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ORNITHOLOGICAL LITERATURE

LIFE HISTORIES OF NORTH AMERICAN WOODPECKERS. By A. C. Bent, illus. by William Zimmerman. Indiana Univ. Press, Bloomington and Indianapolis, Indiana, 1992: xiv + 262 pp., 25 color plates. $29.95.—Arthur Cleveland Bent (1866–1954) needs no introduction to those of us in the lower regions of the life table, but younger ornithologists may not be aware of his name or of the major contribution made by him in his 26-volume series "Life Histories of North American Birds" (1919–1968). Bent began this series at the request of the Smithsonian Institution. It was thought that he would continue the work began by Charles Bendire, but Bent started the survey anew, and his volumes include all of the birds known to have occurred (at least with any regularity) in North America in his time.

The present volume is a re-issue of Bent's volume on woodpeckers (U.S. National Museum Bulletin 174) first printed in 1939. The text remains unchanged, but modern common and scientific names have been added as have been small distribution maps. However, the real attraction in this book are the color plates by Zimmerman. These illustrations are attractive, lifelike, and accurate. I was impressed by the detail of the vegetation in each plate. The color frontispiece in this issue of *The Wilson Bulletin* represents one beautiful example, but all of Zimmerman's plates are of this quality.

Zimmerman says in the foreward "It is my hope . . . that new colored plates will make it possible for a whole new audience to discover this material and develop an appreciation for the writings of Arthur Cleveland Bent." I can only add my support to that thought and to encourage Zimmerman and Indiana University Press to re-issue more volumes of Bent's work in a similar format.—C. R. BLEM.

SPERM COMPETITION IN BIRDS: EVOLUTIONARY CAUSES AND CONSEQUENCES. By T. R. Birkhead and A. P. Moller, illus. by D. Quinn. Academic Press, San Diego, California, 1992: 282 pp. $39.95 (paperbound).—Female birds multiply mate and, as a result, sperm competition occurs. Multiple mating and sperm competition have a cascade of effects on the morphology and behavior of females and males, and these consequences are the stuff of the book, "Sperm Competition." This book is a benchmark that signals for me that the old order has passed away at last and that avian behavioral ecology has entered a new age. Much of this advance has been stimulated by the ideas of the 1960s and the data of the 1980s that showed that genetic paternity (and maternity, for that matter) could not be assumed on the basis of social associations. The twenty years since Trivers (1972) have produced remarkable changes in what we know about social behavior, and "Sperm Competition" reviews some of those data. It is a very exciting book for me because it demonstrates how significantly our field has changed and where our field is going. And furthermore, despite the title of this book, it only casually takes up the next exciting question, namely, why do females multiply mate, i.e., the evolutionary causes of sperm competition? So, for me "Sperm Competition" heralds the generally optimistic feelings I have about all we have to do in avian behavioral ecology for the 1990s.

Despite my general enthusiasm for "Sperm Competition," its publication, which seems just in time, also seems premature to me. By this I mean that some of the chapters contain original syntheses of remarkably recent, and sometimes scanty (and therefore prematurely interpreted) data and others reflect "same ole, same ole" interpretations of often repeated data. And yet, the book is full of ideas that still will benefit from additional tests and therefore is just in time to stimulate these tests. I enjoyed reading "Sperm Competition" immensely;

my copy is liberally pockmarked with my marginalia. Many of the data that Birkhead and Moller review are ones that I am very familiar with and I don't necessarily share their confidence in their interpretations of these data, so the book challenged me to think—that is something I enjoy, so I give this book an "A" and consider it required reading for all avian behavioral ecologists. I think it should be the book of choice for graduate seminars in avian behavioral ecology for the next year or so, and I think it will stimulate critical and original responses from its readers. From that perspective alone, it is worthwhile reading and even though the cover price of the softbound edition is stiff, it's still a deal.

There are 13 chapters in "Sperm Competition." The very best of these is Chapter 3, "Male and Female Reproductive Systems and the Fertile Period." The information in this chapter is novel; there are no other reviews of this literature that I am aware of and the information here is fascinating. Much of the primary literature in this area is a result of research by Birkhead, so it is no surprise that it is reviewed so well here. A brief ten years ago, the vast majority of what we know about sperm storage capacities in birds was unknown. Since then, avian researchers have documented the existence of histological structures that act as sperm storage organs in several species of birds. In fact, Birkhead and Moller say "sperm storage tubules are known to occur in a number of species and may prove to be ubiquitous among birds" (p. 52); their table on tubule length (p. 56) lists 11 species from five families, and their table on sperm storage duration (p. 63) lists 17 species from six families. This chapter also takes up such compelling questions as why intromittent organs are so rare in birds. The answer relies heavily on the work of J. Briskie and R. Montgomerie (unpublished MS), who concluded that the absence of intromittent organs is a result of female choice and suggests that in birds females have control over success of forced copulations. Chapter 4, "Sperm Precedence and Mechanisms of Sperm Competition" indicates that last male sperm precedence is the rule for the birds tested so far. Chapters 5 and 6 are about copulation behavior, within pairs and between non-paired individuals. Chapters 7, 8, and 9 discuss paternity guards; Chapters 10 and 11 are about the costs and benefits of extra-pair copulation for males and females. Chapter 12 is about some of the ways to detect extra-pair paternity, and Chapter 13 is about the evolutionary consequences of sperm competition in birds. I could write pages of remarks about each of these pithy, exciting, and stimulating chapters.

I was disappointed that the literature of the last twenty years, which is amazingly rich, was spottily reviewed; both of the authors are incredibly productive and their work has been exciting. Probably every worker in this area will be offended at the authors' oversights. I will caution my students and other readers that this book shouldn't be considered a review of the literature. Rather it is a review of the work of Birkhead and Moller. In some cases they do present novel syntheses that they haven't already published elsewhere, and it is interesting to see the strands of their work pulled together in one place. But, it remains that the most tiresome aspect of this book is the overly frequent use of self-citation.

My other criticisms pivot on the differences in interpretation and orientation that I think less male-biased scientists will typically bring to issues in sperm competition. I think these differences—between those whose focus includes more fully developed female perspectives as well as male perspectives—will provide the debates of the 1990s. And, inasmuch as I can claim male bias as a legitimate criticism—in real time, so to speak (rather than reflecting back to say the androcentric bias of Victorian biologists), avian behavioral ecology has come a very long way. In a recent letter, Anders Moller wrote me that he and Tim Birkhead had tried to avoid androcentric bias in their interpretations and that they had tried to accommodate the perspective of females on questions in sperm competition. I believe them; I think their failures here are not from lack of trying. On this score they have succeeded far better than many who have attempted recent syntheses about the adaptive causes and

