



EDITED BY ROBERT M. ZINK

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Atlas Ptaków Legowych Malopolski 1985-1991. [The Atlas of Breeding Birds in Malopolska 1985-1991.]—Kazimierz Walasz, Pawel Mielczarek (Eds.). Biologica Silesiae, Wroclaw. PL ISBN 83-900021-2-4. 522 pp., 10 figures, 10 tables, 195 distribution maps, 3 transparent overlap maps, 217 top-of-page black-and-white bird illustrations, 2 appendices. In Polish and English (translation by Roman Tertil and Michael Jacobs), Polish, Latin, German, English species names and species name indices. No price given.—This book is the first volume of the monograph *Birds of Malopolska* and is based on information gathered by almost 400 persons, most of them amateur ornithologists. Malopolska covers about 19% of Poland and is situated in its southeastern part. It has the most diversified physiography in all of Poland. The book describes the distribution of inland waters, climate, forests, soils and agriculture as well as human population. Ornithologically interesting areas are mentioned. Census methods were similar to those adopted in most Western European countries. The region has 195 regularly breeding species as well as 17 probable and possible breeders. Species descriptions are very accurate and include possible, probable and confirmed breeding species, the name of the species in four languages, the number and percentage of atlas blocks for: (1) each species recorded; (2) the grade of breeding (possible, probable, confirmed); and (3) three major physiographic units. Also given is pair density, regularity of breeding for infrequent breeders, status outside the breeding season (e.g. migrating, wandering), habitat description, distribution including some observation localities, as well as dates of most important observations, population tendency (e.g. increasing, decreasing), population density for some species, estimated population size, and maps for confirmed breeding species. Unlike other atlases, this book is valuable from an ecological view, because it has quite accurate demographic data. It is well known that in recent years some Asiatic species have expanded their ranges. From the *Atlas* we can deduce little about the expansion rate of the new breeding species and nothing about changes of species ranges. Nevertheless, future editions of the *Atlas* will contain this information. Numbering of species would facilitate the use of the book. For the foreign reader there is no problem in reading the complete text, even though the Polish terms for "density" and "population estimate" are translated only once in the first species.

A few such minor problems are overwhelmed by

the quality and the usefulness of the book. Undoubtedly, it is one of the best in its category.—MARIUSZ JANCZUR, *Aldama 121 Sur, C.P. 50000, Toluca, Edo de Mexico, Mexico.*

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Population Biology of Passerine Birds, an Integrated Approach.—J. Blondel, A. Gosler, J.-D. Lebreton, and R. McCleery (Eds.). Springer-Verlag, New York. 496 pp. ISBN 0-387-51759-6. Cloth. Price not given.—Long ago ornithologists in Europe recognized the potential value of long-term studies of the demography of marked population of birds, especially of those passerines that will nest in man-made boxes. Lack's studies of tits (*Parus*) began in 1947; von Haartman's studies of the Pied Flycatcher (*Ficedula hypoleuca*) in Finland began in 1941; and Kluyver's studies of the Great Tit (*Parus major*) in Holland began in the 1930s. Right through the 1970s, when most ecologists in the United States were looking at the world through glasses that could perceive only interspecific interactions, the European emphasis on the population biology of single species continued to develop. Its progress was reported in the proceedings of two workshops published in *Ardea* in 1980 and 1987. This book is the product of the third and most recent workshop, held in Corsica and sponsored by the NATO Scientific Affairs Division. It consists of a presidential address by Lars von Haartman, 38 research reports (of which four are from the United States and Canada), and concluding remarks by both Christopher Perrins and Arie van Noordwijk.

In addition to papers about several species of tits and two flycatchers, there are papers on two other secondary-cavity-nesting species (those that do not construct their own cavities): the European Starling (*Sturnus vulgaris*) and the Tree Swallow (*Tachycineta bicolor*). There also are papers on the European Bee-eater (*Merops apiaster*), the Rock Pipit (*Anthus spinoletta*), and the Dipper (*Cinclus cinclus*). The book is less comprehensive than its title suggests. Most passerines for which we have good demographic information do not nest in cavities, but it is a rich source of information about the state of the art of studying the

population biology of birds. It provides examples of new experimental approaches, of applications of modern technologies, and of recent advances in modelling and data analysis.

In addition to questions like "Is clutch size being optimized?" and "What are the environmental correlates of population dynamics?," there are now questions that involve more complex evolutionary considerations like "Are there energetic trade-offs between present reproduction and future survival, reproduction, and recruitment of offspring into the population?," "How is the plasticity of response of an individual to changing environments affected by its genotype?," "Does dispersal between habitats prevent local genetically-based adaptation?," "Are parasitism and predation, which are often controlled but rarely studied in nest-box studies, major determinants of variation in life-histories under natural conditions?," and "What are the behavioral correlates of severe competition for cavities and mates?" Getting answers to questions such as these is very difficult. Even after cleverly designed and executed field experiments and analyses, the answers are not always clear. Below I give a few examples of the complex problems that arise.

