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ORNITHOLOGICAL LITERATURE

EDITED BY WILLIAM E. DAVIS, JR.

A PHOTOGRAPHIC GUIDE TO NORTH AMERICAN RAPTORS. By Brian K. Wheeler and William S. Clark, Academic Press, London, UK, 1995, 198 pp, 377 color photographs $39.95 (cloth).—This new raptor guide presents sizable color photographs of every recognizably different plumage (age, sex, race, and color morph) of every species of diurnal raptor that regularly occurs in North America, as well as representative plumages of documented vagrants. The majority of the color photographs were taken by Wheeler, with a lesser number by Clark and selected photos from other sources. The outstanding selection of photos reveals the efforts the authors made to clearly document all the field marks on film.

The elegantly succinct species accounts begin with a description of key field characters for each plumage, followed by a listing of similar species, the field marks by which to differentiate them, and references to photos of similar species in similar attitudes elsewhere in the guide. A series of usually dazzling photographs follows, ranging from three for the California Condor (*Gymnogyps californianus*) to forty-six of the highly varied plumages of Red-tailed Hawk (*Buteo jamaicensis*). With few exceptions, species accounts include shots of birds perched and in flight (usually from below). A summary of evident field marks accompanies each photo, often referring the reader to comparable photos of similar species.

The guide concludes with a special section of fourteen "Raptor Identification Problems" in which photos of confusing species in approximately the same attitude are juxtaposed to help resolve difficult identification problems. Topics range from differentiating Sharp-shinned Hawk (*Accipiter striatus*) and Cooper's Hawk (*A. coopereii*) to "Pale square primary panels on upperwings of flying buteos."

The photographic guide is best understood with reference to the "Field Guide to Hawks" (1987) by Clark and Wheeler. The photo guide complements rather than replaces "Hawks" which remains the most extensive guide to North America's diurnal raptors. Wheeler's expert illustrations in the field guide present an assortment of diverse plumages not previously conveyed in any North American guides, and Clark's text provides a wealth of insight and technical detail not available in any other source. "Hawks," however, includes 242 black-and-white photographs that are quite small and have lost much of their clarity in reproduction and, therefore, are of limited value to the reader.

The new guide is, in one sense, an amplification on the photo section in "Hawks," but it is also much more than that. The photos are much larger than in "Hawks," and the overall quality of the selection and their reproduction are vastly superior. Quite simply, this is a beautiful book, worth the price for the spectacular raptor photography alone.

The text and photo captions are elegant in their simplicity and clarity, essentially referring only to those field marks that are documented photographically. Wheeler and Clark intentionally avoid discussion of the more esoteric subject of "jizz." (See Dunne, Sibley, and Sutton, "Hawks in Flight." 1988.)

The photo guide does not attempt to provide the wealth of information on each species available in "Hawks," such as descriptions of flight, behavior, status and distribution, fine points, unusual plumages, etymology, and range maps. Although the plumage descriptions in "Hawks" are also more extensive than in the photo guide, the latter offers insightful new field marks for some species, such as juvenile Red-tailed Hawks.

The photo guide also provides new data on the range of length, weight, and wingspan for each species, based solely on direct measurements of live birds and specimens. The

authors eschew all published sources (some of which were used in "Hawks") in the belief that some of the previously published data are erroneous.

The only downside of the guide's relatively large size (25 cm × 16.5 cm) is that it is not easily carried in the field. However, most hawk watchers will want one in the field, no matter how much of a beating it might take, and one at home, as with the field guide. (The publishers should be commended for providing a beautiful yet rugged cover, able to tolerate typical field abuse.)

There are very few errors in the book—basically very minor proofreading oversights. In the topography of a hawk, the terms for axillaries and breast are reversed, and in one reference, White-tailed Hawk (*Buteo albicaudatus*) is identified as White-backed. Some mistakes are evident in the photographic cross references, especially in the "Raptor Identification Problems," suggesting a late change in photo sequence (e.g., Photo FH05 should refer to RL10, not RL09. and FH11 should refer to RL18 & RL19, not RL17 & RL18). Also, the scientific names for Hook-billed Kite (*Chondrohierax uncinatus*), Zone-tailed Hawk (*Buteo albonotatus*), and Red-backed Buzzard (*Buteo polyosoma*) contain minor typographical errors.

Wheeler and Clark have, in the field and photographic guides, performed an invaluable service for everyone interested in hawks. Quite simply, there is nothing like either book for North America's diurnal raptors. You can use either book separately, but anyone seriously interested in hawks clearly should use both.

"A Photographic Guide to North American Raptors" establishes a new, very high standard, not only for raptor identification but for all photographic field guides.—PAUL M. ROBERTS.

THE BIRDS OF ISRAEL. By Hadoram Shirihai (E. Dovrat and D. A. Christie, editors). Academic Press, London and San Diego, 1996: xc + 692 pp., 96 composite photographic color plates (1–11 photographs per plate), 200 + line drawings, ca. 1000 maps, gazetteer. $99.00.—In a normal book review, the quality of the text and of the illustrations receive most of the reviewer's attention. In the case of "The Birds of Israel," however, I must say that in more than four decades of reviewing I have never handled a book so poorly made. It weighs 8 lb (3.64 kg), and the text alone is slightly more than 2 in (5 cm) thick. The binding (thin cloth over cardboard) is utterly inadequate to hold together a book of this size. After a minimum of handling, the front and back endpages of the review copy, a single double-width sheet each, are all that is holding the text to the binding, and these have begun to rip away.

Was a book of this size necessary to present all of the included information? By no means. It is printed on a fairly heavy coated stock; a slightly lighter-weight paper might have sufficed. Perhaps more importantly, there is much wasted space in the text. The headings of the species accounts are in 14-point type and those of the family accounts in 16-point. The text is a mixture of one-/and two-column formats. There is much white space on the pages, especially around some of the maps and line drawings.

