

Book Reviews

Core, H. A.; Côté, W. A.; Day, A. C.: Wood. Structure and Identification. Second edition. 182 pp. Syracuse, New York: Syracuse University Press 1979

All those scientists, who have had an opportunity to examine the different structural details of wood, must necessarily wish that as many as possible be allowed to partake in the marvellous, hidden world of wood anatomy. Today, this is much easier than before, since the scanning electron microscope makes available a range from 10 Å to the micrometer scale that is extremely well suited for wood anatomy. When this technique is combined with the light microscope and the hand lens, a complete picture is obtained, encompassing the finest structural detail at the cellular level in all the manifold tissues.

The three authors of *Wood. Structure and Identification* have made an effort to present the best that can be produced in this field. The book represents a major pictorial description of the native and naturalized softwoods and hardwoods of the United States. In this respect, the book is useful for anybody who has a general interest in nature or who has to deal with wood in one way or another. The pictorial evidence is, however, not the only feature of this book; a complete and easily readable text gives accurate explanations of the different cell types and the organization of the various tissues. The specialist might worry here and there about new definitions, but the indexed glossary at the end of the book allows him to disregard this lack of agreement with the well established literature.

Within the text and also appended to it there are most useful keys for the macroscopic and microscopic identification of softwoods and hardwoods. This is a feature that makes this book a very useful and instructive tool for any practical work with wood. Preparation techniques and microscopes are described in an appendix, and data are also presented for the 76 species which have been included in this manual.

H. H. Bosshard

Rowell, R. M.; Young, R. A.: Modified Cellulosics. 361 pp., numerous figs. and tables. New York, San Francisco, London: Academic Press 1978. \$ 23.00

The symposium of the American Chemical Society on modified cellulose which took place in Chicago, Ill., in 1977 must have been a highly interesting conference. The proceedings have been collected in the present book, which contains 18 articles on various themes concerning the chemical modification of cellulose. Inspection of the table of contents reveals, however, that this book is more than only a summary of papers subdivided into several parts. Apart from special papers such as those on accessibility of cellulose, grafting techniques, antibacterial fibers or effects of liquid ammonia, general papers deal with various reviews and surveys. That is why these proceedings to a certain extent can be used as a reference book. The volume is dedicated to Kyle Ward Jr., the 1977 winner of the Anselme Payen Award. The first contribution is his address on the versatility of cellulose, demonstrated by various acetylation products. This paper is supplemented by an article of J. D. Reid and R. M. Reinhardt who report on studies concerning the chemical modification of cotton fibers performed in Ward's Southern Regional Research Center in New Orleans, Louis. Part 2 contains general views of cellulose sources and modification reactions, beginning with a historical survey of the chemical modification of cellulose (D. F. Durso). The other articles are: Cotton: a world cellulose fiber (R. S. Corkern et al.), outlook for wood cellulose (N. Sanyer), rayon fibers of today (G. C. Daul, F. P. Barch), modified cellulose – an overview of the future (H. L. Hergert, T. E. Muller). It is conspicuous that most of these contributions – in contrast to those of the other parts in this volume – include few bibliographic data, although one expects such data in surveys of this kind. Part 3 (cellulose accessibility and reactivity) consists of two papers: Determination of accessibility and crystallinity of cellulose (L. C. Wadsworth, J. A. Cuculo), and hydroxyl reactivity and availability in cellulose (S. P. Rowland). Part 4 deals with the modification of cellulose by grafting and contains articles of B. Rånby (new methods for graft copolymerization onto cellulose and starch), N. P. Davis and J. L. Garnett (modifications to cellulose using UV grafting procedures), V. Hornof et al. (wood pulp grafting with different monomers by

the xanthate method), and P. Lepoutre et al. (a novel process for the treatment of pulp mill effluents using the grafted pulp fibers). Under "general cellulose modification reactions" (Part 5) the reader finds contributions on antibacterial fibers (T. L. Vigo), preparation, structure, and properties of some derivatives of cellulose and thermomechanical pulp (S. S. Bhattacharjee, A. S. Perlin), the effect of liquid anhydrous ammonia on cellulose II (L. G. Roldan), effect of changes in supramolecular structure on thermal properties and pyrolysis of cellulose (K. E. Cabradilla, S. H. Zeronian), and recent developments in the industrial use of hemicelluloses (R. L. Whistler, R. N. Shah). Many experts have contributed interesting papers to this volume on modified celluloses. Related fields, such as environmental protection and utilization of hemicelluloses are also included. This book can, therefore, be recommended to all persons engaged in cellulose and wood chemistry whether in industry or in research.

D. Fengel

Hillis, W. E.; Brown, A. G.: Eucalypts for Wood Production. 434 pp. Melbourne: Commonwealth Scientific and Industrial Research Organization, Australia, 1978. \$ A 28.00.

For anyone interested in the eucalypts, the book by Hillis and Brown is an "absolut must." The two editors, along with the 31 contributors, encompass most everything that is known about the eucalypts. Information and discussions range from species and stand establishment through management, harvesting, utilization and economic consideration. Reference material at the end of the chapters is abundant and up-to-date, a literal "gold mine" for persons wanting information on the eucalypts.

On first reading, I felt a twinge of disappointment that such great emphasis was on Australia, with often very cursory coverage of the often very good work done on the eucalypts in other parts of the world. Then I went back and reread the preface in which the authors state "A considerable body of knowledge and expertise concerning the production and utilization of eucalypts has been accumulated in Australia, but it is very scattered. This book attempts to bring that knowledge together in the hope of encouraging the planting of more eucalypts in Australia." And this the book does very well. One of these years it would be great to have a sequel to Hillis and Brown's book on the culture of the eucalypts outside Australia.

The choice of contributors, their expertise and the breadth of disciplines covered were truly outstanding. There is information of real value for those who specialize in many fields. I personally would have preferred to see the last chapter and Part J (Future Trends) expanded much more than they were. One of the editors' main stated objectives of the book was to stimulate planting eucalypts in Australia. I would like to have seen some deeper crystal ball ideas as to the future of the eucalypts in Australia, partially in relation to their use elsewhere.

As the editors stated, style differences are evident because of the many differing contributors. This is minor but in some chapters there is an excess of minutia and in others too few details are given. As one example, it might have been helpful to have detailed descriptions of species placed in the Appendix rather than taking up about 50 pages in the text. The Appendices included are well done and useful.

Any worthwhile book is subject to "nitpicking" by a reviewer. Despite its few faults, this book fills a very real need and will be of benefit to all.

B. Zobel