

BOOK REVIEWS

N. G. GAYLORD, *Editor*

Cellulose Pulp and Allied Products. J. GRANT. Interscience, New York-London, 1959. xvi + 512 pp. \$8.50.

This volume has been published as a third edition of J. Grant's "Wood Pulp" from 1938 and "Wood Pulp and Allied Products" from 1947, but it is, to a large extent, a new book. It is written primarily for nonexperts in pulp and paper chemistry and technology. The book covers geographic and economic aspects of the world supply of cellulosic fiber materials. It gives adequate and up-to-date descriptions of technical pulping, bleaching, and purification processes for different plant raw materials. This includes the use of vegetable materials other than wood for pulp production, i.e., straw, grass, bagasse, bamboo, etc., which have become commercially important in countries with limited forest resources. Physical and chemical testing methods of cellulose pulps are also outlined, as well as the technical use of the different materials. Of particular value are the descriptions of "semi-chemical" pulping processes which have been developed more recently and are now rapidly increasing in use.

The volume is highly recommended as a modern outline of cellulose pulp technology. The reviewer has only a few comments to make about the presentation of wood chemistry in the book. The modern concepts of lignin as a three-dimensional network are incompatible with the statement on p. 44 that lignin is "soluble in hot sodium hydroxide (especially in presence of sodium sulfide) or sodium sulfite solutions, alcohol or dioxane." It is rather degraded lignin and lignin derivatives which are dissolved. There is no evidence that lignin is chemically bonded to cellulose forming "lignocellulose," as stated on p. 42. Adversities of this type could easily have been corrected.

B. G. Rånby

State University of New York
College of Forestry
Syracuse 10, New York

Physical Methods of Investigating Textiles. R. MEREDITH and J. W. S. HEARLE, Eds. Textile Book Publishers, Inc., Division of Interscience Publishers, Inc., New York, 1959. ix + 411 pp. \$13.00.

This 411-page book is based on a series of lectures presented at the Manchester College of Sciences and Technology. It is divided into fourteen chapters, prepared by twelve different authors. The chapters and authors are as follows: 1. X-ray Techniques (D. R. Holmes); 2. Infra-red Spectroscopy (C. G. Cannon); 3. Electron Microscope (J. A. Champman); 4. Optical Microscopy (R. Barrer); 5. Fiber Dimensions (S. L. Anderson); 6. Density, Moisture and Swelling (J. W. S. Hearle); 7. Yarn and Fabric Struc-

ture (W. E. Morton); 8. Mechanical Properties of Fibers and Yarns (R. Meredith); 9. Some Mechanical Properties of Fabrics (J. C. Guthrie); 10. Transmission of Heat, Moisture and Air (G. King); 11. Frictional Behavior of Textiles (J. W. S. Hearle and D. Tabor); 12. Optical Properties (R. C. Faust); 13. Electrical Properties (J. W. S. Hearle); 14. Applications of Nuclear Physics (J. W. S. Hearle).

The material presented in this publication is, for the most part, the newer techniques employed in textiles and related fields for the measurement of physical properties. Some of the techniques are discussed in detail; however, not all subjects may be described in sufficient detail for some readers. This can be attributed to the large number of subjects covered and the fact that detailed discussions must be limited to a certain degree. There is also a lack of discussion pertaining to the effectiveness of certain techniques and what limitations, if any, may be expected.

One of the outstanding features of the book is the very complete list of references at the end of each chapter. For the student, or researcher, this feature of the book is most useful.

The authors of the individual chapters and the editors have the finest reputations as being experts in their respective fields; the bringing together of this type of talent is to be considered an accomplishment.

The volume would make a valuable addition to the library of any organization or individual interested in textiles and related fields.

D. S. Hamby

School of Textiles
North Carolina State College
Raleigh, North Carolina

Methoden zur Chemischen Analyse von Gummimischungen. H. E. FREY. Springer, Berlin/Goettingen/Heidelberg, 1960. viii + 169 pp. \$5.00.

This is a second edition of a small German book which includes a final new chapter in English by K. E. Kress on absorption spectroscopy. Although 30 pages are devoted to identification and estimation of rubber polymers, the book is largely concerned with compounding agents used in rubbers, such as plasticizers, pigments, accelerators, and vulcanizing agents. The literature in this field is reviewed, and brief procedures for analysis are given. Fluororubbers, halogenated butyls, and new diene rubbers prepared by stereoregulated ionic polymerizations are not included.

For analysis of polymers and monomers in the rubber field Frey's book can not compare in utility to the more complete recent books by Hummel and by Kline.

C. E. Schildknecht

Gettysburg College
Gettysburg, Pennsylvania