

who do not have the background with which to understand some of the sophisticated approaches employed in this book. Although this book should be present on the shelves of every academic library, it is unlikely to appeal to all but the most enthusiastic students of avian egg/embryo biology.

This book focuses on patterns of development throughout the altricial-precocial spectrum. In this regard, comparative biologists who use the development of the chicken embryo to represent patterns of development in all birds might be in for a surprise. The contributions of the editors, who are authors on 9 of the 17 chapters, present many of the freshest ideas and novel analyses that most represent significant advances over previous volumes. Their chapters cover embryonic growth and development, structural variants and invariants in avian development, comparative analyses of and internal constraints on growth, developmental plasticity, models of avian development, and the evolution of avian developmental modes, as well as patterns of development throughout the altricial-precocial spectrum. New approaches found in these chapters include the development of a new measurement (lean body mass of hatchlings) used in classifying various taxonomic groups along the altricial/precocial spectrum, and the construction of various predictive models. Readers must be armed, however, with a thorough knowledge of statistics and principal components analysis to understand these chapters fully.

The other chapters deal with topics that have been frequently reviewed in the past (ontogeny of thermoregulation, energy metabolism and gas exchange, endocrinology) or with new topics that have not been addressed in the avian egg/embryo forum before (immunology and development of locomotion). However, even in the chapters that cover familiar ground, particularly those by Carol Vleck and Terry Bucher on metabolism, gas exchange, and ventilation, the authors find new issues to cover.

Even without its other contributions, the thorough coverage of the literature, complete list of citations, and plethora of tables make the book a valuable reference. It is an outstanding contribution to the literature on growth and development and will serve as a standard in its field for years to come.—CYNTHIA CAREY, *Department of Environmental, Population and Organismic Biology, University of Colorado, Boulder, Colorado 80309, USA.*

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- Rails: A Guide to the Rails, Crakes, Gallinules and Coots of the World.**—Barry Taylor. 1998. Yale University Press, New Haven, Connecticut. 600 pp., 43 color plates, 15 text figures. ISBN 0-300-07758-0. Cloth, \$49.95.—Among the many family-level bird books that appeared in the 1990s, this is one of the best. Barry Taylor's encyclopedic knowledge of rails leaps from every page of this carefully researched book. Whatever criticisms I put forth here do little to dampen my overall enthusiasm for *Rails*, a book with small but legible print that packs more good information than any mortal could ever absorb.
- With clarity, conciseness, and fairness, the introductory section covers the topics of phylogeny, classification, morphology, flightlessness, habitat, feeding, voice, behavior, breeding, movements, conservation, and extinction. Taylor presents the information objectively, unafraid of controversy where it exists, such as in the classification of rails. The new book is much more thorough than the rail chapter that Taylor wrote for the *Handbook of the Birds of the World*, vol. 3 (del Hoyo et al. 1996). Previous to Taylor's efforts, the last time that all rails were treated in book form was in the lavish, large-format *Rails of the World* by S. Dillon Ripley (1977). Except for Storrs Olson's chapter on fossil rails (which is now obsolete in parts but still very useful) and certain of the color plates by J. Fenwick Lansdowne, little need now exists for ornithologists to reach for Ripley's *Rails*.
- The species accounts follow a standard format, furnishing 145 species of rails (133 extant, 12 extinct) with a distribution map and a text with sections on taxonomy and nomenclature, identification, voice, description, measurements, geographic variation, molt, distribution and status, movements, habitat, food and feeding, habits, social organization, social and sexual behavior, and breeding and survival. These accounts serve as a proxy for how much we know about some species (13 pages worth for *Porphyrio porphyrio* and 12 for *Gallinula chloropus*, for example) and how little we know about others, such as less than one page for the historically extinct *Porzana monasa* or for the extant *Rallina leucospila*.
- The distribution maps are very useful but would be even more so with the addition of place names.

This is especially true for the widespread oceanic species *Gallirallus philippensis*, *Porzana tabuensis*, and *P. porphyrio*. Most of the maps are fairly accurate, although for *P. porphyrio*, southern Tonga (Tongatapu, 'Eua) and nearly all of the Solomon Islands are erroneously excluded from the range. The map for *Porzana tabuensis* also has inaccuracies. I would add, however, that Taylor's accounts of these three difficult species are outstanding and by far the most useful ever written.

