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Edited by William E. Davis, Jr.

THE BIRD COLLECTORS. By Barbara and Richard Mearns. Academic Press, San Diego and London. 1998: xviii + 472 pages, many unnumbered figures, 4 maps of expedition itineraries. $49.95 (cloth).—This is the third book by the Mearnses in 10 years. The first two consisted of biographies of persons after whom birds have been named; first, for the Western Palearctic ("Biographies for bird watchers", 1988, reviewed in *Wilson Bulletin* 101:658–659), and then for North America ("Audubon to Xantus", 1992, reviewed in *Wilson Bulletin* 105:701–702). Richard is a countryside ranger in Scotland; Barbara is a professional occupational therapist, but in recent years has spent more and more time on her avocation, biohistorical research.

Their new book, although biographical in large part (and thus overlapping slightly with the first two books), has quite a different balance. The Mearnses are well aware that the collecting of bird specimens in the late 20th Century is subject to much debate, often acrimonious. The arguments and the social and political pressures of the current anti-collecting camp are phenomena seldom if ever faced by the historical collectors whose exploits form most of the book's subject matter. The Mearnses make their position plain in a brief preface; neither of them has ever deliberately killed a bird (they salvage accidentally killed birds for the Royal Museum of Scotland). They point out, however, that anyone who, in their words, turns "pale at the mere thought of killing birds" must realize that "anyone who drives a car, uses products of the petrochemical industries, owns a cat, has glass in the windows of their home, buys paper, or consumes electricity will be responsible for killing birds." This subject is dealt with at greater length in their Chapter 17, "The importance of old and new bird collections," which relies heavily on the important paper by Remsen (1995).

The first three chapters bounce around a good bit, dealing with reasons for killing birds other than for museum collections, bird books and journals, human casualties, labeling and note-taking, problems in the field, in shipment of specimens, and in the museum, etc. By the fourth chapter, the emphasis becomes primarily historical, reviewing collecting and collectors chronologically. But the arrangement is not strictly chronological as a whole; chapters on specific kinds of collectors are internally chronological. Examples include "Bird artists as collectors," "Government-sponsored collecting," "Army officers," "The medical profession," and "Clergymen and missionaries." A chapter entitled "The great accumulators" treats the owners of large private collections, beginning with the 13th Earl of Derby (1775–1851) and ending with the notorious Colonel Richard Meinertzhagen (see Knox 1993). A chapter on "The professional field collectors" is a hodgepodge, including scientists such as Alfred Russell Wallace, whose collections were indeed sold, and contract collectors working for museums, such as Rollo Beck. This chapter is much too short, as major portions of the holdings of several of the large museums were made by collectors under contract; in South America, for example, some of the most prolific were Samuel Klages, the Steinbachs (father and son), M. A. Carriker, Jr., and more recently William H. Partridge. Of these, only Carriker is mentioned, thrice; half of a sentence in the "Professional field collectors" chapter and half of a paragraph on his two wives in a chapter on "Women in the field"!

The Mearnses admit in their Preface that their "approach has been rather Anglo-centric," after which they list by name 17 "great collectors [who] have been omitted or not mentioned in detail"—the third reference to Carriker is the presence of his name in this list. The relative neglect of some parts of the world is obvious all through the book, and I'm not sure this can be wholly excused by their admission quoted above. They appear to have been obsessed by the history of collecting in central Asia, as this is the subject of a 27-page chapter called "Terra Incognita", in which 7½

pages, a map and three portraits are devoted to the exploits of General Nicholas M. Prjevalsky (of Prjevalsky's Horse), and slightly more text plus a map and a portrait to those of Armand David (of Père David's Deer). Surely most of the South American continent was at least as "incognita".

In the "Professional field collectors" chapter, Lord Rothschild is quoted as having stated that William Doherty (1857–1901) was "unquestionably the best collector for the last fifty years." To anybody who has seen bird skins from Doherty's expeditions, this statement is incomprehensible; he never learned to skin birds for himself, turning them over to Indian servants, according to the Mearnses. Carnegie Museum of Natural History has a collection Doherty made in Kenya six months before his death in 1901 (Holland 1905). The skins are mediocre and the original labels bear nothing but a pencilled sex mark; the data ("10 miles W of Mombasa, September–October 1900") were apparently supplied by Doherty to Dr. Holland, Director of the museum, who had purchased the collection. All of this suggests that the Mearnses were probably correct in suggesting that Rothschild's high praise of Doherty may have been based on his "services to entomology."

A chapter on "Women in the field" contains 9 short biographies. Of the women thus honored, only 3 [Emilie Snethlage, Elizabeth Kozlova, and Beryl P. (Pat) Hall] contributed to ornithology primarily through their collecting activities, at a level comparable to that of most of the males featured in the rest of the book. Here is where we find the Mearnses' most appalling omission; the late Maria Koepcke (1924–1971), whose name appears as the only woman in the Preface list of collectors who "deserve more space than we could give them". Maria Koepcke may justifiably be said to be one of the true pioneers in the 20th Century study of the ornithology of Peru, a small country whose avifauna numbers about 1⅓ times that of the entire Palearctic. She and her husband Hans-Wilhelm, trained as a hydrobiologist, founded Casa Humboldt (=Humboldt House) in Lima in 1957; this became the convenient base for many expeditions throughout Peru involving scientists from several nations. Maria conducted avifaunal surveys in areas ranging from the desert coast to the Amazonian rain forest. Her bibliography lists 29 titles, plus 12 co-authored with her husband. She described 3 new species and 13 new subspecies.

