



EDITED BY ROBERT M. ZINK

*The following critiques express the opinions of the individual evaluators regarding the strengths, weaknesses, and value of the books they review. As such, the appraisals are subjective assessments and do not necessarily reflect the opinions of the editors or any official policy of the American Ornithologists' Union.*

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**Sexual Selection and the Barn Swallow.**—Anders P. Møller. 1994. Oxford University Press, Oxford. x + 365 pp., 115 text figures. ISBN 0-19-854029-9. \$42.50 (cloth), \$24.95 (paper).—Although many studies of sexual selection have focused on species that are highly polygynous or have unusual plumage or ornamentation, Møller's studies of Barn Swallows (*Hirundo rustica*) take the opposite approach. Barn Swallows are socially monogamous and largely monomorphic. The main goal of Møller's compilation of 10 years of field observation and experimentation is to demonstrate sexual selection in a "typical" bird—a monogamous passerine.

Møller focuses on the function of the elongated outer tail feathers of Barn Swallows, which show slight sexual dimorphism—tails of males are slightly longer than those of females. He finds tail length to be related to differential mating success, the typical mechanism for sexual selection. In addition, mates of long-tailed males invested more in parental care, and offspring of long-tailed males suffered lower rates of infanticide. He proposes that sexual selection be defined in terms of the relationship of a characteristic to a variety of aspects related to reproductive success, rather than just mating success. Whereas this definition is somewhat controversial—others have argued that sexual selection should be defined strictly in terms of mating success—Møller's results suggest that the relation of traits to mating success cannot be understood without evaluation of these other aspects of reproduction. By considering the effects of tail length on a diversity of factors related to reproductive success, Møller has developed the most complete study of the action of sexual selection on an avian population that I know of.

Before describing his results, Møller comprehensively reviews the many existing models of sexual selection. This review covers more models than he subsequently tests, including models likely to apply only to polygynous species with no male parental care as well as those that are more applicable to the mo-

nogamous Barn Swallows. Because he explains differences in assumptions and predictions of many different models of "handicap," "good genes," and "runaway" sexual selection, this chapter is recommended for anyone desiring a largely nonmathematical introduction to the complexity of sexual-selection models.

Møller gives a general description of Barn Swallows and of his study methods. He then evaluates the components of selection on Barn Swallow tail length. He has studied associations between tail length and an impressive range of factors affecting reproductive success: whether or not males obtain mates, the timing of mate acquisition, extrapair copulations (identified both behaviorally and through DNA fingerprinting), female quality, parental investment by males and by females, and levels of infanticide. Interestingly, most of these factors were correlated with tail length. His tail-length-manipulation studies demonstrated the effect of tail length on time to mate acquisition, extrapair copulations, quality of mates, and parental investment of mates.

I found these demonstrations of sexual selection to be the most interesting part of the book. Not only do the results demonstrate the complexity of sexual selection, they also provide an excellent example of how field experimentation and observations can be combined to study a question in depth. For example, by conducting tail-length manipulations after, as well as before, pairing occurred, Møller demonstrated the relationship of tail length to male and female parental care, as well as to mate selection. Møller's studies provide an excellent model for anyone studying sexual selection, and to some extent other areas of behavioral ecology, showing the kinds of information obtainable through well-planned experimental manipulations, and the range of factors that should be studied with regard to sexual selection.

Much of the rest of the book elaborates on the causes and consequences of the selection on Barn Swallow tail length. He considers in detail the ben-

efits of mate choice, causes of variation in tail length—including an interesting discussion of symmetry as well as absolute tail length—arrival time, unmated males, effects of parasites on tail-length evolution, parental care, and sperm competition. His main focus is on the “handicap” models of sexual selection—that is, models that propose that male ornaments indicate some aspect of male quality, such as parental care or parasite load. He finds that long-tailed males show less parental care, but have fewer parasites. Finally, he considers some additional areas related to sexual selection: sexual dimorphism in size and tail length, and the function of the elongated tails of females; and geographic variation in size and tail length. In considering dimorphism, he finds that tail length is subject to sexual selection in females, as well as males, but suggests that long-tailed females, unlike long-tailed males, provide high levels of parental care. He concludes with a synthesis of the role of sexual selection in the life of the Barn Swallow.

