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ORNITHOLOGICAL LITERATURE

NEOTROPICAL ORNITHOLOGY. By P. A. Buckley, M. S. Foster, E. S. Morton, R. S. Ridgely, and F. G. Buckley (eds.). Ornithol. Monogr. 36, American Ornithologists' Union, Washington, D.C., 1985:xi + 1041 pp., 7 colored plates. $70.00 (Order from Frank R. Moore, Assistant to the Treasurer, A.O.U., Dept. Biology, Univ. Southern Mississippi, Southern Station Box 5018, Hattiesburg, Mississippi 39406.)—Dedicated to Eugene Eisenmann and offered as a permanent memorial to his broad and lasting influence on Neotropical avian biology, this heavy volume represents a landmark contribution. Assembled here are 63 papers by 79 authors representing scores of institutions in the United States, Middle America, the West Indies, South America, and Europe. In the introductory paper, Thomas R. Howell reviews Eisenmann's remarkable life and his multifaceted contributions to the study of Neotropical birds. The next 61 papers are organized under eight headings: "New Taxa" (5 papers), "Zoogeography and Distribution" (11), "Systematics" (9), "Evolution" (10), "Community and Population Ecology" (10), "Evolutionary and Behavioral Ecology" (8), "Breeding Biology" (3), and "Conservation" (5). Thus, the coverage heavily emphasizes Eisenmann's own interests. Each paper begins with an Abstract, in both English and Spanish, and ends with a list of Literature Cited. Kenneth C. Parkes analyzes the contents of the entire volume in the final paper, "Neotropical Ornithology—An Overview." An Index lists key words that reflect the subject matter covered, names of contributors and artists, and the scientific names of newly described taxa. The vivid colored plates (by J. W. Fitzpatrick, D. Gardner, R. M. Mengel, J. P. O'Neill [2], R. T. Peterson, A. Singer, and M. D. Williams) either depict previously undescribed taxa and their close relatives or illustrate other species under discussion. Tables, graphs, maps, and appendices abound. There are relatively few photos.

With a text composed of fine, dense print and narrow margins, the 1041 pages of "Neotropical Ornithology" contain an awesome amount of information. In terms of new data, novel interpretations, and general information conveyed per page, the present volume far surpasses "Biological Diversification in the Tropics" (G. T. Prance, ed., Columbia Univ. Press, New York, New York, 1982), an inflated although comparably expensive tome on a related but broader topic.

Although symposium volumes, Festschrifts, and the like typically suffer from unevenness in quality, the contributions in this book are consistently of high caliber, a tribute to the toil and dedication of the five editors and their 125 (!) reviewers. Indeed, the attention to detail that characterizes genuine scholarship is evident throughout. Appropriate statistical tests routinely are applied where necessary. I was especially pleased to note the abundance of hard data in tables and appendices. Previously unreported information (e.g., on nest characteristics, body weights, and colors of soft parts) is presented for many species. In a number of papers, detailed accounts describe new records and provide natural history notes on unusual species. Inevitably, more than a few of these accounts will become epitaphs over the next decade as the shadow of habitat destruction lengthens across the Neotropics.

Space allotted here precludes comment on most of the individual papers. Moreover, Parkes has already accomplished this in his comprehensive overview. However, of the many solid contributions, two impressed me as masterworks, deserving of special comment. The first, by John W. Fitzpatrick, concerns the radiation of the Tyrannidae. In an analysis of 94 living species (25% of the family), he examines possible relationships between site and style of prey capture and measurements of the bill, wing, tarsus, and tail. Generalized foragers have generalized morphologies; species with peculiar feeding modes are characterized by deviant

physical measurements. Members of these two extremes are joined by species at various intermediate stages of specialization in feeding and structure. Thus, from the close correspondence between behavior and morphology seen in living species, we can infer the nature of ancient phyletic avenues along which New World flycatchers radiated from generalists, through intermediates, to diverse kinds of specialists. The relatively competitor-free environment in which the suboscines may have radiated could have provided the setting that encouraged their impressive diversification. Fitzpatrick concludes that, ". . . today's family Tyrannidae may illustrate pathways of morphologic and behavioral specialization long since obliterated in most other modern bird families." Although this method of phylogenetic reconstruction is not new, I know of no other example in birds where it has been applied with such clarity and thoroughness.

