on seed ecology, which will provide researchers and students an unparalleled source of information for many years.

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Rice (Oryza sativa L.), in addition to being a major world food crop, is an excellent model cereal crop for molecular genetic research. For this reason, the journal Plant Molecular Biology invited guest editors to provide a comprehensive review of rice biotechnology, culminating in the book Oryza: From Molecule to Plant, a reprint of Plant Molecular Biology, Volume 35(1.2), 1997. In this book, leading researchers from around the world provide an overview of the central role rice plays in the comparative genomics of grass crop species as well as a review of the past and current status of rice breeding and rice molecular genetics. They also describe the development and application of molecular tools required to study the rice genome. This complete compilation of papers underscores the substantial progress that has been made in rice biotechnology by including subjects ranging from molecular markers and genetic maps to genetic transformation and the dissection of quantitatively inherited traits. Clearly, as the editors note, rice has become the “Arabidopsis” of the cereal community. Oryza: From Molecule to Plant, comprising 23 papers, covers the complete spectrum of information on rice molecular genetics and will serve as an excellent comprehensive reference for researchers or a textbook supplement for graduate courses that emphasize genomics research.

The importance of progress being made in rice molecular genetics with regard to other cereal crops is emphasized in the first paper by DeVos and Gale, who describe the synteny between the rice genome and other cereal crop genomes. Moore and colleagues follow with a look at the possibility of a holocentric chromosome ancestor existing between the cereal genomes. This possible level of homogeneity has served to further promote research interest in rice, particularly the application of functional genomics. Many of the resources and tools developed by rice researchers will be applicable to the study of other cereals such as wheat (Triticum aestivum L.) and maize (Zea mays L.). Other overview papers provide background and insight to researchers interested in rice because of the molecular tools currently available, including those on the origin and cultivation of rice by Khush, one on the introgression of genes from wild species, and two on the application of cDNAs for construction of physical maps and cataloguing the rice genome.

Yamamoto and Sasaki covers the Rice Genome Program’s characterization of copy DNA clones to identify expressed genes using expressed sequence tags (ESTs) and the application of cDNAs for construction of a rice genomic library. McCouch et al. on microsatellite or simple sequence repeats (SSRs) amplified by polymerase chain reaction (PCR) for genetic mapping and marker-assisted selection. Others are on quantitative trait loci (QTL) analysis for quantitatively inherited traits. Rice transformation with Agrobacterium tumefaciens, and molecular functions associated with transposons, and retrotransposons for gene targeting are also covered. The final paper by Carter and colleagues focuses on the central role rice plays in understanding cereal crop genetics and plant biology in general. It outlines the potential resources available for rice and other grass species in terms of and access to bioinformatics resources with the potential for expanding the future potential of rice genomics to crop-based agriculture. There are papers that show the role in developing the future potential of rice genomics to crop-based agriculture, particularly the application of concerted research for meeting the challenges of cereal genomics.

While this book is not for beginners, it provides a convenient way for those interested to become immersed in rice genomics. It is wonderful to have all of the pieces in one place as a reference for genomics training in an understanding of scientists in related fields and enables readers to get a handle on the acronyms and jargon that are prevalent in the field of biotechnology, without being confusing to scientists in related areas.

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Each chapter is a review article by leading weed scientists. Several chapters include new and all present new approaches to weed management. The hope is that the book will stimulate discussion and a broader view of weed management. If the book is discussed, as it deserves to be, that hope will be fulfilled. The introduction claims that concerns about the environmental effects of current weed control practices are a form of alternative strategies. Environmental disturbances, large farms, economic pressure, and herbicide resistance are given as examples of a need for research that may solve these problems.

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