

Ornithological Literature

Edited by William E. Davis, Jr.

THE ORIGIN AND EVOLUTION OF BIRDS. By Alan Feduccia. Yale University Press, New Haven, Connecticut. 1996: 420 pages, 470 unnumbered figures. \$65.00 (cloth).—This is a remarkable book. Alan Feduccia has compiled an amazing amount of information on the morphology, evolution, systematics, and paleontology of birds. Anyone interested in these topics should own this treatise, which summarizes Feduccia's own studies as well as those of many other ornithologists and paleontologists, but especially Larry D. Martin (Mesozoic birds) and Storrs L. Olson (Cenozoic birds, relationships of modern birds).

The text is accompanied by numerous illustrations and photographs, mostly borrowed from other sources. The ink drawings of birds by George M. Sutton (from Van Tyne and Berger's *Fundamentals of Ornithology*) are familiar and pleasant. The original drawings and paintings by John P. O'Neill are very nice, although that of *Didunculus* on page 249 shows a bird with psittacid rather than columbid head and body proportions, perpetuating the myth that the tooth-billed pigeon of Samoa might be related to parrots. (There also is no evidence, contra Feduccia, that *Didunculus* is closely related to the extinct dodos of the Mascarenes.) The quality of reproduction of the half-tones is mediocre. Numbering the figures would have helped to relate them more precisely to the text. Some legends are confusing. Also, the paper is thin and warps easily.

Nowhere is it said who other than Feduccia read the MS before it was published. A careful review by another ornithologist or paleontologist would have helped to eliminate the many factual errors that are sprinkled through the text and figure legends. While reading Chapters 5–8, for example, I noted such errors on 23 of these 179 pages.

Nevertheless, Feduccia's narrative does a good job of explaining topics never before dealt with outside of the primary literature. Time after time he points out conflicts between the fossil record and molecular clocks, such as in the Oscine-Suboscine dichotomy

and the never-ending dilemma of ratite relationships. The strongest parts of the book are Chapters 3–5, titled "Genesis of Avian Flight," "Birds of the Cretaceous," and "Flamingos, Ducks, and Long-legged Waders," where Feduccia presents many original ideas and well formulated explanations.

One of the most important developments in vertebrate paleontology has been the newly discovered diversity of Mesozoic birds. Long gone are the days when Mesozoic birds of any note consisted of *Archaeopteryx*, *Hesperornis*, *Ichthyornis*, and little else. Feduccia introduces us to these early birds from China, Mongolia, Spain, Argentina, and elsewhere. The most common group of Mesozoic birds is the Subclass Enantiornithes, characterized by pectoral and tarsal structure that is fundamentally different from that of modern birds. Perhaps even more exciting has been the discovery of birds from both the Early and Late Cretaceous that have an essentially modern flight apparatus. This last group forces one to doubt that the much more reptilian *Archaeopteryx*, in spite of its sophisticated feathers, is on the main line leading to modern birds.

Interpretation of the Mesozoic bird fossils is contentious. Two fundamental issues form the core of the dispute. One is how the various early birds are related to *Archaeopteryx*, to each other, and to living birds. The other, perhaps fueled in part by the public allure with dinosaurs, is whether birds originated from theropod dinosaurs or from some other archosaurs, such as thecodonts or crocodilians. Both concepts of avian origin are backed by some good evidence. The pro-theropod camp is dominated by scientists who, unlike Feduccia, try to adhere strictly to cladistic methodologies. Feduccia points out the difficulties in determining character polarities, in distinguishing phylogenetically genuine similarity from convergence or homoplasy, and in the concept of parsimony. The question of bird vs reptile is irrelevant to cladists who regard birds simply to be theropods. This leads to phrases such as "non-avian dinosaur" and

“non-avian theropod,” which seem to me to be the conceptual equivalent of “non-reptilian amphibian” or “non-amphibian fish.” Feduccia disagrees with the theropod origin of birds and has steadfastly pointed out problems involving chronology, dental morphology, origin of flight, forelimb proportions, homology of the wrist and manus, and homology of the tarsals and metatarsals.

It is much too early to expect a consensus on the origin of birds. Because both sides have evidence to support their views, a more tolerant tone would keep the arguments at a scholarly level. Indelicate reviews of Feduccia's book, such as that by bird-theropod advocates Norell and Chiappe (1996, *Nature* 384:230, entitled “Flight from reason”), do little to sustain the reviewers' own cause. To criticize a paleontologist for relying too much on the fossil record is like faulting a mason for building with bricks.

The controversies over the origin of birds are another example of a non-compromising, black-and-white, winner-take-all argument between opposing camps of systematists. Such debates, often as personal as they are scholarly, cast a dark shadow over the field of avian systematics. The polarization will begin to subside only when the major players admit that progress in understanding the origin, evolution, and relationships of birds can be made by scientists with diverse specialties, whether muscles or molecules, bones or behavior, physiology or fossils. No single person can do it all or even claim to understand it all. Rarely, if ever, can we expect any single set of data to lead us to the promised land. We are interested in progress; the final word may never come. In the meantime, let us enjoy the new discoveries. Feduccia now has compiled more information about the origin and evolution of birds than anyone else. He is to be congratulated for this, regardless of his errors or of his methodological/conceptual differences with others.—DAVID W. STEADMAN.