Although most of Møller’s points are well supported by experiment and observation, he sometimes draws strong conclusions from fairly circumstantial data, and some conclusions are based on the assumption (not always tested) that traits are currently adaptive. Although he considers nonadaptive models of sexual selection such as Fisherian or “run-away” sexual selection, other nonadaptive explanations, such as hypotheses of phylogenetic inertia, are mentioned initially but not considered further. For example, he argues without strong supporting evidence that female choice of long-tailed males probably involves a costly amount of time, and incurs high risk of sexually transmitted disease, since long-tailed males engage in more extrapair copulation. He then states that because female choice is costly, there must be benefits to female choice to balance these costs. He thus assumes female choice to be currently adaptive, without considering the phylogenetic history of the trait; this kind of assumption occurs throughout the book. The absence of a historical perspective is the one major aspect missing from this very comprehensive study of sexual selection.

My main complaint about the book is redundancy in the writing, especially with regard to explanations of theory. Repeating theoretical arguments to some extent can be useful, especially in a book, but Møller carries this to an extreme. Not only are aspects of theory reviewed in the second chapter repeated in introductions to chapters, these same arguments are then repeated, sometimes more than once, within the chapter. As an extreme example, Møller’s evaluation of the costs and benefits of extrapair copulation are listed twice on the same page (once in a table, once as an enumerated list) and then repeated again, with only slightly more detail, on the next two pages. The final synthesis also was disappointing. I was hoping for a comprehensive picture of sexual selection in Barn Swallows based on his results. Instead, Møller

primarily repeated theoretical and descriptive material from introductory parts of the book.

The strengths of the long-term study, the use of different field manipulations as well as extensive observations, and the diversity of different factors Møller studied far outweigh any weaknesses in assumptions and presentation. This book is important reading for behavioral ecologists in general, and should be required reading for anyone studying sexual selection. It would make an interesting book for graduate or advanced undergraduate seminars in behavioral ecology, and is recommended for libraries of universities and colleges with programs including behavioral ecology at these levels.—REBECCA E. IRWIN. *Department of Biological Sciences, University of Tennessee at Martin, Martin, Tennessee 38238, USA.*

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**Moult and Ageing of European Passerines.**—Lukas Jenni and Raffael Winkler. 1994. Academic Press, London. x + 224 pp., 650 text figures, many being color photographs of wings. ISBN 0-12-384150-X. \$40.00.—This exquisitely illustrated volume should revolutionize expectations for books treating the subtleties of incomplete molts and their importance for aging birds. Its pages are filled with photographs of extended wings, virtually all of which have their feathers perfectly arranged. Several photographs often are used to illustrate variability within sex and age classes, and the wonderful detail they convey makes this the first book that can be used effectively to age passerines without reference to comparative museum material or extensive experience handling trapped birds.

It is not designed to replace L. Svensson’s *Identification Guide to European Passerines* (Stockholm, 1992). Correct identification to species is presumed; furthermore, the book is too large to be used comfortably in the field, it covers just 58 species, and it is so beautiful that most would probably be reluctant to damage their copies through field use. The quality and usefulness of the illustrations for the species covered is so extraordinary that I expect this work will inspire a new generation of guides to ageing and sexing that will differ from the best guides now available for the passerines of Europe (Svensson 1992) and North America (Pyle et al. 1987, Slate Creek Press, California) by being lavishly illustrated with photographs. Unlike guides for identification, where photographs cannot be standardized well enough to be effective, the detail shown in the close-ups of wings that fill this volume minimize the need for reference specimens or for extensive experience handling live birds. Nothing else will ever make the aging of birds reliable when a worker has not already examined at least some, and often a considerable amount of comparative material.