A second notable paper, by Timothy C. Moermond and Julie Sloan Denslow, exhaustively reviews (173 references) Neotropical avian frugivory. The topic turns out to be far more complex than many previous workers have implied. From consideration of a wide array of taxa, the authors found no consistent morphological adaptations for the digestion of fruits; instead, specializations in digestive physiology seem likely. Small birds (e.g., tanagers and manakins) mainly eat fruits rich in carbohydrates. Large species (e.g., cotingas and toucans) consume a wider range of fruit sizes, from small, carbohydrate-rich kinds to large fruits rich in lipids. Modes of fruit-picking and processing are extremely diverse. A major finding is that very few species can both reach fruit easily while perched and pick fruits with facility while in flight. Morphologic and behavioral correlates of fruit foraging are carefully documented and discussed. Tables and figures provide data on wing loading, body weight, specific muscle weight, and other relevant variables. Finally, only a very few species (Oilbirds [*Steatornis caripensis*] and a few cotingids) appear to be totally frugivorous. Thus, the dogma that fruit-eating birds can be divided neatly into either generalists or specialists on the basis of diet, behavior, or morphology should perish as one more unsupported oversimplification. These points are merely the highlights of a very scholarly and insightful analysis that is bound to be widely cited.

In the Preface the editors state that, "Wherever we have been able to induce authors to do so, we have sought comparisons between tropical and temperate zones . . . , and between paleotropical and neotropical birds and ecosystems." Unfortunately, only a few papers satisfy these worthy objectives. For example, both Murray and Skutch discuss latitudinal variation in clutch size, Remsen compares the highland avifaunas of two sites in Bolivia with one in the White Mountains, New Hampshire, and Kushlan et al. contrast the wading bird community of the Venezuelan Llanos with that of the Florida Everglades. Only Houston's essay on the evolutionary ecology of Afrotropical and Neotropical forest vultures, and Short's contribution contrasting radiations of barbets and woodpeckers in the New World tropics versus the Old World tropics, offer intercontinental tropical comparisons. Thus, despite the publication of "Neotropical Ornithology," there remains the need for direct latitudinal and intertropical comparisons of a host of features for which avian data are amenable, including migration, pairbonding, territoriality, breeding cycles, molting, plumages, and subspeciation. The profound differences between Paleotropical and Neotropical environments described in Prance (1982) further underscore the need for additional comparative studies. Nonetheless, the shortage of geographic comparisons in "Neotropical Ornithology" is not a serious weakness; future workers will undoubtedly conduct such investigations as new information accumulates. In the meantime, Ricklefs and Bloom's analysis (Auk 94:86–96, 1977) of latitudinal trends in several life history parameters serves as a model for the kinds of comparisons that hopefully will become more commonplace.

In sum, the publication of this admirable and important book introduces a new era in

the study of Neotropical ornithology. Because it is certain to influence research on tropical birds far into the future, the volume belongs within easy reach of every ornithologist and tropical biologist regardless of their specific interests.—NED K. JOHNSON.

THE BEGINNINGS OF BIRDS. PROCEEDINGS OF THE INTERNATIONAL ARCHAEOPTERYX CONFERENCE EICHSTÄTT 1984. By M. K. Hecht, J. H. Ostrom, G. Viohl, anad P. Wellnhofer (eds.). Freunde des Jura-Museums Eichstätt, Willibaldsburg, D-8078 Eichstätt, Federal Republic of Germany, 1985:342 pp., numerous black-and-white illustrations. D.M. 90 (D.M. 93 outside of Germany).—Probably no fossil form has been written about as much as *Archaeopteryx,* the classic evolutionary intermediate. This book records the proceedings of a 1984 conference of workers from a variety of discipines, and was held, most appropriately, in the center of the quarry district from which all five specimens have come. Hopes for a general consensus on major questions generally were not realized. There is considerable variation in the quality of the contributions; although many are highly original, some are restatements of previous ideas. Many topics are addressed in the 38 papers, but space limits emphasis here to a few main questions and authors.

How did birds begin to fly? One popular idea is the cursorial or "upwards" theory that running (or hopping) prebirds began by jumping into the air to reach insect prey or to escape predators, using incipient wings to lengthen their time aloft. The main alternative is the arboreal or "downwards" theory that flight evolved in forms that leaped from trees, and passed through successive parachuting and gliding stages to powered flight. These theories are reviewed and tinkered with repeatedly in this volume, and plausible arguments for both are presented. Perhaps the most useful new anatomical analysis is Yalden's argument that the clawed fingers of *Archaeopteryx* were adapted to permit it to climb trees like a squirrel. One variation on familiar themes is the idea of Peters that avian ancestors glided down hilly slopes, thus reconciling the apparent open habitat with the advantage of using rather than fighting gravity. More unusual is the theory of Thulborn and Hamley that *Archaeopteryx* was a wader that used its wings as a canopy like herons do, and that flight originated in forms that fluttered from wave crest to wave crest. In addition to studies based mainly on *Archaeopteryx,* there are several more theoretical analyses of flight in general. Some of these are firmly grounded in anatomy and mathematics, others are merely armchair speculations. In general, it cannot be said that agreement was reached on the origin of flight, but the downwards theory appears more popular.

