REVIEWS

EDITED BY M. ROSS LEIN

The following reviews express the opinions of the individual reviewers regarding the strengths, weaknesses, and value of the books they review. As such, they are subjective evaluations and do not necessarily reflect the opinions of the editors or any official policy of the A.O.U.—Eds.

Auks: An Ornithologist's Guide.—Ron Freethy. 1987. New York and Oxford, Facts on File Publications. 208 pp., 12 color plates, 23 black-and-white photographs, 51 line illustrations, 6 tables. ISBN 0-8160-1696-8. Cloth, $24.95.—This book is intended as a "comprehensive study of the auk family—the Alcidae—which comprises over 20 species." Inevitably it makes a series of compromises owing to imbalances in existing information on the birds and on the marine habitats they occupy (Atlantic, Arctic and Pacific oceans), and so is unlikely to please anybody completely. This daunting realization would prevent most anyone from taking on the task, but Ron Freethy decided to make an attempt despite the odds. The target audience for the book is not identified—there is no preface or introduction—but can be assumed to be both professional ornithologists and serious birdwatchers, based on the promotion on the dust jacket.

The book comprises three sections. The first consists of chapters on the classification of the auks (9 pp.) and a summary of their biology and ecology (12 pp.). The second part consists of 8 chapters (150 pp.) and contains 23 species accounts. Each account is divided into sections such as habitat, description (morphology and plumage), distributions and populations, behavior and breeding, and food and feeding. Extent of coverage varies according to species, with information on the Pacific auks (those not occurring in the Atlantic) generally weak, even for some species (e.g. Pigeon Guillemot) for which data are relatively abundant. The book concludes with a chapter on "auks in the modern world" (16 pp.), an attempt to review present threats to auk populations from human-induced disturbances in their marine habitat, followed by a bibliography and index. The text is illustrated with species distribution maps (of limited value), and numerous line drawings (poor in artistic quality and reproduction), and black-and-white photographs (ranging from poor to good) and color plates (excellent) of some species.

The book is not a success. Apart from the fact that coverage is very much skewed towards species that inhabit the Atlantic (only 43 of 150 pages in the species accounts are devoted to the Pacific auks even though they make up 16 of the 23 auk species), other serious faults exist. Even in the reviews of the Atlantic auks, there is a disturbingly strong bias towards work performed in the northeastern Atlantic, with several key works from the western sector neglected or barely mentioned. One consequence of this is a lopsided account of the biological characteristics and ecological requirements of individual species. But more significant is the fact that much of the information provided for all auk species, Atlantic and Pacific, is incomplete or riddled with factual errors and misinterpretations of many aspects of the biology of these birds. The mix of information derived from scientific study with anecdotal tales (mostly erroneous) makes it difficult for the untrained reader to separate fact from fiction. A look at the bibliography reveals part of the problem; it is less a bibliography than a list of reference sources, one that shows a clear lack of adequate background research because of what is omitted. Moreover, many of the references listed are incomplete (lacking either title, journal volume, pagination, etc.: 36 of the 289 references listed are without titles, and close to 25% of the total contain at least one error) indicating they were probably cited unseen. Several citations are also out-of-date in the context that they appear to have been used, though this is often difficult to determine because citations are not made directly in the text.

As well as these major shortcomings, there are other imperfections. For example, the distribution maps for all species are poor, often with inadequate legibility of information (the lack of useful captions and keys does not help) and faulty placement of breeding ranges and colony locations (not one of the maps of the six Atlantic auks is without errors of omission or commission). The summary chapter of the biology and ecology of the auks is extremely poor, showing a serious lack of knowledge of auk biology per se. Aspects of the birds' biology and behavior given in the species accounts are, for the most part, no better; in many instances they are simply wrong or misleading. Inconsistencies exist in the use of English names for species. The majority of common names used for the Atlantic auks are those of the British Ornithologists' Union, although Puffin, Common Puffin, and Atlantic Puffin are used interchangeably for *Fratercula arctica* in different places through the book. Most of the blame for inadequate copyediting and quality control rests with the publisher, but the lack of suitable background research and a less than careful use of the literature are faults of the author alone. Combined, these shortcomings have led to the production of a book of questionable worth.

Clearly this volume cannot be recommended to professional biologists and serious amateur ornithologists as a reliable reference source for the auk family.

