

# Ornithological Literature

John Faaborg, Book Review Editor

THE AMERICAN ORNITHOLOGISTS' UNION: THE FIRST CENTURY 1883–1983. By Keir B. Sterling and Marianne G. Ainley. Edited by William E. Davis, Jr. and Byron K. Butler. *Memoirs of the Nuttall Ornithological Club*, Number 20. Nuttall Ornithological Club, Cambridge, Massachusetts, USA. 2016: xviii + 405 pages. ISBN: 978-1-877973-50-5. \$35.00 (hardcover).—This work was originally proposed to coincide with the 100th anniversary of the American Ornithologists' Union (AOU) in 1983, but did not happen for a variety of reasons outlined in the introduction to the book. The project was revived for the 125th anniversary in 2008, but ran into problems again. In 2014, Erica Dunn approached Ted Davis about finishing the project and he enlisted the assistance of historian Byron K. Butler. One of the original authors, Sterling, also agreed to help; unfortunately the other author, Marianne Ainley, had passed away by then. The author and editors are to be congratulated for finally seeing this project through to print. (Full disclosure: I was one of the outside reviewers of their final manuscript.)

This volume is as advertised: it is the history of the AOU without any attempt to put it in the perspective of the history of ornithology in North America. The original decision was to break the chapters into major aspects of the AOU rather than present events in a chronological order, so there are lots of cross-references in chapters to events that may have affected several aspects of the AOU simultaneously. I think that this was a good decision as it allows one to see the progression of various issues within the AOU as events are generally in chronological order within chapters.

The oldest ornithological society in North America is the Nuttall Ornithological Club, founded by William Brewster in 1873 in Cambridge, Massachusetts. Brewster thought that something larger could be achieved and envisioned forming a union of maybe 12 people that could move the field of ornithology forward. He enlisted the help of J. A. Allen and Elliot Coues to arrange a meeting in New York City in the fall of

1883. The meeting was planned pretty much in secrecy and there was a lot of hand-wringing about who should be invited, given the personalities of the three organizers. Eventually, 48 men were invited to the meeting at the American Museum of Natural History on 26–28 September 1883 and 21 of them attended. According to those in attendance, things went better than planned and the AOU was formed.

From the beginning, the AOU was thought to be a rather elitist organization, with caps on the number of individuals in some membership categories, membership limited to the United States and Canada, and the society's business conducted by a relatively few individuals (eventually called Fellows). Complaints were lodged that being elected a Fellow was based on the death of a Fellow, not one's accomplishments as an ornithologist. The second chapter on by-laws chronicles the struggles the AOU went through and how restrictions on membership were gradually reduced over time. Much of this came to a head during the 1930s, when a group of young Turks led a 'revolt' and wrestled the leadership of the AOU from the Old Guard associated with Washington, D.C.

The Nuttall Ornithological Club generously offered their *Bulletin* to the fledgling Union, as long as the gift was acknowledged on the cover of the journal, a practice that was continued until Harvey I. Fisher removed that reference on the cover in 1950. Coues proposed the name *The Auk* for the new journal, stating it was "brief, even abrupt, raucous, distinctive, —many things in its favor...brevity is the soul of wit." The other serious contender was *American Ornithologist*. J. A. Allen was the editor of the *Bulletin* and he continued on as the first editor of *The Auk* as well as the first president of the AOU. After 27 years, Witmer Stone was named the second editor and he served for 25 years, so *The Auk* only had two editors for over 50 years. Remarkably, Stone had no staff, used no reviewers, and wrote almost all the book reviews himself. However, he was roundly criticized for being a very light-handed editor that rarely rejected a piece. Future editors would serve

much shorter terms, but it is interesting to see that many shared the same problems and frustrations concerning funding and dealing with the Council.

The fourth chapter deals with nomenclature and the AOU check-lists. One of the first committees elected was on nomenclature, which was one of the main reasons that the AOU was formed. With many competing points-of-view at that time, it was hoped that a standard check-list could be produced. Between 1886 and 1910, the Committee would produce three check-lists to compete with those of Coues and Robert Ridgway and much debate ensued about the importance of binomials versus trinomials and species versus subspecies. The fourth check-list was delayed by World War I and financial problems, finally appearing in 1931. The emphasis was clearly on subspecies, with the number nearly doubling from the previous version to 609. A fifth edition would appear in 1957 and a sixth in 1983, both of which were criticized for what the committee did and did not do.

Another of the first committees to be established was the Committee on Bird Protection and a chapter is devoted to this committee. Work by this committee and other members of the AOU led directly to the Migratory Bird Treaty of 1916 and the AOU was viewed as one of the leading conservation organizations, then, strangely, the committee floundered for decades. At one point, it was thought that the AOU should not be involved in bird conservation at all. Only during the DDT crisis of the 1950s and 1960s did the AOU emerge as a leader in avian conservation.

