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ORNITHOLOGICAL LITERATURE

EDITED BY WILLIAM E DAVIS, JR.

THE NORTHERN GOSHAWK: ECOLOGY AND MANAGEMENT. By William M. Block, Michael L. Morrison, and M. Hildegard Reiser, editors. Studies in Avian Biology 16. Cooper Ornithological Society, % Western Foundation of Vertebrate Zoology, 439 Calle San Pablo, Camarillo, California. 1995: 34 figs., 58 tables. $16.00 (paper).—Honest-to-goodness updates of species' life-history information—as opposed to simple rehashings of previously published accounts—are always welcome additions to the ornithological literature. This is especially true when the species in question is one whose known biology is steeped as much in myth and traditional lore as ecological reality, and even more so when the information in question focuses on limiting-factors research at multiple sites. The current offering is one such effort. The published result of a symposium on the biology and management of the Northern Goshawk (*Accipiter gentilis*) that was held in conjunction with a Cooper Ornithological Society meeting in April, 1993, the work represents "a compendium of current information on goshawk biology and management" in North America.

The symposium was organized because evidence available at the time suggested that North American populations of goshawks, especially some of those in the western United States, were declining, and because resources managers had insufficient information upon which to base practical and effective management efforts. Although the former is no longer thought to be the case, the resulting proceedings remains a useful and timely contribution to the avian literature. The 22, 4- to 9-page papers that make up the work were authored or co-authored by an astounding 41 individuals, testimony to recent interest in the species. The work includes six contributions on "research approaches and management concepts," nine on "resource ecology," and seven on "population ecology." Not surprisingly, not all of the efforts included therein are as scientifically rigorous or as gracefully presented as one might hope. Several papers, for example, offer but brief and preliminary glimpses of works that were still in progress at the time. Nevertheless, the proceedings' editors are to be congratulated for producing a work that is both editorially clean and reasonably seamless.

Several of the more generically useful papers include ones by Clint Boal on aging nestling goshawks, and Suzanne Joy, Richard Reynolds, and Douglas Leslie on the costs of benefits of broadcast survey techniques for breeding goshawks. Although most "management" papers in the work are clearly aimed at site-specific situations, many of the conclusions reached should be of general interest to managers of forest raptors. A paper by Pat Kennedy, Johanna Ward, George Rinker, and Jim Gessaman on post-fledging areas in goshawk home ranges, for example, insightfully concludes that management strategies need to account for the habitat requirements of recently fledged young, as well as for the nest-site and foraging-area requirements of parental adults. Similar bits of wisdom occur in other papers.

Overall, the symposium offers a wealth of new information, as well as a good read. There is, however, one troubling aspect of the work on which I need to comment. Many of the management strategies laid out in the symposium are basically "product" rather than "process" driven (i.e., most managers still seem intent on maximizing local goshawk production—principally by creating species-specific, "designer habitats" for the species--rather than on trying to establish fully functional, naturally forested ecosystems typical of the regions in question). Given that the goshawk does not appear to be severely threatened in any major portion of its North American range, should we really be trying to maximize its production in managed forests. Wouldn't conservation interests be better served by trying to reestablish a full suite of natural ecosystem functions in "natural" forests. As I read most

of the management papers in the work, I couldn't help but wonder whether the use of silvicultural analogs alone (e.g., substitute "numbers of Northern Goshawk nestlings produced per year per" for "amount of softwood board feet per year") will ever really work in forest conservation and whether we need to be looking at management strategies that extend beyond the current single-species, production-oriented, paradigm.

This latter, not-so-minor, caveat notwithstanding, the current offering should be read by all who have an interest in the species, as well as by those with interests in the species' forested habitats. The Cooper Ornithological Society is to be congratulated for making the proceedings available so quickly, and at such a reasonable price.—KEITH L. BILDSTEIN

HOW BIRDS MIGRATE. By Paul Kerlinger, illus. by Pat Archer. Stackpole Books, Mechanicsburg, Pennsylvania 1995: 228 pp., 16 maps, 43 figures, 2 tables. $14.95 (paper).—The ornithological literature is full of books on bird migration. My own collection takes up more than a meter of shelf space, and the current offering represents Kerlinger's second addition to the group in less than a decade. Even so, "How birds migrate" provides an especially welcome and long-overdue complement to the existing literature. Indeed, not since Donald Griffin's classic work on the subject in 1964 (Bird migration, Doubleday, Garden City, New York) has anyone managed to distill and highlight the current ornithological literature on bird migration in such an appealing and productive fashion. Kerlinger's text, which contains little of the byzantine modeling, mathematics, and jargon of the current technical literature, retains all of its essential findings and excitement.