An Appendix lists, in sequence of size, the world's 69 largest collections of bird specimens, together with the most significant components included therein. Unfortunately there are many errors and omissions in this list, partly because for some museums the authors' information was a quarter-century out of date, based on Banks and coworkers (1973). It is a pity that they felt no need to enter into correspondence to get more recent figures. Attribution of components is irregular; parts of the dismantled collections of the Cleveland Museum of Natural History, for example, are listed for the Field Museum; the Museum of Zoology, University of Michigan; and the Peabody Museum, Yale University, but *not* the Carnegie Museum of Natural History, which may have the largest number of former Cleveland birds. No components are listed for the Delaware Museum of Natural History, which holds one of the most important U.S. collections of Philippine birds, and much of the former collections of John E. duPont, George M. Sutton, and Allan R. Phillips. Numerous other omissions could be mentioned, such that this Appendix is not as valuable as it could have been.

Any heterogeneous work of this sort is bound to induce comments and corrections. A few are listed below:

p. 13. The authors mention the extinction of the endemic flowerpecker (*Dicaeum quadricolor*) of Cebu owing to the deforestation of that Philippine island; in fact, no fewer than 9 endemic forms of Cebu were thought to have been extirpated (Rabor 1959), although small remnant populations of a few of these have subsequently been found.

p. 111. The authors refer to "remote, little-known islands such as Whitsunday Atoll, Clarion Island and the Revillagigedo group." Clarion is, in fact, one of the islands in the Revillagigedo group.

p. 149. For a more complete account of the fate of the Gould Australian collection, see Meyer de Schauensee 1957.

p. 182. The Ruwenzori mountains are on the western, not the eastern border of Uganda.

p. 244. British writers should know that the

authorship of the classical *Handbook of British Birds* was in the sequence Witherby, Ticehurst, Jourdain and Tucker; the Mearnses list Jourdain last.

p. 270. A comment would have been appropriate after the statement about Prjevalsky's first expedition; "there would have been more [bird specimens] but most were moulting so nine-tenths of all of the birds shot were discarded." This atrocious practice has, of course, proved to be the bane of students of molts and plumages; I encountered the same kind of statement in connection with some 19th Century British collectors of Philippine birds.

p. 366. Brina Kessel and I have been friends and colleagues for fifty years, but I can't understand the rationale for including her in a book about collectors. The Mearnses mention that "her first specimen-based research was for her Ph.D. dissertation on European Starlings and involved the preparation of over 500 skins." True enough, except that the majority of the starlings were collected and prepared by Robert W. Dickerman.

I need hardly say that any reader of this book will find, as I did, that the descriptions of the exploits of many collectors previously known to us as little more than names attached to bird species have been brought to vivid life by the Mearnses. Their book is highly readable, and their attitude toward collecting as fair-minded as one might ask of writers not directly involved themselves in collecting.

I am indebted to Manuel Plenge for sending me biographical materials on Maria Koepcke.—KENNETH C. PARKES.

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LIFE OF THE FLYCATCHER. By Alexander F. Skutch. Illustrated by Dana Gardner. University of Oklahoma Press, Norman, Oklahoma. 1997: xiii + 162 pp., 16 color plates, 32 black-and-white drawings, 4 tables, bibliography, index. $40.00. ISBN 0-8061-2919-0.—Alexander Skutch brings forth a popular review of the Tyrannidae in *Life of the Flycatcher*. This volume continues Skutch's *Life of . . .* series, each reviewing variation in life history within a bird family (e.g., Tanager, Pigeon, Woodpecker, Hummingbird). The Tyrannidae, subject of this current volume, is a large family (380 species) of suboscines limited to the New World. The text is successful in showing the great degree of diversity displayed by this family. If your knowledge of New World flycatchers is limited to North American species, the diversity described for the family in *Life of the Flycatcher* will amaze you. The text may offer inspiration for evolutionary inquires and directions for further study.

The text begins with an overview of the family, and continues with chapters on food, daily life, song, courtship, nest, eggs, young and breeding success. Skutch's personal experience with this group during his long career in the American tropics is evident. The book ends with 138 references organized by chapters and an index. The bibliography provides some direction to seeking further information.

Skutch takes some exception to the illogic often apparent in birds' names and uses "flycatcher" in common names rather than various forms of "tyrant" (as in "marsh-tyrant" or "tyrannulet"); this practice may delay tracking down specific species in other texts. The only error of some note I found was in the index: Alder Flycatcher was identified as "*Empidonax minimum.*"—PETER E. LOWTHER.

A NEOTROPICAL COMPANION: AN INTRODUCTION TO THE ANIMALS, PLANTS, AND ECOSYSTEMS OF THE NEW WORLD TROPICS. Second edition, revised and expanded. By John Kricher. Princeton University Press, Princeton, New Jersey. 1997: 451 pp., 177 color photographs, 86 line drawings. $29.95 (cloth).—This sturdy vol-

ume accompanied me for 10,000 miles this spring, enlightening me during airport vigils, on long flights, and during hot nights in Guatemala and elsewhere. Except for a warped cover it is still in excellent condition. Despite many prior trips to the American tropics, I found this book fascinating reading as well as a valuable reference to other literature sources.

This is a series of authoritative essays on tropical ecology, organized in 14 chapters and followed by an Appendix, a list of Acronyms, a Glossary, 35 pages of References, and an Index that includes every species, genus, and topic mentioned. The Appendix, "And, Hey, Let's be Careful Out There," should catch the reader's eye before (s)he leaves home. If you are a tropical bookworm you will appreciate the miniabstracts of his 40 book-length references.

