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BOOK REVIEWS

EDITED BY DAVID L. SWANSON

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A Concise History of Ornithology.—Michael Walters. 2003. Yale University Press, New Haven, CT. 255 pp., 75 illustrations. ISBN 0-300-09073-0. $30.00 (cloth).

''The historian is a prophet in reverse.''–Friedrich von Schlegel, 1798

History serves us best when it can instruct us in the most thoughtful, efficient, artful, or practical ways to act in the present, and can serve as a lodestar for future practice and thought. ''What is past is prologue,'' notes the inscription carved on the front of the National Archives building in Washington, DC, which is in turn a quote from *Hamlet*. The modern study of ornithology is built upon the foundation of careful work in decades and centuries past, and even the missteps of naturalists and scientists have usually taught ornithologists a great deal.

This compact book provides a necessarily brief—although in a few cases, somewhat hasty—overview of a long and complex subject spanning centuries. It's meant to be what its title implies—concise—but it provides generally excellent service. Because it is primarily narrative rather than analytical, this particular history book will probably not solve any specific problems for ornithologists, but it will certainly guide those willing to dig deeply into a much richer literature.

Michael Walters, Curator of the Bird Group in the Department of Zoology at the Natural History Museum at Tring in the UK, details what he considers the notable aspects of the history of ornithology knowledgeably and usually with a deft hand. Despite a steady stream of dates and names, the text is clear, crisp, and accessible. The illustrations—all in black and white—are all taken from the exceptional visual resources in London's Natural History Museum.

The book is organized into ten chapters, ranging from the earliest Chinese and Greek history up through the twentieth century, with a large number of Appendices rounding out the work. Walters has aimed the book towards an educated lay audience, and it works nicely for the scientist or generalist interested in history but with no specialized knowledge of ornithology, as well as for the ornithologist with a deeper interest in history. Walters also presupposes no particular specialized vocabulary, which is a nice relief for the general reader.

In creating this work, Walters has conducted an admirable amount of sometimes original, and often deep, research in primary and secondary sources; it is far more than a regurgitation of well-known historical factoids. For example, one of the wonderful contributions of this book is its untangling of the interrelated history of taxonomic and nomenclatural change. Because these changes before, during, and after Linnaeus' time were very important in dictating how ornithologists organized and described birds, the history of nomenclatural development and transformation can shed a great deal of light on how modern taxa were formed.

It is people who have made ornithology the subject that it is, and it is the people who are the most interesting aspect of this book. Many led fascinating lives, and Walters painstakingly traces their connections to each other and their works. What Walters includes in the book is generally more important that what he has left out. He has done ornithologists and historians alike, a great favor by getting the details correct—small but important facts that are often incorrectly cited in a number of reference sources, or which are rarely seen in print. For instance, in his brief section on the important but under-recognized Robert Ridgway, Walters correctly notes a number of quite obscure details, none of which are available in a single source: that Ridgway was almost ridiculously loyal to Spencer Fullerton Baird and the Smithsonian, turning down a lucrative position at the American Museum of Natural History (AMNH) which paid nearly three times what he was making in Washington; that he was only sixteen years old (and not seventeen as is often stated) when he began service as the ornithologist on Clarence King's Survey of the Fortieth Parallel between 1867 and 1869; and that he privately published some 5000 copies of his *Color Standards and Color Nomenclature* in 1912, with his wife wrapping and mailing almost every copy herself. The pain and sacrifice of the undertaking doesn't come through in Walter's book, however. Ridgway, who was nearly financially ruined by the task, noted in a letter to his brother six years after publication that ''that miserable color book has proven a veritable disaster, for it has involved me in difficulties that I may never be able to surmount'' (unpublished letter from Robert Ridgway to John L. Ridgway, 26 August 1918, Blacker-Wood Library, McGill University, Montreal, Canada).

The book's biggest shortcoming—and it doesn't have many—is its relative lack of attention to the vital period between the middle of the nineteenth century to the recent past. Only a scant sixteen pages are dedicated to the nineteenth century, and even fewer—a dozen pages—are given over to ornithology and ornithologists in the twentieth century. It is this era that is likely to be of the greatest interest to practicing ornithologists because of the increasing relevance and recognizability of the work being done. After John James Audubon died, a new era of work in systematics and institutionalized ornithology sprung up under the

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auspices of men like the Smithsonian's Spencer Fullerton Baird, the AMNH's Joel Allen, and others. The last quarter of the nineteenth century alone encompassed the formation of the American Ornithologists' Union, the initial uses of trinomials and all that they implied about evolution, and the powerful influence of Charles Darwin's writings upon scientific thought. Walters touches on all of these subjects, but in a short book a little information goes a long way, and an additional ten pages given over to this vital era would have solidified this book's position as an outstanding historical chronology. In his defense, though, Walker's treatment of these subjects, particularly trinomials, is excellent and provides a model of brevity and clarity.

