Reviews

EDITED BY ROBERT M. ZINK

The Auk 110(3):661, 1993

Birds of Southwestern Brazil: Catalogue and Guide to the Birds of the Pantanal of Mato Grosso and Its Border Areas.—Balthasar Dubs. 1992. Betrona-Verlag, Küsnacht, Switzerland. 164 pp., 10 black-and-white figures, 54 color figures, 3 text figures. ISBN 3-9520244-0-6. No price given.—Despite the appearance of many excellent field guides for portions of South America in the last 20 years, large regions of the continent remain poorly documented. Balthasar Dubs' book covers one of these regions, the Pantanal of southwestern Brazil. Although the seasonally flooded habitats of the Pantanal do not have a diverse avifauna, they are situated in the middle of South America and bordered by Amazonian and Atlantic coastal tropical forests, Chaco, and Campo Cerrado. Dubs ambitiously includes entries on 698 species from these habitats whose distributions reach into southwestern Brazil, in the states of Mato Grosso and Mato Grosso do Sul.

Eleven major habitats occurring in the region are described along with brief sections on biogeography, seasonality, breeding seasons and ornithological history. Black-and-white photographs represent the habitats well. The species accounts rely on the author's own observations, recently published regional work by other ornithologists such as Cintra, Oniki, Sick, Willis, and Yamashita, and older collections made by Natterer, Smith, Pinto, Cherrie and Miller. There are a few errors in nomenclature, and the taxonomy used is somewhat outdated (e.g. *Corythopis* is placed in the Conopophagidae rather than in the Tyrannidae). Plumage descriptions are like those of Meyer de Shaunesee (1970, A guide to the birds of South America, Livingston Press), and will cause confusion for someone unfamiliar with family and generic characteristics of many species. Habitat descriptions are brief and of some use, but they can also be misleading (e.g. the Fawn-breasted Wren [*Thryothorus guarayanus*] will not be found only "in gardens and in the shrubbery near buildings"). Little is known about the movements of migratory species in this region and, although seasonality is mentioned for many of these species, their migration dates are often not provided (reflecting an important area of needed research). One handy aspect is the inclusion of the described subspecific variation in each species along with which subspecies occur in Mato Grosso. The plates are adequate for many easy to identify birds, but are not useful for most furnariids and formicariids. Small flycatchers are not even illustrated. This book will be of use to anyone visiting southwestern Brazil, and serves as an important step toward an understanding of the diverse avifauna of this region.—JOHN M. BATES, *Museum of Natural Science and Dept. of Zoology and Physiology, Louisiana State University, Baton Rouge, Louisiana 70803, USA.*

The Auk 110(3):661-662, 1993

Parent-Offspring Conflict and Its Resolution in the European Starling.—E. Litovich and H. W. Power. 1992. Ornithological Monographs No. 47, American Ornithologists' Union, Washington, D.C. 71 pp., 10 figures, 8 tables. ISBN 0-9935868-58-5, $11.70.—This monograph describes the results of experiments aimed at testing hypotheses related to the question of parent-offspring conflict over provisioning of nestlings in the European Starling (*Sturnus vulgaris*). The questions addressed in Litovich's thesis, completed 10 years ago, are still timely and relevant to behavioral ecology. Even though publishing a series of papers is more adaptive in today's competitive academic marketplace, this monograph is a good example of the benefits of publishing a single, cohesive body of work. The extensive literature review in the introductory and summary chapters will certainly prove useful for anyone beginning research in this area. The solid empirical stance, synthesis of the results of the few existing experimental studies of parent-offspring conflict in birds, and analysis of the significance of the results in the context of current theory provide a solid basis for understanding conflict between nestlings and parents over feeding and time of fledging. The authors also make an effort to relate the results to theoretical and empirical work on social insects, although discussion of and comparison with weaning conflicts in mammals is minimal.

The monograph describes the results of four sets of experiments aimed at examining the rules governing how parental investment is distributed among starling nests and nestlings. The discussion then centers on who wins when the rules are followed and whether the rules can be broken by the parties that lose when the rules are obeyed.

The first two experiments involved the novel technique of administering alcohol-soaked raisins to nestlings. Alcohol apparently decreased the begging fre-

quency of nestlings without putting them to sleep, although no data are provided on this. In the first experiment, the authors found that broods were fed less frequently when given alcohol-soaked raisins than when given normal raisins as a control, but they found no effect on nest-cleaning behavior. They interpreted this as supporting the hypothesis that there is communication between broods and parents.

The second set of experiments involved examining rules used to determine which nestlings are fed within a brood. The authors observed marked nestlings in viewing boxes and experimentally reduced the intensity of begging, either by giving individual nestlings alcohol-soaked raisins or by sating them with hamburger. Individual nestlings were fed more frequently when sober or hungry than when drunk or sated. The authors scored the begging behavior of nestlings using a composite of height of the nestling, whether it was chirping or simply gaping, and whether it was first to beg. Using this system, the nestling with the highest score was almost always the one that was fed. Both male and female breeders fed the best beggar most of the time, and the two sexes did not divide up the brood. The authors suggest that their method of analysis, which uses a simple scoring system that reflects overall begging intensity, is better than breaking begging behavior down into its components. However, I would rather see a multivariate analysis that determines the relative importance of various components of begging behavior and includes parameters not included in their scoring system, such as how close the nestling is to the nest hole. The importance of proximity to the nest hole is suggested by Litovich and Power's statement that differential begging intensity ceases to be the primary determinant of who gets fed at day 15, when nestlings compete to block the entrance to the nest box, wresting the decision over who gets fed from the parents.

Litovich and Power referred to the tendency for parents to feed the nestling with the highest begging score as the "best-beggar rule" and showed in experiments described in chapter 4 that no chick, not even the runt, is exempt from this rule. This rule works for the parents because food is distributed equally among chicks under conditions of plenty, but the most vigorous chicks are fed under conditions of food scarcity. In contrast, they state that investing in proportion to need or investing equally among offspring would be maladaptive because, under conditions of food scarcity, this would reduce the survival and reproductive success of nestlings with the highest reproductive value.

According to Litovich and Power, the best-beggar rule precludes deception because "the best beggar will be obvious in time while a faker will collapse from exhaustion." For the sake of students using this monograph as an introduction to the subject of parent-offspring conflict in birds, I would have preferred to see the authors highlight the fact that the best-beggar rule and hole blocking both involve competition among nestlings. It is because parents use relative begging intensity, rather than some threshold begging intensity, that nestlings are fed in proportion to their relative vigor or reproductive value. If begging higher, longer, and louder is energetically expensive, a less vigorous chick will not consistently outperform a more vigorous one.

Chapter 5 examined parent-offspring conflict over the time of fledging. Using hole restrictors, Litovich and Power kept nestlings in the nest beyond their anticipated fledging dates and compared mass changes in those nestlings with changes observed in nestlings isolated in the field, deprived of food, and allowed to die. They expressed regret at their treatment of the five control broods, a procedure that probably would not be permissible today, given the current animal-use regulations. The controls were used to determine the point at which the restriction experiments should be terminated to prevent the death of nestlings. Feeding observations revealed that nestlings were fed less frequently and lost mass after the restrictors were put on. The authors concluded that the restricted nestlings were worse off than if they had fledged on schedule, but it is possible that birds that fledged on schedule also lost mass. A lack of information on fledgling performance weakens their conclusions.

