# Reviews

EDITED BY BRUCE M. BEEHLER

*The Auk* 109(3):683–686, 1992

**Birds of the High Andes. A Manual to the Birds of the Temperate Zone of the Andes and Patagonia, South America.**—Jon Fjeldså and Niels Krabbe. 1990. Zoological Museum, University of Copenhagen and Apollo Books, Svendborg, Denmark. 876 pp., 64 color plates, numerous (unnumbered) text figures (distribution maps, sonagrams, sketches of birds), 2 color endplates, addenda, index, list of plants illustrated in the color plates, four unnumbered topographical and political maps. ISBN 87-88757-16-1. 700 Danish Kroner (about U.S. $100; available for that amount plus postage from Apollo Books, Lundbyvej 36, DK-5700 Svendbord, Denmark).—From the snow-capped summits of the Santa Marta Mountains of Colombia along the immense backbone of western South America—the Andes—all the way south to the rugged and wind swept islands of the Cape Horn Archipelago in southern Chile, stretch vegetation zones that house a rich and diverse avifauna of well over 1,000 species, more than 10% of the world's birds. In spite of the environmental heterogeneity of this region (ranging from grasslands and cloud forests of the high equatorial Andes to the arid plains of Patagonia near sea level at 50° or more south latitude), its avifauna constitutes a single major biogeographical unit in South America and the Neotropics. Thus, a species like the Bar-winged Cinclodes (*Cinclodes fuscus*) occurs along the entire length of this area from Colombia and Venezuela to Cape Horn. In other cases, a given genus is represented by distinct species, each living in a different part of this biogeographical zone. In the chat-tyrants of the genus *Ochthoeca*, for example, northern Andean forests are inhabited by species like *diadema*, the puna scrub of the central Andes is the home of *oenanthoides*, and the very wet southern beech (*Nothofagus*) forests of extreme southern Chile house *parvirostris*. In contrast to such distribution patterns, there are striking cases of endemism, such as the Titicaca Flightless Grebe (*Rollandia microptera*), the Spectacled Duck (*Anas specularis*) of the southern Andes, the Magellanic Plover (*Pluvianellus socialis*) in Patagonia and Tierra del Fuego, the White-throated Treerunner (*Pygarrhichas albogularis*) in southern beech forests, the Rufous-webbed Tyrant *Polioxolmis rufipennis* in the central Andes, the Giant Conebill (*Oreomanes fraseri*) in *Polylepis* woodlands from Colombia to Bolivia, and the Pardusco (*Nephelornis oneilli*) in Peruvian cloud forests.

This dual aspect of the distribution of various elements in the Andean-Patagonian avifauna—wide-ranging versus localized—has long attracted the attention of ornithologists. In particular, Frank M. Chapman, who was Chairman of the Department of Ornithology at the American Museum of Natural History between 1920 and 1942, devoted an important portion of his long, varied, and productive career to a study of Andean-Patagonian birds. Besides countless short reports describing new taxa, Chapman also wrote major papers on the avifaunas of part of the Andean-Patagonian complex (Colombia, Ecuador, the Urubamba Valley of Peru) or outliers (tepuis of Venezuela), and on taxa selected for their biogeographic significance (*Atlapetes, Notiochelidon, Zonotrichia, Saltator*). Chapman was among the first ornithologists, if not the first, to suggest that the precursors of the birds of the high tropical Andes had originated in south-temperate Patagonia. He also published important theories on the origins of differentiation of northern Andean bird faunas, and on the role of the Andes in the separation of Amazonian from Chocoan rainforest birds. His ideas served as the starting point for subsequent workers like Jean Dorst and Jürgen Haffer, even though they criticized, modified, or sometimes abandoned Chapman's theories.

More recently, a new generation of Andean ornithologists has arisen and, as a result of fresh and extensive field work (especially on the part of the Louisiana State University Museum of Zoology, starting under the impulsion of the late George Lowery), many publications on new taxa, range extensions, faunal analyses, and biogeographic hypotheses have appeared.

The authors of *Birds of the High Andes*, however, are neither the intellectual descendants of the Chapman lineage, nor a product of the LSU Museum of Zoology lineage. Jon Fjeldså and Niels Krabbe, ornithologists at the Zoological Museum of the University of Copenhagen, decided to write this book after much field work in the Andes. "The motive for writing this book was our feeling that the needed upsurge of ornithological activity in the area would not take place unless modern fieldguides became available. Many previous texts were suited mainly for identifying birds 'in the hand' (i.e. in museum collections) but difficult to use in the field due to few illustrations and informations [sic] about habits, calls, habitat requirements, etc. Since we started, Colombia has been well covered, but most parts of the Andes still lack a modern treatment. We hope the present book will meet the needs of a genuine fieldguide" (p. 9). After still more fieldwork in the Andes and Patagonia, and work indoors studying

skins in many museums and painting plates, they produced this extraordinary book. My review copy is one of the 5,000 copies of the standard edition costing DKK 700 and not, unfortunately, either the collector's edition (200 copies at DKK 3,500; about U.S. $510) or the unique edition (26 copies at DKK 7,000; about U.S. $1,000). Too bad. I could have sold the review copy of the unique edition, bought a standard copy, and used the left-over money for an expedition to the Andes or Patagonia, instead of dreaming about it while admiring the plates.

The plates, of course, are what first attract one's attention to the book. Besides the two beautiful color plates as endpapers, depicting life on the Patagonian plains and in the high Andean *Polylepis* woodlands, there are 64 color plates illustrating over 1,000 species of Andean and Patagonian birds. Three of these plates show, respectively, specialties of the Bogotá wetlands (plate 10), the Santa Marta endemics (plate 63) and the Mérida endemics (plate 64). The others are arranged in the standard systematic order, starting with grebes and ending with finches. Many of the plant taxa illustrated in these plates are listed in an appendix (p. 876).

I have looked at these plates again and again for a long time now, in the museum and in the field, and find them, as a whole, simply stupendous. All were painted by Fjeldså "in water color from field sketches (supported by photos), and with study skins at hand" (p. 52). We are also told that "The birds on a plate often differ in attitude, some birds resting, others active, some flying, although identical attitudes would make the comparison of similar-looking forms easier. The artist's motive was not only to make the plates 'alive', but also to convey information about the characteristic attitudes, activities, etc., which combine with the colors and patterns to give the species its special feel or 'jizz' " (p. 51). Just below this quote is the line-drawing of a Puna Rhea (*Pterocnemia pennata tarapacensis*) on the run, a vivid example of this aliveness. Fjeldså's color plates (and his line drawings in the text) appeal to me very much. These illustrations generally are unlike those that have appeared in recent field guides to Neotropical birds, especially those by Guy Tudor. I am not going to compare the respective merits of these two artists here, however. Tudor's work also appeals to me very much, but in a different way. If I were to illustrate a field guide, I would probably do it as Fjeldså has done, not how Tudor usually does it. This, I believe, is largely a matter of temperament. I have drawn many birds during my lifetime, but very few of my ornithological colleagues know this, since, with one exception, my published art has appeared only in local European bird journals while I was in my early twenties. Like Fjeldså, I enjoy drawing birds in the field, and once home, like to work on a more elaborate composition. Fjeldså's style reminds me of that of Robert Hainard. Hainard is one of the best-known bird (and wildlife) artists in Europe, but unfortunately is almost unknown in the United States. I do not know whether Fjeldså was inspired by Hainard or by Scandinavian artists like Liljefors, but after comparing Fjeldså's plates with those by Hainard in a pocket field guide published in Switzerland in 1943 (Vögel der Schweiz, Hallwag, Bern; subsequently Payot), I am struck by some of the resemblances in technique and results. The "jizz" is what it is all about.