RED-COCKADED WOODPECKER: RECOVERY, ECOLOGY AND MANAGEMENT. Edited by David L. Kulhavy, Robert G. Hooper, and Ralph Costa. College of Forestry, P.O. Box 6109, Stephen F. Austin State

University, Nacogdoches, Texas 75962. 1995: 552 pp., 7 color plates. \$54.96 + \$4.00 shipping and handling (hardback).—The Red-cockaded Woodpecker [RCW] (*Picoides borealis*) is probably the most studied North American woodpecker and may also qualify for inclusion among the ten most studied bird species in North America. It has received this kind of attention from a wide spectrum of individuals and agencies because its survival has been threatened seriously for many years. It was designated as an endangered species in 1968. This large format volume (22 × 28.5 × 3.75 cm) contains the proceedings of the Third Red-cockaded Woodpecker Symposium held in January 1993 and attended by more than 300 persons. It includes 65 edited papers by 114 authors and coauthors divided into six sections: 1. Outlook for Recovery, 2. Strategy for Recovery, 3. Natural Disturbances, 4. New Insights on the Biology, 5. Cavity Trees as a Resource, and 6. Status. Shorter parts, such as literature cited, subject index, index of scientific names, list of contributors, and short biographical sketches of the editors and photographer complete the book. The papers are carefully edited and include a useful abstract and keywords. The presentation is pleasant and of high quality.

In the first section, M. C. Meier summarizes the processes that have led to what he calls “an emerging success story” toward the recovery of RCW. In another paper R. E. F. Escano describes the population status and management on land administered by USDA Forest Service. J. A. Jackson contributes a history of the knowledge on this woodpecker since its description in 1807 and gives a good overview on the research and interest that it has generated since its designation as an endangered species.

The second section should be of great value to those who are interested in or are responsible for the management and implementation of measures for the recovery of an endangered species. The papers deal with several aspects of management including ecological strategies and use of modern computer techniques. The third section covers aspects of natural disturbances that could affect recovery plans and includes phenomena such as hurricanes and wind damage, beetle infestations, lightning, and forest architecture. A paper entitled “Eco-

conomic valuation of the Red-cockaded Woodpecker and its habitat” provides interesting ideas on “how to assign economic values to goods which are not traded in the market place.” Anyone who may have to address this issue or promote a project dealing with the conservation of species or habitats, particularly in the financial and/or political arenas, should read at least this section of the book. The fourth section reviews the results of recent research on various aspects of the biology of RCW, and includes articles on populations, genetics, habitat use, land management, ecology, morphology, and parasites. Section five, deals exclusively with cavity trees and includes papers on artificial cavities, predation, interspecific competition, tree characteristics, and forest composition and structure. In the last section, the status of the RCW is reviewed from different perspectives, each providing an interesting insight on the status of the bird and its future. The bibliographic section is extensive and should be useful to anyone looking for more information than what is given in the papers which, no doubt, had to be reduced to their essential elements.

This well organized book will be useful to anyone dealing with the ecological management and recovery plans for endangered or threatened species although it deals strictly with a single forest species. Many of the principles and procedures described in the papers could be adapted to other situations or serve as examples for management projects. This book should be available to students, teachers, resource managers and planners who will find it a good source of information. Politicians involved in the conservation of natural resources should be required to read and understand crucially important chapters of this book if the endangered and threatened species of the continent are to survive.—HENRI OUELLET.

EAGLE'S PLUME: PRESERVING THE LIFE AND HABITAT OF AMERICA'S BALD EAGLE. By Bruce E. Beans. Scribner, New York, New York. 1996: 318 pp., 20 black-and-white photographs, \$25.00 (cloth).—The Bald Eagle (*Haliaeetus leucocephalus*), arguably America's most widely

recognized bird, is also one of its most evocative. Dig deeply enough, and almost everyone has an opinion about the National bird. Benjamin Franklin, disgusted by the Continental Congress's choice of the Bald Eagle in 1784 as part of the new nation's national emblem, attacked the species in a now famous letter to his daughter, arguing that the bird's piratical habits precluded its use in such a lofty position. Almost two hundred years later, conservation biologists in Canada and the United States embraced the plight of reproductively constrained, pesticide-laden Bald Eagles in their fight to ban the widespread use of DDT in North America. That Franklin's eloquent arguments fell on deaf ears while those of 20th Century conservationists did not, is testimony to the species' mystical—indeed, almost addictive—appeal. As someone who helps introduce hundreds of Hawk Mountain visitors to southbound Bald Eagles each fall, I am convinced that one could build a religion around the bird. But over the past 50 years Bald Eagles have been the subject of 100s, if not 1000s, of newspaper and magazine articles, and dozens of books. So when all is said and done, do we really need another book about Bald Eagles? Haven't all the bases already been touched? “Eagle's plume” suggests otherwise.

Bruce E. Beans has written not so much another book about Bald Eagles, but rather a book about Bald Eagle conservation, or, more exactly, about Bald Eagle protagonists and antagonists. This is not to say that the book doesn't deal with the eagles themselves. It does, and for the most part eagle ecology is presented in both a credible and readable manner. But the real heart of the book—and what will be of particular interest to Wilson Society readers—is its description of the many personalities involved in Bald Eagle conservation. Included are descriptions of the actions of many past or present Wilson Society members and associates, including detailed accounts of such “Bald Eagle luminaries” as Charles Broley, Larry Niles, and Mitchell Byrd. Also included are many of the enemies Bald Eagles have faced over the years, human and otherwise.

Although the book wanders a bit in its concluding chapters, most of the work provides a well-researched history of the species' trials

and tribulations through the DDT-Era of the 1950s, 60s, and 70s, into the Coastal Development Era of the 1980s and 90s. While specialists in the field might quibble with the author's emphases, the book's engaging and well-documented prose compares favorably with Jonathan Weiner's critically acclaimed "The beak of the finch." I strongly recommend "Eagle's plume." The next time someone asks you what conservation biologists are like, tell them to read this book.—KEITH L. BILDSTEIN.