The line drawings by Alan Harris are attractive, but are an unnecessary luxury in a book of this kind and size. Furthermore, the spot drawings in the introductory pages are not identified: Stone-curlew, p. xxiv; Alpine Accentor, p. xxxviii; Hen Harrier, p. xliii; Hawfinch, p. xliv; Ruppell's Warbler, p. xlv; White Stork, p. liv; Black-crowned Night-Heron, p. lv; two subspecies of Redstart, p. lvi; Brown Booby, p. lx; Black-headed Plover, p. lxi; Black-shouldered Kite, p. lxii. Most of the drawings capture the Gestalt of the species reasonably well, but errors in bill length and shape are easily detected by looking at those drawings

for which a photograph is also supplied (see particularly the Pied Kingfisher drawing on p. 338).

There are two sets of color photographs. The first 12 plates show species typical of various seasonalities of breeding birds and of migrant and wintering birds, plus vagrants arranged by their geographic origins. Plates 13–24 illustrate habitats in Israel. Later in the book comes a series of 72 plates, mostly composite, of birds with "an emphasis . . . placed on the more important and most attractive species in Israel." The definition of "important" must include vagrants, as the very first photograph in this series portrays the first Western Palearctic record for Streaked Shearwater. Incredibly, there are no cross-references on the plates nor in the species accounts; the only way to find a photograph of a given species is to look in the index entry for that species. Similarly, to find the text reference for a photographed species it is also necessary to turn to the index.

The systematic sequence in the species accounts is essentially that of Voous, published in The Ibis in 1973 and 1977. Although still used in a few European publications, this sequence is little known to Americans, and as a result families are not always where you might expect them (i.e., the Corvidae are in the middle of the Passeriformes, not at the end or near the beginning).

There are nearly 100 pages of introductory matter; in addition to the expected Foreword, Preface, and Acknowledgements, there is a "General Introduction," within which there is a history of ornithology in Israel (beginning with species mentioned in the Bible), and a section on "The main features of the Israeli Avifauna," with separate chapters on the breeding, wintering and migrant species, plus vagrants. Then comes a "Relevant (!) Introduction," including explanations of the layout of the species accounts, maps and symbols. There is a very detailed (12 pp) description of the climate, vegetation, geology, and other factors influencing bird distribution in Israel.

Then come the species accounts. The current and original scientific names are given, the latter with author and date but not full citation. A short paragraph summarizes the world and Middle Eastern distributions of the species, and a similar paragraph serves for the subspecies (one or more) in Israel. A paragraph on "Status, habitat & general occurrence" is set in a larger typeface than elsewhere in the species account. This paragraph and those above it run across the page; the remainder of the species account is in two-column format. The main headings are "Distribution, numbers & annual cycle" and (when pertinent) "Subspecific identification." Under the first of these, there are (again, when appropriate) separate paragraphs for autumn, spring, winter, and summer, plus a parenthetical paragraph on the status of the species in the Sinai. Data in these paragraphs are presented in overwhelming detail, often giving estimated daily maxima at a series of localities. "Subspecific identification" clearly refers to birds in the hand, and will be of use only to banders and for identification of salvaged dead birds.

There are several kinds of maps, as many as 3, within the species accounts. Although there is a 3-page section defining the symbols and conventions employed in the maps, one looks in vain for any sample maps to show how these are actually used in practice. There is a map of Israel on the end pages and within the text, but (not surprisingly) it shows very few of the ca. 800 localities listed in the Gazetteer. Latitude and longitude, as well as the "nearest town" (which is not necessarily one shown on the book's map) are given in the gazetteer, but after having tried to locate a number of places, I can state that a large-scale folding map would have been a major asset to this book.

Without having read all of the species accounts thoroughly, I found some small flaws, and there are no doubt others. For example, the Horned Grebe (*Podiceps auritus*) is not monotypic; a general discussion of vagrancy in seabirds is appended to the species account for the Shy Albatross; the subspecies account for Leach's Storm-Petrel (*Oceanodroma leu-*

corhoa) is erroneous (the nominate race is said to breed "throughout species' range except in North America, where a different subspecies occurs"). On p. 265 there are tables of characters differentiating various taxa in the Herring Gull complex (primary pattern of adults, pattern differences in wings and tail of juveniles), but the *striking* differences in leg and bill colors are buried in the text; I was able long after the fact to identify a bird I saw in Israel as the Armenian Gull (*L. armenicus*) but only by using other reference works. A statement of the relative abundance of the black-/and white-throated morphs (a geographically variable phenomenon) of the Black-eared Wheatear (*Oenanthe hispanica*) would have been of interest; we saw about 10 on Mount Hermon on 4 April 1986, only one of which was of the white-throated morph.

There is an appendix in four parts. First are five species recorded exclusively in Sinai; then "Species reported in Israel and under review"; then "Records previously published, but species' occurrence in Israel and/or Sinai subsequently rejected"; and then "Escaped cagebird species." In the second list, Shirihai is tough on sight records, even his own (see Socotra Cormorant [*Phalacrocorax nigrogularis*]). This list also includes records of *collected* birds, with the species placed on hold because the specimen(s) cannot now be found. The difference between the second and third lists is not always clear—in several instances species are admitted to the second list on the basis of sight records, followed by "No documentation," and other sight records are relegated to the third list and said to be "unsubstantiated." Some published records are said to be "unacceptable" or "rejected," but seldom are we told why.

I spent 1–16 April 1986 in Israel on a tour with a highly competent and knowledgeable leader, Mark van Beirs; we covered virtually the entire country from Mount Hermon to Eilat. Judging from the status as given in "The birds of Israel," some of our observations were noteworthy.