It is hard for me to select my favorites among the many beautiful plates painted by Fjeldså. I like his yellow-finches (*Sicalis*, plate 60) and siskins (*Carduelis*, plate 62), as well as his terrestrial flycatchers (like *Muscisaxicola* and *Agriornis*, plate 43), his owls and nightjars (plate 26), and his grebes (plate 20). Some birds, however, definitely are not done as well as others. One example is the two species of *Pteroptochos* on plate 40. The three birds illustrated, especially *tarnii*, look as if they are either dead or moribund. Fjeldså may not have been able to observe them well enough for good field sketches. Another example is the drawing of pipits at the bottom of plate 48, which somehow does not "feel" like the Andean-Patagonian pipits I know, and which cannot be used for field identification. Like many of the color plates, the line drawings throughout the text are little gems. I already mentioned the Puna Rhea of page 52. Others I found very attractive include the Chilean Flamingoes (p. 87), the Andean Condor (p. 90), the flying Black-chested Buzzard-Eagles (p. 99; the "jizz" is just right!), the Tawny-throated Dotterels (p. 164), the Emerald-bellied Puffleg (p. 275), and the Stripe-headed Antpitta (p. 407). Fjeldså's style of line drawings is quite different from his watercoloring style. I wonder whether he was influenced by Martin Moynihan's drawings.

So far I have only commented on the plates, but there is much more to the book than that. The text was written by Fjeldså (introductory chapters, species accounts of nonpasserines) and Krabbe (passerines), but both authors read and made comments on the other's chapters. The authors spent a lot of time in the field (J.F., 17 months; N.K., 28 months) and also "checked, at least superficially, over 100,000 bird specimens" in many museums. A map (p. 12) shows their study sites. Although there are large gaps in their travels (northern and southern Andes especially), one can only be impressed by the huge amount of labor that went into the production of the book. Even though it is meant to be a field guide, as the authors stated in the introduction, it also is, as suggested by the subtitle, a manual. The introductory sections include good descriptions of Andean and Patagonian topography and climate, of vegetation zones, and of habitats (landscape types). After a survey of the historical exploration of the Andean-Patagonian avifauna, the major landbird communities are described. Also included are chapters on conservation, with hints for field work in the Andes (very useful, except that the "large pockets" recommended

by the authors for field guides would have to be very large indeed to accommodate theirs!), and on classification (good discussion of speciation, of species concepts, and of taxonomic categories). Several pages indicate how to use the species accounts. The latter (pp. 53–696) form the bulk of the text, and are followed by an extensive bibliography (pp. 697–702, and 833–845), and an index to Latin and English names of birds. For most of the approximately 1,100 species treated in the text, the accounts give a description, notes on habits, voice, breeding, habitat, and range, the last supplemented by range maps. Details about subspecies or geographic variation are given in the species descriptions or in the sections on range, or in both.

The range maps (drawn by Fjeldså) give several kinds of information about distribution, including relative abundance in certain areas (for some species), migration, and breeding versus nonbreeding distribution. These maps are for the most part clearly drawn and, even though many of them are quite small, they are easy to use. The major rivers and country boundaries have been indicated on the range maps. Therefore, by quick reference to the four unpaginated maps at the end of the book following page 876, especially the two maps where rivers are given in blue, it usually is possible to figure out the precise localities represented by even isolated dots. Some maps are not that simple to understand, however, even with reference to the text. For example, the map of the breeding versus migratory ranges of *Hymenops perspicillata* (p. 519) will leave some readers puzzled because the map seems to imply a wholesale exchange of populations between Chile and Argentina. Similarly, the map of the migratory movements of *Mimus patagonicus* (p. 550) is confusing because the double-headed arrow seems to imply migration over the sea.

In general, I find that the text is packed with information and summarizes much of what is known about Andean and Patagonian birds. The introductory sections are well thought out and useful, the color plates are superb, the line drawings are evocative of real birds in the field, and the range maps are easy to interpret. I do wish a skilled English-language copy editor had gone through the book to eliminate the (too) numerous typographical errors, to improve the flow of words, and even to correct the grammar. I still wonder whether the book is a field guide (as the authors intended it to be) or a manual (as the subtitle suggests, and as the text clearly shows it to be). It is too big and too heavy to be carried in one's pocket (and even in one's daypack it takes a huge amount of space), and the paper is too thin to resist for long the rough Andean-Patagonian usage to which it would be submitted (the book would be in a sorry state after a week of camping in elfin woodland, or after a few days of traipsing through the windy and gritty Patagonian steppes). The plates could be taken out and bound separately, but they would not be sufficient, by themselves, for field identification of many species. The maps and text would be needed also. My solution during a recent field expedition was to remove the binding and the bibliography and to put masking tape on the outer pages to protect them, thus making the book less bulky and yet sturdy in the field. I also kept it in a zippered pouch, to prevent it from being damaged severely during field work. In spite of this book's size and weight, I do not see how students of Andean and Patagonian birds are going to do field work there in the future without taking this giant along. So, perhaps it does not matter whether it is a field guide or a manual. It is some sort of hybrid, and there is nothing quite like it on the market. For anybody to whom biogeography makes sense, this book, therefore, will become the field guide-cum-manual for western South America, from the Caribbean to Drake Passage. It does suffer from a few drawbacks, some of which have already been mentioned in this review. There are others, which fall into two categories.

The first kind of drawback is the curious omission of several species that occur in the area the authors cover. As an example, the Tufted Tit-Spinetail (*Leptasthenura platensis*), which is very similar to the Plain-mantled Tit-Spinetail (*L. aegithaloides*) discussed in the text (pp. 348–349) and illustrated on plate XXXV, is not described or illustrated although it is briefly mentioned on page 349 ("dull rufous in the very similar Tufted T.-s. [*L. platensis*] of lowland Arg. and s Brazil"). Ornithologists who might be unaware of the great similarity in the field between these two species of tit-spinetails might, therefore, misidentify them.

The second kind of drawback in this book is embodied by the section on tapaculos of the genus *Scytalopus* (pp. 424–444). These birds pose very difficult taxonomic problems that are far from having been solved at the present time—the boundaries between several taxa at or near the species level are still unclear. In their book, Fjeldså and Krabbe propose a nomenclature of *Scytalopus* that differs in many respects from previous treatments. They mention an "unnamed species," species groups, and many subspecies in a way that is inappropriate for a field guide (far too confusing), yet inadequate for a manual (not a formal classification). In a book such as theirs a conservative treatment would have been the correct procedure to follow. Some of the taxonomic problems could have been alluded to in footnotes for the sake of completeness. I am especially unhappy about their mentioning a "*Scytalopus* unnamed species" on pages 427–428. This is a virtual description and diagnosis of a new species, although it lacks a Latin name. If the authors felt that a new species of *Scytalopus* needed to be described, then they should have done so in the formal way adopted by systematists—namely in a refereed journal—and not in a field-guide-type book, and with a designation of type specimens.

In spite of problems such as those mentioned in

this review, *Birds of the High Andes* is a unique volume that bears the stamp of originality of its two authors, and especially of senior author and artist Jon Fjeldså. As an old hand in Andean-Patagonian ornithology myself, I say to them: Well done (and I wish I had done it).—FRANÇOIS VUILLEUMIER, *Department of Ornithology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024, USA.*

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**The Status of Seabirds in Britain and Ireland.**—Clare Lloyd, Mark L. Tasker, and Ken Partridge. 1991. Academic Press, San Diego, California. xviii + 355 pp., 30 plates (black-and-white photographs), 41 figures, 63 tables, 5 appendices. ISBN 0-85661-061-5. $41.00.—This book is the result of a project of tremendous scope (for which much of the field work was carried out by volunteers in 1985–1987) to census all the coastal seabird colonies of Great Britain, Ireland, the Isle of Man, and the Channel Islands. These islands harbor globally important breeding populations of several seabirds, in particular Manx Shearwaters (*Puffinus p. puffinus*), British Storm-Petrels (*Hydrobates pelagicus*), Northern Gannets (*Sula bassana*), and Great Skuas (*Catharacta s. skua*). Because a fairly complete survey of coastal seabirds for the same areas was done in 1969–1970, the Seabird Colony Register—which derived from the 1985–1987 census—allowed for detection and interpretation of population trends in the intervening years for the breeding seabirds of these areas.

