

BOOK REVIEWS

RAYMOND PIEROTTI, EDITOR

PARENTAL CARE IN BIRDS: HERE IS WHERE WE HAVE BEEN, NOW WHERE ARE WE GOING?

The Evolution of Parental Care. Monographs in Behavior and Ecology 2.—T. H. Clutton-Brock. 1991. Princeton University Press, 330 p. ISBN 0-691-02516-9. \$19.95 paper; \$49.50 hardback.

The last fifteen years have seen a tremendous growth in the ideas and relevant research on parental care in a large variety of taxa. Theory articulated in the mid-1980s forged a strong connection between parental care and the well-established body of life history theory that had been developed in the 1970s. In the earlier development of life history theory, the work of ornithologists was most often the testing ground. The seminal work of Lack on clutch size evolution led to the elaboration of concepts of reproductive effort and their implications by Williams, Charnov, Krebs, Schaffer and others. The years since Lack's early work also saw a parallel explosion in the data on clutch size and other life history traits in birds. We seem now to be in the early phases of a similar data expansion phase for parental care, which is now clearly perceived as a life history trait like any other, forming a natural bridge between behavioral ecology and population biology. Ornithology is once again providing much of the evidence to feed the ongoing development of parental care studies.

Against this backdrop of emerging generalizations and crystalizing concepts, the publication of T. H. Clutton-Brock's *The Evolution of Parental Care* is particularly timely. In this book, Clutton-Brock provides a wide-ranging and critical synthesis of all that had happened in the rapidly growing field up through about 1989. The book has an uncommonly broad scope, including treatments of parental care in all taxa from insects through birds and mammals. Conceptually, Clutton-Brock places parental care squarely within the framework of life history thinking with early chapters on the costs of reproduction and propagule size, the latter being especially novel and important for discussions of parental care. Because so much of the data on parental care comes from studies of birds, there is unavoidable overlap between the material presented in the chapter on birds and mammals and the concept-related chapters (e.g., care related to benefits, costs, parent-offspring conflict, and sex of offspring), but Clutton-Brock generally does a very good job of organizing the ideas and data. As a result, he has given us a valuable reference, from which the relevant concepts, data and references can be extracted for just about any problem in parental care.

Clutton-Brock is a master at bringing together disparate data, interpreting them as evidence for and against the relevant conceptual positions, and pointing

out difficulties of interpretation. With virtually every concept he considers, the reader is left with a cogent impression of its empirical support and the problems with the data at hand. If there is a general weakness in the writing, it is that Clutton-Brock seldom writes much about what should come next in any given area. This is obviously the most difficult part of a synthesis, but there are many issues where Clutton-Brock's critical abilities and broad scope could be put to use suggesting specific critical experiments or focused prescriptions for theoretical work. Given the generally high standards of scholarship and writing in the book; however, the principal shortcomings of the book (at least from an ornithologist's perspective) lie in omissions of research cited rather than errors or misjudgments in the material presented. In any book of such wide scope, much excellent research must no doubt be left out. Nevertheless, ornithologists may miss treatments of several relevant areas. Clutton-Brock devotes a few paragraphs to a small number of the numerous exemplary studies of cooperative-breeding birds, but there is no mention, for example, of the fascinating and detailed work of Reyer, Emlen, Koenig, Mumme, Fitzpatrick, Woolfenden and others. These studies of the costs and benefits of parental care in cooperative systems are rich in natural experiments on variable parental roles, and they deserve further exploration. The fascinating and instructive examples of species that provide no parental care (i.e., the brood parasites) are absent from the book. Also, despite Clutton-Brock's call in the conclusion to the book for a better understanding of the mechanisms underlying variation in parental care and parent and offspring survival, there is no mention of the endocrinological work of Wingfield, Ball and others, nor the physiological ecological work of Bryant, Weathers, et al. On the historical front, it is a shame to have a book dealing with parental care in birds that does not refer to the pioneering (and still instructive) work of Moreau, von Haartman and Royama.