consequences of mating behavior in birds. As far as they succeeded, they did so by constant reference to multiple hypotheses, which is an excellent and laudable hallmark of "Sperm Competition" in that most chapters include reference to multiple explanations. I was impressed with their commitment to strong inference, but nevertheless frustrated by their failures to get the female perspective quite fully enough. There are many examples I could mention, I will discuss only a few. For example, they raise that very old, tired, and misleading notion that female resistance to extra-pair copulation attempts "may either be genuine resistance or a ploy to test male quality" and they then uncharacteristically shrink from a serious examination of this idea by claiming that these two explanations for resistance to copulations are difficult to distinguish, something that is hardly so. These researchers and others muddled by this apparent difficulty might start with the assumption that "no" means "no" in nonhuman animals too. Operational criteria for recognizing behavioral ploys are easily and reliably defined, so easily that it makes me wonder why some persons have so much trouble with these ideas! They do, however, make a point that I consider right or almost right. Sperm competition is a behavioral alternative to mate guarding, something that should be evolutionarily significant for females in that rather than having their behavior coerced by competing males, males are less attentive to coercing female behavior and compete among themselves through sperm competition. That is, while Birkhead and Moller get the alternatives, they overlook the significance of sperm competition for females in terms of the effects of male behavioral alternatives *on females*. So, in a way that I found frustrating, sperm competition in the Birkhead and Moller formulations remains a matter among males and males only. Yet, paradoxically, they also must be recognized as the first authors to claim that mate-guarding is a behavioral alternative to unadulterated sperm competition. Another place where what I would call androcentric bias was noticeable is in their rush to label behaviors in functional terms without adequate testing of the implied functional hypothesis. This happens—not just in this book but in our science—far too frequently for my taste. An example is their claim that pair copulations that occur immediately after an extra-pair copulation are "retaliatory." The retaliatory label obscures many interesting questions about these pair copulations that follow extra-pair copulations. For instance, if sperm competition is advantageous for females as a way to decrease a less advantageous alternative, such as coercive manipulation by males of her behavior, females may solicit and, though we cannot evaluate it, even enjoy these pair copulations after extra-pair copulations. Birkhead and Moller do note that female solicitation of even pair copulations may be behaviorally subtle and difficult for human observers to notice; how much more difficult to observe if the notion that females might be soliciting these copulations is obscured by naming them "retaliatory"!

I think that the task for avian behavioral ecology in the 1990s is the elimination of the vestiges of male bias and the fleshing out of female perspectives in our hypothesis formation, testing, and interpretation of results. I recommend that you read "Sperm Competition," and I hope you do in mixed gender groups with these goals in mind.—PATRICIA ADAIR GOWATY.

THE BLACK-CAPPED CHICKADEE: BEHAVIORAL ECOLOGY AND NATURAL HISTORY. By Susan M. Smith. Comstock Publishing of Cornell University Press, Ithaca and London, 1991: xi + 362 pp., numerous figs. and tables. $17.95 (paperback), $46.50 (cloth).—*Parus atricapillus* is one of North America's most familiar, beloved, and widely distributed birds. It is a permanent resident ranging from Alaska and northern Canada south through most of the 48 conterminous states, being replaced in the southeast by the similar Carolina Chickadee (*P. carolinensis*). It is also one of our better-studied species, so that Susan Smith's book should be of wide interest to ornithologists and the general populace alike. Lest there be

confusion, an earlier (and fine) monograph on the Carolina Chickadee was written by Susan T. Smith, who appears to have published nothing else about chickadees. The present author, Susan M. Smith, has for many years contributed prolifically to the technical literature on chickadees. (The bibliography of this book lists references by no fewer than ten different Smiths who are sole or senior authors, and I would have preferred text citations consistently including their initials instead of just usually doing so.)

Everything you wanted to know about the Black-capped Chickadee but were afraid to ask is here somewhere, for Susan M. has covered the enormous literature very competently. There are the expected chapters on feeding, breeding (two chapters), and the non-breeding season, with separate chapters on communication, winter survival, and population dynamics. Following the opening chapter on general natural history, there is a most useful chapter on study techniques: banding, ageing (spelled "aging"), sexing, and even Grubb's interesting use of feather bars to judge nutritional history (ptilochronology). The book is written in a simple, direct style that I admire and is decorated with many of the author's own sketches of various species of tits. As evidenced by the frequency of citation, the success of this book owes an enormous debt to two forerunners in particular: Eugene Odum's (1941–1943) classic series of papers on the Black-capped Chickadee and Christopher Perrins' (1979) book "British Tits." Where something is not known or understood fully in the Black-capped Chickadee, Smith has attempted to fill the gap with information from congeners; where the data on *P. atricapillus* do exist, she tries to tell us whether other tits are the same or different.

Fearing that senility is overtaking this usually crusty reviewer, I have searched hard for things I did not like about this book and ended up mainly picking nits. First, there are scientific notes. I am not convinced that all male Black-capped Chickadees help the female to excavate the nest hole (p. 6). Ficken (1981) did not really say that the "fee-bee" vocalization repels rivals (pp. 10, 61); she, in fact, cited Dixon, who was of the opinion that fee-bees summon neighbors to the territorial boundary, where different vocalizations are actually used in any ensuing dispute. Chickadees probably can indeed copulate any time of day (p. 105), but do so most consistently at dawn when the female leaves her night's roost. I am not convinced that females always or even usually lay before emerging from the night's roost (p. 117). Nilsson's argument for why females disperse farther than males (p. 138) is markedly weak, as the same phenomenon occurs in most birds, including many species in which his reasoning could not apply. And so on. There are typos, of course—"Grill" for Gill (p. 13), a missing parenthesis in "Odum 1941b)" (p. 130)—but these are remarkably few. In the area of grammar, there seems to be a difficulty matching the number of subject and verb, as in "animals is" (p. 33), "food . . . are" (p. 47), and "studies . . . has" (p. 119). The text uses both "juvenile" and "juvenal" as the adjective, and I occasionally stumbled on a choice of words: e.g., terming the correlation of hatching date and food abundance "spurious" (p. 102), where "indirect" or "inconsequential" might be more accurate, as correlation per se never implies causality. And, I understand the author's pride in her photography, but the contrast between many of her offerings with the marvelous photos by the likes of Arthur Allen, David Allen, and Alan Cruickshank is striking; the out-of-focus chickadee opening a seed (p. 47) is an extreme case in point. But these are all trivial complaints. To a devoted chickadee watcher this book rings true, right down to the odd-ball exceptions such as Smith's male that sang "fee-dee" ("dee" of the chick-a-dee call) instead of "fee-bee"—we have had such a male on our study tract for the last two years.

Is it simply that a chickadee is a passerine is a bird, or are there also larger issues to be extracted from this monographic treatment? Susan Smith pounds on the theme of dominance as the organizing principle of chickadee life. Sometimes the concept itself seems slippery, as when the male's passing food for the nestlings to the female is supposed to show his dominance (p. 104). In a series of papers, well integrated with additional material in this

book, Smith has argued that dominance relations explain all sorts of things, from composition of the winter flock and mortality schedules to mate choice and divorce. Her views have not gone unchallenged in the literature, so one might expect to see here in the summing up an undue amount of overstatement and special pleading. In fact, Smith is extremely even-handed, fairly and completely crediting all views, and repeatedly making the important point that differences in local habitat, in geographic location, and even among closely related species may be responsible for apparent conflicts of data. Indeed, one of the things I truly admire in this book is unabashed praise for the work of others, as in terming the work of Janine Clemmons a "superb field study" (p. 78).

One of the positive effects of any good review is to point up, both implicitly and explicitly, where our knowledge is lacking and our understanding shallow. A good example of implication is the chapter on communication (pp. 55–89). The Black-capped chickadee has more than a dozen vocalizations, including the exceedingly complicated chick-a-dee call and gargle complexes, yet there are only a few we understand with any certainty. For example, the incessant "broken dee" of the female cannot be simply a "demand" to be fed by the mate, or (more vaguely) a signal that "cements the pair bond" (p. 74). (I have my own views, which I will save for a technical paper.) And almost nothing very definite is understood about the very rapid display postures in this species. I take all this as good news, for if communication were truly understood in the Black-capped Chickadee, I would have to find some other research topic to keep me off the streets and out of trouble.

