

ORNITHOLOGICAL LITERATURE

LIFETIME REPRODUCTION IN BIRDS. Edited by Ian Newton. Academic Press, London, England. 1989. 479 pp. (price not known).—One of the most important developments in ornithology over the past 20 years has been the establishment of long-term studies of individual, marked birds. From such studies one can track the reproductive contribution of individuals. Lifetime reproductive success (LRS) is defined as “the total number of young raised by recognizable individuals during their lifespans,” and is the theme of this book.

The volume is composed of 26 chapters contributed by more than 30 authors from many countries. Each chapter generally consists of a detailed synthesis of information accumulated during many years of study of single species. As a result, the account is very rich and extremely uneven. Chapters deal with “short-lived hole nesters” (e.g., tits [*Parus*] and other species), “short-lived open nesters,” (e.g., Red-winged Blackbird [*Agelaius phoeniceus*], Indigo Bunting [*Passerina cyanea*]), “cooperative breeders,” (including the Florida Scrub Jay [*Aphelocoma caerulescens*]), “birds of prey,” (e.g., Osprey [*Pandion haliaetus*], Eastern Screech-Owl [*Otus asio*]), and “long-lived waterfowl and seabirds,” (e.g., Barnacle Goose [*Branta leucopsis*], Short-tailed Shearwater [*Puffinus tenuirostris*]). “General issues” are discussed in two synthesis chapters.

Most chapters end with “conclusions” sections that summarize the major factors that lead to increased LRS. If all authors had followed this format, the book could be a bit more useful and editors of future syntheses would do well to insist on such conformity. In many species, lifespan was identified as the major contributor to LRS. In a few cases, environmental factors were more important. At any rate, researchers considering how to begin a long-term study will benefit from the variety of approaches used by the authors of the present volume. Obviously, techniques used to study small cavity-nesting species are not directly applicable to seabirds, but the diversity of approach here is instructive.

The book is bound in a glossy, colorful cover and appears to be highly durable. The papers are well edited and relatively free of error. However, variation in the style of figure preparation makes the chapters look more like separate scientific papers in a journal. There is a bit of confusion in the literature cited sections about whether doctoral students produce theses or dissertations. (Why cite dissertations as “unpublished?” We should be able to recognize that they are by their very nature special sorts of publications which still exist even when some of the information in them appears elsewhere.) My major complaint (and it is not so big a complaint at that) is that the editor or typesetter has changed conventional American spelling to that favored by the British (color = colour; behavior = behaviour, and the like), even in titles where the original used the former. The most egregious case occurs when Tree Swallow (*Tachycineta [Iridoprocne] bicolor*) is given as *I. bicolour*!

Perhaps the most interesting contribution of the present book is its documentation of the observation that only a few birds survive to produce young and those that do reproduce vary widely in their contributions. Individual chapters differ in their presentations of the evidence, as do the specific interests of the authors. The editor says that the aim of the book is “to bring together most of the major avian studies of lifetime reproduction. . . and find what general patterns emerge.” It appears that the volume is successful in fulfilling this goal.—CHARLES R. BLEM.

WORLD BIRDBASE: THE WORLD BIRDER'S DATABASE. Santa Barbara Software Products, 1400 Dover Road, Santa Barbara, CA 93103, USA. 1988:5.25” (or 3.5”) floppy disks, 76 pp. manual. U.S. \$99.00 + \$5.00 shipping (\$10.00 for foreign sales).—The tremendous expansion in interest in birding over the past two decades has been paralleled by the pro-

liferation of personal computers and computer technology. Most birders are inveterate list-makers and computers are ideal tools to assist in this task. What is needed is an information management system so that lists can be combined and compared, additional data for individual sightings can be kept, records can be retrieved and displayed, etc. With a little ingenuity most general data management systems (e.g., *dBase IV*) can be set up to accomplish these tasks. However, since there is a finite (albeit changeable) number of taxa (usually species) of interest to the birder, one of the things that might be wanted is what birds he or she *hasn't* seen. This requires that the information management system contains the names of all species of interest; for international birders (aren't we all?) this may be in excess of 9000 species. Consistent spelling of either scientific or English names also poses a problem. A system that incorporates a list of birds of the world would be most welcome.

World BirdBase is such a package. This system, an expansion and improvement of the program BirdBase, uses the same taxonomic list as the book "Birds of the World: A Checklist," by Dr. James Clements (including recent updates). Each kind of bird is identified by Order, Family, Genus, Species, and English names as well as a taxonomic sequence number. The system focuses on two kinds of records: cumulative lists (e.g., life list, backyard list) and individual sightings of a given species. In general, the data entered after the initial setup of the system will be the individual sightings; the cumulative lists are maintained automatically. Facilities are provided for retrieval of data but not for formatting which must be done using other software. Specific aspects of the program are as follows:

The backbone of the system is the taxonomic list and all data entered into the system are keyed to these names. Because both the nomenclature and the inclusion of a species on the list are subject to change, World BirdBase permits the user to modify the list by splitting, combining, or renaming species; the only feature not easily modified is the sequence, probably the least important of the attributes. Being able to modify the master list is quite important since both the choice of names and the definition of species is subject to wide international and individual variance. World BirdBase permits the user to define his or her own personal version of things and to subsequently change it when desired. Changes to the list after the system has been in use for some time will occasionally affect individual records; in most cases, the system will take care of these automatically.

