

present volume of the *Reports* should be available in any center where there is an active interest in carbohydrate chemistry or biochemistry.

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*Wood Chemistry: Fundamentals and Applications*, by EERO SJÖSTRÖM, Academic Press, New York, 1981, xi + 223 pages, \$22.00.

Wood chemistry has been a multi-disciplinary subject of long-standing interest, as it encompasses the intricate structure of plant cell-walls, and the fundamental properties of a versatile, structural material that forms the basis of the pulp and paper industries. This interest has recently been enhanced by renewed efforts in applications of wood as a renewable, raw material for conversion into different forms of fuel, chemical compounds, and even feed. The broad aspects of this subject cover not only the chemistry of the cellular, natural products but also the border lines of biology and engineering. In this book, the author starts with a discussion of the cellular structure of wood, followed by a general introduction to carbohydrate chemistry, before discussing the chemistry of wood polysaccharides, lignin, extractives, and bark. He then deals with the chemistry of pulping, bleaching, cellulose derivatives, and chemical compounds from wood.

The book is based on an earlier volume in Finnish by the same author. It is written in, or translated into, good and free-flowing English, except for a few unusual words and usages, such as "emulgator" for emulsifier, and "two-acid" for dibasic. The subject is covered along the traditional lines, with emphasis on pulp and paper chemistry, and the contributions, which are indeed impressive, of Scandinavian scholars to this subject. Unfortunately, there is very little discussion of fundamental approaches for utilization of wood as a source of fuel and chemicals, or of the underlying principles of combustion and conversion which are of considerable current interest. The chemical treatments of wood for preservation, fire protection, or dimensional stability (which is of particular interest to wood technologists) are completely omitted.

The materials presented are generally sound and accurate, scientifically, except for minor errors in the formulas (resonance structures) and mix-ups in some carbohydrate chemistry. The Haworth perspective formulas, which were devised to get away from the problems of Fischer projection formulas, are portrayed as having the ring structure perpendicular to the plane of the paper, and substituents parallel to this plane; and yet the formulas are drawn correctly, being tilted, with the side towards the viewer darker. The classification of epoxides is expanded to include three- to six-membered anhydro rings. The chemistry of wood components is presented

briefly and concisely, albeit, at times, rather superficially. Isolation of hemicelluloses, in particular, could have been presented more systematically, and the chapter on extractives, in which various compounds are listed, could have been more informative.

In general, the book provides a factual introduction rather than an in-depth and detailed discussion of the various subjects, and it is expected to prove particularly useful as a text book.

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