

## ORNITHOLOGICAL LITERATURE

**THE BIRDS OF AFRICA.** Vol. III. Edited By C. Hilary Fry, Stuart Keith, and Emil K. Urban; illustrated by Martin Woodcock and Ian Willis. Academic Press, Inc., San Diego, California. 1988:xvi + 611 pp., 32 color plates, numerous line drawings and maps. \$129.—Reviewing a mid-series volume of a smashing successful series puts one in a pickle. What superlatives can you use that haven't already been used? What nuance that contributes to the value of the series has not been mentioned? My first comment comes from the heart . . . Wow! It is difficult to comprehend the magnitude of the job of tying together the bits and pieces of our knowledge of the avifauna of a continent that is so politically fragmented, so ecologically diverse, and so unevenly studied.

Volume III covers the parrots, turacos, cuckoos, owls, nightjars, swifts, colies, kingfishers and their allies, and woodpeckers and their allies. The turacos are treated as a separate Order, the Musophagiformes. Sixteen authors contributed to the volume.

Aside from its use as the major reference on African birds, I have found the "Birds of Africa" to have outstanding, up-to-date, encapsulated accounts of the Orders, Suborders, and Families of birds. At once they provide salient biogeographic information along with morphological, physiological, ecological, and behavioral characteristics which unite the taxon and separate it from other taxa.

Out of curiosity, I compared this volume with Volume IV of the "Handbook of the Birds of Europe the Middle East and North Africa" (Cramp et al. 1985, Oxford University Press, New York). There is considerable overlap in the Orders covered and the birds of North Africa are included in both. Both are monumental accomplishments. Among the differences, "The Handbook" includes sonograms and plates of eggs; "Birds of Africa" does not. Such material is simply unavailable for too many African species. The species accounts in "The Handbook" are generally more comprehensive, again probably reflecting availability of material. "The Birds of Africa" is much more pleasing, with margins nearly double and line drawings much larger. The "Handbook" includes maps of a smaller scale, but the addition of color facilitates their interpretation. Although the shading conventions in "The Birds of Africa" are sometimes confusing, I found the maps superior. One of the frustrating discoveries in comparing these volumes is the level of disparity in range maps for the same species. Comparison of range maps for nearly 20 species revealed no pair that matched!

One of the features I find most useful in "The Birds of Africa" is the completeness and arrangement of the bibliographic citations. The abbreviated, titleless, jam-packed style of the bibliography of "The Handbook" (and also "The Handbook of North American Birds" [R. Palmer, ed., Vols. 4 and 5, 1988, Yale University Press, New Haven, Connecticut]) may include all that is absolutely needed, but is a nightmare for researchers to deal with.

An excellent bibliography of acoustic references to the species included presents not only the citations, format, and sources, but also references to published errata. A list of recordists and the institutions in which their work has been deposited will greatly aid future researchers.

One of the goals for "The Birds of Africa" has been to provide some standardization for common names of African birds—a goal certainly worth pursuing and made possible by the comprehensiveness of the effort. Both English and French names are provided, including alternative English names that are in use. For the species of North Africa, however, I found several differences in both English and French names between "The Birds of Africa" and "The Handbook." Is there no hope?

In general, I found the plates in "Birds of Africa, Vol. III" to be superb—accurate portrayals of species, often with geographic, sex, and age variants shown. Most are shown in more "life-like" postures than provided by utilitarian field guides. The plates are uncluttered with

text, necessary interpretive material appearing on outlines of the birds on the facing page. Line drawings never seem to be mere decoration or filler, but instead illustrate species behavior or anatomy.

Shortcomings of this volume are minor and largely in the realm of literature review and readability. The bibliography is divided into "General and Regional References," and references to each family of birds included in the volume. Although the Introduction states that "The literature has been thoroughly reviewed up to August 1986," literature citations for some groups include few references that recent. This may be due to past research emphasis on some taxonomic groups and lack thereof for others, and perhaps to some extent uneven coverage by authors in this volume. The range of bibliographic coverage is great. For example, there are 191 references for the 25 species of Cuculidae that occur in Africa, 157 for 23 species of Apodidae, 13 for the three species of Trogonidae, and 34 for the 30 species of Picidae. The latter, however, were recently chronicled in Short's monograph on the woodpeckers of the world (1982. Delaware Mus. Nat. Hist. Monogr. 4).

Problems with readability are a result of the necessary attempt to maximize information content in a minimal space. Accepting this as a necessary evil, one still wonders why a single paragraph should contain some perfectly good English sentences and some detached phrases that, with insertion of a proper verb would have been so much more palatable. For example, on p. 1, the last paragraph in the description of the Family Psittacidae begins with the sentence (?) "Popular cage birds, traded legally and illegally around the world, exotic species often becoming naturalized." The paragraph ends with a good, four-line complex sentence.

A page of errata details problems found in previous volumes. Many of these were errors of omission, but the two most common types of errors are ones involving inaccuracies in reported ranges and inaccuracies in plumage or posture shown in plates.

Volume III completes the coverage of non-passerines and puts our knowledge of African birds onto a peak. It is not all downhill from here, but certainly ornithologists working in Africa or with African birds will have an easier go of it for some time to come. Gains in our knowledge of African birds should pick up momentum, because we now have a continent-wide view, summaries from which to begin, statements of deficiencies, and the groundwork laid out for hundreds of research directions. The inspiration is there and the need is so apparent. We must continue our quest for understanding of the African avifauna, because only through such understanding can we hope to have an influence on the future of Africa's natural ecosystems.

The authors, editors, and publisher are all to be congratulated. I look forward to volumes IV to VII!—JEROME A. JACKSON.

SONGS OF MEXICAN BIRDS. Taped and produced by Ben B. Coffey, Jr. and Lula C. Coffey. Two cassettes, ARA 13-1 (137 species), ARA 13-2 (109 species). ARA Records, 1989. \$21.00 postpaid from ARA, P.O. Box 12347, Gainesville, Florida 32604-0347.—The Coffeys began working in Mexico in 1946, and this extensive series of recordings is a fitting tribute to their time in the field. The impressive total of almost 250 species comprises a representative cross-section of Mexican birds, arranged in the most recent (1983) AOU sequence. The quality of the recordings varies but is generally good. One must remember, however, that in the early days, recording equipment was not at the sophisticated level of today. Domestic sounds, ranging from chainsaws to children, are often audible in the background but convey some of the character of Mexico. Interestingly, the second cassette concludes with vocalizations of a "burrowing frog" and howler monkeys, hinting that non-avian sounds can also be of interest. Many visitors to the Neotropics, myself included, would

find correctly identified "bird-like" vocalizations, particularly of frogs and nocturnal mammals, extremely valuable.

