BOOK REVIEWS

The White-Tailed Deer. Ilo Hiller. 1996. Texas A & M University Press, College Station, TX. 105 p. $9.95 paper.

Ilo Hiller has attempted to present "an in-depth look at the white-tailed deer, including information about habitat needs, food preferences, physical characteristics, antler development, social behavior, and general life cycle" (p. XI). In each of eight chapters, he presents detailed information regarding an aspect of the white-tails' life history.

The White-Tailed Deer will serve as a useful reference source for the wildlife biologist, teacher, nature photographer or casual nature enthusiast. The brevity of the book without sacrifice of detail allows for quick reference of its content.

Following a brief introduction, chapters cover distribution, habitat, appearance and senses, antlers, reproduction, social behavior, mortality and disease, and historic as well as the economic importance of white-tailed deer. In the first chapter, Hiller introduces us to the family of deer with particular emphasis upon the white-tail. Their global distribution is given with mention of several introduction efforts in various parts of the world. Their adaptability is exemplified through summations of case studies. In the second chapter, he provides an in-depth discussion of white-tailed deer habitat exploring elements of drinking water, food preference, and cover. Numerous studies of habitat elements are referenced, the majority occurring in the state of Texas. The author makes little effort to connect the deers' "niche" into the ecology of its habitat. This omission is disappointing and to a degree sacrifices an opportunity to present the deer as an element of its habitat.

Next, the book offers a somewhat laborious description of deer body portions, hair, color, and senses. In this section, the author asks: "How does a deer decide which of the many sounds it hears mean danger?" He responds to his question utilizing numerous detailed hypothetical scenarios creating some redundancy of the point being made. In covering sensory mechanisms, the author's excellent descriptions create vivid mental images for readers familiar with deer behavior. The failure to footnote numerous references to research findings is disappointing for readers who wish to make further inquiry.

In the next few chapters, the author runs through the deer antler cycle, reproduction cycle, and social behavior related to the aging cycle. He nicely ties these cycles to more broad seasonal cycles in nature. The entire seventh chapter is devoted to a discussion of parasites and bacterial and viral diseases which may impact deer. Here the author seems to lose focus of his topic discussing ticks and tick-borne diseases affecting humans. While the information is accurate and well organized, the recreational reader or general wildlife observer may find this chapter somewhat indigestible. In his closing chapter, Hiller provides a brief and general overview of the white-tailed deer in the United States. While he covers the economics of deer hunting in detail, the entire issue of inherent value is unfortunately omitted.

The White-Tailed Deer is praise-worthy, providing a well-organized, informative, and highly readable reference book. It will be a useful addition to any natural history collection.

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Where to Watch Birds in South America. Nigel Wheatley. 1995. Princeton University Press, Princeton, NJ. 431 p. $35.00.

To an enthusiastic birdwatcher, particularly one interested in the Neotropics, there is nothing quite as exciting as seeing a dazzling Pompadour Cotinga as one overlooks the splendor of the Tepuis in eastern Venezuela, or sifting through a mixed-species flock of difficult to identify antbirds that are moving rapidly through the understory of an Amazonian rainforest, or standing at the edge of a steep precipice high in the Peruvian Andes while watching an Andean Condor soaring majestically below, or having a flock of Hyacinth Macaws swoop over while you're watching a group of Jabirus in the Pantanal of Brazil. There is no question that South America offers the bird enthusiast, whether professional or amateur, an extraordinary opportunity to experience species diversity at its extreme. For a scientist or ecotourist alike, determining where to go on this vast continent, and what one may see when they get there, is still a daunting exercise. Although many of the countries frequented by "birders" (i.e., Ecuador, Venezuela, southeastern Brazil, etc.) now have adequate site guides to point us in the right direction, *Where to Watch Birds in South America* by Nigel Wheatley is the first book that is ambitious enough to attempt to cover the entire continent.

The author states clearly on the first page of the introduction the purpose and intention of this book, namely to act as "a guiding light," and to answer many of the initial questions one may ask during the planning stage of a trip into the wilds of South America. The plan of the book is well-organized and straight forward. For each country (presented in alphabetical order) there is a simple map highlighting each of the "sites" covered within, and an introductory section dealing with basic important questions about transportation, accommodation, health, climate, timing, habitats, conservation, and most importantly, the endemics found in that country. For each site covered, the author includes a general discussion about that site, how to get there, a list of endemics found at that site, a list of specialty birds found at that site, another list that includes "other" birds of interest found there, a list of other possible wildlife in the area, and finally how to gain access to the site and the name of a recommended accommodation. At the end of each country, there is a useful list of important addresses and a short list of pertinent books one may want. Many of the site descriptions have a small map

included to aid the visitor and get them to the right birding spots. In all, no fewer that 215 birding locations are covered, in varying degrees of thoroughness.