The remaining chapters deal with AOU awards, annual meetings, special projects, and changes in the AOU. The main awards given out by the AOU are the Brewster Medal and the Coues Award and a list of recipients through 1982 is presented in an appendix. The chapter on meetings traces the history and evolution of these annual events, such as the need to limit the time of presentations, going to concurrent sessions, and the addition of poster sessions. Earlier meetings were in big cities at hotels or museums, but the transition to meeting on university campuses greatly increased the social aspect of meetings. Mention is made of *The Auklet*, a banquet favor that appeared in 1920 and continued well in to the 20th Century. (I wrote the one for the 1988 meeting in Fayetteville.) Satirical and often bawdy, it is too bad that some illustrations from *The Auklet* were not included

in this section. Special projects discussed were the relief effort during and after World War II when members of the AOU sent more than 3,000 packages of food and clothing to colleagues in Europe, the ill-fated *Handbook of North American Birds* project, and the other publication of the AOU, *Ornithological Monographs*.

The chapter on changes examines the changing roles of amateurs, women, and Canadians in the AOU. Initially encouraging the participation of amateurs, the number of non-professionals in the AOU dropped precipitously during the first 100 years. For example, the number of publications in *The Auk* by non-professionals dropped from 72% in 1900 to 8% in 1950. While other societies were attracting non-professionals, the AOU struggled with what being the professional society meant. The AOU also slowly incorporated women into their ranks, but rather surprisingly the percent of women members was relatively constant at about 16% from 1900 to 1980. The number of women involved with running the society greatly increased in the latter years, as did the number of female Fellows and Elected Members, but no female president or Editor of *The Auk*. The former was about to change with the election of Frances James as President-Elect in 1982. Margaret Morse Nice was a candidate for Editor of *The Auk* in 1942, but being a woman was considered 'a handicap' by some Council members.

I once had a professor tell me that if you are really interested in something, you will want to know the history of it, so I would recommend this reasonably-priced volume to anyone interested in knowing more about American ornithology. I am impressed with the amount of detailed information presented on the early history of the AOU that the authors were able to amass and I must confess I knew little of the turmoil within the society between 1930 and 1970. The book itself is in the style of other Nuttall Memoirs volumes and there are pictures of many of the ornithologists mentioned in the text scattered through the chapters.—KIMBERLY G. SMITH, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701, USA. e-mail: kgsmith@uark.edu

BIRDS OF MONTANA. By Jeffrey S. Marks, Paul Hendricks, and Daniel Casey. Buteo Books, Arrington, Virginia, USA. 2016: 659 pages, 155 color range maps, 73 illustrations, 16 color photos.

ISBN: 978-0931130-19-9. \$75.00 (hardcover).—Montana is the fourth largest state and one of the least populated by humans, yet it boasts more than 425 species of birds including an impressive array of breeding birds. If you have an interest in learning more about the state's birdlife and rich history of ornithology, then *Birds of Montana* is for you! The authors have produced an exceptional reference on Montana's birds with the release of this book. *Birds of Montana* truly is the first authoritative reference on the birds of Montana. While there are several earlier publications on the state's birds, this is by far the most comprehensive and the first to summarize the historical record, each species' conservation status, and contemporary research. As the book's large format (650+ pages) suggests, the level of detail provided in the species accounts is rarely matched by other state's bird reference guides. And for those familiar with earlier publications such as P.D. Skaar's *Montana Bird Distribution* (7th Ed., 2012, Montana Audubon, Helena), you need not worry about potential overlap—this book is far more comprehensive, more up-to-date, and has many added features such as the historical perspective and references to detailed studies on many of the covered species. In short, this book is a huge step forward from any previous text on Montana's birds.

The book begins with a short preface that provides a context for the content. The authors note that at least 270 species of birds have bred in Montana, a total representing nearly 50% of all landbirds in the New World north of Mexico. Who knew? The authors also note that this is intended to be a useful ornithological reference that also highlights conservation and research issues on birds. In this aspect it differs from many other state bird texts, which often emphasize taxonomy, distribution, and seasonal occurrence while omitting conservation issues. I like the approach used in *Birds of Montana*.

The book also includes introductory chapters on Montana's geography, topography, habitats, and ecoregions; a history of Montana ornithology; and bird conservation in Montana. The authors preface this section with some comments on how they evaluated records for inclusion in the book. Their emphasis on a process of record evaluation and the choice to err on the conservative side when in doubt represents a sound approach. The geography section includes brief descriptions of five habitat

zones (plains, valley, montane, subalpine, and alpine), each accompanied by color photos that nicely illustrate the habitat. The text for each zone also mentions specialty bird species, typical breeding birds and migrants, and sometimes other notes about topics like specific locations to find the habitat and access issues. The section on 'Ecological Regions' is an extension of the geography section and uses a U.S. Environmental Protection Agency classification system to describe landscapes based upon their similarity in geology, soils, climate, and other factors. For many readers this classification will make more sense than the geography section because birders already use some of the terms. For example, the Northwestern Glaciated Plains Ecoregion is a well-known stronghold for many breeding grassland birds including such specialty species as the Sprague's Pipit and Baird's Sparrow. The chapter on Montana's ornithological history was fascinating and is a must read for anyone owning this book. It is organized chronologically, beginning with the Lewis and Clark expedition in 1805 followed by short sections on key ornithological contributors. The sections about early contributions (prior to 1900) are especially well written and emphasize many of the early collectors in this region. The closing section on university professors was also interesting, although it fails to mention several key individuals who have been working on Montana's avifauna in the last few decades. The introductory material concludes with a section on bird conservation in Montana, a topic that is not always included in state bird references. This section begins with brief descriptions of key landowners (e.g., U.S. Forest Service and U.S. Bureau of Land Management) and a mention of any special bird management efforts in their control (e.g., the Mountain Plover Area of Critical Environmental Concern in Valley County). Next there are short sections covering bird conservation efforts on private lands such as those of the American Bird Conservancy and Montana Audubon. When you see the many bird conservation efforts summarized in a few pages you can begin to appreciate just how many positive steps are being taken in Montana! The introductory material ends with a sobering section on the predicted impacts of climate change on Montana's birdlife. The authors cite recent studies of wintering birds shifting northwards (using Christmas Bird Count data), as