One other complaint is that the book covers relatively little of some key conflicts and difficulties which have been central in defining ornithology during many of the decades of the past two or three centuries: the sometimes bitter struggles between amateurs and professionals; the disdain felt by nineteenth-century ornithologists for those from the previous centuries as they struggled to gain professional status; and the dismissal at times by twentieth-century ornithologists of their nineteenth-century counterparts. The very real dangers—sometimes fatal—faced by ornithologists in the field also receive little attention.

Somewhat inexplicably, the final chapter, ''Ornithology and Ornithologists in the Twentieth Century,'' is authored by someone else—John Coulson. Currently the editor of *Waterbirds*, Coulson is a distinguished scientist and the immediate past Editor-in-Chief of *The Ibis.* His writing style blends in reasonably well, but the book contains no explanation as to why he, and not Walters, authored this chapter, although Coulson's byline is prominent at the start of the chapter and in the table of contents.

Finally, the end matter in the book—which at eighty pages takes up nearly a third of the volume—is exceptionally useful for historians of ornithology. It contains a whopping thirty-two separate Appendices, which note the names used by many of the important ornithologists in the era before nomenclature stabilized. One of its greatest uses for those interested in the history of ornithology is its treatment of historic synonymies, not just at the species level but for higher taxonomic categories as well. The bibliography is also excellent and will provide great service to those wishing to read further about the people and events Walters recounts.—DANIEL LEWIS, Curator of the History of Science & Technology, The Huntington Library, Art Collections & Botanical Gardens, 1151 Oxford Road, San Marino, CA. 91108. E-mail: dlewis@huntington.org

The Speciation and Biogeography of Birds.—Ian Newton. 2003. Academic Press, London, UK. xii + 668 pp., 125 text figures. ISBN 0-12-517375-X. $75.00 (cloth).

Automated DNA sequencing technologies, the development of other easily automated genetic marker systems (e.g., single nucleotide polymorphisms, AFLPs), and the concomitant development of maximum-likelihood and Bayesian statistical methods to analyze these data have extended the depth of avian speciation studies to include inferences of effective population size, effective migration rate between populations, historical demographic changes within populations, branching relationships of gene copies or species, as well as a statistical framework for testing alternative hypotheses in each of these cases. These analyses do not supplant, but rather complement more traditional specimen-based speciation studies that examine quantitative characterizations of morphological variation in the organisms that actually interact with the environment. In tandem, these morphological and genetic analyses can provide unprecedented characterization of patterns of speciation, and keen insights into the underlying processes that shape them.

These developments are not the focus of Ian Newton's *The Speciation and Biogeography of Birds,* and readers expecting to find an in-depth summary of the latest and greatest knowledge regarding avian speciation will be disappointed. In spite of its title, the central thesis of this book is not avian speciation, but bird distributions and the ecological processes that shape them. This focus is evident in the book's overall structure. Excluding the ''Introduction'' and ''Conclusions'' chapters, the meat of the book is divided into five primary parts. The first of these (82 pages), entitled ''Evolution and Diversity of Birds,'' is the ''speciation'' component of the book. The other four main sections, collectively totaling 438 pages, or 84% of the meat, represents the ''biogeography'' part of the book: Part 2 (Major Distribution Patterns), Part 3 (Effects of Past Climates), Part 4 (Limitation of Species Distributions), and Part 5 (Bird Movements). The text's targets are ''advanced students of population and evolutionary biology,'' but jargon is minimized in the hopes of reaching a wider audience (e.g., bird-watchers).

Because birds are relatively large, not especially fecund, and often difficult to maintain in captivity, they were not destined to become a workhorse for laboratory speciation studies, a la *Drosophila* fruitflies (Coyne and Orr 2004). In most other respects, however, birds are ideal study organisms for speciation and historical biogeography studies, and the advent of DNA sequencing technologies has been a major facilitator. Molecular systematics is arguably one of the fastest growing fields in ornithology, with the number of published studies increasing almost exponentially over the past few years. In addition to providing insights into speciation and the historical branching patterns of lineages (Swofford et al. 1996), phylogenetic trees provide the framework for nearly all comparative studies (Pagel 1997). For a text focused on the speciation and biogeography of birds, it was odd to find so few phylogenetic trees—only three trees appeared in the entire book. Although Newton clearly recognizes the importance of phylogenetic trees (Sibley and Ahlquist's DNA-DNA hybrization-based ''tapestry'' is highlighted), most of the discussions of phylogenetics that did appear in the text were superficial or erroneous, beginning with the definition of ''phylogeny'' as the ''study of evolutionary relationships'' on page 24. To largely neglect this relevant and recent body of literature was a monumental weakness (for more details see Zink and Jones 2004).