Although the major feature of the system is the management of individual sight records, when setting up the system the user must make decisions as to which cumulative lists are desired. Nine lists are automatically kept by the system: 1. A "life list", i.e., any species seen anywhere, is automatically compiled. 2-5: The second category of lists is a set of four hierarchically nested lists, envisioned by the programmers as geographically more and more restricted: COUNTRY, REGION, LOCALITY, HOME (for users in the United States this might be country, state, county, back yard). The user is free to use these in other ways but is not able to rename them. They must be used hierarchically; if a record is to apply to the LOCALITY list it *must* apply to both the COUNTRY and REGION lists. 6-9: Finally, there are four Special lists that can be used in any way desired (life list of birds photographed, found dead on road, seen copulating, identified by voice, etc. etc. etc.).

The user can initialize the system by entering logical information (presence or absence) for all species for all the lists (this functionally is accomplished by noting those species which belong on each list since the default is "no" in every case), or by entering the "life" lists as though each was a "trip". Once the system is set up, the results of each birding trip are entered. Operationally, one trip is likely to be split into several parts because the system permits only one location per "trip". This is not necessarily a problem for birders who take copious notes since their records are probably already broken down this way. Each "trip" is identified by location (this field also includes comments), date, and which lists apply. The location field is 56 characters long which doesn't provide for much detail. However, if more

detail is needed, the "trip" can be split into two or more locations, each with a 56 character name. The country of the location is entered as a two-character code. Dates can be either MM-DD-YY or DD-MM-YY depending on configuration, but the year is restricted to the period 50 (=1950) through 49 (=2049).

Entry of actual data from each "trip" involves highlighting the name of the bird on the master list, hitting the return key, entering comments (if any) and hitting the return key. This is repeated until all species on the list have been accounted for. A "trip" may involve just one species or hundreds. The system provides a sophisticated "find" utility for locating a species on the master list (as well as two different paging functions). However, the "find" utility usually starts at the beginning of the list so that jumping to species in the "higher" passerines is slow; having the data sorted in taxonomic order can speed entry. Once data have been entered, records can be deleted, and the various cumulative lists can be edited.

Information can be retrieved using several different fields, including species, date, first sighting of species, location, etc. This display utility retrieves complete records in a standard format and lists them on the screen, printer, or to a file. If the records are written to a file, two formats are available, Word Processing (as the records are written to the screen) and Data (standard double quote/comma delimiting for importation into other databases or analysis software). No other formatting is available.

World BirdBase is written for IBM-compatible personal computers and is copy-protected. A minimum of 640k RAM, one floppy disk drive, and a hard disk drive are required. The master name file takes nearly 800k. The storage of sight records is reasonably efficient: the maximum number that can be stored in a directory is slightly over 32,500, taking approximately 2 megabytes of space. I tested the system on a 8086 machine and found it a bit slow, (9000 entries is quite a few to scan). I expect that the performance would be much better on a 286 or faster machine. Greater flexibility and speed in moving around through the master list would also improve the performance of the system. The manual is written in English, has an index, and is quite good, as computer manuals go. More than half of the manual is devoted to a series of tutorials which cover nearly all features of the system. One feature lacking from the system is geographic range data for each species. This would permit the user to set up target lists for new places to visit. Perhaps future updates will include this information.

This is a very good deal for birders who have a lot of data from various parts of the world (and who have time to enter them!). The computerized world list, alone, is worth the price.—
D. SCOTT WOOD.

RESIDENT FOREST BIRDS IN THAILAND, THEIR STATUS AND CONSERVATION. By Philip D. Round. International Council for Bird Preservation, Monograph No. 2. Cambridge, U. K., 1988: 211 pp., 17 tables, 17 maps. 16 halftone photos, 4 line drawings of birds. Paper, \$12.00.—This is a resume of the status and location of birds in a political entity, Thailand, the type of which is needed throughout the world. Rather than include all species, Round considers the places where wildlife is supposed to be protected and discusses the ecological conditions extant and the species being affected by the changes that each area is undergoing.