The ideas in the monograph are clearly expressed and help to clarify differences between genotypic and phenotypic conflict of interest. The authors advocate a sound approach to empirical studies of parent-offspring conflict that is workable in the absence of data on long-term fitness consequences, which are difficult to obtain. While I found the discussion of models shallow, this monograph does good service to the field of parent-offspring conflict in birds. Chapter 6 brings to light Dawkins' unrelenting misrepresentation of Alexander's ideas on the subject of whether or not offspring can win, a question that has dominated the parent-offspring debate. The message here is to leave this debate behind and proceed with experimental studies, of which, 10 years after the completion of Litovich's thesis, there are still surprisingly few.—JANIS L. DICKINSON, *Hastings Natural History Reservation, University of California, 38601 E. Carmel Valley Road, Carmel Valley, California 93924, USA.*

The Auk 110(3):662–663, 1993

Birds of Cyprus.—P. R. Flint and P. F. Stewart. 1992. British Ornithologists' Union Check-list No. 6 (second ed.). 234 pp., 24 black-and-white plates, 16 color plates, 4 text figures. ISBN 0-907-44614-0.

£ 20.00.—This book is a thorough revision of the first edition (1983). It contains sections on the history of ornithology in Cyprus, the islands' geography (including maps), geology, climate and vegetation, and bird migration and breeding. Of particular concern is the description of the killing of migratory birds for sport (by shooting, liming and netting), which apparently is rather widespread. As an aside, I suggest that those responsible for uninformed protests against scientific collecting should reflect on the situation in Cyprus. At one time, over 5,000,000 migrant birds were killed annually, many left to rot on the ground, others pickled as delicacies. This illustrates the kind of pressures that actually threaten bird populations, not the few scientific collectors that obtain extremely low numbers of birds for museums and scientific study. The authors urge others to support conservation efforts in Cyprus, where legislation regulating bird killing is apparently somewhat ineffective or inconsistent. The main body of the book contains an annotated species list, which includes data on winter, migratory and breeding status, and places where species are often observed. Plates depict habitats and some bird species. Included in appendices are data on banding recoveries, doubtful sight records, masses and wing lengths of some species, sites of ornithological interest, a list of protected bird species, a migration chronology table, a list of useful addresses, and references. This would be an important book to have in libraries because of Cyprus' position in the migration path of European birds. I could not imagine going to Cyprus without it.—ROBERT M. ZINK, *Bell Museum of Natural History, Ecology Building, University of Minnesota, St. Paul, Minnesota 55108, USA.*

The Auk 110(3):663–664, 1993

Kingfishers, Bee-eaters & Rollers.—C. Hilary Fry and Kathie Fry. 1992. Illustrated by Alan Harris. Princeton University Press, Princeton, New Jersey. xi + 324 pp., 40 color plates. ISBN 0-691-08780-8. $49.50.—This book briefly summarizes knowledge for all species in three families in the Coraciiformes. The species accounts consist of sections on Field Identification, Voice (verbal descriptions), Geographical Variation (a list of subspecies recognized by the Frys and distributions, with brief discussion of the characters that distinguish each), Habitat and Range, Population (density and abundance data for those few species for which data were available), Migration (timing and destinations), Food, Habits (behavior), Description (plumages, linear measurements, and body mass), and References ("salient references," not a complete bibliography). Text length reflects the amount of information available for each species, which ranges from a little less than one page for little-studied species to about three pages for well-studied species.

Fry and Fry also include brief chapters on general biology of kingfishers, bee-eaters, and rollers. In "Characters and Relationships," they give the characters shared by families in the Coraciiformes, but do not state clearly what characters define the order or its various families. They follow Sibley and Ahlquist's family-level taxonomy based on DNA-DNA hybridization in recognizing three families of kingfishers, rather than the traditional single family. At the genus and species level, the Frys follow C. H. Fry's previously published taxonomies for kingfishers and bee-eaters. In "Food and Foraging," "Nesting," and "Social and Breeding Behaviour," data on these topics are summarized and synthesized. In "Distribution and Derivation," the authors summarize C. H. Fry's earlier zoogeographic analyses. In the half-page "Island Rarities," the Frys call attention to the precarious existence of several insular species and subspecies.

Alan Harris' illustrations are excellent, with glowing colors complementing accurate representations of shapes, postures, plumages, and patterns. All 123 species of kingfishers, bee-eaters and rollers are illustrated, as well as different sexes, ages, and well-marked subspecies. Useful range maps accompany the plates.

For the six New World kingfishers that I have studied, the information given by the Frys is reasonably complete and accurate, with minor exceptions. The alleged insect-hawking behavior of the American Pygmy Kingfisher mentioned by the Frys has never been documented, but evidently has been passed along from author to author in the literature; it is probably a classic example of copy-cat error perpetuation. The distinctiveness in bill length and plumage color of the southernmost population of Ringed Kingfisher was not mentioned. The papers of W. J. Davis on territoriality, habitat selection, and vocalizations of the Belted Kingfisher (Auk 99:353–362, 1982; Condor 88: 505–512, 1986; and Am. Midland Nat. 117:63–70, 1987), the most detailed studies published on the biology of this species, were evidently overlooked. Nevertheless, the overall high quality of information vastly overshadows these small problems.

C. H. Fry has already written an excellent, 300-page book on the Meropidae (*The Bee-eaters*, 1984, Buteo Books) that contains far more detailed information on this family, including lengthy chapters on their general biology and extensive data appendices. Therefore, personally I would have preferred an expanded treatment of kingfishers and rollers, or alternatively, inclusion of other coraciiform families, such as motmots and todies, rather than the 45 pages of species accounts on bee-eaters, most of which is almost certainly repeated in the 1984 book. (Although J. M. Forshaw has already published three immense and lavish monographs [Landsdowne Editions, Sydney]

that cover kingfishers, bee-eaters, todies, motmots, and rollers, these volumes are too expensive for any but the wealthiest of ornithologists and institutional libraries and, therefore, remain somewhat inaccessible.)

Compilations of information at the family level, such as this one by Fry, Fry, and Harris, should inspire concerns about the lack of basic knowledge of birds throughout the world. For example, of the 87 species of kingfishers, the nest has not been described for 22 (25%). A simple description of the voice is unavailable for seven species (8%), and little more than anecdotal natural history information is available for 70 species (81%). Of the 87 kingfisher species, at least 18 (21%) have ranges smaller than approximately 100,000 km^2, and several distinctive subspecies are extinct or endangered. When will funding agencies begin to recognize that opportunities for filling the gaps in fundamental knowledge of bird biology are diminishing rapidly?

Fry, Fry, and Harris have produced a highly useful, beautifully illustrated summary of knowledge of three groups of birds. This is one of the many new "family" books that many ornithologists will want for their own libraries, and any institutional library used by ornithologists should obtain a copy.—J. V. REMSEN, JR., *Museum of Natural Science, Louisiana State University, Baton Rouge, Louisiana 70803, USA.*

The Auk 110(3):664, 1993

Antarctic Birds.—David F. Parmelee. 1992. University of Minnesota Press, Minneapolis, Minnesota. xviii + 203 pp., 16 color plates, numerous black-and-white illustrations and maps. ISBN 0-8166-2000-8. $39.95.—This is a semipopular account of the research program of David Parmelee, his students, and colleagues on the ecology and behavior of the birds of the Antarctic Peninsula. Most of the research was carried out at the U.S. research base at Palmer Station; information from additional cruises and forays is also included. The data on the location and sizes of bird colonies will be useful to future researchers in that immediate area. The information on life-history traits will be of more general interest; for example, data on phenology, courtship, territory, nest building, diet, molt, and dispersal are included. Engaging for a wide audience will be the introductory chapters describing research in wind, sea and pack ice, and anecdotes of fieldwork on rock and snow and ice—the romance of the last good country. Both black-and-white and color photographs are good, but the author's drawings and watercolors are idiosyncratic and wonderful. Some of them remind me of the work of Walter Anderson, but without the dark qualities of that artist. In addition to a readership of professionals, the book ought to be of interest to birdwatchers planning a trip to Antarctica.—GEORGE F. BARROWCLOUGH, *Department of Ornithology, American Museum of Natural History, New York, New York 10024, USA.*

The Auk 110(3):664–666, 1993

The Birds of Africa. Volume IV, Broadbills to Chats.—Stuart Keith, Emil K. Urban, and C. Hilary Fry, Editors. Illustrated by Martin Woodcock and Ian Willis. Acoustic References by Claude Chappuis. 1992. Academic Press, London. xv + 609 pp., 32 color plates of birds, numerous text illustrations and range maps. ISBN 0-12-137304-5. $145.00.—Volume IV of *The Birds of Africa* continues the landmark species accounts of African birds. All birds known to occur in Africa (from Egypt west of Sinai) are covered, including Palaearctic birds with ranges that are restricted in Africa to the Mediterranean coast and nonbreeding migrants that spend the winter in Africa, as well as birds of the Afrotropical region.

