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Book Reviews

Starch Chemistry and Technology, 2nd edn. Edited by R. L. Whistler, J. N. BeMiller and E. F. Paschall. Academic Press, Orlando, Florida, 1985. xxiv + 718 pages. Price: £53.50/$75.00. ISBN 0-12-746270-8.

The first edition of *Starch Chemistry and Technology* was published in the mid 1960s when the wet milling of starch was just beginning to move from batch processing into continuous processing. The following 20 years have seen a complete revolution in wet milling such that it is now a highly sophisticated continuous process for the conversion of corn to starch and onto D-glucose and a whole series of sweeteners using advanced enzyme technology. The second edition of *Starch Chemistry and Technology* therefore represents a complete updated version of the initial edition, with coverage of the new technologies. Each of the 23 contributions is written by acknowledged experts and covers a wide range of interdisciplinary aspects of the subject.

The first two chapters cover the history, economics and future of the industry. The third chapter deals with the genetics and development of starch. Two chapters are devoted to the enzymology of starch (Chapters 4 and 5), whilst four chapters cover the structure, properties and behaviour of starch granules and molecules (Chapters 6 to 9). Chapters 10 and 11 cover the more modern aspects of the reactions of starch and its conversion to a limited number of specific derivatives. Production and use of commercially important starches are discussed in Chapters 12 to 16, with industrial applications in paper, food, adhesives and as sweeteners being considered in Chapters 17 to 21. The final two chapters deal with aspects of microscopy of starches. The coverage of the subject matter of each chapter is comprehensive with many clear illustrations to give the reader an excellent description of the chemistry and technology involved.

Where criticism can be made it is at the lack of control exercised by the editors in keeping the discussion of the subject matter to the more recent work of the past 15 years or so. There are too many references to

the literature published prior to 1970, whilst the editors' suggestion that *Methods in Carbohydrate Chemistry*, Volume IV, should be used as a companion volume to this review for the analytical and experimental procedures involved is without comprehension. Does this imply that no new methodologies have been developed since 1964? The inclusion of a description of the more modern techniques would have made this good book into an excellent one. The relatively high price must be taken into account in this respect and regrettably the cost is beyond the real limit for personal purchase.

This text is, within the limitations described, a useful text for practising scientists in academia or industry, qualified non-experts who require an introduction to the subject and those students who wish to gain a detailed coverage of the chemistry and industrial applications of starch.

John. F. Kennedy
Charles A. White

Cellulose, Structure, Modification and Hydrolysis. Edited by R. A. Young and R. M. Powell. John Wiley and Sons, New York, 1986. 379 pp. Price £61.75.

In their introduction the authors state that the objective of the book is to cover recent developments in cellulose chemistry and technology through experts in the field. The 20 chapters are divided into four parts entitled Cellulose Structure and Biosynthesis, Cellulose Modification, Cellulose Liquid Crystals and Cellulose Hydrolysis and Degradation. Because it concentrates on these topics rather than attempting to cover all aspects of cellulose science, the book has more coherence than many edited volumes.

The book is dedicated to Professor R. D. Preston who has contributed the first chapter on natural celluloses. The high standard of this is matched by many of the subsequent 19 chapters. It is clear that the editors have selected their contributors wisely. The standard of presentation is excellent and the authors are to be congratulated in achieving their stated objectives and making a significant contribution to the literature.

J. R. Mitchell