

Book review

Gums and Stabilisers for the Food Industry 3: Edited by GLYN O. PHILLIPS, DAVID J. WEDLOCK, AND PETER A. WILLIAMS, Elsevier Applied Science Publishers. London, New York, 1986, xiv + 665 pages + Subject Index, £60.00.

This book constitutes Volume 3 of a projected series having the same title, and is a collection of 48 papers, 17 poster presentations (in camera-ready format), and a list, by name and affiliation, of the 237 researchers who participated in the Third International Conference on the subject at Wrexham, Wales, in July, 1985. (A fourth is scheduled for July, 1987, at the same place.)

The subject area of this volume is divided into four parts. The first part (238 pages), entitled "Analysis, Structure and Properties", consists of 22 papers by a total of 53 authors. Thus, this part provides the reader with an abundance of structural studies on polysaccharides (8 papers). Other papers in this part are less pertinent.

The second part (150 pages), entitled "Applications", encompasses 16 contributions by a total of 32 authors. Four important papers are on cyclomaltoheptaose (β -cyclodextrin) and carrageenan, two are on hydrocolloids, and one discusses a most valuable development, namely, a new starch derivative, an *O*-(hydroxypropyl)starch acetate, and its use as a chewing-gum base.

The next part (47 pages) contains 5 papers, by a total of 18 authors, on "Interactions". This part is rather thin in substance, and, as the book deals with progress in the food industry, the reader might well expect more information on this topic.

The last part (49 pages), entitled "Recent Development—Future Trends", covers 5 articles by a total of 9 authors. As in previous parts, this section is relatively thin. Only one article, coincidentally entitled identical to the headline, deals seriously with the subject. Three others treat cross-linked gels, and kinetic studies of xanthan and κ -carrageenan. The last one provides the reader with a new technique of characterization of starch retrogradation by using Raman spectroscopy.

Finally, there are 17 poster presentations (147 pages!) by a total of 50 authors. Some of the posters are very interesting and useful, compared to the articles in previous parts. Among these posters, one is devoted to a discussion of cyclomaltoheptaose and its safe use in the drug and food industries.

On the whole, this artificially bulky book, taking up 665 pages including 40 (!) blank and title pages, and 15 pages for the list of participants, also contains a Subject Index, an additional 9 pages. It is this reviewer's opinion that modifications are needed if this series is to survive, and that this course of action would be a far

more acceptable means of attaining the presumed objective than a possible fragmentation of the next volume into two parts.

Overall, the foregoing may be seen to imply that this volume is of interest primarily to such specialists as food technologists concerned with the proteinaceous, hydrocolloidal, food stabilizers and with structural studies of polysaccharides, but not to most carbohydrate chemists and biochemists, for which it is far less useful.

*Food Science Department,
Whistler Center for Carbohydrate Research,
Purdue University,
West Lafayette, IN 47907*

ZBIGNIEW J. WITCZAK

Biotechnology of Marine Polysaccharides: edited by RITA R. COLWELL, E. R. PARISER, AND ANTHONY J. SINSKEY, Hemisphere Publishing Corporation, Washington, New York, and London, 1985, xi + 550 pages + Subject Index, \$79.95.

This volume is the Proceedings of the 3rd Annual MIT Sea Grant College Program Lecture and Seminar held at the Massachusetts Institute of Technology in April, 1984. It covers a wide range of topics and is by no means restricted to biotechnology. In all, there are twenty two papers, ranging in length from seven pages on exopolymers in fish ponds to sixty three pages on the uses of algal and bacterial polysaccharides. The majority of them report recent research carried out by the authors, but some are more general reviews. They were presented in nine sessions, each dealing with a different group of topics.

Two papers were given in Session 1; the first is on the functions of polysaccharides in biotechnology, and the other is a detailed study of the conformation of carrageenan and alginate in aqueous solution.

In Session 2, three papers dealing with different aspects of marine biofouling processes were given. In the longest paper, the general problem of adhesion of organisms to surfaces was considered, with special reference to *Chlorella*, where associated bacteria were found to be important. Shorter papers dealt with the adhesion of oyster larvae and of bacteria.

Leaving biological problems, Session 3 included two papers on the little understood phenomenon of drag reduction brought about by traces of polysaccharides and other polymers dissolved in water. One was a long and detailed study of fluid flow in different conditions, and the other reported experiments made to apply the effects to ships. Session 4 dealt with the use of polymers in enhanced oil-recovery. The output of oil wells can be increased by pumping a liquid into the oil-bearing strata; the exacting properties of polymers needed to function effectively in the flooding liquid was discussed in one paper. The rather different properties required