Major features of this book include introductory material on seabird biology, populations and reasons for their change, and the methods used in data collection. These items are followed by detailed species accounts for each of the 24 breeding species of seabirds in Britain and Ireland, and a short section on species that have bred there very rarely. Each species account is preceded by a black-and-white illustration by the exceptionally talented Keith Brockie, and there are numerous small black-and-white photographs throughout the text. For each species, standardized figures are provided for distribution and size of colonies in Britain and Ireland between 1985 and 1987, as well as for regional changes in numbers of breeders. These figures are informative, clear, and well executed. Tables present estimated world breeding populations of each species broken down by country, and regional breeding populations within Britain and Ireland. Appendices provide the instruction and recording forms used for the censuses of the Seabird Colony Register between 1985 and 1987 and those of its predecessor Operation Seafarer in 1969–1970.

The book is well written and produced, and the text is nearly free of typographical errors (one on p. 40 referred to "fulmar nets"). In table 19, the entry for the country of Turkey lacks a population estimate or any comment. Appendix V contains a misspelling of *Sterna*, the name *Avoceta curvirostra* instead of *Recurvirostra avosetta*, and a twice-repeated misspelling of *Mustela*. On page 4, a capsule summary of the characteristics of seabirds includes the statement "a highly concentrated salt solution . . . trickles out of the bird's nostrils"; however, this does not occur in phalacrocoracids, which as adults have occluded nostrils. In most cases, where the American name for a species differs from the British, the former is provided near the beginning of the species account, but this clarification is lacking for the European Shag (*Phalacrocorax aristotelis*), Parasitic Jaeger (*Stercorarius parasiticus*), Common Black-headed Gull (*Larus ridibundus*), and Mew Gull (*Larus canus*).

The usefulness of this important book will extend past the identification of trends in British and Irish seabird populations, as it surely will serve as a reference work on seabird censusing techniques. There are few if any other areas of the world where censusing on this scale of major populations of seabirds could even be attempted. The authors deal frankly and thoroughly with biases and sources of error in the data collection and interpretation process for each species; this will increase the book's usefulness and interpretability of trends, and may lead to the development of improved censusing procedures. This book definitely belongs in the libraries of conservation organizations, individuals with special interests in seabirds or British birds, and colleges or universities with wildlife management or conservation-biology programs.—PAMELA C. RASMUSSEN, *NHB Room 336, Smithsonian Institution, Washington, D.C. 20560, USA.*

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**Biology, Conservation and Management of Waterfowl in Venezuela.**—Francisco Gómez-Dallmeier and Alexander T. Cringan. 1989 (=1990). Editorial Ex Libris, Caracas, Venezuela. 351 pp., 47 color plates, 35 text figures, 5 tables, 3 appendices. ISBN 980-6200-13-6. Price not given.—*Waterfowl in Venezuela* will contribute to the development of waterfowl biology in the Neotropics, as it presents the array of subjects necessary for implementation of effective conservation, hunting, and pest-control strategies geared specifically to the needs of a South American country. Venezuela has a number of wetland preserves and enforces hunting regulations, but is undergoing major waterfowl habitat loss and pollution, hunting is

permitted during the breeding seasons of some species, whistling-ducks are serious rice-crop pests and require control, and globally important populations of several taxa occur there. Venezuela's strategies for dealing with the above problems are based on limited local research as, despite the popularity of duck hunting, few studies have been done on waterfowl in South America other than on the economically important whistling-ducks. Much of this book is a summary of data primarily from Northern Hemisphere waterfowl studies and an attempt to relate management practices utilized in other parts of the world to Venezuela's special problems.

The book includes brief chapters entitled "Classification of Waterfowl," "Molts, Plumages, and Identification . . . ," and "Migration" (the last by F. C. Bellrose). Longer chapters are "Geography of Venezuela," "Venezuelan Wetlands," "Wetland Management Techniques," "Venezuelan Protected Areas," "National Wildlife Refuges," "Waterfowl Depredation and its Control," "Waterfowl Harvest Regulations," "Diseases and Other Non-Harvest Mortality . . . ," and "Waterfowl Management Plan."

Species accounts follow for each of the waterfowl occurring in Venezuela. These include a list of common names in several languages, as well as mean measurements (length, wing, and weight) for a sample of each sex. Sample size is given for each but there is no mention of measurement methods and, for most species, there is no indication of geographic origin. As an example, for the Southern Pochard (*Netta e. erythrophthalma*), the weights given are for the African race (*N. e. brunnea*), but this is made clear only by checking the reference. Other sections cover identification in the field and in the hand, as well as distribution and abundance. Range maps for Venezuelan and global distributions are included. For the resident species and some of the visitants, there are sections on life history and ecology.

The plates comprise: 7 of waterfowl habitats in Venezuela; 5 depicting disease, poisoning, and parasite conditions; 13 overly romanticized paintings by Walter Arp of adults of all waterfowl species in Venezuela; 1 painting by Arp captioned "Individual variation in four waterfowl species collected in Venezuela" that includes what appear to be two different teal hybrids (I could find no comment on these in the text); 3 plates by Arp of downy ducklings of each breeding species (that of the Fulvous Whistling-Duck [*Dendrocygna bicolor*] is depicted as too dark above and lacking the pale stripe on the back of the head characteristic of downy Dendrocygnini); and 19 photos (most of excellent quality) of each species except the Masked Duck (*Oxyura dominica*) and Lesser Scaup (*Aythya affinis*). The photograph of the Speckled Teal (*Anas flavirostris*) is of the yellow-billed nominate race from southern South America (*A. f. flavirostris*), rather than one of the probably specifically distinct blue-billed northern forms of which the Mérida Speckled Teal (*A. f. altipetans*) is the form occurring in Venezuela. The photograph of the Northern Pintail (*A. acuta*) appears to show two males in partial eclipse rather than one individual of each sex as stated in the figure caption. This section includes an excellent photo taken by the first author of a male Southern Pochard of the rare South American race.

The distribution and status of the Southern Pochard are enigmatic in South America; however, table 3 gives an estimate "[b]ased on five-year census and interviews" of its population in Venezuela as 5,000 to 10,000, or 20 to 40% of the total South American population. These figures must be highly speculative, as page 239 mentions only four localities at which a few Southern Pochards have been found in Venezuela since the 1970s, and censuses certainly have not been done in most of the other South American countries. Also, the range map on page 238 shows the range of the Southern Pochard as the entire northern half of South America and (erroneously) eastern Panama; it ignores records from southeastern Brazil, northern Chile, and northwestern Argentina. The authors state on page 239 that the vocalizations of females are undescribed, but in fact these are known at least for the African race. Surprisingly, the Southern Pochard is on the list of waterfowl species that in Venezuela "can be hunted if the Ministry of Environment and Natural Resources (MARNR) includes them in the annual hunting season calendar" (p. 87), and it was not listed by the authors as one of the species temporarily protected until studies indicate that hunting can be sustained, although such studies are recommended in the proposed management plan (p. 116).

