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ORNITHOLOGICAL LITERATURE

CONSERVATION OF TROPICAL FOREST BIRDS. A. W. Diamond and T. E. Lovejoy (eds.). ICBP Technical Publ. No. 4, 1985:318 pp. £18.50.—This book presents the proceedings of a workshop and symposium held at the XVIII World Conference of the International Council for Bird Preservation on 7, 8, and 10 August 1982 in Cambridge, England. Numbers 2 and 3 in ICBP's Technical Publication series, on the conservation of seabirds and island birds, respectively, arose from the same conference. All are available postpaid from ICBP, 219c Huntingdon Rd., Cambridge CB3 0DL, England.

ICBP's symposium on the conservation of tropical forest birds drew 21 written contributions from ornithologists around the world. Coverage, extensive but not complete, was strongest for Middle America, Colombia, Brazil, all of Africa except Madagascar, and southeast Asia except India, Sri Lanka, and the Philippines. Symposium convenor A. W. Diamond noted in his preface that the symposium is intended to promote knowledge of the roles played by birds in tropical forest ecosystems, to identify tropical forest areas where birds are at risk, and to promote conservation of suitable forest areas to ensure survival of bird species.

The book is in four parts. The first part, entitled "Global Perspectives," begins with an overview of tropical rain forest bird ecology and evolution by Allen Keast. A. W. Diamond summarizes tropical forest bird distribution patterns, the conservation implications of identifying and conserving centers of endemism and areas of species richness (CORE areas), and an appraisal of current efforts to measure the rate of depletion of tropical forests. Not only are we unable to measure this loss with any satisfying degree of accuracy, but the existing global network of reserves and parks is woefully inadequate in preserving tropical forest CORE areas. F. G. Stiles gives us a solid pragmatic reason for preserving tropical forest birds: in neotropical forests up to three-quarters or more of tree seed dispersal is accomplished by birds.

Part Two deals with the status of tropical forest birds in the New World. Summary assessment by D. W. Snow that Colombia and southeastern Brazil contain the greatest numbers of threatened species relative to the extent of forest destruction is followed by survey papers by M. A. Ramos on Mexico and Central America, F. S. Delgado B. on Panama, J. E. Orejuela on Colombia, D. A. Scott and M. deL. Brooke on southeastern Brazil, and F. G. Stiles on Costa Rica.

Part Three covers the Paleotropics. Africa is ably and thoroughly covered by J. M. Thiollay (west), S. N. Stuart (east), and R. J. Dowsett (central and southern). D. R. Wells surveys the bulk of southeast Asia, excluding the Philippines. B. Beehler treats the problems of New Guinea, suggesting that forest preservation there should be based on a series of reserves protecting birds of paradise, species that have ritual significance and recognition value to the people of New Guinea. M. Wong presents a case study of the effects of logging and regeneration on birds in a Malaysian rain forest. Many forest birds return quickly as rain forest regenerates, as long as cutting is selective and nearby mature patches provide colonization sources.

Part Four presents the proceedings of the workshop, which preceded the symposium. The separation of the workshop papers from those of the symposium in this volume seems artificial, for the nature of 5 of the 6 papers in this part complements papers in the preceding 2 parts, while extending coverage to Australia and Western Samoa. Unique in this part is a presentation, compiled by A. W. Diamond, summing the themes arising from the workshop that are common to tropical forest bird conservation around the globe: the nature and

relative importance of the threats; the crucial locations where attention should focus most urgently; and the actions ICBP might undertake to address the problem, namely, preparation of atlases of distribution of tropical forest birds from which centers of endemism and species diversity can be identified. The latter should lead to decisions on the establishment and protection of reserves that take into account the requirements of tropical forest birds, including those that move between habitats, altitudes, regions, or seasons.

The book tells us that some tropical forests are far more valuable than others from an ornithologist's viewpoint. Similar information on CORE areas of taxonomic groups other than birds is still lacking or is quite incomplete, but when assembled it will help to guide choices by those protecting forest land. The rub is that time is running out. In the interval between this symposium and publication of the proceedings, 600,000 km^2 of tropical forest, roughly 6% of the total, was seriously altered or destroyed. Lowland forests will largely be gone in the Philippines, peninsular Malaysia, and much of West Africa and Central America by 1990. We are learning which pieces of forest to save at the same time we are losing the option to choose. At risk here and now is much of the 30% of the world's avifauna that inhabit tropical forests, as well as the forests themselves, with which these birds have coevolved. This situation is the most significant, most compelling topic in ornithology today. In this book for the first time the problem, which no ornithologist can ignore, is addressed on a global basis, area by area, and species by species.—WARREN B. KING.

BOBWHITES IN THE RIO GRANDE PLAIN OF TEXAS. By Val W. Lehmann, with illustrations by Nancy McGowan. Texas A&M Univ. Press, College Station, Texas 1984:371 pp., 45 figs., 9 color plates. $20.00 (cloth).—This is not an easy book to digest in one reading as it includes an abundance of data. It represents a lifetime of study by Val Lehmann, undoubtedly the most knowledgeable person working with Northern Bobwhites (*Colinus virginianus*), over the last 4 decades. The book is organized into 3 parts: Life History (22 chapters), Management Considerations (12 chapters), and Management Recommendations (11 chapters). It also contains 11 appendixes, Literature Cited, and a useful index.

