

New Titles

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provided in chapter 18. Furthermore, detailed derivations of Hamilton's rule and a partial differential equation approach to kin selection models—both accounting for the interaction of multiple individuals with different phenotypes—should dispel the notion that kin selection theory is no longer useful. Of course, neither kin selection nor the asymmetric relatedness of haplodiploid species necessarily results in the evolution of eusociality. Queller and Strassman acknowledge that cooperation is not explained by relatedness alone, and describe the implications of multiple mating by queens in haplodiploid hymenopterans, for example. Gardner and colleagues also mention the application of these principles to the evolution of cooperation in human societies, though I was disappointed to see that this subject was not considered in more detail in one of the “Extensions” chapters. Such a discussion would have been timely and concurrent with several recent papers in the peer-reviewed literature on the evolution of morality.

For the theory-minded reader or student, the chapters of this book vary in accessibility and extent of theory-related detail. In chapters with the ideal layout, the main text focuses on the generalities, whereas the details of theoretical models are presented in several boxes inserted within the chapter. For example, Earley and Dugatkin (chapter 17) explain the selective advantages of group behavior, and Nonacs shows (in box 17.2) the derivation of models that predict why reproductive success in groups is unequal—and points out several limitations of the approach. In other chapters, however, the boxed text provides yet another example that could have been incorporated into the text or omitted completely (e.g., a study supporting a general principle). Some chapters are strongly analytical and may be completely accessible only to specialists, such as the one by Wolf and Moore (chapter 14) that modifies quantitative genetic models to predict the amount of heritable variation of a trait due to the “environmental” effect caused by social interactions with

other individuals (also a genetically variable set of influences). Perhaps the most effective discussion of quantitative approaches to making testable predictions for behavioral studies is Ydenberg's “Decision Theory” (chapter 8). The chapter is an excellent transition from the “Foundations” section of the book (see below) into the more contemporary approaches to behavioral ecology discussed later.

Experts in genomics may wish for more than the chapter toward the end of the volume (chapter 28) by Grozinger, but the nonspecialist is introduced to modern molecular techniques such as high-throughput assays to help search genomes for specific traits and genes under selection. The identification of a trait under selection is particularly challenging in behavioral ecology because the behavior as a phenotypic expression may be a combination of several traits that combine in response to environmental cues in different ways. Thus, it is not always clear what the target of selection may be. Nevertheless, examples of the identification of behaviorally related genes are scattered throughout other chapters, and one can sense that the relatively low number of these examples reflects a field still under development.

Compiling a comprehensive volume on evolutionary behavioral ecology is an enormous undertaking; the result, in this case, is proportional to the task. This volume certainly exceeds the capacity of a single graduate seminar; arguably, a two-semester course could be designed using this text, assuming students already have a grasp of the basic concepts. The eight-chapter “Foundations” section, with general reviews of the concepts of adaptation, natural selection, fitness, and phylogeny, would provide enough material to fill out an upper-division undergraduate course. For specialists designing graduate seminar courses, the other major sections, into which the editors have grouped the remaining chapters, could each function as material for a single course (particularly if the suggested further readings and other

literature were incorporated). Section II (“Decision Making”) and section III (“Ecology of Behavior”) could be combined.

Behavioral ecology is a distinctly Darwinian science, and the material in *Evolutionary Behavioral Ecology* shows that behavioral traits are actually the easiest to study in terms of how natural selection acts to determine their relative fitness. Despite the challenge of linking those behavioral traits to specific genes, many of the most informative examples of natural selection as a driving evolutionary force come from this field. The contributing authors of this volume bring each area of study up to date by summarizing current literature. *Evolutionary Behavioral Ecology* should set the standard for the field for another decade or two.

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NEW TITLES

The American Bird Conservancy Guide to Bird Conservation.

Daniel J. Lebbin, Michael J. Parr, and George H. Fenwick. University of Chicago Press, 2010. 456 pp., illus. \$45.00 (ISBN 9780226647272 cloth).

