Bird problems in agriculture.—E. N. Wright, I. R. Inglis, and C. J. Feare, Eds. 1980. Croydon, England, British Crop Protection Council Publications. 210 pp. £10.00.—Man has encountered problems with bird "pests" for as long as he has practiced agriculture. The usual solution has been to kill the birds if possible, or to attempt to scare them elsewhere. This volume contains a series of papers delivered at a symposium held in 1977 under the auspices of the British Crop Protection Council, which had the specific aim of stimulating interest in seeking new approaches to the control of bird damage to agriculture. The articles are organized into four general sections, each containing a chairman's introduction, four contributed chapters, and a few pages of general discussion.

The first section addresses general considerations of pest birds and agriculture. A common theme runs through this and the following section: the birds that assume "pest" status are generally predisposed to do so, as their adaptive features combine with alterations imposed by man upon their habitats to bring their use of habitats into conflict with that by man. In some cases, the problems are a consequence of the sheer numbers of birds involved, and Moore suggests that in such situations the pest populations could be reduced "without detriment," so long as the control measures were *specific* to the pest species. But often it is winter flocks of relatively rare species or small numbers of breeding individuals that cause the most severe damage, at least on a local scale. Flegg, for example, points out the devastating effect that a "handful of bullfinches" can have upon pear orchards by stripping buds from the trees. All of this suggests that control of the bird populations may not be the most practical solution, and that it may be more effective to control instead the patterns of agricultural cropping practiced in areas sensitive to bird damage, or simply to compensate farmers who suffer severe local damages (as Boyd discusses).

The second section specifically addresses the problems posed by Starlings as agricultural pests, and continues the themes established in the first section. Two chapters review in some detail features of the breeding systems of Starlings and the features that contribute to their high reproductive output (Verheyen) and the tactics that are employed by Starlings in foraging (Tinbergen and Drent). The latter chapter is especially lucid, and, when coupled with Tinbergen's recent detailed report on this research (1981, Ardea 69: 1), provides an excellent view of the sorts of factors that contribute to the pesthood of Starlings. Aspects of the economics of Starling damage are reviewed by Feare, who notes that (a) the problems caused by their consumption of cherries in orchards may at least partly be a consequence of the inability of farmers to regulate the number of cherry pickers in relation to the amount of ripening fruit, (b) despite the damage to germinating cereals close to winter roosts, there is no evidence that this has a significant effect on crop yield, and (c) good evidence that Starlings are involved in disease transmission is lacking. Thus, despite the conspicuousness of Starlings in agricultural areas, the magnitude of their real economic effect (if any) is not well established. Nonetheless, Starlings are the subject of some of the more spectacular control measures, such as the massive efforts to dynamite roosts described by Tahon. As with so many control programs of this sort, this has not had much success: "The promoters of the use of explosives predicted a severe reduction in the starling population after one year, so that it should have been possible after some time to limit or to stop roost destruction. But from the start, it was evident to biologists that a 5 to 20% reduction of the population was insufficient to gain such a result. Evidence of that misjudgement is provided by the relatively stable number of birds killed each year in a population which is still approximately at the same level as before" (p. 67). This is largely a consequence of the movement patterns of the Starlings, and Tahon emphasizes the critical role of banding studies in defining these movement patterns and (in this case) in showing why such control is unlikely to be effective. As Feare notes, "a more practical alternative may well be to regard a bird pest simply as another environmental factor that must be taken into account when considering modifications to existing husbandry techniques or the introduction of new ones" (p. 52).

The last two sections deal with two alternative control measures, scaring the birds and using chemical repellents. The treatments of bird scaring consider the interplay between basic features of bird behavior, such as habituation, and various scaring techniques. Several of the authors observe that scaring is generally founded upon the assumption that novelty repells birds, but that in order to have any real prospects for success, scaring techniques must be built upon a deeper knowledge of the behavior of pest birds, as most scaring approaches have met with limited success at best. The treatments of chemical repellents likewise stress the importance of a full knowledge of the behavior of the birds as a prerequisite to implementation of avian repellents.