Ninety-two of the species are found on other ARA records, and a further 35 are on L. Irby Davis' "Voices of Mexican Birds." Others can be found elsewhere, but this still leaves a significant number of species whose voices have not previously been readily available. However, I noted some misidentified species: the "Acorn Woodpecker" (*Melanerpes formicivorus*) sounds like a Pale-billed Woodpecker (*Campephilus quatemalensis*) or possibly even a squirrel; the "Streaked Flycatcher" (*Myiodynastes maculatus*) is an example of the calls of Sulphur-bellied Flycatcher (*M. luteiventris*)—the Sulphur-bellied Flycatcher is its dawn song; and the "Lazuli Bunting" (*Passerina amoena*) is a Blue Bunting (*Cyanocompsa parellina*). The "Scrub Euphonia" (*Euphonia affinis*) sounds like a Yellow-throated Euphonia (*E. hirundinacea*); however, euphonias have extremely varied songs, and I cannot be certain the cut is misidentified. The "Yellow-headed Parrot" (presumably referring to *Amazona oratrix*) is from Arriaga, Chiapas, which, on geographic grounds, makes it a Yellow-naped Parrot (*A. auroballiata*).

The cardboard inserts accompanying the cassettes are rather spartan—scientific names are not given, although A.O.U. names are not always used. The most confusing name is "Warbling Chat"; in the narration, four alternative English names are given but, remarkably, none of them is the widely used Gray-crowned Yellowthroat (*Chamaethlypis* [= *Geothlypis*] *poliocephala*). An addendum clarifies the authors' nightjar nomenclature; I can confirm, based on personal field work in February 1989, the voices of Yucatan Poorwill (*Nyctiphrynus yucatanicus*) and Yucatan Nightjar (*Caprimulgus badius*) are "Will" and "Ree-o-ree" respectively, as has been recently suspected.

Unfortunately, localities are infrequently and inconsistently given, and dates not at all. In some cases where localities are noted, one might be misled to conclude significant geographic variation. Conversely, locality data would be helpful in cases where vocalizations do vary geographically, including some where incipient species may be involved, e.g., Brown Towhee (*Pipilo fuscus*). The "Cookacheea" or Buff-collared Nightjar (*Caprimulgus ridgwayi*) from Puente Nacional, Veracruz, is the same cut as that on the ARA Records nightbirds cassette (released 1980) but the geographic significance of the record (c.f. AOU 1983), assuming correct labeling, appears to have been overlooked before this review.

Most background vocalizations are left unidentified, and in a few cases, this could lead to confusion by persons unfamiliar with some of the species. Distinguishing songs from calls would also be useful—the narration (at times hard to understand) could be lengthened at the expense of deleting familiar North American birds such as Great Horned Owl (*Bubo virginianus*) and White-crowned Sparrow (*Zonotrichia leucophrys*).

Despite these points, "Songs of Mexican Birds" is an excellent compilation and should be well received as a valuable addition to the growing selection of recordings dealing with Mexican and Neotropical birds.—STEVE N. G. HOWELL.

A DISTRIBUTIONAL SURVEY OF THE BIRDS OF THE MEXICAN STATE OF OAXACA. By Laurence C. Binford. Ornithological Monographs No. 43. 1989. 418 pp., 28 black-and-white photographs, 3 maps. \$40.00 (\$36.00 to AOU members) + \$2.00 p&h.—Oaxaca probably hosts the largest and most diverse avifauna of any Mexican state. This work (hereafter "Birds of Oaxaca") is a comprehensive and well presented treatment of the 680 or so species Binford lists for Oaxaca. Following the introduction, mainly outlining the history of ornithological work in Oaxaca, are extensive discussions of general physiography, climate, and habitat. The species accounts, arranged in 1983 AOU sequence, include notes on abundance, dis-

tribution, habitat, evidence of breeding and taxonomy; a list of hypothetical occurrences follows the main list. Then come analyses of the breeding avifauna (by habitat) and of migrants (external and internal). A list of Oaxacan type localities, an exhaustive gazetteer, acknowledgments, literature cited, and an index complete "Birds of Oaxaca." A fold-out map inside the front cover shows the distribution of the major habitats within Oaxaca. The map of selected localities is logically placed with the gazetteer where, oddly, one also finds the map of physiographic features which would be better placed with the discussion of general physiography.

The progenitor for this work was Binford's 1968 Ph.D. dissertation, "A Preliminary Survey of the Avifauna of the Mexican State of Oaxaca," and it is pleasing to see the way that "Birds of Oaxaca" has built upon the earlier work. Binford's working knowledge of Oaxaca's complex biogeography is probably unequalled, and his division of the state into physiographic regions is done well. This understanding, often lacking in similar works, forms a solid basis for explaining species' distributions. Perpetuated errors common to other works, including the 1983 AOU checklist, have been thoroughly researched and clarified, e.g., the true distribution of Green Parakeet (*Aratinga holochlora*). The amount of unpublished data brought together in this work is remarkable and touches upon many little-known points, such as local movements of hummingbirds and other supposedly resident species. Importantly, when uncertainty exists, Binford points this out in the hope of stimulating further research.

Given the nature of planning the species accounts, only ten lines devoted to defining relative abundance are disappointing. While I fully appreciate the problems involved with this aspect of any such work, I feel the user deserves some indication of what one might interpret from "fairly common, uncommon, very uncommon," etc.