Dalmatian Pelican (*Pelecanus crispus*). Shirihai accepted only seven records of this rare winter visitor in Israel, with dates ranging from 13 October to 7 April. We saw one on 2 April, in a flock of ca 70 Great White Pelicans (*P. onocrotalus*) soaring over the intersection at the turnoff for Kefar Blum in northern Israel. It was easily recognizeable by its lack of jet black on the undersides of the remiges.

Yellow Wagtail (*Motacilla flava*). Shirihai states that the migration of *M. f. feldegg* at Eilat is "mainly mid February to end March." There were two *feldegg* and eight *beema* on a football field at Eilat on 14 April, and a flock of over 100, including both subspecies, in the northern fields of Eilat on 15 April.

Rock Thrush (*Monticola saxatilis*). According to Shirihai, the resident population of this species on Mount Hermon arrives during the second and third weeks of April. We saw six males on Mount Hermon on 4 April; these may have been migrants of another population.

Marsh Warbler (*Acrocephalus palustris*). Shirihai considered this species "very rare to mid-April." We saw 2 on 5 April in bushes near the water's edge at the mouth of the Jordan River at the north end of the Sea of Galillee.

Common Raven (*Corvus corax*). Two or three pairs of this species are said to be resident in the central Negev between Sede Boqer and Mizpe Ramon. We saw a pair on 10 April in a canyon at En Avedat within this area.

Finally, an addition to Shirihai's list of escaped cagebirds—an oddly familiar call led me to a dark blue and white Budgerigar (*Melopsittacus undulatus*) in the date palm grove just east of the salt ponds at Eilat on 15 April.

For an Israeli perspective on Shirihai's book, I recommend the incisive review by Yoram Yom-Tov (1996. Ibis 138:589–590). He summarizes his review by stating "in the Introduction this book provides good information on bird life in Israel and is a good source of information on the taxonomy, distribution, movements and migration of the birds of Israel.

However, it fails to fulfill its promise and does not constitute a comprehensive review of the present ornithological knowledge in Israel. It is unfortunate that, owing to the above-mentioned failures, most quantitative parts of the book [of which there are very many] are of little scientific use."

For most readers, an adequately comprehensive account of the Israeli avifauna can be found in "The birds of Israel" by Uzi Paz (Christopher Helm, London, 1987) which weighs only about two pounds! Its 29 line/scratchboard drawings by Chris Rose are at least as attractive as those of Alan Harris in the book under review, and there are 60 color photographs, only two of which are reproduced at less than half-page size, unlike many of those in the Shirihai book. Unfortunately the Paz book appears to be out of print, but it's worth searching for as an alternative to Shirihai's gargantuan tome.—KENNETH C. PARKES.

ATLAS SAISONNIER DES OISEAUX DU QUÉBEC. By André Cyr and Jacques Larivée. Presses de l'Université de Sherbrooke et Société de Loisir Ornithologique de l'Estrie, Sherbrooke. 1995: 711 pp., 37 numbered text figs., numerous line drawings, over 1100 distribution maps, 3 transparent overlays; US$ 56.95 (paper). [Available from "Société de Loisir Ornithologique de l'Estrie, a/s Atlas saisonnier, C.P. 1263, Sherbrooke (Québec), Canada J1H5L7."].—Quite clearly, this new atlas, illustrating the seasonal distribution of over three hundred species of birds in Québec Province, Canada, is a splendid achievement that deserves wide recognition in North American ornithology in general and biogeography in particular. What I found impressive about it are the huge data base upon which it rests, the well thought-out methodology of data capture and subsequent data reduction to produce meaningful and easily understood cartography, and in general, the vast amount of useful distributional information, whether in the form of maps or of text, contained between its covers. Before describing this volume in detail, I wish to congratulate all the ornithologists in Québec who over the years have amassed such a wealth of observation points, the twelve authors of species accounts (listed below), and especially the Atlas's two main authors, André Cyr and Jacques Larivée, for a job well done.

The "Atlas saisonnier" treats 303 species of birds occurring in *southern* Québec Province ("Québec méridional"; see Figs. 2–9, pp. 4–9). By southern Québec is meant "the portion of Québecois territory located south of 52°N latitude" (p. 4). The Atlas's title is thus misleading: why is it not "Atlas saisonnier des oiseaux du Québec méridional"? The book is based on data points accumulated by numerous ornithologists during the period 1969–1989. The raw data used to compile the atlas are a total of 128,076 daily observation protocols ("feuillets d'observations quotidiennes"; sample on p. 12) filed by field observers, an average of 6099 protocols per year. All these field workers are members of the clubs of the "Association québecoise des groupes d' ornithologues." "Nearly 72% of the territory of [southern Québec] south of 50°N was covered by this study" (p. viii). This huge data base (ÉPOP = Étude des populations d'oiseaux du Québec) has been treated by computer analyses to produce four seasonal distribution maps for each of the 303 species, one each for the spring (1 Mar.–30 Apr.), summer (1 May–31 July), fall (1 Aug.–30 Nov.), and winter (1 December–29 February) seasons. The subdivision of the year into these four seasons is clearly explained on pp. 15–17. Each map presents a certain number of rectangles encompassing a surface area of 10 minutes of latitude and 12 minutes of longitude. Three different tones of shading (besides white-absence of the species) indicate a scale of relative local frequency in each rectangle.

A detailed introductory section (pp. 1–10), describing the various features of the area covered by the atlas, is followed by a section on methods (pp. 11–33), a section on spatio-

temporal distribution of birds in southern Québec (pp. 34–43), and a section on the distribution of biodiversity in southern Québec (pp. 44–52). This last section is of special interest in terms of conservation in the region. This analysis emphasizes the dual aspect of species diversity (p. 52). One aspect reflects the concept that one ought to protect regions having the highest number of species, whereas the second aspect underlines the concept that one should preserve areas with threatened or endangered species and those areas where the highest number of geographically restricted species occur. This is similar to what some biogeographers would call areas of endemism, although this term is not used in the Atlas.

