

MONTEVERDE: ECOLOGY AND CONSERVATION OF A TROPICAL CLOUD FOREST.

*Edited by Nalini M Nadkarni and Nathaniel T Wheelwright. Oxford and New York: Oxford University Press. \$130.00 (hardcover); \$34.95 (paper). xxiii + 573 p + 8 pl; ill.; index. ISBN: 0-19-509560-X (hc); 0-19-513310-2 (pb). 2000.*

The Monteverde conserved wildlands, perched at the lower margin of Costa Rica's cloud forest, and blurring out into a dry forest agroscape to the Pacific and seriously intact rainforest toward the Atlantic, has long been a mecca for tropical biologists to live, conduct research, teach field biology courses, and be a colony of the very environmentally conscious. This compilation of their experiences and accumulated local scientific and street knowledge is first and foremost a basic textbook for those courses, a category of ecotourism still on the rise in Costa Rica. Complemented by other volumes such as Janzen's *Costa Rican Natural History* (1983. Chicago (IL): University of Chicago Press), McDade et al.'s *La Selva: Ecology and Natural History of a Neotropical Rain Forest* (1994. Chicago (IL): University of Chicago Press), Henderson's *Field Guide to the Wildlife of Costa Rica* (2002. Austin (TX): University of Texas Press); Kappelle and Brown's *Bosques Nublados del Neotrópico* (2001. Santo Domingo de Heredia (Costa Rica): INBio), and the dozen modern field guides and essays on Costa Rican natural history and conservation, any field biology course of any length in the Monteverde area (or for that matter, any other part of Costa Rica) has all the written materials it could ever ask for. The resource in short supply becomes experiences with real organisms doing real things in the wild.

This is a lucidly and cleanly written group effort by 114 contributors, all with experience with Monteverde field biology. The contributions range from detailed treatments of prominent (or prominently researched) species to integrated accounts of climate and history to conservation analyses and prognoses. Just as the history of Monteverde is very much that of pioneers integrating with the forest and climate as much as eliminating it, this book is saturated with the human impact. The thorough checklist of Monteverde plants, social wasps, herps, birds, and mammals will go far toward backstopping both course activities and future conservation analyses. All we could wish for is that all of this material was available on a website or CD-ROM (and in this manner all those superb black-and-white photographs could be available in their much more useful color morph).

DANIEL H JANZEN, *Biology, University of Pennsylvania, Philadelphia, Pennsylvania*

EVOLUTIONARY ECOLOGY: CONCEPTS AND CASE STUDIES.

*Edited by Charles W Fox, Derek A Roff, and Daphne J Fairbairn. Oxford and New York: Oxford University Press. \$85.00 (hardcover); \$45.00 (paper). xii + 424 p; ill.; index. ISBN: 0-19-513154-1 (hc); 0-19-513155-X (pb). 2001.*

The very clearly stated goal of this volume was to "provide a collection of readings . . . that would serve as an introduction to contemporary research programs in evolutionary ecology" (p v). Consequently, the editors also indicate that the book is intended for graduate or advanced undergraduate students, rather than "experts." The editors are clearly too modest here, even experts working within particular areas of the field will find many of the chapters outside their primary area of research interesting and stimulating. This should not be surprising, as the 35 authors constitute a veritable "who's who" in the field.

The 28 chapters are separated into five major subject areas: Recurring Themes (seven chapters); Life Histories (seven chapters); Behavior (five chapters); Interspecific Interactions (six chapters); and Adaptation to Anthropogenic Change (three chapters). Despite admitted omissions (there are no chapters on speciation or on specialized methodologies), the breadth of coverage is impressive. Unexpected were chapters on Cooperation and Altruism (by D S Wilson), The Evolutionary Ecology of Movement (by H Dingle and M Holyoak), and the final three chapters on adaptation of the "rest of life" to the presence of humans.

Chapters are generally consistent in style and coverage, proceed in a logical order, and are linked to one another at numerous points. Each chapter provides an overview of important historical and conceptual topics, is followed by one or more case studies, and concludes with speculations on where future research might prove most profitable (great thinkers publish both facts and opinions, and both are worth listening to). Figures are clear, crisp, and almost invariably easily understood. In many respects the book has a cohesiveness usually found only in single authored works. Still, chapters do reflect the individual personalities of the authors. In fact, one of the most striking things about the volume is that many of the chapters come across less as formal textbooks than as semiformal lectures. This is produced, in part, by minimizing unnecessary technical jargon, and also by permitting (encouraging?) the authors to be creative in making important points. For example, Wilson offers the opinion that progress in understanding the evolution of cooperation and altruism was less like "a heroic march to the truth" than like "the Three Stooges trying to move a piano" (p 222). These

features will make the volume easier and more pleasant reading for students—a fact that will undoubtedly facilitate learning. The relative paucity of literature will disappoint those seeking comprehensive reviews. Notwithstanding that the editors expressly forbade such contributions, the low citation density does not impair the book at all. The references that are used possess an especially high average “value.” Combining all the citations at the conclusion of the book instead of at the end of individual chapters may also disappoint some, but it certainly reduces redundancy and in some ways is actually a convenience.