Both specimen data and sight records were used, but somewhat inconsistently. While rightly casting doubt on data attached to Mario del Toro Aviles specimens, Binford includes Slate-colored Seedeater (*Sporophila schistacea*) in the main list (although admitting strong reservations about the record). Sight records, even those supported by photographs, are problematical, and I understand the desirability of restricting their use to cases involving oneself and personally known observers. However, I see little difference between Slender-billed Wren (*Hylorchilus sumichrasti*), placed in the main list and Flammulated Owl (*Otus flammeolus*) considered hypothetical. In the same vein, the work suffers considerably from Binford not having contacted those birders and field ornithologists who regularly visit Oaxaca. I found numerous cases where the distributional data could have been significantly supplemented had other observers been contacted. For example, for Barred Parakeet (*Bolborhynchus lineola*), which many observers have found "common" (I have even made good tape recordings of its calls) in cloud forest above Valle Nacional, Binford has no "acceptable" records in Oaxaca, or Dwarf Vireo (*Vireo nelsoni*) which is fairly common in Oaxaca Valley 100 km or so to the southeast of Binford's range limit.

I found no mention of the problem of cage birds, although Oaxaca City is a large center for this activity. Binford considers neither Clay-colored (*Turdus grayi*) nor Rufous-backed (*T. rufopalliatu*s) robins as reliably recorded in Oaxaca Valley, casting doubt on a nest of the latter species found by Rowley in Oaxaca City. At least in the 1980s, and probably before then, populations of both robins and other cage birds existed (irregularly?) in Oaxaca Valley, and it seems likely that escapees are responsible for such distribution anomalies.

As with any work of this magnitude, one can always find minor discrepancies, e.g., while Streaked Flycatcher (*Myiodynastes maculatus*) is correctly listed as a summer resident on p. 331, in the species accounts the possibility of it being a permanent resident is mentioned, but with no indication as to why that might be the case. The few erroneous statements, usually in relation to areas outside Oaxaca, are understandable, given what little recent, relevant published information exists. For example, stating that Slate-colored Seedeater is

believed to be sedentary, whereas it is notably nomadic, at least in southern Central America (F. G. Stiles pers. comm.; Ridgely, R. S. 1976. "A Guide to the Birds of Panama." Princeton Univ. Press, Princeton, New Jersey). The work is well produced and typographical errors are rare.

"Birds of Oaxaca" is arguably the most comprehensive distributional treatment of any avifauna south of the U.S. border. As well as recommending it highly to all interested in Mexican and Neotropical birds, not to mention North American migrants, anyone undertaking a distributional survey can learn much from Binford's thorough approach.—STEVE N. G. HOWELL.

THE ATLAS OF THE BREEDING BIRDS IN NEW YORK STATE. Robert F. Andrie and Janet R. Carroll (eds.). Cornell University Press, Ithaca and London. 1988:551 pp., 250 maps, 242 black-and-white illustrations. \$29.95. Eight plastic map overlays for an additional \$9.95.—The introduction to the volume presents a surprisingly skimpy overview of the data collection process in New York. Anyone seeking detailed information on how to set up an atlas should consult Laughlin et al. 1982. *Amer. Birds* 36:6–19. The New York project differs, regrettably, from all other U.S. projects by using a metric state transverse Mercator grid. Block maps were produced by cutting and pasting together N.Y.D.O.T. Quad sheets which lacked vegetative features. Hopefully the next generation of New York atlasers will adopt USGS topographic maps which are the standard for the rest of the country and readily accessible. Contrary to the introduction, data printouts in at least 50 blocks in two different regions of the state were not checked by field observers for accuracy. The example data sheet includes several codes used with inappropriate species according to standard guidelines. While relaxing standards for breeding confirmation on common species is not a capital offense, a more grievous modification in the original study plan occurred mid-project when efforts to achieve prespecified levels of coverage and confirmation were dropped. Consequently, only two of ten regions of the state averaged over 75 species per atlas block. Nonetheless, some coverage was achieved in 5323 atlas blocks, of which only 337 had fewer than 50 species recorded. The average number of species found statewide was 68. My experience in the western Catskills and Finger Lakes indicates that 110 to 120 species could be found, given moderate habitat diversity and several years intensive coverage. From this book one cannot determine which blocks got such coverage.

The introduction presents eleven maps, all without scales, of political, climatic, physiographic, vegetative and coverage data. Most of these same data are presented in the acetate overlays. The listing of Federal and state wildlife areas on Map 2 is incomplete. At least three of the eleven potential forest types (Map 6) virtually are indistinguishable, and unless the reader is familiar with eighteenth-century canals, there is little chance that the unlabeled river systems (Map 5) will be decipherable. The forest cover map (Map 7) bears scant resemblance to that published in the 1978 N.Y. Forest Resources Assessment.

Species accounts (by 19 different authors) form the bulk of the book. Although all 238 species are indexed, there was no list of families or subfamilies in the table of contents. One must plod through nearly 500 pages of text and maps to locate individual accounts. Each species account is accompanied by a line drawing which consumes one quarter of the page dedicated to text. On the facing page is the atlas map presenting the occurrence of possible, probable, and confirmed breeders as determined during the six year survey. These maps present, in as much detail as one can cram in at 225 blocks to the square inch, the apparent distribution of the species. The reader is cautioned against taking literally the absence of any species from a given block. Remember, coverage varied tremendously, and even if standards for adequate coverage (e.g., 75 species recorded) were met, 30% of the species

may still be undetected. Data around Long Island and Lake Champlain were difficult to decipher because the base map was excessively detailed.

A discussion of each account exceeds the space limitations of this review. As is usually the case in such a multiple-authored compendium, individual accounts vary considerably in style and quality. Each reader will doubtless have his favorites. Each account attempts to review habitat preferences, summarize scanty historical distribution data, discuss the atlas map on the facing page, and present the breeding ecology of the species. Many were interesting and informative, while others were barely adequate. A few general comments may be warranted. The use of 11 subjective abundance categories applied by 19 authors defies reason. Many accounts were woefully short, some barely a half page in length, others much less. A few did little more than summarize the material presented in John Bull's "Birds of New York State" published in 1975 but recently reprinted. I was astonished to see that no one cited E. H. Eaton's paper "Birds of New York 1910 to 1930" which discusses population changes over those twenty years, although some account authors obviously put considerable effort into the historical review. Few New York breeding data are presented, and for the majority of species, the interested reader cannot learn how many eggs the bird normally lays, much less its breeding behavior. Admittedly, other sources of this information exist, but should a reader of a book professing to be about the breeding birds of their state be forced to look elsewhere for such basic information?

