

(Chapters 3 through 6), and Application of Cladistic Results (Chapters 7 through 10). The majority of the volume is dedicated to discussing the history and use of cladistic methods to infer evolutionary history, and utilization of the phylogeny for classification, investigation of evolutionary and biogeographic scenarios, and conservation purposes. Both plant and animal examples are included throughout the book. The authors' unequivocal endorsement of cladistics—and parsimony in particular—provides a thorough explanation of the method with several clear examples, which will undoubtedly be of interest to students of systematics. Nevertheless, the large field of biological systematics, referred to in the title, is only partly covered in this volume.

Systematics, as defined by the authors, is “the practice of recognizing taxa, determining hierarchical relationships among those taxa, and formally specifying those relationships” (p. 268), and yet there is very little discussion of the nature of species, character analysis methods for the purposes of species recognition and delimitation, or methods for undertaking alpha taxonomic research. Also, the authors disregard or discredit additional and more recent methods and applications, including maximum likelihood, Bayesian inference, molecular dating, and other biogeographic analysis methods. Perhaps a more appropriate title would be, *Biological Systematics: Cladistic Principles and Applications*. And although the authors claim to have incorporated recent “philosophical and technical advances” (p. ix) in this second edition, my overall impression was that they instead chose a more historical narrative. Comparison of the prefaces reveals that the organization, contents, and scope of the book have not changed significantly since the first edition in 2000. In my opinion, the authors could have incorporated many more up-to-date examples of cladistic applications from the recent literature (of which there are many) in the text and figures in the third section of the book. In the end, I was left questioning the significance of this volume for today's versatile and well-rounded practicing systematists, especially given the availability of similar “textbooks”—e.g., E. O. Wiley's *Phylogenetics: The Theory and Practice of Phylogenetic Systematics* (1981. New York: Wiley) and T. F. Stuessy's *Plant Taxonomy: The Systematic Evaluation of Comparative Data* (2009. Second Edition. New York: Columbia University Press)—many of which provide a more comprehensive treatment of the dynamic and multifaceted field that is biological systematics in the 21st century.

HEIDI M. MEUDT, *Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand*



BEHAVIOR

EVOLUTIONARY BEHAVIORAL ECOLOGY.

Edited by David Westneat and Charles W. Fox. Oxford and New York: Oxford University Press. \$150.00 (hardcover); \$49.95 (paper). xvii + 641 p.; ill.; index. ISBN: 978-0-19-533193-6 (hc); 978-0-19-533192-9 (pb). 2010.

Over the past few years, there has been a proliferation of animal behavior and behavioral ecology introductory textbooks. Unfortunately, there have been fewer volumes devoted to upper-level students since the fourth edition of Krebs and Davies's classic, *Behavioural Ecology: An Evolutionary Approach* (1997. Cambridge (MA): Blackwell Science). With the introduction of *Evolutionary Behavioral Ecology* by Westneat and Fox, that has changed, as this new edited volume is written specifically for beginning graduate students.

As evidenced by the title alone, which emphasizes the role of evolutionary biology, the field of behavioral ecology has expanded greatly beyond studies of animal behavior over the last few decades. This book succeeds in highlighting not only many of the discipline's classic themes and newer developments, it also has a portion devoted partly to future directions. Each of the 31 chapters is organized into six sections: Foundations; Decision Making; Ecology of Behavior; Social Behavior; Reproductive Behavior; and Extensions. From a discussion of the history of behavioral ecology, to basic descriptions of key concepts such as adaptation and fitness, to an introduction to phylogenetic comparative methods and genomic approaches, this text covers much ground.

Perhaps because of its roots in ethology, behavioral ecology is often thought of as a less quantitative discipline than either ecology or evolutionary biology. This volume will clearly demonstrate to readers that this is not the case. Many of the chapters introduce a series of basic modeling techniques—ranging from game theory to quantitative genetics—that are easy to understand and interpret. Although I would have liked a section on physiological mechanisms of behavior, perhaps we will see this in the future. Just as Krebs and Davies's classic textbook spanned four editions and nearly 20 years, I would not be surprised if this volume did the same.

DUSTIN R. RUBENSTEIN, *Ecology, Evolution & Environmental Biology, Columbia University, New York, New York*