I consider the contributions to this volume to be enlightened and forward-looking. When considered together with the summarization of the efforts of the IBP Working Group on Granivorous Birds (1977, "Granivorous birds in ecosystems," J. Pinowski and

S. C. Kendeigh, Eds., Cambridge, Cambridge Univ. Press), they provide a firm foundation for breaking away from the lethal control attitude of the past and developing a fresh perspective on "pest birds." It is apparent that there is no single solution to the problem, that an integration of basic knowledge with applied research and well-founded economic decisions is required. But, as Dunnet observes, "The ecological problems which any pest species poses are extremely complex, and it is frequently the case that farmers and their advisers have to take action before a full understanding of the situation can be achieved. This can readily lead to such action being built into standard practice without a firm scientific basis, and to the belief that prolonged and painstaking ecological investigation may be unnecessary or even irrelevant" (p. 37). This volume is an excellent testimonial to the naiveté of that conclusion, and the need for building an approach to bird problems that is based upon knowledge rather than upon false economics and emotion.—JOHN A. WIENS.

The Audubon Society handbook for birders.—Stephen W. Kress. 1981. New York, Charles Scribner's Sons. xiii + 322 pp. $17.95.—The growth in numbers of Americans interested in birds is a phenomenon of our times, but many of us have deplored that no nationwide agency has yet emerged to mobilize this force more effectively for ornithological research. It is still true that nothing comparable to the British Trust for Ornithology has appeared on this continent, but nearly all of us reading this book will be amazed at the catalog of collaborative efforts involving amateurs and professionals that have sprung up separately across the land. The most valuable part of this book, I believe, is the latter two-thirds devoted to a directory of agencies and services available to people interested in bird study. This not only points out opportunities for amateurs to participate in ongoing research but also may open the eyes of some professionals to avenues for enlisting amateur assistance. As a result, this book will be valuable on the reference shelves of libraries.

The principal aim of this book is to help amateurs rise beyond the sport of identification and listing, where most of them start. The first one-third is devoted to techniques: suggestions for finding and identifying birds, leading field trips, selecting cameras, telephoto lenses, binoculars, and telescopes, observing behavior, taking notes of observations, sketching, photographing, and tape-recording.

It is difficult for an author (or reviewer) who long ago passed through the beginner stage to put himself back in the place of the person who is just starting out. Therefore, we can only guess what will catch the imagination of the novice and encourage him or her to go farther. Not surprisingly, I believe, Kress is at his best when offering tips on leading bird hikes and presenting slide shows, endeavors in which he is currently engaged. At all times his writing is clear and straightforward. The illustrations by Anne Senechal Faust are excellent, and teachers will look far to find better drawings of bird structures and activities. The abundance of drawings and photographs contribute to the attractive format.

In some places, as when he explains how to operate a camera, it seems to me he does not assume enough knowledge on the part of his readers. Surely people are acquainted with the elements of photography before they aspire to bird portraiture. In other instances, as when he suggests that people learning to identify birds attempt first to put them in their proper families, or when he suggests that beginners record the postures and movements of interest to ethologists, I think he may be calling for a level of sophistication not usually attained until after years of study. But perhaps it is inevitable that a book aimed at a broad spectrum of bird watchers will aim both low and high at times.

In the opening chapters intended to bring out the fun and challenge in gathering useful data, we might wish for more discussion of kinds of information still needed and well within the scope of the individual amateur. For example, in spite of the copious literature on mating and nesting, there are gaps in knowledge and important regional variations in nest placement, nest materials, reproductive success, cowbird parasitism, predation, and population densities that need investigation. A number of such questions could be detailed. Flight speeds and habitat preferences might catch the interest particularly of outdoorsmen who come to ornithology through hunting. Many birders are instantly enthralled with their first experience in mist-netting and banding, but these topics are not to be found in the index nor in the chapter "Observing Birds," although the paperwork aspects of banding are treated along with the agencies involved under the heading "Research Programs Welcoming Amateurs."

My admiration goes out to Kress for the enormous and worthwhile task of reporting the educational and research programs, the organizations, and the periodicals, as well as the dealers in books, optical equipment, and bird feeders, available to the people of the United States and Canada. His suggestions for building an ornithological library are supplemented by lists of government sources, many providing free literature. These various topics are grouped by category, and locating them requires some thumbing of pages since they are not usually found by name in the index.

I sympathize with the author's problem in listing obscure publications and ephemeral information about organizations and periodicals under the direction of shifting cohorts of volunteers. The sample for verification on my desk may not be fortunate or typical, but it illustrates the kinds of errors likely to

occur in initial listings from varied and distant sources. The identities of the Jack-Pine Warbler (a journal publishing scientific papers) and Michigan Audubon (a newsletter) are reversed. The entry for the TNA Bulletin, newsletter of the Toledo Naturalists' Association, names a lady who tells me she was never an appropriate contact, and it places her at an address from which she moved in 1979 and from which her mail no longer follows her. Not included in the regional listings is The Ohio Cardinal, quarterly publication since 1978 for the most enthusiastic bird-listers of the region.