well as other model predictions about changes in some breeding birds resulting from large-scale habitat change. Some of the predictions are sobering. Could iconic alpine breeding birds like the White-tailed Ptarmigan and Black Rosy-Finch disappear from Montana? Or, could increases in drought cycles in the plains dry up many wetland complexes with a concomitant loss in breeding waterfowl? Predictions aside, the authors rightly conclude that climate change will be an important theme of future bird conservation efforts in Montana (and elsewhere, for that matter).

The bulk of the book is comprised of 433 individual species accounts, roughly 1–2 pages per species, covering all of the species known to occur in Montana. Each consists of a brief introductory paragraph followed by sections on Subspecies, Status and Occurrence, Habitat, Conservation, Historical Notes, Contemporary Work, and Banded Birds. Section length varies by species, and for many species one or more sections may be omitted. The species accounts are accompanied by nice illustrations of selected species; they are simplistic and mostly lack a habitat context with the focus on the bird. I do think they add to the book by breaking up the text and I definitely prefer illustrations over photos. The Status and Occurrence section includes a lot of details such as arrival and departure dates, peak counts, and observations from outside the species' normal range if it doesn't occur statewide. Where appropriate individual records are linked to the Montana Bird Records Committee by a unique number. The authors should be complimented for their exhaustive work to complete the Contemporary Work and Banded Birds sections!

As with any text, a reader often has a 'wish list' of content that is missing or is not fully covered. For *Birds of Montana*, this is thankfully a short list that centers on the range maps. I think birders who visit Montana will want a detailed reference on what birds they might see, where they can be found, and something about the habitat type(s) to search. Good range maps can quickly alert the reader to where a species occurs, which can be useful for planning a trip. This might not be necessary for every species, but for most species a detailed map would be useful. The maps in *Birds of Montana* are rather coarse and could be made more useful, although this would have required a lot more work from the authors. For example, the

Dusky Flycatcher map indicates it is a summer resident throughout all but the far northeastern sliver of Montana, yet this species is largely absent from the plains that cover much of the eastern third of the state. I can't help but think that a slightly more detailed map could have been created for species with similar patterns of distribution. That said, the maps are still quite useful and this is a relatively minor criticism when compared to all the material contained in this book!

*Birds of Montana* provides a thorough coverage of Montana's birds and their habitats, and then links this to current avian conservation efforts. I enjoyed my read of the book, learned a lot about the state's birds and rich ornithological history, and highly recommend it to anyone with an interest in Montana's birdlife.—STEPHEN J. DINSMORE, Department of Natural Resource Ecology and Management, Iowa State University, 203 Science II, Ames, IA 50011 USA; e-mail: cootjr@iastate.edu

WHERE SONG BEGAN: AUSTRALIA'S BIRDS AND HOW THEY CHANGED THE WORLD. By Tim Low. Yale University Press, New Haven, Connecticut, USA. 2016: xi + 406 pages, 36 color and 21 black-and-white photographs, 8 diagrams and maps. (Originally published in 2014 by Penguin Random House, Melbourne, Victoria, Australia.) ISBN: 978-0-300-22166-4. \$32.50 (hardcover).—This delightful book consists of a new Preface for the Yale University Press edition, an Introduction, 12 text chapters, followed by end notes, a Bibliography, Acknowledgments, Photo Credits, and an Index. In the introduction Low presents the case that Australia's (including New Guinea) bird fauna is distinctive in regard to such characteristics as eating more sweet foods, living in more complex societies, being long-lived, having an aggressive nature, and being noisy. The honeyeaters and parrots are singled out as outstanding pollinators. Chapter 1, Food Worth Defending, continues this theme, describing the relationship between the eucalypts and paperbarks (*Melaleuca*), which thrive on poor soils and produce forests of easily accessible nectar-producers, and the birds that pollinate them. Many other groups of smaller Australian plants are bird-pollinated as well, including the banksias and bottle-brushes. Low

