

haps intimidated by the increasing role of genetics in conservation planning and legal decision-making. Although most topics are given only a brief explanation, the suggested readings provide ample opportunity for researching areas of interest more thoroughly. The biggest strength of this book is its use of real-life examples, which serves to clarify difficult concepts and makes for an enjoyable read.

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ANNUAL REVIEW OF ECOLOGY, EVOLUTION, AND SYSTEMATICS. *Volume 36: 2005.*

*Edited by Douglas J Futuyma, H Bradley Shaffer, and Daniel Simberloff. Palo Alto (California): Annual Reviews. \$80.00. x + 719 p + 15 pl; ill.; subject index and cumulative indexes (contributing authors and chapter titles, Volumes 32–36). ISBN: 0–8243–1436–0. 2005.*

SPECIES INVASIONS: INSIGHTS INTO ECOLOGY, EVOLUTION, AND BIOGEOGRAPHY.

*Edited by Dov F Sax, John J Stachowicz, and Steven D Gaines. Sunderland (Massachusetts): Sinauer Associates. \$74.95 (hardcover); \$49.95 (paper). xiii + 495 p; ill.; index. ISBN: 0–87893–821–4 (hc); 0–87893–811–7 (pb). 2005.*

OUT OF EDEN: AN ODYSSEY OF ECOLOGICAL INVASION.

*By Alan Burdick. New York: Farrar, Straus and Giroux. \$25.00. vii + 325 p; ill.; no index. ISBN: 0–374–21973–7. 2005.*

Twenty years ago the field of “invasion biology” did not exist. Although there were individual researchers investigating the phenomenon from both theoretical and applied views, there was not a cohesive body of knowledge. And the public was certainly unaware of and uninterested in biological invasions. Times have changed, and there are now numerous books written for both professionals and the general public.

In the mid-1980s, a series of books and special editions of journals were published with the encouragement and assistance of the International Council of Scientific Unions through the Scientific Committee of Problems of the Environment (SCOPE). The chapter authors were well-known scientists in their field, although few of them had made a career of working on invasive organisms. In fact, at that time, few scientists had made a career working on invasions into wildlands and natural areas. Those books and papers formed the genesis of the field of invasion biology.

Like the SCOPE papers, the editors of *Species Invasions: Insights into Ecology, Evolution, and Biogeography* assembled researchers known for excellence

in their fields, if not in invasion biology. Most participated in a similarly titled workshop organized by the editors.

The volume is separated into three parts. The first part includes five chapters on insights in ecology, ranging from a review of 120 papers on biotic interactions to factors affecting the disproportional loss of bird species on islands to introduced infectious diseases. In all of the chapters, the authors have assembled earlier key findings for review and synthesis.

Part II contains six chapters that provide insights into evolution. This is a rich area for theoretical research, including both the evolution of a species presented with a novel environment and changes in species affected in the invaded environment. Probably all early invasion biologists were influenced by the volume edited by Baker and Stebbins (1965. *The Genetics of Colonizing Species*. New York: Academic Press). The papers in this section echo some material in that volume, but with the insights gained during the molecular revolution. All of the chapters provide interesting reading. In particular, Ricklefs’s comparison of taxon cycles to species invasions draws conclusions between geographic distribution in the invaders’ native ranges and their genetic predisposition to invasion, as well as provides a segue into the final section.

Part III includes five chapters on biogeography, which is by its nature a science that attempts to summarize patterns across large spatial scales. As such, it makes a fitting closure to the book because it draws together ecology and evolution in search of relationships across geography.

This volume would make an excellent starting point for a graduate class in biological invasions. The chapters are well distributed among topics and would provide minds on the edge of diving into research with a fertile foundation. Its more advanced nature would make it less appropriate for undergraduate classes.

In contrast, the target audience for *Out of Eden* is clearly a public that is interested in biological invasions, but that lacks technical knowledge. There have also been a number of recent books intended for this audience. This volume starts with one of the “poster children” of invasions (the brown tree snake invasion on Guam) and then meanders throughout the Pacific, discussing topics such as the cascade effects of avian malaria and feral pigs on Hawaii. The second part of the book explores marine invasions, with a final chapter that looks to the future.