The contents of the book are arranged under seven major headings: Geography and climate of Thailand; Vegetation; Conservation measures (at present); Threats (to the birds and their environments); Regional analysis (by the six zoogeographical regions of Thailand); Species status review; and Discussion and Recommendations (for conservation). Topics under each of these headings are lucidly discussed. Among the most pertinent to me was the list of parks and wildlife refuges under "Regional Analysis", and their descriptions. I had visited

many of these areas during the past two decades and could visualize the changes in vegetation and wildlife populations. Under "Species Status Review" is found a list of the bird families in Thailand and the 93 species of birds endangered, threatened or vulnerable. An appendix of 60 pages listing the species found in Thailand makes up about one-third of the book. With all of these discussions and identifications the book is extremely valuable as a reference concerning where to go to find birds, what species are present and what conditions the observer can expect to find. We need such books for the rest of the world as aids for the serious conservationist. I.C.B.P. is to be commended for having supported this study.—H. E. McCLURE.

A *BIRDWATCHER'S COOKBOOK*. By Erma J. Fisk, illus. by Louise Russell. W. W. Norton & Co., New York. 1987: 272 pp. \$15.95.—A review of a *cookbook* in a scientific journal? In this case, it is easily justified because *Wilson Bulletin* readers watch birds and do field work; and we all eat. This volume serves both occupations delightfully.

If you've never encountered Jonnie Fisk's writing before—either of her best-selling amateur ornithologist-travel-adventure-philosophy books, one on surveying the birds of a remote Arizona mountain ("The Peacocks of Baboquivari," 1983) and the other on banding in Belize ("Parrots' Wood," 1985, both published by Norton) or even her pamphlet on banding ("The Bird with the Silver Bracelet," Arey's Pond Press, South Orleans, MA, 1986)—you have a treat in store. This lady is unique. I hasten to add that she is also a good friend, but I hope that does not disqualify me as a reviewer. In any case, her books reveal so much of her character that even if you don't know her when you begin page 1, you will probably finish the book counting her as a friend, or at least a kindred spirit.

The main theme of this book is how to eat well and interestingly without taking a lot of time in the kitchen, spending that time outside instead; it is also how to cook *for* people doing field work. This is no ordinary cookbook. It contains, for instance, suggestions for healthy and hearty breakfasts for a long day of birding, banding, censusing—wonderful varieties of pancakes, muffins, and biscuits that will carry you for hours in the field. It also advises on breakfasts for "birders" in too much of a hurry to sit at a table." There are many "lunches to go," containing ideas to escape the boredom of peanut butter as basic field food. An essay on why a bagel and cream cheese is so practical notes: "It fits in a pocket; it is slow chewing so it lasts a long time; you can eat it while looking through a telescope or driving without fear of dribbles on your shirt; it sticks together; if you drop it in the sand, it is easy to wipe off."

There are also hot and quick meals for when you can get home for lunch or when you come back too tired after a long day to fix a complicated meal for fellow-birding guests. Field cooking is included as well, with unusual and practical ideas. Throughout the book, there is an emphasis on good nutrition (she slips wheat germ, yogurt, and the like into all sorts of unexpected dishes) and on vegetarian foods (*good-tasting ones*).

This is a cookbook, certainly, but like all of Jonnie Fisk's books, it is highly personal; it contains short vignettes of her experiences, fellow "bird people," and thoughts on life, in amongst the recipes gathered by an interesting and creative woman during a lifetime of cooking and living. A particularly sensible defense of stay-at-home wives appears between Acorn Squash with Apple, and Pumpkin Casserole (pp. 118–119.)

She includes recipes from her home base of Cape Cod (especially rich with useful fish recipes and good things to make with cranberries), as well as many from her experiences in Florida (roast armadillo!), the American Southwest, Mexico, Central and South America, and Europe. As a diplomat's wife before she was widowed and became involved with the world of birds, Jonnie traveled and entertained a good deal. Some of her recipes from those

years—especially novel ideas for appetizers and punches—are as appropriate for a Christmas Countdown party as for a formal occasion.

Other inclusions that might not be expected in a birdwatcher's cookbook are some good recipes for bread, imaginative condiments and preserves. Her sense of humor is apparent throughout but I particularly enjoyed her advice to remove the chicken feet from soup before serving (a flavoring trick learned during Central American field work, when chickens were rare and food generally hard to come by). The reader might expect directions for sparrow pie (p. 58), comments on eating road- and window-kills after preparing them as specimens (pp. 104–5), and recipes for game, but perhaps not a tongue-in-cheek version of Elephant Stew: "Cut 1 medium-sized elephant into bite-sized pieces . . ."