The work consists of 15 chapters, ranging from one on why birds migrate to one on how conservationists are attempting to protect them. There is also an especially useful annotated list of additional references. Most chapters focus on single aspects of migration, introducing and detailing their essential features and concluding with a series of case studies highlighting the phenomenon in individual species. The work is accompanied by an effective series of maps that depict the migratory pathways of species, as well as by numerous illustrations of specific aspects of migration behavior and ecology.

In his previous offering (1989, Flight strategies of migrating hawks, Univ. of Chicago Press, Chicago, Illinois), Paul Kerlinger demonstrated an extraordinary talent for summarizing the migration literature for his colleagues. His current effort demonstrates a similar talent for doing so for the much larger lay audience. In fact, Kerlinger sets an enviable standard for others who would try to do the same. The book's level of treatment, together with its modest price, make it an appropriate companion text for introductory courses in ornithology and avian ecology and behavior. "How birds migrate" should serve as a useful introduction to bird migration well into the next century.—KEITH L. BILDSTEIN

THE SUMMER ATLAS OF NORTH AMERICAN BIRDS. By Jeff Price, Sam Droege, and Amy Price. Academic Press, San Diego, California. 1995: 364 pp., 463 maps, 16 line drawings. $45 (cloth).—The stated goals of this book are to help birders find birds, and to provide information and guidance to conservation organizations and land managers. The book certainly reaches these goals. The data base of this book is the National Biological Survey's North American Breeding Bird Survey (BBS). The first chapter provides an overview of the BBS, including a discussion of the biases and constraints inherent in a survey which is confined to roadsides and in which most of the data is collected by amateur volunteers. Chapter 2

explains in detail how the BBS data was used to create the maps, and all the problems, biases, checking, and trouble shooting involved. The bulk of the book, chapter 3, consists of relative abundance maps, with a level of resolution of 50 km by 50 km blocks, for 450 species and identifiable forms of North American summer birds. Most of the maps show averages of data collected from hundreds of 1985–1991 BBS routes (50 three-minute point counts along a 40 km route) in southern Canada and the contiguous United States. Strictly speaking, the maps do not show breeding bird distribution because non-breeding birds may be represented. Each map has four levels of abundance displayed (<5, 5–20, 20–50, and >50 birds detected per route per year), with a minimum mapped value of 0.5. Unfortunately, the four levels are shown by different levels of intensity of the same color, which makes some maps difficult to read. Additional maps show species richness patterns for all species combined, and for several groups of birds (e.g., herons, waterfowl, flycatchers, warblers). Chapter 4 presents an annotated list of species of 531 species or forms. This includes the species for which there was insufficient data to create a map, and BBS data from Alaska and northern Canada. The annotations for each species include a description of habitat, and three BBS routes that have had consistently high counts for the species. For each route the information presented includes the average number of individuals per year detected, frequency (e.g., 7/7 indicates that the species was detected in all seven census runs from 1985–1991), and location. A fifth chapter addresses population trends and conservation issues. It includes an extensive table of population trends (percentage change), both long term (1966–1993) and short term (1984–1993), with levels of statistical significance for population changes indicated. The chapter includes a discussion and analysis of possible causes for population trends in several groups of birds (e.g., scrub nesters, open water and wetland species), keying mostly on habitat alteration. The four appendices include a list of scientific names, references cited and suggested readings, the American Birding Association's code of ethics, and selected birdfinding guides and breeding bird atlases for each state. The index includes only bird species. The 16 drawings by David D. Beadle add an attractive touch to what is essentially a book of maps.

I find this an interesting and useful presentation of BBS data which should have heuristic value, and recommend it to anyone interested in avian biogeography, conservation, or birdwatching.—WILLIAM E. DAVIS, JR.

THE ATLAS OF BREEDING BIRDS OF CONNECTICUT. By Louis R. Bevier (ed.). Bulletin 113, State Geological and Natural History Survey of Connecticut, Dept. of Environmental Protection, Hartford. 1994: 461 pp., 184 maps, 190 line drawings. Available from: DEP-Publications, 79 Elm Street, Store-Level-MO, Hartford, CT 06106-5127 (checks payable to DEP-PUBLICATIONS). $36.95 plus $3 p&h (cloth).—Another in a series of state and province breeding bird atlases, this book provides baseline data for the breeding birds of Connecticut. These data should be useful both for future evaluations of natural and human-induced bird population changes and for immediate use in making informed decisions on conservation priorities by conservationists, legislators, and state agencies. Because of its relatively small size, all of the state was censused (larger states have used a priority block system), dividing the state into 121 7.5 minute quadrangles (USGS quadrangle system), each divided into 6 blocks of approximately 25 km^2 each. More than 500 individuals were involved in the data collection from 1982–1986. "Block busting" (a few observers spent a few hours) ensured at least some coverage for every block. Each species was assigned a breeding status of "Possible," "Probable," or "Confirmed" using suitable criteria and maps

for each species were compiled. Two hybrids and 173 species were in the confirmed category, including two species which had not been previously recorded breeding in Connecticut.