Typographical and terminological errors are relatively frequent (on p. 9, "inbred" is used instead of "interbred," and "hybridism" is used instead of "hybridization" on the caption for the photograph of Muscovy Ducks [*Cairina moschata*]). On page 93, Squaw Creek National Wildlife Refuge in Missouri is referred to as "Snow Creek." On page 22, the statement is made that male Tadornini "differ appreciably from [females] in plumage" (although the only tadornine in Venezuela, the Orinoco Goose [*Neochen jubata*], is nondimorphic in plumage). The range maps are highly inaccurate; for example, one species recorded only once in Panama and one extirpated there are shown as occurring throughout that country, while one local resident and two species that are common visitants throughout are shown as lacking for most or all of Panama. Figure 28 excludes the White-cheeked Pintail (*A. bahamensis*) from most of its range, but shows it for all of peninsular Florida, where it is only a casual visitor. After discussing the great abundance of Speckled Teal in southern South America, the authors state on page 211 "the Andean populations are doubtless far more abundant," exactly the opposite of what must be the intended meaning. Also, in the account of the Speckled Teal on page 213 is the uninterpret-

able statement that it "has a particular courtship display that is more common than in any other species of *Anas*." The problem of reconciling the population estimates provided in table 3 with information in the species accounts crops up again for the Cinnamon Teal (*A. cyanoptera*, p. 229) and Northern Shoveler (*A. platalea*, p. 233). Regarding the Cinnamon Teal, population estimates within Venezuela are provided for both the North American race (*A. c. septentrionalium*) and an endemic South American race (*A. c. orinomus*). Pages 45 and 63 mention that mountain wetlands provide habitat for the endemic race of Cinnamon Teal, but in the species account, the range of *A. c. orinomus* is stated to be Peru, Bolivia, and Chile; the range map for Venezuela (fig. 30) shows only *A. c. septentrionalium*; and on page 229 the statement "I believe that the few distribution records of cinnamon teal from Venezuela arise from the difficulty in differentiating this species from the blue-winged teal [*A. discors*]" closes the "Distribution and Abundance" section for the former species. Figure 30 and its caption provide an example of pervasive carelessness, as in addition to the problem noted above, they also: contain a misspelling of *A. c. borreroi*; *A. c. cyanoptera* is not italicized; and the northern part of the southern races' ranges as depicted on the map forms three sides of a nearly perfect rectangle. "*Erythrophthalma*" is spelled three different ways on three successive pages (pp. 237–239).

The book contains numerous text figures, such as helpful maps of the occurrence of each type of wetland found in the country. Figure 8, however, gives the distinct impression that all of Venezuela is inundated. Figure 5, "Topography of a waterfowl" is poorly executed, with some labels (back, upper tail coverts, lamellae) being misleading. The figure legends lack reference to which part of the text they pertain, nor do the species accounts refer to the plates, which are unnumbered. "Potential predators" are listed in several species accounts, but it is not always clear whether these are known predators or merely seem likely to be (e.g. pp. 180 and 213). Several useful features of this book include: a list and bibliography of most of the parasites known from each species of Venezuelan waterfowl; lists of forest reserves, protected areas, and their characteristics and acreages; and addresses and phone numbers of local hunting organizations.

*Waterfowl in Venezuela* combines a synthesis of Northern Hemisphere waterfowl biology with specific information on problems and current practices in Venezuela. A number of previously unpublished observations by Gómez-Dallmeier and personal communications by others are included. This book is readable and interesting, and succeeds at bringing together useful information, but is hampered by the sparse available data on the resident species of waterfowl. Perhaps the book will be most useful in stimulating research that will rectify this situation. It will eventually be published in Spanish, making it more accessible to an audience of Latin American wildlife biologists, legislators, hunters, and students. As it contains some original information and summarizes the less accessible Venezuelan literature on waterfowl, major ornithological libraries should obtain a copy. Although the book would have been greatly improved by better editing, organization, and illustrative material, it will be useful to conservation organizations, hunting associations, waterfowl enthusiasts, and wildlife biologists.—PAMELA C. RASMUSSEN, *NHB Room 336, Smithsonian Institution, Washington, D.C. 20560, USA.*

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**Seabirds of the Farallon Islands: Ecology, Dynamics, and Structure of an Upwelling-system Community.**—David G. Ainley and Robert J. Boekelheide. 1990. Stanford University Press, Stanford, California. xiv + 450 pp., 35 black and white plates, 114 text figures. ISBN 0-8047-1530-0. $60.00—It would probably be premature or presumptuous to declare this book and the study it reports to be classics, but they certainly will set standards for years to come on how to study seabirds and how to determine the effects of environmental variability on avian populations. The book is a multiauthored volume covering 15 years of research on the 11 species of marine birds of the Farallon Islands of California. The Farallones were chosen because of their diversity and abundance of nesting seabirds and their proximity (35 km) to San Francisco. The book is organized into 12 chapters. The first three describe the background and purpose of the study, the oceanography of Farallon waters, and the feeding ecology of the seabirds. The next eight examine the breeding of the 11 seabird species of the Farallones. These chapters are full of valuable natural history, which the last chapter of the book pulls together, discussing patterns at the community level.

The study originally was designed to repeat Belopol'skii's Arctic study (1961, *The Ecology of Sea Colony Birds of the Barents Sea*) in a temperate ecosystem, comparing variations in productivity of the marine environment with changes in seabird foraging and breeding. The authors initially expected greater reproductive success when there was low niche overlap among species, but eventually came to regard this as a "naive" expectation. They replaced it with the more recent concept that overlap may be high and resources essentially unlimited in most years, and that occasional years of "ecological crunch" occur when resources become scarce and competition between species may lead to divergence in foraging behavior.

The archtypal ecological crunch is probably the El Niño/Southern Oscillation (ENSO), a change in the circulation of the Pacific Ocean. Three ENSO events occurred during the study (including that of 1983, the most severe ever recorded). This book is in large part about the species' foraging and breeding responses to ENSO, and the consequences for their populations.

There are 10 authors, but David Ainley should receive the lion's share of credit for the book, both as editor and as senior or sole author of 8 of the 12 chapters. The Point Reyes Bird Observatory also deserves recognition for its commitment to long-term research at such a difficult site. This is an essential book for students of marine ornithology, and I would recommend this book to anyone interested in seabirds, environmental variability, and climate change.—DAVID CAMERON DUFFY, *Box 1095, Shelter Island Heights, New York 11965, USA.*

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**An Annotated Bibliography on Preparation, Taxidermy, and Collection Management of Vertebrates with Emphasis on Birds.**—Stephen P. Rogers, Mary Ann Schmidt and Thomas Gütebier. 1989. Carnegie Museum of Natural History, Pittsburgh, Pennsylvania. Special Publication Number 15. 189 pp. $ 15.00.—When asked to review a publication such as this one, it can be perplexing to determine the most appropriate approach. After all, a bibliography does not present scientific theories, concepts or sets of facts with which one can agree or dispute. There are no statistical results or illustrations to be judged for accuracy. Thus, a bibliography must be reviewed by different factors—does the publication cover the subject intended, and is it presented in a usable manner? For both criteria, this publication excels.

This bibliography is one of the few, if not the only, recent attempts to compile the diverse literature on the preparation, preservation and management of vertebrate natural history specimens. It certainly is the most comprehensive. There are 1,231 citations ranging in date from 1630 to 1988 (the cut-off point prior to publication), with the bulk of the citations post-1900. While the main emphasis is on birds, other vertebrate groups are well represented. Many of the references apply to more than one vertebrate class.