NEOTROPICAL MIGRATORY BIRDS: NATURAL HISTORY, DISTRIBUTION, AND POPULATION CHANGE. By Richard M. DeGraaf and John H. Rappole. Comstock Publishing Associates, Ithaca, New York. 1995: 676 pp., 361 range maps, 2 appendices. \$27.50 (paper).—This reference book briefly treats each of 361 species of Neotropical migrants, providing a range map, range description, summary of the conservation status of the species, habitat description, special habitat requirements, and selected references from the primary literature. The range maps are relatively small, obviously computer generated, but nonetheless useful. Three brief introductory chapters deal with defining what, exactly, is a Neotropical migratory bird and the possible causes of population changes (mostly negative) in various species. There are two large appendices, one on breeding and wintering habitat use (preceded by a succinct description of each habitat) and one on regional statistically significant long (1966–1994) and short-term (1980–1994) population trends (increasing or decreasing), based on data from the FWS Breeding Bird Survey. There is a reasonably thorough literature cited section.

The book is presumably meant as a quick, informative overview, a thumbnail sketch of each species. There is little said about particular behaviors of various species, as there is no paragraph devoted to natural history, as such. Therefore many details are lacking and the reader in search of a reasonably thorough treatment will have to look elsewhere, consulting the references cited, and maybe some that are not cited. For example, in the account of Worm-eating Warbler (*Helmitheros vermi-*

vorus), the winter habitat is described accordingly but there is no mention of this species' interesting and specialized habit of foraging in large, dead leaves, nor is Greenberg's paper documenting this habit cited (Greenberg, R. 1987. Development of dead leaf foraging in a tropical migrant warbler. *Ecology* 68:130–141). Under Special Habitat Requirements, "Ravines with dense undergrowth" is accurate for Worm-eating Warbler on its breeding range but not its wintering range, and, unfortunately, that distinction is not made. A naive reader could thus be easily misled.

As a second example, in the account of Northern Waterthrush (*Seiurus motacilla*), there is surprisingly no mention of Swartz's historic study of winter site fidelity and territoriality (Swartz, P. 1964. The Northern Waterthrush in Venezuela. *Living Bird* 3:169–184), though the account states that the species is "strongly territorial on spring migration at temporary ponds in Texas."

Though this book is lacking in depth, it is nonetheless a useful compendium for anyone whose research interests are focussed on Neotropical migrants.—JOHN C. KRICHER.

ATLAS OF THE BREEDING BIRDS OF MARYLAND AND THE DISTRICT OF COLUMBIA. By Chandler S. Robbins (Senior ed.) and Eirik A. T. Blom (Project Coordinator). University of Pittsburgh Press, Pittsburgh, Pennsylvania. 1996: 479 pp., numerous figures, tables, maps, graphs, and line drawings. \$55 (cloth).—This is a state-of-the-art breeding bird atlas that incorporates a wide variety of data bases in addition to the intensive fieldwork data, collected from 1983–1987 by about 800 volunteers. Miniroute data (15 three-minute roadside stops in each atlas block) and Breeding Bird Survey data (BBS; U.S. Fish and Wildlife Service, and Canadian Wildlife Service) provide an index to breeding bird abundance (lack of abundance data is a major flaw in many breeding bird atlases). Other data bases include the Maryland Nest Record File (since 1950), historical records of nesting dating as far back as the mid-1800s, and distribution spot maps compiled during the 1950s. The atlas block was one-sixth of a 7.5-minute U.S.G.S. topographic map, or just

under 10 square miles (25.5 km²), which is common to many state atlases. However, for the District of Columbia and rapidly changing areas of Maryland, atlasing was conducted at the quarter block level for finer resolution. As a "check" on how satisfactory atlas coverage was, 30 random blocks were intensively atlased by Patuxent Migratory Research staff with the interesting result that their coverage and other coverage produced similar results for common species, but the staff did better at finding rare or secretive species [e.g., Cooper's Hawk (*Accipiter cooperii*) was found in 46% of the random blocks, but only in 14% of the blocks state-wide]. The coverage of blocks state-wide was virtually complete, a feat not accomplished in most atlasing projects.

The introductory section includes a brief but comprehensive review of atlas projects world-wide, and a review of the history of ornithology in the area, including such important figures as Elliott Coues, W. W. Cooke, and A. K. Fisher. A chapter on the environment includes a discussion of soil, physiographic regions, land use (including a detailed historical perspective), human population, and climate. A very brief, but useful chapter deals with the effects of weather on bird populations.

Of 201 species recorded during the atlas period, breeding was confirmed for 194 species, three of which were new for the state. The chapter describing results includes an analysis of short-term bird distribution changes in Howard County, which had been atlased in 1973–1975 as well as 1983–1987.

The species accounts occupy the bulk of the book (399 of 479 pages). Each species account is presented on a pair of facing pages with one page of text and one with maps and graphs. The text includes a wealth of natural history information, including migratory status, habitat preferences, nesting habits, status in the atlas area, and conservation needs. One map shows breeding distribution 1983–1987 ("confirmed," "probable," "possible," and "observed") and a summary table presents the number and percentage of atlas blocks for each status category. Included for most species are a map of breeding distribution in 1958 (previously published), a map of relative abundance with categories representing the

percentage of stops the species was recorded on miniroutes, and a BBS graph of population trends. A line drawing of each species accompanies the text. Appendices include lists of plants and non-avian fauna, total atlas species by block, and the literature cited section (23 pages, two columns) alone may be worth the price of the book.

This is an excellent atlas. In addition to the usual useful functions that atlases perform, such as providing data for land-use decisions and research applications, a "snap-shot" in time of breeding bird distribution for future comparisons, this atlas may be of greater-than-usual heuristic value (e.g., for the study of forest fragmentation and for numerical analyses). The book is well edited, sturdy, and attractive. It should be part of every academic library, and of the library of any individual interested in the distribution and conservation of North American birds.—WILLIAM E. DAVIS, JR.