The presentation of the text, figures, and plates is attractive, and the organization is logical. However, the text is not well-edited and some redundancy occurs, especially in parts II and III. I found no typographical errors, although it should be Ellisor (1975a) on p. 77 (not Ellisor [1975]). The amount of wasted space throughout the book is enormous (see especially pp. 144–145, 238–240, 308–310).

Some chapters are short (2 pp., chapters 36 and 39) while others are apparently long enough to warrant a summary (chapters 10, 21, 45). This inconsistency also includes the use of English and metric units. Most measures are in English units (pp. 61, 62, and elsewhere), but on p. 151 weights are given in grams, while in Table 31.6 and on p. 273 both grams and pounds are used. Most figures add to and support the text although some do not (Plates 2.2, 2.3, 2.4). Others: plate 13.5 showing remains of turkeys killed by hail, 16.2 of a coyote den, 16.10 of a coyote scat, 33.2 of Wild Turkeys (*Meleagris gallopavo*), and the bottom color photo on p. 33, add little to the text and could be omitted. The same is true for some tables (especially 29.1 on the fate of turkey nests, 29.3 on the contents of 100 Harris Hawk [*Parabuteo unicinctus*] stomachs, and 29.4 on the contents of 66 Greater Roadrunner [*Geococcyx californianus*] stomachs) and the discussion on turkeys and deer (pp. 194–195), coyote poisoning (pp. 193–194), cotton rats (pp. 210–214), and relationships of bobwhites with other species (Chapter 33).

At times the writing is abrupt with incomplete sentences (pp. 46, 102) and the reader is introduced to new words ("eventuated," p. 38; "chickhood," p. 111; "hatchability," p. 112; "survivability," p. 113; "withal," p. 113; "shootable," p. 245) or strange uses of words

("personnel transfer" for movements between covies, pp. 51, 331, 342; "weaned" for independent young, pp. 45, 115; "aged" for classification of age, pp. 85, 195–196; "stomachs" instead of crops, tables 25–1, 2, and 4; "weeds" instead of forbs, pp. 172–174, 179, 296, 321–322, 352–355). Such words as "always" (pp. 49, 82, 110, 257) and "never" (pp. 16, 199, 318) are also used when the data are not definitive. The author also fails to define "heavy soils" (p. 16), "just right conditions" (p. 16), "good years" (p. 27), and "judicious grazing" (caption for color plate on p. 112, p. 164). Scaled Quail (*Callipepla squamata*) are referred to as "blues" (pp. 19, 141, 222, 224, 226–230, 305), and there is one figure (33.1), 3 plates (33.3, 4b, 5), and a lengthy discussion (pp. 222–230) on this species.

While data are presented throughout the book, there also are unsupported statements (pp. 11, 15, 27, 92, 135, 303–304, and elsewhere) and speculation (chapters 13, 18). Statistical treatment of data is almost nonexistent, although the data sets are more than adequate for this type of rigorous testing. It would be especially desirable to test the validity of the car bush census (pp. 19–21) where 95% accuracy is claimed. The author's interpretation of some data sets may not be the same as the readers', especially in chapters 4, 6, 10, 13, 19, and 22, and Appendix C.

Lehmann obviously has data on the impacts of livestock grazing on quail at all seasons of the year under most environmental conditions. However, he avoids extensive discussion of livestock grazing, although the reader obtains the impression that the author has severe reservations about this cultural practice (see especially color plate on p. 112). Measures of the results of management practices (Part III) are apparently nonexistent as no data are presented. Despite this problem, the section on Management Recommendations contains many practical suggestions on how to manage lands for bobwhites (and other wildlife).

The appendixes are useful even though bird names (Appendix A) do not follow the American Ornithologists' Union, mammal names do not follow the American Society of Mammalogists, and no sources were given for the names of amphibians, reptiles, and invertebrates (Appendix A). I also question the inclusion of 1980–82 data on chick food habits when all other food habits data are from 1933–35. The appendixes on parasites (I, J) are overdone, as only 13 of 41 external parasites were reported from Texas, and the taxonomic descriptions of helminth parasites are unwarranted. I also question the inclusion of quail hunting records (Appendix K) from the Nilo Plantation in Illinois. Finally, although the Rosene and Lay (1963) citation is included in the Literature Cited, I could not find where it was used in the text.

Despite these criticisms, "Bobwhites in the Rio Grande Plain of Texas" is recommended for serious students of quail, land managers, and those of us who are interested in the natural history of birds. Val Lehmann is to be commended for drawing together the knowledge and data that he has accumulated on this species over the last 40+ years. Too often, too many of us are data collectors and amass observations that are not adequately massaged and published. Val Lehmann is thanked for reminding us that we do have an obligation to make our data available to our peers. This book is a steal at $20.00.—CLAIT E. BRAUN.

BIRD BEHAVIOR. By Robert Burton. Bruce Campbell (Consulting Editor). Alfred A. Knopf, New York, New York, 1985:224 pp., 600 color photographs. $18.95.—Despite increasing interest in birds by the general public, few books present the findings of ethologists in a nontechnical manner. The gap has now been filled by this attractive, readable, and informative book. Most major aspects of avian behavior are covered. The chapters are: The Living Bird, Flight, Senses and Intelligence, Finding Food, Diet and Way of Life, Communication, Social Life, Courtship and Mating, Rearing of Young, and Migration.