Volume IV includes Eurylaimidae (broadbills), Pittidae (pittas), Alaudidae (larks), Hirundinidae (swallows), Motacillidae (wagtails, pipits and longclaws), Campephagidae (cuckoo-shrikes), Pycnonotidae (bulbuls), Bombycillidae (waxwings and hypocolius), Cinclidae (dippers), Troglodytidae (wrens), Prunellidae (accentors), and Turdidae (thrushes). The last family is large (125 species in Africa), and four genera (*Monticola, Zoothera, Psophocichla,* and *Turdus*) are left for Volume V. *Neolestes* and *Nicator* are illustrated with the bulbuls, but their accounts will appear in a later volume due to a late change of mind about their relationships. The systematic arrangement follows the standard introductory version in *A Dictionary of Birds,* edited by B. Campbell and E. Lack (1985). The accounts are written by different authors, with sections by W. R. J. Dean, C. Erard, V. Haas, R. A. C. Jensen, T. B. Oatley, P. Lack, D. J. Pearson, S. N. Stuart, and A. D. Tye, as well as by the editors. The reasons behind the authors' taxonomic decisions (none too weird to digest) are summarized in the informative family accounts and the references are cited.

Volume IV has longer accounts than earlier volumes, with an average length of 1,000 words and ranging from one to five pages for a species. The text is concise but readable; repetition or elaboration of extralimital localities could be tightened here and there (e.g. Grey-backed Sparrow-Larks [*Eremopterix verticalis*] at Lochinvar and Luiwa Plains in Zambia are not regular and are not known to breed there;

migrant Citrine Wagtails [*Motacilla citreola*] at Eilat, Israel, are mentioned twice). The status of Mountain Pipit (*Anthus hoeschi*) as a regular migrant from its breeding area on the Drakensberg massif to central Africa is questionable, as it is based on few specimens even though Benson and White collected many other pipits in Zambia, and identification of pipits has been a comedy of errors. Mountain Pipits may instead migrate to Namibia, where they were first described. Species accounts give Range and Status, Descriptions (plumages, measurements, colors of eye, bill, and feet, and comparative accounts of the subspecies), Taxonomic Comments (for a few species), Field Characters (with comparisons of similar birds), Voice (with reference to tape recordings published and unpublished), General Habits, Food, and Breeding Habits (social organization, nest, eggs, laying dates, incubation, development and care of young, and breeding success and survival). Measurements are from museum specimens and netted birds. A few forms for which no masses are listed have unpublished data available elsewhere, as in the Livingston Museum in Zambia, and our museum has *Sheppardia* (*Cossypha*) *bocagei chapini* (Zambia, males 20.8 g and 21.0 g, female 20.0 g, unsexed 20.4 g). References are cited for each species, and the complete citations are grouped into one for the region and separate family bibliographies (with sections for wagtails and for wheatears). They are up to date through 1991. The index of scientific names includes synonyms that are mentioned in the accounts. Other indices list common names in English and in French.

The writing style is friendly and invites a read. For example, the Yellow-whiskered Greenbul (*Andropadus latirostris*), the only songbird known to breed in leks in the forests of Africa, is in other faces of its life the " 'basic' bulbul." At the same time the style is informative and evocative, as in the song of the Little Greenbul (*Andropadus virens*) being "cheerful, bustling ... it consists of 2 basic parts, with optional additions in between: several low, gravelly introductory notes on same pitch, followed by a pause; then a long, unmusical jumble of bubbling notes, some grating but mainly rather squeaky, continuing on one pitch until just before the end when they rise into a shrill finale."

Production is excellent. I spotted only one error (p. 554, Fry 1966 should be Fry 1966a). Also, the references are quite complete, although Liversidge's article (Proc. Second Pan-African Ornithol. Congress, 1964:419–424) on the Cape Bulbul (*Pycnonotus capensis*), the main published work on the species, is not included. Accounts of species that occur mainly outside Africa draw upon Cramp's *The Birds of the Western Palearctic* and southern African birds draw upon Maclean's (1985) *Roberts' Birds of Southern Africa* more than they should, especially where the latter was spotty.

The accounts are as informative as they are because there has been much recent research in Africa, including several species discovered in the past 20 years. Still, there is no information on the breeding biology and songs of some birds, and there are many reasons to continue field studies in Africa. The White-bearded Bulbul (*Criniger ndussumuensis*) is recognized as a species distinct from the Red-tailed Bulbul (*C. calurus*). Other authors have recognized these as thick-billed and thin-billed morphs of a single species. Their songs may differ, but identifications of birds recorded as *ndussumuensis* are questioned by Chappuis, who recorded them. Two species that commonly are called flycatchers (*Stizorhina*) are recognized here in the forest thrush group (*Neocossyphus*). They may be plumage mimics, with mimicry perhaps associated with their ant-swarm following behavior. Their similarity in plumage may also be due to common ancestry, and their bill shapes to a subsequent ecological divergence of the broad-billed birds. No phylogenetic analyses are available, however, so these interpretations remain open.

The illustrations are superb, wonderful color plates, great for identification. Martin Woodcock's paintings improve with each volume of *The Birds of Africa*. I was able to identify several forest birds that I had photographed in Cameroon when I compared them with the color plates. Many species are illustrated from several geographic forms where these differ in plumage pattern or color, and sexes and age differences also are shown. Color plates of juvenile birds are a special feature. Accompanying notes on field marks are helpful (Blue Swallow [*Hirundo atrocaerulea*] and Wire-tailed Swallow [*H. smithii*] may look short-tailed because the tail streamers are so narrow). The distinctive head shapes of Bar-tailed Lark (*Ammomanes cincturus*; stubby bill, round head) and Desert Lark (*A. deserti*; long bill, sloping profile) are illustrated but the differences are not mentioned in the text. Illustrations of recently-described larks, pipits, and swallows are included. It is also useful to see the seldom-figured birds such as Grey Hypocolius (*Hypocolius ampelinus*), and birds known from only a single specimen (Red Sea Swallow [*Hirundo perdita*], Liberian Greenbul [*Phyllastrephus leucolepis*]). Nearly all species known to have occurred in Africa are shown in the color plates, even the vagrant Bohemian Waxwing (*Bombycilla garrulus*), which was seen there only once, in 1841; however, Citrine Wagtails are not illustrated, although several have been seen in Africa. Line sketches by Ian Willis of postures and nestings are included for a few birds. Compared with Volume III, the maps are easier to read, with bolder outlines and more visible shading for ranges in Volume IV. The maps include migration routes and seasonal changes of range for intra-African migrants as well as Palearctic migrants.

Songs are described with words, often with great success when the words sound like the calls (especially in birds that follow ant swarms), or are phrases that convey an attitude. The descriptions of songs

suggest behavior for someone to watch. Many thrushes and larks are song mimics of other kinds of birds. One thrush (Red-capped Robin-Chat [*Cossypha natalensis*]) mimics Fish Eagle calls, and when one bird does this, all his neighbors use it at once, in contests among males. In another thrush (Capped Wheatear [*Oenanthe pileata*]), the song mimicry is used in courtship. Where earlier field observations attributed a song to the wrong bird (including descriptions in Mackworth-Praed and Grant's *Handbook of African Birds*, and in published tape recordings), these are corrected. Audiospectrograms would be useful, but words are easier for us to remember, and the authors have a knack for the right phrase.