The book has an interesting design—24.5 cm wide, 20.4 cm tall—which makes for easy reading. The maps are large and particularly easy to read. Several sections deal with the limitations of the study (e.g., level of effort of data collection was neither uniform nor measurable) and there is an interesting 11 page section by George A. Clark, Jr. on interpreting the distribution of breeding birds (including associated problems and constraints). The bulk of the book is occupied by the species accounts. Each species which was either a confirmed or probable breeder is described in a two (facing) page section which includes an introductory statement, and habitat requirements, atlas results, and discussion sections. The introductory statements usually provide current status information (e.g., Threatened or Special Concern), and the discussion section generally concentrate on historical accounts and population trends. An attractive line drawing by Michael DiGiorgio accompanies each account. More succinct accounts are presented for possible breeding and miscellaneous species. One appendix summarizes the breeding status (e.g., number of blocks in which breeding was confirmed), a second presents Breeding Bird Survey population trends for Connecticut and southern New England, and a third a list of common and scientific names of plant and animal species (excluding birds) mentioned in the text. The Literature Cited section contains over 500 references and is a veritable goldmine for local references.

This is a generally excellent book, but is not without problems. I was sorry that the Monk Parakeet (*Myiopsitta monachus*) was not included in the data collection, since it has been a documented breeding species for years, and population changes in this species should be of future interest. The species accounts, although well done, are a bit thin, in many cases occupying less than a page of text. There is a lot of white space that might well have been usefully filled with descriptions of breeding-related behaviors such as nest building, courtship displays, foraging behavior during the breeding season, and care of the young. These are minor quibbles however—this is an important contribution to the breeding-bird literature of North America.—WILLIAM E. DAVIS, JR.

THE WEST VIRGINIA BREEDING BIRD ATLAS. By Albert R. Buckelew, Jr. and George A. Hall. Univ. Pittsburgh Press, Pittsburgh. 1994: 232 pp. plus acetate overlays, 173 distribution maps, 4 introductory tables and 12 figures. $27.95 (cloth).—With this attractive publication, West Virginia joins the ranks of at least 15 North American states and provinces that have published breeding bird atlases. In the present volume, more than 300 volunteers conducted field work between 1983 and 1989. The southeast corner of 7.5′ topographic maps was targeted as the priority block for most of the state. In addition to priority blocks, fieldwork was conducted in blocks with special features, volunteers' "favorite" areas, and locations covered by Brooks Bird Club field trips. Of the potential 2,700 blocks in the state, 516 were targeted by the study. A total of 171 species is mapped.

The introduction provides background on West Virginia's atlas effort, methods, and organization. It also includes a brief overview of biogeography, physical features, and climate of the state that may influence bird distribution. Maps that display physiographic features are presented here and as seven acetate overlays. Because the state's avifaunal regions and habitat types are nicely described and illustrated by Hall ("West Virginia Birds," 1983), they are not duplicated in the present volume. Project results are disappointingly slim, with little reference to survey effort. No indication of the number of hours of fieldwork, for

example, is presented, and the exact number of blocks surveyed is not clear. Survey effort seems comparable to most other atlases, although the authors state that coverage was not even. Highlights include first breeding records in West Virginia for the Yellow-bellied Flycatcher (*Empidonax flaviventris*) and Yellow-rumped Warbler (*Dendroica coronata*). Other northern species, such as Veery (*Catharus fuscescens*) and Dark-eyed Junco (*Junco hymenalis*), were documented farther south in the western hills than expected.

Like many other states, West Virginia used a priority block system to promote uniform coverage. However, the inclusion of nonrandom blocks has the risk of accentuating coverage inconsistency. Opportunistic coverage of blocks selected by volunteers, notably in the Canaan Valley (Blackwater Falls quadrangle), creates an awkward cluster of observations for common species, such as Common Yellowthroat (*Geothlypis trichas*). This problem was avoided in "The Atlas of Breeding Bird of Michigan" (R. Brewer, G. A. McPeek, and R. J. Adams, Jr.; 1991) by mapping results at a coarser scale than data were collected.