The authors constructed this book around two complementary aims. The first was to present "an up to date summary of the molt patterns of European passerines with due emphasis on the extent of partial molts." The second was to use this information to demonstrate, with the aid of photographs, details of aging criteria for 58 species. Although I do not know the details of the European molt literature, the authors seem to have succeeded very well in both of their aims. Do not be deceived into underestimating the usefulness of the reviews of molt patterns. Jenni and Winkler provide superb summaries of partial and interrupted molts, of the interrelationships between molting and migration, and of the differences in molt schedules that can be related to the geographic origin of breeding populations. They also transcend this wealth of detail through their keen discussions of the adaptive significance of many of the more general aspects of passerine molting and through their economically posed questions concerning what remains to be learned about the molts of European passerines. The "conclusions" to sections 3.3.2 and 4.6.4 offer fine examples of lucidly posed questions for future research. Two long chapters summarizing the annual molts and their scheduling in adults and first-year birds are filled with fine tabular and graphical summaries of patterns. With great clarity these chapters also lay out the trade-offs that drive the strategies used by different ecological, behavioral, and migratory groups of birds (be these species, populations, or individuals) to fit molting, breeding and, often, migration together into an adaptively sensible life history. As a summary of why passerine birds organize their molts the way they do, this book is without parallel. Figure 22 is a superb example of this synthetic achievement for the breeding birds of Europe that winter at different latitudes in sub-Saharan Africa.

Anyone opening this volume is certain to be struck by its exceptional production. The photographs are stunning and abundant enough to be of enormous use; the diagrams and figures are finely drawn, informative, and often clever. I was enormously satisfied, therefore, to find the text to be of similar quality. Topics are well organized and the prose is so clear that the big picture emerges as clearly as do the details. The descriptive terminology applied to avian molting is sometime contentious, but the authors have sailed around this potential morass with ease. I found only their use of "eccentric," rather than "supplemental," to describe the extra molt that characterizes the first year of life in a variety of passerines to be clumsy. The rationale for using eccentric apparently is based on the fact that, unlike most primary molts that start at primary one, this molt usually starts at a variable site beyond primary one, and then proceeds outward in the normal fashion to primary 10. Because some individuals of a population may be undergoing the postjuvenile molt at the same time that others are undergoing the presupplemental molt (e.g. Thomp-

son, *Condor* 93:209-235, 1991), the distinction of the postjuvenile and the presupplemental molts as two separate bouts of feather replacement may have been missed in some European passerines, as was true in various North America passerines until a species was studied in which males changed color in each of the three molts of pennaceous feathers that they undergo in their first year of life (Rohwer, *Auk* 103:281-292, 1986).

The quality of the illustrations in this volume should also stand as an appeal to museums throughout the world to initiate the practice of preserving traditional skin specimens as skin-wing combinations. Easy techniques for doing this are described and illustrated by Spaw (1989 p. 21-29, *In* S. P. Rogers and D. S. Wood [Compilers]. *Notes from a Workshop on Bird Specimen Preparation*. Available from: Section of Birds, Carnegie Museum of Natural History, 4400 Forbes Ave., Pittsburgh, Pennsylvania 15213). Such specimens can match in quality the photographs taken from living birds that constitute the bulk of this book's illustrations, providing that the patagium is well stretched and allowed to dry until it has thoroughly hardened, and that the wing is pinned before it has dried out too much, either in a freezer or on the preparation table in the field. Figures 63 and 118 are examples of wings where the patagium was not properly pinned (see Fig. 141 for a contrastingly good specimen) and Figures 99 and 352 are examples of wings that were too dry to be fully extended, with the slots between the primaries opened. Although open slots are not essential for revealing the ageing characters that are the focus of this book, such standardized pinning of extended wings is a great help to studies of comparative wing morphology.