In an unusual final chapter, Smith makes explicit some of the things she believes are unsolved problems in the Black-capped Chickadee, in some cases offering her own hypotheses. As this discussion makes for such good fun at the end, I will not spoil it here by announcing (so to speak) that the butler did it, but will mention one issue. No one knows how one chickadee tells the sex of another, and Smith suggests (pp. 319–320) that there might be differences in plumage in the ultraviolet. Actually, Robert Bleiweiss, working in my laboratory, explicitly tested this hypothesis a couple of years ago. Not only could he find no hidden "ultraviolet patterns, analogous to the ultraviolet guidelines in flowers" as suggested by Smith, but could not even find differences in the degree of UV reflectivity in visible patterns.

There can be no argument with the author's parting words: "Research on chickadee biology is virtually endless, and is to a large extent limited only by a researcher's imagination" (in asking good questions, of course, not in creating data). I hope this book will help to restore an increasing imbalance in research species fired by the enthusiasm for biological travel and resulting in a lot of dubious general proposals based on inadequate data from furtive esoteric birds. There are theoretically important issues to study in our own back yards, where results can be replicated independently by others, and the Black-capped Chickadee provides a prime example. Thank you, Susan M. Smith, for giving us a scientifically sound, eminently readable treatise.—JACK P. HAILMAN.

THE BIRDS OF SOUTH DAKOTA. 2nd edition. By The South Dakota Ornithologists' Union. Northern State Univ. Press, Aberdeen, South Dakota, 1991: xxxiii + 411 pp., 31 halftones, 487 maps, $29.95.—This latest book on South Dakota birds is an annotated check-list covering all of the birds of the state. It is written in an abbreviated style with only the pertinent data listed. Each account begins with the status of the species, followed by subheadings (as needed) giving habitat description, spring migration, nesting, fall migration, and winter status. Hypothetical species are listed in the main text and enclosed in brackets. The earliest and latest migration and nest dates are given. The Missouri River is used as the boundary between eastern and western birds. The maps were rather crudely made by

map generating software and are just an outline of the state with major river systems drawn in along with the Black Hills and Coteau des Prairies. Five symbols are used on the maps to denote different types of records. Some maps contain no symbols, with only shading showing where the species occurs in the state. Those species, for which banding recoveries were made outside of South Dakota, have maps showing the banding area and where recovered. The book is illustrated throughout with delightful black-and-white drawings by E. W. Steffens.

The book is fairly easy to use but some things are frustrating. Abbreviations are used in the text (such as NM or SD) but are not listed in the common abbreviations at the beginning. The use of counties in one line but using a city in the next makes the reader go to an atlas of South Dakota to find the locality. In one case the locality was listed with no county and on the next page it was listed again but this time with the county. If you use this book much, don't expect the binding to last long.

If you are going to work with birds in South Dakota, this book is a must.—MAX C. THOMPSON.

COLORADO BIRDS. By Robert Andrews and Robert Righter, illustrated by Don Radovich. Denver Museum of Natural History, Denver, Colorado, 1992: xxxviii + 442 pp., maps for each species, $24.95.—This is a soft-bound catalogue of the current status and distribution of the birds of Colorado. The abundance and habitat are given for each species and specimen records are documented for less common birds. Maps are provided that indicate relative abundance and distribution for all species by region and in breeding, winter, and migration seasons. Graphs indicate abundance of each species by elevation. Additional notes are provided regarding species of special concern or those species showing rapid changes in status. This is a useful book for persons looking for birds in Colorado, and it is much more than an annotated list. For example, the authors give specific attention to all subspecies that are known to occur in the state, and the literature review is extensive. The latter will be helpful to birders wishing to learn more about the ecology and identification of individual species. On the other hand, it is not a substitute for a comprehensive book on Colorado birds, as it does not address nesting data, breeding records, or details of natural history.

The book is attractive, cleanly produced, and relatively free of typographical errors. For some reason large blank areas are sometimes left at the bottom of species accounts. In other instances the next account fills these voids. More efficient spacing by the printer could have saved a few pages, but this is a minor point.—C. R. BLEM.

BIRDS OF THE STRAIT OF GIBRALTAR. By Clive Finlayson. T. & A. D. Poyser Ltd., London, United Kingdom, 1992: xxvi + 534 pp., 34 black-and-white photographs, 282 figures, 40 tables, and 23 line drawings by Ian Willis, $52.50.—Only 14 km wide at its narrowest, the Strait of Gibraltar is the shortest crossing of the Mediterranean Sea for birds migrating between Europe and Africa. Consequently, many land and other birds annually migrate through the region, defined in this book as encompassing the adjacent Iberian and Moroccan mainlands. In addition, many birds use the strait as a passageway between the Mediterranean and the Atlantic Ocean. Also, the region's varied and extensive natural habitats, generally favorable climate, and strategic location attract many breeding (or resident) and wintering birds. Consequently, the avifauna of this area is one of Europe's richest, with 400 species so far recorded—of which 184 are known or suspected of breeding.

In treating this avifauna, the author's aim is first to describe the strait region as an

environment for birds, then to detail avian usage there, and finally to place these findings into a broad and dynamic framework that includes time, space, and change. As the basis for this perspective, the author provides a wealth of information on the strait's habitats, birdlife, and related subjects. Not surprisingly, bird migration is a major focus of the book, including 300 pages (53.6% of the total) devoted to 358 such species. Migrants are grouped into four categories, i.e., soaring birds (two storks and 32 species of falconiforms), other land birds (21 non-passerines and 129 passerines), waterbirds (125 migrant and wintering species), and seabirds (49 species). Of these, 124 species are treated in detail that includes information on breeding-ground origins, winter destinations, and timing of passage. Breeding and wintering species are also treated in detail in the book, although their treatments tend to be more abbreviated and generalized than those of migrants.

As might be expected with its scope of coverage, not all aspects of this book are done equally well. One notable deficiency is in describing the region's vegetative communities, which range from coastal wetlands to montane woodlands of oak (*Quercus*), pine (*Pinus*), and fir (*Abies*). As a rule, these descriptions are not sufficiently detailed to convey much more than a general impression of the communities, even in terms of their dominant plants and vegetative structure. Consequently, I could not readily distinguish the "garigue" type of shrubland (matorral) from "maquis" or among the various types of oak and pine woodlands. Helpful in this regard would have been more complete listings of plants (with both vernacular and scientific names), plus more extensive vegetation maps and a consistent definition of terms (e.g., what is "pinsapo"?). For the book as a whole, a good, large-scale map of Europe and Africa (with referenced localities) would also have been a useful addition—especially as compared to the generally diagrammatic ones now included.

In terms of European-African bird migration in general, I believe the author could have provided a more coherent overview of current thinking on the subject—which might have helped readers make more sense out of the mass of details presented. In particular, such an overview might have provided a useful backdrop for the book's discussions of such complicated issues as the Mediterranean and Sahara as obstacles to migration and whether passage across them is on a broad or narrow front. As for migration in the strait region itself, the author might have emphasized that his documentation for this remains limited (e.g., in terms of years and/or areas of coverage)—even for many of the species that he treats in detail. This might have helped explain the book's general lack of statistical analyses, although non-parametric approaches would certainly have been appropriate in some cases (e.g., some of the soaring birds).

I detected few typographical errors in this book, although I did notice such misspellings as mattoral, *Simlax,* and *Phaeton.* Overall, I find the writing to be wordy in places, which could have been helped by tighter editing. In addition, a pet peeve of mine concerns the use of accents on Spanish words, which is approached as inconsistently in this book as it is in many other English-language publications. My view is that if these accents are going to be used, sufficient editorial resources should be invested to attain consistency—which is clearly not true in this book as regards such words as Cádiz, Córdova, Guadalmesí, Jérez, López, Martínez, Ojén, and Ornitológico (such editing would also have caught the inconsistent use of "pinar" versus "piñar"). If accents (and tildes) are not going to be used consistently, then anglicize everything and use none at all. Finally, in my copy of the book, the last page is glued to the back cover—thus eliminating this portion of the index.