The Great Tit and the Blue Tit (*P. caeruleus*) in Wytham Wood near Oxford, England, increase their clutch sizes in years of high abundance of larvae of the winter moth (*Operopthera brumata*) and the green tortrix (*Tortrix viridana*), but do not advance their laying dates, a decision that requires a longer and more difficult prediction. Therefore, they do not precisely synchronize peak egg laying with peak caterpillar abundance (Perrins). The timing of the breeding season of the Blue Tit in southern France has a genetic basis and coincides generally with the peak of the caterpillars it eats in oak habitats, but not in pine habitats (Blondel and Pradel). Its geographic variation in size is correlated with the magnitude of the resource peak in food (Martin and Bellot). In Switzerland, beech trees stressed by acid rain have more caterpillars and higher numbers of Great Tits than other areas (van Noordwijk). Nestlings in artificially reduced broods were heavier and had longer tarsi, suggesting that the development of normal broods was food limited (Henrich-Gebhardt).

The results of experimental manipulations of clutch size of the Collared Flycatcher (*Ficedula albicollis*) indicates that the trade-off is not between current reproduction and subsequent adult survival, but rather between current reproduction and the quality of the offspring. Young from enlarged broods produced fewer recruits to the next generation (Gustafsson). Other papers seeking to demonstrate trade-offs had more equivocal results. Møller and coauthors summarize the substantial literature on the effects of parasites on the nestlings of birds that use the same nesting sites repeatedly.

The dangers of basing estimates of adult survival

on return rates are demonstrated nicely by Slagsvold and Lifjeld for the Pied Flycatcher. Return rates of adults, and even yearlings and unmated males, were much higher to an area to which females had been added in the previous breeding season than they were to an area from which the females had been removed. In other words, decisions about whether to return depended strongly on recollections about the resources of the site. The breeding system of the Pied Flycatcher, which involves deception on the part of the male and probably female-female aggression, is polyterritorial polygyny, even when the species nests in natural cavities (Alatalo and coauthors). In New Jersey, mate guarding away from the nest by male European Starlings prevents cuckoldry during the egg-laying period, but meanwhile other females lay eggs in 25% of the nests (Power). The prize for the description of the most extreme departure from Christian values goes to the paper by Robertson on sexually selected infanticide in the male Tree Swallow. Floater males mate with widowed females while they are incubating, then murder the nestlings when they hatch, thereby getting the female to develop a new clutch promptly.

Many other interesting results about research on the evolution of birds in ecological time are reported in this volume. American ornithologists, including graduate students, who may have limited access to European literature, will find the book to be an especially valuable reference work. Because the style of the papers is that of scientific journals, the book is probably too dry for the lay reader.—FRANCES C. JAMES, *Department of Biological Science, Florida State University, Tallahassee, Florida 32306, USA.*

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The Pinyon Jay: Behavioral Ecology of a Colonial and Cooperative Corvid.—John M. Marzluff and Russell P. Balda. 1992. T. and A. D. Poyser, London. 317 pp., 10 black-and-white photographs, 116 text figures, 44 tables, 6 appendices. ISBN 0-85661-064-X. (United States edition published by Academic Press, San Diego, California. ISBN 0-12-784664-6). \$45.00.—Few ornithologists would dispute the assertion made by the authors of this book that the Pinyon Jay (*Gymnorhinus cyanocephalus*) represents "a pinnacle in the evolution of avian sociality" (p. 285). Individuals of this species live year-round in stable, cohesive flocks that contain hundreds of birds and occupy home ranges comprising thousands of hectares. Pinyon Jays breed in loose colonies, and a few nonbreeding males will act as helpers by caring for young produced by their parents. Each fall, jays harvest and cache thousands of seeds of pinyon pines, a group of pines

with which the Pinyon Jay shares a close and intriguing coevolutionary history.

In *The Pinyon Jay*, Marzluff and Balda summarize their previously published work, and present many new findings on the biology of this fascinating species. The book is based primarily on data collected by the authors and their colleagues on the "Town Flock," a single flock of jays living near Flagstaff, Arizona, during the period 1972–1987. Following an introductory chapter that briefly highlights the natural history and annual cycle of Pinyon Jays, chapters 2–12 address the following topics: systematics, coevolutionary relationships between Pinyon Jays and pines, vocal communication, flock composition, dominance relationship within the flock, mate choice, nesting behavior, parental care and helping behavior, lifetime reproductive success, juvenile dispersal, and survival. Chapter 13 concludes the book with a discussion of the role of environmental variation in shaping key features of Pinyon Jay sociality.

Like many other ornithological titles published by T. and A. D. Poyser, *The Pinyon Jay* is designed to appeal to both professional ornithologists and interested amateurs. To satisfy this diverse readership, the book is written in a lively and highly readable style, and is well illustrated with photographs, figures, and Tony Angell's attractive line drawings. In writing for the general reader, however, Marzluff and Balda have not sacrificed scientific content, nor pulled any analytical punches. Explaining to a general audience a multivariate analysis of interindividual variation in vocal characteristics, or the meaning of residual reproductive value and the elasticity of the population parameter λ , is a prospect that few ornithologists would relish. However, Marzluff and Balda unhesitatingly tackle these and many other equally complex analytical tasks and, in my view, their general explanations succeed admirably.