This group is best advised to go to "The Atlantic Alcidae" (1985, D. N. Nettleship and T. R. Birkhead [Eds.], London, Academic Press) for information on auks in the North Atlantic. Unfortunately, those in need of summaries for the Pacific auks must wait for an alcid biologist to take on the formidable task of producing a sequel (i.e. "The Pacific Alcidae." Perhaps Ron Freethy's "auk guide" may find a place amongst the amateur ranks as an enjoyable, superficial tour through the auk world, but all readers should be cautioned against using it as a source for accurate information.—DAVID N. NETTLESHIP.

Birds to Watch.—N. J. Collar and P. Andrew. 1988. Cambridge, UK, International Council for Bird Preservation, Tech. Publ. No. 8. xvi + 303 pp. ISBN 0-946888-12-4. £9.50. (Available through Smithsonian Institution Press, Dept. 900, Blue Ridge Summit, PA 17294 USA. $18.95 + $2.25 postage and handling.)—Since Col. J. Vincent of ICBP compiled the first edition of the "Red Data Book, 2: Aves" (Morges, IUCN) in 1964, the task of keeping track of the conservation status of the world's birds has become immeasurably more difficult. The coverage of this issue in the popular and scientific literature has vastly increased, but so too has the fraction of the world's bird species deserving treatment in the "Red Data Book." Evidence for both these concerns may be found in the third edition (Collar and Stuart 1985, "Threatened Birds of Africa and Related Islands: The ICBP/IUCN Red Data Book, part 1," Cambridge, United Kingdom, ICBP and IUCN) which treats only the threatened birds of one continent. When completed more than a decade from now, the third edition will run to four massive volumes. The third edition emphasizes exhaustive treatment, reaching 20 or more pages per species (see review by King and Temple 1987, Auk 104: 586–587). "Birds to Watch" avoids the lengthy preparation time of the current edition by providing a paragraph on each of the 1,029 species currently viewed by the authors to be at risk. It replaces the second edition (King 1981, "Endangered Birds of the World: the ICBP Bird Red Data Book," Washington, DC, Smithsonian Institution Press) by updating, in capsule form, information on all of that edition's 270 species and extending coverage to reflect both the greater volume of information and the accelerating impact of our wasting planet on bird species' survival. Expansive coverage for all but the African continent must await preparation of the third edition. In the meantime researchers will have this overview, current and global in scope, by which to judge the health of the avian world and on which to base their efforts to buttress that failing health. ICBP intends to issue similar updates every few years to keep pace with the rate of change in the global situation.

The text includes a paragraph on each species, in the sequence used in the second edition, giving English and Latin names, country or countries of regular occurrence, former and present status, habitat requirements, cause of threat, and conservation actions, if any. All information is attributed to a published reference, an unpublished report or a personal communication. One strength, and ironically also a weakness, of the frequent use of attributions to unpublished and unrefereed material is that the information can be more current and more complete, yet conclusions reached in correspondence often change through the processes of publication preparation and review.

A reference list of about 700 titles follows the species accounts. This list will be useful to researchers of endangered species. Two references cited in the text but not given in the reference list and a few typographical errors are the only problems that I found.

Two appendices follow. One lists the occurrence of species within each geopolitical unit throughout the world. The second lists systematically those species considered or proposed but rejected for treatment in this volume, so-called near-threatened species. Indices of English and Latin species names complete the book.

Treatment in this volume is at the species level, like its companion third edition, but unlike the second edition which dealt with subspecies. The categories of threat assigned to species in the Red Data Books have been ignored here on the basis that only after exhaustive treatment may less-than-arbitrary decisions be made. Of course, the decision to include a species in this book in the first place is similarly arbitrary. One result of including only one paragraph per species is that a species known to be on the edge of extinction receives little more detail than one whose status is quite unknown.

Changes in the status of species since the second edition give ample justification for the preparation of this volume. The authors appear more sanguine about the possible continued existence of some species than was the second edition's author. For example, "rumors persist" about the Pink-headed Duck (*Rhodonessa caryophyllacea*), and the Guadalupe Storm-Petrel (*Oceanodroma macrodactyla*) "may still survive." Justification for this optimism may be found in the recent rediscovery of MacGillivray's or Fiji Petrel (*Pterodroma macgillivrayi*), Jerdon's Courser (*Cursorius bitorquatus*), and Cebu Black Shama (*Copsychus cebuensis*). Several species—Colombian Grebe (*Podiceps andinus*), Atitlan Grebe (*Podilymbus gigas*), and Pohnpei Mountain Starling (*Aplonis pelzelni*)—have apparently become extinct in the same period. Several others, including California Condor (*Gymnogyps californianus*), Guam Rail (*Rallus owstoni*), and Socorro Dove (*Zenaida graysoni*), now survive only in captivity, a situation certain to increase over the coming years.