Chapters are arranged in a logical sequence, beginning with textbook descriptions of climates and ecosystems, and rainforest structure, diversity, and function. Chapters on evolutionary patterns and coevolution/ecology of fruit track relationships among animals and plants from the research of Darwin to investigators of the mid 1990s. After brief chapters on the Neotropics as a pharmacy and on living off the land, are chapters on ecosystems (rivers, mountains, savannas, dry forests, mangroves, coral reefs) and on Neotropical birds and mammals, culminating with a lively discussion on deforestation and biodiversity. A strong conservation theme teases the reader to take appropriate action.

Professor Kricher writes in an easy conversational style, tempting the student, the researcher, or the vacationer to read on and on. His wide field experience in Central and South America, his extensive knowledge of the tropical literature, his long academic career, and his gift for writing combine to make this publication a gem for the tropical explorer. Statements in the text are supported by close to a thousand references to the scientific literature. Terms defined in the glossary are italicized in the text. Dozens of delightful line drawings of birds, mammals, and lesser life forms from the pen of Ted Davis grace the pages. A new feature in this edition is a collection of 177 color photos, all cross-referenced from the text.

I was shocked to read in the conversion table (p. xviii) that 1 square mile = 2,590 square km and (p. 35) that 1 cm = 2.5 in. And I regret to report 9 scientific names of birds were misspelled one or more times, including "Beautiogallus" (3 times). These preventable accidents aside, the book is a goldmine of information that will greatly enrich one's tropical experience.

The Neotropical Companion should be in every high school and college library, in the travel section of your public library, and in the carryon luggage of all students and birders bound for the American tropics.—CHANDLER S. ROBBINS.

THE BIRDS OF ST. LUCIA, WEST INDIES. By Allan R. Keith. British Ornithologists' Union, c/o The Natural History Museum, Tring, Herts HP23 6AP, United Kingdom. 1997: 176 pp., 40 color plates with captions, 7 text figures, 3 tables, 7 appendices, 14 £ (cloth).—In recent years, the British Ornithologists' Union has done the ornithological community a tremendous service by sponsoring the production of a variety of check-list style books specializing on unusual or exotic regions of the world. Compared to Gambia, Nigeria, Cyprus, The Philippines, or even the Southern Bahamas, St. Lucia is a tiny area that supports a fairly small avifauna. Nevertheless, this is a splendid book that provides both the detailed observational information one expects from a check-list plus a vast amount of other information that shows us why St. Lucia is an important place in the ornithological world.

The nitty-gritty of any check-list lies in its species accounts, which in this case cover 162 species that currently occur on St. Lucia or have reliable records from the past. The author does these accounts in a spartan 60 pages. To this can be added short appendices covering species of uncertain occurrence, where museum specimens from St. Lucia reside, recoveries of banded birds in St. Lucia, a gazetteer, and the origins of resident breeding birds. A major appendix (18 pages) provides more information on the 3 endemic species and 3 endemic sub-species found on the island. The author seems to have left no leaf, library, or

museum unturned in gathering all the details available about St. Lucian birds.

Were the above material all of the book, I would readily recommend it for anyone planning a visit to the island, but I would question its value to the general reader. Allan Keith's introductory material (9 chapters adding up to 60 pages) does an excellent job of introducing the island on which the bird records were made. Chapters include political history, geology and geography, climate, vegetation, history of ornithological exploration, migration, breeding, zoogeography and conservation. All of this information makes the avifauna of St. Lucia come much more alive as part of one island within the West Indian region. Keith also does an outstanding job of pointing out the unusual role this island has played in West Indian conservation, as a result of the combined efforts of a local biologist (the late Gabriel Charles) and an English vagrant (Paul Butler) in developing a conservation plan that was very successful on St. Lucia and has been exported elsewhere.

This combination of detailed observational work in the species accounts with the broad biogeographic and ecological perspective found in the introduction allows the reader to not only find out what species occur on St. Lucia, but to get a feeling about why it is this number and how the island compares to its neighbors. The author's synthesis of current scientific thought is exemplary (although a few sections may need to be revised when the current work being done on molecular genetics of West Indian birds is finally released). This is a great way to both find out what is on St. Lucia and to get a bit of a feeling about why this is so.—JOHN FAABORG.

MUNIAS AND MANNIKINS. By Robin Restall, illus. by the author. Yale University Press, New Haven, Connecticut. 1997: 264 pp., 16 colored plates with captions, 64 color plates with measured drawings, innumerable text figures. $60.00—Robin Restall is a lifelong enthusiast of caged finches, whose employment with an international advertising agency has taken him to most parts of the world where he could learn about many of the species of finches in their native contexts. His particular interest is with the genus *Lonchura,* which now includes all of the birds traditionally referred to as munias, mannikins, and the Java and Timor Sparrows which were formerly considered in the genus *Padda.*

This is a masterful collection of virtually every thing known about this assemblage of estrildine finches. The book starts off with a review of the taxonomy and relationships of the genus *Lonchura,* continues with an overview of their natural history, and concludes with a detailed accounting of all pertinent information about each individual species (including one apparently new, undescribed species).

Each species account includes headings for field characters, status, habitat, habits and behaviors, food and feeding, movements, call, song, courtship and display, breeding, distribution, description (including all known subspecific variants), hybrids, conservation, and a list of relevant references. There are color plates for each species, showing all of the most obvious sex, age, and geographic variants and an even more impressive collection of color plates of measured drawings that show the dorsal and ventral views with one wing extended.