The great strength of the book is the care with which the authors have explored likely sources of temporal and individual variation in the social organization and life-history characteristics of Pinyon Jays. For example, the timing of reproduction in the Town Flock is shown to be determined primarily by annual variation in the size of fall pine seed crops and spring snowfall. Variation in the fitness of breeding males is significantly affected by both the male's dominance status and the body size of his mate. Although generally uncommon, helping behavior is found only within a few highly successful lineages, and helpers are usually small, nonbreeding, yearling males; larger males are much more likely to acquire a mate and breed as yearlings, and thus do not help. These are but a small sample of the thoughtful analyses of temporal and individual variation that can be found throughout the book.

The only significant weakness of *The Pinyon Jay*, and one that the authors readily acknowledge, is that most of the results presented in the book come from

a single flock of Pinyon Jays inhabiting an unusual high-elevation site dominated by *Pinus ponderosa*, where pinyon pines are scarce but supplemental food from backyard feeding stations is readily available. Furthermore, the size of the Town Flock has declined steadily in recent years, apparently due to increasing urbanization of Flagstaff and an associated increase in the abundance of nest predators (primarily crows and ravens) and nest predation. Thus, it is not clear if the patterns described in this book would be characteristic of more "typical" Pinyon Jays that inhabit the vast pinyon-juniper woodlands of the western United States, where supplemental feeding and other anthropogenic influences are less prevalent.

I also have some minor quibbles. The maps showing the features of the Town Flock's home range and nesting colonies (figs. 45 and 62) inexplicably do not include a scale, and some figures (e.g., fig. 98) use symbols that are not explained in the legend. The number of years of data that appears in a particular analysis is variable, and it is not always clear why it should be. For example, figure 70 shows data on nest predation from 1973–1985, while figure 80(B) shows the exact same data for two additional years (1973–1987). Finally, brief summaries of each chapter would have been very useful, particularly after the longer, data-rich chapters.

Overall, however, *The Pinyon Jay* is an admirable and valuable contribution to ornithology, and to the expanding published database on corvids and the New World jays. I recommend the book to both professional and amateur ornithologists interested in the social behavior of birds.—RONALD L. MUMME, Department of Biology, Allegheny College, Meadville, Pennsylvania 16335, USA.

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Ducks in the Wild: Conserving Waterfowl and Their Habitats.—Paul A. Johnsgard. 1992. Prentice Hall General Reference. New York. 160 pp., 130 color photographs and illustrations, 20 line drawings, maps, index, bibliography, appendix, glossary. ISBN 0-671-85007-5. \$30.00.—This work is an excellent nontechnical compilation of the natural history and behavior of all the extant species of wild ducks. The book is characterized by two major sections. The first three chapters detail the fascination that ornithologists and bird watchers have with waterfowl. Here Johnsgard draws on his own personal experiences to share with the reader his own enjoyment of waterfowl. He also details ducks that are extinct or highly endangered. The second portion of the book is devoted to species

descriptions. These typically contain descriptions of breeding patterns, clutch size, fledging period, etc. They also contain particularly interesting characteristics of each species which add to the reader's appreciation for the diversity of ducks. The species are described in a casual manner and often only particularly interesting features of each species are highlighted. The species accounts do not each contain complete technical information. Nonetheless, much comparative information about the various species of waterfowl can be gleaned from the species accounts. A glossary, identification key, and a list of waterfowl conservation organizations are also included in this work. Overall, this book is enjoyable to read, has many extraordinary photographs, and contains a valuable compilation of the conservation status of all duck species. The superb color photographs and conversational narrative make this book a good introduction to ducks for bird enthusiasts and professional ornithologists alike. However, it is not an essential volume for every professional ornithologist's library.—KEVIN P. JOHNSON, *Bell Museum of Natural History, 100 Ecology Building, 1987 Upper Buford Circle, University of Minnesota, St. Paul, Minnesota 55108, USA.*

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Handbook of the Birds of the World, Volume 1.—Josep del Hoyo, Andrew Elliott, and Jordi Sargatal, Eds. 1992. Lynx Edicions, Barcelona. 696 pp., 64 color plates, 382 color photos, 568 maps. ISBN 84-87334-10-5. \$165.00.—This handsome tome inaugurates one of the most ambitious publication ventures in the history of ornithology—a 10-volume work “illustrating and dealing in detail with all of the world's bird species.” After a 19-page introduction, which describes in detail the plan of the work, a 38-page mini-text in general ornithology covers feathers, color, skeleton, musculature, locomotion, feeding and digestion, reproduction, incubation and growth, migration, and speciation. Although limited space precludes more than a shallow treatment of most topics, beginners and serious amateurs will profit from perusing this material. An especially valuable feature is four pages devoted to a color-coded classification of orders, suborders, and families in which the more traditional system of J. J. Morony, W. J. Bock and J. Farrand (1975, *Reference List of the Birds of the World*, American Museum of Natural History, New York) is contrasted with that of C. G. Sibley and B. L. Monroe (1990, *Distribution and Taxonomy of Birds of the World*, Yale University Press, New Haven), the latter based on the massive DNA-DNA hybridization data set of

C. G. Sibley and J. E. Ahlquist (1990, *Phylogeny and Classification of Birds: A Study in Molecular Evolution*, Yale University Press, New Haven). For the series, the editors opted to use the system of Morony et al. (1975) under the assumption that the recency and revolutionary nature of the latter system forecast serious future revision. Furthermore, according to the editors, the definitive version of the Sibley-Monroe system was unavailable when the *Handbook* project was initiated. In view of continuing controversy attending the classification of higher avian taxa, only the future can judge the wisdom of their choice. Nonetheless, one can hope that those who continue to embed traditional classifications in concrete will not ignore the DNA-DNA hybridization results in perpetuity as additional support for their validity is mounted. Vernacular English names chosen were based, with few departures, on the “extensive international correspondence of B. L. Monroe, and published in Sibley and Monroe (1990).”