The low price of \$40.00 is a welcome surprise; beautifully illustrated technical books are rarely affordable. Anyone whose work demands a good knowledge of the plumage cycles of birds should buy this book, and this includes ornithologists throughout the world. Despite its focus on European passerines, no other volume offers plates that better illustrate how much can be learned from what are often subtle contrasts between the different feather generations that simultaneously may be present in the wings of yearling passerines. Museum curators and collection managers should consider this book a mandate for developing extended-wing collections, and they should use it as inspiration to the quality of feather arrangement that can and should be achieved in the preservation of such specimens. As more and more collections of extended wings develop, they will undoubtedly become the primary sources for the photographic illustrations that this book reveals should become a standard for the next generation of guides to ageing and sexing birds.—SIEVERT ROHWER, *Burke Museum and Department of Zoology, Box 353010, University of Washington, Seattle, Washington 98195, USA.*

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**Bird Migration.**—Thomas Alerstam. 1990. Cambridge University Press, Cambridge, England. vii + 420 pp., 137 figures, 31 tables. ISBN 0-521-32865-9. \$105.—This volume is an English translation by David A. Cristie of Alerstam's original Swedish volume *Fågelflyttning* published by Bokförlaget Signum in 1982. The translation was published eight years after the original, and Alerstam has updated some of the reference material (26 new references in the bibliography from 1982 through 1989). The volume flows well as nearly all of the "in-text" citations are included in the legends of figures and captions of tables, although all these citations predate 1982. It would have been beneficial if Alerstam had updated some of the figures and tables with newer information.

The first chapter is an exposition of Alerstam's feelings about the growth of knowledge, the value of science, and what constitutes good science. This short chapter ends with a brief historical perspective of the growth of knowledge of bird migration from Aristotle to present. One normally would expect a chapter like this to be at the end of the book, and Alerstam admits that it was written last, but being at the beginning it does succeed in setting the tone for the rest of the volume. The second chapter covers the rotating world of migratory birds (e.g. annual climatic cycle, some basic geophysics, and the spatial and temporal distribution of climatic factors and the biota). These relationships are responsible in large part for the diversity of bird migration systems.

Chapter three examines the annual cycles of many different species of migratory birds that occupy different habitats (e.g. wetlands, lake and sea bottom) or have different foraging habits (e.g. fish eaters, insect eaters, raptors, terrestrial plant eaters). Each section of this chapter (e.g. wetlands) is devoted to a particular group of species and several species are examined in some detail as examples. The text material for these species is supplemented with maps containing information on breeding range, migration routes, and wintering range, and occasionally tables with population census information for some of the species. The last part of chapter three is devoted to the evolution of bird migration, and Alerstam stresses that bird migration takes place commonly within all the earth's climatic zones and that the movements "cement" together several different "temporary detached niches to form a complete and adequate living niche." His treatment is ecological, and he discusses the influence of dynamic ecological landscapes and the role of climatic cycles.

The migratory journey is the focus of Chapter 4. It begins with a survey of the methods used to study migration in the field, and then covers the major aspects of migration in some detail: flight speeds, flock-

ing, soaring flight, altitude, and fat as fuel. Following these sections, Alerstam discusses the adaptations for migrating across the Mediterranean Sea and the Sahara on the east side of the Atlantic Ocean and from North to South America on the western side of the Atlantic Ocean. The migration of the Ruddy Turnstone (*Arenaria interpres*) is treated in detail as an example of a long-distance flyer, and at the other end of the spectrum, the rainy-season migration of the Red-billed Quelea (*Quelea quelea*) in Africa is presented as an example of a relatively short-distance migrant that moves in response to rainfall patterns. The remainder of Chapter 4 concerns diurnal and nocturnal migration, the importance of weather and wind, and the dangers during migration. Perhaps the strongest section of the book is Alerstam's treatment of the importance of wind. This is not at all surprising given his research accomplishments in this area. The dangers during migration emphasize the risks of wind drift and extreme displacements, and mortality from man-made obstacles and predation.