In general the accounts are well edited, although individual authors' styles continue to shine (or in some instances, glare) through the editorial veneer. The editors are to be commended for their efforts, but I can't help wondering why define "BP" (before present) as Pre-1950 or split the hybrid Blue-winged × Golden-winged warbler account mid-sentence mid-page?

The first Appendix "The Ecoregions of New York State" presents a good overview. The second, "Natural and Cultural Ecological Communities of New York State" presents 213 undefined habitat categories and belongs elsewhere. It is far too fine-grained to characterize areas the size of atlas blocks. My biggest disappointment, however, was the Breeding Season Table which professes to represent New York data but is actually comprised of many out-of-state sources. It is impossible, for instance, to determine whether reproductive dates listed for any species are representative of New York or even the northeast. Misleading information is rampant in the table. I know of no documented instances of second broods in New York or adjoining states of perhaps 40 species so listed. Wood Thrushes are unlikely to feed themselves at 10 days of age.

The nineteen-page reference section reflects the effort some authors put into researching their accounts. The final listing of over 4300 volunteers who devoted over 200,000 hours to the field effort may give less populated states pause for thought before embarking on a total coverage atlas effort. Forty states and provinces currently are undertaking or have completed bird atlas projects. Compilers of these atlas projects are faced with very similar problems (e.g., finite budgets, need to publish in a timely manner, and desire to provide their audiences with comprehensive analyses). Producers of future atlas books may wish to consider whether it is necessary to duplicate the approach taken by these authors in presenting their mapped data.

This volume, for all its shortcomings, will be an important addition to the literature on New York's birds. Certainly former New York atlas workers will want to have a copy, but the state bird book of choice for many will continue to be John Bull's recently reprinted "Birds of New York State".—DOUGLAS P. KIBBE.

ATLAS OF WINTERING NORTH AMERICAN BIRDS: AN ANALYSIS OF CHRISTMAS BIRD COUNT DATA. By Terry Root. Univ. of Chicago Press, Chicago and London. 1988:312 + xxiv pp., 11 transparent overlays, 42 line drawings, 17 numbered figures, and maps for 346 species. Hardcover \$60; softcover \$35.—This is a very difficult book to review. To illustrate the point, there are two reviews in the Spring 1989 issue (Vol. 61) of *The Loon* (Minnesota's state bird journal), one glowing and one steaming. I agree with both of them to some extent. Luckily, reviewers are given two hands ("on the one hand"; and "on the other hand"), and I will write a two-handed review.

The author is interested in the factors that limit the winter distribution of North American birds and in the factors that determine centers of abundance for these species. She has recently published two scientific papers on the topic (T. Root, 1988, *Ecology* 69:330-339; T. Root, 1988, *J. Biogeog.* 15:489-505). In her scientific papers, she concentrated almost entirely on environmental factors such as temperature, precipitation, elevation, and potential vegetation. The atlas can be viewed as a summary of the raw data for her two papers; however, she accurately recognized that there would be a wider audience for descriptive information about the ranges and relative abundances of North American birds than there would be for her scientific papers. Thus, the atlas represents Root's attempt to present her species-by-species analyses to a general birding audience.

Root's introduction describes her methods of analysis, concentrating on how the maps were made and what their limitations might be. The bulk of the book consists of one or two maps for all species that were frequently encountered on Christmas Bird Counts (CBCs), accompanied by a written account for each species. The text describes centers of abundance, discusses factors that are correlated with range limits, and introduces some information about the winter ecology of each species, along with a few miscellaneous tidbits. In the tradition of the breeding bird atlases that are beginning to proliferate, Root has included 11 transparent overlays so that the reader can personally examine correlations between the distribution and abundance of particular species and various environmental factors.

At this point it is necessary to acknowledge a few weaknesses in the book. First, it is based on data that are 17-26 years old. Second, it provides a static picture of winter ranges by providing only a single map for ten years of data. Some species *do* have relatively static winter ranges, both from year-to-year and over the past 26 years. For those species, these maps will be most useful. However, a number of species are more dynamic, either from year-to-year (irruptive species and weather-sensitive species) or over the past 26 years (House Finches [*Carpodacus mexicanus*] in the east are perhaps the best example). Root extensively discusses some of the problems with the maps in the introduction, and she attempts to deal with those problems by relegating maps for 96 of the 346 species to an appendix. However, I think every individual would probably make different decisions as to which species to put in the appendix and which to keep in the body of the text. The problem is that there are *both* important weaknesses and useful information in the maps for all 346 species. Let the reader beware!

Perhaps the most basic issue is the appearance of the maps. Most of you have seen the advertising circular for the book and can judge for yourselves. In a word, the maps are not easy to read. The two-dimensional maps would be improved by using black for the highest density areas and shades of gray (or cross-hatching) for areas with intermediate density. I am now used to the two-dimensional maps, and I can get a lot of information from them; however, I still am not used to the three-dimensional maps. The two biggest problems with the three-dimensional maps are that: (1) the peaks of the maps are displaced away from the centers of abundance enough that you can't tell from these maps where the centers of abundance are, and (2) the maps include cross-hatching even in areas where the species is absent, providing little contrast within the maps.

I also have some problems with the criteria involved in deciding where the limits of the ranges are. To my mind, determining limits of ranges should be entirely separate from determining centers of abundance. The limits of ranges should be determined from frequency of occurrence data. For most species, there will be a number of CBC locations that never recorded it; and for many species, there will be some locations that recorded it every year. In between, there should be a number of locations that recorded the species some years but not others. It would be very useful to see a graph for each species showing how often CBC locations fell into each of these categories. It is this information on frequency of occurrence that should be used to determine a range boundary. Instead, Root used information derived from measures of relative abundance. (The range boundary is defined as the line connecting points at which the abundance is calculated to be 0.5% of the maximum abundance. Maximum abundance is defined as the lowest average value for a CBC location that is greater than 99% of the values for that species). The problem with Root's method is as follows: in species with high maximum average abundances at at least 1% of CBC locations, many peripheral locations with a very low abundance may be excluded from the mapped range; however, in species that lack high peaks of abundance, peripheral locations with low levels of abundance will be included in the mapped range.