"A Birdwatcher's Cookbook" is a book to be *read*, not just to look up a recipe in. The recipes are there, of course, and the main subjects are indexed, but much will be lost without a thorough reading, along with annotating the somewhat skimpy index with items especially interesting to the reader. This book is typical of the author in that it occasionally goes off on tangents: for instance, in the fish chapter Eleanor's Chowder is followed immediately by Chocolate-Chip Cookies (another recipe from Eleanor) and then Fried Grasshoppers (which Eleanor cooked when she lived in the Solomon Islands)—then back to the next fish recipe. The author's skill and approach to cooking is reflected by many of the recipes being written in a sort of short-hand, telling the reader what is in the dish but often not how much of each ingredient. A novice cook can learn much about improvisation from this breezy attitude toward hard-and-fast recipes, but advice should be sought in cases of doubt. For instance, in Black-eyed Rabbit, there are no instructions to *cook* the dried peas after soaking; inexperience could result in pretty crunchy rabbit! I noticed about 6 obvious typographical errors and suspected a few omissions, like the lack of any flour in the peanut butter cookies on p. 214. The copy of the book that I bought had "add 2 scant cups of flour" written in the author's hand in the molasses cookies recipe on the next page, and Jonnie wrote me (without knowing about this review) that 3 Tbs of shortening was inadvertently omitted from Five-Grain Bread (p. 153); despite five proofreadings, some omissions got through.

I can heartily recommend this book to all who get out to watch birds and even to those who don't. It is reasonably priced, with the royalties going to the Cornell Laboratory of Ornithology (E. Fisk, pers. comm.). It is attractively illustrated with pen-and-ink drawings. I found it thoroughly enjoyable and useful. [*Note added in proof:* I regret that publication of this review was delayed and Mrs. Fisk never saw it in print; she died peacefully in her sleep in January, 1990, at age 84. I am glad to report, however, that two more Fisk books, on natural history and Cape Cod, are in press.]—MARY H. CLENCH.

THE COMMON LOON: SPIRIT OF NORTHERN LAKES. By Judith W. McIntyre, illus. by Anne Olson. University of Minnesota Press, Minneapolis, Minnesota. 1988:xii + 228 pp., 22 tables, 40 figures, 10 plates of color photographs, 3 appendices, 13 pp. references, 1 disc-recording of vocalizations. \$25.00 cloth.—For someone who has enjoyed the lonely call of the Common Loon (*Gavia immer*) across a northern lake on a summer evening, this book will be a delight. Pleasant recollections of loon behavior and vocalizations will be recalled when reading the text and listening to the accompanying record.

This book will be appealing, as well as beneficial, to both the amateur and professional ornithologist. It is a comprehensive monograph of the natural history of the Common Loon, including chapters on loon myths and legends, courtship, nesting, territorial behavior, family behavior, social interactions, vocal communications, feeding, parasites and diseases, ecology, evolution and classification, anatomy and plumage, distribution and migratory routes, and human impact on loon populations. The author has incorporated an extensive review of the scientific literature into the text, tables, and figures, making it a valuable scientific review,

rather than just an anecdotal review. Yet the author has managed to present the findings in such a way as to explain what is known quantitatively about the loon in a format that will be enjoyable and educational reading for the amateur.

The illustrations are very well done and enhance the descriptions in the text. The recordings of Common Loon vocalizations are a positive and instructive addition. For the "loon watcher," this book will be a valuable source for understanding the behavior and calls that are observed. For the professional ornithologist, it will be a rich resource of references regarding the Common Loon, with an extensive reference section.

All of these factors take this book off the coffee table as a nice compilation of loon photographs and anecdotes, and make it a valuable and enjoyable contribution to an ornithological library. The price also will make it appealing to a variety of readers.—LEANN B. BLEM.

BIRDS AND BERRIES/A STUDY OF AN ECOLOGICAL INTERACTION. By Barbara and David Snow. T & A D Poyser Ltd., Staffordshire, England, 1988:268 pp., 44 pencil sketches by John Busby. \$37.50.—The Snows continue their contribution to the field study of the coevolution of birds and fruits eaten by birds. The main basis of this book is their study of frugivorous birds in southern England from 1980 to 1985, with more than 1,600 h of timed watches at fruiting plants (43 species). As will be explained below however, the analyses of the study are of broad interest, far beyond the regional data. The book has three natural sections: the fruits, the fruit-eaters, and interpretation. In the 100 p. section on "The Fruits" individual plant species are discussed with particular attention to the seasonal pattern of avian exploitation. Let me provide an example with their text on Haws (*Crataegus* spp.), a main constituent of British hedgerows. This 4-page account reviews the distribution and abundance of haws in England and the study area. Botanical information on the haw fruits are provided (with additional information in the appendices of all fruits). The seasonal pattern of birds feeding on haws is presented with a monthly table of 3658 feeding records by eight bird species that are dispersers. Also, a very interesting histogram (Fig. 4, p. 46) shows that haw exploitation varies greatly depending on whether or not the individual plants are a defended food resource of Mistle Thrushes (*Turdus viscivorus*). The long-term defense of these plants can extend over several months, and indeed the same individual plants may be defended year after year. There is also discussion of seed- and pulp-predators. The Blue Tit (*Parus caeruleus*) are pulp-predators, taking pieces of the pulp but leaving the haw fruits in situ, while the aptly named Hawfinch (*Coccothraustes coccothraustes*) is the plant's only avian seed-predator. The account concludes with a review of "haws elsewhere," a discussion of published observations from various locations on the European continent. Most of the plant species accounts follow a format quite similar to the one described above.