The unifying theme of the text is the adaptiveness of behavior, including cost-benefit

analysis of flight patterns, migration, social behavior, etc. Such an evolutionary approach is unusual in a book for a general audience, but the emphasis makes it much more interesting than a presentation consisting solely of various "tidbits" of behavior. Even ornithologists will probably find some new information. For example, we are informed that swiftlets (*Collacalia* spp.) carry nest material in their feet so that they can echolocate, that the young of Oilbirds (*Steatornis caripensis*) take 100 days to fledge (they can afford this development, slow even for a frugivore, because of reduced predation associated with cave-nesting), and that "milk" is not just given to the young of pigeons, but also to Emperor Penguins (*Aptenodytes forsteri*) and flamingos. In addition to presenting results of many descriptive studies, numerous experiments are described (such as tests of the Beau Geste hypothesis), another unusual feature of a "popular" bird book.

In seeking readability by a general audience, some authors succumb to liberal use of anthropomorphic statements. Only a few are found here. Sunbathing is described as "enjoyable" and "more than a functional pursuit" and avian communication is "often extremely sophisticated, more so than immediately seems to be necessary. . ." Statements such as these are rare exceptions in a book that is outstanding in its scientific approach.

The book is unusual in its breadth of coverage. It is concerned with the behavior of the birds of the world, rather than using only North American and European examples. The book seems remarkably free of errors. The photograph on p. 169 is mislabeled as that of a "Bushtit", although it is a Long-tailed Tit (*Aegithalos caudatus*). Common names are used in the text and photo captions, but the index provides scientific names.

Most of the photographs are not only beautiful, but an integral part of the book, enhancing the text, and showing the behavior of a variety of species. Some series of photographs are particularly outstanding in their presentation of behavior: aggression and courtship at a Ruff (*Philomachus pugnax*) lek, an Egyptian vulture (*Neophron percnopterus*) opening an Ostrich (*Struthio camelus*) egg with a stone, a Green-backed Heron (*Butorides virescens*) fishing with "bait," to name a few. In addition to effective use of a series of pictures to show behavioral events, many individual pictures are especially memorable. My favorites are a Red-backed Hawk (*Buteo polyosoma*) with its head cocked to one side as it flies (obviously scanning), triple exposure of a Tawny Owl (*Strix aluco*) showing how its head moves from side to side to judge distance, a Fairy Tern (*Gygis alba*) having laid an egg on a branch where it would normally be safe sitting unperturbed next to a skink and a Toc Toc Bird (*Foudia seychellarum*) that is eating the egg, and an African Jacana (*Actophilornis africana*) walking while carrying a young tucked under its wing. In a book with so many photographs used to demonstrate behavior, it is not surprising that some are of poor quality, and a few are questionable choices as they are so small that the birds appear as tiny dots. Despite these minor flaws, the book succeeds in presenting not just a remarkable collection of photographs of perched or flying birds, as is the usual case, but of birds engaged in a variety of behavioral activities.

This is a book that can be read and enjoyed by all. It might even be appropriate for use as an adjunct text in an ornithology course. "Bird Behavior" should inspire many to a greater appreciation of why birds behave the way they do. At $18.95 it is also a bargain.—MILLICENT S. FICKEN.

USE OF SNAGS BY CAVITY-NESTING BIRDS IN THE SIERRA NEVADA. By Martin G. Raphael and Marshall White. Wildlife Monographs No. 86, The Wildlife Society, 1984:66 pp., 1 black-and-white photograph, 31 tables, 26 numbered text figs. $4.05.—The Wildlife Monograph series is designed to accommodate papers that are too long for publication in typical journal format. These papers tend to be highly data-oriented with much of the raw data

presented in tabular form, and they often resemble theses or dissertations in style and format. This number in the Monograph series reads like the latter. It attempts to answer the basic questions of what types of dead trees are used by cavity-nesting birds, how are they used, and how we can "manage" for increased use. To these ends the monograph is quite successful, providing much detailed information about cavity users, both primary excavators and secondary users, and their habitats in an isolated portion of the Sierra Nevada Range. The monograph is data-dominated and should provide useful information for students of "snag management" and cavity-using species in general. The presentation of so many data makes the monograph also quite useful for instructional purposes in advanced ecological courses. My graduate-level Statistical Ecology class went through the monograph in an attempt to "verify" some of the analyses. Our results, however, did not always conform with the authors'. For example, the dendrogram (Fig. 19) of multivariate foraging niche overlaps could not have been produced from the data in Table 21, regardless of what was presented in the text. Overlap between the Pygmy Nuthatch (*Sitta pygmaea*) and Brown Creeper (*Certhia americana*) (the two most similar species in the dendrogram) is approximately 0.5 in the figure, but only 0.264 in the table (where the two most similar are the Pygmy Nuthatch and White-breasted Nuthatch [*S. carolinensis*] at 0.476). When we repeated the UPGMA cluster analysis of the Table 21 data, a totally different dendrogram was produced. With this in mind, care should be taken when interpretation of tabular data from this monograph is undertaken, especially as the figures are attractive and may be placed, unchecked, in textbooks.

It is also a bit unclear as to when the data were collected and how the years were treated. We know that nesting cavity data were collected in 1976–1978, but we don't know when foraging observations and density estimations were conducted. Therefore, we don't know if data were collected in all years and lumped, or if just a certain year or years were used. For example, Figs. 22–24 analyze the density data. Some plots, however, are averaged from 1975 and 1976, while others are from 1977 only. How can this be valid? Are not year effects possible? Careful examination of the figures, especially the first two, shows that the shape of the line is determined almost entirely by the brush plot point which were (by chance?) the only data from 1975–76.