As Larivée made clear in his summary (p. viii), an atlas like this one can help the user answer many kinds of questions. Such queries include where each species is found at each season, how many species can be found at each season, what species have increased or decreased in their distribution area, and how much surface area does a particular species occupy. All these questions, and many others, are listed, and the reader is told where answers can be found (whether on range maps or in the text, tables, or appendixes) in a convenient table on p. 53. Because the maps synthesize many data points and represent a summary of relatively complicated methods of raw data analysis, they are not necessarily easy to "read." This potential difficulty is remedied by the clear instructions presented on p. 54.

The most substantial part of the atlas, pp. 56–661, includes the accounts of the 303 species treated, from Red-throated Loon (*Gavia stellata*), (pp. 56–57) to House Sparrow (*Passer domesticus*) (pp. 660–661). This is followed by 10 Appendixes (pp. 662–691), a list of references (pp. 695–705), an index to the French and Latin names of birds (pp. 706–711), and three pages of transparent overlays, which reproduce Figs. 3–9 given in the introductory section and which can be conveniently detached if one needs to superimpose them on the species' distribution maps.

The format of the double-page species accounts is uniform throughout the atlas, hence interspecific cross comparisons are quite easy to make. On the left page are the text, a line drawing, and a table indicating the seasonal occurrence of the species treated. The French, Latin, and English names of the species are given. The text deals with seasonal status, area and habitat occupied, and biogeographical "faunal type" (defined in the Glossary, p. 694, and more explicitly on p. 31: "Faunal type represents a biogeographic region characterizing the whole of the world distribution of the species"). The text of each species account is signed by one or two of the following twelve authors: André Cyr, Philippe Fragnier, Marc Gauthier, Serge Gauthier, Michel Gosselin, Christian Houle, Diane Lacombe, Denis Lepage, Michel Robert, François Schaffer, Julie Schaffer, and Marc-André Villard. These texts are compact and succinct, yet much information is packed into them. I regret, however, that brief English summaries were not included: they would have added immensely to the usefulness and value of the Atlas. On the right page of each species account are the four seasonal maps. For some species, however (for example Greater Shearwater [*Puffinus gravis*], Sooty Shearwater [*P. griseus*], and Manx Shearwater [*P. puffinus*], there are only two maps, as the species in question occur only during two of the four seasons identified in the atlas.

One outstanding aspect of this atlas is the seasonal maps. Thus it is possible to visualize the seasonal status of over 300 species of birds at a glance, a very useful feature indeed. As I wrote at the beginning of this review, I am very impressed by this Atlas. Nevertheless, given the vast amount of work that went into the development of this project, from the field work to the data capture, the computer treatment, and the final production of the book, it seems to me that it would have taken only a few extra steps to include a few extra items that would have made the volume even more useful to an even broader audience. I have already mentioned the somewhat misleading title and the lack of English summaries in the species accounts. I am sorry that the Latin names of the plant species mentioned in the description of vegetation types (p. 9) are not given (who among even a French-reading, but

non-French Canadian user, will know what "épinette noire" or "caryer" are?). Similarly, English-language equivalents of the vegetation types should have been indicated. I was also disturbed by the fact that the species names in the long—and very useful—Appendices 1–7 are only in French. Why were the Latin names not included, thus making the use of these tables even wider? I am sorry that a line drawing of each species was included in the text. Some of these sketches are fine, but many, I regret to say, are rather mediocre. Whether attractive or not, these line drawings add nothing to the book. Instead, they use up precious text space that would have been better utilized by including additional distributional information. In any case, illustrations of all these birds can be found in one or more of the several North American field guides now on the market. The use of the transparent overlays (especially overlays B and C) would be greatly increased had the lettering included also an English language version (or else had two parallel overlays been published, one in French and a second in English). And last, but in some ways not least, of my criticisms, are the size, cover, and paper of this atlas. Let me say here that I love atlases. Right next to my computer on my book shelf are my favorite atlases which I use daily. Some are purely geographic, others are more thematic, such as the bird atlases. I find the atlas format one of the most rewarding ways of presenting some kinds of information. The point I am making here is that to be fully useful a good atlas must not only include well presented information but it must also be of a size and printed on paper and bound in such a way as to be a craftsman's tool. Whereas the Atlas saisonnier is a great piece of work that contains a mass of invaluable information, it fails on the other score. It is wider (28 cm) than high (22 cm) (just the opposite of most atlases), it has a very soft and slippery paper cover, and its paper is almost Bible-thin, so that the printing is visible through the page. Together these three qualities make this book a very awkward volume to use. Because of the weak cover and thin paper it "flops" uncomfortably. Because the unit of study and presentation in the atlas is the species entry on a double-page, the effective size becomes even wider. Whereas this might seem like a trivial point, in fact it is not. Again and again, I found it difficult to scan from text to maps because of the size involved, encompassing a total width of over 50 cm. Even if it were rebound, for example in thick library-type cloth binding, its wider than high size would probably make its spine vulnerable to heavy use. If André Cyr and Jacques Larivée are thinking of ever updating their otherwise wonderful Atlas saisonnier and of publishing a new edition, I strongly urge them to re-think the size, binding, and paper.

Clearly, the Atlas saisonnier will be most useful to French-speaking Canadian ornithologists who reside in southern Québec Province. Next it will be useful to all ornithologists interested in the distribution patterns of birds along the Atlantic seaboard of North America. My criticisms aside, I highly recommend that this innovative new Atlas be studied by all avian biogeographers, whether from Canada, North America, or elsewhere.—FRANÇOIS VUILLEUMIER.