In the second part of the book, the "Fruit-eaters," the many birds are discussed, again by species accounts. Remarkably, although there is a shared data as the basis of this and the first section of the book there is really little repetition in text: the plant and the bird viewpoints of the two sections turn out to be quite different. Again I will use an example to show the format. The 5 pages on the European Starling (*Sturnus vulgaris*) outlines the bird's seasonal abundance and fruit-feeding habits. A monthly table presents 4621 records of starlings feeding on fruits. Analyses show that the starling feeding success rate is often quite inferior to that of thrushes, and the behavioral and anatomical reasons for starling inefficiency in fruit feeding are considered with regard to a variety of plant species. The account ends with "starlings elsewhere," citing other European studies that include reviews of agricultural fruit-damage by starlings.

The final section of the book, "Interpretation," reviews and expands our current ecological understanding for birds/fruits interactions with discussions including studies throughout the

world by many researchers. This part of the book can be read by itself for the excellent presentations on a wide variety of topics: fruit size and seed burden, color and taste of fruits, competition for dispersal, seasonal fruit quality, seed-predators and plant defenses, limits and adaptations to a fruit diet, preferences and strategies of fruit-eaters, time/energy budgets, and coevolution (both long-term and recent) of birds and their plant foods. The Snows go far beyond their good reviews of each of these topics; they also include new ideas and novel explanations, some of which will be controversial. The study of frugivorous birds is a popular research area, with many directions, and this book serves as an important update.

Appendices include information such as the nutritive values of bird-dispersed fruits. The artistic sketches of birds and their food plants are a welcomed addition throughout the text. The book's physical quality is high; the index however could have been more complete with subject headings. One can enthusiastically recommend the book to a wide audience, from avian ecologists to the interested layman. It inspires readers to long-term, direct field observations within an observer's home district. We can extend an appreciative congratulations to the authors on a study and book well done.—CHARLES F. LECK.

A GUIDE TO BIRD BEHAVIOR. VOLUME III. By Donald W. Stokes and Lillian Q. Stokes, illus. by Bob Hines and Donald W. Stokes. Little, Brown, and Company, Boston. 1989. 397 pp., numerous line drawings. \$18.95 hardcover, \$10.95 paperback.—This is the third in a series of guides designed to aid birdwatchers in identifying and interpreting behaviors seen in the field. The book follows closely the format of the first two volumes (see review, *Wilson Bull.*, 96:510–511, 1984). Briefly, the book is divided into 25 sections, each devoted to a species of North American bird. Each section contains a short introduction to the species; a behavior calendar showing months when various categories of behavior can be observed; a display guide, outlining the form and context of the major visual and auditory displays; and behavior descriptions, narratives detailing major aspects of behavior such as territoriality, courtship, breeding, migration, and flocking. As was true of the first two volumes, the book is basically well done, providing a great deal of accurate information in a clear and easily retrievable fashion.

One difference between this and the previous volumes lies in the manner in which species were chosen for inclusion. As the authors explain in their introduction, the first two volumes concentrated on species that are both common and easy to observe, while for the present volume the authors chose species that, because of features such as large size, striking appearance, or unusual behavior, are especially attractive to humans, even though many of these species turn out to be rare or difficult to observe. Thus readers may have more difficulty in actually seeing many of the behaviors described in this volume, but on the other hand most will probably agree that those behaviors one does observe are of special interest.

The information presented has again been garnered from original scientific papers, which are listed in the back of the book but are not cited in the text. The authors for the most part have done a good job in locating the appropriate literature, though I did notice a few omissions; for example, D. W. Mock's work on sibling aggression in Great Blue Herons (*Ardea herodias*) seems to have been overlooked, as has B. Heinrich's recent work on the social behavior of Common Ravens (*Corvus corax*). Another problem is the confusion the authors occasionally exhibit about certain ethological concepts. For example, they do not seem to have a good grasp on the definitions of the various types of mating systems, and they stretch the definition of territoriality to a dubious degree, as when they categorize defense against potential nest predators under this term. Moreover, they also seem confused at times about how natural selection works in the evolution of behavior. The most glaring

example of this problem is the puzzlement they repeatedly express about the function of brood parasitism, a behavior whose probable fitness benefit to individual practitioners seems especially obvious.

Despite these problems, the book is an excellent resource, providing an introduction to the behavior of the target species that should be useful to professional and amateur ornithologists alike.—WILLIAM A. SEARCY.