Species accounts are concise, incorporating the atlas map, text, and a tabular summary on a single page. Four map symbols are used to reflect the levels of breeding evidence. "Observed" records are mapped, even though those records are defined as indicating no evidence of breeding. The map symbols are not, to my eye, intuitively hierarchial, but have the advantage of being clearly distinguishable. The base map includes state counties and a grid of topographic maps, creating a busy map. The topographic grid, and corresponding key in the appendix, makes this one of the easiest atlases in which to pinpoint the location of records. The accounts are generally free of typographical errors and are well edited. They provide a concise summary of habitat, distribution, historical patterns, and population trends. An appendix discusses the status of eight species not confirmed during the atlas efforts. The literature cited is surprisingly brief and reflects frequent reference to Hall's previous volume. The index includes both English and scientific names.

West Virginia has contributed a useful addition to the growing collection of published breeding bird atlases, targeted well to local interests. I recommend it to students of bird distribution in the region.—DANIEL W. BRAUNING.

A BIRD-FINDING GUIDE TO ONTARIO. Revised Edition. By Clive E. Goodwin. University of Toronto Press, Toronto. 1995: 477 pp., 41 maps. $24.95 (paper).—This revised edition updates the information in the 1982 edition and provides more information on the status of individual species. The task of providing a bird-finding guide to an area so large and ecologically diverse is enormous—Ontario has an area of over one million km^2 with deciduous and boreal forest, tundra, farmland and prairie, and a vast shoreline along the Great Lakes. It takes five pages to tell you how to use the book (this includes, however, an excellent section on birding ethics). Chapter 2 introduces the reader to the diversity of habitats and the birds found in each, as well as a discussion of seasonal variations. Chapters 3–16 are site guides for individual or clusters of counties in southern Ontario, while chapters 18 and 19 deal with the vast regions of northern Ontario. The chapters start with an overview which generally includes topography, flora, birding possibilities, and weather and seasonal changes. The distances are in kilometers, and direction usually given to the nearest tenth of a kilometer, which is excellent. The maps need to be supplemented by provincial road maps, however. The coverage of the areas of Ontario I know best (e.g., Algonquin Park) were adequate but lacked the detail of the American Birding Association birdfinding guide series. Much useful information, e.g., the Wolfe Island ferry schedule, is included, however. Chapter 19 deals with useful information for the visitor such as accommodations, hot line telephone

numbers, and important reference books. Chapter 20 is a systematic list of the birds, with text and bar graphs for each species. An appendix provides common and scientific names for the mammals, reptiles, and plants mentioned. The index is extensive and printed in the same type size as the text which makes it easy to read.

The book is generally well written, although a stronger editorial hand could smoothed out such statements as, "Fifteen species of ducks have been proved to nest. . . ," and in my copy page 344 was missing completely. A few of the maps lack scale bars so distances are hard to judge. The book won't fit into your pocket but will fit into your glove compartment. It is a bit overwhelming because of its scope and complexity, but next time I go to Ontario I will certainly take my copy along.—WILLIAM E. DAVIS, JR.

BIRDFINDER: A BIRDER'S GUIDE TO PLANNING NORTH AMERICAN TRIPS. By Jerry A. Cooper. American Birding Association, Inc., Colorado Springs, Colorado. 1995: 374 pp., 40 maps, 22 line drawings. $17.95 (wire-o binding, stiff paper).—This latest addition to the American Birding Association's (ABA) "Birder's Guide" series is in the same format with a wrap-around rear cover which can act as a book mark and protects the pages. It differs from previous guides in its scope and intent—it is primarily a trip planner—and should be used in conjunction with local bird finding guides. The first 19 chapters outline 19 trips, in chronological order so that they all could be taken in a single year, which theoretically might allow a birder to see 650 species of birds in North America. An additional "Baker's dozen" trips would allow the birder to add a few species to that list. In fairness, list-building is not the entire focus of this guide—quality of experiences is also emphasized. The chapters present general itineraries (including map or maps) for the trips scattered about Alaska, the contiguous 48 states, and Canada, timed at the best season for birds. They also present a plethora of details on trip planning, including a list of birding guides, telephone numbers and addresses for outfits which offer special services (e.g., pelagic trips), rare bird alert telephone numbers, a list of key species that should be looked for, tips on accommodations, and budget guidelines. A final chapter entitled "The Birdfinder Chart," which occupies more than 50 pages, lists the entire ABA checklist of species and indicates on which trips each is a key, probable, possible, or remotely possible species. This list also functions as the index to species for the guide—the actual index does not include bird names.

As is typical of the ABA guides, the book is sturdy, easy to read, and well designed. There are a few typos (mostly words run together) but it is generally well edited. This guide should be useful to the birder looking for adventure or to the more serious bird student who might want to have a look around before or after a professional conference. It is loaded with useful tidbits of information and is certainly worth the money.—WILLIAM E. DAVIS, JR.