PALEARCTIC BIRDS: A CHECKLIST OF THE BIRDS OF EUROPE, NORTH AFRICA, AND ASIA NORTH OF THE FOOTHILLS OF THE HIMALAYAS. By Mark Beaman. Harrier Publications, Lancashire, UK. 1994: 168 pp. £9.9.—It is manifestly impossible to produce a checklist of English/scientific bird names that will satisfy everyone. Once this is accepted, we can get on with the business of reviewing this admirable effort. British birder and author Mark Beaman has produced an elegant, easy-to-read, and carefully crafted list of English names for all birds known to have occurred in the Palaearctic (which he spells without the second "a") faunal region. There have been a number of such efforts recently for the Western Palaearctic, particularly those sponsored by the BOU Records Committee, *British Birds*, and *Birding World*. Where this one differs, and what makes it so special, is that it is the first to endeavor to give every Palaearctic bird a globally unique English name. It's about time.

Beaman's attractive, soft-covered, slim volume is divided into several parts. The Introduction, especially pp. 6–9, is a splendid apologia for his ideas on vernacular names, and several passages are so utterly charming yet insightful they should be read and reread by

all interested in vernacular names. His sensible, well-articulated viewpoints could well serve as the model for all attempts, whole or in part, to stabilize English names for the world's birds.

Pivotal to this effort yet curiously absent is any discussion of his notion of what constitutes a species, either the traditional Biological Species Concept (BSC), or the more descriptive Phylogenetic Species Concept (PSC), recently so forcefully articulated by C. J. Hazevoet in his *B.O.U. Check-list of the Birds of the Cape Verde Islands* (1995). But close reading of Beaman's extensive Taxonomic Notes makes it clear he relates to the BSC, not the PSC. In the actual Systematic List he gives English and scientific names for most subspecies that have been, or are reasonably likely to be, split or lumped, although he oddly does not discuss the useful format he has adopted.

This brings up an important point. Unlike a number of recent amateur authors, especially those of articles published in some of the newer birding journals, Beaman has actively sought out and integrated technical advice from taxonomists and other ornithologists. The high scientific quality of the finished product clearly reflects both this input as well as the level of technical comprehension Beaman has achieved. At the higher taxonomic levels, he has basically followed the Wetmore/Voous model, eschewing the Sibley and Monroe ordering as experimental and therefore likely to be subject to too many later modifications to be stable enough for his needs. At the generic and specific level he has also used Voous as his base, obviously much modified by recent work. Here he has commendably rejected nearly all of Sibley and Monroe's species splits where he finds that "published supporting evidence is either sparse or lacking, or to [his] mind unconvincing." Nonetheless, most of the names he has chosen do conform to those in Sibley and Monroe.

Three sections occupy the bulk of the book: the Systematic List (pp. 17–62), Taxonomic Notes (pp. 63–99), and Notes on English Names (pp. 100–135). Notes on Distributional Status, Omitted Species, and References conclude the book (pp. 136–168). Beaman takes four pages (10–13) to describe how and why he delimited his "Palaeartic," which is not

congruent with that of the 10-volume *Birds of the Western Palaearctic*, or Vaurie's 2-volume *Birds of the Palaearctic Fauna*, or even with Voous. Nonetheless, Beaman's version is not only convincingly presented, it provides a wealth of useful zoogeographic information, especially on the biological significance of elevational bounds.

His literature review is excellent, and covers papers in many languages. Doubtless he will have missed some papers, maybe even critical ones (some have already been pointed out by other reviewers) but the point is that in general, he has done his homework well. I would have liked him to have acknowledged, among other recent name-checklists, *Noms Français des Oiseaux du Monde* (1993), and Bourne and Casement's *RNBWS Checklist of Seabirds* published in *Sea Swallow* (1993), but this is only the first edition of Beaman's book. I fully expect (and hope) it will be revised and updated periodically, when these and other reviewers' criticisms can be addressed.

But what makes Beaman's effort special and nearly unique are the additional premises he has embraced as essential to the creation of a globally-unique checklist of English names. These include trying to conserve English names, especially those in widespread use; recognizing up front that the country where a bird is endemic or where a group is most diverse/abundant should decide what they should be called globally (e.g., longspurs vs buntings)—thus preserving a mix of stints and sandpipers for small calidrids, and hawks and buzzards for buteos; rigorously conserving patronyms, in sharp contrast to Sibley and Monroe who willy-nilly threw out hundreds of ancient English names honoring famous ornithologists the world over; bending over backwards to avoid creating wholly new English names simply because they might better describe some birds than existing names; "in this international era" sedulously replacing all of the diacritical marks such as umlauts and accents that Sibley and Monroe mawkishly removed; to simplify typography, deleting nearly all group-name hyphens (as in hawk-owl, golden-plover, leaf-warbler, etc.); and in literally only a handful of cases where absolutely necessary, resorting to the creation of totally new names.