In summary, although this book has certain flaws, these are clearly offset by the obvious strengths—which center on the presentation of a mass of information on the avifauna of the Strait of Gibraltar region in a broad and dynamic framework. As a consequence, the author has produced what should become an essential reference not only for the strait region, but on the subject of European-African bird migration as well.—JOHN P. HUBBARD.

MASTERPIECES OF BIRD ART: 700 YEARS OF ORNITHOLOGICAL ILLUSTRATION. By Roger F. Pasquier and John Farrand, Jr. Abbeville Press, New York, New York, 1991: 261 pp., many color, halftone, and black-and-white illustrations, $85.

THE ART OF BIRD ILLUSTRATION: A VISUAL TRIBUTE TO THE LIVES AND ACHIEVEMENTS OF THE CLASSIC BIRD ILLUSTRATORS. By Maureen Lambourne. Collins, London, 1991: 192 pp., many illustrations, mostly color, $19.95.—The expression "coffee table book" is commonly used with a somewhat pejorative import, as indicating a large, lavishly illustrated tome of little scholarly worth, published just in time for Christmas. Both of the books covered here (abbreviated MBA and ABI hereafter), especially MBA, are certainly heavy enough to preclude reading them in bed—MBA weighs 5¾ lb (2.6 kg) and ABI 3¼ lb (ca 1.5 kg), and lavishly illustrated they are. The texts of both, however, are eminently scholarly, yet remain pleasantly readable. The backgrounds of the authors differ. Pasquier and Farrand, although having a strong interest in the history of their field, are ornithologists with numerous bird books to their credit. Lambourne, although the great-great-granddaughter of the prolific ornithologist, bird painter, and entrepreneur John Gould, has an education primarily in the field of fine art. This difference in background shows clearly in the annotations to the illustrations in the two books. Both identify the bird portrayed, with English and scientific names, and give the artist, the work, and the date. Lambourne sometimes includes a short sentence about the illustrated species, whereas Pasquier and Farrand occasionally comment on the artist's rendition, but usually take up most of a sometimes lengthy paragraph in a discussion of the habits, range, etc., of the pictured bird. I found this choice of subject matter in the captions a bit annoying, as MBA is not supposed to be a book about birds but about bird art. We can read about the birds elsewhere—it is a commentary on the artist's portrayal of the bird that would be most appropriate.

Lambourne wrote her own introductory material, whereas MBA has the apparently mandatory Foreword by Roger Tory Peterson (who also has six paintings reproduced in color, two more than allotted to Louis Agassiz Fuertes). Peterson's Foreword includes a statement that I believe to be so ambiguous as to be meaningless—"What we call 'art' depends on how well a bird is painted." The art museums of the world are filled with masterpieces in which birds, often anatomically inaccurate, form an integral part of the composition. Peterson also states in what, in context, I take to be a somewhat pejorative vein, "Some artists may use photographs as study material." There are all too many artists who are too snobbish or otherwise unwilling to avail themselves of photographic resources in order to verify the accuracy of anatomy, proportions, and poses, and the birds in their paintings, not surprisingly, reflect this.

Although in this review MBA will be discussed as if it were truly a joint effort, the Preface indicates that Farrand wrote the Introduction and Chapter 1 and Pasquier wrote Chapters 2, 3, and 4. Oddly, neither in the table of contents nor on their first pages are the chapters numbered!

Both books were printed in Hong Kong; the luxurious heavy red binding of MBA was also manufactured in Hong Kong, but no specific statement about binding appears in ABI (it is said to have been "designed and produced" in London and "manufactured" and "printed" in Hong Kong). The heavy paper of MBA is pure white, that of ABI a light cream color. This difference may in part be responsible for the generally superior color reproduction of MBA. There is (as might be expected) duplication in the selection of paintings. In some instances the differences in color reproduction are minor, as in Thorburn's magnificent Temminck's Tragopan (*Tragopan temminckii*), given near full-page treatment on p. 184 of MBA and about 40% of page area on p. 177 of ABI. On the other hand, the well-known tomb fresco of geese at Medum, Egypt, is reproduced entire, at a mere 21 × 3 cm on p. 17 of MBA; in ABI only three of the six geese are reproduced, but in mirror image and stretching

across pp. 12–13 at about 41 × 12 cm (thus showing details better), and in colors considerably different from those in the MBA reproduction.

Most of the colored illustrations in ABI have narrow contrasting margins. Some are simple pink edgings, whereas others have the top and sides gray and the bottom white (contrasting with the cream-colored paper), with the corners marked in such a way as to give the appearance of a bevel-edged mat.

There are inevitably misidentifications in books of this kind. In MBA, the tiny owl on p. 29 appears to be a Barn Owl (*Tyto alba*) rather than a Little Owl (*Athene noctua*). The lower right-hand figure on p. 86, which the authors call an "elegantly painted" Dotterel (*Charadrius morinellus*), although criticizing the artist (Jacques Barraband) for not giving it yellow legs, is nothing like a Dotterel, but is in fact a quite identifiable portrayal of an Egyptian "Plover" or Crocodile-Bird (*Pluvianus aegyptius*), a member of the family Glareolidae. The raptor on p. 174 is identified as a White Hawk (*Leucopternis albicollis*), but is actually the admittedly closely related Mantled Hawk (*L. polionota*); the plate is from Sclater and Salvin's "Exotic Ornithology" (1869), and had the authors read the accompanying text they would have seen that the pictured bird came from eastern Brazil (São Paulo, Rio de Janeiro), where *L. albicollis* does not occur. On p. 128, the Edward Lear painting is certainly not a Great Gray Owl (*Strix nebulosa*) as labeled; it most nearly resembles a badly painted Barred Owl (*S. varia*). I consulted Volume 1 of Gould's "The Birds of Europe," and learned that Gould himself was confused. He had a correct plate and text for the Great Gray Owl, and also a correctly labeled plate of the Barred Owl, the source of the reproduction in MBA. Gould's text for the Barred Owl indicates that he misunderstood the distributions of the two species of *Strix*; he attributed to the Barred Owl a Holarctic range, of which the European portion is actually that of the Great Gray Owl; most of his text on the Barred Owl was quoted from Audubon.

Mr. Pasquier informs me that in a second printing of MBA, all of these misidentifications (and some other errors) will be corrected. Future purchasers of the book should check to see which printing they are getting.

Misidentifications I noted in ABI were (1) the bird in the Byzantine mosaic on p. 19, alleged to be an immature peacock, which I believe to be a member of the genus *Gallus*, as it is clearly shown to have a reddish comb on the crown and reddish wattles on the throat; (2) the galliform bird on p. 29, identified as a "partridge" (without scientific name), which is much more likely a Eurasian Quail (*Coturnix coturnix*). The "duck" in the same drawing is unquestionably a male Common Teal (*Anas crecca*). Lambourne lists the birds in a painting of "poultry" by Melchior de Hondecoeter (Dutch, 1635–1695) on pp. 50–51 of ABI as "peacock, cock, hen and chicks, chaffinch, and goldfinch." Although the composition suggests that Lambourne reproduced the entire painting, I found no chicks and no goldfinch. She overlooked an obvious waxwing (her "goldfinch"?) and failed to mention ten waterfowl at various distances from the viewer; that in the foreground is apparently a Eurasian Wigeon (*Anas penelope*).

On p. 14 Lambourne writes "A [Roman] mosaic preserved in Cologne shows two green parrots harnessed to a small cart loaded with agricultural implements"; if this is the same Roman mosaic I saw in Cologne, the cart was not "loaded with agricultural implements" but with *condiments*—the birds were trained to walk around the banquet table to permit the guests to choose the flavorings for their food.