The final chapter in the book (Chapter 5) covers the topic of orientation and navigation. After some introductory comments, Alerstam discusses the sensory world of birds with an emphasis on the work with homing pigeons. He then provides an overview of the different types of compasses used by migrating birds (the sun compass, star compass, and magnetic compass), and how the different compasses are coordinated. The information is relatively up-to-date with a 1989 reference cited in the section. Displacement experiments during migration are reviewed next, and a distinction between "orientational" migration and "navigational" migration is made. The former refers to the fact that some birds with an innate standard direction will continue in the same direction after displacement, whereas the latter refers to birds that correct for displacement by taking up a new direction toward their migratory goal. The duration and timing of migratory behavior are discussed next with an emphasis on Gwinner's work on endogenous circannual rhythms of migratory behavior. A final discussion of the navigational capabilities of birds (pigeons) completes the chapter.

The bibliography is not exhaustive, but it is very representative. There is an obvious bias toward references of European work, but this is totally understandable given the intended audience of the original Swedish version. An obvious question from readers will be: how does this volume stand up against the other two "recent" books on bird migration (Gwinner 1990, Berthold 1993)? The volume Gwinner edited is the proceedings from a 1988 conference on the physiology and ecophysiology of bird migration and contains a collection of review papers by experts in the field. The Berthold volume, originally published in German as *Vogelzug—Eine kurze, aktuelle Gesamtübersicht*, has been translated and updated with respect to

references. The Berthold volume compares quite well to Alerstam's, as both have the same objective and both treat the subject comprehensively. Alerstam's writing style flows well, and he does an excellent job in explaining difficult topics. In contrast, Berthold's book has an excellent and relatively complete bibliography, and the references are more up-to-date than those in Alerstam's. The price difference between the two was originally great (Alerstam's volume in cloth \$105; Berthold's volume in cloth \$26.50), but a paperback version of Alerstam's book now sells for \$37.95. At these prices both volumes could be a part of one's library of essential ornithological books.—SIDNEY A. GAUTHREAUX, JR., *Department of Biological Sciences, Clemson University, Clemson, South Carolina, 29634, USA.*

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**The Northern Goshawk: Ecology and Management.**—William M. Block, Michael L. Morrison and M. Hildegard Reiser (Eds.). 1994. *Studies in Avian Biology* No. 16. Cooper Ornithological Society. 136 pp. ISBN 0-935868-76-3. \$16.00 (paper). [Available from Western Foundation of Vertebrate Zoology, 439 Calle San Pablo, Camarillo, California 93012-8506.]—This volume's title suggests an answer to a northern-latitude land manager's dream—an overview of Northern Goshawk (*Accipiter gentilis*) ecology and guidelines for goshawk management, all in 136 pages. If things were only that simple! Instead, what becomes clear almost immediately from these symposium proceedings is that there is much to be learned about goshawk ecology and management, and that current and past research efforts have addressed a wide range of goshawk-related issues, with little synthesis or general applicability. As pointed out by the editors in the introduction, "The current situation with the Northern Goshawk . . . bears an uncanny resemblance to that of the Northern Spotted Owl [*Strix occidentalis caurina*] a decade ago." The purpose of this symposium was to bring together managers and researchers to exchange information about goshawk biology and management, and this volume is the outcome of that effort.

There is widespread concern for the population status of the Northern Goshawk, especially in the southwestern and western United States. Management agencies, particularly the U.S. Forest Service, are searching for forest-management strategies that give consideration to and allow for persistence of goshawk populations. What is generally agreed upon is that goshawks are secretive, forest-nesting raptors

that, in general, select for nesting older forest stands with sparse understories, are opportunistic predators that prey predominantly on medium-sized mammals and birds, and require relatively large areas to breed successfully and raise young. These generalities recently have been summarized and incorporated into management recommendations (Reynolds et al. 1992. Management recommendations for the Northern Goshawk in the southwestern United States, U.S. Department of Agriculture, Forest Service, Gen. Tech. Rep. RM-217, Ft. Collins, Colorado) for the southwestern United States, and the current volume is both an outgrowth of those recommendations, and an update on research findings since those recommendations were drafted.