The students (and young assistant professors?) targeted by this volume must be thrifty in order to maximize the collective value of the books they purchase. With that in mind, I offer the following: for about \$50 you can get a thick filet, a carafe of good wine, and dessert at a decent steak house. Alternatively, you could buy this book, then have a cheeseburger with the money left over. I do not want to indicate how you should spend your money, but was there not a song about a “cheeseburger in paradise”?

JOHN A BAKER, *Biology, Clark University, Worcester, Massachusetts*

SCALING RELATIONS IN EXPERIMENTAL ECOLOGY.  
*Complexity in Ecological Systems Series.*

*Edited by Robert H Gardner, W Michael Kemp, Victor S Kennedy, and John E Petersen. New York: Columbia University Press. \$65.00 (hardcover); \$30.00 (paper). xxx + 373 p; ill.; index. ISBN: 0-231-11498-2 (hc); 0-231-11499-0 (pb). 2001.*

Challenging concepts in ecology usually undergo tortuous semantic examination before being adopted as conventions. The word “scale” continues to experience growing pains. In 12 chapters stemming from a workshop held in 1997, the authors’ main goal is to relate inferences from aquatic mesocosm experiments to nature and thereby improve predictions about ponds, lakes, and the sea. Chapters are separated into four sections: Background (one paper); Scaling Theory (three papers); Scaling Mesocosms to Nature (four papers); and Scale and Experiment in Different Systems (four papers). Literature cited sections appear at the end of each chapter of this fully indexed volume. At least seven editorial errors appear, including mathematical notation in one equation.

Readers with a damp orientation will feel at home given the heavy emphasis on aquatic ecology. Landlubbers willing to peer into a wet world can witness the ontology of a scientific community that is developing in parallel with its terrestrial coun-

terpart. The viewpoints span from that of the aquatic experimentalist to the advanced practitioner of scaling methods, especially dimensional analysis. This approach, de rigueur in physics and engineering, blossomed briefly in ecology during the early 1980s, but died on the vine. Chapter 4, Spatial Allometry: Theory and Application to Experimental and Natural Aquatic Ecosystems, should be required reading for all students wanting to help rekindle this topic, where “scaling” is about how parameters, not states, of systems change with scale. Here and in Chapters 2 (Wiens) and 12 (Scheurer et al.) the authors identify compelling questions about the origin of scaling relations in ecology, although it would be a mistake to naively follow the latter’s recipe for dimensional analysis without consulting original sources. Curiously, relevant literature from hydrology is not cited, where the scaling of whole distributions follows the functional equation  $G(\lambda x) = \lambda^{\theta} G(x)$ .

Clearly, *Scaling Relations* indicates a strong desire among ecologists to adopt proven quantitative theory, thereby making scaling a centerpiece of experimental design, on a par with replication and control.

BRUCE T MILNE, *Biology, University of New Mexico, Albuquerque, New Mexico*

THE BLACK SEA: ECOLOGY AND OCEANOGRAPHY.  
*Biology of Inland Waters.*

*By Yuri I Sorokin. Leiden (The Netherlands): Backhuys Publishers. \$210.00. x + 875 p; ill.; no index. ISBN: 90-5782-105-2. 2002.*

The Black Sea is the world’s largest meromictic (permanently stratified) lake and its largest body of anoxic waters. As such, it presents one of the best examples for biologists and chemists of the critical interactions among microbial processes and redox gradients, which profoundly affect ecosystem structure and dynamics. This book, the third in the *Biology of Inland Waters* series, by the renowned Russian microbiologist Yuri Sorokin, is aimed at providing a monographic treatment of the vast Russian and Romanian literature on the Black Sea in English. Sadly, the Black Sea is also distinguished as one of the world’s ecosystems most catastrophically devastated by anthropogenic influences, ranging from cultural eutrophication and overfishing to exotic species introductions. Sorokin goes to some length to document these effects. The book is separated into three parts: physical oceanography (two chapters), chemical oceanography (three chapters), and biological oceanography (six chapters), and includes 75 pages of references (mostly Russian) extending to 1998. It is abundantly illustrated with many maps, charts, and