The coverage of ABI essentially ends with the late 19th Century. In a short closing chapter, Lambourne selects Charles Frederick Tunnicliffe (British, 1901–1979) to "stand for many" 20th Century artists. It is all the more ironic, therefore, that Tunnicliffe is not even mentioned by Pasquier and Farrand, an unaccountable omission.

The authors of MBA tend to be diplomatic to the point of outright generosity. In identifying the birds on medieval manuscripts and early woodcuts, for example, they never say how

grotesquely *badly* some of these were portrayed, but give the artists ample credit for their accomplishments: "It is remarkable that these medieval painters, whose names we will never know, achieved such a lifelike quality." This contrasts sharply with the petulant attitude of Brunsdon Yapp in his "Birds in Medieval Manuscripts" (Schocken Books, New York, 1982), a book that was not reviewed in *The Wilson Bulletin*. Writing of the wing of a bird, identified by Yapp as a Greenfinch (*Carduelis chloris*), in a 14th Century Psalter, he stated: "There is one primary feather too many (a very common type of mistake, still often made by artists and even by zoologists) . . ." Of a bird in a missal dated ca 1350, Yapp wrote: "The great tit at the top is reasonably correct in colouring, but the feet are unnatural and the upward bent tail is impossible." Many of Yapp's identifications involve massive stretches of the imagination, and when he is wrong, he is *very* wrong, as in his commentary on his Plate 44 about birds on a page from the early 15th Century "Hours of Etienne Chevalier." Yapp identifies one figure as "a rather poor peacock, with no crest and a tail that is difficult to see and hardly connected to the body." The "poor peacock" is in fact an excellent and easily identifiable portrayal of a Great Bustard (*Otis tarda*)! Lambourne's discussion of birds in medieval art is straightforward, often mentioning the religious associations of certain species; she does, however, accept Yapp's identifications uncritically. Pasquier and Farrand include Yapp's book in their list of "Selected References"; the list is not annotated, so let this be a warning to the reader not to take Yapp's conclusions at face value.

The choice of artists, particularly those of the 20th Century, to include in MBA must have been difficult. In their Preface, the authors state that they selected "what we consider the best and most important contributions to ornithological illustration." The inclusion of a brief account of, and reproduction of an atypically good painting by, Allan Brooks was undoubtedly mandated by Brooks's dominance of the North American field after the death of Fuertes rather than by the accuracy of his portrayals. Mengel (Living Bird 18:57, 1980) said of Brooks that he showed early promise but "foundered in trite, syrupy puerility under the burdens of excessive illustrations." Brooks insisted on trying to paint birds facing the observer, and never succeeded in this most difficult of poses; one critic, whose identity I have forgotten, said that all of these head-on birds of Brooks's looked like tiny owls. An American bird artist whose work was widely seen in the 1920s and 1930s and who might have been mentioned if only because of his productivity was R[obert] Bruce Horsfall, who illustrated several books and dominated the pages of *Nature Magazine*; he also painted some museum diorama backgrounds (as did Jaques and Sutton). In 1928 the American Nature Association published a collection of Horsfall's small paintings from *Nature Magazine* under the title "Bird and Animal Paintings." They are highly variable in quality; he seemed to have been more comfortable with shorebirds and raptors than with small passerines. I once read that Horsfall admitted that he had painted every North American wood warbler at least four times, but he still couldn't identify them in the field!

I started to compile a list of the living and recently deceased bird illustrators who might well have been included in MBA, but realized that it would not only be impractical to list them in this review but even more so to add them to MBA. I will admit that if I had my druthers, I would prefer to have seen, say, the late Donald L. Malick included in place of Fenwick Lansdowne, but the authors were just as entitled to their subjective judgments as I am to mine. In general, I applaud both their choices and their analyses.

I found a handful of typographical errors in MBA (to be corrected in the next printing), and none in ABI. On p. 29 of MBA the captions for the center and right-hand figures are switched. The caption for a drawing of "various bills" by George Edwards on p. 65 of MBA states that the portrayed skimmer head "could have come from Africa or the New World," but clearly legible on Edwards's plate is the statement that the skimmer came from "Carolina."

Lambourne includes a brief but instructive appendix on Print Collecting, dated April 1990. Although comments on prices will soon be obsolete (if they are not so already), much of the other material in this chapter will be of interest to potential collectors.

Lambourne's "Select Bibliography" contains 37 titles, and the "Selected References" of Pasquier and Farrand 36 titles. Incredibly, only nine works are included in both lists. This is partly accounted for by Lambourne's omission of works dealing with any North American artist except Audubon, whereas MBA lists works by or about Abbot, Catesby, Wilson, Audubon, Grayson, Fuertes, Jaques, Brooks, and Sutton.

Much of the information, as well as reproductions of illustrations, in these two books can be found elsewhere, of course, especially in works dealing with single artists (such as those listed above) or particular periods (Hammond, "Twentieth-Century Wildlife Artists" 1986) or artistic media (Jackson, "Wood Engravings of Birds" 1978). Nevertheless, either book would make an excellent and well-informed introduction to the field of bird illustration; taking into account the differences between the two mentioned in this review, I recommend them highly.—KENNETH C. PARKES.

THE BIRDS OF THE PHILIPPINES: AN ANNOTATED CHECK-LIST. By Edward C. Dickinson, Robert S. Kennedy, and Kenneth C. Parkes. British Ornithologists' Union Check-list no. 12. 1991: 507 pp., 14 maps, 11 tables, 1 fig., 7 color plates, appendices. £39.—For those interested in Southeast Asian ornithology, the appearance of this volume is heartily welcome. The collaboration of these three noted authorities on Philippine ornithology has resulted in a reference unequalled by past works dealing with this complex and interesting region.

The principal section, the species accounts, is prefaced by introductory chapters on Philippine geography, climate, bird habitats, avian biogeography, geographic variation, breeding, migration, conservation, and a history of ornithological exploration, all of which draw on the individual author's knowledge of the various topics. By their very nature the introductory chapters are brief and present only an overview of these topics.

Parkes' chapter on geographic variation and speciation could have provided greater detail but is nonetheless the most up-to-date discussion of this interesting topic. The chapter on vegetation and bird habitats is accompanied by color plates which add little to the discussion, but likely add substantially to the cost, of what I had hoped to be a readily available reference. The chapter on geography is illustrated by several maps showing many historic collecting localities. Kennedy's chapter on bird conservation in the Philippines correctly attributes the demise or threat to most Philippine endemics to the loss of forested habitats. This is graphically illustrated by a plate showing the sparsity of forest cover in 1988. Dickinson's "An outline of the history of ornithological exploration in the Philippines" with its two appendices, a gazetteer of localities and a list of collectors, is immensely useful and makes this volume a necessity for workers in other disciplines concerned with terrestrial natural history collections from the Philippines.

The systematic list contains 556 species accounts. Typically each gives scientific and English common names, a comment on general distribution, number of races known from the Philippines (monotypic species are noted), and a statement on relative abundance and habitat preference. This is followed by a summary of almost everything known for the Philippine occurrence including original citation, a summary of past distribution records referenced to McGregor's 1909–1910 classic, "A Manual of Philippine Birds," subsequent records, breeding records and seasonality, and a nomenclatural comment and explanatory notes when required.

In general the taxa accounts are excellent. Often museum specimens are cited either to confirm records or present previously unpublished documentation of occurrence. As with

any such major undertaking some pertinent material in museum collections has been overlooked. Sight and banding records are often included in taxa distributions, and while these were critically appraised by the authors, they are still suspect. Perhaps of more concern, sight records given by McGregor are not differentiated from material he collected or examined and articles "in prep." are cited for some distribution records where museum specimens exist and should have been noted instead.