Publication of *The Birds of Africa* is an outstanding event in ornithology. It is an exciting series for everyone interested in African birds. It is hoped that the series will be available for students in Africa as well. To further the interest of birds in Africa, Academic Press has presented volumes to the institutions that hosted recent Pan-African Ornithological Congresses. Volume IV itself had a lot of use during its first year in 1992 at the ICBP guest house at Mt. Kupé, Nyasoso, Cameroon, where many broadbills, cuckooshrikes, bulbuls, and thrushes live along the forest trails. Although the book is too large to carry in the field, the guest house has sturdy tables to support it and the other volumes, and we had a rewarding browse when we returned from the forest to identify the birds we had seen and heard and to find out more about them.

The series is attractive and useful to all ornithologists with an interest in Africa. They should buy it. The series should be in all university libraries, and in museums and conservation agencies with a concern for tropical birds.—ROBERT B. PAYNE, *Museum of Zoology, University of Michigan, Ann Arbor, Michigan 48109, USA.*

The Auk 110(3):666–667, 1993

New World Parrots in Crisis, Solutions from Conservation Biology.—Stephen R. Beissinger and Noel F. R. Snyder (Eds.). 1992. Smithsonian Institution Press, Washington, D.C. xv + 288 pp., 20 text figures. ISBN 1-56098-110-5 (cloth). $35.00. ISBN 1-56098-136-9 (paper). $16.95.—Parrots and their relatives face all of the same pressures for their survival that most tropical birds do, such as habitat loss and fragmentation, etc. Psittacids face an additional pressure that most other birds do not—a specific persecution for the pet trade. In some instances pet-trade harvesting can reach tremendous proportions, causing the extermination of species even when large areas of suitable habitat still exist.

New World Parrots in Crisis is the proceedings of a symposium held at the 1990 AOU meeting at Los Angeles. It represents a timely and useful look at the problems facing psittacids in general, and the New World group in particular. Its 11 chapters, covering most of the issues affecting New World psittacids, are contributed by authorities knowledgeable in the subject. There are chapters on endangered species, scope of trade, parrots as agricultural pests, and many potential conservation options. These include educational programs, reintroduction, sustainable harvesting, and captive breeding.

The global population size is known for practically no endangered or threatened species of any birds (or other organisms, for that matter) except the most rare ones, even in North America or Europe. Even with this lack of information, it is clear that many psittacid species are in trouble. In their chapter on the dimensions of the problem, Nigel Collar and Tony Juniper estimate that 42 of the about 140 species of New World parrots are in some danger of extinction. The causes include over-harvest as well as loss of habitat. As groups, the parrots of the Caribbean islands almost all are threatened, but the blue macaws (*Anodorhynchus* and *Cyanopsitta*) of Brazil are severely threatened too.

Jorgen Thomsen and Theresa Mulliken provide a detailed description of the international trade. In recent years, the scope of the international trade and its horrors and abuses have become known to many conservationists. Still lacking from this volume, as well as anywhere else, is information on the *internal* consumption of parrots as pets in their "range" countries. This is not a trivial problem; for example, rare parrots and macaws are captured in Brazil for sale to wealthy Brazilian collectors. But wealthy collectors are not the only ones with parrots as pets in tropical countries; the birds are popular with people at all levels of society, including subsistence indigenous ones. Critical information on internal trade is needed before any truly effective conservation plans can be made for parrots.

Although most psittacids face over-harvest for the pet trade, some are considered agricultural pests. Conflicts between the birds and agriculturists often occur in areas along the agricultural frontier, where parrots are losing their natural food sources. Even so, as Enrique Bucher points out in his chapter on parrots as agricultural pests, parrot depredation of crops tends to be localized and exaggerated by the farmers.

Much of the book is taken up with ideas, plans, and trials of conservation efforts. Charles Munn shows the value of wild birds for eco-tourism in southeastern Peru. Eco-tourism seems to be potentially valuable for encouraging preservation of habitat and sustainable development in Peru. It has yet to prove itself as a large-scale solution; the problems of habitat loss

and pet-trade harvesting are great, and the number of wealthy eco-tourists is finite.

Beissinger and Bucher present a model for "ranching" of parrots. Ranching involves harvesting from an artificially increased wild population. The populations of many species of parrots seem to be limited by the number of nest cavitites; by putting out nest boxes, the proportion of the population breeding can be increased, and the increase harvested. Although the model offers hope for providing an incentive for the natives to preserve natural habitats while at the same time providing income and protecting the birds, so far no pilot projects have demonstrated that it is an economically or ecologically viable solution, or that the model will work on the large species of parrots most sought after in the pet trade.

There is some hope. Paul Butler describes his largely successful efforts to save endemic Caribbean amazons through educational programs. Scott Derrickson and Snyder discuss how captive breeding may help maintain some rare species, but point out its limitations as well: the cost of maintaining the birds; the difficulty of maintaining the genetic pool; and the difficulty of avoiding detrimental genetic changes involved with domestication.

Nonetheless, captive breeding does have a role in conservation, in that captive breeding of pets may take some of the pressure off wild birds. As Susan Clubb rightly points out, it will still be necessary to overcome much mistrust between conservationists and aviculturists. In fact, there is not necessarily a dichotomy between the two—many aviculturists also are conservationists. Aviculturists have much to offer "pure" ornithology, but their knowledge and contributions are often neglected. The book helps towards alleviating this, and bringing field and farm bird-workers together.

Reintroduction of birds into habitat from which they had been extirpated also shows promise. Jim Wiley and his co-authors discuss the issues involved and describe the efforts at re-establishment of the Hispaniolan Amazon (*Amazona ventralis*) and Thick-billed Parrot (*Rhynchopsitta pachyrhyncha*). Efforts at reintroduction are just beginning, and much is still to be learned.

The second-to-last section of the book covers the roundtable discussion held at the end of the symposium. As would be expected from an unstructured interchange, this section of the book is also fairly unstructured. Much of the discussion centered around trade and trade bans, and their effect on smuggling.

Since the roundtable, and even since publication of this book, the United States has enacted the Wild Bird Conservation Act of 1992. The law is designed to greatly restrict the importation of birds for the pet trade (dead scientific specimens are not covered by the act [Section 104-2-B-1]). The act does not make this book any less important or useful. Many countries other than the United States continue to import wild-caught birds, although the European Community also has import restrictions, and many of the issues addressed in the book are important with or without import restrictions. The final section of the book summarizes and synthesizes knowledge about parrot conservation presented in the symposium, and provides a list of priorities and recommendations.

Beissinger and Snyder's book is well done and nicely presented; the hardcover and paperback editions I have seen are well produced. A Spanish-language abstract is provided for each chapter. This is most welcome, and makes the book far more useful to many of the people who have direct authority for managing the New World's wild parrots. The "Literature Cited" section is provided at the end of each chapter rather than a single section at the end of the book, a fact I appreciate, although editors may claim duplication of many citations. An index to the whole book is provided at the end.

