wheeler


This volume, which has also been published as issue 6 (1) of New Forests, brings together 19 review papers presented at the International Symposium on Population Genetics of Forest Trees held in Corvallis, Oregon in the summer of 1990. Genetic diversity within and among populations and species is relevant for sustained fitness, establishment of seed orchards, forest management, and for conservation strategies. Many papers in this book survey the considerable genetic variation in and among populations of temperate and tropical trees mainly estimated from diversity patterns in allozymes, terpenes and DNA. The significance of gene dispersal and mating systems is also discussed in some chapters.

One could wish for more correlation analysis of genetic diversity with variation in heritable traits such as wood quality (including various wood anatomical features) than is given in this book. Apparently such information is hardly available. Savolainen and Karkkainen's remark that there is only low correlation in level and pattern of variation between biochemical and adaptive characters is somewhat discouraging in this respect. The rapid development in molecular and biochemical approaches to population genetics have probably made some of the chapters in the book already redundant, almost three years after the symposium was held. Despite this ephemeral aspect, the book can be recommended to those with an interest in the genetic backgrounds of forest tree variation and evolution. Its high price could have been lower if the editors had been more strict with their authors and had avoided the rather extensive duplication in the various chapters.

P. B.