Burdick uses invasion biology effectively to illustrate ecological concepts. He draws on classic literature by Darwin (1859. *On the Origin of Species* by

*Means of Natural Selection*. London: J. Murray) and Elton (1958. *The Ecology of Invasions by Animals and Plants*. London: Methuen), and points out that invasion biology can be thought of as evolutionary biology turned “inside out.” As with other authors who write for a general audience, he personalizes invasions by journeying to see them and to meet with the scientists who are studying them. This will give readers a feeling of having a front row seat to scientific inquiry.

This volume could have been improved by some sort of organization. There is no Table of Contents and most of the chapters are not labeled, so readers will have no sense of where the book is going. Add this to Burdick’s meandering style of writing and readers will be left somewhat disoriented. It also makes going back to recheck subjects previously read a hunting expedition.

*Out of Eden* would be a good book to give to a family member who has expressed an interest in learning more about biological invasions. Other volumes, such as Baskin’s *A Plague of Rats and Rubbervines: The Growing Threat of Species Invasions* (2002. Washington (DC): Island Press), cover a broader range of subjects and have a better organization.

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## NEURAL SCIENCES

### PSYCHOPHARMACOLOGY: DRUGS, THE BRAIN, AND BEHAVIOR.

By Jerrold S Meyer and Linda F Quenzer. Sunderland (Massachusetts): Sinauer Associates. \$72.95. xvii + 555 p; ill.; author and subject indexes. ISBN: 0-87893-534-7. 2005.

This volume is a continuation of the book, *Principles of Neuropsychopharmacology*, by the same authors in collaboration with Robert S Freedman (who is now retired). The previous volume has been useful for anyone involved in teaching undergraduate and graduate students. I have been quite satisfied with how the authors approached this new textbook. The volume deals with three separate aspects of psychopharmacology: basic principles of pharmacology and neuroscience; drug and alcohol dependence; and drug use in psychiatry. The introductory chapters that discuss pharmacology and neuroscience are excellent. I am also pleased to see the authors introduce behavioral issues such as conditional tolerance and the state dependent learning in Chapter 1, Principles of Pharmacology.

The chapters that deal with structure and function of the nervous system, chemical signaling by neurotransmitters and hormones, and select neurotransmitters (Chapters 2 through 7) are also well done and provide the necessary foundation to appreciate how psychoactive drugs work. Chapter 4 is also a good overview as to methodologies used to study drug action; this chapter contains an adequate discussion of approaches from the cell to a whole animal organism, including approaches used in clinical research. A good and concise review of the mechanisms and problems associated with drugs abused by man is presented in Chapters 8 through 15; each drug is covered in appropriate detail. The final two chapters evaluate the clinical and basic science aspects of mental health problems and the drugs used as treatment for these debilitating diseases.

This volume provides a good balance across all the areas of psychopharmacology and is an excellent guide for students in psychology, pharmacology, and neuroscience. Advanced undergraduate and first- or second-year graduate students should do well with this book. It is well written and easy to understand; the diagrams and tables are also well done. Moreover, the book provides students with additional outside reading sources. The CD-ROM for instructors is very useful and presents PowerPoint lectures for each chapter, as well as a test bank for student evaluation. Overall, this book is well worth the price.

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### THE CEREBELLUM AND THE READING PROCESS.

By Rita Moretti, Paola Torre, Rodolfo M Antonello, Giuseppe Cazzato, and Antonio Bava. Hauppauge (New York): Nova Biomedical Books. \$69.00. ix + 85 p; ill.; index. ISBN: 1-59033-767-0. 2003.

This slim volume summarizes two studies—both have been published previously, although augmented in this account by the inclusion of six patients who were not part of the original investigations. The first study discusses 16 patients with lesions of the cerebellar vermis (ten of whom were reported on previously) and the second study concerns six patients with olivopontocerebellar atrophy. In both studies, eye movement data and the patients’ reading and writing errors were compared with data from control participants. The error data are described appropriately, but the eye movement data are presented in too compressed a fashion and without adequate explanation of the terminology. Furthermore, at some points in the text, it will be extremely difficult for readers to as-