A similar problem is encountered in Table 26, a comparison of bird use before and after snag removal. Again the after-data are densities averaged over two years, 1975–76. However, the before-data were taken from a study by D. L. Beaver in 1972. Therefore, the before- and after-data not only have been confounded with yearly differences but investigator effect as well. Moreover, we are left to assume that identical sampling procedures were used.

Notwithstanding the plethora of analytical discrepancies, the monograph is valuable and should be read by all people interested in snag ecology. The price of $4.05 is well worth the investment.—ROBERT C. WHITMORE.

THE ECOLOGICAL WEB (MORE ON THE DISTRIBUTION AND ABUNDANCE OF ANIMALS). By H. G. Andrewartha and L. C. Birch. Univ. Chicago Press, Chicago, Illinois 1984:506 pp., 7 black-and-white illus., numerous tables and figs. $35.00—The relative importance of different biotic and abiotic factors in determining the distribution and abundance of animals continues to receive considerable attention (e.g., The American Naturalist issue devoted entirely to the subject [Am. Nat., 122:583–705], the recent volume edited by Strong et al. [Ecological Communities: Conceptual Issues and the Evidence, Princeton Univ. Press, Princeton, New Jersey, 1984], the Symposium on Competition at the 1985 A.O.U. meeting in Tempe, Arizona). But perhaps the most intriguing recent attempt at addressing this thorny issue is Andrewartha and Birch's "The Ecological Web." Although it bears a resemblance to their earlier work (The Distribution and Abundance of Animals, Univ. Chicago Press,

Chicago, Illinois, 1954), the authors state in the Preface that they hope the "book will be accepted as a new contribution to population ecology—not merely a revision of our previous work." Indeed, the book does include much new material, and, although the entire text may not be essential reading for all animal ecologists, portions of it merit scrutiny.

The book is divided into three parts: "The theory of environment," "General theory of population ecology," and "Population ecology as it is practiced." Each section covers considerable ground. There is everything from a formal mathematical definition of the environment of an animal to a closing chapter entitled "The ecology of man." Approximately 5% of the more than 700 references are bird papers.

The first section of the book, "The theory of environment," is rather meaty reading. Considerable space is devoted to the use of a graphical representation of the factors influencing the survival and reproduction of animals (i.e., biotic and abiotic components in the organism's environment). The resultant dendrogram, or, as the authors propose to call it, "envirogram," traces pathways taken by environmental factors of importance to the focal animal. The focal animal's environment is conceptualized as including a "centrum" of directly acting components, comprised of mates, predators, resources, and malentities, surrounded by a "web" of indirectly acting components. According to Andrewartha and Birch, malentities are hazards that differ from predators in that the former's reaction to the focal animal is either negative or lacking rather than positive, as would be a predator's reaction. Resources include not only traditional components such as food, water, and heat, but also "tokens" such as daylength (i.e., signals that the focal animal uses to prepare for the future). Environmental components are viewed as being important only if they have the capacity to vary. Natural objects can constitute more than one component if they do different things to the focal animal (i.e., interact at different levels). Although this "theory of the environment," which is really a viewpoint from which to examine an animal's ecology, is a bit overwhelming at first (an entire lexicon is developed in the first 50 or so pages), adopting it should provide autecologists with a more holistic view of an organism's environment. Its use may actually allow "naturalists" to codify their multi-factored approach to ecological study. I especially liked the envirogram, which will allow researchers to illustrate graphically, albeit in telegraphic form, the current state of knowledge of the ecology of their animal. For this first section alone, the book is worth reading.

I found the remainder of the book considerably less useful. Much of what is discussed in Part 2 of the book has been covered as well or better before, some of it in the authors' earlier work. The literature is certainly not biased toward North American studies, as are so many of our own locally authored volumes on the subject; but I found numerous instances in the book where the presentation of material would have been strengthened had more North American sources been used. But then again, it is nice to read about what ecologists elsewhere are doing. Part 3 is an application of Parts 1 and 2 to the ecology of several animals, and includes a total of 30 pages on the Black-backed Magpie (*Gymnorhina tibicen*) and Grey Teal (*Anas gibberifrons*).

Because it shifts between the very detailed and the very general, I found the text difficult to read and unconvincing in places. Overall, however, a well-seasoned ecologist should be able to separate the wheat from the chaff. (Although I doubt that all will agree on which segments constitute the former and which are the latter.) The book is well suited for graduate students about to embark on thesis research. It should both encourage and humble these readers. Andrewartha and Birch conclude with the message that an animal's world, like our own, is a rather complex place, and that attempting to understand it requires more than simple models. Whether the book has any effect on the approach taken by autecologists in North America should be apparent by the presence or absence of "envirograms" in their future presentations and publications.—K.L.B.

UTAH BIRDS: A REVISED CHECKLIST. By William H. Behle, Ella D. Sorensen, and Clayton M. White. Occasional Publication No. 4, Utah Museum of Natural History, Univ. Utah, Salt Lake City, Utah, 1985:108 pp. $6.25 (paper).—Without doubt Bill Behle and Clay White are qualified to write a book summarizing Utah birds. They sit as the Deans of Utah Ornithology (although I would like to have seen Keith Dixon included as an author on this book) and their respective contributions to the field are widely known. Bill has spent over 50 years working with Utah birds and has published many important papers and monographs. His famous "Birds of the Pine Valley Mountain Region Southwestern Utah" (University of Biology Section 7:1–85, 1943) greatly influenced my early work on the Virgin River Valley avifauna. Clay White has spent many years collecting birds throughout the state, with much of his early work under the direction of Dr. Behle. Clay's stories of collecting in the Manti LaSal mountains are classic! (Imagine being trapped by high water and forced to live on the passerines you collected. Clay often said, "If you can't eat a bird don't shoot it.")