If your ornithological pursuits carry you in the direction of studies involving "the chicken" or "the quail" perhaps you won't need this book. But if you

plan to study or look at bird species in the wild, chances are good you will want to have this book. One of every nine of the world's birds is now in it. It may not be presumptuous to suggest that all of us whose livelihood depends upon the continued existence of wild birds in the world will want to obtain a copy of this chronicle. In fact, some of us may want to do something about the challenge this book poses.—WARREN B. KING.

The Birds of Sumatra: Annotated Check-list.—J. G. van Marle and Karel H. Voous. 1988. Brit. Ornithol. Union Check-list, No. 10. 265 pp., 9 tables, 3 maps, 8 pages of black-and-white habitat pictures. ISBN 0-907446-09-4. £ 18.00. (Available from British Ornithologists' Union, c/o British Museum (Natural History), Sub-department of Ornithology, Tring, Hertfordshire HP23 6AP, UK).—This is the 10th in the B.O.U.'s check-list series that cover little-known areas. It is a thorough treatment of the literature and specimen record, and of a fair number of recent sight records. The species accounts range from two lines to one-half page in length and list the status in terms of abundance and seasonal occurrence, habitat, distribution, subspecies, collecting localities (if important), and recent observations. This gives a rather complete picture of what is known about each species in Sumatra. It also gives a good idea of what is unknown—a lot in many cases—and thus points to future fieldwork. A 52-page introduction covers geographic limits, topography, climate, vegetation, bird life, endemism, zoogeography, breeding seasonality, bird migration, history of ornithological research, chronological historical synopsis, and acknowledgments. Appendices include a gazetteer of localities, glossary of selected Indonesian geographical terms, species rejected from the Sumatran list of birds, and summary list of the birds of Sumatra and its satellite islands. There is an extensive bibliography, and indices to English and scientific names.

While comprehensive, well-thought-out and very useful, the check-list is nonetheless a flawed work. Typos and errors of fact are fairly numerous. My sight record of *Cuculus vagans* on 5 September 1985 at near sea level at Way Rambas was shifted to 12 August 1985 (at 350 m elevation) at Ketambe on the other end of the island. Other recent sight records are misquoted. Two species, *Pterodroma baraui* and *Bulweria fallax*, are admitted to the list based on unpublished sight records! These species are notoriously difficult to identify in the field and would better have been listed in an appendix as questionable. I hope that an errata sheet will be issued. Nonetheless, even with these problems, it is an extraordinarily useful book and will form the basis for all future fieldwork on birds in Sumatra.—BEN KING.

High Altitude Tropical Biogeography.—François Vuilleumier and Maximina Monasterio (Eds.). 1986. New York and Oxford, Oxford University Press. xi + 649 pp. ISBN 0-19-503625-5., cloth, $75.00.—This volume is a collection of original papers, each of which is a review of the biogeography of particular groups of plants and animals of high altitude, montane regions of the tropics. It is the first comprehensive volume to address this neglected portion of the tropics. As the editors correctly point out, such montane altitudes are usually overlooked by tropical biologists as part of the tropics.

There are 23 chapters, an index of authors cited in the chapters, and a comprehensive subject index. The distribution of chapter topics is as follows: an introductory chapter by the editors, a useful chapter on climate at high altitudes in the tropics, four chapters on adaptations to high altitudes in the tropics, four on paleoecological/paleontological topics, six on "diversification and adaptive radiation" of particular taxa, and seven on "origins" of various taxa. A perfectly symmetrical treatment with respect to taxa and geography is prevented by a shortage of researchers. There are five chapters on plants, two on arthropods (butterflies), two on amphibians and reptiles, three on mammals (including one on domestication), and four on birds. Geographically, there are 14 chapters on the Andes, three on Africa, two on the East Indies-Melanesian region, and four that cover two or more regions. An Andean bias is probably unavoidable and perhaps appropriate in view of the greater areal extent and species richness of the Andes. As a consequence of the broad taxonomic and geographic coverage, the composite bibliographies represent an unparalleled resource for anyone doing research on high-altitude biotas. The 24 authors represent 10 countries, providing a commendable international perspective. Hopefully, future collections will include authors from countries with the richest high-altitude biotas in the world, i.e. Colombia, Ecuador, Peru, and Bolivia. Although all chapters are in English, the first authors of 11 chapters are based in countries in which English is not the first language. Nevertheless, the quality of the writing in every chapter is so high that the editors must deserve special credit.