The volume is organized into three broad categories: Research Approaches and Management Concepts; Resource Ecology; and Population Ecology. The proceedings start with a discussion of ecological scale, and an evaluation of efforts to manage forested landscapes in the southwestern United States to provide habitats where goshawks will likely persist as a breeding member of the ecological community. Of particular interest are manuscripts by Lilieholm et al. and Bassett et al. that discuss how forest management influences vegetative structure, and how current management recommendations (Reynolds et al. 1992) are influenced by the gradient of conditions over which they might be applied, respectively. The section on Resource Selection is an interesting mix of site-specific studies of microhabitat use, reproduction, food habits, home range, and territory occupancy, along with landscape-level evaluation and modeling of habitat use. The final section, Population Ecology, is largely a continuation of the preceding section, in that breeding and population parameters for a number of different populations are presented.

As the published proceedings of a symposium convened to "discuss ideas on the biology and management of the Northern Goshawk," the volume suffers the weaknesses common to symposia proceedings, but also offers an outlet for important information that otherwise might be unavailable in the peer-reviewed literature. The quality of papers is highly variable—several manuscripts might have been published in respected peer-reviewed primary literature, whereas others would likely be relegated to project reports and other gray literature. Although manuscripts are organized into the aforementioned categories, there is little continuity either within or among categories—a reflection of the diversity of current research involving Northern Goshawks and, perhaps, the lack of a unifying theme in the symposium.

The production of the volume and the quality of the editing are, for the most part, quite good. There are a few inconsistencies that are annoying at best and, at worst, confusing. First, and most importantly, terminology regarding reproduction is not used con-

sistently throughout the volume. Inconsistently applied definitions and use of terms describing breeding parameters of raptors have plagued the scientific literature for years, even though there have been efforts to standardize use of these terms (e.g. K. Steenhof, 1987. Pages 157–170 in B. A. Giron Pendleton et al. [Eds.], Raptor management techniques manual. Natl. Wildl. Fed. Sci and Tech. Series No. 10, Washington, D.C.). It is unfortunate that these proceedings continue that problem. Less serious, but still distracting, are inconsistencies in format. For example, the table and figure legends in some chapters are in small letters, and in other chapters, are in all capital letters.

Looking past these problems, these proceedings are of interest to both the scientific and management communities, and to others interested in raptor ecology and management. Although a rather eclectic mix of topics, there is both practical information and a broader perspective on ecological and conservation issues. For example, Clint Boal provides a photographic and behavioral guide to ageing nestling Northern Goshawks, and Suzanne Joy and coauthors provide useful information regarding design and costs of broadcast surveys for breeding goshawks. Stephen DeStefano and coauthors provide some of the first evaluations of adult goshawk survivorship—prerequisite for population modeling, or population-viability or metapopulation analyses. In a broader context, Johanna Ward and Patricia Kennedy describe an experimental approach using food supplementation in breeding goshawks to test predictions related to food limitation, and John Keane and Michael Morrison argue that a mechanistic understanding of factors that influence behavior and population dynamics is necessary to build a comprehensive conservation strategy for the Northern Goshawk. With the breadth of topics represented in these proceedings, most readers will find at least some manuscripts of interest.

