

Rodent Societies: An Ecological & Evolutionary Perspective

Edited by J. O. Wolff and P. W. Sherman. 2007. The University of Chicago Press, Chicago, 610 pages. U.S. \$49. Paper, \$125 Cloth.

This opus on rodent behaviour brings together 61 researchers in a single edited volume. There are 42 chapters grouped into various topics including systematics, sexual behaviour, life histories, behavioural development, social behaviour, antipredator behaviour, comparative socioecology, conservation and disease. The main objectives are to present the latest research on the behaviour of rodents and to place it in the context of ecology and evolution. The resultant compilation of papers is firmly based on comparative biology, which goes beyond merely describing phenomena and explains it in terms of the larger ecosystem and within a phylogenetic framework. There is an emphasis on hypothesis testing and explicit experimentation that results in robust and scientifically-sound studies. This approach fostered by the editors gives more than just summaries of particular topics but highlights the ongoing nature of our understanding of behaviour in not only rodents but also as related to other organisms.

At over 2200 species, Rodentia is the most speciose order of mammals and accounts for approximately 40% of the diversity. In terms of breadth of coverage, almost half of the chapters summarize behavioural data across all major lineages of rodents or within a higher-level classification. In addition, many different groups or species of rodents are directly studied as case examples in this compendium, with taxa examined ranging from squirrels to beavers to rats to capybara.

After an introductory chapter on rodents as model systems, the evolutionary background is set with a paper discussing phylogenetics and biogeography. This is followed by several chapters on sexual behaviour dealing with mating and reproductive strategies. Life histories of rodents are covered by topics on dimorphism, sex ratios, stress, dispersal and philopatry, gene dynamics, and self-regulation. There is discussion of behavioural development such as neural regulation, ontogeny, learning, and kin recognition. Social behaviour is examined with papers on parental care, ecology of sociality, scent marking, non-parental infanticide, monogamy, and pacifism. There is a small section with three chapters on antipredator behaviour including

alarm communication. Comparative socioecology has several papers on social organization and structure of a number of different species or higher-level groups. The book ends with a section on conservation and disease followed by a chapter summarizing conclusions and future directions on the research of rodent behaviour.

One weakness in an otherwise comprehensive anthology was the lack of molecular study on the genetic basis for much of the evolution of behaviour. In particular, DNA sequence data nowadays seems to be churning out by the genome. Was this an editorial oversight, or is there just nobody looking into this field of research for rodents? If so, this highlights an area that needs attention, especially since there are several candidate model-system species in rodents to choose from. Likewise, I found it odd that only four of the chapters have figures of phylogenies, considering that an evolutionary perspective is supposed to be one of the major underlying themes of the volume. Perhaps this is an indication that there is still an obvious gap that requires bridging between micro- and macroevolution.

Another observation is that over 80% of the authors are based at institutions in the Americas. Has this biased the presentation of the state of knowledge of rodent behaviour? A more subjective criticism is the combined literature cited section for the whole book. For edited volumes, I prefer references listed separately at the end of each chapter, especially when topics are as varied as this monograph. However, there are some advantages such as the elimination of repeated citations for general publications on rodents and a single compiled source useful for searching purposes. Nonetheless, these minor detractions by no means diminish from the scientific merits of the book.

This book is definitely aimed at the specialist researching the behaviour of rodents, but will also be of interest to biologists working on other organisms and studying similar social systems. At over 600 pages, the price is reasonable for purchase by a university library, or would be a valuable addition to any ecologist's bookshelf because it is packed with the latest information on ethology.

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Seashells: Jewels from the Ocean

By Budd Titlow. 2007. Voyageur Press, 729 Prospect Avenue, P.O. Box 1, Osceola, Wisconsin 54020. 112 pages. US \$20. Cloth.

Sea shells have fascinated people since the dawn of time. Intrinsically beautiful, they have inspired artists and architects, been used to fashion tools, and have even served as money. They are also the prize of collectors the world over. All of these themes feature in

Budd Titlow's handsome book *Seashells: Jewels from the Ocean*.

This relatively slender volume, copiously illustrated with photographs by the author or from stock footage, provides a good introduction to the world of mollusks and the shells which adorn so many of them. Successive chapters deal with the physiology of mollusks, their classification, their habitats, their cultural and econom-

ic importance to humans, and the threats that mollusks face. The latter include marine and land-based sources of pollution and over-exploitation of commercially valuable species.

