

Preface

The contents of Volume 2 of *Biotechnology & Genetic Engineering Reviews* again reflect the diversity of scientific, medical and industrial research and development that constitutes biotechnology, in the widest sense of that word. As in Volume 1, our main objective in assembling the contributions has been to present major, up-to-the-minute reviews of important aspects of biotechnology, with particular emphasis on genetic manipulation. There are very many connections between what may at first seem to be quite different areas of biotechnology; it is one purpose of these reviews to draw out and emphasize these interdisciplinary linkages. For this reason, a comprehensive index is included in each volume to facilitate cross-reference.

Specialists in any one aspect will undoubtedly benefit from reading about others. For example, anyone who is interested in the various facets of human and animal disease not only will wish to read the chapters on new methods of vaccine production (1 and 14) and on interferon synthesis (Chapter 8) but will find further information on interferon production by *Bacillus subtilis* in Chapter 5, on the effects of antibiotics on cell membranes in Chapters 11 and 13, on the use of immobilized enzymes in clinical analysis and therapy in Chapter 15, on the therapeutic use of pentoses in Chapter 7, and on the control of insect vectors of disease in Chapter 12. Similarly, not only are fermentation processes described in the review concerning single-cell protein (Chapter 10) but the manipulation of micro-organisms and of their environment for overproduction is discussed in Chapters 4, 5, 7 and 12; the inhibition of alcoholic fermentation is discussed in Chapter 13, and the development of efficient sensors to monitor such processes is covered in Chapters 11 and 15. Agricultural and environmental scientists will find accounts of biotechnological enhancement of plant products in Chapters 2 (on plant-cell culture) and 6 (improvement of wheat-grain quality), of genetic control of pest insects of crop plants in Chapter 3, and additional information about possible methods of pest control in Chapters 10 and 12; while the detection and treatment of pesticide residues in waste water are touched upon in Chapters 9 and 11. Different aspects of biomass production and utilization are discussed in Chapters 7, 9 and 10. Finally, those who wish to know more about the use of *Bacillus subtilis* to produce proteins will find much to interest them in Chapters 5, 7, 8, 10 and 12; indeed *all* biotechnologists will find Chapters 5 and 8 valuable because they contain lucid accounts of how to define biotechnological problems and then how to solve them. A feature of this series is that each chapter is written in such a way that readers should be able to understand at least the general principles in the review articles which cover areas of biotechnology other than their own.

Scientists often find that some of their most useful research ideas are prompted by information concerning apparently unrelated topics. I hope, therefore, that specialists in one particular aspect of biotechnology will read the

whole of this book, rather than only the one or two chapters which reflect their own direct interests. In this way they should obtain the maximum benefit from these volumes.

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