The bulk of the volume is devoted to discussions of families (Struthionidae through Anatidae are included in this volume) and to the species accounts. The broad-brush family essays are organized under the following headings: systematics, morphology, habitat, habits, voice, food and feeding, breeding, movements, relationship with Man, and status and conservation, ending with a general bibliography. Large color photographs, approximately one to a page, illustrate selected species. These vivid portraits take full advantage of the large format. The most detailed and, hence, most useful part of the book are the species accounts, each of which is presented in fine print and divided into abbreviated comments on taxonomy, distribution, food and feeding, breeding, movements, status and conservation, and bibliography. The essence of seasonal distribution patterns is depicted in color on small, generalized maps whose size precludes the level of detail that biogeographers often hope for. Nonetheless, the gist of geographic occurrence of each species is clearly indicated, and larger maps in a book of this size would have required sacrifice of other material. The material on status and conservation is especially important and useful, although in view of unprecedented habitat change in many parts of the world and because of inevitable lag time in publication these sections will be difficult if not impossible to keep current. In addition to the photos of some species, every species is attractively illustrated in color on full-page plates. Morphs and strongly-marked subspecies, especially those sometimes considered to be species, are also often shown. Neither immature nor nonbreeding plumages are depicted. Because the goal has been to show the main distinguishing features of each form, the plates are, appropriately, diagrammatic illustrations rather than works of art.

The book terminates with a list of over 6,000 references and an eight-page index to scientific and ver-

naacular names in English. For one seeking an introduction to any of the species covered, this index is the place to start.

Hardly a "handbook" at 32 cm (12.6 in) in height and approximately 3.6 kg (8 lb) in mass, the volume is "folio-sized," according to American Library Association standards and is, therefore, cumbersome to use. As a basic reference which potentially could serve persons with widely-ranging physical capabilities, from school children to geriatric professors, I recommend that future books in this series be slimmer and thus easier to handle. Other than vague notions of quantitative symmetry there seems to be no compelling reason to limit the total number of volumes to 10.

I judge this major work to be the single most useful reference on birds of the world. It serves as the logical launching pad for entry into a world of other, more detailed literature. Therefore, college and university libraries, curators of bird collections, professional ornithologists and wildlife biologists generally should either possess or have access to this volume and those to come. Community libraries should also have the series, although the price would probably deter purchase by all but the most affluent.

In sum, this book is a first-rate, scholarly production and my minor criticisms should not detract from this truth. The standards set by this initial volume point to an eventual series of genuine excellence. The dedicated editors, authors, and collaborators who are mortgaging their futures in order to complete this unique enterprise deserve our encouragement and lasting respect.—NED K. JOHNSON, *Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA.*

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Noms Français des Oiseaux du Monde avec les Équivalents Latins et Anglais.—Commission internationale des noms français des oiseaux, Pierre Devillers et Henri Ouellet, coprésidents. 1993. Éditions MultiMondes inc., 930, Pouliot, Sainte-Foy (Québec), G1V 3N8 Canada (ISBN 2-921146-14-2), and Éditions Chabaud, 32, allées Marines, B.P. 524, 64105 Bayonne Cedex, France. xv + 452 pp. (ISBN 2-87749-035-1). \$39.95 (cloth).—This attractively produced volume contains the list of French names of 9,927 species of birds of the world (9,913 in the main text plus 14 in the Addendum on p. 199). This compilation is the result of work begun in 1986 during the XIXth International Ornithological Congress in Ottawa, and

continued especially after the XXth I.O.C. in Christchurch in 1990, where the International Ornithological Committee created the "Commission internationale des noms français des oiseaux." The task of this "Commission," co-presided by Pierre Devillers from Belgium's Institut royal des sciences naturelles and Henri Ouellet from Canada's Musée canadien de la nature, was "to prepare a list of French names of birds of the world." Together with Commission members Édouard Benito-Espinal (Guadeloupe), Roseline Beudels (Belgium), Roger Cruon (France), Normand David (Canada), Christian Énard (France), Michel Gosselet (Canada), and Gilles Seutin (Smithsonian Tropical Research Institute), co-presidents Devillers and Ouellet were able to finalize the project less than three years after the creation of the Commission, which is quite an accomplishment. At various times during their work, Commission members were helped by Paul Géroutet (Switzerland), Pierre Le Maréchal (France), and Philippe Dubois (France).

The Introduction (pp. ix-xiv) gives the history of the project, emphasizing that it had its inception in the nine installments of "Projet de nomenclature française des oiseaux du monde" published by Pierre Devillers in *Le Gerfaut* between 1976 and 1980 (numbers 1-5 covered the non-Passeriformes, and 6-9 part of the Passeriformes).