The color plates by Ber van Perlo are generally accurate and artistically gratifying. Multiple depictions for most species cover much of the variation due to age, sex, or geography. Some of the birds are too pale; the colors should be more saturated in, for example, various species of *Gallirallus* and *Porzana* (plates 14 and 28). A few other plates are too red. The soft-part colors are inaccurate for some poorly known species, such as for both species of *Nesoclopeus* (plate 11).

Extinction is no small topic when discussing rails; if not for anthropogenic extinction, more species of rails would be alive today than of any other family of birds. Taylor discusses extinction of island rails thoroughly, reviewing even some of the massive amount of extinction that took place prehistorically on oceanic islands. This sets his book apart from most modern treatments of avian biogeography, which ignore human-caused extinctions that occurred before 1600.

Because of their secretive habits, many species of rails are difficult to detect and therefore difficult to survey. Large-scale population estimates are simply unavailable and unrealistic to attempt for most species. Thus, the conservation status is highly speculative for many, perhaps most, species of rails. On average, Taylor does a much better job than many conservationists in not crying wolf about species whose status is, in fact, either poorly known or simply not qualified for the subjective classification "endangered." An exception would be *Nesoclopeus woodfordi*, which he calls "globally ENDANGERED and possibly close to extinction" (p. 230) in spite of being "locally common" (p. 231) on the large island of Isabel. During my field work on Isabel in 1997, *N. woodfordi* was common in riverine forest and was well known to local people. It is not close to extinction.

To continue with *Nesoclopeus*, I was disappointed to see that Taylor repeated the oft-made but illogical claim that *N. woodfordi* of the Solomon Islands and *N. poecilopterus* of Fiji form a "superspecies" and may even be conspecific. These two flightless species are distinct from each other morphologically, and they live on islands that are separated by 2,200 km of deep ocean. Just as untenable is suggesting superspecies status for *P. monasa* and *P. atra* (p. 422), two flightless species that are isolated by 6,000 km of deep ocean and hundreds of intervening islands.

Among my minor quibbles, unavoidable in a work

as extensive as Taylor's, are using "eruptive" rather than "irruptive" (p. 37), "classed" rather than "classified" (p. 349), and various misspelled island names (p. 361). Pettiness aside, *Rails* is a book that will never be far from my reach. Barry Taylor has set a very high standard for future family-level bird books.—DAVID W. STEADMAN, *Florida Museum of Natural History, University of Florida, Gainesville, Florida 32611, USA.*

The Auk 117(3):841–842, 2000

The Directory of Australian Birds. Passeriformes: A Taxonomic and Zoogeographic Atlas of the Biodiversity of Birds in Australia and its Territories.—R. Schodde and I. J. Mason. 1999. CSIRO Publishing, Canberra, Australia. x + 851 pp., numerous text figures. ISBN 0-643-06457-7. Cloth, AUS \$180.00 (available from <sales@publish.csiro.an>).—Assessment of the species-level taxa of Australian birds has been a major problem ever since the publication in the early part of this century of the many volumes of *The Birds of Australia* by G. M. Mathews. A predominant difficulty has been the location of the largest collections of Australian birds, including most of the type specimens, in European and North American museums. For several decades, Richard Schodde and Ian Mason have built up the largest current Australian collection of Australian birds with excellent label data at CSIRO-Wildlife in Canberra. They have used this material as the foundation for a review of the species taxa of this avifauna. In addition, Schodde has examined the important collections of Australian birds in overseas museums, paying particular attention to the type specimens in to clarify the nomenclature of these birds. The results of this enormous labor on the passerines of Australia are presented in this volume.

The species taxa recognized in this treatment are based on the biological species concept, and this volume includes a discussion of the advantages of this species concept and the species taxa based on it. However, because this treatment of Australian passerines is also intended for use by general biologists, conservation managers, bird watchers, and interested lay persons, the authors felt that a general term for the basic units of Australian avian biodiversity was needed. This need is not well served by the phylogenetic species concept that would result in species taxa with widely different properties. Hence, the concept of the ultrataxon—a neutral grouping—was proposed to delimit the geographic units, generally subspecies, within species-level taxa. Use of the term "ultrataxon" is equivalent to the legal definition of "species" in some laws such as the U.S. Endangered