BIRDS OF KENYA AND NORTHERN TANZANIA. By Dale A. Zimmerman, Donald A. Turner, and David J. Pearson. 1996. Princeton Univ. Press, Princeton, New Jersey. 740 pages, 112 color plates. $65.00 (cloth).—The east African region, Kenya in particular, is among the most heavily-visited ecotourism destinations in the world. Visitors long have chafed at the absence of a comprehensive modern guide to the region's birdlife. This much-awaited volume rectifies that problem with a nearly 2-kg thud. Covering 1080 species admitted by the authors to the Kenyan list as of December, 1994, plus 34 species found in adjacent northeastern Tanzania included at the urging of safari operators and others, this book addresses 1114 species with detailed text and lifelike, mostly color illustrations. For most, it gives thorough field and sometimes in-hand descriptions of major plumages (including downy young) and discusses geographic variation, voice, habits, similar species, and status and

distribution within the area of coverage. The local range of nearly all species is shown on small, black-and-white maps. Many of the 124 plates (112 in color), all grouped near the front of the book, have between twenty and thirty images, showing differences not only between species but also between sexes, ages, and populations within species. More than half were painted by Zimmerman before his eyesight deteriorated, when Ian Willis and Douglas Pratt stepped in to complete them. The opposite text mostly summarizes the status, range, and habitat of each species and often also gives a brief summary of field characters.

The book's relatively short introduction gives some of its rationale and explains how to use it, including a glossary of nearly 200 terms used in the text down to the level of mandibular ramus and zygodactyl. In the introduction also is a short section briefly synthesizing the region's geography and ecology, accompanied by 38 black-and-white photos of typical habitats and four keyed black-and-white maps showing major locations mentioned in the text. Following the species accounts are appendices listing those species found in Tanzania and Uganda not treated by this book, a gazetteer giving latitudes and longitudes for about 500 locations mentioned in the text, about 250 literature citations, and indices to English and scientific names.

"Birds of Kenya and Northern Tanzania" is a truly significant contribution to the body of ornithological knowledge of East Africa, and every serious student of its birdlife should own or have access to a copy. But, I also think interest in this book partly will reflect the absence of significant alternatives. It is less a field guide than a handbook and not a particularly "user-friendly" one at that. The species accounts and plates are so densely written and drawn that probably they will be difficult for many people to digest readily and use effectively. The maps, lacking reference points or color, often just giving spots where a species has been recorded, seem almost like wasted space, for few readers will be able to understand a species' range in the region covered without carefully referring to the text and gazetteer. That space might have been used instead to expand the discussion of the region's physiography and environment, for example, providing a better framework for understanding its often puzzling bird distribution. The authors claim that their systematics and nomenclature most closely follow the "Birds of Africa" series (Academic Press, 1982 ff), where available, rather than any other modern published work. I readily found deviations from that, or any, familiar standard, but most were at least explained, albeit with varying convincingness. Clearly Africa needs a unifying force for taxonomy and nomenclature. A rather unmodern practice of this book is to use trinomials widely, even on species headings when only one recognized subspecies occurs in the region covered.

Concerns such as mine are likely to be addressed in subsequent editions of "Birds of Kenya and Northern Tanzania," or by authors of other works in the future, as was the case following the publication of Roberts' pioneering "Birds of Southern Africa." For now we should be thankful that this massive undertaking has come to fruition, and that such a comprehensive reference guide is finally available for this popular destination. The authors state that their book is designed for use on safari, not for bookshelf decoration. I expect that potentially it will be most beneficial for general preparation before heading into the field, and for attempting to resolve particular field problems at the end of a field session or the day. In the field itself, I suspect most users will find it heavy, both literally and figurative.—P. WILLIAM SMITH.

THE MIGRATION OF KNOTS. By Theunis Piersma and Nick Davidson. Wader Study Bulletin 64, Supplement, April 1992 (Wader Study Group, P. O. Box 247, Tring, Herts. HP23 5SN, U.K.). Proceedings of a workshop on "Recent advances in understanding Knot migrations" held in Ribe, Denmark, 21–22 September, 1989: 209 pp., a color frontispiece with no cap-

tion, 28 papers divided into five sections, 26 b/w photographs, 41 maps, 28 tables, 67 figs., £15 (softcover) includes postage and packing.

THE FLIGHT OF THE RED KNOT. By Brian Harrington with Charles Flowers. W. W. Norton and Company, New York, London, 1996: 192 pp., 50 colour photographs, 8 maps. $29.95 (hard cover).—The work described by Piersma and Davidson in the Wader Study Group Supplement is divided into five sections with 28 papers by 32 authors from 14 countries on the migration dynamics of five subspecies of the Red Knot (*Calidris canutus*). This "supplement" is truly an international effort with papers by authors from Russia (1 paper), Norway (2), Iceland (2), Germany (1), Sweden (3), Denmark (2), Poland (2), Australia (1), South Africa (1), England (4), The Netherlands (7), France (1), Canada (4), and the United States (1). In their "introduction," Piersma and Davidson state that shorebird researchers "form enthusiatic and communicative flocks". The information exchanged between members of this flock from all the major flyways over a 20-year period resulted in the workshop and this volume. The main sections of this book describe (1) the origins, genetics and distribution of the subspecies, (2) the migration systems of four subspecies (the fifth *Calidris canutus roselaari*, hitherto unrecognized, is described for the first time in this volume), (3) *islandica* (western Europe) knots in spring and summer with five of twelve papers stressing the very important role of Iceland as a major staging area, (4) autumn and winter movements in Europe and Africa, and (5) a synthesis of the five subspecies in light of their migrations and annual cycles and an assessment of conservation needs and implications. It is an attractive volume with a colour photo of roosting/flying knots in the Dutch Wadden Sea on the 8″ × 12″ cover and 26 black-and-white photographs dispersed throughout.

The book does not address a specific problem (although a recent population decline appears to be of special interest to the editors) or attempt to answer a particular question. It describes all that is known (up to 1992) about the genetics, migration routes, continental population levels and aspects of body condition of a single species of shorebird on a worldwide basis, not an easy objective to accomplish for any species of migratory bird. But, as editors, Piersma and Davidson come as close to reaching this remarkable objective as anyone could hope for even though much information is still lacking (as identified throughout this volume).