Although the authors explain their use of terms used to reference typical material in the species accounts, their use of the terms "type" and "syntype" are confusing. Often they select a single specimen as "syntype" instead of giving all material in the syntype series, giving the impression that one syntype has greater significance than the other(s).

"The Birds of the Philippines," while at times giving the impression that our knowledge of Philippine systematic ornithology is more well known than is really the case, will hopefully stimulate a new era of research. It provides an excellent reference point for both museum and field research to build on and I suspect that a large number of papers on the distribution, breeding, and systematics of Philippine birds, will result from its publication.

The authors should be congratulated on having successfully brought to publication an invaluable tool for the continuing study of the Philippine avifauna. It is truly a job well done and I do not hesitate to recommend its purchase to anyone interested in not only Philippine birds, but other aspects of Philippine biogeography and systematics.—CHARLES A. ROSS.

ECOLOGY AND CONSERVATION OF NEOTROPICAL MIGRANT LANDBIRDS. Edited by John M. Hagan, III and David W. Johnston. Smithsonian Institution Press, Washington, D.C. and London, England, 1992: xiii + 609 pp. $48.00 (cloth), $17.95 (paper).

THE ECOLOGY AND CONSERVATION OF PALAEARCTIC-AFRICAN MIGRANTS. Edited by Humphrey Q. P. Crick and Peter J. Jones. Blackwell Scientific Publishing, Oxford, England, 1992: 132 pp. (Ibis supplement). $11.00 (available from The Natural History Museum, Sub-Department of Ornithology, Tring, Herts, HP23 6AP).—Much attention has been given over the past decade to the decline of Neotropical migrants and the conservation measures necessary to counteract it. The two volumes considered here bring us up to date with recent research performed both in the Neotropics and in the Palearctic-African regions.

The first book contains 51 papers on various aspects of the decline in Neotropical migrants. Topics range from counts of migratory landbirds in northern forests to abundance and distribution of these same migrants at tropical sites. The editors have done a wonderful job of maintaining consistency both in size and style of all papers. The authors include many researchers most knowledgeable about our migrants and their presentations are mostly of high quality. The volume I have (paper) is much like a catalogue in quality and appears to be capable of holding together about as long as the papers will remain relevant. It is printed and bound in an attractive style. The papers are divided among sections on trends in populations, nonbreeding season, breeding season, and hemispheric perspectives. I believe ornithologists of all interests will find something to like in this volume. I did not read the book from cover to cover, but learned much by scanning the abstracts (also given in Spanish—an insightful addition, given the large number of Hispanic colleagues involved in the book and in continuing research), and from the papers I read in detail. I specifically call attention to John Terborgh's plenary address—the essay is well worth the attention of anyone involved in ecology in general, but is especially important for birders. I wish this paper was twice as long. Let me encourage the participants in this symposium not to wait another decade for the next such gathering. It is obvious from this book that conservation of Neotropical

migrants is at a crucial point. Survival of many avian species may just depend upon how rapidly we share information and organize to protect what is left.

The second publication, a supplement to *The Ibis,* is approximately the same size as an issue of that journal. It contains papers from a conference on migration between Europe/Asia and Africa (mostly trans-Saharan migrants) organized by the British Ornithologists' Union. Because of the smaller space available, this symposium includes a smaller range of topics, and the coverage accordingly is spotty. For example, I counted only about 11 pages devoted to conservation. My impression of the remaining papers is that, while they are presented clearly and concisely, the content is rather fine-grained and tends to represent reviews of recent research rather than new data sets. Nevertheless, the papers are well worth the attention of students of migration.—C. R. BLEM.

VOICES OF THE WOODCREEPERS (NEOTROPICAL FAMILY DENDROCOLAPTIDAE). By J. W. Hardy, Theodore A. Parker, and Ben B. Coffey, Jr. ARA Records, P.O. Box 12347, Gainesville, Florida 32604-0347. 1991: audio cassette and detailed brochure. $11.00.—This is the latest contribution by Hardy and the Florida State Museum that features vocalizations of a New World avian family. From a species representation, the dendrocolaptid compilation is surprisingly comprehensive given the difficulty of establishing the songster's identity in this elusive group. The primary song of 45 of 49 currently recognized species is furnished (the liner notes for the Dusky-billed Woodcreeper [*Xiphorhynchus eytoni*] are in error, as it is the song, not the calls, that are provided), with another species represented by calls only. There are, nonetheless, a few taxa that are under "split," such as *Sittasomus,* where additional vocalizations are needed to illustrate all the taxa that are involved. Moreover, the material on this cassette is undoubtedly only a sampling of the total vocal repertoire for a number of species.

Not unexpectedly, the quality of the recordings varies considerably. Recordings of a number of species are truly superb, whereas those of Hoffman's Woodcreeper (*Dendrocolaptes hoffmannsi*) and a few of the *Lepidocolaptes* await better acquisitions.

As with all the Hardy et al. tapes, the liner notes provide invaluable information on the type of vocalization, date, locality, habitat, and often, where appropriate, comments on taxomony. There are, however, a number of inconsistencies and errors in the details. For example, there is no consistency in the range given for each species. These descriptions range from giving the precise countries and habitat preferences for a species, to generalizations, that state nothing more than "South America." A few of the distributions are inaccurate, with that of the Scimitar-billed Woodcreeper (*Drymornis bridgesii*) being the worst example. This monotypic woodcreeper is *not* found from "Central America to northern Argentina," but is restricted to arid woodland of Paraguay, Uruguay and Argentina.

Identification of avian species in the "background" is also inconsistent. Some species are identified that are relatively inconspicuous in the background, whereas others that are very prominent are unmentioned, e.g., the Gray Antbird (*Cercomacra cinerascens*), is quite apparent in the third cut of the Barred Woodcreeper (*Dendrocolaptes certhia*) recordings. This antbird can also be heard in a few other woodcreeper cuts.

There are several "typos," including the following: a "h" is left out of *Glyphorhynchus,* and the reference to the conspecific under the Moustached Woodcreeper (*Xiphocolaptes falcirostris*) should be "17," not "18." Surely the Greater Scythebill (*Campylorhamphus pucherani*), #45, instead of the Red-billed Scythebill (*C. trochilirostris*), #46, was intended to be included in the list of "extremely rare species," as the latter species is fairly common throughout much of its rather extensive range.

I wish this tape had been available fifteen years ago, when I first ventured into the neotropics, as it would have greatly facilitated the identification of this perplexing group. The authors and contributors are to be commended for making the woodcreepers more accessible to neotropical avian aficionados.—MARK B. ROBBINS.

THE MAGPIES. By Tim Birkhead, illus. by David Quinn. T. & A. D. Poyser Ltd., London, England, 1991: 270 pp., 1 color plate, 96 figs., 35 tables, 46 photographs and 24 line drawings. $39.95.—The book deals with Black-billed (*Pica pica*) and Yellow-billed magpies (*P. nuttalli*); the emphasis is on social behavior and breeding ecology. The 12 chapters can be subdivided into social behavior of breeding and non-breeding birds, feeding ecology, population ecology, reproduction and nesting success and the interactions between magpies and people. Since the late 1960s quite a number of studies in North America and Europe have dealt with various aspects of magpie ecology and behavior, so that over the years we have become much better informed about the biology of these much maligned birds. Birkhead has used the results of his own studies and those of others to produce a comprehensive summary of magpie ecology and behavior. The picture that emerges is one of very adaptable species, with rich behavioral repertoires and complex social organizations.