It appears that a very narrow audience is targeted by this book. If one was planning a trip to maximize the number of species seen, and to concentrate on regional endemics and specialties, this book would be very valuable in the planning stages of a trip. At the end of each chapter (country), there is an additional list of all the endemics found in that country and a pointer as to where one may go to see them. The entire book is geared around getting to what the author perceives as the best locations for the endemics and specialties. The lists presented, though, are only very partial lists for a particular site, and there is no attempt to supply information regarding relative abundances of the species, or specific information on where and how within a site one may find any of these specialties. The descriptions and directions to the specific birding sites (i.e., trails, etc.) within the sites, as well as the maps, are often very superficial and, not infrequently, very misleading and, in my opinion, will not be of much use once one gets generally to a site. With site guides for other regions (i.e., the Lane guides for North America), we have come to expect a higher degree of detail and accuracy that is, unfortunately, lacking in this book. Therefore (and the author somewhat suggests this in the introduction), additional information in the form of recent trip reports, detailed field lists, and most importantly, a good field guide, are necessary in addition to this book.

The information presented in this book, from a technical standpoint, appears to be mostly accurate, although I did find a number of errors. My main concern was in evaluating the practical use of the species lists for the sites described within this book. In my opinion, the author does a disservice by presenting lists for areas that do not include any information concerning status or relative abundance of the birds or the likelihood of seeing them. In virtually every account that I reviewed, where I was familiar with that particular locality, I found several species listed that a visiting birdwatcher would have little or no chance of seeing, particularly during a short visit. On more than a few occasions, I found species incorrectly listed for localities, as well as specialty birds (or endemics) not included in the account, or, in some cases, not in the book at all. I can appreciate the amount of work and effort involved in compiling lists such as these, but it appears that not all the lists have been properly reviewed, and that there is a fair amount of erroneous information presented. The average birdwatcher will have a difficult time sifting out such mistakes, and these may lead to unfulfilled expectations and frustration.

To summarize, this book's greatest value will be in the planning stage of a trip to South America. By accurately portraying the diversity (and endemism) of each region, and presenting each country's best, and often most-accessible, birding localities, a potential visitor should be able to get a good initial impression of each country, and can then plan a trip accordingly depending on their particular interests. For the avid bird "lister," the many lists of endemics and specialty birds for each locality will certainly aid in determining where one should go for those birds, but I caution that there are errors and omissions. For someone more generally interested in traveling in South America on their own, this book will have a more limited value, particularly if one is looking for detailed directions to sites, or more detailed information of what one is "likely" to see on a given visit. For this type of information, more detailed regional site-guides (if available) or detailed trip reports from past visitors will be of more use.

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A Natural History of Amphibians. Robert C. Stebbins and Nathan W. Cohen. 1995. Princeton University Press, Princeton, NJ. 316 p. $29.95 hardcover.

The authors have done a commendable job at meeting the goal stated in their preface: "for a general audience, for the pleasure and edification of anyone, anywhere, interested in learning about the ways of amphibians...that grace our planet." The authors have other goals as well. They lament the decline in the study of natural history (often to the point of elimination) in current biological sciences education. The importance of studying "whole organisms and their interactions in nature" should not be depreciated by the value of molecular and cellular studies. In fact, both solving and gaining an appreciation for the extent of the widely trumpeted crisis that is the loss of biodiversity will undoubtedly depend much more upon natural history studies than molecular or cellular biology studies.

This is a very readable account of amphibian natural history. Though written for a general audience, readers with more serious interests will find author-date citations provided for further investigation of the subjects. I never found these to interfere with my easy progress through the book, and they were, indeed, helpful in providing me further direction. I was amazed at how many times I flipped quickly to the back of the book to check on a reference! This book does not pretend to the comprehensiveness of *Biology of Amphibians* (W. E. Duellman and L. Trueb, 1986), for example, but there are 47 pages of literature citations (over 900 citations) and, even though the book is the result of 33 years of teaching about amphibians, many of these citations are from the past decade. The index covers 16 pages and contains everything that I thought to check back for. With such richness of reference resources, this book is very student-friendly.