Harrington's book was derived from a nature film entitled "Mystery of the Animal Pathfinders." It represents one man's fascination with a species and his determination to understand its movements across the hemisphere. Consequently, it covers two important topics: (1) the extensive migrations of a most interesting species of shorebird and (2) the work of Harrington, the "pathfinder." Unfortunately, I found the book to lack focus. But the reader must be especially aware that this reviewer is a scientist searching for scientific information, whereas a naturalist, interested in conservation issues dealing with wetlands, would undoubtedly read this book with different eyes and strongly disagree with this preliminary assessment; wetlands conservation is a major topic of this book.

The preface brings a personal touch to Harrington's introduction to the world of shorebirds when, a teenager in the early 1950s, he first "discovers" Golden Plovers along the Sakonnet River in Rhode Island. And his fascination with shorebirds never diminished. The first time I picked up this book, I was anxious to learn much about a fascinating species about which much had been documented by the author in the scientific literature. I looked forward to reading about all of Harrington's work on the Red Knot summarized in a single book. But I was disappointed: the introduction is about wetlands and their importance to shorebirds in general; the Red Knot is not mentioned until the fifth page of the introduction. I found that the book went to great lengths to deal with environmental and conservation issues, some of which have long been dealt with (e.g., Fundy tidal power, see below), and not enough, in my opinion, about the interesting dynamics and biology of a fascinating migrant.

Overall, Chapters 1 to 3 deal with the Red Knot's northward migration; those three chapters are subdivided by region and time of year (e.g., from the wintering grounds in October through February (Chapter 1) to the shores of Delaware Bay in May and June (Chapter 3)). The months of June through August describe the breeding season in the arctic (Chapter 4) while Chapter 5 returns the reader back to the wintering grounds (August through October). The final chapter (Into Our Future) concentrates on the potential threats to shorebirds and the many conservation programs in place to protect their habitats.

The species we know as Red Knot is not fully introduced to the reader until page 31 in the chapter entitled "October through February." In this reader's humble opinion, the first paragraph of page 31 should really be the first paragraph of the book. It is a tedious introduction to the species and one which probably works better on film than in book form. But Harrington's thought-provoking description of knots in flight followed by Twichell's photo on page 42 is a most effective technique in describing/showing the great beauty of, and mystery in, flying shorebirds.

Harrington indicates "that we have little idea" how the Red Knots manage the flight from Lagoa de Peixe in Argentina to Delaware Bay in New Jersey/Delaware. However, the "possible" explanations given by Harrington are fascinating enough to turn a large number of the readers into shorebird biologists to find the answers. But the first descriptions of the trans-Atlantic migration of knots are placed in a footnote (Note 7, see third paragraph) and will likely be missed by many readers. Similarly, the mention of picric-dyed knots (of which much has been published by Harrington), is simply made in the legend to a photo of dyed knots on page 106; it is especially relevent (and most interesting) information and really should have been expanded in the text.

Chapter 6 is essentially the environmental lecture. It makes reference to (1) the Exxon Valdez, (2) hydroelectric dams in James Bay and (3) Fundy tidal power. The two latter issues were problems in Canada which were heatedly discussed by the scientific community a decade and a half ago. No details of these debates are given. This chapter goes to some length to discuss shorebird conservation programs in Delaware Bay; it reads like a dull but factual government report. A similar lengthy discussion about Jamaica Bay goes into considerable detail about parking space and the like and, in my opinion, is examined in more detail than is really necessary in this book. This chapter also reads like a lecture on the philosophy of conservation in the modern world; all very commendable, but what has it to do with the flight of the Red Knot?

I have long admired Harrington's scientific work and dedication to the task, so my disappointment with this book is mainly due to my high expectations. Consequently, I found it most unfortunate that Harrington's scientific papers are not listed anywhere in this book. The main lesson here is that a nature film is not easily transformed into a book. I unfortunately never saw the film ("Mystery of the Animal Pathfinders" by NOVA) but my impression is that the reverse scenario is probably more successful. But I must stress here that the great beauty of this bird is done considerable justice by the remarkable photography of Dave C. Twichell.

Overall, these two publications provide considerable valuable information on the migratory movements of a species on a worldwide basis. But I can only conclude that Piersma and Davidson's collection of papers (including a paper co-authored by Harrington) have considerably more scientific merit than the adaptation of a nature film can convey.—PETER HICKLIN.

SPARROWS AND BUNTINGS—A GUIDE TO THE SPARROWS AND BUNTINGS OF NORTH AMERICA AND THE WORLD. By Clive Byers, Jon Curson, and Urban Olsson. Houghton Mifflin, Boston, Massachusetts. 1995. 334 pp., 39 color plates with captions, 110 range maps, $40.00 (cloth)—This is the eighth volume to appear in Houghton Mifflin's "Helm Identification Series." This volume covers the buntings and sparrows (subfamily Emberizinae) of the

Holarctic region, not "the world," as the title suggests, since the authors clearly state in their introduction that ". . . to include all the South American species would really be beyond the scope of the book . . ." Small oversights such as this aside, this is a very good guide to field identification for a challenging group of species. Brief introductory chapters on "Taxonomy and Relationships," "Breeding Biology," "Escaped Cagebirds," and "Hybrids" add interest to the book. The chapter, "Taxonomy and Relationships," is especially useful. One hundred ten species are covered, with range maps for each species. The tendency of the book is to be rather inclusive of species, rather than exclusive, with some forms of uncertain taxonomic status, such as "Timberline" Sparrow (*Spizella* (*breweri*) *taverneri*) included in the text and treated as distinct species.