It is to be expected that such a compendium will need corrections in future editions, and I wonder if the perishable information might be reissued in inexpensive supplements every few years. For much of this material there is no other source, and the only other comprehensive directory of organizations, "A guide to North American bird clubs," by Jon E. Rickert, is already more than 3 years old.—HAROLD F. MAYFIELD.

The birds of Cameroon. An annotated check-list.—M. Louette. 1981. Brussels, Verhandeling Wetenschappen, Jaargang 43, no. 163. 295 pp., 1 fig., 66 maps. Available from N. V. Brepols I.G.P., Baron Fr. du Fourstraat 8, B-2300 Turnhout, Brussels. 900 Belgian francs.—Cameroun, though relatively small (475,440 km^2), is geographically long from north to south and has diverse bird habitats. Cameroun contains the wettest area of Africa (about Mount Cameroun, 4,070 m), and much forest, yet it extends north into the Sahel. Further, it occupies a key position between the West African (Upper Guinean) and Central African (Lower Guinean) forest regions, and thus is important zoogeographically. Michel Louette of the Koninklijk Museum voor Midden-Africa made many trips to Cameroun and has studied specimens of Cameroun birds in diverse African, European, and American museums. This check-list is a condensed and revised version of his 1977 doctoral thesis (three large volumes, in Flemish!), and it won him the 1979 Schouteden Prize of the Koninklijke Academie voor Wetenschappen, Letteren en Schone Kunsten van Belgie. This work contains a brief Introduction, Acknowledgments, a brief history of Cameroun ornithology, a 7-page outline of the country's geography, vegetation, climate and habitats, a section on Materials and Methods (many data are from nine Belgian expeditions, taxonomy largely follows White's African lists and Morony et al. [1975, Reference list of birds of the world, Amer. Mus. Nat. Hist.]), 158 pages in a species' list, 15 pages of zoogeographical conclusions, an adequate 6-page gazetteer, Literature Cited, a Flemish summary, maps of Cameroun, of its vegetation zones, of the collecting localities of the Belgian expeditions, 63 maps showing distributional records of 87 species (22 including subspecies), and, finally, a "Contents" section. The single figure is a frontispiece rendering of the endemic *Tauraco bannermani*. No nesting or other biological information is presented.

The work represents a major contribution to African ornithology, updating as it does the distributions mapped by Hall and Moreau (1970, An atlas of speciation in African passerine birds, British Museum (Natural History), London) and by Snow (1978, Atlas of speciation in African non-passerine birds, British Museum (Natural History), London), presenting data on sympatry or parapatry of related taxa, and to some extent evaluating subspecies of Cameroun birds. The writing does not flow evenly, there being clear indications that English is the author's second language, but his points usually are clear. Particularly important are his characterizations of lowland forest species and the degree to which they occupy montane and savanna-fringe forest and woodland. At the species and intraspecific levels I find his taxonomy well-based. Many species problems remain to be solved, and the excellent maps, each with the vegetation indicated, suggest the location of sites for seeking interactions (e.g. of *Dendropicos pyrrhogaster* and *D. xanthopholus*, Map 39).

For many readers the zoogeographical section will prove tantalizingly interesting—the author promises a separate paper on Cameroun ornithogeography, and thus we are given a rather meager outline of "hypotheses" with some references to the maps. Subspecies borders, allospecific meetings, and species' range limits are the chief bases for the several "hypotheses," as well as the three "phenomena" he lists.

Whether or not one agrees with all the author's taxonomic and zoogeographic views, he has meticulously performed his tasks of ferreting out extant Cameroun specimens, and the result is an accurate reflection of the state of our knowledge of Cameroun species and their distribution. This work is a major reference in African ornithology. Its light cover (hard paper) bends and creases readily, so my copy will go to a binder *posthaste*.—L. L. SHORT.