For anyone interested in New World parrot conservation, *New World Parrots in Crisis* is an important reference. It provides a wealth of information for anyone with a beginning interest in parrot conservation, while at the same time providing an important resource for researchers in the field. The book also is useful not only for those studying parrots elsewhere in the world, but also for anyone interested in tropical conservation. The sections on eco-tourism, sustainable use, and reintroductions should be of interest to those interested in conservation in general, and biologists studying many other nonbird organisms. I heartily recommend this book as an addition to the bookshelf of all tropical conservation biologists.—DAVID A. WIEDENFELD, *Museum of Natural Science, 119 Foster Hall, Louisiana State University, Baton Rouge, Louisiana 70803, USA.*

The Auk 110(3):667–668, 1993

Florida Bird Species, An Annotated List.—William B. Robertson, Jr., and Glen E. Woolfenden. 1992. Florida Ornithological Society, Special Publication No. 6, Gainesville, Florida. ix + 260 pages, 1 figure. Cloth, $22.95, paper $17.95, plus $2.00 per book shipping (Florida residents add 7% sales tax), available from Editor of Special Publications, Florida Ornithological Society, Archbold Biological Station, Venus, Florida 33960.—The production in the 1990s of a concise and accurate summary of the records of occurrence of the birds of a region requires more than scientific expertise in the production of the manuscript. Years of prior cooperative effort between the authors and field naturalists, critical record keeping, and examinations of specimens in collections are necessary. Fortunately

for Florida, all these elements have come together in the production of *Florida Bird Species, An Annotated List*, by William B. Robertson, Jr., and Glen E. Woolfenden, which was recently published by the Florida Ornithological Society. These two authors plus two others, Oscar Owre and Henry Stevenson, recently deceased, to whom the book is dedicated, have worked closely with the Florida Ornithological Society and birders in the state for many years. The book uses the conventional format of species accounts to summarize the expected seasonal occurrences of birds and their general abundance classes in different parts of the state, giving references to published records and the locations of specimens in collections. Robertson and Woolfenden insist that the state list be one of species with verified records and that verification requires documentation (in the form of specimens, photographs, or voice recordings) in an archived collection that is available for others to evaluate. Much of the information about the distribution of birds in the state is a synthesis of field notes and reports published in *American Birds*, the *Florida Naturalist* and the *Florida Field Naturalist*.

The list of Verified Species includes 461 birds, 100 more than Howell's (1932) *Florida Bird Life*. Of these, 11 are exotic species that have had self-sustaining, wild populations breeding in Florida for at least the last 10 years. The authors personally examined these records and arranged for the Tall Timbers Research Station near Tallahassee to be the official repository of photographs documenting exceptional records not otherwise properly archived. A second list, relegated to Appendix A, contains 75 Unverified Stragglers, some of which are mentioned in the literature or even based on specimens, but were judged to be mislabeled or natural vagrants or possibly birds that had escaped from cages and, thus, were not eligible for the first list. The status of 16 Probably Unestablished Exotics and 119 Unestablished Exotics is given in Appendices B and C. The rationale is that such information needs to be recorded so that it can be reevaluated in the light of new evidence in the future.

One particularly useful aspect of this book is its estimation of recent general changes in the distribution and abundances of particular species since the late 1960s. Sixty-five species are judged to have expanded their breeding ranges in the state (e.g. Brown-headed Cowbird, Blue Grosbeak, Indigo Bunting), whereas about 30 have had receding breeding ranges (e.g. White Ibis, Wood Stork, American Kestrel, several species associated with pineland, prairie, and scrub habitats). Some established exotics have been moving northward in the state (e.g. Eurasian Collared Dove). Of transient species, those that neither breed nor spend the winter in the state, about 30 are more numerous than previously, whereas 20 are less numerous. Although some waterbirds have declined seriously, many have been attracted to new aquatic habitats in the interior, such as flooded farmlands, phosphate pits, and sewage-treatment plants. Some of these changes are not well understood. Why, for instance, did the large populations of Budgerigars and Canary-winged Parakeets decline sharply in the 1980s as their suburban habitats expanded?

The availability of this fine book is a credit to the authors and to the large cadre of outstanding birders in Florida. It will elevate the general understanding of the dynamics of bird populations in Florida to a new level, and it will permit new investigations to be planned on the basis of the best current knowledge.—FRANCES C. JAMES, *Department of Biological Science, Florida State University, Tallahassee, Florida 32306, USA.*

The Auk 110(3):668–669, 1993

Taxonomy and Identification of Steamer-ducks (Anatidae: *Tachyeres*).—Bradley C. Livezey and Philip S. Humphrey. 1992. University of Kansas Museum of Natural History Monograph No. 8, Lawrence, Kansas. ii + 125 pp., 1 color plate, 29 text figures. ISBN 0-89338-042-3. $14.95.—The authors of this monograph set out to fulfill six objectives: (1) to present a history of the study of the genus *Tachyeres*, (2) to provide generic and specific synonymies and species accounts, (3) to summarize the current understanding of molts and plumages in the genus, (4) to present diagnostic characters and identification keys for the species in the genus, (5) to summarize information on field identification and aviculture of steamer-ducks, and (6) to present a bibliography of relevant literature. They have amply succeeded in these objectives, but I believe that they have accomplished something more significant still.

In the past two or three decades, ornithology and indeed systematics in general have gradually left behind the idea of monographic treatments of taxonomic groups. The first part of this century saw the publication of numerous important monographs of groups of birds, for example, the treatments of the genera *Junco*, *Aphelocoma*, and *Campylorhynchus*. Since about 1970, however, very few monographic treatments have been published, the biggest exceptions being the treatments of the *Empidonax* flycatchers and the *Polioptila* gnatcatchers.

Have detailed studies of particular taxa of birds ceased, or have ornithologists simply stopped publishing monographic treatments? I think that it is clear that detailed studies are still being carried out by many ornithologists, many times in much greater detail and involving many more character sets than was possible previously. Ornithologists simply are

not synthesizing their knowledge in long, detailed monographic form as they did previously. Rather, a large-scale research project is often split up into small, "sexy" papers that are sent to journals such as *Science, Nature, Evolution,* and the *Auk,* among others. This change certainly results at least in part from different priorities on the part of universities and museums for promotion and tenure, which seem to focus heavily on the "big-name" journals. An additional factor, however, is that the monograph series that traditionally served as the outlet for such publications (e.g. *American Museum Novitates, Fieldiana, University of California Publications in Zoology*) are becoming increasingly restricted in terms of how many issues are published annually, or who may publish.

The above is a wayward manner of congratulating Livezey and Humphrey on publishing a monographic treatment of the steamer-ducks. Their presentation of synonymies and identification keys will clarify greatly the situation in this confusing genus of ducks. As they state in the Introduction, the existence of one single summary of species limits, taxonomy, key characters, and the existing literature for accurate identification will greatly facilitate future study of the steamer-ducks.

My criticisms of the book are few. At times, the authors concentrate on summarizing early understandings of the situation in the group (e.g. of molt and plumage sequences), especially the misunderstandings of prior workers; this space might better have been used to summarize their results and insights into the evolutionary history and the history of character evolution in the group that they have published elsewhere. The Spanish in the "Resumen" is a bit choppy and carries a few typographical errors (which are all but absent elsewhere in the book)—perhaps most unfortunate is the abandonment of the true common name where the birds are found ("Quetru" or some variation thereof) in favor of a transliteration of the English vernacular name ("Pato Vapor"), which has no connection with steamboats as it does in English. These criticisms, of course, are trivial in comparison with the importance of the work as a whole.

In sum, this book will prove to be extremely useful for ornithologists, for identification of existing museum specimens, to facilitate field identification of steamer-ducks, and to provide a basis for detailed study of the group. It is to be hoped that monographic treatment such as this will also serve as an example for ornithologists studying other groups: publication of "the whole picture" regarding a particular group leads to much more complete communication of the author's ideas.—A TOWNSEND PETERSON, *Center for Evolutionary and Environmental Biology, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, Illinois 60605, USA.*

The Auk 110(3):669–670, 1993

Saving American Birds: T. Gilbert Pearson and the Founding of the Audubon Movement.—Oliver H. Orr, Jr. 1992. University Press of Florida, Gainesville, Florida. xii + 296 pp., 15 black-and-white photographs, notes, extensive endnotes, bibliography, index. ISBN 0-8130-1129-9, cloth, $34.95.—This is a detailed, well-referenced chronology of T. Gilbert Pearson's (1873–1943) involvement in the beginnings of the bird-protection movement. The first half of Pearson's life is described, and the book terminates (abruptly) halfway through his career. Pearson was a poor Florida farm boy with a consuming passion for birds and a determined resolve to rise above his humble Quaker origins. He attended college in North Carolina and adopted the state as his own. After progressing as a faculty member he became intensely devoted to the popular and political battles in the bird-protection movement. Pearson's enthusiastic public speaking and gift for fund-raising led to a career as a lobbyist/organizer and administrator for causes of the numerous Audubon Societies, first locally, then nationally. Pearson worked closely with and often as the agent of William Dutcher, a main motivating and organizing figure in the bird-protection movement.

