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Review of *Molecular Biology of Fungal Development*,
Mycology Series, Volume 15

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prising considering that Leysen's laboratory focuses on the mechanism of auxin action).

Not only is *Mechanisms in Plant Development* an excellent learning tool for students, but it will also serve as a valuable resource for practitioners in the field for years to come.

THOMAS JACK, *Biological Sciences, Dartmouth College, Hanover, New Hampshire*

WILDFLOWERS AND OTHER PLANTS OF TEXAS BEACHES AND ISLANDS. *Treasures of Nature Series.*

By Alfred Richardson. Austin (Texas): University of Texas Press. \$65.00 (hardcover); \$29.95 (paper). xxiii + 247 p; ill.; index. ISBN: 0-292-77115-0 (hc); 0-292-77116-9 (pb). 2002.

PLANT STRATEGIES, VEGETATION PROCESSES, AND ECOSYSTEM PROPERTIES. *Second Edition.*

By J Philip Grime. Chichester (United Kingdom) and New York: John Wiley & Sons. \$55.00 (paper). xxxvii + 417 p; ill.; species list and index. ISBN: 0-471-49601-4. 2001.

More than 20 years after the publication of the first edition, Grime has meticulously reexamined and expanded the scope of his original CSR theory on plant functional types. The framework of his argument is based on the idea that there are two fundamental divisions of a plant's habitat: stress (inversely related to productivity) and disturbance. He uses these divisions to categorize habitats into four groupings, three of which favor a particular functional type of plant: competitors (C) are favored in low-stress/low-disturbance environments; stress-tolerators (S) in high-stress/low-disturbance environments; and ruderals (R) in low-stress/high-disturbance environments. The fourth category, high-stress/high-disturbance, is argued to be an unsatisfactory environment for plant growth.

The book's ten chapters are separated into three parts. The first three chapters focus on plant strategies and detail the theoretical framework of the CSR model. The following six chapters examine vegetation processes (e.g., dominance, succession, and coexistence) and their relationship to the CSR model. The final chapter looks at how C-, S-, and R-strategists potentially influence ecosystem properties. The concluding chapter, one of the most intriguing, presents evidence of the effects of plants on the trophic structure, productivity, and stability of ecosystems. One interesting example given is a case study involving the effect of the 1986 Chernobyl accident on contaminated sheep pastures in Great Britain. The evidence presented suggests that in productive pastures dominated by fast

growing C-strategists, contamination declined more rapidly than in less productive pastures of slower growing S-strategists. Other support within this chapter is drawn from an extensive literature review of field observations and manipulative experiments. Generally, Grime's evidence is convincing. Further, he does a good job of examining competing theories and explaining how they fit into the framework of his model. Overall, this is a commendable book. Grime has convincingly laid out evidence of his CSR theory from a wide array of sources and has presented an excellent synthesis of work done in this area over the last 20 years. This clearly written volume should be of great interest to researchers involved in plant ecology generally, and plant functional types in particular.

BRENT C BLAIR, *Natural Resources & Environment, University of Michigan, Ann Arbor, Michigan*

SEVENTH CATALOG OF THE VASCULAR PLANTS OF OHIO.

Edited by Tom S Cooperrider, Allison W Cusick, and John T Kartesz. Columbus (Ohio): Ohio State University Press. \$65.00 (hardcover); \$30.00 (paper). x + 195 p; ill.; indexes to scientific names and common names. ISBN: 0-8142-0858-4 (hc); 0-8142-5061-0 (pb). 2001.

MOLECULAR BIOLOGY OF FUNGAL DEVELOPMENT. *Mycology Series, Volume 15.*

Edited by Heinz D Osiewacz. New York: Marcel Dekker. \$195.00. xvi + 607 p; ill.; index. ISBN: 0-8247-0744-3. 2002.

Numerous publications, books, and textbooks are available that treat the subject of developmental biology. Far less is available detailing the fungi, an important group of organisms that have implications in a broad variety of contexts from medical to agricultural to food, and of course as model systems for "higher" eukaryotes. This nicely edited book by Osiewacz is an attempt to fill that gap. He has compiled an impressive list of authors, who represent leaders in their respective fields. This gives readers a detailed and current view of a broad array of fungal processes and lifestyles, ranging from saprophytes to pathogens of both plants and animals to symbionts. This volume contains 20 articles that review research from a broad base of fields relating to fungal developmental biology. They are grouped in two major sections: Basic Developmental Processes (11 chapters) and Interactions of Fungi with Different Hosts (nine chapters).