Ravens, crows, magpies, and jays.—Tony Angell. 1978. Seattle and London, University of Washington Press. 112 pp., 88 black-and-white illustrations. $14.95.—Tony Angell has focused on the 18 corvids of the United States, first providing in his "Cast of Characters" a brief depiction of each species, often relying on personal experiences, along with a drawing. Most of the written vignettes contain entertaining or thought-provoking anecdotes, e.g. the very different ornithological responses to the appearances in the U.S. of San Blas and Brown jays in 1938 (sic, '37) and 1974, respectively. Following this section, several other topics are briefly taken up: "A Paradox of Myth and Culture"; "Social Strategies for Surviv-

al"; "A Special Generalist"; "Tool Users, Talkers, and Problem Solvers"; "The Energy Edge"; and "Corvids and the Community." Each of these sections contains some really lovely drawings. Although the bibliography is respectable, this is not a reference book and does not pretend to provide a comprehensive overview of the biology of the species concerned. Rather, due primarily to the presence of Angell's numerous, original, and very appealing illustrations, it is in a sense a personal statement about the author's interest in the natural world. This is not to say, however, that "R., C., M., and J." has no scholarly merit. On the contrary, I found it to hold both a lot of factual information and more than its share of intriguing ideas. It is eminently suitable for persons interested in moving beyond bird watching in the narrow sense into study of bird biology. All in all, as a "popular" bird book, I give this one a very high rating.—J. DAVID LIGON.

British thrushes.—Eric Simms. 1978. London, William Collins Sons and Co. Ltd. 304 pp. Ink drawings plus 24 black-and-white plates, 63 figures (mostly maps), and 20 tables. £6.50.—As a compilation of information about a subset of the subfamily Turdinae (or family Turdidae, if you follow Peters' Checklist of Birds of the World, Vol. 10: 13–227, 1964, Harvard University Press), this volume is an important contribution to the New Naturalist Series of the Survey of British Natural History. Eric Simms summarizes the literature through 1976 on the life history, vocalizations, molt, habitat relationships, migratory behavior, and population changes in the six species of *Turdus* that occur regularly in Britain. The birds are considered in the framework of their entire geographic range as well as their relation to congeners worldwide. This information is supplemented by the author's notes from 26 years of fieldwork in London and elsewhere. In addition, there is a chapter on the status of 11 larger thrushes that occur less regularly in Britain, and another chapter on the smaller chatlike thrushes. That "none of Britain's breeding thrushes now nest in truly natural habitats" (p. 19) is documented by tracing changes in distribution historically and geographically. These are cast as adaptations of the species to changes in land use such as urbanization or the development of agricultural land, gardens, hedgerows, or conifer plantations. Thus the abundant and widespread Blackbird (*T. merula*) is continuing to extend its range in European and British farmland and towns although before 1800 it was known only from dense thickets and woodlands. The common Song Thrush (*T. philomelos*) breeds in towns in the same region, but also on natural moors on the Outer Hebrides. The less numerous Mistle Thrush (*T. viscivorus*) has invaded man-made habitats in the 20th century. And the taiga-dwelling Redwing (*T. iliacus*) and Fieldfare (*T. pilaris*), known mainly in Britain as migrants and wintering birds, are now established as breeding species mainly in northern farmlands. Even the Ring Ouzel (*T. torquatus*), of alpine or coastal grassy banks with rocks or gullies, finds its niche now in pastures and at the edges of pine plantations. Whether these species have moved away from their original habitats because of changing preferences or whether the resources of the natural habitats have become less favorable is very difficult to know. But there are interesting parallels with our American Robin (*T. migratorius*). It occurs in natural parklands in northern and western North America, as well as near the tree line in arctic and alpine areas, but its range expansion in the southern and eastern United States is tied to man-made habitats.

The book is not at the cutting edge of modern ecology. The writing style is anecdotal and the terminology, for instance on molts and vocalizations, is outdated. But I agree with Mr. Simms that there will always be room in science for the perceptive observer who studies a few taxa over a long time. This volume is an example of how a traditionally empirical approach to a single lineage can still provide a valuable synthesis of comparative information.—FRANCES C. JAMES.

Funktionelle-morphologische Untersuchungen zur Radiation der Ernahrungs-und Trinkmethoden per Papageien (Psittaci).—Dominique G. Homberger. 1980. Bonner Zoologische Monographien, Nr. 13. 192 pp. 30 DM.—This monograph presents the results of a comparative study of the surface morphology of the feeding apparatus (jaw and tongue), salivary glands, details of the rhamphotheca, and of the feeding and drinking methods of 92 species of Old World parrots. All parrots, with the exception of *Psittrichas*, share a characteristic seed-shelling mechanism in which the seed is held against the step of the upper jaw by the tongue and husked with the anterior edge of the lower jaw; the seed is turned by the tongue after the husk on one side is removed. Four distinct drinking methods exist, each of which is characteristic of a particular subgroup. The drinking methods are a consequence of particular feeding methods and feeding apparatus features that evolved in each group, superimposed on the basic seed-husking method. Feeding and drinking methods were observed on captive birds, using slow motion movies to show details of each type. These methods were correlated with the details of the surface morphology.

