Taken together, these papers provide an excellent synthesis of disturbance and patch dynamics in a wide variety of systems from both the theoretical and the empirical standpoint, with both plant and animal assemblages equally represented. I would strongly recommend this volume to all students and advanced researcher in natural areas management and community and ecosystem ecology.—KATE LAJTHA, Department of Botany, Ohio State University, Columbus, OH 43210.

Pesticide Resistance: Strategies and Tactics for Management


Agricultural growers, pest control operators, government regulators, and the chemical industry have come to realize that resistance to pesticides is an unavoidable, problematic outcome of man’s attempt to suppress pest populations and limit economic losses due to pests. Under the aegis of the National Research Council Board on Agriculture, a 3-day conference was held in November 1984, to provide state-of-the-art presentations on various aspects of pesticide resistance, along with an analysis and recommendations for action. The product of the conference is this volume, which includes 27 symposium papers and a report by the Committee on Strategies for the Management of Pesticide Resistant Pest Populations (Chair, E.H. Glass). The book is organized into six chapters, a preface, glossary (limited), and index. Most significant, for those long on interest and short on time, is the inclusion of a nine-page Executive Summary, which capably alerts the reader to the severity of pesticide resistance, links the management of resistance to the principles of integrated pest management (IPM), and presents 16 recommendations relating to research, detection and monitoring, implementation of IPM, government action, and the development of alternative pest control technology.

The book begins with a comprehensive (and disturbing) chapter on the Magnitude of the Resistance Problem, by G.P. Georghiou. As of 1984, 447 species of insects and mites were classified as insecticide-resistant; 59% were agricultural pests; and 38% medical/veterinary pests. Of interest is the absence of structural insect and forest insect pests from the list. Multiresistance—resistance to different groups of chemicals—has become more common. Almost half of the 447 resistant arthropod species are resistant to two or more classes of chemicals. Indeed, for major pests such as the Colorado potato beetle and the diamondback moth, there are no longer any effective pesticides available.

The remaining five chapters deal with: Genetic, Biochemical and Physiological Mechanisms of Resistance to Pesticides; Population Biology of Pesticide Resistance; Detection, Monitoring and Risk Assessment; Tactics for Prevention and Management; and Economics of Pesticide Resistance. The book ends with a chapter on the Importance of Research and Development Directed to Alternative Pest Control Technologies, by J.R. Carrow. The chapter on the Importance of Research and Development Directed to Alternative Pest Control Technologies is not adequately recognized in the book. Without this effort, it is difficult to develop a strategic approach to management of resistance.

Nevertheless, this is a readable, well-organized, up-to-date reference that will be of great value to scientists, policy makers, managers, research managers, and growers. It is unfortunate that the future prospects for management of pesticide resistance are so dim.—J.R. CARROW, Faculty of Forestry, University of Toronto, Toronto, Canada M5S 1A1.

The Role of Organic Matter in Modern Agriculture


There has been a growing resurgence in the last decade of research on the role of organic matter in crop production that was long known to farmers but one that has been superseded by the impressive gains of synthetic chemical fertilizers. An increasing concern for ecological, environmental, and economic reasons has led to a reexamination of the role of organic matter in modern agriculture. This book is the result of the Fifth Symposium on Organic Matter in Agriculture, held in July 1984. It includes papers presented at the conference and new material. The book is divided into three parts: biogeochemical prospects for the future of insecticide resistance, management of resistance to the principles of integrated pest management, and economics of pesticide resistance. Without this effort, it is difficult to develop an effective IPM, including alternatives to chemicals. But the book does not exist and thus IPM is still more theoretical than practical. Without them, resistance will continue to intensify as a problem. The subtitle of this book, Strategies and Tactics for Management, leads one to expect long-range strategic plans for overcoming resistance. Although many tactics are described, nowhere does the reader find a truly strategic approach to managing and overcoming pesticide resistance. The acknowledgment of the enormous challenge posed by resistance to chemical pesticides, the need for expanded use of IPM, including alternatives to chemicals. But this is a book that is far too far removed from the reality of today’s pest management efforts is that there are few alternatives available to the grower or operator. The importance of research and development directed to alternative pest control technologies is not adequately recognized in the book. Without this effort, it is difficult to develop a strategic approach to management of resistance.

Nevertheless, this is a readable, well-organized, up-to-date reference that will be of great value to scientists, policy makers, managers, research managers, and growers. It is unfortunate that the future prospects for management of pesticide resistance are so dim.—J.R. CARROW, Faculty of Forestry, University of Toronto, Toronto, Canada M5S 1A1.