I think that the contouring algorithm Root used is much better for calculating and mapping relative abundance than it is for calculating range boundaries, but even here there are questions. For example, should a single algorithm be used for species that vary so much in their patterns of distribution and abundance? Perhaps better results would come from using a different algorithm (or a different decision rule using the same algorithm) for the highly gregarious species with enormous peaks of abundance than is used for species that are more thinly spread. It would add a lot to the book if there were graphs for each species showing the frequency of categories of relative abundance for all CBC locations where the species was observed.

The text that accompanies the maps has some problems as well. The heart of the problem for most readers of *The Wilson Bulletin*, I think, is that Root approaches the text as a biogeographer, not as an ornithologist or a birder. For example, she deals poorly with extralimital records (both in the maps and in the text). Extralimital birds should be carefully checked out to see if they are well-documented; those that are well-documented should be represented on maps with a single, small dot. They essentially should be ignored in a text where the main interest is in centers of abundance and range limits. Instead, extralimital records seem to be included with little scrutiny. They have a disproportionate effect on the maps, and they are discussed in the text, sometimes laboriously.

In general, Root provides little evidence that she is aware of identification problems. Maps of Broad-winged Hawk (*Buteo platypterus*), Swainson's Hawk (*B. swainsoni*), and Semipalmated Sandpiper (*Calidris pusilla*) are included in the appendix even though most ornithologists I know believe that the overwhelming majority of these records represent misidentifications. There is no mention of identification problems of accipiters (G. G. Daniels, 1975, *Am. Birds* 29:634-637). I can find no mention of Thayer's Gull (*Larus thayeri*) at all (D. M. Mark, 1981, *Am. Birds* 35:898-900); birders had never heard of it when they collected these data, but it has been officially considered a full species for 16 years. Many records of Herring Gull (*L. argentatus*) and Glaucous-winged Gull (*L. glaucescens*) along the Pacific Coast may actually represent Thayer's Gull. These are all difficult problems to deal with, but they need to be addressed head on in a book of this type.

One of the biggest disappointments of the text is that Root does not have a good feel for the habitat requirements of birds, and she does not differentiate well between potential vegetation and actual vegetation. Thus, for an open-field species like the Vesper Sparrow (*Poocetes gramineus*), she expresses surprise that it is found in the "mixed mesophytic and

deciduous forest" biome (p. 235), even though much of that forest was cleared for agriculture long ago and remains open today. The problem recurs in the discussions of habitat relationships for a variety of species.

One of the questions a potential reader might have is: Should Christmas Bird Count data be used at all for this kind of project? My answer is an unequivocal "yes." Certainly, CBC data are messy, and that messiness contributes to the problems with this book. But that messiness can be cleaned up quite a bit by careful attention to detail. CBC participants make identification errors; however, the CBC editing system is increasingly able to identify those errors and weed them out (CBC analysts should be able to mimic that process for the older data). Some CBC participants cover their CBC circles in a haphazard way and count individuals in a lackadaisical way; but on a large scale, information about relative abundance should correlate with reality for most species. Effort on CBCs varies dramatically from place-to-place and has increased through time; however, effort has been consistently reported (especially since about 1955) and methods are available to control for effort when analyzing CBC data (C. E. Bock and T. Root, 1981, in C. J. Ralph and J. M. Scott, eds., "Estimating Numbers of Terrestrial Birds," *Studies in Avian Biology* 6:17-23; G. S. Butcher and C. E. McCulloch, 1989, in J. Sauer and S. Droege, eds., "Proc. of the Workshop on the Analysis of Population Trends from Avian Surveys," United States Fish and Wildlife Service, *in press*). The CBC provides information mostly from the second half of December, when many species are not on their definitive winter ranges; however, there may be no such thing as a definitive winter range for many of these species, since their movements may depend on the severity of winter weather conditions.

As messy as it is, the CBC is the only source of quantitative information on the continent-wide distribution and abundance of winter birds available. A number of studies have correlated CBC data with other sources of data and found general agreement (G. S. Butcher, 1989, in J. Sauer and S. Droege, eds., "Proc. of the Workshop on the Analysis of Population Trends from Avian Surveys," United States Fish and Wildlife Service, *in press*). When carefully used, the CBC provides a treasure-trove of information.

I have made some severe criticisms of this book, but what is the bottom line? Should you buy it or should you ignore it? For me, the answer is easy. I *need* this book. I expect to use it almost daily. I may swear at its limitations, and disagree with its maps or text, but there is a tremendous amount of useful information here on subjects that fascinate me. My hunch is that many of you will want this book too and will actually enjoy fighting with it. While doing so, let's give the author credit—she has done a tremendous amount of work to further our understanding of the winter biogeography of North American birds.—GREGORY S. BUTCHER.

ADAPTIVE STRATEGIES AND POPULATION ECOLOGY OF NORTHERN GROUSE. Edited by Arthur T. Bergerud and Michael W. Gratson. Univ. Minnesota Press, Minneapolis, Minnesota 1988:809 pp. \$59.50 (cloth). Also available in two volumes, \$17.95 each (paper).—The book is arranged in two parts: Population Studies (11 Chapters) and Theory and Synthesis (5 Chapters). Each chapter contains a summary; there is an useful index and a section on references (1104 total) of which the most recent is 1985.

The initial chapters on Population Studies were written by 12 different authors, while the portion on Theory and Synthesis was primarily written by A. T. Bergerud. As expected in a work of this magnitude, the writing is uneven, and some chapters are considerably out of date. Some read like the theses from which they were modified.

This is not a book written by the major grouse researchers, although many of them were

offered the opportunity to contribute. Instead, it contains chapters written primarily by people who have not published extensively. Most chapters obviously have been polished by the editors, and some differ from the original theses. The individual chapters on population studies are interesting, but some are limited and do not represent work throughout the species' range. Much of this work has not been peer reviewed outside of graduate committees and represents gray literature at best. This is a major failing of the entire book.