EDWARD LEAR: A BIOGRAPHY by Peter Levi, Scribner, New York, 1995, 363 pp, 41 black-and-white illustrations, 2 appendices, bibliography, $30 (cloth).—The English poet, painter, and travel-writer, Edward Lear (1812–1888), of Lear's Macaw fame, is best remembered today for a single child's verse in which an improbable pair of characters take to sea "in a beautiful pea-green boat," court, marry, and "dance by the light of the moon." "The Owl and the Pussycat," written in 1867, was a relatively late addition to the hundreds of songs, poems, limericks, and "nonsense" rhymes Lear created for the enjoyment of his friends' young children. When he published them for a much larger audience, beginning in 1846,

these flights of fancy proved an unexpected commercial success and established Lear as one of the most beloved children's writers of all time.

It is no coincidence that "The Owl and the Pussycat" and so many of Lear's other stories feature birds, for the author/artist began his professional career by painting exotic birds at the London Zoo. By the age of 20, he had published a spectacular monograph on parrots ("Illustrations of the Family of Psittacidae or Parrots," 1832) and was providing ornithological illustrations for many of the most influential British ornithologists of his day, including Prideaux John Selby, William Jardine, T. C. Eyton, and John Gould. His work was favorably compared with Audubon's, and he was, in the mid-1830s, poised at the start of a career that might have made him the most successful wildlife artist of the 19th century. How he reached that point, and why he gave it up to pursue a less illustrious life as a poet, writer, and landscape painter, are among the many interesting aspects of Edward Lear's life inadequately addressed in Peter Levi's new biography.

In his introduction, Levi, a poet and literary historian with several previous biographies to his credit (including books on Shakespeare, Tolstoy, Tennyson, and Pasternak), tells us that he set out to write about Lear's poetry. His scope then broadened to a full biography. The resulting publication is a sloppy, rambling story that reads more like a dictaphone transcript than the writing of an Oxford don. Who were the editors, one wonders, who allowed Levi's cliche-laden text ("bright as a button," and "dry as dust") to lurch between impenetrable descriptions ("it is useful to notice at once that Lord Derby's sister Lucy had married the Rev. Geoffrey Hornby of Winwick, because his grandson, who was born in 1799, married the same Mr. Hornby's second daughter, who was his first cousin,") and irrelevant anecdotes ("as for Poole, one of my uncles flew a Turkish flag there, in front of his house by the waterside, but not until the 1880's; in the 1830's his parents were still in Istanbul").

Some simple fact-checking might also have been expected: William Swainson was an *English,* not an American naturalist, John Gould's wife was *Elizabeth,* not Edith, and it was the Goulds, not Edward Lear, who illustrated the zoological findings of Charles Darwin's voyage on the *Beagle.*

The book focuses heavily on Lear's life as an artist, but few of the "wonderful," "charming," "mysterious," or "heavenly" paintings about which Levi raves are illustrated. This leaves the reader with a frustrating sensation of having visited an art museum by telephone and been guided through its disorganized galleries by a docent brimming with strong opinions but few dependable facts. When the artist is allowed to speak for himself, his quotations are not sourced, further reducing the usefulness of the biography.

Lear deserves better, for he is an appealing, important, and intriguingly complex figure whose life at times seems more the stuff of 19th century romance than fact. The 20th of 21 children born to a failed stock-broker and an understandably exhausted mother, Lear was raised by an older sister who gave him his only formal education and his first lessons in art. Lear's bird paintings at the London Zoo and his ambitious, self-financed monograph on parrots so impressed the scientific establishment of his day that the Zoo's chairman, Lord Stanley (later the 13th Earl of Derby) invited him to illustrate the birds and mammals in his private menagerie at Knowsley Hall—a project Lord Stanley had previously discussed with John James Audubon.

Lear enjoyed the financial security and social status such patronage afforded, but he found the detail of scientific illustration extremely taxing. "My eyes are so sadly worse," he wrote John Gould in 1836, "that no bird under (the size of) an ostrich shall I soon be able to see to do." And so with the same intensity he had lavished on birds, Lear turned to landscape, traveling first to Ireland and the English Lake District and then to Rome.

Lear found foreign travel much to his liking and went on to visit Malta, Greece, Turkey,

Albania, Egypt, and Sinai. From these experiences, he produced several color plate books in which he described and illustrated his peregrinations.

One of these books, "Illustrated Excursions in Italy" (1846), brought Lear to the attention of a young Queen Victoria who appointed him as her drawing instructor. Later, Lear returned to Europe and wrote three more travel books. Then, in 1873, he visited India where he felt "nearly mad from sheer beauty and wonder." It was to be the last and most exotic journey of his life.