I found this to be an excellent summary of information on a group of birds about which I knew relatively little. Yale University Press has done a fine job of editing (I found very few typographic errors), and the color reproduction of the plates appears to be first-rate. I recommend the volume highly.—HERBERT T. HENDRICKSON.

FOREST PATCHES IN TROPICAL LANDSCAPES. By John Schelhas and Russell Greenberg, Eds. Island Press, Washington, D.C. 1996: 426 pp., maps, tables, black-and-white figures. $30.00 (paper).—It is obvious to anyone who studies any aspect of global tropical ecology that forest fragmentation is increasing annually. The complex ecological effects of fragmentation are only now becoming known, an increasing database generated from the efforts of numerous researchers in tropical regions around the world. Most tropical ecologists are familiar with the ongoing study known now as the Biological Dynamics

of Forest Fragments Project, located north of Manaus, Brazil, but this multi-authored volume includes data from numerous studies in other regions (as well as one chapter dealing with the BDFFP).

The book is divided into four parts: changing forests, regional landscapes, human dimensions, and management. The introduction, authored by the editors, provides a concise but thorough overview of the issues covered in depth throughout the volume. Birds are the focus of but one of the 19 chapters, but are discussed to varying degrees in numerous other chapters. Most of the chapters deal with South and Central America though there is one chapter on Africa, one largely on Indonesia, and one on India. Each chapter is referenced from the primary literature.

This volume, broad in scope, and excellently edited, is an important resource for tropical ecologists, particularly those whose research is focused on biodiversity preservation and ecologically sound management policies.—JOHN C. KRICHER.

WHERE TO WATCH BIRDS IN ASIA. By Nigel Wheatley. Princeton Univ. Press, Princeton, New Jersey, 1996: 463 pp., 51 line drawings, 8 figs., 105 maps. $35.00.—This remarkable book compresses an impressive amount of birding data from our largest continent into a relatively compact volume. Asia (including the island nations of Indonesia and the Philippines) harbors just under 2,700 bird species. Considering that various parts of the continent have been off limits—or inaccessible—to outsiders for much of our lifetimes, I was delighted to see how many places have now been surveyed by keen birders. The author is to be congratulated on gathering these scattered data into one volume. The book is not meant as an encyclopedic reference to all sites or to all species in a given country and the author rightly suggests that the information may be best used as a first "guiding light", a starting point in travel planning. The book fills this function admirably and by studying material presented here you can quickly focus on desirable Asian locations and the species found there. The format is appealing and easy to follow, while the text, composed in a clear 9 point Cheltenham Light, is remarkably free of typographical errors.

The book is divided into three parts: a general introduction, the main text (organized by countries), and additional suggestions and indexes. The introduction is necessarily brief but explains the book's layout and then provides much useful information relating to birds and birding in Asia and includes notes on habitat diversity, bird diversity (at the family and species levels), and how Asia compares with other continents (400 species more than Africa and 400 less than South America). Conservation is given a separate six paragraph section where Wheatley is brave enough to identify human population growth as a major conservation problem and to call for growth stabilization, or better yet, "we should aim to reduce" population growth. Under General Tips we learn of familiar techniques for good birding (some Asian birds are very shy) and of various dangers to travelers. Altitude sickness (in the higher Himalayas and Tibet) is mentioned but I find the subject treated too lightly. The recommended one night at 3000 m. (9,843′) before ascending to 4500 m. (14,764′) the next night is far too fast for many people hiking in the Himalayas. Similarly, it is suggested that if one "turns blue and coughs up pink mucus" one should immediately descend to below 3000 m. (9,843′). Actually one should have descended well before this grim stage is reached. Keep in mind, that "descending immediately" from some locations in Tibet is not possible.

In the main text, forty countries are summarized in varying detail (one paragraph for the Maldives to 57 pages for Indonesia; North Asia is not covered). English names follow those used by James Clements *Birds of the World: A Check List* (Fourth edition, 1991 and Supplements) and is a most useful correlation. Yet it is a pity that, except for 189 species given in an appendix, scientific names are not recorded somewhere in the book.

Each country report follows a standard format that starts with a general map, followed by a summary and then short notes on size, transport within the country, accommodations, health and safety, climate and timing, habitats, conservation, special birds, a note on endemics, and how many species one might expect

to see in a stated time. These sections are helpful planning tools. Accommodations and travel within the country are only lightly touched upon as vast descriptions are available in various general guides: accommodations mentioned are usually aimed at the individual traveling on a limited budget.

Following this general introduction, important birding sites are covered in a clear format. This material starts with an overall note and sometimes a map (of some 250 sites, 184 are not mapped) and then moves to a list of endemics seen at that particular site, followed by specialties, others, and finally other wildlife. Maps are so helpful that I would like to have seen more. The 51 line drawings (mostly of excellent quality) sprinkled throughout add visual appeal but do not enhance the usefulness of the text. Dropping line drawings to add maps would make the book more utilitarian albeit less attractive. Each country section ends with Additional Information that includes addresses of local bird clubs and nature societies, suggested readings, a complete list of all the country's endemics, and finally a paragraph giving near-endemics.

The book nears the end with yet additional addresses that include various general societies and clubs dealing with Asia, where one may obtain trip reports, and of 16 companies that do birding tours. After a selection of general book titles there are three pages of three-column fine print that give scientific names that correspond with Clements English names, and then with other English names used in Asian bird books (where these differ from the names used by Clements). The book concludes with two indexes.