Therefore, I was pleased to see this checklist appear in print. It is a welcome addition to the two recent major works on the Utah avifauna (Behle, W. H. and M. L. Perry, Utah Birds, Utah Museum of Natural History, Salt Lake City, Utah, 1975; Hayward, C. L., C. Cottan, A. M. Woodbury, and H. H. Frost, Birds of Utah. Great Basin Naturalist Memoirs 1:1–229, Brigham Young Univ. Press, Provo, Utah, 1976). It is stated in the preface that the book was designed for field use and it easily fits in one's hip pocket.

This revised checklist summarizes recent records and brings the state's checklist into conformity with the "new" (1983) A.O.U. Check-list of North American Birds.

Included in the checklist are four basic lists: birds of unquestionable occurrence, those that "probably occur" or are "provisionals," "Unverified Species," and "Suspected Misidentifications." To make the first list the records are included only if there are two records which ". . . we judge to be acceptable. . . ." Provisionals ". . . have only one well-documented record which we judge to be acceptable." Unverified Species are ". . . based on sight records where supporting documentation is inadequate to demonstrate their unquestionable occurrence." The last group, "Suspected Misidentifications," is self explanatory. The authors have been most diligent in searching through the published records, and care is taken with each species to document the citations in the text. Moreover, the entire manuscript was reviewed by many noted Utah birders including the current authority on southwestern Utah birds, Jerome Gifford.

I have no major complaints with this work. The text is easy to read and well-documented. A random check of 30 text citations found all listed in the literature cited section. There are only a few typos, a credit to the University of Utah Printing Service. One might ask, however, why does the cover of a bird checklist have a leaf, a human skull, and what appears to be a chambered nautilus as the only illustrations? The lack of a detailed set of maps listing place names mentioned in the text detracts from the usefulness of the book as a field aid. I suggest that such maps be added to future editions. The inclusion of subspecies in the checklist seems a bit out of place as the 1983 A.O.U. Check-list does not list them. (Although it does support the subspecies concept.) Moreover, Behle's recent monograph, "Utah Birds: Geographic Distribution and Systematics" (Occasional Publication No. 5, Utah Museum of Natural History, Salt Lake City, 1985), gives an in-depth treatment (complete with maps) of the Utah subspecific avifauna. In sum, I recommend this fine work to anyone interested in Western birds. It is a valuable reference book.—ROBERT C. WHITMORE.

DISTRIBUTION OF OKLAHOMA BIRDS. By D. Scott Wood and Gary D. Schnell. Published for the Stovall Museum of Science and History, University of Oklahoma, Norman, Okla-

homa, by Univ. Oklahoma Press, 1984:xxi + 209 pp., 380 range maps. $14.95.—The recreational bird watcher in Oklahoma will find this book a valuable source of information in determining where and when to find the birds that occur in the state. The serious student of distribution and seasonal occurrences of Oklahoma birds will welcome the handy species summaries showing at a glance what is presently known and where gaps in information occur. After a short introductory section describing the purpose, format, and information used, the rest of the book consists of maps of Oklahoma showing, by use of circles in the county outlines, the counties in which a species has been recorded. There is one such diagram for each species that has been recorded five or more times in the state. Single letter abbreviations, carefully defined in the introduction, summarize the status and relative abundance of each bird. A bar graph shows seasonal occurrence. An appendix lists the species recorded in Oklahoma fewer than five times.

The symbols on maps showing county distributions signify whether there has been a collected specimen of the species or whether the county records are based on sightings alone. It would have been more informative if the symbols instead could have shown differences in seasonal distributions in the state. This approach, for example, would contrast breeding season and winter ranges in a permanent resident species that shows a shift between seasons, or would distinguish widespread transient individuals from summering distribution in a species that is both a migrant and nesting bird. But, the county marks only document presence regardless of season. The authors acknowledge this problem and explain that the records were not numerous enough in most cases to produce meaningful seasonal patterns.

It would seem that photographic records have the same confirmable reliability as specimen records, yet photographs are classed with sight records, maybe because both are obtained through a lens. There probably are also many sight records for a species in most of the counties where specimens were collected, and indeed a specimen constitutes a sight record before collecting. Recognizing these added sight records, it is obvious immediately from the maps how much more reliable sight records are in showing the total distribution of a species than are specimen records. Admittedly, there are errors in sight records that cannot be checked and this can produce some distortion (errors of commission), but these are minor compared to the greatly distorted reduction in range shown by the fewer specimen records (errors of omission).

There are two delightful line drawings in the book, both by Robert M. Mengel. They show the fore (frontispiece) and aft (cover) view of a Sprague's Pitpit (*Anthus spragueii*).—DOUGLAS JAMES.