The book is comprised of 20 chapters, averaging just under 12.5 pages per chapter. After the brief "Introduction," the next eight chapters describe mostly physical characteristics of the animals: "Skin," "Breathing," "Limbs and Locomotion," "Tail," "Nose and Chemoreception," "Eyes and Vision," "Food Habits," "Ears and Hearing." Eight chapters (just over 50% of book) then discuss mostly behavioral topics: "Voice," "Temperature Characteristics," "Body Water Regulation," "Protection Against Predators," "Home Range and Movements,"

"Territorial Behavior and Fighting," "Homing and Migration," "Reproduction," "Parental Care." The final two chapters (20%) relate amphibians to humans: "Contributions of Amphibians to Human Welfare," "Declining Amphibians."

Two chapters are 3-4 times the size of any others: "Reproduction" (55 pp.) and "Declining Amphibians" (42 pp.). In a way, these *are* the natural history of amphibians. Because most amphibians do live the 'two lives' recorded in their name, having an obligatory aquatic larval stage and a more terrestrial adult stage, reproduction is a key feature of the natural history of amphibians. This is not to say that reproduction is not an important aspect of the natural history of any organism; clearly, reproduction is always important. Reproductive modes and parental care (another 10-page chapter) involve such amazing and bizarre goings on as brooding in a pouch, vocal sac, or stomach; parents carrying tadpoles to water (even into trees!); parents battling much larger predators to protect their clutches, and fasting for up to three months while they do so; larvae and tadpoles that are adapted to hatch prematurely in the water or belatedly on land, to attach themselves to rocks in currents or, to speed up development in a race with a drying puddle. This very diversity of propagation, interesting and instructive as it may be, is both threatened by, and possibly a component of, the apparent widespread decline of amphibian populations. The vulnerability of amphibian eggs to UV radiation, or of all stages to waterborne toxics, is a clear threat to some amphibian populations; but habitat loss, worldwide, is a threat to more. As we are beginning to see with some neotropical migrant songbirds, loss of breeding habitat may be more destructive than losses of the habitat used at other times. This is almost certainly true for amphibians, and wetlands represent one of the most abused habitats. Thus, we are back to the idea that amphibians may be issuing a warning, another contribution to our welfare, and one that will require both the study and appreciation of natural history in order to understand.

I do have a few minor complaints about the book. There are a few typographical errors (I noted about 10) and occasional inconsistencies in the placement of the parenthetic information on geographic range for species mentioned (e.g., repeated seven lines apart on p. 35, but not on the following page). Color photographs would have added immeasurably (though the increased cost might have canceled the gains). My most substantive complaint, however, relates to the use of some scientific and common names which do not follow the Third Edition of *Standard Common and Current Scientific Names for North American Amphibians and Reptiles* (J.T. Collins, 1990. SSAR Herpetological Circular 19). Ornithologists have long seen the value of standardizing all names for the organisms that they study; herpetologists are now trying to do this. The authors' use of Southern Giant Salamander rather than California Giant Salamander (p. 23), or *Scaphiopus hammondii* rather than *Spea hammondii* (p. 7)—while accepting the genus *Spea*, may seem trivial, but it is not. Readers, especially those of the target general audience, can only be confused if the book they are reading does not agree with other books, such as their field guide.

A Natural History of Amphibians can be appreciated by a broader general audience than those interested in amphibians. It would be a good read for anyone interested in natural history, whole animal biology, or the fate of biodiversity on this planet. I suspect that almost anyone can learn more about amphibians from this book. I liked this book, found reviewing it a pleasure, and recommend it highly!

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Molecular Endocrinology, Second Edition. Franklyn F. Bolander. 1994. Academic Press, San Diego, CA. 601 p. $69.95 hardcover.
Molecular Endocrinology: Basic Concepts and Clinical Correlations. Edited by Bruce D. Weintraub. 1995. Raven Press, New York, NY. 523 p. $142.00 cloth.

Although these two books share a common title, their publication resulted from different frames of reference, and there was a different primary impetus for the publication of each. The Bolander book came about initially from the frustration of the author when searching for a text to use in a graduate level endocrinology class. The second edition has followed five years after the first to update this rapidly expanding area of information. The book edited by Weintraub is much more of a research volume, with an international cast of 72 authors (including the editor) contributing to its production. While the Weintraub book could also be used as a text for a class, its goal as stated in the preface is "...to provide a state-of-the-art book that is of value to physicians, nonclinical scientists and students from many disciplines."