The Theory and Synthesis chapters represent the major contribution of the book. However, the chapters on Mating Systems in Grouse and Survival and Breeding Strategies of Grouse repeat what is generally known. Somewhat novel and disputed ideas are presented in Chapters 12, 15, and 16. Many readers will be disappointed with the chapter on 10-year cycles of grouse as only D. Chitty's hypothesis is explored. Presumably the authors (Page and Bergerud) disagree with all other hypotheses. Differences between genotypes is further discussed in the chapter on Population Ecology of Grouse where the reader is asked to believe that density-dependent changes in mate choice lead to chicks with differing intrinsic viabilities. Strong evidence for this postulation is not presented. I was also especially interested to learn (p. 731) that hunting mortality is additive to natural mortality over winter. Considerable evidence exists that hunting mortality below some threshold (about one-half of the annual mortality) is compensatory; above this level hunting mortality may be additive. This will be a point of contention with many readers.

Some "grousemigan" researchers will be surprised to see some of their unpublished data in this book even though their unpublished reports may be cited. At least one legal action was reportedly threatened over use of unpublished data while this book was in the early stages of preparation. The editors/authors have been careful to acknowledge everyone whose data they examined or used. Unfortunately, they did not have the permission of everyone for the liberal use of selected data collected by others.

This is not an easy book to digest or fully understand. It is well edited and misspellings are minor (Hoffman, R. S. should be Hoffmann, R. S.). Most tables and figures are understandable although some figures are too complex for quick comprehension. The grouse sketches by D. H. Mossop are pleasant additions to otherwise standard figures.

Despite the obvious biases shown by some authors and the differences in interpretation, "Adaptive Strategies and Population Ecology of Northern Grouse" is recommended for serious students of grouse. It will be a widely read, discussed, and cussed book which will have a prominent place on the desk of active "grousemigan" researchers. There should be ample opportunity for everyone to find something to test in this important contribution to the grouse literature. The editors, especially Tom Bergerud, are commended for seeing this "labor of love" through to completion. The cloth price of \$59.50 is high but I recommend the cloth copy over the paper (\$17.95 ea for two volumes) as this book will be used extensively.—CLAIT E. BRAUN.

**NORTH AMERICAN OWLS.** By Paul A. Johnsgard. Smithsonian Institution Press, Washington, D.C. 1988:295 pp., 32 color plates, 54 numbered text figs., 19 range maps, 12 numbered tables, 3 appendices. \$45.00.—Some will think "not another book on owls!" This, however, is not just another owl book. It is a well-balanced coverage of the biology and natural history of the North American species.

Each of the 19 species is illustrated in color. The Fuertes paintings portraying 10 species are of little value for species identification in my opinion. Fourteen species are pictured in color photographs of mostly good quality.

Johnsgard's book is organized much like Mikkola's "Owls of Europe" (1983). Johnsgard,

however, aimed at a compromise between a non-technical and a highly technical volume, a goal that he clearly achieved. Mikkola's book is more comprehensive with about 40% more citations and 69 tables crammed with useful data.

The text is in two major divisions. First is a section of six chapters entitled "Comparative Biology of Owls." A short chapter deals with the fossil record of owls and several views of owl taxonomy. The chapter on ecology and distribution is strongest in its coverage of habitat and food. The other two subsections, biogeography and species densities, and ecological aspects of body size, are relatively weak. The chapter on morphology and physiology starts with general morphology but is best in the presentation of vision and hearing, two senses very important to owls. Coverage in a chapter on behavior ranges from maintenance behavior through breeding and other social behavior to hunting and prey capture behavior. The chapter on reproduction encompasses population densities, home ranges, clutch data, dispersal, and mortality. The sixth chapter, "Owls in Myth and Legend," although interesting, seems out of place in a book on natural history. Missing from the section on comparative biology is a discussion of sexual dimorphism. This topic, one that has stirred much interest and disagreement among biologists, deserves to be covered in a book of this type.

Several tables are included in these chapters and contain well-organized data. The numerous line drawings illustrating morphology and behavior are mostly well-drawn and useful. Fig. 10, though, which purports to show the relative size of North American owls is highly misleading.

Part two contains chapters on 19 species. Each account provides a range map, list of subspecies, wing, tail, and egg measurements, body and egg weights, description, assistance in identification, vocalizations, habitat and ecology, movements, foods and foraging behavior, social behavior, and breeding biology. A final section in each account covers, curiously, two unrelated topics: evolutionary relationships and conservation status. This section is quite brief for most species, probably reflecting the paucity of information on population status and trends for most owls. Other sections of the species accounts are well-balanced, easily read, and sprinkled with a good sample of references.

There are three appendices: a dichotomous key to genera and species, a description of typical calls of North American owls (with sonograms) organized in groups of similar sounding calls, and a listing of the origin of scientific and vernacular names of owls. A glossary and index are also provided.

In summary, Johnsgard has provided a good, very usable reference to the owls of North America. He writes clearly and provides up-to-date information. Of the numerous books on North American owls, this is certainly the best and most comprehensive. However, the depth of coverage will not satisfy those needing detailed information on many aspects of owl biology. This book is a must for all community, college, and university libraries. Individuals desiring a general treatment of owls will also want it for their personal collections. — CARL D. MARTI.

BIRD CONSERVATION. 3. Edited by Jerome A. Jackson. The Univ. of Wisconsin Press, Madison, Wisconsin 1988:viii + 177 pp., 11 text figs., 17 tables. Hardcover \$17.50, paper \$12.95.—*Bird Conservation* is a series published for the United States section of The International Council for Bird Conservation. Each issue features chapters by authorities on an important conservation issue. Topics in Vol. 3 concern the past, present, and future of North American forests and their avifauna. Six forest ecosystems are discussed: ponderosa pine by Jeffrey D. Brawn and Russell P. Balda, the oak-hickory and pine forests of the Ozarks by Kimberly G. Smith and Daniel R. Petit, oak-gum-cypress by James G. Dickson,

Douglas-fir forests of California by Martin G. Raphael, Kenneth V. Rosenberg, and Bruce G. Marcot, southern Appalachian subalpine forests by George A. Hall, and southeastern pine forests by Jerome A. Jackson. Jackson is also the editor of "Bird Conservation." Curtis S. Adkisson presents a chapter on the history of cavity-nesting birds, their present status, and future prospects. All of these authors succeed to various degrees, depending on the information available, in presenting a history of their forest types and the avifauna dependent on each. Brawn and Balda and Raphael et al. limit their assessment of the present status of birds in ponderosa pine and Douglas-fir forests to the results of specific studies that have been made on habitats of known history, while the other authors include a much broader range of information, including their own studies and data from other sources as well. Raphael et al. do not discuss the status of the Spotted Owl (*Strix occidentalis*), presumably because it was not part of their study. This is one of the few disappointments in the book, which provides a lot of valuable information on other species of special concern and their forest habitats.