This book has little to do with the science of ornithology. However, anyone interested in the political and administrative actions of the early bird-protection movement will discover much here. I found the complex history more readable than I anticipated. It describes multiple, loosely organized volunteer organizations waging a popular and legislative war against professional plume harvesters and market hunters. If I had an interest in tales of legislative maneuvering, my enthusiasm would be high. Readers of this book will encounter a vivid picture of popular bird interest early in this century. This period is characterized by anthropomorphic excitement about "cheerful songsters," ceaseless trumpeting of the economic value of birds as our defense against a world of pests, and a quasireligious crusade against wholesale and often idle slaughter of wildlife. The beginning of the conservation movement in North America came with the dawning of public appreciation that natural resources were not limitless. It demonstrated that publicly supported legislative and enforcement activities could preserve natural resources that clearly were threatened with extinction. The conflicts were intense and often dangerous. I was surprised to learn that at least three Audubon wardens were murdered in the line of duty, and many had their lives threatened.

I am glad to have learned of Mr. Pearson, of whom I confess I'd never heard, but come away disappointed with this book overall. I was disappointed that it did not include a broader discussion of people and actions related to the bird-preservation movement and was

annoyed by the sudden termination of the work after Pearson moved to New York in 1912. In 1912 Pearson was, as the fly leaf of the book tells us, "the first full-time leader of the National Association of Audubon Societies. He continued his work with the national organization until 1934, helping to build the association into the strong international force for conservation that it is today." None of his work from 1912 until his death in 1943 is discussed. After the exhaustive detail of the first part of his life, I expected to hear at least something of the second half of his career. He published multiple works during his last 22 years of professional activity including an edited series—*Portraits and Habits of Our Birds*—which contains works by Forbush, Dutcher, Frank Chapman, Witmer Stone, C. H. Townsend, F. H. Allen, A. C. Bent, Edward W. Nelson, George Bird Grinnell, and Joseph Grinnell. This list reads like a Who's Who of North American Ornithology of the period, and I'd like to know more about Pearson's association with these people. *Saving American Birds* makes it clear that William Dutcher, a New York insurance agent, was a force of great importance in the AOU, the Audubon Societies, Mr. Pearson's life, and the conservation movement in general. I often wished that I was reading Mr. Dutcher's biography rather than Mr. Pearson's. Many of the questions raised in my reading were answered in *The Audubon Ark: A History of the National Audubon Society* (F. J. Graham and C. W. Buchheister. 1990. Alfred A. Knopf).

While preparing this review, I found the history of the conservation movement somewhat difficult to approach. The works I encountered all seemed to have a particular bias, variously from the viewpoint of foresters, sportsmen, ornithologists, ichthyologists, or administrators. My reading suggests that the first popular arguments for preservation came from sportsmen, starting in the 1870s. Reiger's history of this—*American Sportsmen and the Origins of Conservation* (J. F. Reiger. 1975. Winchester Press)—is useful and interesting, but I strongly agree with Banks' fine review (1976. Auk 93:864), suggesting that the "sportsman" angle is overemphasized.

All writers agree that the main history of avian conservation began in 1884 when William Brewster instigated the organization of an AOU Committee on the Protection of North American Birds. In 1886 this committee issued a bulletin containing a proposal for a wildlife protection law. This law is referred to as the "Model Law," and many sources refer to it as one of the most important documents in the history of conservation. Its proposals for legal protection of wildlife produced an outcry amoung the public and professionals alike, but it guided most subsequent legislation. The mid-1880s was a time of rising public sentiment for bird protection. These protective enthusiasms were aided by the effects of the introduced House Sparrow and its easily seen displacement of native birds. The founding of numerous (and generally short-lived) "Audubon" Societies was a popular expression of this protective spirit.

The founder of the first Audubon Society was a remarkable individual, George Bird Grinnell (1849-1938). Grinnell appears several times in *Saving American Birds*; details of his life can be found in *The Passing of the Great West: Selected Papers of George Bird Grinnell* (J. F. Reiger. 1972. Charles Scribner's Sons). He grew up on Audubon's estate, played with Audubon's children, and was schooled and inspired by Audubon's widow. He went on to be a student of O. C. Marsh (receiving a Ph.D. in Osteology), an AOU member, a member of the Committee on the Protection of North American Birds, the editor of a sportsman's magazine, an expert on Plains Indians and the West, and a close advisor to Theodore Roosevelt. In the 11 February 1886 issue of his magazine, *Forest and Stream*, Grinnell published an editorial proposing the first Audubon Society. Despite enormous popular response, this initial society lasted only until December 1888. Reiger maintains that "when [Grinnell] founded the first Audubon Society, he named it as much for [Audubon's widow] . . . as for her husband" (Reiger 1972: 22)—although Reiger's basis for this statement is not clear. Grinnell's middle name, Bird, is singularly apt for this unusual individual. "Bird" seems to be a family name as Grinnell's father (George Blake Grinnell) had a cousin named George Bird (*The National Cyclopaedia of American Biography*. 1893. James T. White & Co.). George Bird Grinnell was a distant cousin of the ornithologist Joseph Grinnell (1877-1939); their most recent common ancestor was born in the late 1600s (Stephen G. Hermann pers. comm.).

The book reviewed here does not strike me as containing particularly useful lessons for those struggling with current issues of preservation and protection. The period at the turn of the century had intense popular enthusiasm for conservation which was opposed by relatively idle, wasteful, and wanton destruction; this seems a contrast to the overpopulation and survival challenges of our day. The detail of Mr. Pearson's early life makes this book appropriate for reference libraries and for those people with a passion for biographies associated with conservation history. For those interested in a history of the Audubon movement in particular, and with some interest in the history of conservation generally, I recommend the other book mentioned here.—ALAN P. PETERSON, *P.O.B. 1999, Walla Walla, Washington 99362, USA.*

The Auk 110(3):670-671, 1993

Russian Journal of Ornithology.—Alexander V. Bardin, Editor-in-Chief. Volume 1, issue 1, 1992. ISSN

0869-4362. Editorial Office: Post Box 453, 199034 St. Petersburg, Russia. Subscription price £ 19 (UK), £ 22 (Europe), £ 27 (rest of world), to be sent to E. Potapov, % EGI, Dept. Zoology, South Parks Road, Oxford OX1 3PS, United Kingdom.—The number of ornithological journals of the world exceeds 200 and is rapidly increasing. The new ones are duly reported in the issues of Recent Ornithological Literature. There was, however, a country, or rather an empire, the USSR that during the last half century did not have a periodical entirely devoted to bird studies. The ornithological community, therefore, especially welcomes the present initiative.

It is hard to judge a new journal from its first issue, but this one already reveals a number of special features. The neat silhouette of a Barn Swallow on the cover is perhaps a harbinger, allegorically speaking, of the appearance of the first swallow shortly after the spring thaw in Russia's long winter. The bright blue cover reminds those who have travelled in Russia of the typical blue color in which the country farmhouses are painted there. Upon opening, we find that this is a "sponsored" undertaking (i.e. there is neither government, nor an association standing behind it, but private enterprise). The Alga Publishers and the Alga Foundation of St. Petersburg (whose president and director wrote a welcoming message) are responsible for support.

Editor Bardin introduces the journal emphasizing the importance and impact of ornithological research in many branches of the biological sciences. He hopes that through a regularly appearing journal specialists of these disciplines will have direct access to the results of studies in avian biology. He also points out the great potential in Russia of producing a large variety of ornithological publications. Hopefully, even those working in the faraway peripheries of the large commonwealth will have an opportunity for quickly communicating their results in a regularly appearing journal.

