BOOK REVIEW

THE STRUCTURE OF NEW ZEALAND WOODS

by B. A. Meyland and B. G. Butterfield

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"Magnificent" is the word that comes immediately to mind on first thumbing through the pages of this book. The whole scale of its production is quite overwhelming, from the well designed hard cover to the splendid presentation of scanning electron micrographs (one large two-face view and six smaller one-face views per species) covering the wood of 115 trees and shrubs. Sample preparation and photography throughout are of the very high standard that has won world-wide recognition for the authors. Only those who are familiar with the difficulties of the craft can appreciate, for example, the true quality of the photographs of **Heimerliodendron**, a species with included phloem, which usually defies all attempts to preserve its structure during drying, let alone to prepare clean-cut surfaces for photography.

However, this is primarily a scientific publication and one must therefore ask what purpose is served by so lavish a production dealing with the relatively unimportant woods of a small Pacific country. The authors freely concede that full anatomical descriptions require the use of both light and electron microscopes, supplemented by detailed quantitative data which go well beyond what they have attempted in their own presentation. This book therefore falls well short of what an expert would require to identify New Zealand woods.

On the other hand, for anyone interested in wood structure, there can be no doubt that the book provides splendid support for light microscopy at the point where it falters through lack of resolving power. Indeed many of the photographs carry implications which go far beyond the species that they illustrate. Thus they will be of interest to workers outside this country who may never encounter any New Zealand timbers, and many of the features illustrated will probably arouse more general debate about the proper definitions of various structures used in identification. As an example, precise surface details of tracheid to ray pitting revealed under the electron microscope clearly often belie interpretations derived from light microscopy. Nevertheless one may ask whether the integration of total wall sculpturing which occurs as light passes through the cell wall may not sometimes validate distinctions between pit structures which are not discernible to surface photography alone.

In fact scanning electron micrographs can sometimes be curiously misleading to anyone who has access only to light microscopy for wood identification. For example, the numerous dark flecks of resin calls seen in transverse section, which often provide a quick lead towards identification of certain New Zealand gynosperms under light microscopy, are naturally lacking in these photographs, as is the "honeycomb" appearance of closely packed bordered pits which immediately indicates kauri. Yet differences such as these really serve only to emphasise the extent to which the techniques of light and electron microscopy should now be regarded as being complementary.

In their introductory remarks the authors suggest that the purist will inevitably find deficiencies in their presentation. It is, of course, all too easy to point out the lack of certain "essential" details, to regret that they were unable to include the woods of any lianes or prostrate plants, which have their own features of anatomical interest, and to deplore the fact that woody monocotyledons are passed over without mention. Yet, in the light of what they have achieved, such criticism would be little more than petulant. This book may well become a classic of its kind, and I suspect that its influence on the science of wood anatomy will extend far beyond these shores.

J.M.H.

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