The citations are grouped among 37 subject headings that range from the very general (Museums and Collections, General Taxidermy) to the specific (Skeleton Preparation, Clearing and Staining of Specimens). Although the chief emphasis is preparation and taxidermy of bird specimens, the bibliography includes sections covering collection management, conservation, fumigation, special preparation methods, postmortem changes, labeling, and field notes. There is a separate listing of 145 foreign-language publications.

For anyone intimately involved in the preparation and conservation of vertebrate specimens, this bibliography is invaluable for researching methods to refine techniques, or for finding a special technique with which one is not familiar. The annotations included with almost every citation are the greatest strength of this work. Anyone researching a particular topic or technique will benefit from the incisive annotations when trying to determine which references to explore in detail. On a number of occasions, while researching a particular technique, I found myself distracted by a witty and perceptive annotation on an entirely different topic.

The inclusion of many citations of historical methods will aid workers charged with the long-term care and preservation of exhibits or museum collections. Learning the techniques, treatments and materials used in the past is vital when one must conserve specimens today or in the future. Certainly, the long-term prospects of vertebrate collections depend on our ability to preserve the specimens in our charge.

The incorporation of numerous citations from the popular taxidermy literature is an additional bonus. Most of us working in museum and university research collections do not have ready access to these publications. Thus, we miss an important segment of the literature devoted to the preparation of vertebrate specimens for public display.

It is difficult to find much to criticize about this publication. Authors are bound to miss some citations, but I have not noticed any major works in English that were omitted. However, the foreign-language publications could have been more thoroughly covered, and some of the annotations could have been more detailed.

In short, this inexpensive publication contains a wealth of information. Its comprehensive, annotated citations will be valuable tools for anyone interested in the preparation, care and conservation of vertebrate specimens used for scientific or educational purposes. The bibliography deserves an accessible spot in one's personal library. It definitely should be available in every museum library and vertebrate natural-history collection.—JAMES P. DEAN, *Division of Birds, Room E606, MRC-116, Smithsonian Institution, Washington, D.C. 20560, USA.*

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*The Auk* 109(3):689–692, 1992

**The Birds of British Columbia.**—R. Wayne Campbell, Neil K. Dawe, Ian McTaggart-Cowan, John M. Cooper, Gary W. Kaiser, and Michael C. E. McNall.

1990. Royal British Columbia Museum, Victoria, British Columbia. Vol. 1, nonpasserines, introduction, loons through waterfowl. xvii + 514 pp., 341 text figures, 71 distribution maps. Vol. 2, nonpasserines, diurnal birds of prey through woodpeckers. ii + 636 pp., 350 text figures, 153 distribution maps. ISBN 0-7718-8872-4. $99.00 Canadian.—Regional bird books often are adorned with attractive but unnecessary color plates, surely more of a marketing ploy than a need for still more illustrations of well-known species. Fortunately, the producers of this book flew in the face of that credo and, nevertheless, have given us what is likely to be a best seller. The final three-volume set will take up more space on the bookshelf and cost more than any other North American regional bird book. Is it worth it? In fact, the work is so rich in clearly presented information that it serves not only as a model of its type but also as an important reference for a much larger region. Ornithologists elsewhere in North America only can express admiration of the human resources and envy of the financial resources that allowed British Columbia through its provincial museum to produce this book only three years after the equally fine book on birds of the province's Okanagan Valley by Robert, Richard and Sydney Cannings.

The book consists of a very lengthy introduction, focusing primarily on the environment (written by other authors) and ornithological history of the province. These accounts present very interesting temporal and spatial contexts for understanding both the birds of British Columbia and the extent of our knowledge of them. Some may question the inclusion of these sections, but to many they will enhance the book's value. Both are interesting and educational, and could stand alone as separate booklets.

Species accounts make up the bulk of the volumes; each account emphasizes distribution, phenology, habitat use and breeding biology. The presentation of many details and constant reference to published papers make these summaries exemplary. Among the nonpasserines, 223 species occur regularly in British Columbia and another 48 have occurred at least once, an impressive total. This is in part a consequence of the large size and diverse environments of the province and in part because of the strength of its coverage (4,629 people contributed records!). Two appendices present valuable summaries of migration chronology (11 locations) and Christmas Bird Counts (47 locations), fortunately scattered across the province.

The authors commendably chose to use objective categories to describe the status and abundance of each species (1:148–149). Their abundance designations are straightforward, logical and used consistently in the text. However, I consider their status designations confusing. The use of "migrant" or "visitant" to distinguish species that both breed *and* winter in the province from those that only breed *or* winter in the province seems superfluous. The use of both "migrant" and "transient" introduces an additional term where unneeded, as it does not seem particularly valuable to distinguish two categories of migrant species—those that breed or winter in the province, and those that do not. In any case, there is not always consistency, as several species (e.g. Greater White-fronted Goose, Long-billed Dowitcher) are listed as transients (defined as "neither breeds nor overwinters") that also occur regularly in winter.

Numerous text figures, most of them previously unpublished, enhance the information presented in writing. Special maps for certain species include banding recoveries, migration routes, subspecies distributions, seasonal concentrations and molt sites. Also included are phenology studies for 9 species and population trends for 16 species, most of the latter from Christmas Bird Count data. Information about population trends in all regularly wintering species would have been of similar interest, but such an analysis remains for the future. However, changes in the status of many other species are well documented in the text.

The almost 200 habitat photos, many of them aerials, bring into sharp focus the magnificent landscapes of the province. One-third of them are in the environment section, the rest sprinkled throughout the text as typical of particular species. The 58 photos of provincial ornithologists might be considered of more dubious value, but I suspect they were included as much in recognition of the contributors to the volume as for their information content.

The organization of ornithological knowledge in British Columbia has been phenomenal. In 1972, two of the authors (Campbell and McTaggart-Cowan) conceived the "B.C. bird book project." Records were kept on 3 × 5 cards, as much of the project was done by volunteers and accomplished before the days of user-friendly microcomputers. The store of information now held in the B.C. Wildlife Records Scheme and the B.C. Nest Records Scheme databases is extraordinary, in fair part due to the energies and dedication of Wayne Campbell over the last two decades.

Over a million records were available to determine the occurrence of nonpasserines in British Columbia, surely more than have ever been analyzed for a bird book. Thus, the number of records for each month, not counting breeding, was about 76,000. The nest-records file, begun by M. T. Myres, is the largest regional program in North America, with 150,000 records of nearly 300 species. The B.C. Photo-Records File, begun by Campbell, now contains 1,200 photographs of 297 species of British Columbia birds. Although all this information is available in the book, I include it here to emphasize that one reason the book is of such high quality is the volume of information available to its authors. For example, the nest records have allowed quantification of breeding biology (nesting habitats, nest sites and material, egg dates, clutch size and brood size) for each species,

with astonishing sample sizes for many species (e.g. 1,371 Black Oystercatcher clutches, 1,384 Barrow's Goldeneye broods).

The authors point out the inadequacies of their data base, as well as exulting in its size. The huge gaps in the range of many species in northern interior British Columbia are easily explained by looking at the figures (1:13) of coverage for each season in each quadrat of the map grid. They are almost solid in the southern half of the province but much sparser in the northern half, especially in spring, when conditions are the most difficult. Twenty percent of the provincial grids were not sampled at all, and the proportion of unsampled grids rises to 40 to 60% for the bioregions of the northern third of the province. And lest anyone think the last words have been said about even the very well-studied southern edge of the province, read about the Parakeet Auklet (2:629). Although there were no definite previous provincial records, 15 dead birds washed up on western Vancouver Island beaches after a near-shore oil spill in 1988. Presumably, the auklets are present every year.