relates this heavy reliance on nectar and other sweet foods to the aggressive behavior of, for example, the honeyeaters (*Meliphagidae*), a large and diverse family of birds. Chapter 2, *Forests That Exude Energy*, focuses on other sugar-rich foods produced by insects and trees and their effect on the evolution of aggressive behavior in Australian birds, especially the Bell Miner (*Manorina melanophrys*) and Noisy Miner (*M. melanocephala*). The non-nectar sugar-rich exudates are mana, produced by some eucalypts after insect attack, and lerp and honeydew, produced by insects on leaves and in the bark. These rich resources are linked to honeyeater aggression as they defend this resource against other birds. The two miner species are extreme in this regard. Bell Miners exclude virtually all other birds from their colonies as do the Noisy Miners who extend their aggression to mammals, lizards, and snakes. Low argues that availability of lerp was the driving force in the evolution of the miner's group breeding and group defense. Chapter 3, *The First Song*, traces the shift from the "northern orthodoxy" that songbirds (Passeriformes) had evolved in the Northern Hemisphere and that Australian birds arrived from Asia, to the current position that they evolved first in Australia and radiated from there around the world. Low makes the argument that many extreme characteristics of Australian birds, such as the aggression of the miners and honeyeaters results from longer time of diversification. In Chapter 4, *New Guinea: Australia's Northern Province*, Low makes the argument that New Guinea must be considered part of Australia biologically and historically, and concludes: "As for understanding Australia's birds, we can't get far if we leave out half of them." Chapter 5, *Land of Parrots*, makes the argument that the cockatoos (Cacatuidae) and parrots (Psittacidae) originated in Australia and discusses these groups as the most intelligent of birds as well as major Australian pests. Chapter 6, *The Last of the Forest Giants*, discusses the Cassowary (*Casuarius casuarius*) and its New Guinea counterparts along with the other large flightless birds, the emus, moas, rheas, and kiwis, and argues that birds in Australia peaked in size long before the mammals did. Chapter 7, *Australia as a Centre of Origin*, draws upon fossil evidence, current bird distribution patterns, and DNA trees to argue that Australia gave to the world a variety of birds, for example, shelducks

and possibly other waterfowl groups. Low presents the various theories that suggest that more birds survived the Cretaceous extinction in Gondwana than elsewhere and includes an interesting section entitled *Biogeography as Embarrassing Science*. In Chapter 8, *The Forest Makers*, Low investigates the role of birds as seed dispersers emphasizing the dispersal role played by the fruit pigeons in temperate rainforests and shorebirds in long-distance dispersal. Australian plants have a Gondwana component, usually in mountain areas, and an Asian element. In Chapter 9, *Of Grass and Fire*, Low argues that grasses are the most successful plants in the world and relates grasses to recent invasions of Asian birds. Low also discusses the history and role of fire in Australian ecosystems, including the relatively recent effects of human use of fire. Chapter 10, *Life in a Liquid Landscape*, discusses the unique adaptations that seabirds have for life at sea and the effects of needing mammal-free islands for successful breeding. Also covered is the history of human exploitation of seabird colonies together with the human introduction of mammals to remote islands. Chapter 11, *A Continent Compared*, examines the similarities and differences between Australia and other continents in such features as the prevalence of aggression among Australian birds, the effect of Australia being largely populated with marsupial mammals that include few predators or large herbivores, the sugary foods that Australia produces, all described in an historical context. The final chapter, *People and Birds*, traces the history of bird exploitation in Australia, including the commercial trade in muttonbirds (Short-tailed Shearwaters *Ardenna tenuirostris*) that continues to this day, penguins rendered down for oil, parrots and finches for the pet trade, paying of bounties on raptors, emus, bee-eaters, and currawongs, and excessive egg, nest, and bird collecting. The chapter concludes with a section on the emergence of modern conservation initiatives and unresolved problems.

This book presents a rich and varied Australian ecological landscape, with a strong historical element. The theories discussed are well documented and though I did not agree with some of his conclusions, and the narrative was a bit repetitive at points, Low is to be congratulated for producing this very idea-rich ecological tapestry. I thoroughly enjoyed reading it and found

it very thought provoking. The book should be of interest to anyone interested in Australian ecology and birds—WILLIAM E. DAVIS, JR., Boston University, 23 Knollwood Drive, East Falmouth, MA 02536, USA. e-mail: wedavis11@gmail.com

**BIRD BRAIN: AN EXPLORATION OF AVIAN INTELLIGENCE.** By Nathan Emery. Princeton University Press, Princeton, New Jersey, USA. 2016: 192 pages, 175 color illustrations. ISBN: 978-0-691-16517-2. \$29.95 (hardcover).—This engaging book blends the latest science on avian cognition with colorful original illustrations and photos by the author. Emery has created a uniquely attractive popular volume that simultaneously makes for an excellent coffee-table book and a useful edition for any avian scholar's bookshelf.

The text introduces readers to classic descriptions of avian cognition and primes them for understanding the evolutionary selection pressures that have shaped cognitive capacity in birds. The first chapter, 'From Birdbrain to Feathered Ape,' investigates how our understanding of avian intelligence has evolved from laboratory studies of pigeons to complex experimental studies that demonstrate that some bird brains process information in ways similar to the great apes. Emery presents a comparative description of brain anatomy and demonstrates that avian and mammalian brains share similar structures (such as the pallium that is used for similar purposes) with similar functions despite different evolutionary pathways. Subsequent chapters describe many classic studies and expand on that knowledge with new research by the author, graduate students and others working in avian cognition and learning. Major chapter topics include navigation, communication and song learning, social behavior, tool use, self-recognition, and higher reasoning and innovation. A central theme in each chapter relates behavior and cognition to intelligence, the ability to adapt knowledge and skills to new situations, often using a comparative approach. Many chapters reveal parallels between avian and human intelligence and present evidence that like humans, at least some birds exhibit the ability to problem solve, create, imagine and plan for the future.