A second question deals with the origin of feathers. It is generally agreed that they evolved from reptilian epidermal scales, but there has been a dispute about their original function. One theory is that feathers originated for flight and subsequently were adapted for thermal insulation. In this volume Feduccia defends this theory partly on the grounds that the complexity of feather structure is excessive for insulatory purposes, but necessary for flight. Others have argued that the energy needed for flight requires the prior development of an insulating layer. Regal suggests that we should not assume that structures originated in adaptation to their ultimate functions, and reviews instead his theory that feathers began as heat shields that only later became further modified for both flight and insulation. His paper is a sensible and amusing essay on the limits of adaptational analysis and a reminder that animals are more versatile in their behavior than we often credit them to be.

These continuing disagreements suggest that the ability of functional morphologists to predict the behavior of animals on the basis of their structure is severely limited outside the use of analogies with living forms whose actions can be observed. There is no analog of *Archaeopteryx* alive today to serve as such a model, and one despairs that morphologists

will ever agree on the behavior of *Archaeopteryx* or its role in the origin of flight. Perhaps, despite the cleverness of the interpretations, the available evidence simply is not adequate to provide an understanding of the origin of flight in birds. This may have to await the discovery of additional fossil forms revealing new stages in the historical process.

A third problem is determining which group of reptiles gave rise to birds, and this is confounded by the question of the exact phylogenetic position of *Archaeopteryx*. The leading contenders are crocodilians, thecodonts, and theropods. The crocodilian theory is clearly in decline on the basis of recent anatomical studies. The once-popular thecodont theory still has adherents, but their position is eroded by the argument of Gauthier and Padian that thecodonts do not constitute a monophyletic group. They show that thecodonts merely are archosaurs that are not crocodiles, pterosaurs, dinosaurs, or birds, and that the origin of birds from "unknown thecodonts" is meaningless. Overall, the derivation of birds from theropods, as advocated by Ostrom, appears to be the dominant theory.

Many other topics are discussed in this book, including the classification, habitat, and anatomical structure of *Archaeopteryx* and the history of its discovery. Just as *Archaeopteryx* ends with an unusual caudal appendage, so does this book end with a bizarre tale. In a chapter written after the conference, Rietschel discusses the claim of astronomer and science-fiction writer Fred Hoyle that the feather impressions of *Archaeopteryx* are forgeries. The matter is effectively laid to rest, but one must wonder what damage to the credibility of science may result when the popular press reports such victories of arrogance over competence. Perhaps this is why the one point on which the conferees agreed unanimously was the declaration that "Organic evolution is a fundamental process of biology, and we recognize the importance of the *Archaeopteryx* contribution to that problem."—ROBERT J. RAIKOW.

PHYSIOLOGICAL STRATEGIES IN AVIAN BIOLOGY. By J. G. Phillips, P. J. Butler, and P. J. Sharp. Blackie and Son, Glasgow, Scotland, and Chapman and Hall, New York, New York, 1985:218 pp. $39.95 (cloth) $19.95 (paper).—". . . birds are endowed with easily studied morphological, behavioural and physiological adaptations which illustrate general principles of biological and practical importance. It is for this reason that birds are used as models in many areas of research . . . ." For an ornithology that has outgrown its descriptive texts, introductions to analytical ecology and physiology of birds are particularly welcome. This volume of the Tertiary Level Biology Series follows and frequently cites its predecessor, "Avian Ecology" by C. M. Perrins and T. R. Birkhead (1983).

The authors write with considerable expertise, among them having contributed significantly to the primary literature in most of the major divisions of avian physiology treated herein.

A brief review of avian respiration, circulation, and skeletal muscles precedes the analysis of flight energetics and physiology. Walking, running, swimming, and diving locomotion also are discussed. This is followed by a chapter on migration and orientation, which includes a brief but good section on energy conservation in flight.

The two following chapters discuss homeostatic regulation. Consideration of thermoregulation is equally divided between cold and heat stress responses. From torpor in poorwills and hummingbirds to circulatory strategies of raptors and heat exchanges of penguins, the examples chosen reflect more of the diversity of birds and environments than the other chapters.

