Ecology and Behavior of Chickadees and Titmice: An Integrated Approach

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Reviews

Edited by R. Todd Engstrom

The following critiques express the opinions of the individual evaluators regarding the strengths, weaknesses, and value of the books they review. As such, the appraisals are subjective assessments and do not necessarily reflect the opinions of the editors or any official policy of the American Ornithologists' Union.

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Ecology and Behavior of Chickadees and Titmice: An Integrated Approach.—Ken A. Otter, Editor. Oxford University Press, New York. x + 319 pp., 81 figures, 22 tables. ISBN 978-0-19-856999-2. Hardcover, $110.00.—Who cares about chickadees? Ken Otter begins the preface of this book with that very question. It is a question that many ornithologists who have devoted significant portions of their careers to field and lab studies of parids often hear from fellow colleagues, as well as from family and friends. Mostly, this question is asked from a perspective of good-natured sarcasm, but too many times there can be an element of derision just below the surface. Surely, as some people believe, there are more spectacular and charismatic species and groups of birds worthy of study. However, compared with the Paridae, there are very few families of birds that have allowed ornithologists such a clear and fabulous window into their lives and, thus, provided a basis for spectacular understanding and progress in ornithology.

This volume is the product of the first North American Parid Workshop held during August 2005 in Snowbird, Utah. However, this book is in no way an ordinary published product of a conference or workshop that might have several excellent, a few above-average, and many mediocre chapters. This book is, in fact, just the opposite. Beginning with the Preface—which is actually a seven-page introductory chapter in and of itself—and concluding with a chapter by Andre Dhondt that synthesizes the differences in approaches to North American and Eurasian research on parids, each chapter presents a clear and solid state-of-the-art overview of a particular topic that is germane to chickadee and titmouse ecology and behavior. Furthermore, as editor, Otter has done a fantastic job of striking a balance between making the language and tone of each chapter consistent throughout the book and also giving each author or set of coauthors the opportunity to have their own voice. This is a phenomenal editorial feat.

After some interesting front matter as noted above—including an excellent formal introductory chapter by Susan Smith that complements Otter's preface—the book is divided into four broad topical sections: (I) Proximate mechanisms in behavior and evolution; (II) Reproductive ecology, evolution and behavior; (III) Vocal communication; and (IV) Landscape ecology, behavior and conservation issues. Each section is concluded by an excellent synopsis that was coauthored by all or most of the authors of each chapter in that respective section.

Section I on behavior and evolution contains five papers that address various aspects of food storing, spatial memory, and relationships between photoperiodism, annual cycle, and timing of reproduction. The synopsis of this section, like most of the other synopses in this book, raises more questions than it answers. For example, David Sherry and coauthors note that laboratory and field studies provide dramatically different perspectives when it comes to understanding song control nuclei and the hippocampus. Evidently, in the laboratory, manipulating photoperiod can change the size of song control nuclei, but such changes are not observed in wild birds taken at different times of the year. In birds that store or cache food, such

as parids, it has been shown that they have a larger hippocampus than other groups of birds that do not store food. Although it is known that the hippocampus plays as significant role in many brain functions, including spatial memory, in Chapter 3 Vladimir Pravosudov makes a key point—that we are still a long way from understanding the exact patterns of annual food storing by various species of chickadees.

Section II, on reproductive ecology, evolution, and behavior, begins with Chapter 6, a study of phylogeography by Theresa Burg that uses the Chestnut-backed Chickadee (*Poecile rufescens*) as a predominant example. Burg employs a preponderance of data from past studies of Chestnut-backed Chickadee habitat, geographic distribution, and recent range expansion, and synthesizes these data with results from microsatellite analyses to reveal there are four genetically different populations of this species in western North America. She follows this with an impressive biogeographic analysis to illustrate how the colonization of Chestnut-backed Chickadees into postglacial environments was a complex process that ultimately resulted in the current (and relatively restricted, compared with most other parids) geographic distribution of this species. More than a century ago in *The Auk*, Joseph Grinnell (1904) set the stage for this chapter by hypothesizing about possible explanations for this species' restriction to a narrow humid coastal belt of western North America. If Grinnell were alive today and could read this chapter, I have no doubt he would be pleased.

Hybridization of various species of chickadees and titmice is another topic related to reproductive ecology that has long fascinated ornithologists. In Chapter 7, Robert Curry and coauthors pull together interesting data and perspectives on genetics and behavior, first for Black-capped Chickadee (*P. atricapillus*) and Carolina Chickadee (*P. carolinensis*), then for other North American parids and, finally, Eurasian parids.

In Chapter 9, Laurene Ratcliffe and coauthors explore the link between social dominance and fitness in Black-capped Chickadees. They demonstrate quite convincingly that, although males on their study area were variable in how well they could dominate rivals, higher social rank was correlated with increased annual survival and reproduction, which led to increased lifetime reproductive success. This is but one of many reasons why we should care about and study chickadees. They allow us to collect data on the ultimate currency of demography in wild birds, which is fitness.