The author suggests that because problem-solving, innovation, and other skills acquired via learning are so closely tied to the context in which

they were learned or evolved, it has been difficult to interpret the intelligence of birds. The text pragmatically questions whether aspects of avian cognition, such as a bird's ability to navigate, cache food, or use tools is the result of intelligence or ultimately evolutionary tinkering of a bird to its environment. The chapter on tool use includes a map showing world distribution of avian tool use and demonstrates that although some examples of tool use by corvids and songbirds may be classic in textbooks, tool use to increase feeding efficiency is very rare in the avian world. The author elucidates the problem of interpreting tool use as a function of intelligence by examining if experimental manipulations observed in some species in the lab translate to understanding in their native physical world. The answer seems to be that when the task and tool are related to feeding ecology, many birds, even non-tool users, have the cognitive abilities necessary for tool use but it seems environment and necessity are the likely reasons why so few bird species use tools in the wild. The chapter concludes with an insightful discussion of the comparable intelligence of corvids and humans, with rooks, jays and New Caledonian crows possessing equal or greater competence in tool innovation and causative reasoning than eight-year-old children.

Emery does a superb job summarizing the vast and accumulating knowledge of avian cognition and intelligence research. The book is visually appealing and filled with colorful photos and illustrations and within chapters there are many short sections with catchy sub-headings that keep the text moving and causes the reader to probe into the next section without pause. My only complaint is that without references or in-text citations it is difficult to distinguish between new information and previously published or classic work. The lack of citations throughout was a bit unsettling but a partial reference list is provided in the appendices and readers are encouraged to visit the author's website ([featheredape.com](http://featheredape.com)) where a full reference list should be provided (I found only Emery's publications), although this should be a minor issue for the popular audience for which this book is intended.

Given that bird brains are structurally and functionally similar to mammals and that many birds are capable of similarly sophisticated spatio- and social-cognitive feats, it is no wonder the

author suggests members of certain avian groups like corvids and parrots are ‘feathered apes’ and rightly belong to the Clever Club, a group of animals such as elephants, chimpanzees, and dolphins, that all have brains larger than predicted from their body size. This visually impressive book astutely summarizes the fascinating field of avian cognition and sheds light on the avian brain, which turns out to be much more complex than popularly believed. Birds are perhaps even more remarkable when we consider they evolved these sophisticated structures and behaviors under the energetic constraints of flight. I agree with Emery, let’s retire the term ‘birdbrain’ and opt for ‘feathered ape.’—DANA MORRIS, Division of Science, Mathematics, and Computer Science, Central Methodist University, 411 Central Methodist Square, Fayette, MO 65248, USA. e-mail: dlmorris@centralmethodist.edu

THE WILDLIFE CONSERVATION SOCIETY BIRDS OF BRAZIL: THE ATLANTIC FOREST OF SOUTHEAST BRAZIL, INCLUDING SÃO PAULO AND RIO DE JANEIRO. By Robert S. Ridgely, John A. Gwynne, Guy Tudor, and Martha Argel. Cornell University Press, Ithaca, New York, USA. 2016: xv + 415 pages. ISBN: 978-1-5017-0453-6. \$35.00 (paperback).—Brazil was, until recently, the single extant South American country with a megadiverse avifauna lacking a comprehensive field guide for bird identification. I attribute this geographic coverage gap to the gargantuan size of the task: Brazil is the fifth largest country in the world, heart of the Amazon, a center of bird diversification, and home to some 1,900 species, many of them endemics.

The lack of field guides for some extraordinarily rich areas such as Brazil has been temporarily overcome by using books of adjacent areas (and often filling the remaining gaps with supplementary books). For example, R. T. Peterson and E. L. Chalif’s *Mexican Birds*, published in 1973 (Houghton Mifflin Company, NY), took advantage of the existence of well-developed field guides for the United States and Canada (‘North America’) to cover Mexico. Peterson and Chalif illustrated only those birds not included in North America, gathered then-scant distributional data (no maps!), and wrote species accounts for them. This practice reduced the amount of work needed to deal with a

new territory and made the task more manageable for the writers and artists (although it created a new complication: the need to carry two books in the field). The benefit of a supplementary book like this is that it extended its usefulness to adjacent countries. For over 20 years, one could use the Mexico guide to identify birds in Guatemala, Belize, El Salvador, Honduras, and other Central American countries to a lesser extent.

This approach has limitations, such as the distributional information missing for many species that one encounters by using a field guide devised for a neighboring territory. This lack of information increases the further away one gets from the guide’s area of original coverage.

Brazil is a country that has been primarily covered with books from adjacent territories. A few weeks ago, I spoke briefly with Tom Schulenberg of the Cornell Lab of Ornithology about field guides for the entire South American continent and the role they played in Brazil. Schulenberg pointed out that nothing was available or useful for Brazil until S. L. Hilty and W. L. Brown published *The Birds of Colombia* in 1986 (Princeton University Press, Princeton, NJ). Hilty and Brown’s book illustrates roughly one-half of the birds of South America and hence provided some help for people studying birds in Brazil, particularly those in areas adjacent to Colombia.