What results is a felicitous list of the very familiar, the sometimes foreign but still familiar, and the occasionally novel. Clearly, he has tried to reach a workable compromise where European and North American names for the same bird differ, and I think he has succeeded remarkably well. At the very least his choices make interesting reading. For example, loons replace divers, but Black-throated, not Arctic, and Great Northern, not Common; Black-necked, not Eared, Grebe; Great Shearwater; Great, not Eurasian/European, Bittern; Western Reef Egret; Common, not Black, and Velvet, not White-winged, scoters (convincing!); Goosander, not Common Merganser; Rough-legged Buzzard, but Swainson's Hawk; Hen, not Northern, Harrier, Kentish, not Snowy, Plover; Lesser Sand, not Mongolian, Plover; Asian, not Asiatic, Dowitcher; Brünnich's Murre (aha!); American Mourning Dove; Tengmalm's, not Boreal, Owl; Eurasian Skylark, not Sky Lark; Sand Martin, not Bank Swallow; American Cliff Swallow; Common Nightingale, Redstart, Stonechat, and Blackbird; Dark-sided, not Siberian or Sooty, Flycatcher; Grey-streaked, not -spotted, Flycatcher; Eurasian Nuthatch, Treecreeper, and Jay; Common, not Black-billed, Magpie; Western Jackdaw; Common Starling, Chaffinch, and Linnet; European Serin and Greenfinch; Grey-capped, not Oriental, Greenfinch; Arctic, not Hoary, Redpoll; Eurasian Bullfinch; Common, not Red, Crossbill (we'll see how long this lasts); and finally, back to using Reed Buntings.

There are a few places where I find his arguments for choosing one name over another not compelling, his logic faulty, or his applications inconsistent: Little Auk vs Dovekie, where he seems to have forgotten about auklets; Grey Plover and Red Phalarope, and Sora and Brent Goose, where identical arguments lead to opposite conclusions; Pintail Snipe, not Pin-tailed Snipe, but Spoon-billed Sandpiper, not Spoonbill Sandpiper; Long-tailed Duck vs Old-squaw, where his view of linguistic enrichment sustaining Dunnock and Goosander seems to evaporate; and Gyr Falcon, where the implicit argument supporting, for example, Shelduck over Shel[1] Duck, also vanishes.

I really have insurmountable difficulty with only one of his names: the ugly "Pallas's

Gull" for Great Black-headed, adopted merely to avoid having to add "Common" to *ridibundus*. Big deal: why can't we have both Black-headed Gull and Great Black-headed Gull? Some rules demand the occasional exception if they are to work. Likewise, I really don't have problems with Crested and Lesser Crested terns; surely we don't need Greater Crested Tern. Taxonomically, he is pretty well up to date, having caught, for example Ahlström's new *Phylloscopus* warblers from southeast Asia, although he curiously missed Steppe Shrike (*meridionalis?*) *pallidiceps*, a likely future split. One odd name choice seems to have been somewhat geopolitically motivated: Red-crowned Crane instead of Japanese or Manchurian (shades of the Persian Gulf vs the Arabian Gulf). Finally, one of his names is particularly mellifluous: "Syrian Serin" just rolls off your tongue.

His taxonomy is a curious mixture of the very conservative (keeping Terek and Common/Spotted sandpipers and the tattlers in their old genera; only partially splitting out all of the Southern Hemisphere skuas; not recognizing Saunders's Tern; not splitting out Black-backed Wagtail) and the liberal (recognizing Fea's and Zino's [sic] petrels as species; splitting Eastern and Western Marsh Harriers; not lumping Canary Islands Oystercatcher; splitting Armenian Gull and Heuglin's Gull) but in most cases reasons are given. The extensive discussions in the Taxonomic Notes (as well as in the Notes on English Names) are very well written: clear, precise, unambiguous, covering both sides of disagreements where appropriate, up to date, and usually compelling. His discussion of the complexities of the genus *Phylloscopus* is an excellent example.

The layout of the book is exceedingly user-friendly, with lots of white space without which this could have been tedious to read. In one of the best proofreading jobs I have ever seen, I have not detected a single error in a type of publication that begs for typos. Even the cover sandgrouse line drawing is exceptionally attractive.

I find this to be one of the best and most useful annotated checklists I have ever seen, setting a standard that future efforts to provide globally unique English names will have to acknowledge. I hope that it will be revised

regularly, and that its author will give serious consideration to applying his considerable skills to a comparable world check-list. We are still waiting for the good one.—P. A. BUCKLEY.

THE BREEDING BIRDS OF QUEBEC: ATLAS OF THE BREEDING BIRDS OF SOUTHERN QUEBEC. Edited by Jean Gauthier and Yves Aubry. L'Association quebécoise des groupes d'ornithologues, the Province of Quebec Society for the Protection of Birds, and the Canadian Wildlife Service, Environment Canada, Quebec Region. 1996 (French edition 1995): 1302 pp., nearly 1500 photographs (more than 300 in color), 300 line drawings, and more than 500 maps. \$149.95 (cloth). [Available from: Editions MultiMondes, 930, rue Pouliot, Sainte-Foy (Quebec), Canada G1V 3N9].—This is a massive book—the format is large (28.5 × 33 cm), and it weighs more than 25 kg. Although primarily a breeding bird atlas, it is actually much more. The atlas species accounts do not begin until page 201—the introductory materials occupy the first 87 pages, followed by an extensive section on the bird families of Quebec. The book goes much farther than most atlases in providing in-depth treatment of each species' biology, and provides relative abundance data on birds for each of southern Quebec's ecological regions. An introductory chapter includes three essays that give different perspectives about the history of ornithology in Quebec. This is followed by a chapter on the biogeography of Quebec that includes the major physiographic regions, climate, glaciation, ecoclimate provinces, soils, vegetation, hydrographic system and wetlands, all lavishly illustrated with color maps, satellite and aerial images, maps, and diagrams. A chapter on human impact on the environment is presented in an historical context and also features satellite imagery among the illustrative material. Natural disturbances and habitat conservation are also treated. The section on the bird families of Quebec begins with taxonomy, which largely follows the American Ornithologists' Union Checklist, although DNA-based classifications are discussed. Forty-five accounts of families are supplemented

with several hundred color photographs illustrating individual species.