The chronology of record documentation is fascinatingly shown in species accounts in which all records from the province are listed. For example, the 12 records of the King Eider are based, in order, on specimen (1938), specimen (1942), specimen (1945), photo, photo, sight, sight, photo, photo, photo, sight and sight documentation. The eight Snowy Plover records are based on sight, sight, sight, photo, photo, photo, photo and photo. The seven Curlew Sandpiper records are based on specimen, photo, sight, photo, sight, sight and sight. Obviously, we are in the era of the sight record, which means a certain deviation from "the truth" evident when records were based on specimens. At least good cameras and long lenses are available now to provide some records that can be objectively judged.

The distribution maps follow a recent trend, especially in breeding-bird atlases, of mapping by a grid system. The grid used for British Columbia measures about 1,000 $km^2$ in each quadrat. Although a fairly large area, about the size of Greater Vancouver, such an area represents enough detail, considering the size of the province. The circles that indicate records are further divided into quarters indicating spring, summer, fall and winter. The maps are so interesting that I wish they were available as overlays with which to compare species (e.g. swans, scaups or sapsuckers).

The maps take up a full page each and include the map key, a bar showing annual occurrence, and a data base showing the number of records (and breeding records) in each month. As impressive as the maps are, I think the seasonal quarter circles are difficult to interpret, and I would have preferred four smaller maps for each species, one for each season. To save the space needed for these maps and improve the graphic presentation of phenology, I would have dropped the wash drawing of each species (a concession, I suspect, to the marketing people) as well as the map key and data base. I would have converted the annual-occurrence and breeding-chronology bars to frequency charts showing records by month—on a log scale if necessary. We need to consider more informative methods than have traditionally been used to present bird distribution and phenology. Imagine all such information on computer data bases, from which we could call up records on screen by months or weeks and show by animation the yearly movements of birds!

No reviewer can judge the accuracy of the records that make up this book, but the authors at least attempted to be critical in their judgment of the sight records that make up the bulk of their data base, in particular those for very rare species or seasonally or geographically unlikely occurrence. For example, published records of Swainson's Hawks and Short-billed Dowitchers on Christmas Bird Counts, as well as huge flocks of Long-billed Dowitchers on the coast of Vancouver Island, were questioned and not included on the species maps. Numerous sight records of vagrant Eurasian shorebirds, some of them published, were not accepted.

The book presents a fine collection of photographs of birds both common and rare to facilitate such confirmation; a few are mislabelled, including the reversal of the adult and juvenile White-headed Woodpeckers in figure 313 (2:440). The Iceland Gull in figure 337 (2:470) is surely not this species, and the specimen should be reexamined. In fact, there may be some confusion, as no mention of it is made in the text. The Forster's Tern in figure 201 (2:288), from its dark primaries, looks like a Common Tern (and a late date for either species to be in alternate plumage). If all of the province's 26 Little Gulls and 11 Common Black-headed Gulls (rather than four of each) had been photographed, they could be subject to the same scrutiny. There is no specimen of either of these species from the west coast of North America south of Alaska; this is not a trivial matter, as it would be of interest to determine the subspecies (and, thus, continent of origin) for the Black-headed Gulls. Even specimens can be misleading if their data are incorrect; a Black Swift specimen from Comox on 1 March 1925 (2:399) is so extraordinarily early that it should be questioned.

There will be criticisms of any such massive undertaking, and mine are mostly minor. The data base listing for each species can be misleading if the introductory explanation (1:150) was missed. For example, the 12 King Eiders reported from the province total 31 "occurrences" in the data base. Thus, the number of records for British Columbia for any species cannot be gleaned from the data base, although the text makes that number clear for rare species.

Although the subspecies as a formal taxonomic category has been criticized, these named populations, nevertheless, are of interest evolutionarily and bio-

geographically, and it is a shame that, even though the great majority of bird specimens collected in British Columbia were examined for this book, there was no attempt made to work out the distribution of the numerous subspecies of many species in this complex province. I suspect this shows again the emphasis on the sight record but, in all fairness, such a project would have been daunting, and Campbell is to be commended for checking so many specimens at the species level.

A few errors in presenting species records, probably unavoidable in a work of this magnitude, came to my notice. The most misleading is the ending of the annual occurrence bar for Thayer's Gull in June. A total of three Eurasian Wigeon records for July in the data base is countered by only a single record in the text. The data bases show no April records for Red Knot or White-rumped Sandpiper, contradicting the annual-occurrence charts. The text lists several April records for the knot but none for the White-rumped Sandpiper. January records for Parasitic Jaeger and Heermann's Gull are on the data bases but not on the annual-occurrence charts. The late November Common Poorwill record is not shown on the chronology chart. The text records for wintering Red-naped Sapsuckers do not add up to the numbers in the data base. I also found enough typographical errors in casual reading ("competant" on 1:146, "anomoly" on 1:149, "Agricuiltural" on 1:297, "integrade" on 2:56) to indicate their regular if rare occurrence; hopefully, they are minimal in the bird records.

Finally, I must emphasize that all such minor problems are overwhelmed by the usefulness of the book. This work—and I wish the authors all speed in preparing the final volume on passerines—is of value to any ornithologist or serious birder who lives in or near British Columbia and, as an outstanding documentation of a large and significant North American avifaunal region, it belongs in all institutional libraries as well.--DENNIS R. PAULSON, *Slater Museum of Natural History, University of Puget Sound, Tacoma, Washington 98416, USA.*

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**Handbuch der Vögel der Sovjetunion. Vol. 4, Galliformes, Gruiformes.**—R. L. Potapov and V. E. Flint (Eds.). 1989. Translated from Russian (Ptitsi SSSR, 1987, Moscow, Nauka) by B. Stephan, E. Stephan and D. Wallschläger. A. Ziemsen Verlag, Wittenberg Lutherstadt. ISBN 3-7403-0027-2. 427 pp., 20 color plates, 111 line drawings, maps. DM 98.00. **Vol. 6/1, Charadriiformes/Lari: Stercorariidae, Laridae (Larinae und Sterninae).**—V. D. Ilichev and V. A. Zubakin (Eds.). 1990. Translated from Russian (Ptitsi SSSR, 1988, Moscow, Nauka) by B. Stephan and D. Wallschläger, helped by S. Fiedler and J. Möhl. A. Ziemsen Verlag, Wittenberg Lutherstadt. ISBN 3-7403-0029-29. 367 pp., 16 color plates, 87 line drawings, maps. DM 98.00.—I already have reviewed (Auk 104: 571–573, 1987) the first, introductory volume of the German translation of this important faunal monograph and discussed the descriptive treatments of the first three avian orders that were included therein. The two volumes that have since appeared in German translation follow the same pattern. Compared with the Russian original, both volumes are updated with newer faunistic records, their maps are also redrawn, and both include color plates of the eggs for species treated (the plates were not in the Russian original), taken mostly from clutches of several German museum collections. The color plates depicting eggs and plates of the various plumages of gruid chicks (vol. 4) and various larids (vol. 6/1) are especially valuable and unique. Volume 4 gives on the inside cover a good general geographic map of the area treated, and volume 6/1 provides a useful, simplified map of the biomes of the same area.—MIKLOS D. F. UDVARDY, *Department of Biological Sciences, California State University, Sacramento, California 95819, USA.*