Several rules were followed to establish French names, which are considered "technical" names, and not vernacular or local names. The most important rules concern what the authors call "générique" (a name "applied to a group of related species") and "spécifique" (a name applied to each species). The sequence of orders and families followed for the non-Passeriformes is basically that in Storer (Classification of birds, Pages 1-18 in D. S. Farner and J. R. King, Eds., 1971, *Avian biology*, vol. 1, Academic Press), and for the Passeriformes that in Sibley and Monroe (Distribution and Taxonomy of Birds of the World, 1990, Yale University Press).

The main part of the book (pp. 2-199, including the Addendum on p. 199) contains the list itself. Each species is numbered, and listed by its Latin and French names. To help English-language readers an alphabetical "Repertory of English names" is given on pp. 201-297, and is followed by a bibliographic list of books containing these English names, and of books in French containing French language synonyms. An Index of French names (pp. 305-379) and an Index of Latin names (pp. 381-452) complete the volume. Thanks to this system of cross-references, aided by the numbering of each species, the user of the book will have no trouble discovering what species is being dealt with.

The main question that comes to mind when consulting such a volume is: Do we need a list of French names of birds of the world? As a professional ornithologist using Latin names of birds in my everyday work, I would probably answer "No." However, after

using this book for some time, I have come to revise this view, and to accept the Commission's opinion (Introduction, p. ix) that "The presentation of a French nomenclature of birds of the world has become an ever more pressing necessity in order to fulfill the needs of authors and translators, as well as those of writers of government agencies and of national and international organizations of many kinds." There are indeed many instances where a uniform and authoritative list of French names of birds of the world is necessary today. One of these is in the field of conservation, where French (or Spanish, German, etc.) names are increasingly being used, sometimes next to the Latin names, and sometimes not, by nonprofessional ornithologists or by nonornithologists. Shortly before I received this book for review, a French correspondent asked whether I could identify some tropical Asian birds, of which he had only the French ("générique") name. I could not. The day I opened this volume I looked up the wished-for name, immediately found it, and was thus able to respond positively to my inquirer. Other similar examples have occurred since then.

Any French-language user of "Noms Français des Oiseaux du Monde" will probably find names that he or she does not like, or that do not match the names they are familiar with. Some names may even appear peculiar, relatively ill-chosen, or unimaginative (for instance no. 0196, *Puffinus gavia*, "Puffin volage," or no. 2099, *Didunculus strigirostris*, "Diduncule strigirostre," or else no. 9353, *Conirostrum speciosum*, "Conirostre cul-roux"). From a systematist's point of view, I found it interesting that some groups of birds now placed in several genera (for example Dendrocolapidae, 13 genera, p. 104; or Ptilonorhynchidae, 7 genera, p. 107) have only one French generic name, respectively "Grimpar" and "Jardinier." This simplification will certainly help our already overtaxed memory! Perhaps the most interesting thing about this book is that it is fun to peruse. I was fascinated to discover that *Saxicoloides fulicata* (no. 6770) is called "Pseudotraquet indien," that *Chaimarrornis leucocephalus* (no. 6782) is the "Torrentaire à calotte blanche," or that *Tangara mexicana* (no. 9536) is named "Calliste diable-enrhumé." These and many other French names in this volume are evocative of the species or suggest something special about it.

In summary, this attractive book will be helpful to many persons, ornithologists and others, who need to refer to French names of birds on a worldwide basis. The professionalism of the members of the Commission insures that the greatest care has been taken in their selection of French names, and the cross-indexing permits easy reference to just about any bird species with a Latin, French, or English name.—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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In Search of Arctic Birds.—Richard Vaughan. 1992. T. & A.D. Poyser Ltd. 24-28 Oval Road, London, United Kingdom. xiv + 431 pp., 73 black-and-white plates, 40 maps. ISBN 0-85661-071-2. \$39.95.—This book documents the multifarious ways in which man has interacted with arctic birds from earliest times to the present. It clearly is aimed at the birdwatching rather than the professional market, but contains much information on all aspects of birds in the Arctic that is also informative to the ornithologist. There are chapters on the relationships between arctic birds and autochthonous people, whalers, falconers, bird and egg collectors, scientists and birders. The author covers the whole of the arctic—North America, Europe and Asia, though it is difficult to understand his rationale for which areas to include in the geographic description of the arctic. After a paragraph on the complexities of defining the arctic, the author then defines it on page 2 as "the land areas that will be considered as lying within the arctic in the pages that follow."! In many places the reader is left wondering for example why Northern Manitoba is included but the similarly vegetated parts of Northern Ontario are excluded. The case for Iceland's exclusion is not made. Perhaps one reason is to limit the factual content of the book.

The author has brought masses of information on the arctic, its birds and its human visitors, into one place and, thus, provided the serious ornithologist with a useful source of information on, for example, the nineteenth century British egg collectors who visited the arctic coast of Russia, the collectors of the Hudson's Bay Company in Northern Canada in the 18th century, and present-day research in Spitzbergen. He describes the excitement of the first discoveries of the nests of Knot, Ivory Gull, Ross's Gull and other rare Siberian shorebirds. It is clear that much of the excitement of arctic birds has been generated by a desire for birdwatchers and scientists, particularly from the settled parts of Europe, to know more of the nesting habits of those birds that they knew only as passage migrants or winter visitors.