With any volume of this magnitude readers will have varying opinions on the coverage and the presentation of the material. Perhaps the most serious omission of the book, to my mind, is that there is no clue as to the abundance of the species listed. Thus there is no distinction between a bird that has been seen once at that site or another that is recorded in numbers every day. Even a two-tier indication giving an "r" for very rare species and an "a" for an abundant species would be helpful. Similarly, some birds move seasonally and at times the text gives no idea as to when the bird might be at the site described. Tickell's Leaf Warbler (*Phylloscopus affinis*), for example, is listed for Corbett National Park (India), but for much of the year this migratory species is not in the park.

A curious paragraph called "near-endemics" appears at the end of each country summary. To save space, this section could easily be dropped or at least the definition of "near-endemic" tightened. It is hard to see how the Nepal Fulvetta (*Alcippe nipalensis*) is a "near-endemic" when it is listed for Bangladesh, Bhutan, Burma, Nepal, and northeast India.

As common to many first editions dealing with this much detail, there are a number of minor factual errors. For example, the Purple-rumped Sunbird (India) is listed under "more or less throughout" while the bird does not occur in the north. The plural of genus, p.25, is genera (not genuses). Similarly, Padang en route to Kirinci-Seblat National Park (Indonesia) is twenty-four hours (not six) by bus from Berestagi (Brastagi)—twenty-four, that is, if one is lucky. The Khunjerab Pass (Pakistan) is close to 16,000 feet (not 5575 m., 18,290′). On page 38 we learn that "most of the pristine forest which is left in the eastern Himalayas is in . . . Bhutan." In reality, there is far more eastern Himalayan forest in Arunachal Pradesh than in Bhutan but much of Arunachal is still off limits to outsiders. Namdapha National Park (India) is accorded "the greatest altitudinal range of any park in the world" but the Sagarmatha National Park and the Makalu-Barun National Park and Conservation Area in Nepal and the Quomolungma Nature Reserve in Tibet cover substantially more altitude than does Namdapha.

I fear this book will not sell well in the Maldives for on page 124 the Maldives disappears as a country only to resurface as a single paragraph under India. This treatment would surprise the citizens of this Indian Ocean nation. Agreed, the Maldives may not be particularly good for birding, but it has world class coral reefs and scuba diving and should be accorded full country status in the next edition.

These errors, however, are of a minor nature and do not detract from the importance of this effort and I strongly recommend the book to anyone who is even remotely thinking about those nearly 2700 Asian species that are just waiting to be seen.–ROBERT L. FLEMING, JR.

THE BIRDS OF SULAWESI. By Derek Holmes and Karen Phillipps. Oxford University Press, Oxford, U.K. 1997: 86 pp., 20 color plates illustrating 142 species, 22 black-and-white illustrations, one table. $24.95 (cloth).—The island of Sulawesi, part of the vast country of Indonesia, has only relatively recently been frequented by ecotourists and birders. Sulawesi is perhaps best known for Torajaland, where the local people practice elaborate funeral rites and the dead are placed in cliffside alcoves, commemorated with unique statues. Sulawesi was of great interest to Alfred Russel Wallace, as it sits almost astride "Wallace's Line," separating two biogeographic realms. The authors of this guide provide a brief table that compares the avifauna of Kalimantan, on one side of Wallace's Line, with Sulawesi, on the other side. They note that of the 380 species found on Sulawesi and its near neighbor islands (what the authors call the "Sulawesi region"), 96 are endemic to the region, and 115 are endemic to Indonesia.

While this guide is admittedly not comprehensive, it will prove very useful. The species treated are those most commonly seen, the illustrations are of good quality, and the text descriptions are adequate for identification. It would be helpful if some maps were included but none are. The authors state that "For the bird-watcher, Sulawesi is unequalled." That is certainly not true. Much of the island is devoted to rice farming and birds other than munias and some herons, are sparse. To get any real sense of the endemic avifauna one must visit one or more of the nature reserves and national parks, where some natural forest survives. Like much of the rest of Indonesia, roadside birding is disappointing, with a surprising paucity of birdlife.

The book is indexed and provides a checklist of resident land birds in the Sulawesi Faunal Region.—JOHN C. KRICHER.

THE WHOOPING CRANE: NORTH AMERICA'S SYMBOL OF CONSERVATION. By Jerome J. Pratt. Castle Rock Publishing, Prescott, Arizona. 1996: 171 pp., 46 photographs. $12.95 (paper).—The Whooping Crane (*Grus americana*) is a species that has been close to extinction throughout my lifetime and has rightly come to symbolize the conservation movement in North America. This book is an effort to relate the history of the species and the efforts made to prevent it from disappearing completely. The author, Jerome Pratt, was one of the charter members of the Whooping Crane advisory group established in 1956, and thus provides an "insider's" perspective on how the recovery project has unfolded. This may be the book's greatest short-coming. Saving endangered species appears to have some strong similarities to the making of sausage; you don't necessarily want to know everything that goes into it.

Pratt clearly has some strong opinions on how the recovery program should have proceeded, which differ from the way it actually unfolded. However, I found it difficult in reading the text to determine precisely what the points of difference were. Perhaps someone with less personal involvement would have been able to present a more clear explanation of exactly how the differing philosophies interacted in the varying political environments to determine the decisions that were made.

I found it troublesome that nowhere in the text is there a simple graph describing the numbers of Whooping Cranes extant in the wild and/or in captivity. Much of the data is mentioned in the text, but it does not appear to be complete and it is extremely difficult to locate. It is clear that there are presently many more Whooping Cranes than there were in, say 1954, but exactly how the various management techniques that have been applied relate to the number of birds is not.

