which has been expanded and updated to show how rapidly this aspect of plant physiology is moving and its potential for the future complete the book.

This revised and updated textbook introduces the student encountering plant physiology for the first time to fundamental concepts of plant physiology. The Summary, Review questions, and Suggested readings at the end of each chapter help students develop a solid understanding of the material covered. The number of references is limited in order to avoid disrupting the narrative and interfering with the flow of ideas that is essential to developing an understanding of a subject.

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Chitin and Chitinases

P. Jollès, R.A.A. Muzzarelli (Eds.); Birkhäuser, Basel, 1999, xi + 340 pages, ISBN 3-764-35815-7, DM 268.00

Chitin is the most abundant nitrogen bearing organic compound found in nature. It is an insoluble polymer consisting of 1,4 linked *N*-acetylglucosamine residues in the β-D-anomeric configuration, and is the most common constituent of insect exoskeletons, shells of crustaceans and fungal cell walls. *Chitin and Chitinases* is divided into three parts, with an initial short introductory presentation of these polysaccharides in the natural environment. The first part is devoted to chitin biosynthesis, both in vitro and in vivo, the structural organisation of chitin in vivo, and chitin synthases in yeasts and fungi. The role of chitin oligosaccharides in plant morphogenesis and the biochemical aspects of inhibitors of chitin synthase are covered, as are the chitin binding proteins.

Chitinases, which split the β-1,4 glycosidic bonds of chitin (similar to lysozymes), are discussed in the second part of the text. The biochemical, structural and evolutionary aspects concerning chitinases are covered in turn, along with chapters mentioning enzyme inhibitors and newly characterised mammalian chitinase-like proteins. Aspects concerning *N*-acteyl-β-D-glucosaminadases, enzymes releasing *N*-actelyglucosamine monomers from chitin, are also discussed in relation with their growing medical importance.

Finally, the third part is devoted to chitosan; a family of deacetylated chitins, which are used more and more frequently in the agriculture, food, cosmetic and pharmaceutical industries. It is an important chitin derivative, which occurs in the composition of threads, fibres, films, gels, microspheres and liposomes. Some exciting applications are mentioned, which emphasise that applications of chitosan, based on its biological significance, often depend on its biodegradability.

Chitin and Chitinases presents some of the most recent and sophisticated chitin-related advances in the life sciences. It is the work of over 50 contributors, with each chapter consisting of an article, which contains extensive referencing. Overall, this book provides a stimulating background for further productive research on chitin in the biochemical and biological fields.

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Toxic Plants—Dangerous to Humans and Animals

J. Bruneton, Intercept, Lavoisier Publishing, 1999, 560 pages, ISBN 1-898-29862-9, £99.50

Respiratory allergy, allergic dermatitis, phytophotodermatitis, and thorn injury are plant problems as probable as ingestion. Every day physicians, pharmacists, and veterinarians deal with incidents and accidents caused by plants. They are mostly ill-prepared to manage such cases and sorely need reliable information on the subject. *Toxic Plants—Dangerous to Humans and Animals* fulfils this need. The scope of the book includes houseplants, the consequences of widespread enthusiasm for a return to nature, and the impact of plants on companion animals.

A brief Part 1 provides a useful statistical data on frequency and true consequences of accidents caused by plants. It lists the common causes of incidents and accidents induced by plants in humans, describes the risks, emphasises those inherent to herbal drugs, and discusses issues of plant identification and medical treatment, as well as the specifics of animal poisoning, particularly in pets. The inventory of the most significant clinical data are grouped in Part 2 which is a detailed discussion of the plant species most often at fault, including the

circumstances of the intoxication, symptoms, proposed treatment, toxic doses, but also elements of diagnosis, toxin identification, and toxic mechanisms. The book is completed with two appendices: glossary of botanical terms, and elements of phytochemistry.

Toxic Plants—Dangerous to Humans and Animals, purely bibliographical, is based on over 1300 literature references and the most recent statistics. Over four dozen botanical families organised in alphabetical order are covered. The book names over 350 plant species including 100 plant monographs and numerous illustrations. This highly educational book provides health professionals and students with a complete picture of the toxic potential of higher plants.

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Trends in Carbohydrate Chemistry, Vol. 4
P.L. Soni and V. Kumar (Eds.); Surya International Publications, Dehra Dun, 1999, 117 pages, ISBN 81-85276-75-7

The increased appreciation of the role of carbohydrates in the biological and pharmaceutical sciences has resulted in a revival of interest in carbohydrate chemistry. "Trends in Carbohydrate Chemistry. Volume 4" contains the proceedings of the XII Carbohydrate Conference, which was held in Lucknow, India. The book is a collection of selected papers, which provide information on the emerging trends in carbohydrate chemistry. The polysaccharide based hydrocolloids (gum) industry in India and the need and scope for the developments have been surveyed. Preparation and applications of carboxymethyl guaran, physico-chemical, viscosity, and rheological studies of some potential seed galactomannans, structural studies of oligosaccharides containing deoxy sugars are some of the topics discussed. The kinetics and mechanism of oxidation of reducing sugars with oxidants like manganese (III) are also reported. The isolation and biological activities of milk oligosaccharides as immunostimulant and antitumor agents are described in detail.

This compendium of research papers will be useful for research scientists, students and industry.

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Creating New Foods. The Product Developer's Guide
Mary Earle and Richard Earle; Chandos Publishing (Oxford) Ltd, 1999, xi + 190 pages, ISBN 1-902375-12-2

Product development is a major activity in the food industry. It covers not only technical research, but includes the company's internal organisation, the market and marketing, the customers and consumers, the technological ambience surrounding the company including competitors, and also the social and physical environments in which the company operates. Product development is therefore a multi-disciplinary activity that requires knowledge on science, engineering, society and consumers as well as on the technical aspects of production and products. "Creating New Foods. The Product Developer's Guide", written by two leading authorities in the field, introduces managers of product development to a systematic process which integrates the various research areas, and which identifies the activities, outcomes and decisions to be made as the project progresses. The book also incorporates ideas from other industries such as product concept engineering and product design, so that management in the food industry can consider them.

Successful product development first requires the decisions, outcomes and activities to be developed in a logical flow plan of activities and critical control points. The product development process, integrating activities, outcomes and decisions is therefore described. The book then moves on to the product development project (aims, objectives, constraints, activities, and techniques), and the integration of research areas, including a complete description of the product, processing, consumer, and market. The integration of product design and process development covering systematic design, quantitative product qualities, and product testing, is also stressed.

Throughout the text are "Think Breaks" that encourage the reader to consider the practical applications of the material, both in their own company and in the food industry in general. Each chapter contains a "Project Break", which invites the reader to solve typical problems that occur in product development projects. Published comments on food product development are also included. "Creating New Foods. The Product Developer's Guide" is therefore an interactive text and it can be