With such a mass of information, an author is faced with two problems: (1) How should the facts be organized? (2) How comprehensive should the information be? In my opinion Richard Vaughan has not been too successful in solving these problems. The facts are not always presented in a consistent framework and the overall message of the book is unclear. For example, on p. 284 there is discussion about an expedition of amateur naturalists to western Greenland to study White-fronted Geese. We are presented with the fascinating information that they used 20,000 tea bags, but are not told what were the objectives of the expedition. In fact, this expedition was important in the overall framework of ornithological research in the arctic, but the author does not make it clear.

Although he clearly demonstrates his skills as a naturalist and historian, it is not clear that he has the scientific breadth to encapsulate the key issues of ornithological research in the arctic, which he attempts to do in chapters 10 and 11. In the author's defense, he makes no claim to skills in this direction, but the wealth of detail may lead the unwary reader to believe that the information was comprehensive. The North American ornithologist would be understandably surprised to find that most of the research on arctic birds in North America reported by Vaughan had been carried out by British, Dutch or Danish biologists! This unwitting bias in the choice of material for inclusion results from the fact that this is a British author appealing to a mainly British audience, but it also reflects the lack of comprehensive overview expected from a scholarly work.

I nevertheless enjoyed reading the book and learned many things about those parts of the arctic and periods of history with which I was unfamiliar. The author's knowledge of Russian ornithology is certainly broad and he has made the birds and ornithologists of this region familiar to the readers. As this part of the world becomes more accessible, the information in the book will provide a useful springboard. For those parts of the arctic with which I was more familiar, I was disturbed that several of the facts in the book were either incorrect or at least incorrectly emphasized. The summary of the naturalists of the Hudson's Bay Company in the eighteenth century mentions Andrew Graham's collections, but omits the magnificent journals that he left and that illustrate what a fine naturalist he was. He refers to the Wrangel Island Snow Goose population as separate from the North American populations, despite research by Syroechkovsky and others that shows that there is much exchange of birds between the two populations. There is the surprising claim that Niko Tinbergen received his Nobel Prize in medicine for his work on autistic children, whereas in reality it was presented jointly with Lorenz and von Frisch in recognition for their important contributions to modern ethology.

Although this book is slightly flawed as a scholarly work, it is interesting reading and has lots of useful information in it. It is aimed mainly at an amateur audience and emphasizes the Old World rather than the New, but despite this there is much of interest to the ornithologist and, as far as I know, it is the first attempt to bring together such a compendium of information about the arctic and its birdlife. The book has a place in community and personal libraries, but also contains valuable references for a scientific audience and could find a place in some of the larger university libraries.—FRED COOKE, *Dept. Biological Sciences, Simon Fraser University, Burnaby British Columbia V5A 1S6, Canada.*

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Oklahoma Bird Life.—Frederick M. Baumgartner and A. Marguerite Baumgartner. 1992. University of Oklahoma Press, Norman, Oklahoma. xxxv + 443 pp. 51 color plates, 58 line drawings, 154 black-and-white photographs, 3 maps. ISBN 0-8061-1792-3. \$49.95.—Both Baumgartners earned doctoral degrees in Zoology from Cornell University, and the senior author joined the faculty at Oklahoma State in Stillwater before the Second World War. Furthermore, Professor Baumgartner and his spouse have been very active in the Oklahoma Ornithological Society, including the years following retirement in the mid-sixties. Many years ago at an AOU meeting, Margaret Morse Nice urged the Baumgartners to write a definitive state bird book as a follow-up to her *Birds of Oklahoma*, published as a short bulletin in 1924. That desire has now been realized and reflects the authors long association with Oklahoma birds.

This 9" × 12" volume is a traditional state bird book. As the authors state in the Preface, the book is a "truly cooperative venture, not only for but by the people of Oklahoma," since the species accounts make extensive use of documented records obtained by birders throughout the state. It is targeted at the general reader who has an interest in the birds of the region; the book is not designed to be a biogeographic or ecological analysis of the Oklahoma avifauna. Measurements are in inches, miles, and acres, in deference to a readership still in transition to metric units.

Part I comprises about 10% of the book and contains short chapters on the history of ornithology in Oklahoma, attracting birds, bird study as a hobby, bird banding, Christmas bird counts, breeding-bird surveys, and a longer chapter on the ecological communities within the state. I was disappointed in the history chapter, a mere two pages with the period 1719 to 1900 covered in less than 150 words! The years from 1900 to 1950 are reviewed in about five times as many words, but still the text is mostly names and dates with little about the various contributions to Oklahoma ornithology. It is a formidable task for the general reader to access the sources of historical information; they could have been better served by the authors. The chapter on ecology, on the other hand, provides clearly written descriptions of the vegetative and edaphic characteristics of the various biotic associations across the state and is supported by tabular data on the characteristic breeding birds. This information will most certainly facilitate understanding about the distribution of the state's birds by folks who like to go birding or have a general interest in natural history. To persons not familiar with Oklahoma, this chapter illustrates the ecological heterogeneity of the landscape—from cypress sloughs and loblolly pine forest to mesquite plains and pinyon pine-juniper mesas.