Homberger started with the assumption that the basic seed-husking mechanism was present in primitive parrots, and hence assumed that morphological features that are essential for this feeding method are primitive in parrots. She was able to establish sequences of transformation series and to establish the polarity of these series based on functional and ad-

aptational arguments. These series could be correlated with the demands of the known special feeding methods, e.g. nectar, pollen, nut, and fruit-feeding. She was able to argue, with conviction, that the observed morphological changes that she studied are adaptations to changes in feeding and that the modifications in drinking methods are a consequence of these evolutionary changes.

Using the comparative functional-adaptive analyses of these surface structures, Homberger presents a classification for the Old World genera that she studied (she was unable to include *Nestor, Micropsitta,* and *Strigops*). She argues that the parrots should be placed in a single family with at least five subfamilies: the Cacatuinae, including *Nymphicus;* the Loriinae; the Psittacinae, which is divided into the Platycercini including *Melopsittacus* and *Lathamus,* the Psittaculini including *Alisterus, Polytelis* and *Agapornis,* and the Psittacini for *Psittacus* and *Poicephalus;* the Psittrichadinae for *Psittrichas;* and Loriculinae for *Loriculus.* Special attention is given to problem genera such as *Nymphicus, Lathamus, Psittrichas,* and *Loriculus,* in which Homberger is able to show that features used to ally these genera to other groups, e.g. *Lathamus* to the Loriinae, are convergent similarities that evolved largely because of similar feeding methods.

Homberger's monograph is an excellent case study of the application of functional and adaptive analyses to phylogenetic and classificatory investigation. It shows that highly adaptive features such as the surface structures of the feeding apparatus can provide valuable taxonomic characters when analyzed properly.—WALTER J. BOCK.

Strictly for the chickens.—Frances Hamerstrom. 1980. Ames, Iowa, Iowa State University Press. x + 174 pp. $11.95 (for autographed copies, write directly to F. Hamerstrom, Rte. 1, Box 448, Plainfield, WI 54966 and add $1.00 for postage).—A number of biographies and autobiographies about ornithologists have been published over the last decade, providing us with a diversified picture of avian biologists and of their work. Such books, both good and bad, provide us with enormous information about the activities of ornithologists, their research, and the development of ideas in avian biology, all of which is valuable to students of the history and sociality of science. Yet if a prize was offered for the best and most interesting (auto)biography, "Strictly for the chickens" would be my nomination without hesitation. Fran Hamerstrom has captured the essential spirit of the long-range research that her husband and she have done on the Prairie Chicken over four decades, and she has interwoven it with their own lives in central Wisconsin. If one does not know the Hamerstroms and their work already, a single reading of this book will make them seem like old friends.

The most important contribution of this book is that it presents the approaches and methods used by the Hamerstroms in their studies on the Prairie Chicken simply and clearly, without getting tied up in the results (which are available in the scientific literature). The frustrations, the defeats, and most important the discoveries and the triumphs, are presented in a fashion that makes research the living thing it is to a scientist. Most of us, however, cannot present our work with the open, interesting style of Fran Hamerstrom. Moreover, she is able to bring in their family life just sufficiently to show that biologists are also people, but avoiding the nauseating concentration on the "human side" of research that is characteristic of television documentaries.

The photographs and line drawings by daughter Elva add greatly to this book, nicely illustrating the work being described or providing background. The text is bounded by "identical" pictures of the Hamerstroms early in their work and at the time this book was written.

I have only one complaint about this book, and about many other similar works—it is short on dates. It is quite clear that the events in this autobiography are not put down in a strictly chronological order, and that a number of the instances and discussions need not be dated. But many of the events do or may have historical importance, and a date would make life far easier for the future historian. It would be nice to know the year that the Hamerstroms went to Europe, or which Madison AOU meeting is included, the year that the S.T.C.P. was founded, or the year that Herr Oberforstmeister Karl Beringer or Gustav Kramer visited. Certainly the dates of the "Prairie Chicken War" are important.