These and other omissions could have been avoided, even within the confines of a book dealing with many disparate taxa. But most of the material that today's reader will miss in the book is research that has emerged since the book's writing. Such omissions are obviously not detractions from the present book, rather they are encouraging indications of just how fast the field of parental care studies is growing. Many topics that are now of current interest were only beginning to emerge in the late 1980s. The explosion in interest and data on extra-pair copulations, fueled by developments in DNA fingerprinting, apparently came too late to be included in the book. The first generalizations from the fingerprinting work already make any previous assumptions about the relatedness of "parent" birds to their offspring suspect. Not only will further work refine generalizations and help identify unusual systems wor-

thy of further study, the data have already led to some modeling and conceptualizing (by Whittingham, Taylor, Dunn, Westneat, Sherman and others) to see just how much of the theory developed in the 80s must be revised to include variation in parentage as a critical variable in behavioral models. In the absence of any evidence that males can recognize "cuckolded" eggs or chicks, I suspect that the established theory will stand the test of time. But the issue of a parent's knowledge of its paternity is just one of many assessment issues that interconnect in the arena of biparental care. How do parents assess not only their paternity, but the quality of their mates and the parental care that they are likely to provide? Theory and data on assessment are sorely needed, and they clearly have strong and fascinating ramifications for mate choice and sexual selection.

Another area that has burgeoned since the late 80s is comparative biology. With the recent rise in molecular systematics, ornithologists are suddenly confronted with new information to help construct phylogenies of previously intractable groups, and the methods to analyze the evolution of characters within these improved phylogenies have been developing rapidly to keep up. Recent large-scale cladistic analyses by McKittrick complement the earlier, non-phylogenetic survey by Silver, Andrews and Ball, and there will certainly be many more detailed analyses of smaller groups forthcoming in the next five years. The next book on the evolution of parental care will likely include detailed investigations of character evolution against a well developed phylogenetic framework.

On the theoretical front, two big developments have happened since the late 1980s. First, the pioneering efforts by the teams of Houston and MacNamara and Clark and Mangel have made dynamic state variable models an accepted and integral part of the conceptual tool box for all behavioral ecologists. Recent models by Beauchamp and his colleagues and Ydenberg and Clark have only scratched the surface for the theoretical exploration of complex interactions between and among parents and offspring. The other recent development of import is Grafen's restatement of the handicap principle of Zahavi in mathematical terms. The math is difficult, but Godfray's recent treatment of offspring begging as a handicap problem points the way to simpler approaches and highlights the potential applicability of Zahavi's ideas to many issues in parental care.

I could go on with further examples of the tremendous research activity in this area. It is unfortunate for Clutton-Brock that the rush of recent research has robbed his fine work of bellwether status, but it stands as the most valuable summary and distillation of the early years of modern parental care studies. It should be read by all ornithologists interested in life histories, and, once read, it will be referred to often. It would make an ideal focus for graduate seminars, and the book will serve as a reliable springboard for further research in the exciting years ahead.—DAVID W. WINKLER, Section of Ecology and Systematics, Division of Biological Sciences, Cornell University, Ithaca, NY 14853.

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NEWS AND NOTES

62nd ANNUAL MEETING OF THE COOPER ORNITHOLOGICAL SOCIETY

The Cooper Ornithological Society held its 62nd annual meeting on 22–28 June 1992 at the University of Washington, Seattle. David Manuwal chaired the Local Committee on Arrangements and Dennis Martin chaired the Scientific Program Committee. A symposium, "Demographics of the Northern Spotted Owl in Five Northwest Landscapes: Status and Trends," was cochaired by Martin Raphael, Eric Forsman and Stephen DeStefano.

The following members are continuing or newly-elected officers: Martin L. Morton, President; Lloyd F. Kiff, President-elect; Terrell D. Rich, Secretary; Martin G. Raphael, Assistant Secretary; Donald R. Powers, Treasurer; Walter Wehtje, Assistant Treasurer. Glenn Walsberg continues as the editor of *The Condor*; and Joseph R. Jehl, Jr. will continue as editor of *Studies in Avian Biology*, until a new editor is selected.

The Board of Directors conferred honorary membership to Richard C. Banks and John William (Bill)

Hardy for their exceptional contributions to ornithology and the COS.

The Board also voted to join the newly-formed Ornithological Council. President Morton will appoint two members of the COS to represent the Society on this council.

Three new members of the Board were elected for three-year terms (1992–1995) by the membership in balloting conducted prior to the meeting: Deborah M. Finch, Walter D. Koenig and Elizabeth Ann Schreiber. They replace retiring members Carl D. Marti, Mary E. Murphy and Martin G. Raphael.

The membership approved all proposed bylaws changes by wide margins.

There were 233 registrants at the meeting. In the general paper sessions, poster session, and symposia, 79 papers and posters were presented. The COS Paper Awards Committee presented the A. Brazier Howell Award to Timothy P. O'Connor of the University of Michigan for his paper, "Possible Mechanism for Seasonal Acclimatization in the House Finch." A Board of Directors Award was given to Jeff T. Price of the