Each order and family is described in terms of its

general characteristics, ecology, distribution, and species richness within the state. The bulk of the book, of course, is the annotated list of species, including a separate account in Appendix A for "Stragglers." The authors recognize that there is "a thin line" between listing species in the main body of the text or in an appendix devoted to less commonly observed species, but I wish that line had never been drawn. There is no reason to make such a differentiation. It is perplexing, for example, to discover the account for the Henslow's Sparrow (*Ammodramus henslowii*), a regular breeding bird in the tallgrass prairies of northern Oklahoma, among the stragglers. The Black-capped Vireo (*Vireo atricapillus*), a much less abundant species (but perhaps more frequently seen species), on the other hand, gets full treatment. Each species entry provides an assessment of its status in the state, records of occurrence by region, and an account of its natural history that is commensurate with its prevalence in the Oklahoma avifauna. These species descriptions include personal anecdotes that not only make the text more readable, but more informative. The experiences of the Baumgartners with Oklahoma birds during the past half century would have been forever lost had their discussions dealt strictly with the science. A key is provided for selected Cardinalinae, Emberizinae, and Fringillidae, but I wonder why some species (e.g. *Carpodacus mexicanus*) are omitted and why the key was even included. Granted the "LBJ's" are difficult, but why not a key for the field identification of all those "peeps"!

The colored plates by Wallace Hughes are reminiscent of Allan Brooks in style and layout. The general reader may be misled, however, by the Townsend's Solitaire (*Myadestes townsendi*) in an ecological setting with pipits and larks, and the lime-green sub-adult and female orchard orioles (*Icterus spurius*). The plate of the *Spizella* buntings is a delight, portraying the crispness of their plumages and postures, and the pen-and-ink flashing mockingbird that introduces the Mimidae is another favorite. There is an appendix that provides a key to the nests of Oklahoma birds, which will be valuable now that the atlas effort has spread into that state. There is also an appendix that lists recommended readings, including a section on books appropriate for children. The list for adults contains some classics (e.g. Broun's *Hawks Aloft* and Hickey's *A Guide to Bird Watching*), but appears to be dated in that some references (e.g. Lincoln's *Migration of Birds*) have been superseded by more recent and better sources. This book is appropriate for university, community, and personal libraries.—JOHN L. ZIMMERMAN. *Division of Biology, Ackert Hall, Kansas State University, Manhattan, Kansas 66506, USA.*

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Storks, Ibises and Spoonbills of the World.—James A. Hancock, James A. Kushlan, and M. Philip Kahl. Academic Press, San Diego California. iv + 336 text pages, 49 plates, 40 figures in text. ISBN 0-12-322730-5. \$138.00.—This book is a badly-needed international reference, and a well-done collector's item. It consists mainly of detailed life histories of the 49 species of storks, ibises, and spoonbills of the world (with the reasoned exception of the Hammerkop, *Scopus umbretta*), each beginning with a full-page color plate (10 × 12 inch format) by Alan Harris or David Quinn. It includes four short introductory chapters on Taxonomy, Conservation, Courtship and Reproduction, and Feeding Behaviour and Ecology, each spiced with numerous excellent photographs. The book also contains an extremely valuable appendix of body and egg measurements, and egg-laying dates for many species, and a whopping 3,600-entry bibliography with full citations.

The quality of the plates is generally quite high—several, like the Shoebill, Yellow-billed Stork, and Black Stork are stunning. The colors are quite well reproduced, and are faithful for the species I am familiar with. These high-quality plates were commissioned by Wolf Brehm of the Brehm Fonds, and their use for the book was donated. This arrangement makes this book relatively inexpensive for its quality. Despite the generally high quality of illustrations, a very few of the plates show birds with surprisingly distorted proportions (e.g. Jabiru, Sharp-tailed Ibis). The quality and choice of photographs (many of which are M. P. Kahl's) are excellent throughout. For the nonprofessional, the plates and photos make this book worthy as an addition to the collection, and an eye-catcher on the coffee table.

The introductory chapters are short and readable by professional and layperson alike. The conservation chapter is especially timely and compelling, and accurately depicts the extremely precarious ecological position of the majority of these wetland species. The two chapters on foraging, and reproduction, concentrate far too much on describing named reproductive and foraging behaviors, and too little on some of the more interesting facets of these subjects (brood reduction, nomadism, site fidelity, coloniality, diseases and parasitism for instance). It also is disturbing that there are few references in either, and that all of those in the foraging chapter are those of the authors. While these two chapters are distinctly weak as treatments of their subjects at any level, they are also short, and do not occupy much of the book.

The real value (and bulk) of the book for most interested readers lies in the species descriptions, each of which include sections on Identification, Distribution and Population, Ecology, Breeding, Taxonomy, and Conservation, with range maps. I spent 15 min trying to find an explanatory key for the range

maps; it's buried in small print at the end of the Introduction, a full 30 pages from the nearest range map. The level of detail is generally admirable—at least 10 and occasionally 30 common names are given for each species, in up to 15 languages; each species description is liberally referenced. I felt I could truly evaluate in detail five of the species descriptions. With minor disagreements, I was pleased with each, and generally impressed with the accuracy. Conflicting data and controversies seem to be represented fairly in most instances.