Ornithologists will appreciate many of the non-ornithological chapters. Although focusing on details of particular taxa, most also have sections that extrapolate from their findings to topics of more general concern. Unfortunately, there are few chapter summaries. Many chapters are accompanied by extensive, valuable, data-rich appendices that form the empirical backbones of the chapters' reviews. The editors take a firm stand on the value of a solid data-base and are to be congratulated for including such data.

The four chapters on birds will be the focus of this review. They concern: Physiological and ecological adaptations to high altitudes by sunbirds and hum-

mingbirds, by Larry Wolf and Frank Gill; Convergences among birds and bird communities, by Jean Dorst and François Vuilleumier; Biogeography of montane avifaunas in Africa, by R. J. Dowsett; and Biogeography of Andean birds, by Vuilleumier.

Wolf and Gill compare sunbirds and hummingbirds with respect to physiology, diet, community organization, and reproductive biology. They conclude that high-altitude species show no unusual adaptations to high altitudes, other than perhaps better insulation and larger nest size. This absence of obvious adaptations is somewhat unexpected because of the energetic consequences of lower air density and ambient temperatures at high altitudes, as well as the tiny body size of hummingbirds and sunbirds. This chapter is loaded with fascinating observations on the biology of these nectarivorous birds, but ends with a plea for detailed studies of high-altitude species.

Dorst and Vuilleumier's chapter lists guild assignments for high-altitude bird communities from Mexico, SE Brazil, Sabah, New Guinea, Tibet, three sites in Venezuela, and six sites in Africa. The core of their paper is a search for convergences at the guild and species levels between bird communities in the Andes and Afro-alpine regions. This search suffers from a conceptual difficulty in defining convergence. Dorst and Vulleumier consider similarities in species number in a guild, or ecological similarities between species within a guild, as evidence for convergence. However, unless these similarities are restricted to high-altitude communities and are not widespread among treeless, grassy habitats at any altitude, then labelling such similarities as "convergence" seems premature. For example, the authors suggest cautiously that similarities between African *Serinus* and various Andean emberizids represent convergence. However, all open and grassy habitats have such seedeaters. Therefore, the similarity cannot be attributed to convergence between these high-altitude communities, but rather the tendency for any similar region to have seedeaters. To demonstrate convincingly that the observed similarities represent convergence at high altitudes, it is necessary to show that the similarities are greater than expected between any two regions of similar vegetative physiognomy at any altitude (a comparison to "controls" that the authors mention in their concluding remarks). Some of the most promising cases for convergence seem to be between certain Tibetan and Andean birds. Dorst and Vuilleumier point out that not much can be said because of a near absence of quantitative ecological data, and their interpretations are appropriately cautious, in spite of their chapter's optimistic title. Surprisingly, Dorst and Vuilleumier offer no morphological data to support their cases of potential convergence other than qualitative descriptions of general size and shape. Certainly any analysis of convergence must treat morphology in a more sophisticated manner.

In addition to the conceptual problems, Dorst and Vuilleumier's chapter contains factual errors concerning composition of "páramo" avifaunas. For example, their list of 10 species from Mt. Itatiaia, Brazil, leaves out (T. A. Parker pers. comm.) at least 10 other species characteristic of the "páramo" there (*Cariama cristata, Caprimulgus longirostris, Streptoprocne zonaris, Cypseloides fumigatus, Thamnophilus ruficapillus, Knipolegus nigerrimus, Notiochelidon cyanoleuca, Embernagra platensis, Carduelis magellanica,* and *Troglodytes aedon* (the latter in disturbed areas only, but the Dorst-Vuilleumier list includes species, such as *Falco sparverius* and *Synallaxis spixi,* found mainly in disturbed areas). Also, this same list included one species (*Scytalopus speluncae*) found mainly in bamboo undergrowth of forest adjacent to the "páramo," not in the "páramo" itself. If discrepancies of this magnitude are present in the other lists, then conclusions concerning convergence at any level should be re-evaluated.