In general, the color plates are good; however, in my review copy the color saturation from plate to plate was quite variable, with some plates noticeably brighter than others. Each plate undertakes to depict multiple species, along with distinctive plumages for juveniles and adult males and females. This leads to some very "busy" color plates in some instances (e.g., Plate 18: American Longspurs and Plate 36: Rufous-sided/Collared Towhee Complex) and the arrangement of species on the page can be confusing at times (e.g., Plate 33: *Aimophila* Sparrows).

Each species account includes information related to identification (mostly field marks), detailed description (including plumage differences among the sexes and juvenile and adult birds), aging and sexing guidelines, measurements, geographical variation, voice, habits, status and habitat, distribution, and references. The emphasis of the species accounts is upon identification, with relatively less information on other aspects of a species' biology, and the references cited are highly variable, both in quantity and quality. Information about status is usually not very useful, with general terms, like "common," "uncommon," or "fairly common" used frequently without any interpretation of their meaning.

In addition to the color illustrations of birds, I also found the extensive set of range maps provided with the book of special interest. Unfortunately, it has become popular in recent years to use guesses at the areas of species ranges as components of various, arbitrary, conservation ranking schemes. Like most range maps produced in field guides, the maps in this book are reproduced at unspecified scales, coordinate systems, and projections, making them illustrations, not maps, and unsuitable for estimation of any actual land areas associated with the range of a species. The cartographically challenged, therefore, should be careful in their use of these maps for purposes other than illustrations, since they are not "maps" in a technical sense and not intended for technical uses.

I found this book to be a good overview of a diverse and challenging group of species. I recommend it to anyone with a specific interest in field identification of sparrows and buntings or a general interest in worldwide distributions and general ecology of those groups.—CHARLES R. SMITH.

CHICKADEES, TITS, NUTHATCHES AND TREECREEPERS. By Simon Harrap and David Quinn. Princeton Univ. Press, 41 Williams St., Princeton. New Jersey 08540. 1996: 464 pp., 36 color plates, 110 color maps. $49.50.—The Great Tit (*Parus major*) may be the most intensively studied bird in the world, while the Black-capped Chickadee (*P. atricapillus*) is certainly one of the most familiar birds in North America. These two species are the stars of the latest in the series of monographs devoted to single or closely related bird families. Other familiar birds of western Europe and North America and a long list of little known Asiatic species are included. Following the taxonomy of Sibley and Monroe, the book treats the Sittidae (25 species), Certhiidae, including *Salpornis* (7 species), Parinae (57 species),

Remizinae, including *Auriparus,* (13 species), and Aegithalidae, including *Psaltriparus* (10 species).

Even though two publishers are marketing the American versions of these originally British books they both follow a standard format. (By a complicated set of events two British companies are also involved.) A short introduction is followed by a section of color plates together with range maps. A third section gives a detailed discussion of each species under the topics: Identification, Sex/Age, Voice, Distribution and Movements, Habitat, Population, Habits, Breeding Biology, Description, Moult, Geographical Variation, Relationship, and References. The species accounts vary in length from a page and a half to 14 pages for the Great Tit and 10 for the Black-capped Chicakadee. For the well-known species these accounts are much fuller and offer more information than has been the case in other books in the series. The text, indeed, makes a very useful summary of the biology of the species. An authority of a given species may find the accounts lacking something, but they appear to be accurate summaries of the available literature. Scattered through the species accounts are numerous black-and-white figures, sound spectrograms of vocalizations, maps detailing distribution, tail or wing patterns, or other identification characters.

The colored figures by David Quinn are quite good. Quinn has pretty well avoided the big-headed appearance that have characterized some of the drawings in this series. However, a few of his birds could not possibly stand upright on the legs and leg attachment he has given them. Several plumages are figured for each species with 20 for the Great Tit. Of course all these tits look alike, as witness plate 16 with 14 figures of three species with only very subtle differences.

The range maps are small but reasonably accurate. A few show a very limited area on a blown-up section of a map of central Asia. Without labels the normal reader will have difficulty in placing this range.

Most *Wilson Bulletin* readers will use the treatment of the Black-capped and Carolina (*P. carolinensis*) chickadees as a test of this book. I can report that it passes this test with a good score. The British author has certainly done his homework on this matter. The details of the plumage and vocalization differences are carefully and completely outlined. These two species do however, overlap in parts of the Appalachians to an extent greater than indicated.

While the book is well done and full of interesting information, I am left with a wonder as to what audience it is intended. Some of the introduction is at the very elementary level. On the other hand the detailed description of all the described subspecies (33 for *P. major*) would appear useful only to a taxonomist. The detailed feather by feather descriptions would be of use only for banders or museum curators identifying specimens. As other reviewers of books in this series have noted no one is going to carry these books into the field to identify birds encountered in a new region. Indeed the traveling birder will not even take these books along for consultation. He will take a field guide for the region he is visiting. It would appear then that the authors and editors of this series want to produce a series of all-purpose books, sort of "Handbuch" on the inexpensive side. If so they have accomplished this volume is done in a first rate manner.—GEORGE A. HALL.

THE DOUBLE-CRESTED CORMORANT: BIOLOGY, CONSERVATION, AND MANAGEMENT. Edited by David N. Nettleship and David C. Duffy, Colonial Waterbirds 18 (Special Publication 1):1–256, $30 postpaid (paper).—The Double-crested Cormorant (*Phalacrocorax auritus*) is arguably the most volatile avian species of this century. It has gone from locally extirpated human food item (early 1800s), to locally abundant pest species

(1950s), to endangered status in much of its range (1970s) and to an exploding continental population carrying major implications for aquaculture and disease transmission (1990s). This issue of "*Colonial Waterbirds*" is devoted entirely to the proceedings of a symposium on Double-crested Cormorants held in Oxford, Mississippi, in 1992. The proceedings contain 29 scientific papers, involving 67 authors, organized into four major sections. In "The Bird and the Problem," three papers document the history of the North American population, the potential interactions of cormorants with rapidly growing U.S. and Canadian aquaculture industries, and the sociology of human perceptions of cormorants as competitors with humans for fish.