BIRDS IN KANSAS. Vol. 1. By Max C. Thompson and Charles Ely. Univ. Kansas, Mus. Natural History, Lawrence, Kansas. Public Educ. Ser., No. 11 (J. T. Collins, ed.), distributed by The Univ. Press of Kansas, Lawrence, Kansas. 1989:xv + 404 pp., 179 black-and-white photos, 222 distribution maps. \$25.00 (cloth), \$14.95 (paper).—As should be expected from the state's central position among the 48 contiguous states, the birds in Kansas show both eastern and western as well as northern and southern affinities, resulting in a state total of 424 species. The authors identify the Zebulon Pike expedition in 1806 for the addition of the first species to the recognized list for what is now Kansas. The history of ornithology in Kansas is the history of western expansion and the naturalists who accompanied the army during this invasion—Say, Abert, Baird, Cassin, Couch, Hammond, and Coues, to name a few. The most recent synopsis of Kansas birds was R. F. Johnston's 1965 "Directory" (also published by The Museum of Natural History at the Univ. of Kansas) that listed 383 species. Several of the professional ornithologists in the state who have enriched the state list during the intervening quarter century are identified by Thompson and Ely, but unfortunately none of the highly proficient amateur ornithologists are recognized.

The authors' purpose is not to provide a "thorough technical work, but rather . . . for the enjoyment and use of both the amateur birdwatcher and the professional ornithologist." The bulk of the book is devoted to the accounts of 222 non-passerine species (including the extinct Passenger Pigeon [*Ectopistes migratorius*] and Carolina Parakeet [*Conuropsis carolinensis*]). Volume 2 will cover the passerines. For every species a statement of occurrence and abundance is provided. For 162 species this status report is expanded to include paragraphs on "periods of occurrence" and "habits and habitat." For 105 species there is a section on "breeding," included for some species that do not breed in the state (e.g., Purple Gallinule [*Porphyryla martinica*], Piping Plover [*Charadrius melodus*], and Willet [*Catoptrophorus semipalmatus*]) and excluded for one species that does breed in the state (Whippoorwill [*Caprimulgus vociferus*]). Field marks are described for 45% of the species, but there appears to be no pattern to the inclusion of this section. The American Swallow-tailed Kite (*Elanoides forficatus*), described as "unmistakable" and the Black-necked Stilt (*Himantopus mexicanus*), "one of the most easily identified shorebirds" receive space under this heading, while no species in the genus *Accipiter* does. For almost three-quarters of the species, there is a description of "food," a section that could have been omitted without any significant loss.

The major contribution of this book, in addition to providing an authoritative list of the species in the state, is the distributional data. Every species has a state map with the counties of record indicated, even if there is only one dot. This presentation, of course, will be a major stimulus for further distributional work as we all go out to fill in the blanks (I've already started my file). It would have been also helpful if a figure providing a graphic presentation of phenology and relative frequency of the species could have been included, but perhaps the authors felt that a similar figure in the recent guide to bird-finding in the region (Zimmerman and Patti 1988, Univ. Press of Kansas) was sufficient.

There are black-and-white photographs with 187 of the species' accounts provided by 23 bird photographers, the work of David Rintoul, Galen Pittman, Bob Gress, Marvin Schwill-

ing, Frank Shipley, Mike Blair, and Jean and Ed Schulenberg being well represented. Some abundant species are not pictured (e.g., Common Merganser [*Mergus merganser*]), some rare species for which good Kansas photos exist are not included (e.g., Thayer's Gull [*Larus thayeri*]), and there are some errors in the captions that will cause confusion (e.g., Black-bellied Plover [*Pluvialis squatarola*] in "winter" plumage, the "Baird's" Sandpiper [*Calidris bairdii*], and the "adult White-faced" Ibis [*Plegadis chihi*]).

My only disappointment is the paucity of literature citations. Even though this is not a strictly scientific work, it would have been more satisfying if at least all the published records that substantiate species' occurrences could have been included. A comprehensive bibliography for Kansas birds has not been available since Johnston's work. Hopefully this will be rectified by the rapid publication of the more technical treatment of Kansas birds by the authors.

The authors dedicated this volume to colleagues "who waited so patiently", and I believe that it was worth the wait. We anticipate the publication of volume 2 with positive expectations.—JOHN L. ZIMMERMAN.

AUDUBON WILDLIFE REPORT 1989/1990. By William J. Chandler (ed.) Academic Press, New York. 1989:xix + 585 pp., many black-and-white photos, maps and graphs. \$39.95.— This is the fifth volume in a series of summaries which emphasize the wildlife management activities of various agencies of the Federal Government. Earlier volumes were reviewed in *The Wilson Bulletin* 100:707-708(1988) and 101:522(1989) and the current volume follows the format outlined in those reviews.

"The Featured Agency" in this volume is The U.S. Army Corps of Engineers, and this is the only Federal agency discussed in this volume. Part Two reports on eight "Conservation Challenges." These include two articles of great interest to ornithologists: "Conserving Nongame Migratory Birds: A Strategy for Monitoring and Research" by Judith Gradwohl and Russell Greenberg, and "Global Warming, Climate Disruption, and Biological Diversity" by R. T. Lester and J. P. Myers. The others discuss Western Water and Wildlife; The Pacific Northwest's Ancient Forest; Recent Court Decisions affecting Wildlife; Conserving Southeast Coastal Wetlands; Discarded Catch in U.S. Commercial Marine Fisheries and Restoring Ravaged Range.