As with the earlier *Herons Handbook*, the authors offer a number of taxonomic revisions. In the case of lumping the White/Scarlet Ibis, the justification is well reasoned, and is used to call attention to the need for more information on the genus *Eudocimus*. In the case of the Roseate Spoonbill, however, the case is explained too briefly, and the suggested change to the genus *Platelaia* appears somewhat arbitrary. The Conservation sections for each species were often too general, vague, or dated to be of direct utility. I found the index disappointing, since it was organized only by species name.

For the North and South American species with which I am familiar, this book easily surpasses existing guides and texts in up-to-date content, accuracy, and overall quality. For many of the more poorly known species, this book is probably the first time their life histories have been comprehensively described. *Storks, Ibises and Spoonbills of the World* is absolutely packed with valuable information, and seems to be quite user-friendly. The plates and photographs are of sufficient quality to make it a book that will appeal to nonprofessionals, and will hopefully also make it a persuasive tool for conservation. Its excellent reference quality, along with the photographs and color plates make this book well worth the \$138.00. I highly recommend this book for collectors, conservationists, libraries, and professionals who have any interest in these birds or the wetland habitats they inhabit. It is a pity that its price almost precludes it from being seen in countries where the rarest, and most endangered species exist. Considering the price and potential utility of the book internationally, it should be considered a high priority as a donation to third world libraries.—PETER C. FREDERICK, *Department of Wildlife and Range Sciences, 118 Newins-Ziegler Hall, University of Florida, Gainesville, Florida 32611, USA.*

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Biogeography and Ecology of Forest Bird Communities.—Allen Keast, editor. 1990. SPB Academic Publishing, P.O. Box 97747, 2509 GC, The Hague,

Netherlands. vi + 410 pp., 17 color photographs, 156 figures, and 52 tables. ISBN 90-5103-047-9. Cloth \$120.00. DFL 210.00.—In June 1986 at the Nineteenth International Ornithological Congress, Allen Keast organized a symposium on forest bird communities. The present volume represents a subsequent byproduct of that meeting. Twenty-five authors contributed to this ambitious compendium of analyses of the ecology of forests and their bird communities from around the world. These range from F. Hallé's chapter on the structure and growth dynamics of tropical rainforests and their influence on birds, to C. J. Ralph's chapter on Hawaiian forests and their impoverished but specialized bird faunas, to J. Blondel's report on long-term studies of mainland and insular bird communities in the Mediterranean region.

Chapters that focus on a particular forest habitat are fairly balanced between tropical forests (8) and temperate (10). Added to this core of chapters are eight chapters that treat general topics rather than regional analyses. The contributors represent a considerable range of nationalities, which indicates Keast made an effort to cast his net wide. This is a pleasing exception to edited volumes (especially in America) that in many instances seem to consist of compilations of a series of like-minded scholars. Keast's selection is particularly gratifying because it includes both ornithologists (e.g. R. T. Holmes, J. R. Karr, and R. O. Bierregaard) and plant ecologists/botanists (e.g. H. H. Shugart, F. Hallé, and A. H. Gentry).

There are lots of valuable observations to be found in the various chapters. Hallé (Chap. 3) rightly points out the mosaic nature of tropical humid forest. The green monotony of the rainforest as viewed from an overflying plane is an illusion. Gentry (Chap. 4) points out that the tropical humid forests constitute less than a tenth of the earth's land surface. This makes the prodigious species richness found therein all the more remarkable. The chapter by S. K. Robinson, J. Terborgh, and C. A. Munn highlights that typical forest bird species in the western Amazon have very low population densities and are often patchily distributed. Their take-home point is that effective long-term conservation of these sorts of populations may require very large forest reserves.

The chapter by A. Brosset details a remarkable 20-year study of the birds of a lowland rainforest in Gabon. Although 364 species of birds were recorded from the 2-km² plot, only 175 were classified as species of primary forest. This makes clear the point that tropical forest communities are complex and that just as the tropical forests are mosaics, the bird fauna is made of discrete subgroups affiliated with particular forest, nonforest, and edge microhabitats.

D. R. Wells details the impact of northern migrants on the structure of rainforests in Malaysia. He documents the remarkable degree to which these migrants add biomass to the forest bird communities in winter. As with Neotropical studies, Wells has found

cases of seasonal migrant philopatry, with a 46% annual return rate in the case of the Siberian Blue Robin.

I have chosen to focus on some of the chapters treating tropical communities (my personal interest), but there is much more here for the reader interested in forest bird communities of the world. The only obvious regions missing from specific chapter treatments are the Indian Subcontinent and the former Soviet Union.

The book is marred slightly by minor mistakes and incongruities. Near the front of the text there are two full pages featuring color snap-shots of hand-held North American birds (including notable non-forest species such as European Starling, Brown-head-

ed Cowbird, and Song Sparrow). This seems an extravagance that probably added to the expense of the book. There are a fair number of typographical errors (page 4 alone has four). On page 91 one finds the photograph of a Japanese Green Woodpecker rotated 90°. These various problems are only minor glitches in what should prove to be a useful reference. I thus recommend this book to universities with research libraries and researchers with a particular interest in the ecology of forest bird communities.—
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