All of these forest ecosystems have been adversely affected in the past. The forests of the Ozarks were virtually destroyed. Today, they all face a gamut of pressures and threats—urbanization, short rotation harvest schedules, clearcutting and intensive site preparation, removal of snags and dead trees, monoculture tree farming, forest grazing, fire suppression, and air pollution. Adkisson declares that current management plans "amount to disaster for any organism that depends on old-growth forest." He calls for regional ecosystem planning to set aside critical habitat reserves for species with narrow ecological tolerance. He and other authors argue that much longer harvest rotations must be established in critical habitats—as long as 100 years in southern pine forests and more than 200 years in the Pacific Northwest. But this will not be easily accomplished: Jackson maintains that the Red-cockaded Woodpecker (*Picoides borealis*), an indicator species for mature southern pine forest needs 80–400 ha of home range per clan. Since a minimum of six neighboring clans is essential to sustain a population for a decade and perhaps as many as 500 clans may be necessary to sustain a population indefinitely, an enormous area of pine forest must be specially managed to sustain this species. All of these authorities express concerns similar to Hall's who writes "that we are losing a beautiful ecosystem and that our descendants will never experience the joys of days spent in the cool conifer-covered heights."

Jackson has eliminated the review of bird conservation literature found in previous volumes of this series and replaced it with a single book review. The bird conservation news section amounts to only one short article on "The Status and Conservation of Woodpeckers" by Lester L. Short. It may be that the obvious difficulty the U.S. section of the I.C.B.C. has getting this series published in a timely manner (the most recent references in this issue are not later than 1986 in most chapters) has led to the editor's abandoning any hope of presenting up-to-date news. This is a shame, because the review of bird conservation literature in previous volumes was a valuable service, bringing together in one source references that are difficult to find otherwise. I would like to see this feature reinstated in future volumes. Whether the publishers do this or not, this series will continue to be an important source of information on conservation of North American birds. Vol. 3 is an excellent account of the history, present status, and future prospects of North American forest ecosystems. One could only wish that other important forest ecosystems might be included.—ALBERT R. BUCKELEW, JR.

ACTA XIX CONGRESSUS INTERNATIONALIS ORNITHOLOGICI. Edited by Henri Ouellet. Univ. of Ottawa Press, Ottawa, 1989: Two volumes, 2815 pp., one photo, many black-and-white diagrams and graphs. \$175 (Canadian).—If the sheer volume before us is any criterion, ornithology in the summer of 1986 was flourishing. We have here about 10 pounds of “Acta” of the 19th International Ornithological Congress held in Ottawa, Canada, in that year. The proceedings are led off by the Presidential Address of the late Klaus Immelmann entitled “Ornithology—an Interdisciplinary Challenge.” This expressed the theme of the Congress and many of the 50 symposia cast rather far afield from traditional ornithology. However, almost every aspect of ornithology as it is practiced today was covered in these symposia, most of which consisted of five papers together with introductory and/or concluding remarks.

In addition to the symposia there are five plenary lectures: “Individual Performances in Sparrowhawks: the Ecology of Two Sexes” by Ian Newton; “Biogéographie évolutive à différentes échelles: l’histoire des avifaunes méditerranéennes” by Jacques Blondel; “Genetic Studies of Birds—the Goose with Blue Genes” by Fred Cooke; “The Control of Migration of European Warblers” by Peter Berthold; and “Eco-evolutionary Aspects of Bird Movements in the Northern Neotropical Region” by Mario Ramos. these are thoughtful syntheses of much of the published work of these authors.

There is also an interesting history of Canadian ornithology by Secretary General Henri Ouellet, various reports, and a list of the 1300 or so people who attended. The Statutes and By-laws of the International Ornithological Committee and the list of members of that Committee are included.

Probably no one will read all of the material in these two volumes. Perhaps many people who attended the Congress will use the volumes as I have, in reading the papers I was unable to hear in person. Since the symposia were held in twice daily sets of five concurrent sessions, no one was able to do more than sample the total program. It would be pointless to attempt a detailed review of the contributions but as is typical of all symposia volumes, the papers vary widely in quality and information content. Some will be valuable summaries and references, but others will soon be forgotten. Most are in English but a few are in French.

Not included, even by title, in these Acta are the 150 contributed papers, the 380 poster presentations and the 43 round-table discussions. As these occupied perhaps 40% of the Congress day, people who were not in Ottawa will not feel the full flavor of what was indeed a stimulating meeting.

Clearly the size of these Congresses and the resulting Acta have almost gotten out of hand. It is of some interest to trace the growth of these publications. The proceedings of the Ithaca (1962) Congress had 1246 pages and was the last to include all the papers presented. Subsequent proceedings had only the plenary papers and the invited symposia. The Oxford (1966) Congress produced 405 pages, The Hague (1970), 745, Canberra (1974), 765, Berlin (1978), 1463, and Moscow (1982), 1335. I leave it to the reader to make his own extrapolation of these figures to the Congress of the year 2000. While the Congresses themselves provide a stimulating atmosphere for face-to-face discussion at the international level, it is pertinent to ask if the laborious and expensive task of publishing the Acta is really worthwhile. Not only are many of the papers summaries of work published elsewhere, but the amount of time devoted in editing these accounts is an inordinate burden on the Secretary General who has already labored long and hard to get the Congress off the ground. I understand that the International Ornithological Committee is seriously considering a revision of the publication policies of the Congresses.

In any event Editor Ouellet and his five member editorial committee are to be congratulated on completing the publication task in such fine shape and so promptly.—GEORGE A. HALL.