In 1989 and 1994, R. S. Ridgely and G. Tudor embraced and completed the project of writing two books for the entire continent’s songbirds: the magnificent *Birds of South America, Volume I: The Oscine Passerines*, and *Birds of South America, Volume II: The Suboscine Passerines* (University of Texas Press, Austin, TX), respectively (from those books derived Ridgely and Tudor’s 2009 *Field Guide to the Songbirds of South America* [University of Texas Press, Austin, TX]). Hilty’s *Birds of Venezuela* (2002, Princeton University Press, Princeton, NJ), and Ridgely and Greenfield’s *Birds of Ecuador* (2001, Cornell University Press, Ithaca, NY) added to what could be used to identify birds in the field in nearby Brazil. Some of them were (again) devised for adjacent territories, too bulky and encyclopedic for use in the field, or too coarse-grained for bird study in this country.

So for a date as late as the beginning of this decade there was nothing aimed at Brazil itself. Several hard-to-find books were published locally, exclusively in Brazilian Portuguese, or with

slightly different scopes than the standard field guide that ornithologists and bird watchers have grown accustomed to. Books by Tomas Sigrist, Rolf Grantsau, Edwin Willis, and other authors are out of print, largely inaccessible, and I could not find an easy way to get them. Van Perlo's 2009 *Field Guide to the Birds of Brazil* (Oxford University Press, Oxford, UK) can be credited with being the first book to cover the identification of the entire avifauna of Brazil, with the limitations of what an illustrated checklist can bring to the fine-grain identification of birds.

This is a long way to say that in spite of all these works Brazil remained as the greatest field guide gap in South America as recently as 2010, until now. The challenge of publishing field guides to cover the entire country has been taken by the Projeto Aves do Brasil, an initiative of the Wildlife Conservation Society Brazil. Kitty Liu, at Cornell University Press, told me this is planned to be a five-part set of field guides: *The Pantanal and Cerrado of Central Brazil* (published in 2010 by Gwynne et al., also available in Brazilian Portuguese), *The Atlantic Forest of Southeast Brazil* (reviewed here, published in 2016), and three more on the queue: the Northeast and Caatinga, Amazonia, and Southern Brazil.

The volume reviewed here is then the second of this series. It covers the Atlantic forest of southeast Brazil, locally known as Mata Atlântica. This field guide provides information for the identification of 927 bird species. The majority of them, 863, are illustrated in 368 color plates. Nearly 15% of them (140) are endemic, and another 104 are near-endemic. Ridgely and coauthors consider 83 of them are in under some threat category.

This field guide is a beautiful and compact book. It is 14 × 23 cm, 430 pages long, and weighs exactly 800 g. It is sturdy without being excessively thick. Same as many other field guides, the inner front cover explains the way species' maps are colored, the codes used for plumages, endemism, conservation status, state abbreviations, and other brief terms used throughout the book. The inner back cover in turn provides information on biome and elevational range differences that may be new to an expected target audience of people from the temperate region.

The book begins with a five-page introductory and acknowledgments section. In pages 1–29 the

reader will find an introduction to the biodiversity and conservation highlights of the Atlantic Forest, a broad description of 12 types of habitat (some of them, such as restinga, Araucaria forest, and cerrado possibly new to outsiders), and miscellaneous conservation notes.

The front matter contains 35 other bird, habitat, or diagrammatic illustrations, most of them painted by J. A. Gwynne, as well as 35 color photographs that depict 12 major habitat types.

I really like the way the color plates are placed relative to species accounts. Color plates simply face the text and maps for each species. But this is not an easy job: field guides that cover a lot of material—either those whose scope is on extensive avifaunas with 1,000+ species (e.g., Hilty and Brown's *Birds of Colombia*), or that provide extensive data for each species treated, such as S. N. G. Howell and S. Webb's *Guide to the Birds of Mexico and Northern Central America* (1995, Oxford University Press, Oxford, UK)—typically place the color plates at the center of the book and print them in thick glossy paper. The rest of the book, printed in lighter weight, matte paper, sandwiches the color plates. Steve Howell once told me his species accounts were large to field guide standards by necessity: many of the data provided for each bird were unknown or only available in obscure literature. He considered it essential to have it published there, as well as to point out unknowns.

The downside of this type of guide is that it makes the book impractical for use in the field. I have seen many people ripping color-plate-sandwich field guides apart (and even binding the color plates separately) to make them easier to carry in the field. The color plates then become forever disassociated from essential information to accurately identify a bird in the field. The key additional data that species accounts provide, such as highlights of field marks, unique characteristics, range maps, and similar species that may be difficult to distinguish from under field conditions, are given secondary importance. I suspect this field guide model may be responsible for more identification errors than the alternative described below.

This book is not the case. This volume of the *Birds of Brazil* follows the model of Schulenberg et al.'s *Birds of Peru* (2007, Princeton University Press, Princeton, NJ), which presents only the

TABLE 1. Species coverage of the first two volumes of the Birds of Brazil series. The overlap of species illustrated in both field guides is large, 481 species.