Peter Levi traces Lear's physical, artistic, and emotional travels with enthusiasm and empathy, but his repeated insertions of unrelated personal anecdote, no matter how well intended, distract from the coherence of the biography. Fortunately, more than a dozen other biographies of Lear have already been written. The best of these, by far, is Vivien Noakes' "Edward Lear, The Life of a Wanderer" (Collins, 1968). While Ms. Noakes' biography (unfortunately out of print) is highly recommended, Mr. Levi's is not.—ROBERT MCCRACKEN PECK

Note.—Robert Peck is currently researching for a book on Edward Lear as a natural history painter. He invites readers with information on this subject to contact him at The Academy of Natural Sciences of Philadelphia, 1900 Benjamin Franklin Parkway, Philadelphia, Pa. 19103; Phone (215) 299-1138; e-mail: peck@say.acnatsci.org.

POLYGYNY AND SEXUAL SELECTION IN RED-WINGED BLACKBIRDS. By William A. Searcy and Ken Yasukawa. Monographs in Behavior and Ecology, Eds. J. R. Krebs and T. Clutton-Brock, Princeton Univ. Press, Princeton, New Jersey. 1995: xviii+312 pp., 61 numbered text figures and 32 tables. $55 (cloth); $29.95 (paper).—The authors note that there have been about a thousand papers published on Red-winged Blackbirds (*Agelaius phoeniceus*). Less than half of these are cited in this monograph because it is limited to the ecology and evolution of polygyny in red-wings and the import of this mating system to the process of sexual selection. The book is no mere synthesis, although the reader is provided with a firm foundation about the behavioral ecology of the species. There is a certain satisfaction in exploring the biology of a species about which a great deal is known, since relevant data are available that are germane to a wide array of questions. Searcy and Yasukawa have used this wealth of published as well as unpublished data to develop arguments related to both proximate and ultimate causes for polygyny and past and present sexual selection. Their analyses of hypotheses are carefully accomplished and fully acknowledge confounding factors, pittfalls, and alternate explanations. Indeed their meticulous, comprehensive approach sometimes caused me to lose sight of where they were going, but fortunately separate discussions within the text of chapters are brought to closure with a summary of their conclusions (or lack of conclusions). This book deserves a longer and more detailed review. I highly recommend that such a review might be the focus of a senior topics course or graduate seminar since there is much to learn, not just about the phenomena discussed, but more broadly, about the support of assumptions and the testing of hypotheses.—JOHN L. ZIMMERMAN.

BIRD SONG: BIOLOGICAL THEMES AND VARIATIONS. By C. K. Catchpole and P. J. B. Slater, illus. by N. Mann. Cambridge Univ. Press, Cambridge. 1995: 248 pp., pen and ink illustrations, 77 figures and 3 tables. $32.95 (cloth).—Bird song arguably is the most intensively studied area of animal communication and has been fertile ground for researchers in behavioral ecology, ethology, psychology, and neuroscience. As such, the breadth and depth of

the literature can prove intimidating to those new to it. Until recently, someone approaching the field faced a vast body of primary literature scattered in a diversity of journals, a handful of specialized review articles, and a few technical edited volumes. Now, however, two of the field's most prominent researchers have written an approachable and comprehensive introduction to the study of bird song.

This book will appeal to graduate students, professionals in the behavioral sciences, and amateur ornithologists alike. The book stands alone, requiring a minimum of background knowledge. However, most of the topics are treated in sufficient depth to serve as a useful academic reference. Catchpole and Slater have not attempted to describe all the available research on a given topic; instead, they select current and representative examples to illustrate their main points. Thus, each section of the book can provide a solid basis for a more intense literature survey of that particular topic.

The production quality of the book is excellent. Crisp pen and ink illustrations introduce each chapter and enhance most figures. The figures are clear and pertinent. The authors also use a standard (author year) citation format—a feature commonly lacking in books aimed at a more general audience. The modest price of this book belies the excellent production job.

In the Tinbergen tradition, the book is organized around questions of mechanism, ontogeny, function, and evolutionary history. Chapter 1 introduces basic nomenclature and concepts in animal communication and bird song in particular. Chapter 2 provides an overview of the physiological and neural mechanisms of song production. This chapter provides a broad, basic introduction to the neuroethology of bird song. Chapter 3 describes the phenomenon of song learning. Again, the chapter is a solid basic introduction to the area. Chapter 4 rounds out the discussion of proximate causation in bird song in reviewing how sound transmission affects singing behavior. This part of the book provides excellent introductions, but many readers will want to follow up the primary literature.