There appears to have been only minimal editing done on the original manuscript and I found a large number of spelling errors and other typographic mistakes all over the book. Most of the time these were merely annoying, but when numbers were transposed in years, these mistakes were greatly misleading.

The strongest feature of this book is its 28-page bibliography. This contains essentially all of the relevant literature on Whooping Cranes and is a must for anyone who wishes to try writing the definitive history of Whooping Crane conservation in North America.—HERBERT T. HENDRICKSON.

A PASSION FOR BIRDS. AMERICAN ORNITHOLOGY AFTER AUDUBON. By Mark V. Barrow, Jr. Princeton University Press, Princeton, New Jersey. 1998: 326 pp., 33 unnumbered text figures. ISBN 0-691-04402-3. $39.50 (cloth).—Histories of ornithology, and especially of American ornithology are rare and those by professional historians of science are rarer still as shown by a perusal of the bibliography of this excellent new book by Mark Barrow. Barrow's *A Passion for Birds* does not provide such a complete history of North American ornithology as this was not his purpose in writing this particular analysis; ornithologists who are looking for a full history of their field may be disappointed, but should not be. Rather the goal of Barrow's book is to examine the rise of professionalization in ornithology from the death of Audubon in 1851 to 1940. It is a most excellent treatment of this important aspect of ornithology, one which is well worth the close attention of everyone interested in this biological discipline. *A Passion for Birds* is a superbly excellent history of science with full documentation and an exhaustive bibliography. Barrow chose to begin his analysis at 1850 because this coincides with Audubon's death in 1851 and continues Farber's analysis which ended in 1850. Barrow undertook a most intensive study of archives and the literature, as demonstrated by his citations, and presents a tremendous amount of information on the history of North American ornithology which is of interest to all ornithologists, professional and amateur alike. One does not have to be a historian of science to enjoy reading *A Passion for Birds* and to learn much from it.

Barrow stresses three topics in his analysis of professionalization of North American ornithology; these are: (a) collecting and systematics; (b) the American Ornithologists' Union founded in New York City in September, 1883; and (c) bird conservation. Quite clearly, the pathway for most early North Americans into ornithology, whether they remained amateurs or became professionals, was via the accumulation of a collection of bird skins or eggs.

Ornithology during the 19th century was characterized by intense activity amassing collections and describing the diversity of North American birds, first species and then subspecies, followed by those in the rest of the New World and finally the Old World. This descriptive work led to two different check-lists of North American birds, namely by Elliott Coues and by Robert Ridgway. It was largely the differences between these check-lists which led to the founding of the American Ornithologists' Union in 1883.

One of the important aspects in the professionalization of a science, as emphasized by Barrow, is the founding of a national society and the publication of a scholarly journal by that society. This was certainly true in the course of professionalization of ornithology in North America even if the initial goals of the American Ornithologists' Union were not quite so noble. Invitations were sent to a small group of ornithologists with the clear purpose of establishing a society with the primary goal of solving the check-list problem and with a structure which kept control of the society in the hands of a small group of leading ornithologists. The new Union solved splendidly the classification and nomenclature problems in short order, publishing the first edition of its check-list and its code of nomenclature in 1886. Professionalization was further achieved with the decision to accept the offer to take over the *Bulletin of the Nuttall Ornithological Club* as *The Auk*.

However, the AOU was less successful in dealing with other ornithological matters. The formal hierarchical structure of membership classes, designed to keep the large masses of amateur and other ornithologists out of the running of the Union, caused problems from the beginning which became more serious as the decades passed; this archaic system is still in place as the 20th century draws to a close. Moreover, the Union did not deal readily with other ornithological questions such as migration and bird protection, largely because of the preoccupation of the leading members with matters of collecting and systematics.

Barrow discusses in detail the development of conservation and bird protection which became a central issue for the Union from its origin. He showed that although several prominent members of the AOU had central roles in the development of bird protection in North America, the Union did little in this area. A large part of the problem stemmed from con-

flicts between member in favor of collecting birds for scientific (as opposed to commercial) purposes and those in favor of bird protection. Barrow does an excellent job in summarizing these arguments and showing their consequences for the Union and for conservation groups; but he fails to analyze these arguments and therefore does not show that these two groups were largely arguing past one another. By 1900, it was clear that collecting birds had nothing to do with the decline and extinction of avian species. Rather it was clear that the primary factors were market hunting and habitat destruction.

The second major aspect, and perhaps the more difficult one to analyze, in the professionalization of a science is the balance between amateurs and professionals. Barrow states (p. 5) that ornithology is "a classic example of an inclusive scientific field" but does not clarify this concept. He pays most careful attention to the professional–amateur distinction in his introduction providing numerous citations to the literature in this field, but does not come to a clear resolution because of the quandaries in defining an amateur (including whether a single definition would serve equally well in 1880, 1930, and 1980, and in characterizing particular persons as an amateur or as a professional. Was Sir William Herschel (1738–1822) an amateur astronomer when he discovered the planet Uranus in 1781, a time when he was still earning his keep as a musician? Were William Brewster, Elliott Coues, Margaret M. Nice, or Lord Walter Rothschild amateurs? Possibly this quandary will never be settled. Major questions still exist, such as: How much interest in ornithology does a person have to have to be identified as an amateur ornithologist? Is every person who maintains a bird feeding station and possesses a pair of binoculars and a bird identification guide, an amateur ornithologist? Perhaps a distinction should be made between serious amateur ornithologists and all others (the "hobby-ornithologists" as expressed in German). What were the roles of amateurs to ornithology since 1850? Since 1900? Since 1940, the end of Barrow's analysis? And is ornithology the science in which professionals are so outnumbered by amateurs (see statement by Frank Chapman, p. 5)? I think not. I suspect that ornithologists have over-emphasized the number and importance of amateurs in their science. Comparative studies are needed. But I suspect that there have been and still are more serious amateur astronomers than serious amateur ornithologists, and that these amateur astronomers have and continue to contribute more to astronomy than amateur ornithologists do to ornithology.