Beyond Cladistics: The Branching of a Paradigm.

David M. Williams and Sandra Knapp, eds. University of California Press, 2010. 352 pp., illus. \$52.00 (ISBN 9780520267725 cloth).

Climate Savvy: Adapting Conservation and Resource Management to a Changing World.

Lara J. Hansen and Jennifer R. Hoffman. Island

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Press, 2010. 256 pp., illus. \$40.00 (ISBN 9781597266864 paper).

Collective Animal Behavior. David J. T. Sumpter. Princeton University Press, 2010. 312 pp., illus. \$39.50 (ISBN 9780691148434 paper).

Conserving and Valuing Ecosystem Services and Biodiversity: Economic, Institutional, and Social Challenges. K. N. Ninan, ed. Earthscan, 2010. 432 pp., illus. \$49.95 (ISBN 9781849711739 paper).

Coral Reefs and Climate Change: The Guide for Education and Awareness. Craig Reid, Justin Marshall, Dave Logan, and Diana Kleine. CoralWatch (The University of Queensland, Brisbane), 2009. 256 pp., illus. \$45.00 (ISBN 9780646523606 paper).

Dendritic Spines. Rafael Yuste. MIT Press, 2010. 280 pp., illus. \$40.00 (ISBN 9780262013505 cloth).

Effects of Climate Change on Birds. Anders Pape Møller, Wolfgang Fiedler, and Peter Berthold, eds. Oxford University Press, 2010. 344 pp., illus. \$62.95 (ISBN 9780199569755 paper).

Evolution Since Darwin: The First 150 Years. Michael A. Bell, Douglas J. Futuyma, Walter F. Eanes, and Jeffrey S. Levinton, eds. Sinauer Associates, 2010. 688 pp., illus. \$69.95 (ISBN 9780878934133 paper).

Governing Risk in GM Agriculture. Michael Baram and Mathilde Bourrier, eds. Cambridge University Press, 2010. 296 pp., illus. \$85.00 (ISBN 9781107001473 cloth).

How Fast Can a Falcon Dive? Fascinating Answers to Questions about Birds of Prey. Peter Capainolo and Carol A. Butler. Rutgers University Press, 2010. 238 pp., illus. \$21.95 (ISBN 9780813547909 paper).

How Vertebrates Left the Water. Michel Laurin. University of California Press, 2010. 216 pp., illus. \$34.95 (ISBN 9780520266476 cloth).

Practical Computing for Biologists. Steven H. D. Haddock and Casey W. Dunn. Sinauer Associates, 2010. 538 pp., illus. \$59.95 (ISBN 9780878933914 paper).

A Primer of Conservation Behavior. Daniel T. Blumstein and Esteban

Fernández-Juricic. Sinauer Associates, 2010. 224 pp., illus. \$34.95 (ISBN 9780878934010 paper).

Research Methods for the Biosciences. 2nd ed. Debbie Holmes, Peter Moody, and Diana Dine. Oxford University Press, 2010. 488 pp., illus. \$50.00 (ISBN 9780199545766 paper).

Smog Check: Science, Federalism, and the Politics of Clean Air. Douglas S. Eisinger. Earthscan (RFF Press), 2010. 256 pp., illus. \$34.95 (ISBN 9781933115726 paper).

The \$1000 Genome: The Revolution in DNA Sequencing and the New Era of Personalized Medicine. Kevin Davies. Simon and Schuster, 2010. 352 pp., illus. \$26.00 (ISBN 9781416569596 cloth).

Transborder Governance of Forests, Rivers, and Seas. Wil de Jong, Denyse Snelder, and Noboru Ishikawa, eds. Earthscan, 2010. 230 pp., illus. \$99.95 (ISBN 9781849712231 cloth).

The Wonder of Genetics: The Creepy, the Curious, and the Common-place. Richard V. Kowles. Prometheus Books, 2010. 337 pp., illus. \$25.00 (ISBN 9781616142148 cloth).