Dowsett thoroughly reviews the biogeography of African montane birds, including faunal lists and calculations of degree of endemism for seven major regions. He rightfully disputes the dispersalist explanations of several previous authors for the disjunct distributions of montane taxa and favors a vicariance hypothesis. Dowsett's review treats all montane African birds, not just the above-timberline species that are the focus of most authors of the symposium.

Vuilleumier's lengthy chapter on the origins of high Andean birds clearly outlines vegetation types and the bird species found in each. This compilation will be highly useful to those working with high Andean birds. From this data-base, Vuilleumier computes species-to-genus ratios, tabulates zoogeographic affinities of high Andean birds to other regions in South America, and calculates the number of genera and species endemic to the páramo-puna region. These analyses lead to various conclusions, many of which differ to varying degrees from similar analyses conducted by Frank Chapman 50–60 years ago. Unfortunately, many differences are most likely due to somewhat subjective assignments of bird taxa to vegetation types. In the one case that I investigated in detail, my calculations came closer to Chapman's than to Vuilleumier's. One of Vuilleumier's conclusions is that the páramo shares many more species (30) with wet montane vegetation than Chapman found. However, I found only 12 species in Vuilleumier's list of 166 páramo-puna species that could possibly occur in "wet montane," and none of these 12 is a true forest bird—all occur in fingers of páramo-like vegetation or disturbed areas within wet montane forest or are aerial foragers. I suspect that some of Vuilleumier's conclusions about which areas are most similar are open to re-interpretation.

Vuilleumier also summarizes data on disjunct distributions of 52 species and superspecies of páramo-puna birds. Almost half of the disjunctions involve taxa also found in the tropical lowlands of South America. Vuilleumier repeats many of the above anal-

yses for "peripheral" species, species that spend their nonbreeding season in the puna, and accidentals. The categories were analyzed this way because Vuilleumier searches for patterns in these categories that parallel those for the core avifauna.

Vuilleumier has followed a botanical definition of "páramo" that limits this vegetation type to an area from northern Peru to Venezuela. However, virtually all species (or allospecies) of birds found in what Vuilleumier considers true páramo extend "illegally" south of northern Peru to at least northern Bolivia in páramo-like, humid, grassy and bushy vegetation just above timberline. For example, Vuilleumier and Ewert (1978, Bull. Am. Mus. Nat. Hist. 162: 47) classified 25 bird species as páramo species in Venezuela at the northern limit of páramo. Of these 25, 16 occur in northern Bolivia and another 5 have allospecies replacements in Bolivia in vegetation similar in structure to "true" páramo. This leaves only four species (*Chalcostigma heteropgon, Oxypogon guerinii, Sturnella magna, Carduelis spinescens*) to define "true" páramo. None of these extends through the páramo to its southern limit in northern Peru. Their southern distribution is truncated by factors other than the presence of páramo. Therefore, the geographic restriction of páramo to those areas north of northern Peru is artificial from the standpoint of bird distribution. Furthermore, vegetation similar in structure occurs in a narrow band throughout the Andes to at least Dpto. La Paz, Bolivia, where a bird species list would be remarkably similar to those from the Venezuelan páramo, 3,500 km to the north. Apparently Vuilleumier considers this vegetation to be "puna," in spite of its páramo avifauna. Does the páramo avifauna suddenly shift habitat preference from páramo to puna south of northern Peru? Of course not. If some botanists want to restrict "páramo" to the northern Andes, then let them find another term for the nearly identical habitat that páramo birds inhabit in the southern Andes. Until then, I recommend that it all be called páramo (as is similar vegetation in alpine Costa Rica [Gómez 1986, Vegetación de Costa Rica, vol. 1, San José, Costa Rica, Editorial Universidad Estatal a Distancia]). Because Vuilleumier did not assign species to one or the other category in his list of core puna-páramo birds, I think that he also recognizes the problem. Ironically, Dorst and Vuilleumier, in their chapter on convergence, label the vegetation at high altitudes in Mexico, Brazil, and New Guinea (!) as páramo "for the sake of convenience," yet they are unwilling to admit the páramo extends to central Bolivia. Vuilleumier's own botanical definition of páramo vegetation (Vuilleumier and Ewert, 1978, Bull. Am. Mus. Nat. Hist. 162: 47) includes no plant genera, except for *Espeletia*, restricted to the Venezuela-to-northern-Peru region. In fact, most of the genera listed are not even restricted to montane regions. Either we should abandon the puna vs. páramo distinction, or we should define "páramo" as the humid grass-shrub mosaic above wet montane forest on the humid slopes of the Andes, regardless of whether it is found north of northern Peru (following Parker et al. 1982, An annotated checklist of Peruvian birds, Vermillion, South Dakota, Buteo Books; Remsen and Traylor in press, An annotated list of the birds of Bolivia, Vermillion, South Dakota, Buteo Books). Such vegetation is more restricted south of northern Peru because the massive cordilleras and drier Pacific slopes there compress the region in which páramo can exist into a narrow strip on the eastern slopes above humid forest and below puna.