This is a book that can be recommended without hestitation to every reader of The Club. Purchase a copy and settle down for a pleasant evening of Prairie Chickens, life in central Wisconsin, and how research is done, plus stories about the upside blind, the frozen pump and the flame-colored velvet evening dress, privy buckets during their first Wisconsin winter, and a delightful couple.—WALTER J. BOCK.

The birds of Saudi Arabia: a check-list.—Michael C. Jennings. 1981. M. C. Jennings, Cambridge, England. 112 pp., 4 maps, 3 line drawings, 117 range maps. £6.30 (including seamail postage) or £7.77 (airmail postage; international sterling money orders or U.S. banknotes only. Order from author: M. C. Jennings, 63 Blandford Road, Chiswick, London W4 1EA, England).—While the distributional information and taxonomy of Meinertzhagen's "Birds of Arabia" (1954) has been getting more and more out of date and its price extortionately expensive, a small

but growing group of European and American amateur birders has been working in the Arabian Peninsula and devoting their spare time to seeing and learning about the birds there. This checklist is a very good attempt to summarize what has been learned about bird distribution since 1954, as well as sort out some ambiguities and discrepancies in the literature on Saudi Arabian birds.

The species accounts are short (1–7 lines, occasionally more), consisting of a statement about the bird's presence in the different areas of Saudi Arabia and how common it is. Also included in many accounts is a "comment" section wherein the author briefly discusses various points that help to clarify problems about the bird's distribution or suggest questions that need answers. The introductory section of the book consists of a description of the author's data base and sources, mode of operation and a description of the geographical divisions he has made of Saudi Arabia. The four maps illustrate ornithological regions, place names, rainfall, and relief. The five appendices are: (1) rejected species (annotated), (2) bibliography, (3) list of correspondents and observers, (4) gazetteer, and (5) sketch maps of the suggested breeding range of 117 species in Saudi Arabia. There is an index to scientific names (none for English names) and a brief addendem of records received since the cut-off date of April 1981.

My overall impression of the book is that of a project well done. While I believe more extensive research into some of the older questionable records might have obtained different conclusions, that kind of digging can be done later by others. The important achievement of this checklist is that it provides a base to work from and points out the areas for further investigation. There are elements that are speculative, such as the range maps, but these can be tested and improved on. There were no maps before and these will serve to stimulate verification. Mr. Jennings has had many difficult decisions to make as most of the recent records are sight records and not all the authors of these records could be contacted. While one could quibble with some decisions, a good job has nevertheless been done in sorting through this minefield. The author's approach was basically reasonable and conservative. Future observations will tend to verify or discount his conclusions, especially since the basis for each decision as well as the evidence is presented.

The size (413 species) of the Saudi list and the variety of habitats (mangrove, juniper forests, sand dunes, etc.) are invariably a surprise to those who think of the Arabian Peninsula as all sand. Birding there is fascinating and exciting and hopefully the Saudis will change their policy of admitting only workers and their families (no tourist visas) so that more birders can visit this fascinating country. This checklist lays a good foundation for both scientific research and recreational birding and is a most useful publication, essential to anyone with an interest in Saudi Arabian birds.—BEN KING.

Birds. Readings from Scientific American.—Barry W. Wilson, Ed. 1980. San Francisco, W. H. Freeman & Co. vii + 276 pp. $17.95 hardbound, $8.95 paperbound.—This series of readings presents 25 articles from earlier issues of *Scientific American* following the well-established format of these reading volumes. The editor is hence constrained in his choice to available articles. The choices are good, in that a broad spectrum of information on avian biology is presented. A notable absence is Dilger's excellent article on hybridization and genetics of behavior in the *Agapornis* parrots. Each of the seven sections has a short introduction by the editor.

This volume "is designed for the general non-science reader, bird watcher or aviculturist interested in learning more about birds" and "should be useful as supplemental reading material" in college courses. It is an excellent source book for both purposes in that the articles are all of high quality. Unfortunately, it suffers from a major disadvantage, in that a majority of the articles are more than 10 yr old and several are over 20 yr old. Some of these areas, such as the diversity of birds, flight, aspects of evolution, and song, are ones for which only older articles are available, but have been areas of very active research for the past decade. The introductions by the editor do very little to rectify this shortcoming. I find the introduction to "Physiology and song" especially weak, repeating the old story of a passive perching mechanism in the toes, confusing the properties of muscle fiber types in birds, etc. The literature cited for further reading is not suitable to provide the interested reader with a means of learning more about more recent work in these fields.