In the remaining chapters of the book, the authors' expertise truly comes to the fore in examining functional causation of song behavior. It is here that bird song is most explicitly considered a product of inter- and intra-sexual selection. Chapter 5 answers the question of which birds sing and when do they do it. Chapter 6 focuses on male-male competition and territory defense in the evolution of singing behavior. Chapter 7 examines mate choice and the role of female song preferences in the evolution of song complexity. Chapter 8 is an examination of the variety of songs and singing behaviors among species and describes competing hypotheses for the evolution of such complexity. Chapter 9 addresses geographic variation in bird songs and the evolution of dialects. This second section of the book provides a balanced view of the debates and controversies that have colored the field. The section also provides an excellent summary of the data we have supporting the functions of bird song: mate attraction and territory defense. On the whole, no other publication on the topic has brought together such a wide body of literature.

In summary, "Bird Song" is the most complete and approachable review of the field to date. Although many experts may find that their particular area has not been covered as thoroughly as they would have liked, or their favorite species has not been used as an example, they will not question the books breadth and utility. I plan to hand a copy to any student interested in starting research in the area. This handsome and affordable volume should complement the bookshelf of anyone interested in bird behaviour.—SCOTT MACDOUGALL-SHACKLETON.

NORTH AMERICAN BLUEBIRD SOCIETY RESEARCH GRANTS—1997

The North American Bluebird Society announces the 13th annual grants in aid for ornithological research directed toward cavity-nesting species of North America with emphasis on the genus *Sialia.* Presently three grants of single or multiple awards are awarded and include:

BLUEBIRD RESEARCH GRANT

Available to student, professional or individual researcher for a research project focused on any of the three species of bluebird in the genus *Sialia.*

GENERAL RESEARCH GRANT

Available to student, professional or individual researcher for a research project focused on any North American cavity-nesting species.

STUDENT RESEARCH GRANT

Available to full-time college or university students for a research project focused on any North American cavity-nesting species.

Further guidelines and application materials are available upon request from:

Kevin L. Berner
Research Committee Chairman
College of Agriculture and Technology
State University of New York
Cobleskill, New York 12043

Completed applications must be received by December 1, 1996; funding decisions will be announced by January 15, 1997.

1996 NABS RESEARCH AWARDS

The North American Bluebird Society is pleased to announce the results of its 12th annual research grant's program. The following individuals are recipients of the 1996 research awards:

BLUEBIRD GRANTS

Kristina M. Hannam, University of Miami. Title: Effects of Blowfly Ectoparasites on Eastern Bluebird Reproductive Success.

STUDENT GRANTS

Karl E. Miller, University of Florida. Title: Nest-site Selection and Reproductive Success of Secondary Cavity Nesting Birds in Thinned and Unthinned Slash Pine Forests in Florida.

Paul Doherty, Ohio State University. Title: Metapopulation Dynamics of a Permanent Resident Forest-dwelling Bird Species Within a Fragmented Landscape: Empirical Data and Dynamic Programming Models.

Elena V. Pravosudova, Ohio State University. Title: The Effect of Forest Fragmentation on Social Structure of the Tufted Titmouse.

GENERAL GRANTS

Archibald McCallum, College of Charleston. Title: Reproductive Performance of Flammulated Owls in the Jemez Mountains, New Mexico.

GRADUATE AND POST-GRADUATE RESEARCH GRANTS

The Biological Research Station of the Edmund Niles Huyck Preserve offers grants (max. = $2,500) to support biological research which utilizes the resources of the Preserve. Among the research areas supported are basic and applied ecology, animal behavior, systematics, evolution, and conservation. The 2000 acre Preserve is located on the Helderberg Plateau, 30 miles southwest of Albany. Habitats include northeast hardwood-hemlock forests, conifer plantations, old fields, permanent and intermittent streams, 10 and 100 acre lakes and several waterfalls. Facilities include a wet and dry lab, library, and houses/cabins for researchers. Deadline = February 1, 1997. Application material may be obtained from Dr. Richard L. Wyman, Executive Director, EN Huyck Preserve and Biological Research Station, P.O. Box 189, Rensselaerville, NY 12147.

THE ATLAS OF SOUTHERN AFRICAL BIRDS

Preparation of the manuscript for *The Atlas of Southern African Birds* is nearing completion. The Southern African Bird Atlas Project covers Botswana, Lesotho, Namibia, South Africa, Swaziland and Zimbabwe. Based on seven million distribution records, this is the largest biodiversity project in Africa. The 1600-page, two-volume atlas contains distribution maps and texts for 700 species; for many, the ranges are strikingly different from those shown in current fieldguides and handbooks. 200 vagrants are also covered. To receive publication information, write to the Avian Demography Unit, University of Cape Town, Rondebosch, 7700 South Africa, email adu@maths.uct.ac.za or access the Avian Demography Unit's pages at http://www.uct.ac.za/depts/stats/adu/

ERRATUM

The color frontispiece of *Chlorostilbon olivaresi* in the March 1996 issue of *The Wilson Bulletin* was painted by Eugenia Brieva, staff artist of the Instituto de Ciencias Naturales, Universidad Nacional de Colombia.