BIRDS OF NEW YORK STATE. Including the 1976 supplement. By John Bull. Comstock Publ. Assoc., Division of Cornell Univ. Press, Ithaca, New York, 1974 (reissued 1985):xii + 703 pp., 82 black-and-white figs., 167 maps. $49.50 (cloth), $24.95 (paper).—That the Cornell University Press would reissue this book unchanged since 1976 attests both to the worth of the publication and to the presumed size of the potential market of New York bird watchers. The original edition was reviewed in the Wilson Bulletin (88:362–363 [1976]) and a somewhat more critical review appeared in the Auk (92:830–832). Little can be added to these reviews except to note that the color plates of the original are not in the reissue and the black and white photographs are poorly reproduced. The taxonomic innovations for which Bull was criticized in the earlier reviews are now seen to be advanced awareness of the changes made in the Sixth Edition of the A.O.U. Check-list, although of course the arrangement of species is still that of the Fifth Edition. The book has a definite historical value, but for accurate data on the present distribution and abundances of New York birds we await the publication of the Atlas of Breeding Birds now in preparation.—GEORGE A. HALL.

AFRICAN VERTEBRATES: SYSTEMATICS, PHYLOGENY, AND EVOLUTIONARY BIOLOGY. By Karl-L. Schuchmann (ed.). Proceedings of the International Symposium of African Vertebrates (1984), Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, West Germany, 1985:585 pp. with figs., line drawings, tables, photos, and color plates.—Twenty-seven of the 34 papers presented to the International Symposium on African Vertebrates in 1984 are published in the present volume, including 4 on mammals (pp. 11–90), 16 on birds (91–452), and 7 on reptiles and amphibians (pp. 453–585). All bird articles are in English except for one in French and 2 in German; the latter 3 have English summaries. All articles deal at least in part with evolution and systematics, with the following papers on specific groups: Fry, Keith, and Urban on ibises (*Bostrychia*), doves (*Aplopelia*), kingfishers (song phylogeny of *Halcyon*), and cuckoo host partitioning; Jensen and Stuart on the Cameroon mountain forest avifauna; Meyburg and Langrand on birds of prey (Falconiformes) of Madagascar; Crowe and Crowe on francolins (*Francolinus*); Tendeiro on guineafowl (Numididae) and their parasites; Short and Horne on barbets (Capitonidae); Schifter on mousebirds (Coliidae); Bock on the sugarbirds (*Promerops*); Farkas on the Madagascar Robin-Chat (*Copsychus albospecularis*); Sontag on the Wattled Starling (*Creatophora cinerea*); Louette and Herremans on bulbuls (*Hypsipetes*); Wolters on Afrotropical Estrildidae; and van den Elzen on African canaries and seedeaters (Carduelidae).

The remaining two papers (first two in the bird section) are comprehensive and extremely interesting as well as the most controversial of the presentations. Prigogine's paper (pp. 91–114) is a critical review of all new African species described or recognized from 1960 through 1983. In addition to detailed discussions of selected species, I found most useful his appendixes (especially Tables A.1 through A.3), which provide a list of new species recognized, with an assessment of present status and with all entries fully referenced. Certainly no one working on avian systematics of African birds can afford to overlook this paper.

The second comprehensive paper is by Sibley and Ahlquist (pp. 115–161) on the relationships of most suprageneric African groups based on data derived from the DNA–DNA hybridization technique. The summary (pp. 147–148) provides findings on 25 different groups; data, discussions, and phylograms of the various groups are provided in text and in the tables at the end of the paper. Of greatest interest to American ornithologists (in case you have not run into these conclusions in other Sibley-Ahlquist papers) are the following: flamingos (Phoenicopteridae) are members of the Ciconioidea and sister group of the ibis-shoebill-pelican-stork-New World vulture clade, with the storks and cathartines a sister group within that assemblage; the Coraciiformes include the trogons (suborder Trogones) as well as the rollers, kingfishers, and bee-eaters of the traditional Coracii; the Old World barbets (suborder Lybii) are a sister group to remaining "piciform" birds (suborder Pici) that include the New World barbet-toucan assemblage, honeyguides, and woodpeckers, but the order Piciformes is not the sister group to the Passeriformes; true shrikes (Laniidae) are a sister group of the Corvidae; larks (Alaudidae) are the sister group of other fringilloids; and the Ploceidae includes also wagtails and pipits (Motacillinae) and accentors (Prunellinae). Other startling findings in African groups include: divergence of flufftails (*Sarothrura*) from other Ralli at a level constituting a separate family and superfamily (Sarothruridae and Sarothruroidea); the Shoebill (*Balaeniceps*) is the sister group of pelicans; sandgrouse (infraorder Pterocletes with family Pteroclidae) are in the suborder Lari of the Charadriiformes; separation of the Bucerotiformes (hornbills and hoopoes) from the remaining Coraciiformes; the bush-shrikes (Malaconotinae) are a sister group of the Monarchinae within the Corvidae, and contain the tribes Malaconotini (most "bush-shrikes") and Prionopini, the latter not only including the "helmet-shrikes" but also vangids of Madagascar and the genera *Tephrodornis, Philentoma, Batis,* and *Platysteira*; African warblers (Cisticolidae) are distinct from other sylvioids and include the genera *Cisticola, Prinia, Hypergerus, Camaroptera,*

Eminia, Apalis, and probably other related ones; sugarbirds (Promeropinae) are part of the Nectariniidae, a finding in direct contrast to that in Bock's paper (pp. 349–374), which places this group in the Meliphagidae; and the Nectariniidae are the sister group of the Ploceidae. That these controversial findings "shake up" traditional views of avian relationships is unquestioned; yet it should be pointed out that, except for evolutionary branching points close enough to be within the range of experimental error in the technique and for the controversial matter of the time-scale conversion itself, I have not seen a definitive challenge to the Sibley-Ahlquist results. Systematists need to pay close attention to these data.