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**[The Birds of Poland, their Distribution and Abundance.]**—Ludwik Tomiałojć. 1990. Państwowe Wydawnictwo Naukowe, Warsaw. 462 pp., 64 maps, 29 black-and-white photographs. In Polish, with English summary. No price given.—The author's 1972 book with similar title is updated and enlarged with data from the literature as early as 1800 and with modern census results up to 1982. The maps show the recent and historical records. New, unpublished faunistic data also are critically evaluated and included. Seven classes of abundance are used, and there is an emphasis on population size. Poland has 232 regularly breeding species and 11 rare breeders. Almost one-third of the species in the avifauna are decreasing, endangered or outright extinct; 19% of the avifauna is expanding. For the foreign reader, there are detailed instructions in English, complemented with a short list translating some essential faunistic and phenological terms. Invaluable for the faunist and zoogeographer is the concise list, in English, of the Polish avian species, with symbols (whether breeding now or in the past, passage visitor, sporadic, or accidental visitor) and one or more sentences describing abundance. Poland stretches from the narrow beach

of the Baltic coast to the rocky crags of the high Carpathians. Thus, we find here every landscape belt of east-central Europe, from the plains and hills with coniferous, mixed, or broad-leaf woods and forests, to the extensive marshes and (almost half of the total land area) cultivated fields. This up-to-date avifaunal account is pivotal for faunistics and zoogeography of most European birds. MIKLOS D. F. UDVARDY, *Department of Biological Sciences, California State University, Sacramento, California 95819, USA.*

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**Červená kniha ohrožených a vzácných druhů rostlin a živočichů ČSSR, díl 1. – Ptáci [Red Data Book of Czechoslovakia, vol. 1. – Birds].**—K. Sedláček (Ed.). 1989. Státní Zemědělské Nakladatelství, Prague, 180 pp., 267 distribution maps, 143 color illustrations. In Czech language, with English, German and Russian summaries. Cloth 67, - Kčs.—Czechoslovakia is a small country in the heart of Europe, replete with natural beauty and rich in birdlife. Over 390 bird species have been recorded here: 209 regularly breed; 95 pass during migration; and 86 are vagrants. The fact that 59% of the breeding species must be included in this *Red Data Book* is a sad commentary on the extent of environmental destruction that has been, and still is, taking place.

The book opens with a chapter on the history of bird protection, which had a long and venerable tradition in the past, dating back to 1599 when trapping of songbirds was first restricted. The second chapter describes rules for inclusion of species into the book, and defines seven categories: extinct (3 species included); endangered (15); vulnerable (53); rare (33); migrants (15); indeterminate, species in need of special attention (24); and out of danger (0).

The main body of the volume is devoted to individual species accounts. Each is tastefully decorated, and contains two maps: Palearctic distribution; and breeding distribution in Czechoslovakia, which is based on the 1973-1977 breeding atlas. Each account describes status of the species, distribution and habitat preferences, population size, legislative acts that pertain to the species and its biology, monetary value that is used by the judiciary when assessing fines, causes of population decline (where known), detailed list of measures that would reverse the decline, and finally a list of individual birds of the species held in captivity.

The accounts are full of interesting and pertinent information. I find the inclusion of the species into the categories as justified, with the possible exception of the Mute Swan (*Cygnus olor*), which is listed as indeterminate. Mute Swans bred in Czechoslovakia for the first time in 1948. Since then, their population size has considerably increased; it peaked in the 1980s and has stabilized at 320 to 400 pairs since then. The swans face no danger from the people, nor is their habitat diminishing. Quite to the contrary. Swans now spend the winter on rivers in large cities, where they are supplied with food from local residents. Since the Mute Swan is neither endangered nor declining, it should be eliminated from the *Red Data Book* altogether.

Although there is a brief summary in three foreign languages at the end of the book, a more extensive summary in either English or German is warranted. The summary should include key points from the species accounts, such as distribution and population data, causes of decline, and desirable protective steps. Such a summary would enhance the usefulness of the book to biologists in adjacent countries and elsewhere.—STANISLAV PŘIBIL, *Department of Biology, University of Ottawa, Ottawa, Ontario K1N 6N5, Canada.*

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**Zoological Research in Java, and the Neighbouring Islands.**—Thomas Horsfield. 1824 (reprinted 1990). Oxford University Press, Singapore. Original with unnumbered pages, 8 black-and-white and 64 color plates. Memoir by John Bastin, 93 pp. ISBN 0-588982-7. $350.00—Thomas Horsfield (1773–1859) was an American physician who collected extensively in Indonesia early in the 19th century. This volume is a reprint of much of his work on birds and mammals. Bastin provides a thorough commentary on what is known of Horsfield's life and career, even though Horsfield willed that his journals and notebooks be destroyed at his death. Horsfield had a remarkable career that included a dissertation on the clinical aspects of the pharmacology of sumac and poison ivy (a couple of my personal favorites!). He first went to Java as surgeon with the government. Bastin has managed to trace Horsfield's activities, which included numerous interactions with the local government regarding permission to travel and collect throughout the country.

Horsfield was interested primarily in botany and geology. These interests expanded quickly to include entomology and vertebrate natural history. Bastin reviews much of the earlier work, which included material such as descriptions of new plant species and categories of butterflies, etc. Horsfield suffered a number of setbacks dealing with the local bureaucracy and the loss of specimens ("in an affray with the local

people"). Bastin reconstructs many of these activities and problems through correspondence and, museum and business records. The letters reprinted here are wonderful in their manner. We just do not use circumlocutions, diffidence, and phrases the way they did 175 years ago. Horsfield died in London in 1859.

The main body of the volume includes Horsfield's work on birds and mammals. The avian nomenclature follows Temminch and Langrer, and the descriptions were read before the Linnean Society in 1820. About 180 species of birds are described. According to the Oxford University Press, the work is exceptional for its time in that it contains a combination of aquatint, lithographs, and line-engraved plates. It is the first publication to include colored lithographs of any Indonesian subject, and only the second English-language book to include hand-colored lithograph plates of birds. It is difficult to judge the quality of the reproductions without direct comparison with the originals. They seem adequate, and the figures have that very stilted posture so typical of the times. Horsfield's word descriptions of the natural history are an important feature of the volume. This must have brought to Europeans information not previously available.

The book is nicely produced and boxed. It is very expensive. I cannot imagine it fitting into the budget of most libraries.—ALAN H. BRUSH, *Department of Physiology and Neurobiology, University of Connecticut, Storrs, Connecticut 06269, USA.*

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**Guide to the Birds of Nepal.**—Carol and Tim Inskipp. 1991. Second Edition. Smithsonian Institution Press, Washington, D.C. 400 pp., 8 color plates, 25 black-and-white plates, 197 text drawings, and numerous range maps. ISBN 1-56098-097-4. Cloth, $55.00.—After a period of some quiescence, there appears to be a resurgence of work on the birds of the Indian subcontinent. This resurgence was heralded by the publication in 1985 of the first edition of the Inskipp volume, followed in 1991 by the publication of the first volume of *The Birds of Pakistan* (by T. J. Roberts), and now the publication of the second edition of *A Guide to the Birds of Nepal.* Certainly, there is more to come. Volume 2 of Roberts' Pakistan work is eagerly awaited, and there is talk of a multi-authored field guide for the region to be published later in the decade. It is safe to say that much of this interest can be considered the intellectual offspring of the works Sálim Ali and S. Dillon Ripley produced in the 1960s and 1970s. But if the publications of Carol and Tim Inskipp and T. J. Roberts are indicative, it appears the English have reclaimed the high ground of ornithology in what was Imperial India.

What is new about this second edition of the Inskipps' work? It features a more readable typeface—a considerable evolution from the original photo-offset version. Thus, it has a more finished look than the first and, yet, in trim size and layout it is virtually identical. This is not necessarily bad, as the first edition was easy to use and quite a valuable contribution to the ornithology of the area.

What we have here is essentially an annotated list of the birds of Nepal, enhanced by species range maps, some color plates of difficult-to-identify groups, and small pen sketches of about a quarter of the species treated. Also, there are introductory chapters on environments, bird distributions, conservation, migration, where to birdwatch, and identification. The book ends with a bibliography brimming with 819 references—a most valuable asset.