Birds of Brazil Volume	N spp. illustrated	Species covered exclusively in this volume	Overlap with the other volume in the series
1 The Pantanal and Cerrado	740	259	65%
2 The Atlantic Forest of Southeast Brazil (this review)	927	446	52%

essential information needed to identify a bird (and a small range map) in a way that is as economical as possible so it can face the color plate where the species is illustrated (*Birds of Peru* is, to my knowledge, the first South American field guide for a very large avifauna not to follow the color-plate-sandwich field guide model). I am sure it is really challenging to reduce large amounts of information to very short and concise species accounts, but this *Birds of Brazil* field guide does it well.

The color plates are astounding and rival those of the most beautifully illustrated field guides that I have seen. This book is illustrated by a total of six artists: J. A. Gwynne, M. DiGiorgio, D. Dyer, B. Van Dusen, and my two personal favorites, S. Webb and G. Tudor. The latter is also the art director of this guide.

Color plates ( $n = 368$ ) largely follow the traditional sequence of other field guides. They start with a seriema and end with oropendolas. Plate numbers do not exist—the upper right corner of each color plate is simply the corresponding page number, which I find very useful. Color plates don't look crowded. Each plate has a different number of species illustrated per page, from a minimum of two birds in page 33 to a maximum of 19 hummingbirds in page 191 (the mode is of four to five species per plate and about six to eight different plumages or color morphs for each of them). Species are labeled (not simply numbered) aside the actual illustration. All of them have its name in English (black capital letters) and Brazilian Portuguese (gray capital letters, right below the English name). I doubt most of these vernacular names are of true common use but artificially convened, like the ones in existence for the Spanish language.

In cases where different plumages are illustrated, the only additional labels are the male or female signs, adult and immature classes, and regional morphs with lettering such as A, B, C, etc.

Each plate is signed by its author in the lower right corner.

I found a large redundancy between the two volumes published thus far. Depending on what volume you look at, between one-half and two-thirds of each book include species that have already been covered in the other one (Table 1).

Generally speaking, the 'reused' color plates of volume 2 are printed in slightly darker colors than the exact same plate in volume 1. Some color plates covering the same species in both volumes were entirely redone, in some cases by the same author who illustrated the original one. In two cases of recent species splits—Gray-crested Cacholote (*Pseudoseisura unirufa*)/Caatinga Cacholote (*P. cristata*) and White-crested Elaenia (*Elaenia albiceps*)/Chilean Elaenia (*E. chilensis*) for volumes 1 and 2 respectively—the exact same illustration is used for both of them.

Facing the plates, on the left side of the spread, are species accounts. These start with a brief heading for each family, a small dark gray background rectangle with white letters, the colloquial name of the group followed by a parenthesis with the scientific family name, and a brief description (2–4 lines), e.g., Swifts (Apodidae), Hummingbirds (Trochilidae), etc.

Some particularly diverse groups are singled out as well. They have a 2–3 line general description. These groups can be species-rich genera, such as *Picumnus*, *Veniliornis*, *Piculus*, etc., and less often morphological groups, e.g., Hawk-Eagles. I find these headings very informative in spite of being very brief.

Each species account starts with its English standardized names in bold capitals, scientific names, and size in metric and English systems. When species are country endemics, a tiny Brazil flag vignette starts the description of the species (half-flag for near-endemics). Species accounts have sufficient habitat, elevational, and seasonal information to make appropriate conjectures of

places and times where a species is likely to be found. Following that come field marks; the most critical ones are italicized. Behavioral notes, onomatopoeias of their vocalizations, and criteria to separate similar species in the field close each species section. The amount of superfluous information of species accounts varies from very little (excellent brief descriptions, for example, for flycatchers) to lots (for seriema and rhea, unmistakable birds with half-page descriptions).

To the right of each species description is a range map. All of them use the same map extent, and not different sized windows like other field guides. The background of each of them shows political divisions within the area of the field guide and highlight major rivers. Eight cities are marked with either a star (Brasília) or a circle (Goiânia, Curitiba, São Paulo, Rio de Janeiro, Belo Horizonte, Vitória, and Salvador).

The book ends with three indices that (unnecessarily) cover the same material separately (English, Brazilian Portuguese, and scientific names). Brazilian Portuguese orthography is carefully followed (e.g., in Brazilian Portuguese common names are common nouns and are not capitalized; names properly use all five diacritics and hyphenation, etc.).

As much as I loved reviewing this book and flipping through its pages, there is a single major issue I cannot understand: the decision to publish this guide in five volumes. One reason that comes to mind is that \$175 USD for a complete set is more attractive than selling a single book at \$35. I believe this has slowed the pace of publication of these guides (with 6 yrs separating the publication of each volume we can expect the complete set to be ready in a total of 24 yrs). The combined coverage of volumes 1 and 2 is 1,186 species, about two-thirds of all the birds of Brazil. The complete guide to the birds of this country could be only a third from being done! Yes, I understand packing 1,900 species in a single book is a very hard task to accomplish, but it has been done in the past.

