

The Structure, Biosynthesis, and Degradation of Wood (Recent Advances in Phytochemistry, Volume 11), edited by F. A. Loewus and V. C. Runeckles, Plenum Publishing Corp., New York and London, 1977, xii + 527 pages, \$ 59.40.

Although this book consists of eleven papers, presented at the annual meeting of the Phytochemical Society of North America in 1976, it succeeds in providing an outstandingly comprehensive and informative treatise on the important, recent developments in investigations concerning wood, and the information presented has equal validity for other lignocellulosic biomaterials as well. The organizers of the symposium deserve acknowledgment for a wise choice of contributors, and the editors, for a well illustrated and carefully edited volume.

Of the eleven papers, one deals with the ultrastructure of wood, five with the biosynthesis and structure of cell-wall polymers, two with biological degradation of polysaccharides and lignin, two with the changes in wood caused by aging and external attacks, and the final chapter, with wood as chemical feedstock material.

The chapter on ultrastructure (W. A. Côté) summarizes in an outstanding manner the information obtained by the use of electron microscopy, but one wonders why important information obtained by ultraviolet and fluorescence microscopy is not covered in the chapter. The biosynthesis chapters reveal the interesting fact that, although the biogenesis of lignin is known in extensive detail, the biosynthetic pathways leading to polysaccharides, cellulose in particular, remain largely in darkness. It should be noted, on the other hand, that the reverse is true for the enzymic degradations of these polymers, and the fascinating details of enzymic hydrolysis of polysaccharides are described in a chapter by E. T. Reese. The inclusion of a special chapter on the lesser known, but highly interesting, polymers cutin and suberin is noted with satisfaction. The chapter on secondary changes in wood (by W. E. Hillis) is an outstandingly informative description of wood extractives and their formation. The concluding chapter, by Herrick and Hergert, on the utilization of chemicals from wood surpasses in terms of informational content and objectivity anything that has recently been published on the chemical utilization of lignocellulosic biomass.

Overall, this book brings together a wealth of information from various fields of biomass science. The recognition of the future importance of biomass, and materials derivable therefrom, is of recent origin, and research activity in this area is in the process of rapid expansion. In this new field of enquiry, there are few sources of comprehensive information, and none are comparable in value to the present volume. It ought to belong to the library of all biomass scientists.