The first part of the book deals with model fungal organisms, beginning with yeast. These articles are particularly strong, with topics ranging from tip

growth (Bartnicki-García) through conidiation. Two very informative and interesting systems describe senescence in *Podospora anserina* and vegetative incompatibility (VCI) in *Neurospora crassa*. With respect to vegetative compatibility, when two hyphal propagules contact each other, there are two possible outcomes: successful fusion can occur (termed vegetative compatibility), which results in two genetically distinct nuclei/cell; or failure to fuse, resulting in an incompatible or nonviable response. The genetic determinants that mediate the process are being identified in large part in the Glass laboratory and raise issues pertaining to the recognition of self versus nonself, which is not only fascinating, but has ramifications for higher eukaryotes (as do many of these chapters).

The chapters that review light perception (Linden) and circadian rhythms (Bell-Pederson) are given fairly comprehensive treatments and again are not only relevant to fungal biology, but also plants and animals. The second section involves the dynamics associates (pathogen/symbiotic) between fungi and their hosts (plants/humans). Again, the range of systems is impressive, from mycorrhizae through plant pathogens to human pathogens. The chapters are generally well done and comprehensive.

On balance, this book will be an excellent resource for graduate students and others who work with fungi, but also for researchers interested in the broader aspects of eukaryotic development. It is my hope that researchers will look at this book as a great introduction to world of fungal development.

MARTY DICKMAN, *Plant Pathology, University of Nebraska, Lincoln, Nebraska*

FIELD GUIDE TO LIVERWORT GENERA OF PACIFIC NORTH AMERICA.

By *W B Schofield; illustrated by Patricia Drukker-Brammall and Muriel Pacheco. Alberta (Canada): Global Forest Society; Seattle (Washington): University of Washington Press. \$25.00 (paper). viii + 228 p; ill.; index. ISBN: 0-295-98194-6. 2002.*

INTRODUCTION TO PLANT POPULATION BIOLOGY. Fourth Edition.

By *Jonathan Silvertown and Deborah Charlesworth. Oxford and Malden (Massachusetts): Blackwell Science. \$49.95 (paper). viii + 347 p; ill.; index. ISBN: 0-632-04991-X. 2001.*

The fourth edition of this volume is a collaboration of Silvertown with a new coauthor, Deborah Charlesworth. Their knowledge of this expansive and complex subject imbue the current edition

with an integrated perspective that intertwines the ecological and evolutionary perspectives on topics in plant population biology. The book has a relaxed, conversational tone and reads as if many of the chapters were truly coauthored.

Although this edition retains the ten chapter headings used in the previous edition, much has changed here. Most chapters have been significantly reorganized and expanded, including many new topics that were not previously covered. Notable additions are new large sections on molecular genetic markers and their uses in population biology (Chapter 2); density dependent population growth (Chapter 5); regional dynamics and metapopulations, including extinction, invasion, phylogeography, and the genetic consequences of metapopulation dynamics (Chapter 7); and a greatly expanded chapter covering breeding systems (Chapter 9). Throughout the book there are new or reworked figures, tables, and text, with updated examples and references. The authors have retained the Summary section from previous editions, with key terms from the chapter highlighted in bold text. In this edition, two new sections follow each chapter Summary. The Further Reading section provides two to five suggestions for gaining more in-depth knowledge, while the Questions section challenges readers on their understanding. The questions on structured populations (Chapter 6) even provide matrix population problems to work on using spreadsheets. These practical additions and the expansion of the scope of subject areas make it an excellent, current textbook for use in upper-division undergraduate classes or for beginning graduate students.

SUSAN KALISZ, *Biological Sciences, University of Pittsburgh, Pittsburgh, Pennsylvania*



ANIMAL SCIENCES

PARASITES AND THE BEHAVIOR OF ANIMALS. *Oxford Series in Ecology and Evolution.*

By *Janice Moore. Oxford and New York: Oxford University Press. \$85.00 (hardcover); \$45.00 (paper). xi + 315 p + 1 pl; ill.; species and subject indexes. ISBN: 0-19-508441-1 (hc); 0-19-514653-0 (pb). 2002.*

Nowhere are marvelous stories about intricate adaptations more prevalent than in discussions of parasites and their effects on host behavior. The