I am sure not having this field guide in the past created a restless eagerness among ornithologists and bird watchers to have a proper book (or set of them). But I trust the highest expectations have been met. My personal opinion of this volume, and of the entire book series, is that this is a fantastic set that will greatly accelerate our knowledge of

Brazilian birds. Precise, complete, comprehensive, and beautiful. A true landmark publication that will be hard to beat.

I wholeheartedly applaud the commitment of the WCS to also publish these volumes in Brazilian Portuguese. This is one of the most commendable gestures of this project: I know none of the guides produced for Latin American readerships has ever been a moneymaker for its publishers; they are done merely for its scientific and educational value. Parabéns por este livro extraordinário, trabalho excelente!—ERNESTO RUELAS INZUNZA, Instituto de Biotecnología y Ecología Aplicada, Universidad Veracruzana, Xalapa, Veracruz 91090, Mexico. e-mail: ruelas.uv@gmail.com

**CAT WARS: THE DEVASTATING CONSEQUENCES OF A CUDDLY KILLER.** By Peter P. Marra and Chris Santella. Princeton University Press, Princeton, New Jersey, USA. 2016: 216 pages, 24 color photos. ISBN: 978-0-691-16741-1. \$24.95 (hardcover).—"The stage has been set for 'bird people' and 'cat people' to square off, forgetting, perhaps, that they are all animal lovers in the first place" (p. 28). Peter Marra and Chris Santella fearlessly address one of the most significant anthropogenic ecological threats: free-ranging house cats. Marra, like many researchers before him, faced significant public outcry upon publishing reports of the impacts of free-ranging cats on wildlife populations (J. S. Coleman and S. A. Temple, 1989, Proceedings Eastern Wildlife Damage Control Conference 4:9–12; S. R. Loss et al., 2013, Nature Communications 4:1396). The subtitle to *Cat Wars* is a subtle nod to the *New York Times* summary article of Marra and colleague's 2013 manuscript (N. Angier, 30 Jan 2013, A19). The *Times'* *Cuddly Killer* article promptly ignited a firestorm of public opinion that has continued for years. Marra has weathered this storm and, together with Santella, presents a concise and well-crafted book that addresses all sides of this contentious socio-scientific issue.

*Cat Wars* is written for a broad audience. Marra and Santella are careful to present this as a human problem rather than demonizing cats as a species. The authors clearly appreciate cats and strive to respectfully shed light on this issue. The cat-induced extinction of the Stephens Island Wren provides an initial historical example of the

unforeseen consequences of a free-ranging cat on an island ecosystem. Chapters 2 and 3 provide an overview of historical research into bird and mammal predation by cats, as well as the social controversies that often result from this research. Chapter 4 presents an explanation of the scientific modeling used to quantify the ecological damage cats have on ecosystems. The beauty of this chapter is in the thorough, yet easily accessible writing. Readers from all backgrounds should be able to appreciate the complexities of the science and the societal issues that drive the controversy over potential solutions. Chapter 5 focuses on the ecological and often overlooked public health impacts of free-ranging cats as vectors of disease including plague, toxoplasma, and rabies. Chapters 6 and 7 turn to solutions implemented by many municipalities and wildlife conservation organizations. While the title of Chapter 6, *Taking Aim at the Problem*, may seem to endorse a rather cavalier approach, the authors actually caution against responses that may lead individuals to face legal consequences. Marra and Santella discuss the challenges of dealing with cat colonies and disease outbreaks including the pros and cons of Trap-Neuter-Return (TNR), targeted removal, and euthanasia programs. The narratives of cat advocates, conservationists, and municipal leaders are interwoven throughout the discussion to illustrate the complexities of potential solutions. The final two chapters advocate for public and scientific collaboration and persistence to develop solutions. The 10-year partnership between Portland Audubon Society and the Feral Cat Coalition of Oregon is used as an example of successful collaborative problem-solving. Marra and Santella call for birders, educators, and scientists to educate the public about the ecolog-

ical and public health impacts of free-ranging cats. They also call for us to be more vocal in discouraging the emergent distrust of science around contentious socio-scientific issues such as hydraulic fracturing (fracking), climate change, genetic engineering, and free-ranging cats. Some cat advocacy groups have taken the approach of climate change deniers attempting to discredit science behind these studies with misinformation or outright falsehoods. The authors describe this poignantly on page 154, "Call a spoon a knife long enough and loudly enough and people will begin to believe it or at least they will cease to doubt it and move on to something else."

Bird conservation advocates and scientists must do a better job communicating with the public. Those who are concerned about conservation, personally or professionally must speak up locally and more broadly. Outreach and advocacy is not a traditional role for scientists. It is increasingly important, however, in the face of an emerging post-truth society in which peer group opinion trumps scientific evidence, for the interpretation of scientific findings to be well communicated directly by scientists, interpreters, and educators rather than talk-radio, hearsay, and social media. This book succeeds in doing just that.

Readers interested in learning more about contentious socio-scientific issues may want to explore the publications of science education researchers Troy D. Sadler and Dana L. Zeidler. Those interested in the issue of science communication and the influence of social networks in the interpretation of data will appreciate reading Dan M. Kahan's manuscripts.—ANDREW T. KIN-SLOW, College of Education, University of Missouri, 321-O Townsend Hall, Columbia, MO 65211, USA. e-mail: atkz8b@mail.missouri.edu