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Another inadequacy was that insufficient details were given for the well-studied systems in which avian speciation was addressed directly. For example, hybrid zones provide a natural laboratory for investigating pre- and post-mating reproductive isolation mechanisms (Harrison 1990), yet the best-studied systems were either ignored (e.g., *Manacus* manakins, Parsons et al. 1993) or older literature was cited when newer studies were available (e.g., *Poecile* chickadees, Bronson et al. 2003), or the study system was mentioned only briefly (e.g., *Ficedula* flycatchers, Saetre et al. 2001).

Structurally, the coverage of biogeography (Part 2) starts with a synthesis of the major distribution patterns of birds (subdivided into continental birds, island birds, and seabirds). Many extremely useful summary tables are presented, such as ''Families of landbirds endemic to each zoological region,'' ''Numbers of bird species per family in different biogeographical regions,'' and ''Number of breeding seabird species in different regions.'' Having all of this information in a single tome makes the book worthwhile for any student of avian biogeography. The next major section (Part 3) examines the role of past climate changes (e.g., glacial cycles) on the distributions of birds. Structurally, this section is subdivided into two chapters on glacial cycles in northern regions, one chapter on tropical regions, and a final chapter on disjunct ranges. This is largely a review of ''suture zones'' (Remington 1968), but, again, having all of the information in a single resource is valuable. Part 4 focuses on the contemporary factors that shape species distributions, beginning with a chapter on ''Bird distribution patterns.'' This chapter rehashes some of the ideas introduced in Part 2, and is followed by chapters on the factors that limit bird distributions and those that change bird distributions. This part ends with a chapter on ''Crossing barriers''; this chapter seems a bit misplaced given that the next major part of the book (Part 5) focuses on ''Bird Movements,'' with chapters on both dispersal and migration.

A general criticism is that lots of topics are presented in each chapter, but few are discussed in sufficient detail or with the most recent citations. The result is that the text often moves along clumsily from one subtopic to the next, without any real transition between the ideas. For example, in Chapter 10 (Glacial Cycles in Northern Regions: Differentiation and Speciation) contiguous subtopics under the topic ''Genetic Evidence for Past Climates'' were ''Population divergence in passerines,'' ''Population divergence of nonpasserines,'' ''Patterns of colonization,'' ''Joining of populations following range expansion,'' ''Genetic evidence of species responses to barriers,'' and ''Population divergence in seabirds.'' Collectively, these topics are covered in only 10 pages of text and the transitions between many of the subtopics are abrupt.

A positive aspect of the book is that summary tables and easy-to-interpret figures are abundant in most chapters. In addition, ample citations are presented within the text (all appear in a References section at the end of the book), providing plenty of jumping-off points into the primary literature. An Index contained nearly all of the topics for which I searched. The only weakness of the Index was the use of common names as the primary species flags. For example, the entry for *Ficedula hypoleuca* is ''See Flycatcher, European Pied.'' Because scientific names are the idiom of most researchers, especially those for whom English is not their first language, I was surprised that the scientific name was not primary.

In summary, the book suffers from an inappropriate title, with the consequences that many from the book's target audience will be missed, and worse, that many from its nontarget audience will be hit. Unfortunately, the title also masks the real strength of the book as a thorough treatment of avian distribution patterns and the ecological processes that shape them. The literature review alone makes it a valuable resource for any researcher interested in avian biogeography. Students using it as a textbook may find the conglomeration of subtopics within each chapter a bit cumbersome, but by carefully parsing the readings a lecturer could easily use this text in a course on avian biogeography. Its only other detraction as a textbook is that its scholarship suffers in some sections because relevant literature outside of ornithology is not incorporated into the narrative.—ROBB T. BRUMFIELD, Museum of Natural Science, 119 Foster Hall, Baton Rouge, LA 70803. E-mail: brumfld@lsu.edu

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Curassows and Related Birds. Second Edition.—Jean Delacour and Dean Amadon, with updated chapter by Josep del Hoyo and Anna Motis. 2004. Lynx Edicions, Barcelona, and American Museum of Natural History, New York. 476 pp., 56 color plates, 61 black and white figures, photographs and maps. ISBN 84-87334-64-4. $75.00 (cloth).

Curassows, guans and piping-guans, and chachalacas of the Family Cracidae are a group of about 50 species, many of which are endangered. These Neotropical galliform birds are mainly found in rain and cloud forests, and sometimes in drier deciduous woodlands, where their presence indicates that the area has not been severely disturbed. Thirty years ago, a book was dedicated to the natural history of this group (Delacour and Amadon 1973), and became the most authoritative reference on cracids. The amount of information on morphological description, distribution, habitat, and behavior for all of its recognized species and subspecies was complemented with the authors' personal stories and field observations. Now, this classic book has been re-edited entirely, with correction of typographic and toponymic errors, addition of new color plates, and inclusion of an entirely new update chapter covering most of what has been discovered about cracids in the last 30 years.