An introductory chapter deals with distribution, morphometrics, and molt and provides an insight into the ways biologists study birds. The meat is to be found in chapters 2 to 11. Chapter 2 deals with nest spacing and territorial behavior. Throughout Birkhead points out differences between North American and European populations of Black-billed Magpies. One of these is territory size, up to 6 ha in Europe and <1 ha in North America, probably due to differences in the ecological setting of the various study areas. The chapter "Social behaviour: breeding birds" provides among others, a good summary of mate guarding and extra-pair copulations. Male magpies are clearly selfish but engage in extramarital activity whenever possible. There is a whole chapter devoted to the social behavior of non-breeding birds (mostly yearlings), an age class that is usually ignored in bird studies. Young magpies in England move only on average 323 m from the natal nest in the first winter, only a little beyond that in the second year, and build their own nest an average 425 m from the natal nest. There is a detailed description of flocking behavior of non-breeding birds but nothing about the flocking behavior of adults or how they integrate with the yearlings. Chapter 4 gives details on feeding methods, diet, and interspecific competition for food between magpies and other corvids in Europe. The section on food hoarding and keeping hidden food safe makes available interesting but unpublished material. Territorial birds make their caches closer together and nearer to the food source than non-breeding birds, and the more exclusive use a pair has of its territory, the closer together its caches are. About 75 pages are devoted to reproduction (Chapters 7–10). I was surprised to see that the old problem of how to define the incubation period is still with us. Based on the last egg it is 18 days (page 170) (which is what I claimed for the Yellow-billed Magpie), based on the onset of incubation until the last egg hatches it is 22 days (page 161) and based on the laying and hatching of the first egg it is 24 days (page 161). Take your pick. A lot of factors help to reduce a clutch of about six eggs to 1.81 fledglings per pair; starvation of chicks figures prominently. Breeding success is determined mainly by bird quality and, to a lesser degree, by habitat quality (food supply and safety from predators). Interactions of magpies and farmers, game keepers, and townspeople are treated in Chapter 11. With a reduction in the persecution of magpies by game keepers, magpies have become more numerous and more tolerant of people, so that now many nest in urban and suburban areas. Their supposed effect on urban songbird populations (taking eggs and young) appears unfounded.

Birkhead has done a very good job in bringing together a large amount of information

and presenting it in a way that makes the book useful and understandable to a broad audience. A selling point to me are the wonderful line drawings by Quinn which depict mannerisms and situations in daily magpie life. I noticed two imperfections. The tail of the righthand bird on page 42 appears to be screwed on wrong and if I had Quinn's ability I would have given the head of the male on page 214 more of a tilt to indicate his cooperation with and obvious enjoyment of what is being done to him. It is a wonderful book.—NICOLAAS A. M. VERBEEK.

THE LITTLE GREEN BIRD, ECOLOGY OF THE WILLOW FLYCATCHER. By Robert A. McCabe, illus. by Steven A. Hovel. Rusty Rock Press, Madison, Wisconsin, 1991: xv + 171 pp., 47 numbered text figs., 38 tables, 3 appendices. $35.00.—This book, as McCabe himself puts it, is a "telling . . . of the life and times of the Little Green Bird." It is intended for an informed, general audience, although there is much of value here for interested scientists, as well. Virtually all aspects of the natural history of Willow Flycatchers (*Empidonax traillii*) are covered in 21 chapters, including separate chapters on taxonomy, migration, cowbirds, food habits, and conservation, as well as the usual chapters dealing with nesting ecology. The book reads well and the writing is straightforward. The importance of this bird in cementing the bond between the author and Aldo Leopold lends the book a special flavor. In the last chapter, for example, McCabe asks: "Now that it is ended, I wonder what A. L. would have said?"

McCabe's pointed criticisms of ecological interpretations that go beyond the data and his lack of enthusiasm for theory and modelling in ecology are apparent throughout. In the Epilogue, for example, McCabe states that he is "not a card carrying member of the *no hypothesis, no theory, therefore no science* cult." And in the chapter on food habits, McCabe is critical of another study's "detailed mathematical manipulation of the data," its small sample size (15 territories visited an average of only 4 times each), and its test of a model of optimal territorial behavior, to which McCabe parenthetically adds: "I don't know what that is." I'm not sure I do either, Bob. But this example (without passing judgment on the cited study or on McCabe's response) simply underlines the fact that McCabe is an old-school naturalist whose primary interest here was in presenting the results of a detailed natural history study. McCabe's view from the naturalist's perspective is a refreshing one, and his obvious delight and satisfaction from having had the opportunity to be involved with subjects whose "intricate adaptation to their environments are a source of wonder" add a certain charm to the book.

Observations on Willow Flycatchers were carried out over a span of some 35 years, with field data being collected in 12 of those years (1943–1948, 1960–1961, 1974–1975, and 1977–1978). Thus sample sizes for many aspects of Willow Flycatcher ecology are impressive. For example, clutch size was examined for 415 nests, cowbird parasitism was studied at 537 nests, and the analysis of nesting success was based on 459 nests. McCabe draws heavily on the literature, with some 375 citations, and he makes frequent comparisons with his own work. General ecological theory and the author's own, personal views on various aspects of avian natural history and ecology are neatly woven throughout the text.

Among the more innovative experiments by McCabe is one in which first, colored yarn, and then, knotted gray string was woven into experimentally depredated nests to demonstrate the reuse of nesting material from the original nest in the construction of renests. Especially interesting photographs include those such as the one (p. 65) of a nest constructed largely of strips of white packing paper, and the one (p. 115) showing a dissected milk snake (*Lampropeltis triangulum*) that had eaten a complete clutch of Willow Flycatcher eggs. Some

wonderfully descriptive narrative occurs throughout, as well, such as the description of an incubating female which "fills the nest opening as snugly as the lid on a teapot."

Editorial glitches and typos were relatively few, and generally, were not distracting—with one exception. On p. 34, two paragraphs with several typos and run-on sentences are largely repeated (without errors) on p. 35. Also, I detected errors in calculating percentages [e.g., p. 51 and Table NB3: (2014 − 737)/737 ≠ 63%], in converting metric to English equivalents (e.g., Table NB3: 7.6 cm ≠ ¼ inch) or other confusions in text where values did not agree (e.g., p. 108: 26.5 ft. ≠ "about half that . . . of 175 ft.").

There are instances where some might disagree with McCabe's view. For example, his assessment of the breeding range of Willow Flycatchers is too liberal, showing much of the Southwest and the Plains states as occupied breeding range. Curiously, McCabe also believes Willow and Alder flycatchers should be considered as one species. Although they are similar in plumage and morphology, their songs and call notes are distinct and, to my knowledge, there have been no records of interbreeding.

In three of 12 years, McCabe found three-egg clutches more frequent than four-egg clutches, and he attributes differences in clutch size to age of the laying female. But a statistically significant test of the differences in clutch size between first and second clutches suggests that it is clutch sequence and not age of the female that is the primary factor influencing variability in clutch size. Perhaps more second clutches were found in those years where three eggs were more common than in the other years?

Despite the above criticisms, I very much enjoyed the book and recommend it to anyone interested in natural history and the ecological story of the Willow Flycatcher. McCabe states that he will be satisfied if those who read his book gain "an appreciation of the relationship of an animal to it environment" and if his efforts result in "problem recognition, hypotheses to be tested . . . and challenge." I believe McCabe can be satisfied.—JAMES A. SEDGWICK.