There is also a primer on shell collecting, and also short notes on good collecting sites in North America. At its heart, this is a book aimed at shell collectors, be they casual beachcombers or fanatical conchologists. The former will learn much, the latter will no doubt admire the stunning photographs. There is a distinct American bias, both in the selection of photographs and in the shell collecting sites profiled; indeed at times the book reads as an ode to Sanibel Island, Florida, the Mecca of American shell collectors.

The book oscillates between straightforward explanations in layman's terms of the science underpinning malacology, and a rather folksy, and at times highly personal, appreciation of the cultural aspects of sea shells and shelling. While occasionally rather affected, on the whole it is highly readable. Many of the photographs selected sacrifice ecological verisimilitude for art; for example, there are several very beautiful assemblages that would be highly improbable in nature. And, belying the book's American bias, it would be a fortunate day indeed where one found a Spider Conch (from the tropical Indo-Pacific) on a North American beach. For a field naturalist, the book is faintly disappointing in that it tends not to identify in specific terms

most of the shells portrayed. Shelling, unlike birding, is one pastime where getting a grip on the Latin terminology and the taxonomy is essential; for this the reader would be well advised to turn to any one of the several excellent works cited in the short but useful reference section. By the same token, a few sketches illustrating such things as mollusk morphology would have been helpful.

There are a few errors in the text; for example the swans that winter at Chesapeake Bay are Tundra Swan, not Trumpeter Swan, but these errors do not detract from the overall value of the book. One somewhat disappointing aspect of the book, and one in counterpoint to the otherwise conservationist approach, is a section dealing with the collection of live specimens. While pale in comparison to other threats, collectors can pose a considerable threat to vulnerable species and it would have been preferable if the author had concentrated the reader's attention on the collection of non-living material. That said, the author does emphasize the need to respect local regulations. In conclusion, this book is not a scientific reference; however, it does provide a useful primer for anyone keen to explore the world of shelling, and a handsome addition to any collection of "coffee table" books.

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Turtles: An Extraordinary Natural History 245 Million Years in the Making

By Carl J. Franklin. 2007. Voyageur Press, 729 Prospect Avenue, PO Box 1, Osceola, Wisconsin 54020. 160 pages. U.S. \$35.

Turtles provides a brief overview of the turtles of the world along with abundant colour photographs of many of the species. The book is divided into two parts. Part 1, the life and lifestyle of turtles, consists of three chapters. The first chapter covers the taxonomy and internal biology of turtles in roughly 10 pages. Chapter two, the ecology of turtles, covers topics such as thermoregulation, feeding, reproduction, and predators. The third chapter, covering the origin and fossil history of turtles, is only 3 pages long. Part 2, the diversity of modern chelonians, consists of two chapters. One chapter covers the families of Pleurodira, or side-necked turtles, and the other discusses the families of Cryptodira, or hidden-necked turtles. For each family account there is a map illustrating the global distribution of the family, then text discussing shared traits among members of the family and then information on many of the species within the family.

Roughly two-thirds of the book is allocated to Part 2, the family accounts. I found this an unsatisfactory balance. Part 1, which should provide a coherent picture of the various different turtle life history strategies, is just too short and superficial. Likewise, the family

accounts remain superficial because they do not provide systematic species accounts. The information selected for individual species should highlight the unique qualities of that species, but all too often the species profiles rely on just some basic numbers (size, number of eggs laid), distribution (which countries it occurs in) and some general habitat info.

The text also has a number of glaring mistakes. In a text box on Linnaean taxonomy of turtles, the author states that turtles belong to the class Anapsida (page 14). In Linnaean terms, Anapsida is the subclass, while Reptilia (or Chelonia, for splitters) would be the class. The author claims that both McCord's Box Turtle (*Cuora mccordi*) and Zhou's Box Turtle *C. zhoui* are believed to be extinct (pages 39-40), when really he should state they are likely extinct in the wild, as both species still occur in captivity. The author makes use of the most recent phylogenetic work on the genus *Clemmys*, by transferring the Wood Turtle (*Glyptemys insculpta*) to its new genus, but still leaves the Bog Turtle (*G. muhlenbergii*) in the genus *Clemmys*. Other careless errors include stating that there is more than one species within the genus *Actinemys* (page 98), and claiming that there are four species of Painted Turtle (*Chrysemys picta*; page 101), when really there are four subspecies. The Indian Flapshell Turtle (*Lissemys*