The basic block used in assembling the atlas was a square 10 km per side using the Universal Transverse Mercator grid system. For logistical reasons, the atlas was restricted to southern Quebec. Total coverage was desired but in remote regions only blocks near access points received coverage, with the northern and western sections receiving less attention. A statistical procedure was employed to estimate relative abundance figures for more than 100 species for 17 ecological (forest type) regions, with relative abundance for a species presented as minimal, low, high, or maximal. The relative abundances, however, cannot be compared among species. More than 900 participants (including about 100 who were hired by local birdwatching clubs) submitted over 200,000 bird records, representing more than 67,000 hours of field work. Breeding was confirmed for 232 species, including five new to Quebec.

The species accounts are typically 2–4 pages (usually 4) with the first text page highlighted by a two-color line drawing of the species, and the facing page having a two-color map showing breeding status (“confirmed” and “possible and probable”). For many species four shades of tan (plus white) indicate levels of relative abundance in the 17 forest regions. A histogram summarizes breeding evidence reported, and a chronology chart shows seasonal occurrence, laying and incubation period, nestling period, and period of dependence of the young out of the nest. The symbols are a bit intimidating, but the key is printed on the inside of the front cover and the facing page which makes for easy access. A small map shows world breeding range, and frequency of occurrence by ecological (forest) region is presented in tabular form. A species profile gives pertinent breeding biology (e.g., clutch size, mating system) and other data (e.g., longevity record, wing span, weight). The text for most species includes an introduction (including field marks for identification) and sections on habitat and behavior, distribution (especially in the atlas region), and history and trends. The habitat and behavior sections are typically extensive, with lots of natural history information, and are generally supplemented with up to a half dozen black-

and-white photographs showing habitat, nest, eggs, adult bird on nest, etc. A section "Notes on territory" is printed below the line drawing of the species.

The species accounts are followed by a series of brief chapters on species diversity and groups of birds with special affinities (e.g., cliff-nesting birds, seabirds of the St. Lawrence). These chapters contain some interesting analyses and are, as usual, profusely illustrated. The appendices have some interesting data, including migratory game bird harvest estimates, a gazetteer, and the scientific and French names for plants and animals mentioned in the text. A glossary makes the book more user friendly. The bibliography is simply staggering—37 pages with five columns per page (over 5000 references).

This is the largest, most lavishly illustrated breeding bird atlas that I have seen. Some might argue that the book might be more usable—it takes two hands and a podium to use this book—if 1000 or so photographs had been deleted (particularly the several hundred color photos of individual species). I have mixed feelings. It certainly is a most impressive book, representing an enormous effort by numerous individuals, but it is expensive and I doubt if many people can afford the price. Certainly it is an excellent contribution to the burgeoning breeding bird atlas literature, and should be part of every academic library. Perhaps the best solution would be to produce an abridged paperback edition which the majority of ornithologists could afford.—WILLIAM E. DAVIS, JR.

BIBLIOGRAPHIE D'ORNITHOLOGIE FRANÇAISE. TOME 2 (1966–1980). By Yves Muller. Service du Patrimoine Naturel and Société d'Etudes Ornithologiques de France, Paris. 1996: 407 pp., 3 numbered text figs., several line drawings, numerous distribution maps, indexes; 290 French Francs (hardcover). [Available from "Universal Book Service, Dr. W. Backuys, P.O. Box 321, 2300 AH Leiden, Holland.]—I love bibliographies. One of my favorites is René Ronsil's "Bibliographie ornithologique française" (1948), which lists all "works published in the French language and in Latin in France and

the French colonies from 1473 to 1944." I was thus delighted when I received for review volume two of Yves Muller's "Bibliographie d'ornithologie française," a work that, once complete, will cover the period from 1945, when Ronsil's undertaking stopped, to 1990. I also love libraries. During my career I have been lucky to be associated with two institutions that have arguably the best ornithological and natural history libraries in the western hemisphere, Harvard University's Museum of Comparative Zoology and the American Museum of Natural History. For others who are not so fortunate, however, and must be content with libraries having incomplete holdings, good bibliographic works are the tools of necessity.

Outstanding ornithological bibliographies besides Ronsil's are John T. Zimmer's "Catalogue of the Edward E. Ayer Ornithological Library" (Field Museum of Natural History 1926), the bibliographies in the "Ornithological Gazetteers of the Neotropics" by Raymond A. Paynter, Jr. and his collaborators (published by the Museum of Comparative Zoology at Harvard University from 1975 to 1995), and Clifford B. Frith's annotated bibliography of the Papuan Subregion, 1915–1976 (Bulletin of the American Museum of Natural History, 1979).

Yves Muller's "Bibliographie d'ornithologie française, tome 2 (1966–1980)," is the second of a three-volume work. Volume 1, dealing with the period 1945–1965, appeared in 1992 and volume 3, which will include the years 1981–1990, is in preparation. After completion Muller's work will cover 45 years, from the difficult post World-War II period to the tremendous recent development of French ornithology, thus complementing and bringing up to date Ronsil's bibliography. However, although Muller's bibliography is a successor to Ronsil's, it differs from it in two significant respects. First, whereas Ronsil's bibliography included works only in the French and Latin languages (whether these works had been published in France or outside that country), Muller's includes also "publications in foreign languages." Second, whereas Ronsil's bibliography not only included works on the birds of France or her colonies, but also works in French or Latin dealing with the birds of other countries, Muller's only includes works