These shortcomings do not detract from the value of this series of readings, but suggest that care should be exercised in accepting the results and conclusions as the most recent knowledge about birds. I hope that more articles on birds will be published by *Scientific American*, so that more updated readings in avian biology can be issued.—W.J.B.

ALSO RECEIVED

Montana bird distribution. 2nd edition.—P. D. Skaar. 1980. (Available from the author, 501 S. Third, Bozeman, Montana 59715.) 66 pp. $3.95 (paper).—This handy reference presents information on the occurrence and distribution of birds in Montana, presenting the data by 1° × 1° latitude/longitude blocks. For each of the 378 species reliably recorded in Montana, small typewritten "maps" are given that present the distribution during the breeding season and in mid-winter. In addition, average spring arrival dates are given for several areas of the state. The author has made a careful attempt to gather to-

gether all distributional information for Montana birds. Together with the similar latilong analyses of Colorado and Wyoming bird distributions (Kingerly and Graul 1978, Colorado Div. Wildl., Denver; Oakleaf et al. 1979, Wyoming Game & Fish Dept.), this volume presents a nice overview of the distribution of birds in a substantial portion of western USA.—J.A.W.

Endangered birds of the world. The I.C.B.P. bird red data book.—Warren B. King, compiler. 1981. Washington, D.C., Smithsonian Institution Press. Not paginated. $19.95 cloth, $8.95 paper.—This is a single-volume, bound reprint of the Red Data Book (see Auk 97: 650, 1980). The present volume is far more convenient for most users than the two-volume, loose-leaf form. Unfortunately, it is not paginated and lacks an index which greatly reduces its convenience as a reference.—W.J.B.

Allan Brooks: artist naturalist.—Hamilton M. Laing. 1979. Victoria, British Columbia, British Columbia Provincial Museum Special Publication No. 3. 249 pp., many sketches and photographs; 8 color plates. $15.00 (cloth), $10.00 (paper).—Allan Brooks was a remarkable Canadian who epitomized the true naturalist of the late 19th and early 20th centuries. He kept meticulous notebooks, profusely illustrated with sketches, and developed into a renowned and prolific bird artist whose work was especially notable for the "softness" of the birds. He was an avid collector and hunter who made substantial contributions to our knowledge of western birds, but he was also a soldier (and sniper) of considerable skills. This biography treats Brooks and his environment in detail, and provides not only an excellent view of one of the major figures of the "golden age" of natural history, but a perceptive portrait of early British Columbia. It is an enjoyable (albeit somewhat tedious) account, nicely produced and superbly illustrated.—J.A.W.

Finding birds around the world.—Peter Alden and John Gooders. 1981. Boston, Houghton Mifflin. xxviii + 683 pp. $17.95.—This volume is a companion to Gooders' "Where to watch birds in Europe," and describes 111 areas in all areas of the world. The habitat, weather, information on lodging, a simple sketch map, and how to get about are presented for each area. A check-list is also given for each area with notations on abundance, etc. A taxonomic index provides a cross reference to all areas in which each species is found. Scientific names are included for all species in the taxonomic index. An extensive bibliography, arranged geographically, completes the volume.

The style of this volume differs from that in Gooders' European volume, with far less detail on individual areas, but the information presented in a more systematic fashion. In the present book, one can start with the birds that one wishes to see and determine the places where the chance of doing so is the best. It is clear why the authors wanted to include the whole world in a single volume. Yet more space could have been devoted to less well-known areas if regions such as North America and Europe, which are covered by several excellent volumes, were omitted.

For any birders wishing to expand their horizons and life list, this book is a most useful one. Careful attention should be given to the introduction before beginning any serious plans.—W.J.B.

Guide to the national wildlife refuges.—Laura and William Riley. 1979. Garden City, N.Y., Doubleday. xiii + 653 pp. $14.95.—This book is exactly what it states—a guide to national wildlife refuges—and an excellent one. The authors have visited a large number of these refuges and interviewed hundreds of refuge managers and assistants, so the book is written on a first-hand basis. Coverage is by sections of the country, with a map of each section showing the location of each refuge; the accounts for each refuge are arranged alphabetically within each section.

The individual refuge accounts are excellent. The refuge is described with comments on its history and an overview of the habitat, the birds and large mammals of the area, other interesting animals and plants, subrefuges administered from the refuge, and other nearby natural areas and points of interest. Essential details are provided in summary form at the end of the account. These include how to reach the refuge by car, when it is open, the best time to visit, where to stay, campgrounds, weather notes, and the address and phone number of the refuge for additional information.