In summary, these proceedings provide a good overview of current research and application of management recommendations for the Northern Goshawk, with emphasis on the southwestern and western United States. They also demonstrate that there are major gaps in current understanding of goshawk ecology, and that there are potential problems in broadly applying existing goshawk management recommendations. The proceedings include a number of high-quality manuscripts regarding goshawk ecology, and abundant site-specific information about local goshawk populations, some of which is of the kind that is generally unavailable in the peer-reviewed literature. The volume should be a part of libraries with collections of ornithological and conservation literature, and on the shelf (or in the hands) of managers and researchers interested in ecology and conservation of raptors.—DAVID E. ANDERSEN, *National Biological Service, Minnesota Cooperative Fish and Wildlife Research Unit, Department of Fisheries and Wildlife, University of Minnesota, St. Paul, Minnesota 55108, USA.*

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**Identification Guide to European Non-passerines.**—Kevin Baker. 1993. British Trust for Ornithology, The Nunnery, Thetford, Norfolk IP24 2PU, United Kingdom x + 332 pp., 170 text figures. ISBN 0-903793-18-0. £15.00 (paper), excluding postage.—For many years, bird banders in Europe, and others interested in being able to age and sex passerine birds in the hand or in the field, have been well served by the various editions of Lars Svensson's *Identification Guide to European Passerines*, now in its fourth edition (Svensson 1992). This volume aims to provide the same service for those interested in nonpasserines, for which there has been no previous comprehensive compilation, although there are excellent (if a little hard to obtain) guides at the family level (e.g. raptors, Forsman's *Rovfågelsguiden* [1984—in Swedish]; and wildfowl, Salminen's *Suomen sorsalinnut* [1983—in Finnish], which are fully acknowledged as major sources for this book. As Baker states in the introduction, this is intended to be the first edition of a continuously updated volume in the same mould as Svensson's work. Thus, one obvious criticism, that this book is rather centered on northwestern European species in its coverage (119 species are covered; certainly, almost all of those that could be expected to be encountered in the United Kingdom, but including no species of heron, owl or woodpecker that does not breed there), is one that will be easily rectified if workers send their information on ageing and sexing techniques for such species to Baker in time for a second edition. Shorebirds also are not covered by this guide, because they already have their own BTO guide to identification and ageing (*Guide to the Identification and Ageing of Holarctic Waders*, Prater et al., 1977).

Although this might be thought a work of identification from its title, in that sense the title is misleading, for the book is mostly concerned with non-invasive techniques of determining age and sex. Although in-the-hand identification features are discussed for all species, most potential users of this book will know how to identify the species involved. After an excellent introduction to the subject of molt, wear, and general techniques for ageing (which is closely based on the introduction in Svensson's book), 119 species accounts follow. These present detailed information on plumage-based and morphometric methods of ageing and sexing, together with excellent figures illustrating key points. Accepting the limitations on species covered, there are nevertheless some omissions within these species. For instance, there is no guide to identifying the young (prefledging) of wildfowl, gulls, terns or owls. Within the individual species accounts, there are also a few criticisms that can be made. Some of the ageing criteria based upon the shape of remiges (e.g. for Cory's Shearwater, *Calonectris diomedea*) look difficult, if not

impossible, to use without considerable prior experience, and there are occasional transpositions in figure legends (e.g. for Long-eared Owl [*Asio otus*] the central pair of age labels should be transposed).

Nevertheless, this is an extremely useful and attractively produced book that should be in the possession of anyone that regularly handles nonpasserines in Europe, or that has a keen interest in determining their age or sex in the field. Furthermore, because many of the species covered in this guide

(e.g. waterfowl, raptors, owls) are regular throughout the Holarctic, it will also be of interest to many outside Western Europe. However, in reference to the last point, it is a pity that there is no statement in this book about the extent to which the ageing and sexing techniques described are applicable to non-European populations.—BEN C. SHELDON, *Department of Zoology, Uppsala University, Villavägen 9, S-752 36 Uppsala, Sweden.*



## Announcement

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**New Editor Selected.**—Thomas E. Martin has been selected as the new Editor of *The Auk*. All new manuscripts should be sent to: Editorial Office, *The Auk*, Montana Cooperative Wildlife Research Unit, NS 205,

University of Montana, Missoula, Montana 59812, USA. Submit five hard copies of the manuscript and include an ASCII version and a wordprocessor version (preferably Word or WordPerfect; identify the software and the type of computer used) on floppy disk (3.5-inch disk preferable).