## ALSO RECEIVED

THE POPULAR HANDBOOK OF BRITISH BIRDS. (5th revised edition) By P. A. D. Hollom. H. F. & G. Witherby Ltd., London, 1988:xxv + 486 pp., 136 colored, 15 black-and-white plates. (Distributed by David & Charles, Inc., North Pomfret, Vermont). \$34.95.—The original version of this book published in 1952 attempted to give a convenient one—volume summary for the amateur birdwatcher of the material contained in the now almost legendary five-volume “Handbook of British Birds” by Witherby, Jourdain, Ticehurst, and Tucker. The present edition attempts to bring matters up-to-date. Each species is treated in a set format, of Description, Habitat, General Habits, Food, Nesting (if it does nest in Britain), and Status and Distribution. These accounts are brief, usually only a page or page and a half, and a third of this space is taken up with a description. These descriptions are almost too brief to be helpful in identification, but each species is figured in a small, colored painting of a style reminiscent of the last century. For most species these are adequate for identification purposes. There is also a good collection of colored plates of eggs. There are no references. The book may be useful to those beginning bird watchers in the British Isles who are interested beyond the stage of simple identification, but it will have a very limited utility for Americans. Visitors to Britain would do better with one of the excellent field guides available.—GEORGE A. HALL.

WATERFOWL IN WINTER. Edited by Milton W. Weller. University of Minnesota Press, Minneapolis, 1988:xx + 624 pp., many black-and-white graphs and diagrams. \$49.50 (cloth), \$19.95 (paper).—In January, 1985, a symposium on the ecological and behavioral aspects of waterfowl in winter was held in Galveston, Texas. We have here a collection of most of the papers that were given at that symposium. As is typical of such symposia, some of the papers could not stand alone or were to be published independently. Elimination of these has produced a volume whose content is above the usual run of symposium proceedings. The volume contains 37 papers and 10 Workshop Summaries from over 100 contributors.

The papers are collected into nine groups: Winter in Perspective; Reproductive and Social Behavior; Activity Budgets; Community and Feeding Ecology; Weights, Molts, and Condition; Habitat Resources and Habitat Selection; New Habitats and Habitat Management; Harvest, Distribution, and Population Status; and Decimating Influences; Habitat Loss, Toxins, and Disease. All told this collection presents a good picture of our present knowledge of wintering waterfowl and some of the problems confronting them and presented to us by essentially all the biologists active in this field.—GEORGE A. HALL.

BIRDS, BIRDERS, AND BIRDING IN THE SAGINAW BAY AREA. By Eugene Ellis Kenaga. Chippewa Nature Center, Inc., Midland Michigan, 1983:iv + 132 pp., 16 maps, many black-and-white drawings and cartoons, (Available from the author, 1584 E. Pine River Road, Midland Michigan, 48640). \$8.95 + \$1.25 shipping.—The tripartite title describes this attractive work completely. After a brief description of the region, the largest portion of the text is devoted to a list of birds of this seven-county area in Michigan’s Lower Peninsula together with brief annotations. The customary bar-graphs showing seasonal occurrence are included. The author then draws on his long experience in the area to analyze some of the changes that have occurred. The second section outlines the local birding activities and includes sketches of prominent birders, while the third section describes, with maps, various birding spots in the area. A novelty for this type of publication is the series of cartoons which enliven the whole work. The publication should prove most useful to the local birders as well as visitors to this popular vacation area.—GEORGE A. HALL.

WILDLIFE RESERVES AND CORRIDORS IN THE URBAN ENVIRONMENT. By Lowell W. Adams and Louise E. Dove. National Institute for Urban Wildlife (10921 Trotting Ridge Way,

Columbia, Maryland, 21044), 1989:vi + 91, many black-and-white photos and diagrams. \$7 (paperback).—The subtitle is “A Guide to Ecological Landscape Planning and Resource Conservation.”—G.A.H.

CORMORANT. AN INTERNATIONAL JOURNAL OF MARINE ORNITHOLOGY. Published by the African Seabird Group, % Fitzpatrick Institute, University of Cape Town, Rondebosch 7700, South Africa. \$25 per year.—With Volume 16 No. 1, June 1988 the “Cormorant” has expanded its coverage to include the biology of the seabirds of the world.—G.A.H.

The following publications are available from the Publications Unit, U.S. Fish and Wildlife Service, Room 148 Matomic Building, Washington, D.C. 20240.

FISHERIES AND WILDLIFE RESEARCH AND DEVELOPMENT 1987/88. Edited by Paul A. Opler. U.S. Fish and Wildlife Service, Denver, Colorado, 1989:iii + 90 pp.—A useful summary of the research activities of the Agency.—G.A.H.

TEMPORAL AND GEOGRAPHIC ESTIMATES OF SURVIVAL AND RECOVERY RATES FOR MALLARD, 1950 through 1985. By Diane S. Chu and Jay B. Hestbeck. U.S. Fish and Wildlife Service Technical Report 20., Washington, 1989:v + 57 pp.—G.A.H.

PREMIGRATIONAL MOVEMENTS AND BEHAVIOR OF YOUNG MALLARDS AND WOOD DUCKS IN NORTH CENTRAL MINNESOTA. By Ronald E. Kirby, Lewis M. Cowardin, and John R. Tester. Fish and Wildlife Research 5, U.S. Fish and Wildlife Service, Washington, iii + 25 pp.—G.A.H.

## INFORMATION FOR AUTHORS

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

*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 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. Copies on heavy, slick paper, as used in some copy machines, are not acceptable.

*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. All lettering should be done with a lettering instrument or adhesive transfers. Do not use typewriter or computer lettering. Designate the top of each illustration and label (on the back in soft pencil) with author's name, ms title, and figure number. Submit 2 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 sub-headings. 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<sup>-2</sup>). The continental system of dating (19 Jan. 1950) and the 24 hour clock (09:00, 22:00) should be used.

**References.**—In both major papers and general notes, if more than 4 references are cited, they should be included in a terminal "Literature cited" section. Include only references 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 5 references should be cited internally, e.g., (James, Wilson Bull. 83:215–236, 1971) or James (Wilson Bull. 83:215–236, 1971).

**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 bird species in Central and South America the *Bulletin* uses the common names appearing in Eisenmann, "Species of Middle American Birds," 1955 and Meyer de Schauensee "The Species of Birds of South America," 1966. 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.