What we in North America, and generally in the western world, take for granted—free speech in science and elsewhere—needs to be pronounced for the potential contributors and readers of the *Russian Journal of Ornithology*. Thus, Editor Bardin succintly summarizes these as freedom of expression of scientific thought, as giving room for plurality of scientific opinion, and thereby creating a climate for wide, healthy scientific polemics as well.

For the non-Russian reader, of primary importance is his pronouncement that the journal would overcome the language barrier with English summaries and legends to graphs and illustrations of the articles in Russian. Contributions written in English with Russian summaries also are welcomed by the editor.

The major articles, eight of them in the first issue, have English titles and abstracts. Moreover, the same applies to the shorter communications, a laudable feature not always followed in several other ornithological journals. It is understandable that the book reviews are only in Russian; however, the "Chronicle" column (also only in Russian), this time accounting for the tenth All-Union Ornithological Conference in 1991, surely would interest many readers outside the Russian language area.

The subjects of the articles are as varied as in any other international journal of avian biology. These will be reviewed in the forthcoming issues of Recent Ornithological Literature. As a preview, we read here about new Mesozoic and Paleogene birds, a new theory about the origin of birds (at high altitudes!?), circadian rhythms, wing morphology and dimorphism, parasites as "biological tags" of certain passerine populations, commensalism of birds and squirrels, breeding success in relation to nest site, and sexing tits using an index involving wing and tail measurements. These investigations were done by authors from: St. Petersburg, Petrozavodsk and Novosibirsk in Russia; from Kazakhstan, the Ukraine; and from Lithuania. Contributions thus are from a wide geographic selection of eastern Europe and Asia.

I welcome this journal and wish it and its sponsoring enterprises "goodspeed" on the certainly difficult road toward permanency.—MIKLOS D. F. UDVARDY, *California State University, Sacramento, Sacramento, California 95819, USA.*

The Auk 110(3):671-672, 1993

Egg Incubation: Its Effects on Embryonic Development in Birds and Reptiles.—D. Charles Deeming and Mark W. J. Ferguson. 1991. Cambridge University Press, Cambridge, England. xii + 448 pp., numerous text figures. ISBN 0-521-391071-0. $195.—This volume contains 27 review papers that were originally presented as part of an international symposium at the University of Manchester in 1989. The goal of the book is to compare and contrast egg structure, egg function, and embryonic development in reptiles and birds. Although this approach led to some interesting new syntheses and ideas in some chapters, the coverage is not balanced. The lack of balance exists because the study of reptilian eggs has attracted little attention until recently, whereas research on avian eggs is highly advanced due to intensive research both from the poultry industry and from physiologists interested in gas exchange and incubation physiology. In many cases, no data on reptilian eggs existed for comparison with birds. By highlighting the voids in knowledge of reptilian eggs, this book should stimulate additional research.

Coverage is divided into three parts: (1) the chemical composition and structure of eggs; (2) embryonic

requirements for O_2, CO_2, water exchange, temperature, and turning; and (3) hypotheses that can now be tested by new techniques for manipulating embryos. Ornithologists consulting this book for an introduction to avian eggs may be disappointed that many chapters on avian eggs give only passing mention to species other than domestic fowl and perhaps ducks. Notable exceptions are the chapters on shell structure by Ronald Board, metabolism and energetics of avian embryos by Carol Vleck, and David Booth's comparison of reptilian eggs with those of megapode birds. In most cases, the emphasis on chicken data stems from lack of comparative data from wild species, but in other instances from the research bias of the author. Similarly, ornithologists consulting the book for ideas about evolution of avian eggs in diverse environments might also find the book disappointing.

The most novel chapters for ornithologists might prove to be the two chapters by Bruce Dunn, Rocky Tuan, and their coworkers on experiments using embryos removed from the shell early in incubation and incubated in shell-less culture. Various experiments on calcium transport, skeletal development, and cardiovascular development are now possible using shell-less cultures as a technique. Sadly, the paper given at the conference on transgenic eggs was not published, or this chapter, too, might have highlighted the possibilities which now exist for research on gene expression and control.

This book should be in every academic library for use by ornithologists, herpetologists, developmental biologists, and poultry scientists. However, the exorbitant cost of the book will make it an undesirable addition to the home libraries of all but the most enthusiastic oologists.—CYNTHIA CAREY, *Department of EPO Biology, University of Colorado, Boulder, Colorado 80309, USA.*

The Auk 110(3):672–674, 1993

Shorebird Management Manual.—Douglas L. Helmers. 1992. Western Hemisphere Shorebird Reserve Network, Manomet, Massachusetts. 58 pp. Available from Wetlands for the Americas, P.O. Box 1770, Manomet, Massachusetts 02345. $10.00.—On first impression, the *Shorebird Management Manual* appears to be a fresh breeze—an attempt to call attention to the fact that nongame animals too need the attention of land managers. In his forward, Gonzalo Castro states that the primary aim is "to provide wildlife managers with concise advice on how to manage habitats to benefit shorebirds." It is further stated that many of the techniques described are new, not previously occurring in the technical literature, and that the manual is preliminary in nature and will require further refinement. Although this is true, we believe that a much stronger commitment to accuracy and detail was both possible and critical prior to the manual's publication, especially given the potential impact this book may have on the way North American wetlands are managed (it is already being used as the basis for a series of courses for wetland managers).

The manual is developed on the theme that with just a few minor modifications of current waterfowl management parctices, which will not hurt waterfowl goals, we can manage for both shorebirds and waterfowl. This premise is, at a minimum, an oversimplification, and the testing of its validity is an important goal for future research. It is true that, given enough ponds, a manager can manage for both shorebirds and waterfowl in the same year. It is also true that varying drawdown or fill schedules may extend management to enhance shorebird foraging opportunities. It is unlikely, however, that management changes to benefit one taxonomic group (e.g. shorebirds) will have no impact on others (e.g. diving ducks), and setting priorities will always be necessary. Unfortunately, there is little consideration of how to address the issue of how these compromises should be made.

The manual has five chapters, the best parts of which are the general discussions on shorebird biology. These are mostly well written and concise. The first chapter provides a brief account of shorebird ecology, and a superficial overview of threats faced by shorebird populations. The other four address the interior, Atlantic, Gulf of Mexico and Pacific regions. Forested habitats, the subarctic, arctic and Hawaii are essentially ignored. The decision to organize the manual by region causes extensive redundancy (e.g. the need for staggered pond drawdowns is described four times). Furthermore, the geographically based chapters lack biological logic. For example, the "interior" region extends from western Maryland to central Oregon, including everything from oligotrophic Lake Superior to the Great Salt Lake, to large clusters of tiny prairie potholes, and ephemeral playa lakes. The Atlantic, Gulf, and Pacific chapters, with minor exceptions (e.g. the Gulf rice areas), concentrate on marine environments. The last of these is especially weak with little mention of such important areas as the Central Valley of California or the chain of lakes to the east of the Sierra Nevadas. Organization by either habitat (e.g. coastal beaches, estuaries, freshwater marshes) or life stage (e.g. breeding adults, chicks, migrating adults, wintering adults) would have made it easier to find information pertinent to a particular problem.

The manual makes many recommendations for, and statements about, the effects of various management methods and the needs of particular species. Unfortunately, these are rarely supported (no citations or

data are given in the text), allowing the reader no opportunity to evaluate them. For example, in the Atlantic chapter minimum buffer zones of 35 m and 75 m are recommended, respectively, for nesting Snowy Plovers and American Oystercatchers. There is no information, however, on how these recommendations were derived. Similarly, the interior chapter reports home range sizes of 44 ha for Willets and 90 ha for Marbled Godwits in North Dakota. These data were collected in one relatively small area. Considering that territory sizes can vary greatly as a function of habitat conditions and breeder density (e.g. Wiens et al. 1985, Grahn 1990), this information may mislead managers working under different conditions into believing that a certain area of land will support a prescribed population size.