concerned with the birds of "Metropolitan France" (p. 10; what the French call "l'hexagone"). Thus the island of Corsica is included but "the Anglo-Norman islands of Jersey and Guernesey [sic]" and the French colonies or former colonies are excluded. In Muller's words "[My] work thus differs fundamentally from that of Ronsil" (p. 10). In a way this is a pity, because users of Ronsil's and of Muller's works will have to remember these differences, which make comparisons between these two massive bibliographic efforts difficult. Although I respect Muller's decisions (after all, one has to set limits to any work), I am sorry that he did not include publications (whether in French or other languages) about the birds of French colonies, ex-colonies, or territories such as New Caledonia, Tahiti, or Réunion, which would have made his bibliography more comparable to Ronsil's and also useful to a wider audience. Muller is aware of these problems as he wrote that "A revision of Ronsil's bibliography is contemplated, both at the level of the list of references and that of an index, presently quite inadequate" (p. 10). Three more items must be mentioned before analyzing the book further. Within the linguistic and geographic limits cited above, Muller has included works about "birds studied in their natural environment" but not general ornithological works about anatomy, physiology, and systematics, or works about captive held birds. As a systematist I regret the exclusion of systematics. Next, Muller has included "scientific" rather than "popular" works. Finally, he has included only publications that are available in libraries and thus are accessible to the public. Muller's criterion of what constitutes a publication excludes documents such as privately circulated reports and some university theses (like masters' theses) that are not "systematically deposited in libraries" but includes PhD-type theses which are found in libraries and are thus "available to every researcher."

How good a tool is Muller's "Bibliographie d'ornithologie française"? I believe that it is excellent. There are probably missing references in Muller's book but I haven't found them. Muller has searched for relevant publications in many journals, not just obvious ones like *Alauda*, *Gerfaut*, *L'Oiseau et la Revue Française d'Ornithologie*, *Nos Oiseaux*,

or *Journal für Ornithologie*, but also local ones like *Bulletin de l'Association philomatique d'Alsace-Lorraine*, *Riviera scientifique*, or *Mémoires de la Société Académique de l'Aube*. He has also searched for references in the bibliographies published in *L'Oiseau* since 1969 and in the bibliographic lists included in all the articles he consulted. Muller expressed his debt to the librarians and to the libraries of the Zoological Museum in Strasbourg, of the Société Ornithologique de France in Paris, and of the Swiss Ornithological Institute in Sempach. (As I am reviewing a bibliographic work on the birds of a European country, it is appropriate to say that the Swiss Ornithological Institute has probably the best ornithological library in Europe, thanks to Raymond Lévêque's phenomenal knowledge of the avian literature and his tireless efforts to acquire just about every ornithological publication that he could obtain.)

Muller's exhaustive search for bibliographic entries has led him to include 4250 references, 246 as complements to the first volume and 4004 for the period 1966–1980. Muller documents the phenomenal increase in the number of ornithological publications on the birds of France since 1945: from a yearly average of 54 in the period 1945–1949 to a maximum of 442 for the year 1980 alone. Muller highlights several aspects of this growth. He calls 1945–1965 "the period of ornithological exploration in France," qualifies the 1970s as the decade when field ornithology truly took off in France, and emphasizes the importance of university research in ornithology in the period 1966–1980. Whereas only two PhD-type theses on the French avifauna were produced in the period 1945–1965, no fewer than 57 came out in 1966–1980. Similarly, whereas only two ornithological journals, *Alauda* and *L'Oiseau*, were published at the beginning of the 1945–1965 period, many were started after 1953. To quote Muller (p. 17): "Ninety-seven periodicals published observations on the birds of France during the years 1945 to 1965. In the next 15 years, this number climbed to 212, essentially as a result of several dozen new ornithological journals." The nine journals with more than 100 publications each in 1966–1980 are *Alauda*, *le Héron*, *Nos Oiseaux*, *L'Oiseau et la Revue Française d'Ornithologie*, *le Jean-le-Blanc*, *le Lien or-*

nithologique d'Alsace, le Grand-Duc, le Passer, and Penn ar Bed. How many of these periodicals do you consult? (Incidentally, *L'Oiseau* no longer exists. After a "merger," the only ornithological journal now published by the Société d'Etudes Ornithologiques de France is *Alauda*.)

The "Bibliographie d'ornithologie française" for 1966–1980 includes two maps showing the geographical distribution of ornithological work in France (pp. 18–19), complements to the period 1945–1965 (pp. 23–30; references are number-coded from 02402 to 02647), the references for 1966–1980 (pp. 31–172; number-coded from 02468 to 06660), the list of periodicals (pp. 174–177), the index of periodicals (pp. 177–196, listing the number-coded references for each periodical), a geographic index by administrative region and departments (pp. 198–220), a taxonomic index (pp. 222–351; giving the French and Latin names of species following the sequence of K. H. Voous in *Ibis* 1973 and 1977), a thematic index (pp. 354–362; 54 topics ranging from "alimentation" to "vol" and including subjects like "cannibalisme," "invasions," "pollution," "prédation," "protection," and "territorialité"), and a series of attractive maps (pp. 366–400; which are not an atlas of the French avifauna but illustrate the geographic distribution of references for 422 species). The book ends with three indexes (pp. 402–407): geographic, vernacular French names, and scientific (Latin) names.

In his preface to the "Bibliographie" the genial president of the Société d'Etudes Ornithologiques de France Camille Ferry wrote: "I learned in grade school that good workers have good tools. Given the tool Yves Muller has given us, if there remain bad workers in ornithology it will certainly be their own fault." Indeed. With Ronsil's earlier book and volumes 1 and 2 of Muller's bibliography ornithologists have an unsurpassed set of tools to guide them in their bibliographic research on the avifauna of France. In Muller's debt are French ornithologists, of course, and also all of us who are interested in Palearctic birds or who try to keep up with the flood of literature. At a broader level Muller's book will be indispensable to those who protect birds and their habitats in France and elsewhere in western Europe. I hope that Muller will consider

including, in volume 3 or in a fourth volume, bibliographic entries pertaining to the birds of former French colonies and of French overseas territories. While waiting for volume 3, I congratulate Yves Muller for a job well done and pay homage to the sponsors of his book, the Service du Patrimoine Naturel, the Institut d'Ecologie et de Gestion de la Biodiversité, the Muséum National d'Histoire Naturelle, the Société d'Etudes Ornithologiques de France, the Ministère de l'Environnement, the Office National des Forêts, and the Office National de la Chasse.—FRANÇOIS VUILLEUMIER.