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.

Text.—Manuscripts should be prepared carefully in the format of this issue of *The Wilson Bulletin.* **Mss will be returned without review if they are not properly prepared.** They should be neatly typed, double-spaced throughout (including tables, figure legends, and "Literature cited"), with at least 3 cm margins all around, and on one side of good quality 8.5″ × 11″ paper. Do not use erasable bond. **Mss typed on low-quality dot-matrix printers are not acceptable.** The ms should include a cover sheet (unnumbered) with the following: (1) Title, (2) Authors, their institutions, and addresses, (3) Name, address, and phone number of author to receive proof, (4) A brief title for use as a running head. All pages of the text through the "Literature cited" should be numbered, and the name of the author should appear in the upper right-hand corner of each. The text should begin in the middle of the first numbered page. Three copies should be submitted. Xerographic copies are acceptable if they are clearly readable and on good quality paper.

Tables.—Tables are expensive to print and should be prepared only if they are necessary. Do not repeat material in the text in tables. Tables should be narrow and deep rather than wide and shallow. Double space all entries in tables, including titles. Do not use vertical rules. Use tables in a recent issue of the *Bulletin* as examples of style and format. Tables should be typed on separate unnumbered pages and placed at the end of the ms.

Figures.—**Illustrations must be readable (particularly lettering) when reduced in size.** Final size will usually be 11.4 cm wide. Illustrations larger than 22 × 28 cm will not be accepted, and should be reduced photographically before submission. Legends for all figures should be typed on a separate page. Photographs should be clear, of good contrast, and on glossy paper. Drawings should be in India ink on good drawing board, drafting paper, or blue-lined graph paper. Figures produced by high-quality laser printers may be acceptable. All lettering should be done with a lettering instrument or printer. Do not use typewriter lettering and do not submit figures having adhesive transfer letters affixed to them. Designate the top of each illustration and label (on the back in soft pencil) with author's name, ms title, and figure number. Submit two duplicates or readable xerographic copies of each figure as well as the original or high-contrast glossy photo of the original.

Authors of accepted papers are urged to submit voucher photographs of their work to Visual Resources for Ornithology (VIREO) at the Academy of Natural Sciences of Philadelphia. Accession numbers from VIREO will then be published within appropriate sections of the paper to facilitate access to the photographs in subsequent years.

Style and format.—The current issue of *The Wilson Bulletin* should be used as a guide for preparing your ms; all mss must be submitted in that format. For general matters of style authors should consult the "CBE Style Manual," 5th ed., Council of Biology Editors, Inc., Bethesda, MD, 1983. Do not use footnotes or more than two levels of subject subheadings. Except in rare circumstances, major papers should be preceded by an abstract, not to exceed 5% of the length of the ms. Abstracts should be informative rather than indicative, and should be capable of standing by themselves. Most units should be metric, and compound units should be in one-line form (i.e., cm-sec^{-2}). The continental system of dating (19 Jan. 1950) and the 24 hour clock (09:00, 22:00) should be used, and the Standard Time specified (e.g., EST for Eastern Standard Time) at first reference.

References.—In both major papers and general notes, if more than four references are cited, they should be included in a terminal "Literature cited" section. Include only refer-

ences cited in the ms, and only material available in the open literature. ("In-house" reports and the like should not be cited.) Use recent issues of the *Bulletin* for style, and the most recent issue of "BIOSIS," BioScience Information Service, Philadelphia, PA, for abbreviations of periodical names. If in doubt, do not abbreviate serial names. Manuscripts with fewer than five references should be cited internally, e.g., (Sprenkle and Blem, Wilson Bull. 96:184–195) or Sprenkle and Blem (Wilson Bull. 96:184–195).

Nomenclature.—Common names and technical names of birds should be those given in the 1983 A.O.U. Check-list (and supplements as may appear) unless justification is given. For other species the *Bulletin* uses the common names in Sibley and Monroe, "Distribution and Taxonomy of Birds of the World." Common names of birds should be capitalized. The scientific name should be given at first mention of a species both in the abstract and in the text.

The editor welcomes queries concerning style and format during your preparation of mss for submission to the *Bulletin.*—CHARLES R. BLEM, Editor.

This issue of *The Wilson Bulletin* was published on 4 October 1996.