Nevertheless, Barrow was able to demonstrate that by 1940, the termination of his analysis, North American ornithology had become fully professionalized from its largely non-professional status in 1850. By 1940, a good majority of active ornithologists were professionals based on publishing scholarly works in avian biology and earning their living in a position requiring some involvement in the study and/or conservation of birds. Fifty years later, serious amateur ornithologists have all but disappeared. Clearly professionalization in ornithology and other sciences is dependent on the rise of paid positions in the field, but this aspect has not been examined for ornithology in any detail by Barrow or specifically mentioned in the end notes, possibly because it is too obvious. Yet, it would be most interesting to have a detailed analysis of the employment opportunities for North Americans in all aspects of avian biology from teaching and research to conservation and protection as well as the diversity of possibilities in government, publishing, and industry, as well as the changes in these employment opportunities over the decades.

I would like to congratulate Mark Barrow on his excellent analysis of the professionalization of North American ornithology and for presenting it in the clear and lively style used in *A Passion for Birds.* I thoroughly enjoyed reading this book and learned a great deal about the history of North American ornithology and the course of professionalization of a scientific field. Without any hesitation, I can recommend most firmly *A Passion for Birds* to everyone with any interest in ornithology. I would like to thank Keir B. Sterling for answering urgent questions on the fine points of American ornithology and for reading the manuscript.—WALTER J. BOCK.

THE EBCC ATLAS OF EUROPEAN BREEDING BIRDS: THEIR DISTRIBUTION AND ABUNDANCE. W. J. M. Hagemeijer and M. J. Blair (editors). T. and A. D. Poyser, London. 1997: cxli + 903 pp. $88.00.—Twenty-six years in the making, this book is a monumental work and one of the three most significant bird books to emerge from Europe in recent years. Weighing in at over six pounds (if my bathroom scales are correct), its 900-plus large format (8½″ × 12¼″) pages report on the distribution and relative abundance of birds across the European continent, ranging from Gibralter north to Ostend, and east to Svalbard and Novaya Zemlya and Franz Josef Land and south again to the eastern Mediterranean. Significant parts of Russia and the Ukraine are covered, as is Madeira and the Azores but the Mediterranean islands administered from North Africa, as well as Cyprus and the Canary Islands are omitted. In addition, an important part of the Western Palearctic, the North African coast, is also omitted. Within this area some 10,000 plus ornithologists from every European country obtained presence/absence data on some 495 species in over 4400 50 × 50 km^2, often with estimates of the order of magnitude of each population. Coverage is nevertheless regionally uneven, with large areas of former USSR countries lacking any data at all and with Norway, Poland, and parts of four western countries lacking the quantitative population estimates available for most countries. The area to be covered was only about half again as large as the conterminous United States and the number of countries (ca 40, depending on which year one considers) was about the same as the number of states in the U.S. but was complicated by the presence of about 40 different languages and the occasional armed conflict between countries! These political, language, and cultural differences meant that a large part of the success of the project depended on the use of relatively simple methods that could be adopted and implemented relatively rigorously by observers of diverse background.

The book is divided into two major sections, one of 141 (i–cxli) introductory pages, followed by 903 substantive pages. A Foreword by the eminent biogeographer K. H. Voous, a 3-page Preface, and an 8-page English language Introduction describe the purpose and structure of the Atlas. Figure 1 is particularly important in that it documents the completeness of coverage. I could find no quantitative figures as to the coverage achieved, but it looks as if about two-thirds of the squares received data for at least 75% of the breeding species expected to be found there. However, a large chunk of the former USSR received no data at all and there are also gaps in Albania and some of the outer island groups. The remaining squares, particularly concentrated in eastern Europe, received data for fewer than 75% of the breeding species anticipated. What could have been usefully included here is a political map of the region: country boundaries are shown but not identified, leaving readers unfamiliar with the political geography of Europe to guess which country is which.

The Atlas is mapped on a Universal Transverse Mercator (UTM) projection, chosen because it covered the intended area of the Atlas, was familiar in most European countries, and was compatible with national map projections for each country. Each UTM 100 km × 100 km square was subdivided into four smaller 50 × 50 km grid squares to parallel an earlier botanical Atlas. Because lines of longitude converge towards the poles, gradual reduction of the number of 50 × 50 km squares on northern lines of latitude was necessary. Despite this the visual effect on the final Atlas is very acceptable, with one having to look closely to find areas where the local density of dots was not regularly spaced.