Although no citations are included in the text, each chapter does conclude with a list of suggested readings. These lists, however, are short and often fail to include the best examples of particular topics. It is disappointing that the author does not attempt to review the vast literature on topics such as predator control. A cohesive account of the many components of this complex issue (e.g. exclosures, animal removal, island design, taste aversion) would have been a true service. Instead, there is cursory mention of the results of a very few studies scattered throughout the text. For example, it is stated in the interior chapter that the use of predator barriers can enhance Piping Plover recruitment (p. 25). Although several studies have examined and compared various types of exclosures in a range of species, only one is mentioned in the suggested readings, and that study did not measure recruitment. In addition to a more extensive review of the various management techniques that have been employed and tested, it would have been useful to have had some discussion of methods used to evaluate management techniques. In particular, there is a need to supplement habitat-use data with direct measures of how well off an individual will be in a particular managed habitat (e.g. nesting success, feeding rates, food availability, body condition; Van Horne 1983). The manual also would have been improved if it had addressed critical topics such as population biology and, especially, landscape ecology as they apply to wildlife management.

Coverage of management of breeding shorebirds is so superficial that it is often misleading. For example, it is stated that "Shorebirds return each year to historical breeding sites to nest and rear their young" (p. 4). Although some species are highly philopatric (e.g. Willets; Howe 1982), many are highly variable depending upon landscape mosaic and individual experience (e.g. Piping Plover; Haig and Oring 1988), and others have essentially no site fidelity (e.g. Red and Wilson's phalaropes; Colwell et al. 1988). In other instances the manual is simply incorrect; for example, it is stated that "In most species, the adults leave breeding areas before juveniles have fledged" (p. 4). In many species one member of a pair may leave before the young are fledged; in none is it normal for both parents to depart this soon. A further demonstration of how errors in the manual destroy reader confidence is given by table 2.2, which summarizes nest sites, substrate, wetland type, vegetation height and density and what is called nesting behavior (but should be called nest dispersion) of 13 breeding species. Of the 78 summary statements, we consider 19 in error. It is true that about one-half of these might be considered a matter of opinion or result from the lack of definitions (e.g. although the manual considers American Avocets to be semicolonial, we believe that they also are often colonial, and occasionally solitary). The remainder of these statements, however, are simply wrong (e.g. Piping Plovers do not just frequent alkaline/saline wetlands, but also freshwater sites such as the Great Lakes, the big lakes of Minnesota and Manitoba, and most of the great midwestern rivers; Haig 1992).

Finally, we believe that the most efficient way to conduct management requires that one (a) determine which factors limit whatever component of biodiversity one is managing for, and (b) use controlled experiments, in which factors likely to influence an organism's fitness are measured, to assess different management regimes. Furthermore, we do not believe that a uniform prescription for managing wetlands is justified. Rather, priorities should be set in accord with landscape-level planning that recognizes both the potential contributions of each constituent site to maintenance of the earth's biodiversity and the constraints within which management personnel must operate. Although these issues are difficult to address, we feel that the manual should have, at a minimum, recognized their importance.

This manual may help broaden the vision and goals of wetland managers. If this is accomplished, a needed and valuable service will have been provided. Unfortunately, the combination of omissions and errors may negate benefits. If these problems can be rectified in future editions, however, the *Shorebird Management Manual* will constitute a useful addition to the library of anyone interested in wetland management.

Literature Cited

Colwell, M. A., J. D. Reynolds, C. L. Gratto, D. Schamel, and D. M. Tracy. 1988. Phalarope philopatry. Pages 585–593 *in* Acta XIX Congressus Internationalis Ornithologici (H. Ouellet, Ed.). Ottawa, Ontario, 1986. National Museum of Natural Science, Ottawa.

Grahn, M. 1990. Seasonal changes in ranging behaviour and territoriality in the European Jay *Garrulus g. glandarius.* Ornis Scand. 21:195–201.

Haig, S. M. 1992. Piping Plover. Pages 1–18 *in* The birds of North America, No. 2 (A. Poole, P. Stet-

tenheim, and F. Gill, Eds.). American Ornithologists' Union, Washington, D.C., and Academy of Natural Sciences, Philadelphia.

HAIG, S. M., AND L. W. ORING. 1988. Mate, site, and territory fidelity in Piping Plovers. Auk 105:268–277.

HOWE, M. A. 1982. Social organization in a nesting population of eastern Willets (*Catoptrophorus semipalmatus*). Auk 99:88–102.

VAN HORNE, B. 1983. Density as a misleading indicator of habitat quality. J. Wildl. Manage. 47: 893–901.

WIENS, J. A., J. T. ROTENBERRY, AND B. VAN HORNE. 1985. Territory size variations in shrubsteppe birds. Auk 102:500–505.

LEWIS W. ORING AND CHRIS S. ELPHICK, *Ecology, Evolution and Conservation Biology/186, 1000 Valley Road, University of Nevada, Reno, Reno, Nevada 89512, USA.*

The Auk 110(3):674, 1993

My Way to Ornithology.—Olin Sewall Pettingill, Jr., foreword by Gary D. Schnell. 1992. University of Oklahoma Press, Norman, Oklahoma. xiv + 245 pp., 28 text photographs, index. ISBN 0-8061-2409-1. $24.95.—Sewall Pettingill has very likely taught more North Americans about ornithology than anyone else. During 17 years at Carleton College in Minnesota and 36 summers at the University of Michigan Biological Station, he taught over a thousand students, dozens of whom went on to become ornithologists. There is no telling how many more people he reached through his widely-used lab manual/text, his popular and scientific writings, the Home Study Course that he pioneered at Cornell, and his thousands of film lectures. In several innovative ways, he has raised the enjoyment and knowledge of birds by amateurs and would-be professionals.

This autobiography tells the prologue to that career. As the title accurately says, the book relates how Sewall became an ornithologist, not what he did once he achieved that status. Those accomplishments are sketched by Gary Schnell in the foreword. Sewall takes us from his early years in Maine and Massachusetts, through undergraduate years at Bowdoin College and doctoral work at Cornell, to the verge of his first real job, at Carleton. Along the way are mountain climbs in New Hampshire and Maine, a visit to the last Heath Hens on Martha's Vinyard, trips to study and photograph birds on Maine coastal islands, and the expedition with J. B. Semple and George Sutton to James Bay in quest of the nest of Harris' Sparrow. But the tale is not all about birds. During high school and college, Sewall also devoted himself to working on the school paper, acting in and attending shows, and social activities. Eleanor Rice enters the story when they are both in eighth grade and soon becomes integral to it.

Autobiographies, I suspect, are written for the author's sake as much as the reader's. They are a means of recalling and validating what one did with one's life. Supported by daily logs and an extraordinary memory, Sewall has recounted a wealth of details, as if talking his way through a family album. Sometimes there is more than an outsider may want to know, but more often the account is colorful and fascinating. Unselfconsciously, Sewall tells us what he did and how he felt about it, without attempting any deep analysis. He gives plenty of attention to the people around him—his family, Eleanor, friends, and a few influential ornithologists, chiefly Alfred Gross, Arthur Allen and George Sutton. National and world events are scarcely mentioned, however, perhaps reflecting his scope at the time. The story is strongly personal, without much context.

Former students of Sewall's will enjoy this disclosure of the not-so-studious young man behind the demanding teacher they knew. Others will probably be more interested in his glimpses of ornithology in this country during the late '20s and early '30s. Ornithologists who did not know those days will gain an appreciation of how their profession has changed, for better or worse. Imagine (or remember) a time when: there were no comparative field guides for identification; teaching relied on a collection of study skins; collecting and preparing specimens was a standard practice; research was largely on taxonomy, distribution, migration, food habits, and breeding habits; field recording of sounds was just beginning; lantern slides were colored by hand; and papers at AOU meetings were allowed 20 minutes! Sewall Pettingill trained in that setting and we may be glad that he has described it so vividly.—PETER STETTENHEIM, *#64-255, Meriden Rd., Lebanon, New Hampshire 03766, USA.*