Although I am far from an expert on vocal communication in birds, I could not help but marvel at the breadth and depth of the chapters on this topic in Section III. At 89 pages, this is the longest section of the book and, taken as a whole, it illustrates how chickadees and titmice are model study subjects that have implications for understanding vocal communication in birds and perhaps many other organisms. Because parids are easily approached in the wild, and easily manipulated with playback experiments in both field and laboratory, the authors of this section illustrate in phenomenal detail the various patterns of vocalizations and dialects and the implications of the birds' perception of these differences. If you do not believe that male Black-capped Chickadees are capable of eavesdropping on other males, you must read Chapter 14 by Daniel Mennill and Ken Otter, as well as the other chapters in this section.

The fourth and last section of the book is on landscape ecology and conservation. In the introductory note to this section, the authors address the idea that it may be counterintuitive to "think of parids in the context of conservation" because they are perceived as "paragons of adaptability." However, concluding with such a section is not only timely, it is appropriate, especially in the context of a recent Audubon Society report by Butcher and Niven (2007). In their report, Butcher and Niven (2007) illustrate a disturbing 40-year population trend for the Boreal Chickadee (*P. hudsonicus*). This species has undergone a 73% population decline since 1967, from an estimated 20 million individuals in 1967 to about 5.2 million today. It ranks number five on the top 20 list of common bird species in North America that are in significant decline. Apparently, a combination of boreal forest fragmentation from logging, mining, and other extractive activities, along with climate change, are working in concert against the Boreal Chickadee. Admittedly, the report by Butcher and Niven (2007) appeared this past June, about three months after the book was published. However, the disturbing population trend illustrated by the Boreal Chickadee is but one more reason why concluding this book with a section on landscape ecology and conservation is both timely and appropriate.

This is a phenomenally important book that should be in the library of every ornithologist,

whether they study chickadees or not. It illustrates how members of the family Paridae are model study subjects that have allowed us to advance virtually all areas of contemporary ornithology, from behavior to habitat ecology to biogeography, to vocal communication, to molecular ecology. Classic ornithological research projects involving chickadees and titmice have been at the center of all these topics, and surely many more. This book is on a par with the classic works by Perrins (1979) and Smith (1991).

My only complaint about this book has nothing to do with content, which was under the control of the editor and the numerous coauthors, but rather with an issue that was out of their control, its listed retail price $110.00 (although I should note that amazon.com claims "new and used copies for $74.96"). Either way, this is yet another example of what I consider a disturbing trend in commercial academic publishing, which amounts to nothing less than price-gouging by the publisher. With a retail price of more than $100, this book is beyond the budget of the audience that can most benefit from owning a copy, namely graduate students who are doing thesis or dissertation projects on birds. One redeeming factor, however, is that each chapter in *Ecology and Behavior of Chickadees and Titmice* is a stand-alone unit with Literature Cited at the end of the chapter rather than compiled in a comprehensive Literature Cited section at the end of the book. This will at least allow a thrifty graduate student to copy the chapter or two that is most germane to their project without having to shell out more than $100 to a greedy publisher.—Leonard A. Brennan, *Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, Kingsville, Texas 78363, USA. E-mail: leonard.brennan@tamuk.edu*

Literature Cited

Butcher, G. S., and D. K. Niven. 2007. Combining Data from the Christmas Bird Count and the Breeding Bird Survey to Determine the Continental Status and Trends of North American Birds. Audubon Society, Washington, D.C.

Grinnell, J. 1904. The origin and distribution of the Chestnut-backed Chickadee. Auk 21: 364–382.

Perrins, C. M. 1979. British Tits. Collins, London.

Smith, S. M. 1991. The Black-capped Chickadee: Behavioral Ecology and Natural History. Comstock Publishing, Cornell University Press, Ithaca, New York.

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The Sound Approach to Birding: A Guide to Understanding Bird Sound.—Mark Constantine and The Sound Approach. 2006. The Sound Approach, 29 High Street, Poole, Dorset BH12 1AB, United Kingdom. 2006. 192 pp. + 2 CDs. Bird and habitat photos, ~160 sonagrams. ISBN 10:90-810933-1-2. ISBN 13:978-90-810933-1-6. NUR code: 435. £29.95.—What is the "Sound Approach"? It is a trio of enthusiastic bird-sound recordists–analysts (Arnoud B. van den Berg, Mark Constantine, and Magnus Robb) who, with friends, traveled to 42 countries in a massive effort to record all the songs and calls of the birds of the Western Palearctic. The recordings in this guide are selected from the 30,000 or so recorded digitally with stereo microphones by the authors since the year 2000.

Part 1 describes the essentials of tone and timbre, pitch and frequency, and rhythm and timing. The first example given of the importance of sonagrams (pictures of the actual sounds made by the bird) is the failure of field-guide authors to describe verbally the differences between calls of the four species in the genus *Pluvialis.* This caught my attention because I was familiar with calls of all four. In fact, I was once astonished when a European Golden-Plover (*P. apricaria*) that was flying over the Scottish Isle of Rhum responded to my imitation and landed at my very feet. I had never been able to whistle a satisfactory imitation of a Pacific Golden-Plover (*P. fulva*) or an American Golden-Plover (*P. dominica*).

From Part 2 through the final Part 10, annotated sonagrams adorn nearly every page, occasionally interspersed with photographs of birds and habitats. Species are grouped according to similarity of songs or calls rather than by taxonomic relationships. Instead of editing out extraneous sounds, the sonagrams are reproduced in their entirety. When other species are singing on the same cut, the song of the target species is displayed in red and the songs and calls of other