The book is divided into three parts. The first part is called Introductory Chapters and contains 11 chapters providing an overview of cracids. It starts with a general introduction in chapter 1, followed by a brief systematic classification in chapter 2. This chapter has a tree-like drawing depicting the possible genus-level relationships, which was not based on modern cladistic methods, but instead represents Delacour and Amadon's interpretation of cracid evolutionary relationships. Chapters 3 to 6 contain descriptions of plumage, molt, wattles and other display characters, and variation of the trachea (windpipe), which is enlarged especially in chachalacas. Comparative comments on similarities and differences among different groups of cracids are often provided. Chapters 7–9 are dedicated to the reproductive behavior of chachalacas, guans, and curassows. These chapters contain information, ranging from vocalizations to reproduction, that has been gleaned from observations of behavior from several species in the wild or in captivity. Chapter 10 presents a brief discussion on captive breeding, including how these birds should be kept in captivity, and notes on conservation of this group. Finally, Chapter 11 provides excerpts of Amadon's field notebook reporting a trip to Venezuela in 1968.

The second part of the book contains a systematic key to identify genera and species, and provides species accounts, which include geographic ranges where the birds are found, detailed morphological descriptions, habitat requirements, and data on whether these birds have been kept in captivity around the world, and if so, whether reproductive success has been achieved. These first two parts are largely illustrated with distribution maps, black and white photographs, and drawings. The distribution maps presented throughout the book are those originally published in 1973; even though more precise data are available nowadays, they were not updated. Most illustrations in this book are credited to Albert E. Gilbert, who also coordinated the publication of this second edition.

The third part of the book is the bibliography. In addition to listing an extensive number of formal publications used to gather the information contained in the first two parts of the book, it also provides a list of original citations for all genera and species and a glossary of common and scientific names. The glossary makes it easier to understand why some species are named the way they are. A series of color plates follows the glossary. The first five plates by Angels Jutglar and Francesc Jutglar illustrate all recognized species and subspecies of cracids, and were originally published in volume 2 of the *Handbook of the Birds of the World* (del Hoyo et al. 1994). Although drawn to scale, a scale is not provided with the illustrations in this edition. Following the first five plates, most plates are reprinted from the first edition, but several beautiful new plates illustrating downy young cracid chicks, which are represented at or near life size, have been added. Those who have seen cracids in the wild, or in zoos or other captive facilities around the world, would agree that the details given in the plates are incredibly realistic.

The information contained in the reprint of the original book is mostly still valid today. However, updated information is provided in the last part of the new edition, which was written by Josep del Hoyo and Anna Motis. In this new update chapter, the authors summarize published and unpublished data gathered for each one of the cracid species since the publication of the first edition. The level of attention paid to some species (for example, the Horned-Guan [*Oreophasis derbianus*] in Mexico and Guatemala or the Alagoas Curassow [*Mitu mitu*] of northeastern Brazil) in the last 30 years may have been inspired by the lack of knowledge about them at the time this book was first published. I think one of the main contributions of this update is to review recent work on cracid conservation. Sadly, cracid populations seem to be declining throughout their original ranges. In the last few years, extensive field work has been undertaken to determine the status of the most endangered cracids, and successful captive and reintroduction programs have been initiated, and may be key to saving this group from extinction. Certainly, this update chapter will highlight which species need more urgent conservation efforts until the next Cracid Action Plan (Brooks and Strahl 2000) for the years ahead is published.

Unfortunately, recent advances in cracid systematics from phylogenetic relationships of genera, based on molecular analysis of mitochondrial and nuclear genes (Pereira et al. 2002) and osteological characteristics (Silveira 2003), are only briefly mentioned in this chapter. The authors seem to have preferred not to present these phylogenies, as they are somewhat incongruent. Although it is not the scope of this book to investigate the differences between these two phylogenetic hypotheses among genera, their inclusion would give the readers an opportunity to compare the current phylogenetic knowledge with Delacour and Amadon's interpretation of genera relationships presented in the first part of the book. Moreover, the now well-established relationships of cracids to other Gal-

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liformes were ignored in this new edition (Dimcheff et al. 2002, Dyke et al. 2003). After the second edition of *Curassows and Related Birds* was published, more advances in cracid evolution and biogeography became available for curassows (Pereira and Baker 2004) and piping-guans (Grau et al. 2005), based on DNA sequence data.

Although my view is biased towards a comparative evolutionary approach, which I feel is missing in this book, this second edition will certainly be a useful and reliable reference for birders, cracidologists, field ornithologists, and conservation biologists, among others, in the years to come.—SERGIO L. PEREIRA, Department of Natural History, Royal Ontario Museum, Toronto, Ontario, Canada, M5S 2C6. E-mail: sergio.pereira@utoronto.ca

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