Nepal is environmentally diverse, with the earth's most remarkable elevational transect (south to north), and a dry-to-wet gradient from northwest to southeast. Thus, it is not surprising that the avifauna is very rich. The extent and nature of this diversity is the main focus of the introductory chapters. The chapter on conservation points out a paradoxical situation in Nepal. Although the country is now blessed with a significant array of protected areas, its landscape is being transformed by human-subsistence activities—mainly deforestation that results from gardening and collection of firewood. Add to this the growing threat of overgrazing and the abundance of steep slopes, and one can understand the devastating effects of soil erosion and land movement.

One innovation of this book is the section on identification of difficult groups. The authors have, in fact, selected the groups that bedevil most birders visiting the region. They have taken great care here to give a full treatment (including, for instance, first, second, and adult winter plumages of large *Larus* gulls) and, yet, in some instances the lack of color hurts, especially when there is a need to show soft-part colors.

The species accounts focus on records and distributions. Although one hears a bit too much about Brian Hodgson (who conducted ornithological studies in Nepal beginning in the 1820s), the accounts are clear and succinct, and also include a brief description of the bird's range throughout the Indian subcontinent.

The eight color plates range from good to excellent (e.g. Clive Byers' buntings). The tiny but useful text drawings of birds generally are good or very good, but vary a great deal, as they were produced by nine artists. I particularly like some of the work by Craig Robson and Mike Parker.

The species range maps were clearly a big chore, and they have been done quite adequately, if a bit idiosyncratically. Ranges are indicated by coding within a grid laid over the map of Nepal. Below each

map are bar diagrams indicating elevational distribution, period of occurrence, and breeding. Thus, there is a great deal packed in and, yet, I find the reading of the ranges and, especially, the extracting of information on specific records to be quite difficult. This is exacerbated by the fact that the underlying map includes nothing more than a simple outline of the country. The major rivers and four or five most famous towns/birding localities also should have been included.

In sum, this is a fine distributional analysis of birds of Nepal, with a lot of useful additional information for those who are eager to learn more about the birds of Nepal. It should be in all major university libraries and anyone interested in the birds of South Asia must have a copy. At $55.00, the price is fair but not a bargain.—BRUCE M. BEEHLER, *Division of Birds, NHB MRC 116, Smithsonian Institution, Washington, D.C. 20560, USA.*

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**The Birds of Pakistan. Volume One: Regional Studies and Non-Passeriformes.**—T. J. Roberts. 1991. Oxford University Press, Karachi, Pakistan. xli + 596 pp., 9 color plates of birds, 9 color plates of habitats, 68 text illustrations, and 285 maps. ISBN 0-19-557-404-3. $85.00.—For many years the authoritative texts on birds of southern Asia were restricted to those produced by Sálim Ali and S. Dillon Ripley. This ornithological duo must certainly constitute one of the great collaborations in natural history—at least over the last 25 years. Ali began solo, with his *Book of Indian Birds* (1941), *Birds of Kutch* (1945), *Indian Hill Birds* (1949), *Birds of Travancore and Cochin* (1953), and *Birds of Sikkim* (1962). Ripley weighed in with a critical revision of the taxonomy and nomenclature of the entire subregion's avifauna in 1961 (*A Synopsis of Birds of India and Pakistan*, revised in 1982). The culmination of their various efforts was the jointly authored, 10-volume *Handbook of the Birds of India and Pakistan* (1968–1974).

Is there room for yet another handbook, albeit one treating a discrete segment of the Indian subcontinent? With his first volume of *The Birds of Pakistan*, Tom Roberts proves that indeed there is. And it must be especially satisfying for those field workers whose work focuses on Pakistan to soon have a complete two-volume ornithological text for that ecologically and topographically diverse nation state. For Pakistan is, like India, a bird paradise, with great mountain peaks (such as K2, second only to Everest), torrential rivers, plains, deserts, and sea coasts. It merits its own handbook to the birds.

In volume 1 of his *Handbook*, Roberts gives us a remarkably wide-ranging review of topics related to Pakistan and to the discipline of ornithology, and then provides species accounts for all of the nonpasserines. Added to this are a series of color photographs of typical habitats, 285 range maps, 68 halftone text illustrations of birds, and 9 comparative color plates of groups of particular interest. Finally, the book includes a glossary of terms, a large bibliography of the ornithology of Pakistan, and a geographic gazetteer. Here is a work with all the extras.

The introductory material spans 46 pages. This comprises discussions of systematics, ecological factors in bird distribution, zoogeography, migration, and species concepts, as well as a history of ornithology in Pakistan. It also comments on birds as pests and beneficial agents. Roberts is at his best when focused on the topics with which he has had long familiarity—the ornithological history of Pakistan and problems of birds as pests. In the first instance, we gain a sympathetic glimpse of the old Imperial India (now Pakistan) through the brief biographies of some of the British civil servants who became its first true ornithologists. The names Hugh Whistler and Claude Ticehurst are perhaps the best known among a remarkable lot.

Because most of the populace of Pakistan subsists on grains grown and processed *in situ*, bird pests can be a real threat to its livelihood—a phenomenon from which the average American has long been divorced. (How many of our grade-school students even know that bread is made from wheat?) Roberts details a study by Bashir that focused on the population of House Sparrows in a village of 52 households. During March and April, nearly 3,000 active House Sparrow nests were located. These nests produced more than 10,000 offspring. It was determined that this village population of sparrows was capable of consuming 50 kg of wheat a day. The introductory section contains a lot of this sort of fascinating minutia.

The species accounts constitute the bulk of the book, and are its great strength. Although burdened by overly lengthy physical descriptions of plumages and soft parts, these accounts also are filled with rich detail on the habits of the species in the field. It is here that Roberts' handbook exceeds that of Ali and Ripley. From a reading of Roberts' species accounts, the reader has a strong feeling that the author really *knows* these birds in their natural habitat. It is clear Roberts has spent much time in the field observing. He also knows the vocalizations well, although his transliteration of the voices is only a slight improvement over that of Ali and Ripley. Clearly, this book is a product of the extended field effort Roberts put into his long years in Pakistan and the care that went into his observation and note-taking. These personal observations, combined with a well-researched literature have been combined to give us an excellent text on the birds of Pakistan.

This handbook is replete with maps and illustrations. The maps appear meticulously done—probably the best distributional maps produced for birds of any part of southern Asia. The text drawings of birds, produced by Roberts, are good but not always of the quality that today can be expected of a professional bird illustrator. To my eye the color plates, also painted by Roberts, are done in an earlier style—more reminiscent of the original plates in Ali and Ripley than the plates we see in the most recent (1991) edition of *Birds of Thailand*. For Roberts, this was clearly a labor of love with no effort spared. The care the author shows his subject is obvious in all aspects of the book. The solitary nature of this heroic effort proves to be one of the book's few weaknesses. It is especially clear from a reading of the introductory sections that the synthetic sections of the text could have profited from critical review by a variety of experts. A number of his explanations of geological, evolutionary, and biogeographic phenomena are out-of-date or muddled. In addition, the text has its share of typographical and grammatical errors—clearly, the fault of the editors at Oxford University Press (Karachi). In spite of these minor flaws, this first volume of Roberts' *Handbook* is a splendid achievement. It ought to be in the ornithological library of anyone with an interest in the birds of South Asia. I assume that the passerine volume will be as fine as this first effort. I hope the latter will not be long in coming.—BRUCE M. BEEHLER, *Division of Birds, NHB MRC 116, Smithsonian Institution, Washington, D.C. 20560, USA.*

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