Overall, this volume is of great value (and probably indispensable) to avian systematists dealing with African birds.—BURT L. MONROE, JR.

COMMON BIRDS OF EGYPT. By Bertel Bruun, illustrated by Sherif Baha el Din. The American University in Cairo Press (distributed by Columbia Univ. Press, 562 West 113th Street, New York, New York 10025), 1985:50 pp., 14 color plates, in English and Arabic. $12.95 U.S.—This slim volume fills a long neglected gap in the ornithological literature of North Africa. It is unpretentious and does not claim to be anything but what it is, a very brief field guide to the most common birds of Egypt. It sets out to give the first-time visitor, tourist, or casual observer a handy guide to the birds one is most likely to encounter. This it achieves with some success. The illustrations, which are quite good, have suffered somewhat from an unfortunate choice of background colors that makes some of them hard to see.

The bilingual nature of the book should be useful in schools, etc., in Egypt and, perhaps, will create more interest and concern for the avifauna among the local people. One useful addition might have been an English transliteration of the local Arabic name for each species. I find the price a bit excessive.—ALAN HOLLETT.

BIRDS THAT CAME BACK. By John Gooders. André Deutsch Limited, London, England, 1983:xx + 178 pp., 8 color plates with captions, 46 black-and-white photographs with captions, 2 tables. $24.95.—The title of this book is somewhat of a misnomer in that the text covers not only British breeding birds that were extirpated on the island and subsequently returned, but also those that never recovered, those that never really disappeared, those that colonized Britain, and those that might do so. The book provides an overall history of birdlife in Britian, especially in relation to man's activities. It is concerned not only with birds that recovered due to conservation efforts, but also with species that have benefited from the results of human endeavors, including war. Especially interesting in this respect are the wetland species that gained a foothold due to strategic flooding of the coast during World War II, and the Black Redstart (*Phoenicurus ochruros*), which used the bombed-out buildings of London to become established in the 1940s. The intense ornithological interest of the British public has been both helpful to birdlife, in terms of an increased knowledge of species' distributions, and harmful, in terms of disturbance of rare breeders by hordes of anxious birdwatchers. The existence of a persistent band of egg collectors has been a particular hindrance to recovery attempts. Though the book provides interesting reading, it suffers from species accounts that are sometimes rambling and often repetitive, and from pictures that are not always located optimally with respect to the text. Gooders obviously writes to a British audience, which brings me to my main complaint. The book assumes a knowledge of the location of numerous British counties and towns. In a country roughly the size of Utah, a county is given the same status as a state or province in North America. The book's

geographic scale is much finer than this provincial North American can comprehend without some sort of reference. I would have benefited greatly from a map of Great Britain, complete with counties, major towns, and significant topographic features. In summary, this publication is probably not of general interest to those on this side of the Atlantic, but is better suited to those who are familiar with British birdlife and geography.—KEVIN M. DODGE.

MAGNIFICENT VOYAGERS. By Herman J. Viola and Carolyn Margolis (eds.). Smithsonian Institution Press, Washington, D.C., 1985:302 pp., many colored plates and black-and-white photos. $35.00 (cloth), $17.50 (paper).—The U.S. Exploring Expedition, 1838–1842 (often called "The Ex. Ex.") generally has been a little known event, but it represents the first attempt of the United States at a government-sponsored scientific expedtion. Under the command of Lieutenant Charles Wilkes, a small fleet of Navy vessels circumnavigated the world while making surveys of parts of South America, the Pacific Islands, the northwest coast of North America, and the Antarctic ice barrier (they were the first to identify land in Antarctica). Although it was largely a naval surveying expedition, a small group of scientists accompanied the Ex. Ex., collecting geological, botanical, zoological, and anthropological specimens.

To make this expedition more widely known, the Smithsonian Institution has assembled a special exhibition entitled "Magnificent Voyagers" and, in conjunction with the exhibition, has published this lavish volume about the Ex. Ex. Twelve chapters discuss the story of the expedition, various scientific collections, and survey methods. A brief biography of Wilkes is also included. There is also a chapter on the relationship between the Ex. Ex. and the Smithsonian, which ultimately (despite the reluctance of Joseph Henry, the first Secretary) became the repository of most of the collections. There are several useful appendixes, including a complete chronology of each ship during the four years. The Acknowledgment section details the history of the Smithsonian's exhibition (the "Ex. Ex. Ex."). Each chapter is profusely illustrated in both black-and-white and color with maps, contemporary woodcuts, and photographs of specimens. It is a coffee table book, but one that is packed with information.

Of most interest to W.O.S. members is the chapter by George E. Watson entitled "Vertebrate Collections: Lost Opportunities," the bulk of which is devoted to birds. The bird collections were largely made by Titian Peale, and he painted many of the illustrations. The Ex. Ex. brought back over 2100 bird specimens, mostly from the Pacific Islands. Peale attempted to report on this collection and describe the novelties, but was hampered by the restriction placed on him by Wilkes that the specimens remain in Washington, which at that time had no adequate library and no comparative collections. Peale described 129 species as new, but some of these had been described earlier and some were described by others before the Ex. Ex. report appeared. About one-third of Peale's names are valid today. In one interesting case Peale figured the Laysan Albatross (*Diomedea immutabilis*), which was not actually described for another 52 years. Both Peale and John Cassin (who collaborated on the final report) believed that this bird and the Black-footed Albatross (*D. nigripes*) were merely different age classes of *D. brachyura*. Most of the ornithological comment in the chapter is given in the legends (often extensive) of the 11 reproductions of Peale's paintings and one photograph of a specimen. Today the condition of this collection is "woeful," to quote Watson. Many of the skins, particularly type specimens, were mounted and placed on exhibition for some years. Others have been lost or sent to other institutions.