Originally intended for 1985–1988, Atlas field work actually took far longer. Data for Spain, for example, spanned from 1970 to 1992, those from Finland and from Moldova spanned 1986–90, those from Georgia were for 1992, and the few species that were covered in Azerbaijan came from 1994. For some countries visitors' records contributed significantly to the information available. A standard form allowed recording the breeding status of about 440 species recorded for each square. Seven classes of information (e.g., distraction displaying, egg shells found, fledged young, nests seen) confirmed breeding, another of seven classes (e.g., pairs observed in suitable nesting habitat in the breeding season, courtship display observed, nest being seen, etc.)

indicates probable breeding, and two categories (species observed in possible nesting habitat in the breeding season, and seeing males present in breeding season) indicated possible breeding. The validity of the data was reviewed through a hierarchy of subsequent checking, ranging from EBCC national and regional coordinators through species experts to the authors of the species texts. In addition to the presence/absence data, the Atlas sought to include logarithmic population size estimates as semi-quantitative information of population levels. However, organizers in some countries (Norway and Poland) refused entirely to provide such estimates and small or large parts of several other countries (Iceland, France, Italy, Spain) likewise lack such estimates. Not surprisingly with armed conflict there "the project lost contact with Bosnia and Serbia, . . ." and had to make use of earlier presence/absence data from that region. Estimates from border squares between countries were merged to the higher value.

The main body of the Atlas consists of species accounts. Part 1 includes 496 species for which the mapping data were satisfactory in quality; a second group of 17 poorly covered species is covered in a series of briefer accounts. Each species account covers as far as possible a list of standard topics, including world distribution, breeding habitat, distribution and abundance in Europe, recent changes in status, and migration patterns. The accounts do not cover breeding biology and conservation status since these two topics are respectively covered in detail in the standard work on the region (Cramp *et al.*'s 1977–94 nine-volume *Birds of the Western Palearctic*) and in Tucker and Heath's (1994) *Birds in Europe—their conservation status.* The status of subspecies is referenced briefly in the species section. For each species a population size estimate is provided as the geometric mean of the population size in pairs, together with estimates of the minimum and maximum population, the year of the estimate, and the population trend in numbers and range size. Population change estimates cover five categories of decreases or increases of more than 50%, of 20–50%, and stable (± 20%).

The English introduction is followed by a translation of the introduction into thirteen languages, namely Czech, German, Castilian, French, Finnish, Greek, Hungarian, Italian, Dutch, Portuguese, Polish, Russian, and Swedish. Then follow two figures showing the maximum data quality and the minimum data quality for each square, for the best coverage and worst coverage species respectively. These are, in my view, rather uninformative figures, given the extreme nature of the outliers. A copy of the recording form then precedes a four page account of the project's organization and background. Reading between the lines, it is evident that two countries, Britain and the Netherlands, were the major drivers of the project, providing both initial funding and much in-kind support. Intriguingly, a significant amount of support came from a "sponsor a species" campaign in which individuals, organizations, and commercial firms undertook to sponsor the cost of analysis and writing-up species accounts. The 512 species required authors from 37 countries, typically involving people from two countries at opposite ends of the species range, thus promoting national collaboration and a broad perspective on the treatment of the species.

The remainder of the introductory material includes an 8-page account of the evolution and history of the European bird fauna by Jacques Blondel, an acknowledgments section, a bibliography of national and major regional bird books for Europe, and a 2-page introduction to the individual species accounts.

The Atlas maps and accompanying species accounts form the core of the volume. Each Atlas map contains insets for six island groups (Svalbard, Franz Josef Land, Novaya Zemlya, the Azores, the Madeiran archipelago, and the Selvagens). However, one is expected to memorize the identity of each of these insets, the only key being on page cxl. Within each map different colored dots distinguish unsurveyed squares from absence and mere presence from estimated abundance, and show whether breeding was confirmed or probable or merely possible. Dot size characterizes logarithmic abundance (1–9 breeding pairs, 10–99 pairs, etc., through "more than 100,000 breeding pairs"). For parts of Russia colored shading indicates extrapolation of presence from earlier literature was necessary. Most species accounts in Part 1 also include a graph and pie chart providing information on pop-

ulation size and trends in each of the major countries, a tally of the total number of European countries in which the species breeds, and an estimate of its European population (excluding Russia and Turkey). Most species accounts are illustrated by a black and white drawing of the species by a variety of European artists and each has a list of the species name in 14 European languages. The accounts for the 17 irregular or rare breeding species in Part 2 typically include an illustration and a short text commenting on its status.

The species accounts are followed by a short (5-page) account of the conservation status of European birds, adapted by Melanie Heath and Graham Tucker from their 1994 book *Birds in Europe—their conservation status*. A short summary provides an overview for the European avifauna as a whole. The remaining pages are essentially technical miscellania, with a 65-page bibliography and indices of scientific names and indices in the various languages of the book concluding the work.

There is an old joke in computer science to the effect that it pays to be first or third: if you are first, you get the credit; if you are third, you get something that actually works. This volume is undoubtedly in the first category. It provides an excellent approximation to a continent-wide atlas, and one that is infinitely superior to the range maps drawn by guesstimate in earlier regional or European avifauna and field identification guides. However, the differing effort afforded by different countries, the variation in timing of field work, the differing national perspectives as to the inclusion of population estimates, and the major uncertainties about the status of species within the former USSR, limit the scientific quality of this work. Nevertheless, the coverage of some 4400 50 × 50 km squares by a network of volunteer observers organized on essentially a shoestring budget is a stunning achievement. For a North American audience this work takes away any excuse for not having a Canada/United States/Mexico atlas of bird distributions, the major gap in our current spectrum of ornithological resources. For European biogeographers it creates a tremendous new database that will undoubtedly fuel innovative analyses of large-scale bird distributions on a scale previously impossible. And for a European Union that is increasingly moving to becoming a "United States of Europe" this work provides a remarkable conservation resource that should guide pan-European conservation strategies, at least for birds, over the next few decades. For ornithologists of all nationalities the book is a beautifully produced volume that will invite browsing, stimulate comparisons, and provoke thought for years to come—RAYMOND J. O'CONNOR.

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