A STILLNESS IN THE PINES: THE ECOLOGY OF THE RED-COCKADED WOODPECKER. By Robert W. McFarlane. W. W. Norton & Co., New York, New York, 1992: 270 pp., 13 illustrations, 16 graphs and tables. $22.95.—The Red-cockaded Woodpecker (*Picoides borealis*) is a fascinating species ecologically, behaviorally, and politically. It is a monogamous, cooperative breeder endemic to the southeastern United States. During colonial times, it might have been the most common woodpecker in the Southeast. Red-cockaded Woodpeckers are habitat specialists, living in fire-maintained mature pine-savannah habitat, with particular preference for longleaf pine (*Pinus palustris*) 80+ years old. The timber industry's preference for younger pine, combined with land conversion for farming and development, has led to habitat fragmentation, precipitous population declines, and the Red-cockaded Woodpecker's current endangered status. Interest in this bird, both in a purely ecological context and as a conservation problem, has increased tremendously in the last decade. A book reviewing the species is timely.

McFarlane's book provides the reader with details of Red-cockaded Woodpecker natural history, the community of which it is a part, and the struggle for its preservation. The stated audience for McFarlane's book is the "educated lay person," but both lay and professional readers interested in endangered species conservation or woodpecker natural history will find it interesting and enjoyable. Seven of the 12 chapters deal with Red-cockaded Woodpecker natural history. McFarlane does an excellent job of placing all aspects of natural history into a broad ecological context. When discussing the Red-cockaded Woodpecker's place in its community, McFarlane is careful to show this species as a member of a complex community. He compares and contrasts behaviors, morphological adaptations, and specifics

of habitat use with that of other woodpecker species. McFarlane's ability to draw on extensive field work with numerous species adds strength to the analyses. His experience helps create a perspective that can be appreciated by the amateur and professional alike.

Two chapters describe pine bark beetle populations, an influential component of pine forest communities, and the potential regulating force birds might have on insect populations. McFarlane discusses in detail how U.S. Forest Service (USFS) practices in dealing with the potential threat of beetles to forests can affect Red-cockaded Woodpecker survival.

Two surprising omissions from the book were descriptions of the turpentine industry that destroyed historic coastal longleaf pine forests in the Southeast, and the current "pine straw" industry that will have unknown long-term effects on nutrient cycling in the nutrient-poor soil of many pine forests. However, these omissions do not prevent the reader from understanding the current conservation problems presented in the book.

Throughout this book, conservation is an underlying theme. The third chapter gives an overview of large-scale threats (such as pollution) that can threaten species survival. A related theme is the USFS as a less than perfect warden for this endangered species. McFarlane expresses frustration at trying to conserve the Red-cockaded Woodpecker in the face of the management branch of the USFS. Any readers involved in endangered species management will empathize with the problems encountered in trying to save this species.

Appropriately, the final chapters deal with the politics of Red-cockaded Woodpecker conservation. They end with the landmark Texas decision that the USFS timber management practices in Texas constituted "take" of Red-cockaded Woodpeckers, in violation of the Endangered Species Act. McFarlane provides historic details of the battle to protect this species since it was declared endangered in 1968; the battle continues to this day. He concludes that both the biological knowledge and the legal authority to save this species exists. McFarlane justifiably concludes that if the Red-cockaded Woodpecker becomes extinct, it will be caused by too few people caring enough to save it, and by the conflict of interest between upholding the law and serving the special interests of the forest industry.

Those interested in all aspects of this unique species might consider reviewing the proceedings of the third Red-cockaded Woodpecker Symposium scheduled for January, 1993 (for details, write Ralph Costa, USFWS, 75 Spring St., SW, Atlanta, Georgia 30303).—J. MICHAEL REED.

SAVING AMERICAN BIRDS. T. GILBERT PEARSON AND THE FOUNDING OF THE AUDUBON MOVEMENT. By Oliver H. Orr, Jr. University Press of Florida, Gainesville, Florida, 1992: xii + 296 pp., 12 black-and-white photos. $34.95.—Along with other environmental matters, the preservation of wildlife is a widely discussed topic these days and at this writing has even attracted the attention of the "political sector." Given the complexity of the current problems, it is hard for us to comprehend the situation in the United States a hundred years ago. Today more than a few species are a cause for concern, but the 1890s practically *all* bird species were under threat of extinction. With few exceptions wild animals of all kinds were fair game for hunters throughout the year. There were few, if any, "game laws" and no governmental mechanisms for regulating hunting. In some parts of the south the American Robin (*Turdus migratorius*) was a popular game bird and many other small birds were considered to be legitimate targets. Egrets and terns, as well as other species, were slaughtered in great numbers for millinery purposes.

At its second meeting, the A.O.U. formed a committee for bird protection to address some of these situations. Eventually this committee came under the chairmanship of William Dutcher, a New York insurance man. Dutcher, who is an almost forgotten figure today, encouraged the formation of the state and local societies, named for J. J. Audubon to fight

for bird preservation. Eventually these societies were organized as the National Association of Audubon Societies under Dutcher's leadership. To help him in this task Dutcher enlisted a young college professor from North Carolina, T. Gilbert Pearson. Pearson had organized the North Carolina Audubon Society. At that time this Society not only collected the hunting license fees, but also enforced the game laws that had been passed at the Society's recommendation. Eventually he became in 1911 the first fulltime leader of the national association, a position which he held for 23 years. During this time he was one of the most influential figures in conservation, as the Audubon movement not only led the fight for restrictions on the harvesting of birds, but also engineered the revolution in public opinion about wildlife.

Oliver Orr's book blends a partial biography of Pearson (it ends with his movement to New York in 1911) with a detailed history of the development of the Audubon movement. The early part of the book is an interesting account of a young man's first experiences with the lush birdlife of his home area in northern Florida. It traces his gradual change from a collector of birds and eggs (he partially financed his education by selling specimens) to the militant preservationist he ultimately became. Pearson gradually turned his activities from field work and college teaching to lobbying legislatures to pass the so-called "Audubon Laws." In covering this period the book gives a detailed account of these legislative efforts, as well as the media campaigns accompanying them. Orr has had access to a tremendous amount of documentation of these early activities, and it is good to have this information assembled in one source, although I must say that this part of the book reads like a history text—dull but essential.—GEORGE A. HALL.

IN SEARCH OF SPARROWS. By J. Denis Summers-Smith, illus. by Euan Dunn. T. & A.D. Poyser Ltd., London: distributed in U.S. by Academic Press, New York, 1992: viii + 141 pp., many black-and-white photos and sketches. $39.—Denis Summers-Smith has spent more than 40 years studying the birds of the genus *Passer*. After studying the House Sparrow (*Passer domesticus*) at home in England, he set out to study the 19 other species of the genus. This took him to five continents, and eventually he made significant field observations on 20 of the 21 species. The results of this effort were published in his 1988 book, "The Sparrows" (see review in Wilson Bull. 102:566–568, 1990). That book discussed the biology of the birds. The volume now in hand is a light-hearted travelogue describing the other side of the many trips in pursuit of the sparrows. In an engaging manner Summers-Smith tells us of the difficulties of reaching some of the out-of-the way places, of the sometimes vain searches for the birds, as well as descriptions of the sparrows and their habitat. Along the way, we meet a number of ornithologists who played host to the author and his wife.

Besides the travel adventures, the book contains a large amount of the biological results treated in the earlier technical volume. The book is illustrated by numerous photographs as well as an amusing set of cartoon-like sketches by Euan Dunn. The armchair-traveling ornithologist can both learn some bird biology and have a pleasant read from this book.—GEORGE A. HALL.

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EFFECTS OF HARVEST ON FERAL ROCK DOVE SURVIVAL, NEST SUCCESS, AND POPULATION SIZE. By J. Edward Kautz and Richard A. Malecki. U.S. Fish and Wildlife Service, Fish and Wildlife Technical Report 31. 1990: 16 pp., 1 map, many graphs.—G.A.H.

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