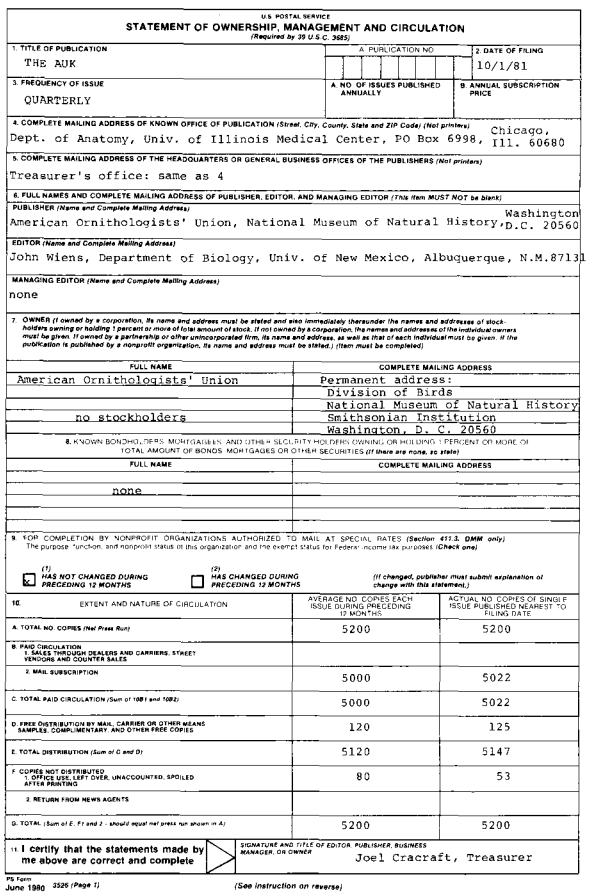
The "Guide to the national wildlife refuges" is an absolute must for anyone interested in natural history and wanting a guide to some of the best areas to see maximum numbers of animals and plants in prime habitats. It is a book to be studied carefully while planning any trip throughout the United States.—W.J.B.

Search for the Spiny Babbler.—S. Dillon Ripley. 1978. Bibliotheca Himalayica, Kathmandu, Nepal (1981, Smithsonian Institution Press, Washington, D.C.). xiii + 301 pp.—A reprint of Ripley's 1952 book. Yes, they did find the Spiny Babbler and secured one specimen on Christmas Day 1948 (the only date in the book is in the table of contents). The account of life and conditions in still-isolated Nepal

shortly after World War II still makes most interesting reading.—W.J.B.

Handbook of the birds of India and Pakistan. Vol. 2. Megapodes to Crab Plover.—Salim Ali and S. Dillon Ripley. 1980. Delhi, London, and New York, Oxford University Press. 2nd edition, xvi + 347 pp. $34.00.—The second edition of volume 2 of this handbook has a small number of minor changes, summarized in an appendix (pp. 341–342), and four new color plates (nos. 23, 24, 29, 30) by John Henry Dick. A new subspecies of the Tamil Nadu Jungle Bush Quail (*Perdicula asiatica vellorei* Abdulali and Reuben) is recognized (see p. 341).—W.J.B.

Chimney Swifts and their relatives.—Margaret Whittemore. 1981. Jackson, Mississippi, Nature Books Publishers. vi + 169 pp. $5.95.—This is a charming little book written in a popular style that introduces its reader to the fascinating world of swifts. The first three-quarters of the book is devoted to the Chimney Swift, *Chaetura pelagica*, and recounts the author's personal experiences with them and summarizes the extensive published life history studies of R. W. Dexter and R. B. Fischer. Mention is also made of Althea Sherman's studies in her specially constructed swift observation tower and the banding of thousands of swifts prior to the discovery of the Chimney Swift's winter home in South America in 1944. Studies of other *Chaetura* swifts are also mentioned, particularly those of H. Sick on *C. andrei* in Brazil. The last four chapters, which provide a brief review of other swifts around the world, are more uneven in treatment and some factual errors have crept in. The book is plagued by an unacceptable number of typographical errors and the taxonomy gets unnecessarily confused, with species being mentioned under several common names and in two genera only a few pages apart. Clearly this is not a reference book, nor is it as authoritative as David Lack's 1956 classic "Swifts in a tower." However, it does provide an interesting, readable summary account of the Chimney Swift and some of its relatives.—CHARLES T. COLLINS.



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