

Book reviews

Biotechnology Second Edition, Volume 9. eds. G. Reed and T.W. Nagodawithana, x + 804 pp., D.M. 520.00, VCH, Weinheim, 1995, ISBN 3-527-29319-6

“Biotechnology” has been defined in many ways. The editors of this book define it as an application of biological principle for the purpose of converting foodstuffs into more palatable nutritious or stable foods.

In recognition of the enormous advances in biotechnology in recent years, the editors of “*Biotechnology*” have decided to complete a more up to date and advanced edition, which has expanded from ten to twelve volumes. The first four volumes consider the fundamentals of biotechnology from biological, biochemical, molecular biological, and chemical engineering perspectives. The next four volumes are devoted to products of industrial relevance. The last four volumes are dedicated to special topics. Volume nine in this second edition series combines four distinct but related sections; these are enzymes, biomass production, food fermentation and feed fermentations.

The section on enzymes is introduced by a description of the general properties of enzymes. This is followed by a comprehensive chapter on the production of enzymes as fine chemicals, a subject which has not previously been treated in the literature in such detail. The section also includes a challenging chapter on the function of multi-enzyme systems. Finally the analytical use of enzymes is discussed in detail.

Four types of microorganisms can be used to produce biomass. These are bacteria, yeast, fungi and algae. Section two of the book reviews the production of biomass from the aforementioned microorganisms for use in human foods and feeds, and the nutritional properties of such biomass.

By far the largest section of the book covers food fermentations on a world-wide basis (Section three). It discusses the staples of our diet including wine and beer as they may also be considered staples because of their major contribution to the diets in various countries.

Fermented feeds and feed products are of major importance to the livestock and feed industry. A myriad of feed products have resulted from fermentation techniques, which are used to enhance animal health and production efficiency. In fermentation of feed stuffs (Section four) such considerations are dealt with in a single chapter.

This book is a clear concise valuable reference source for microbiologists, biochemists, molecular biologists,

bioengineers, chemical engineers, food and pharmaceutical chemists.

John F. Kennedy
Tracey A. Norris

Methods in Carbohydrate Chemistry Volumes IX and X. J.N. Be Miller and R.L. Whistler (eds.), Wiley and Sons, New York, 1994, xxviii + 529 pp., ISBN 0-471-52941-9 (vol. IX); ISBN 0-471-52940-0 (vol. X)

After a pause of several years, *Methods in Carbohydrate Chemistry* resumes publication with a new publisher. It continues the series which was first published in 1962. A testament of the good quality of the *Methods in Carbohydrate Chemistry* series is that the first volume is still in widespread use today. The aim of the series was to fill a need that existed in carbohydrate chemistry and biochemistry for reliable methods that could be used by both the specialist and nonspecialist in carbohydrates thus saving valuable time searching through voluminous literature.

The latest volumes, IX and X, certainly live up to this aim by reviewing techniques that have been developed since the halt in *Methods in Carbohydrate Chemistry* in 1980, with the publication of Volume VIII.

Volume IX of the series consists of nineteen chapters and is divided into four sections. Section one of the book concerns lipopolysaccharides. Initially, isolation techniques are examined where extraction with aqueous phenol has acquired widespread usage not only because of simplicity but also because it can be applied to many groups of bacteria. Also, three specific examples of lipopolysaccharide analysis are detailed.

Section two of the book examines various saccharide separation and analysis techniques, including chromatographic, chemical, enzymic and physical methods of analysis. This is also the largest section of the book.

Glycoproteins is the term used to describe the vast array of molecules that contain a protein and a covalently bound oligosaccharide. Methods used for their preparation and isolation are detailed in Section three.

Immobilization of biologically active components including carbohydrates is an important tool in biological research, especially in its application to affinity chromatography for purification of biological molecules. Volume IX concludes with methods for immobilization of carbohydrates on polyacrylamide gels.

Volume X of the series is primarily concerned with the use of enzymes in carbohydrate chemistry. This