Anyone interested in the descriptive, historical biogeography of montane birds will want a copy of Vuilleumier and Monasterio's book. If one seeks quantitative, hypothesis-testing analyses (such as those characteristic of the *Journal of Biogeography*) that treat in detail the current controversies in biogeography, such as vicariance biogeography, one generally will be disappointed (with the exception of Lynch's chapter on the herpetofauna of the Andes). Unfortunately, the current absence of data on high altitude tropical biota prevents analyses of this sort. Nevertheless, the many excellent papers, with their original data and extensive bibliographies, will justify the high price of this volume for anyone working in this field.—J. V. REMSEN.

OTHER ITEMS OF INTEREST

Bird Songs in Cuba/Cantos de Aves en Cuba.—George B. Reynard and Orlando H. Garrido. 1988. The Crow's Nest Bookshop, Cornell Laboratory of Ornithology, 159 Sapsucker Woods Rd., Ithaca, NY 14850 USA. Two 12" 33⅓ RPM records, $9.95 + $3.95 postage and handling.—This bilingual record set is for "the enjoyment and identification of bird songs heard in Cuba." From his eight recording trips to Cuba between 1977 and 1986, Reynard has selected 300+ cuts for 126 species. Duration of selections is nicely balanced, with longer cuts provided for endemic species or more accomplished and variable songsters (e.g. Bee Hummingbird, *Mellisuga helenae*; Zapata Wren, *Ferminia cerverai*; Cuban Solitaire, *Myadestes elisabeth*; Cuban Vireo, *Vireo gundlachii*; Cuban Blackbird, *Dives atroviolacea*). Specific information for each cut is available on request from the Cornell Laboratory of Ornithology.

The sounds are excellent. The accompanying written information is thorough and errorless. And the record jacket is beautifully illustrated with the Cuban Trogon (*Priotelus temnurus*) and the Bee Hummingbird. Clearly these sounds were taped and the records produced by professionals, and at a price that is hard to beat.—DONALD E. KROODSMA.

Arkansas Birds, Their Distribution and Abundance.—Douglas A. James and Joseph C. Neal. 1986.

Fayetteville, University of Arkansas Press. × +402 pp., 164 figures, 19 color plates, and 19 color photographs. ISBN 0-938626-38-8. Cloth, $34.00.—This book is designed in much the same mold as many other "tabletop" state bird books that contain good scientific information on distribution as well as pretty pictures for appeal to the general public. Arkansas has been without an updated book on bird distribution for better than thirty years, so the volume fills a definite need. Based on my limited knowledge of Arkansas' birds, it appears that the authors have done an excellent job of accurately recording and verifying state records.

The introductory chapters include sections on the history of ornithology in Arkansas, environment (with nice maps of physiographic regions and vegetation and charts giving bird distribution by habitat), Arkansas prehistory, and bird finding. The first two of these are fine and very informative; the section on prehistory seems out of place in a state bird book of this sort, and the bird finding section is virtually useless (far too short and nonspecific).

The major portion of the book is, of course, devoted to the annotated list with distribution, occurrence, and other data for the 366 species of birds recorded in Arkansas. One item of great interest is the innovative inclusion of figures to depict banding returns, executed in such a fashion that one can perceive migrational movements. Arkansas recoveries (or bandings that are recovered elsewhere) are noted and connected by straight lines to the banding location, which gives an interesting picture of movements of the species. To me, this feature is the most important and useful part of the book. It is too bad that the author included such figures only for species with more than 150 banding recoveries.