Part Three (Case Histories) discusses eight species (two mammals, four birds, one fish and one insect (monarch butterfly) that are either endangered or are involved in some conservation problem. The bird species are the Hyacinth Macaw (*Anodorhynchus hyacinthinus*), the Marbled Murrelet (*Brachyrhamphus marmoratus*), the Roseate Tern (*Sterna dougallii*), and the Golden Eagle (*Aquila chrysaetos*). The accounts include an outline some of the natural history of the species, an Historical Perspective and sections on Current Trends, Management, Prognosis, and Recommendations.

A series of Appendices provides a set of directories for the various agencies as well as other useful information including a listing of the Federal Endangered and Threatened Species.

This series has produced some very informative volumes, but one wonders about the selection of this method of getting the information to the public. The volumes are too expensive for the individual, and most institutional libraries may not want to spend their dwindling funds on another series of glossy books, when a more conservative and cheaper publication scheme might suffice.—GEORGE A. HALL.

AMERICAN WARBLERS. AN ECOLOGICAL AND BEHAVIORAL PERSPECTIVE. By Douglass H. Morse. Harvard University Press, Cambridge, Massachusetts. 1989: xii + 406pp., 57 black-

and-white figs. ISBN 0-674-03035-4. \$30.—An arguable case can be made that more bird students would select the wood warblers (Parulinae) as their favorite group of birds than any other group. The author of this book admits that warbler watching played a large part in starting him on his biological career and no doubt many other ornithologists (including this reviewer) would make the same admission. Over the years there have been numerous books on warblers, some accounts of life histories, some elaborate picture books, and some written for the popular market. Here at hand is a book which, as the subtitle indicates, goes beyond anecdotal life history information, and is the first real attempt to synthesize a modern treatment of the biology of this diverse group.

In the 1960s and '70s ornithologists knew Doug Morse as an innovative student of warbler behavior and ecology in the spruce forest of Maine. More recently we heard rumors that, deserting ornithology, he had turned his attention to animals other than birds, but with this book we welcome him back into the fold.

A more representative title might have been "Some American warblers" because the coverage is highly variable. As we might expect from the author's principal research interests, three or four of the spruce-forest warblers of the northeast receive much coverage. Other species that receive full coverage are the Prairie Warbler (*Dendroica discolor*), based on Nolan's exemplary monograph, two threatened species, The Kirtland's (*D. kirtlandii*) and the Golden-cheeked (*D. chrysoparia*), which have been monographed, as well as the Golden-winged (*Vermivora chrysoptera*)—Blue-winged (*V. pinus*) complex. The warblers of the eastern deciduous forest come off with much less discussion, while the western warblers are skimpily treated and one—*Vermivora virginiae*—is omitted entirely. This unevenness cannot be blamed on the author, but is an accurate reflection of the amount of the study that has been devoted to the various species. The 37 pages of bibliography attest to the thoroughness of the author's coverage of the work that has been done on these species.

Besides reporting the known facts, Morse does not hesitate to share with us his insights into the meaning of it all. Each chapter is sprinkled with fascinating and provocative ideas and suggestions, but my only disappointment with the book was that there weren't even more of these.

The list of chapter titles illustrate the wide gamut of topics taken up: Distribution and Evolutionary History, The Breeding Season, Foraging, Habitat Selection and Use, Territorial Behavior and Other Aspects of Resource Exploitation, Predators and Parasites, Display, Plumages, Migration, The Wintering Season, Rare Species, Population Limitation and Species Diversity, Hybrids, Tropical Warblers, Ecological Equivalents, and Opportunities for Further Research.

The book begins with a summary of the several groups of warblers and their distribution. Morse postulates that warblers as a group originated in the American tropics but that most of the speciation occurred in the Pliocene in the southern Appalachians, with the final divergence of some of the superspecies complexes in the Pleistocene. This view seems more reasonable than Mengel's (1964) suggestion that Pleistocene glaciation was responsible for the speciation.

The chapter titled "Population Limitation and Species Diversity" is perhaps the most thought-provoking chapter in the book. Morse attempts, very successfully, to come to grips with the question as to how so many closely related species can occupy a limited habitat. This topic is also treated in the habitat selection chapter. This chapter also gives a thoughtful treatment of the current debate about limitation of numbers by factors on the breeding grounds as opposed to the limitation by factors on the wintering grounds, with limitation by migration events thrown in. Morse concludes that all of these factors are important.

There is an interesting suggestion that the spruce budworm control measures have stabilized the populations of the so-called "budworm specialists" by keeping the insect population at low to medium epidemic proportions. Without the control measures there would

have been such extensive tree-kill that large areas would not support budworms, and hence warblers for many years.