The second section, "Regional Distribution, Status and Conflicts," gives a wealth of specific information about the various regional populations and how humans have dealt with the problem of cormorant depredations on fisheries and aquaculture. This section is clearly the largest (19 papers) and most varied, with contributions on population dynamics, food habits, energetic predation models, techniques for mitigating depredations, conservation on the Pacific coast, breeding success, management histories, and effects of toxic chemicals. This is clearly the meat and potatoes of the volume; it documents the actual state of knowledge about this species, and provides data-rich reference material such as nest counts for specific colonies and regions, contaminant levels, and regional differences in morphometrics.

Part three, "Management Responsibility," is comprised of three papers representing the self-percieved management responsibilities of the U.S. Fish and Wildlife Service, the U.S. Department of Agriculture, and Environment Canada. Although this is the least scientific section, it does highlight how fractured management responsibility is across the U.S. Federal Government and among the Provinces of Canada.

The last section, "Conclusions and Recommendations," is comprised of two papers, one dealing with the future needs of research, and one summarizing the symposium as a whole. This section is particularly valuable since both contributions are hard-hitting, identifying major areas of information that are lacking, and suggesting novel approaches, such as that the cost of research to identify management options might not actually be justified by the cost of depredations to the industry.

The cormorant story is remarkable from many viewpoints. Cormorants have displayed extreme volatility in population size and growth rate, have responded rapidly to the rise and fall of contaminant levels, are a classical example of public perception of pest status repeatedly overriding scientific evidence to the contrary, and have demonstrated just how rapidly a species can shift from a species of local conservation priority to one of national industrial interest. This is a history that should be required reading for ornithogists, wildlife managers and animal ecologists.

This volume is most certainly not for the amateur ornithologist, since it is presented in symposium style, and the papers written in scientific, heavily referenced format. It is professionally edited and printed to the standards of scientific journals. As a guide to the current knowledge of the species, this volume does excellent service, being by far the most up to date body of literature on Double-crested Cormorants, and is the sole document to address comprehensively the growing conflict between cormorants and aquaculture. The volume is valuable both because it is comprehensive, and because the richness of its data will allow it to stand as a valuable reference document for many years to come. I recommend this book highly for professional ornithologists, wildlife managers, aquaculturists, agencies involved in management of aquaculture and fisheries industries, and especially, libraries.—PETER C. FREDERICK.

THE PENGUINS. By Tony D. Williams, illus. by J. N. Davies and John Busby. Oxford Univ. Press, Oxford. 1995: 295 pp., 8 color plates, 17 range maps, 112 numbered text figs., 54 tables. $65. (Hardbound).—This book is an authoritative account of the world's 17 species of penguins. The only remotely comparable compilation is contained in "Handbook of Australian, New Zealand and Antarctic Birds" (Marchant, S. and P. J. Higgins, eds. 1990, Oxford Univ. Press, Melbourne), which, like the present work, uses color paintings by J. N. Davies to illustrate all species. There is considerable overlap between the species accounts in the Marchant and Higgins' "HANZAB," but that book does not cover penguin species from South Africa, South America, or the Galapagos Islands and is five years less up-to-date than Williams in literature citations.

The present volume has two major subdivisions. The first of these includes eight introductory chapters on various aspects of penguin biology and the second contains the seventeen detailed species accounts.

The introductory chapters are comprehensive and up-to-date. They cover evolutionary origins, breeding biology, population dynamics, behavior, foraging ecology, physiology, and conservation. Of especial interest to me, both because of my personal interests and the extent of scientific advance presented, was the chapter on "foraging ecology" written by R. P. Wilson. This chapter summarizes recent information obtained from a variety of recently developed electronic recording devices implanted in penguins - in combination, these instruments permit the tracking of individual penguins on their foraging trips and recording when (and *where*, from satellite-tracked transmitter) on these trips they catch prey. Also exceptionally rich in new information was the chapter on "population dynamics"—here the advances derive from the several long-term studies of penguins that have recently yielded published results. Williams has left most literature references out of the text in the name of readability; this is at times annoying, as many statements, clearly based on single studies, are presented as if universally true. For example, on page 34 it is stated, without reference, that "In Adelie Penguins breeding success increases in birds up to 7 years of age, averaging 0.3 chicks per pair in 3 year-old-birds." There are many such examples. In his well-written and useful chapter on "population structure and dynamics," Williams alludes to the intertwined problems of estimating dispersal and survival in penguins. In many past studies, birds that disperse are implicitly assumed to have died, resulting in exaggerated estimates of philopatry and underestimates of dispersal distances. This is an issue with important conservation implications that I think deserves more attention, and the information in this chapter is a good start.

The species accounts are thorough and incorporate very recent information. They are more than just a good update; there is qualitatively new information being included. For example, data on "Age of First Breeding" are included for nine out of the seventeen species treated. Since these data require a minimum of 5–10 years of continuous study to collect, their inclusion attests to the seriousness of effort devoted to the study of penguins in recent years.

Penguins, the quintessential polar animals, have much to offer even the most jaded biologist. From this book, one will learn of first-laid "runt" eggs of the *Eudyptes* penguins that never hatch, squandering of reproduction by 20% of individuals in a Little Penguin (*Eudyptula minor*) colony, the disappearance to locations unknown by many species of penguins in winter, and of course the extraordinary vigil of Emperor Penguins (*Aptenodytes forsteri*) and their chicks through the intense cold and isolation of the Antarctic winter.

In summary, this is an excellent book that all seabird biologists and zoological libraries will want to own. Animal ecologists will at least want to read the introductory chapters, and it is hard to imagine anyone whose interest would fail to be piqued by the lives and antics of this remarkable group of birds.—RICHARD R. VEIT.