Some of the color photographs are very nice (although the picture of the Prothonotary Warbler [p.307] is 90° out of orientation, with the bird awkwardly hanging upside down), but I was not overly enthralled by the quality of the paintings by David Plank and Sigrid James Bruch. Perhaps more photographs should have been included, but both the paintings and photos add appeal to the book.

The only problem that I noted was the very poor quality of the binding. The cover of my copy separated completely from the remainder with just minimal usage for this review. I would suggest that anyone with a copy might invest in having it re-bound. I rate the content about average among state books and anyone who works on ornithology in Arkansas must have a copy.—BURT L. MONROE JR.

Annotated Checklist of the Birds of Kentucky.—Burt L. Monroe Jr., Anne L. Stamm, and Brainard L. Palmer-Bell Jr. 1988. Louisville, The Kentucky Ornithological Society. xi + 84 pp. Paper, $6.00. Available from The Kentucky Ornithological Society, 9101 Spokane Way, Louisville, Kentucky 40241 USA.—This list updates information on the occurrence of birds in the state of Kentucky that has accumulated since Robert Mengel's "Birds of Kentucky" (1965, Ornithol. Monogr. No. 3). The body of the work comprises 64 pages of abbreviated accounts for the 340 species that have been recorded in the state, and 10 species whose status is hypothetical at present. The authors also go out on a limb and list 10 species that they predict will be the next for which Kentucky records will be obtained. Also included are nine pages of charts to summarize seasonal and regional distribution, relative abundance, and breeding status for all species. This small book will be a useful reference for ornithologists in Kentucky and adjacent regions.—M.R.L.

Hummingbirds.—Tony Keppleman. 1988. Boston, Little, Brown and Company. New York Graphic Society Book. xi + 75 pp. 34 color plates. ISBN 0-8212-1617-1. $40.00.—Brief forwards by R. T. Peterson and the author precede 34 exquisite photographs. The production is lavish and displays each of the 30 × 30 cm plates opposite a blank page. Each image is of extraordinary quality. The visible details of feather structure integrate smoothly into functional features of the plumage. The iridescent nature of the gorget, of course, is featured. But the shape changes in the wings and tail during flight are truly impressive. No words accompany the plates. They can be enjoyed solely for themselves.

The seven U.S. species are illustrated; and the images are spectacular. The front cover displays a slightly enlarged version of one plate and is embossed in gold. Some of the verbal images in the promotion are not so appealing. My dictionary defines aviator "as the operator or pilot of an airplane," probably not the best expression for a bird, however amazing their capacity to fly.

An author's epilogue describes in nontechnical terms the problems overcome to produce these pictures. Bill Mayers' afterword gives further details on the fieldwork. Both the epilogue and the afterword are personal in nature, which adds to the reader's appreciation.—A.H.B.

The Birds of North Central Texas.—Warren M. Pulich. 1988. College Station, Texas A&M University Press. xxi + 439 pp. 112 maps, 22 text figures (by A. M. Pulich). ISBN 0-89096-322-2. Paper. $16.95.—There are 32 counties in north-central Texas. Approximately 385 species of birds have been recorded there; another 33 are uncertain. There are over 560 species statewide. Pulich assembles this information in a small book that will be of interest to a variety of readers. There are

also about 3.5 million humans that inhabit this area, but they are unevenly distributed over the 25,000 sq. miles (the book does not use the metric system). It is the potential interaction between the requirements of the bird species and the humans that is the greatest of the unmentioned problems in this book. Four different vegetation zones are included in this area. Human activity has already begun to have an impact on avian activity as the land changes from farmland and river bottom to "metroplex" and suburb.

The book is not intended to be a field guide, but to help residents understand the status of birds found in the area. In addition, the publisher suggests that "ornithology students, visiting naturalists, environmentalists and dedicated birders" will find this book valuable. Maybe. Pulich did much of the fieldwork himself, but also relied heavily on CBCs and the records of other observers. He does his best to insure accuracy and veracity.

The text consists mainly of species accounts. Each contains information on the status, occurrence (with localities and typical dates), nesting records and specimens. The latter lists museums where known specimens from the area are located. Where appropriate, Pulich comments on the available information and draws heavily on his own experience in the area. In many cases he indicates the particular subspecies present, but there are numerous examples of only one available specimen. It is common to read that the specimens "should be reexamined" or "checked again." In other cases the identity is contended. I am unsure of what the value of subspecies identity is to the reader. On the other hand, the thorough listing of dates may be useful.—A.H.B.