THE BIRDS OF TOGO. By Robert A. Cheke and J. Frank Walsh. British Ornithologists' Union Check-list No. 14. 1996; ca 230 pp., hardback, 9 figs., gazetteer, 39 color photos of habitat and 14 of birds. £22.00 (UK), £24.00 (overseas) incl. postage. [Available from British Ornithologists' Union, c/o The Natural History Museum, Tring, Herts. HP23 6AP, UK.]—Togo is a little-known west African republic hardly bigger than New Hampshire and Vermont (combined), strategically located biogeographically. Along with equally obscure Benin, Togo occupies the narrow "Dahomey Gap" between Ghana and Nigeria, where a tongue of African Savanna reaches nearly to the Gulf of Guinea, effectively interrupting the continuity of lowland Guinea forest. Given apparent speciation events in birds and other life forms on either side of the Gap, better knowledge of life within the Gap seems requisite to understanding the evolutionary forces at work. The authors, both associated for a number of years with the World Health Organization in Togo, have combined their observations (and others') with a scholarly compilation of the avian literature and specimen record. The latter task was particularly difficult as a result of the complex colonial history of the region, especially use of the name "Togo." The result is the first comprehensive, credible baseline avifauna for any portion of the Gap, accrediting 624 spp. to the Republic. The annotated list is supplemented with much other useful information such as an outline of Togo's environment, color habitat photos, and banding recoveries (all of birds banded north of the Sahara) that one has come to expect of the fine BOU Check-list series. I recommend this well-done book to all

students and libraries with an interest in the region's birdlife and zoogeography.—P. WILIAM SMITH.

AN ANNOTATED CHECKLIST OF THE BIRDS OF THE ORIENTAL REGION. By Tim Inskipp, Nigel Lindsey, and William Duckworth. Oriental Bird Club, The Lodge, Sandy, Bedfordshire, U.K. 1996: 294 pp., including a map delineating the Indomalayan region. £9.95 (paper).—Certainly no young ornithological club ever integrated a progressive and open professionalism with the best sort of amateurism as has the Oriental Bird Club. This club is perhaps best known for its annual scientific bird journal, the *Forktail*, which, like the checklist under review, is beautifully and professionally produced. The most remarkable thing about all of this is that these products are almost exclusively produced by bird-lovers in their spare time, not for pay. They have set a high standard indeed.

This annotated checklist is testament to how far this organization has come in little more than a decade. For here is a handsome, inexpensive, data-rich but compact nomenclatural and taxonomic compilation of the avifauna of some 2500 species that inhabits the region from Pakistan north to the Himalayas, eastward to southern China, Taiwan, the Philippines, the Greater and Lesser Sundas, and Wallacea. I suspect this is but the first of an array of excellent publications that the Club will issue on the birdlife of this biotically and culturally complex segment of the earth.

The work begins with an explanation of its aims, the geographic coverage, methods of taxonomic treatment, a discussion of species concepts, and construction of the English names. These are fundamental to understanding how the list was put together, and the authors should be praised for their transparency. Perhaps best of all is that most or all of the usages and treatments in the list are based on published taxonomic and systematic opinion—the reader can thus trace back to the source of anything that seems problematic—a most useful ability for an avifauna as little-studied and problematic as this one.

The introductory discussions are comprehensive, well-argued, and well-annotated. The authors accept the use of the biological species concept, although they fairly review

the various arguments in favor of the competing phylogenetic species concept. For higher level organization, the list generally follows the treatment of Sibley and Monroe, and again here the authors provide useful clarifying discussion of why they chose this over other, more traditional, options. Their rules for English nomenclature are explained in detail. A series of codes for important references, conservation and distributional status, and species-limits is presented in tabular form in the introduction and used extensively in the checklist. These codes perhaps constitute the greatest challenge to the reader—there are too many to quickly memorize, and the coding is not explicit enough for mnemonic purposes.

Now to the checklist. It is nicely laid-out in a double-column format, the accepted English and scientific names to the left, and the explanatory material to the right. This latter includes recent synonyms, other treatments, and comments on species limits. Because of the huge number of poorly-studied forms, this annotation is critical to the utility of the checklist, and the authors greatly increased the reference value of the work by compiling these data for the benefit of the reader. The best thing about the treatment is its transparency—wherever practical, competing views are noted, so that the reader gains access to the diversity of opinion in a ready fashion in this single list. One can quickly pin-point the troublesome groups—they are the ones with the profuse annotation.

Perhaps some will be disappointed that there is no distributional data included in the list. That was clearly beyond the scope of this project, whose goal was to construct a practical baseline nomenclature for use by ornithologists, conservationists, natural resource managers, and birders in the Indomalayan region. This they have done with great skill. One suspects that a next permutation will be a distributional checklist—which perhaps will require more than one volume. The checklist is not perfect, and naturally the authors made some decisions I disagree with—but that's to be expected in such a large analysis.

The bibliography includes 814 references. There are well-designed comprehensive indexes of English and scientific names. This is a must-buy for any ornithologist with an interest in South and Southeast Asia or for those interested in the systematics and nomenclature of birds of the world. The quality is superb, and price is right.—BRUCE M. BEEHLER.