The chapter on foraging concentrates on the breeding season and, as expected, dwells extensively on Morse's work on the spruce-woods warblers. The interesting suggestion is made that during wet weather, or in damp environments, the birds will prefer red spruce forests to white spruce because of the difference in needle arrangement.

The chapter on display is concerned mostly with vocalizations. I found the section on Song and Environment, with its discussion of the attenuation of sound intensity with distance in the forested habitat especially interesting. The chapter on plumages compliments this with a stimulating discussion of plumage patterns and their origins and uses. Especially interesting is the discussion of the relation between certain plumage features and the amount of light the birds experience in foraging as well as on their singing perches.

The chapter on migration discusses the routes used and dwells heavily on the ecology of the habitat changes the species undergoes as it moves between breeding and wintering grounds. It is emphasized that little work has been done on the factors involved in habitat selection during migration. The chapter on the wintering season seems to be an essentially complete summary of the as yet not too extensive information on wintering ranges and behaviors.

A chapter on hybrids discusses the *Vermivora* complex thoroughly and other hybrid combinations, including Sutton's Warbler (*D. potomac*) are mentioned. Morse is favorably inclined to the suggestion of Parkes that intergeneric hybrids should be more common than intrageneric ones.

In addition to the Kirtland's and Golden-cheeked warblers, the chapter on rare species treats the Bachman's (*V. bachmanii*) and Swainson's (*Limnothlypis swainsonii*) warblers as well as some formerly rare ones that have increased. The Colima Warbler (*V. crissalis*) is barely mentioned. The very interesting suggestion is raised that the current rarity of Bachman's Warbler may have something to do with its relationship with the Northern Parula (*Parula americana*).

The chapter on tropical warblers is brief, reflecting the dearth of work on these species, but the differences resulting from the sedentary vs migratory life styles are pointed out. The penultimate chapter draws some interesting contrasts between the New World Parulines and the Old World Sylviids.

In the final chapter Morse lists some opportunities for further research and these are all thoughtful ideas. However, as I read through the book I was constantly being reminded of things we apparently do not know about these birds. Why, for example, does the male American Redstart (*Setophaga ruticilla*), and no other warbler, require two years to acquire its fully adult plumage? Why is the sexual dichromatism of the Black-throated Blue Warbler (*D. caerulescens*) so much more marked than in other species? The whole book can be a fruitful source of research ideas. The book is readable and there are a minimum number of typos. Most readers will rejoice in the absence of the highly mathematical treatment so common in modern ecological papers, but the science is good for all of that lack. This important book should be read by all eco-ethologists (or etho-ecologists) as well as by paruliphiles.—GEORGE A. HALL.

BRIEFLY NOTED

The following publications are available (Free of Charge) from the Publications Unit, U.S. Fish and Wildlife Service, 18th and C Streets, NW, Room 130 Arlington Square Building, Washington D.C., 20240.

NORTH AMERICAN BREEDING BIRD SURVEY, ANNUAL SUMMARY 1988. By Sam Droege and John R. Sauer. U.S. Fish and Wildlife Service Biological Report 89(13), 1989:16 pp.—G.A.H.

PROCEDURES FOR THE ANALYSIS OF BAND-RECOVERY DATA AND USER INSTRUCTIONS FOR PROGRAM MULT. By Michael J. Conroy, James E. Hines, and Byron K. Williams. U.S. Fish and Wildlife Service Resource Publication 175. 1989:iii + 61 pp.—G.A.H.

DEMOGRAPHIC CHARACTERISTICS OF A MAINE WOODCOCK POPULATION AND EFFECTS OF HABITAT MANAGEMENT. By Thomas J. Dwyer, Greg F. Sepik, Eric L. Derleth, and Daniel G. McAuley. U.S. Fish and Wildlife Service, Fish and Wildlife Research 4. 1988:iii + 29 pp.—G.A.H.

MIGRATION OF RADIO-MARKED WHOOPING CRANES FROM THE ARANSAS-WOOD BUFFALO POPULATION: PATTERNS OF HABITAT USE, BEHAVIOR, AND SURVIVAL. By Marshall A. Howe. U.S. Fish and Wildlife Service, Fish and Wildlife Technical Report 21. 1989:iii + 33 pp.—G.A.H.

A COMPUTER PROGRAM FOR SAMPLE SIZE COMPUTATIONS FOR BANDING STUDIES. By Kenneth R. Wilson, James D. Nichols, and James E. Hines. U.S. Fish and Wildlife Service, Fish and Wildlife Technical Report 23. 1989:19 pp.—G.A.H.

INFORMATION FOR AUTHORS

The Wilson Bulletin publishes significant research and review articles in the field of ornithology. Mss are accepted for review with the understanding that the same or similar work has not been and will not be published nor is presently submitted elsewhere, that all persons listed as authors have given their approval for submission of the ms, and that any person cited as a personal communication has approved such citation. All mss should be submitted directly to the Editor.

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