The Bolander book is subdivided into five parts, as was done in the first edition: introductory endocrinology, receptors, transduction, gene regulation, and special topics. Each of these sections contains three or four chapters, with the total number of chapters having increased from 16 in the first to 17 in the second edition. However, this modest change in the number of chapters is *not* reflective of the increase in material incorporated in the second edition which displays nearly a doubling of the number of pages in the first edition. Additionally, chapter titles have undergone revision to reflect changes in the understanding of the specific areas of investigation. For example, "Cyclic Nucleotides" has become "G Proteins and Cyclic Nucleotides," and "Nontranscriptional Effects of Hormones" has become "Phosphorylation and Other Nontranscriptional Events." The updates represent modernization of these topics.

As was the case for the first edition, the general endocrinology chapter of the introductory endocrinology part of the text is the least satisfying component of the book. Since this is a molecular endocrinology text, one would anticipate its readers to have basic understanding of the endocrine system, and Bolander appears to have included information more as a reminder of endocrine

anatomy and physiology than as a substitute for a general endocrinology background. To reflect the liberalization of understanding of endocrine relationships, a section on parahormones (messengers which do not enter the circulatory system, including eicosinoids and opioids) has been included in this chapter. The spirit of a more liberal than classical interpretation of endocrine control has been continued by the addition to this section of a third chapter on non-classical endocrinology, which considers growth factors (with special emphasis on immunomodulatory molecules), invertebrate hormones, and plant hormones. This introductory information provides a basis for the consideration of endocrine evolution in the special topics section, an area that stood somewhat alone in the first edition.

The second, third, and fourth parts of the book address the areas of molecular endocrinology where intensive growth in the collection of information has taken place and continues to progress—receptors, transduction, and gene regulation. This portion of the book alone contains more pages than did the first edition of the text. Bolander has adroitly incorporated new information about hormone receptors, both intracellular and membrane-associated, about transduction of information from hormone-bound receptor to physiological action, and about hormone-receptor interaction with the genome. Throughout this section the information is presented with lucidity, incorporating easily-understood illustrations and tabular explanatory material.

The concluding section relates molecular endocrinology to the "bigger picture," as was done in the first edition. The chapter on evolution now has a more firm introduction as mentioned above. The chapter previously titled "Hormones and Oncogenes" has been broadened to consider the interactive effects of pathogens on the endocrine system. The chapter considering endocrinopathies is nearly four times as long as in the first edition, reflecting the growth of knowledge about these disease states at the molecular level.

The thirty chapters that make up the book edited by Weintraub are subdivided into three parts: basic concepts and molecular biology techniques, genes for hormones and receptors, and endocrine diseases. Thus, the volume begins by assuming a reader with an elevated level of understanding, with the introductory chapter relating endocrine disease to the human genome project. The remainder of the first part of this book describes several molecular biological techniques (polymerase chain reaction, measurement of gene transcription, use of transgenic animals, targeted genetic recombination, and others) and their use in the study of molecular endocrinology. As is the case throughout the text, the authors illustrate their chapters with data generated in their laboratories and those of their colleagues.

The second part of this text describes in detail genetic components of molecular endocrinology. This information includes chapters describing cloning of genes for the polypeptide hormones and for receptors of several types of hormones. Additionally, the molecular biology of intracellular hormone receptors and their action at the genome is discussed.

The third part of the Weintraub book contains nearly half the chapters in the text, and becomes the main thrust of the book, which is to focus a molecular biological perspective on endocrine disorders. This thrust is originally suggested by the preponderance of M.D. degrees among the contributing authors. Endocrine disorders that are directly considered include diabetes, growth disorders, thyroid disorders, and problems associated with various steroid hormones. In the latter category, vitamin D, adrenal steroids, and androgenic steroids are considered. However, female reproductive steroid disorders are not included.

This book contains abundant citation of the biomedical literature, with the typical number of entries in a reference list being about 150 per chapter (range of 21-735 citations). This makes the location of original information by the reader a relatively easy task. Given that this is a multiauthored text, the quality of the book is excellent throughout, with good illustrations and a consistently high level of presentation. The editor and his contributing authors have done well in this synthesis.

In summary, *Molecular Endocrinology* 2/e by Bolander is a good update of basic information in the field, presented in a form and at a level appropriate for students with some endocrinology background. *Molecular Endocrinology* edited by Weintraub presents detailed information for the researcher and clinician. Each of these texts performs its function well.

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