The great delay in publishing the results of the Ex. Ex. (the bird and mammal report did not appear until 1858 under the authorship of Cassin, who by then had available the fine

collections in the Academy of Natural Sciences, Philadelphia), the highly restricted availability of the report when it did appear, as well as the cavalier treatment of the collection itself, all combined to make the contribution of the Ex. Ex. much less than it might have been—the "Lost Opportunities" of Watson's title. Nevertheless the expedition was a noteworthy introduction for the young United States into the world of science. This book will give you an interesting and enjoyable summary of the Ex. Ex.—GEORGE A. HALL.

VERTEBRATE FLIGHT: A BIBLIOGRAPHY TO 1985. By Jeremy M. V. Rayner. Univ. Bristol Press, Bristol, England, 1985:182 pp. $9.75 (soft cover). (Order from the author at Dept. Zoology, Univ. Bristol, Bristol BS8 1UG, England.)—This useful and up-to-date bibliography, so obviously a labor of love, includes approximately 2500 entries. Over 800 of the entries are from 1975 onward, and at least 100 of these are from 1985 or are in press. There are also numerous historical references including works by Aristotle, Darwin, Muybridge, and Nopsca. Although the scope of the bibliography is rather wide (e.g., for some reason not apparent in the titles, there are references to "flight" trajectories in seeds and fruits) and coverage is somewhat patchy (especially for the less recent entries), Rayner provides most avian researchers more than enough reading for the short- or long-term. Entries range from the very general to the very specific. Flight is defined herein to include flying underwater, and there are references to the "porpoising of aquatic birds and mammals" as well as to flight in flying fish, amphibians, reptiles, and mammals. The overwhelming majority of the list, however, is devoted to birds.

A subject index of 10 major categories (Energetics, Evolution, Morphology and Anatomy, etc.) and over 100 sub-categories is included. There is also a taxonomic index that includes an ordinal breakdown for nonpasserines and a familial breakdown for passerines. Unfortunately, there is little cross indexing. Although a brief search through one of my own areas of interest (reversed sexual size dimorphism in raptors) was commendably thorough, the list is obviously selective, and it would have been nice to have an indication of the sources searched (i.e., journal titles and years, etc.).

The body of the text, which is printed in dot-matrix, is relatively easy on the eyes. At $9.75 the book is a bargain for anyone in need of information on avian flight.—K.L.B.

VOICES OF THE NEW WORLD THRUSHES. By John William Hardy and Theodore A. Parker III. ARA 10, ARA records, P.O. Box 1237, Gainesville, Florida 32604–0347, 1985:Monaural Tape Cassette and 22 pp. booklet. No price given.—Having produced collections of the vocalizations of nightbirds, wrens, vireos, and jays, Bill Hardy and his ARA Records now give us an excellent collection of the sounds of thrushes. Included on the cassette are 66 of the 68 species known to breed in the western hemisphere. The missing ones are *Entomodestes coracinus* and *Turdus reeveii,* which apparently have never been recorded. The selected recordings are all of good quality, but of course some of the rarely recorded species are represented by samples less brilliant than the commoner species. Some 46 persons contributed recordings and the task of assembling them was a heavy one. Most species are represented by at least two examples and many are represented by up to 10.

The songs of the members of the genus *Turdus,* from the Falkland Islands (*T. falcklandii*) to northern North America (*T. migratorius*), may sound very similar to most of us, but we will marvel over the fantastic examples of the Lawrence's Thrush (*T. lawrenceii*), probably the best avian mimic in the world, which include 78 different imitations, most of which can be identified.

The accompanying booklet discusses thrush songs in general and then gives detailed data on each recording, often accompanied by some pertinent taxonomic comments suggested to the authors by the similarities or differences in songs. This set of recordings should have something for everyone: the student of vocalizations; the taxonomist who must, in some cases, respond to some of the comments in the booklet; or the person, like myself, who wants to call up memories of the high forest in the Sierra Madre (*Myadestes obscurus*), the Montana Rockies (*Ixoreus naevius*), or merely the spruce-clad mountains of home (*Catharus guttatus*).—GEORGE A. HALL.

RAILS OF THE WORLD, A COMPILATION OF NEW INFORMATION, 1975–1983 (AVES: RALLIDAE). By S. Dillon Ripley and Bruce M. Beehler. Smithsonian Contributions to Zoology, No. 417, Washington, D.C., 1985:28 pp., 2 black-and-white photographs.—Since the publication of Ripley's "Rails of the World" in 1977 much has been learned of members of this elusive and interesting family. This short publication attempts to compile this new information as well as make corrections of certain errors appearing in the original monograph. One new species, *Rallus okinawae,* and 4 new subspecies have been described since 1977. Besides these additions to the list, new information on taxonomy, undescribed plumages, ecology, behavior, nesting observations, and calls are given for other species. Status reports on certain endangered populations are summarized. A valuable supplement to the original monograph.—GEORGE A. HALL.