The treatment of osmotic regulation includes behavioral aspects such as thirst, salt appetite, drinking, feeding strategies, and timing to avoid extreme stresses. The statement that ". . . a small bird with a high metabolic rate, thus producing relatively larger amounts

of free water, can tolerate a higher salinity of drinking water" overlooks the fact that respiration of the required oxygen results in sufficient evaporation to cancel the size-dependent rate of oxidation water production.

Salt glands have evolved in most marine and predatory birds, but not in the majority of bird species. Despite 11 pages of text that emphasize salt glands, twice as much as for kidney function and evaporation, there is no indication of the proportionate contribution of salt glands vs kidneys and gut to sodium and chloride excretion. Figure 5.4 on salt-gland structure lacks labels, unfortunately.

The topic of reproduction is divided into two chapters, one on reproductive system function and one on "The Environment and Reproduction." The latter is one of the most interesting chapters in the book. The concluding chapter goes into "applied aspects" of domestication and intensive farming and the consequences of pollution, particularly oil contamination, unfortunately made very relevant by news of the recent Port Angeles oil spill disaster.

An index is not crucial for a short reader, but this one is little more than an incomplete listing of bird species. To find "shivering" look under "budgerigar," "torpor" under "hummingbird," "kidney" under "starling" or "Savannah Sparrow." For "diving," "receptors," "blood," "Fick principle," or any symbols, one must flip through the text. At least seven species discussed in the text lost common or scientific name, or were omitted.

"Strategy" is perhaps the number one buzz-word of contemporary ecology, an anthropomorphism that gives meaning to the ecologist's life, as teleologies do for the physiologist. The definition from "Webster's New Universal Unabridged Dictionary" that seems to apply for our use of "strategy" is "skill in managing or planning, especially by using a ['plan, scheme, artifice, trick']." I was initially excited by the title of this little book, hoping that it would further my own efforts of several years to "sell" physiology to ecologists. To succeed, the volume would have to go beyond description of mechanisms to show how birds solve specific problems with neat physiological tricks. Of course, no strategy can be implemented or understood without the mechanisms, so much of such a sales effort is an exercise in packaging. By the oversimplification of adding up the number of pages actually discussing how challenges are met or problems are solved, I find that about 13 per cent of the book is devoted to what might be billed as "strategies," less than the emphasis implied.

The book was written "for advanced undergraduates . . . also . . . for the informed amateur ornithologist," "designed to be self-contained and, as a result, to stand on its own . . . ." That needs to be qualified: the book is for the student who has already taken some physiology. Strain, breaking force, STPD, thermoneutral temperature, drag coefficient, substance P, enkephalin, cytosolic fraction, horseradish peroxidase, and ouabain are among the terms used without explanations or definitions for the uninitiated. Several allometric relations are given six pages before explaining the allometric relationship. Reference is made and an illustration devoted to Rayner's vortex theory of flight without telling how a vortex would propel a bird. On p. 20, hyperventilation is implied (without definition) to be ventilation above metabolic demands, but on p. 28 it occurs when the bird is acidotic, indicating inadequacy for metabolic demands. Ventilation volume and oxygen extraction are used without the basic conservation equation that would make their significance clear to the undergraduate. Names of central nervous system parts are mentioned without any visual image.

Editorial and typographical errors are relatively few. On p. 12, reference to Fig. 3.6 should be to 2.3; reference to 5.3.2 on p. 91 should be 5.5.3f; stroke volume was omitted from an equation on p. 22; turkeys are altricial and canaries precocial in Fig. 6.12 legend.

The oil glut has slowed our domestic inflation, but the price of imported books is still

upsetting. While enriching the curriculum, the two avian paperback tertiary readers, added to assigned traditional ornithology text and field guide, would make an expensive book list.

This is an informative review. With help, the undergraduate can use it. The book also would complement previous experience limited to mammalian or human physiology by comparative exposure to the physiology of an independently evolved, fascinating class of high-energy homeotherms.—WILLIAM A. CALDER, III.

BIRDS OF SOUTHERN AFRICA 1: KRUGER NATIONAL PARK. By Kenneth Newman. Macmillan. South African Publishers, Johannesburg, South Africa, 1980 (reprinted 1981):242 pp, 4 line drawings, 2 maps, 106 colored plates. $14.00.—The monumental six-volume works of C. W. Mackworth-Praed and Captain C. H. B. Grant, "African Handbook of Birds," were for many years the standard identification and reference guides for Africa's rich avifauna. Series two of these books, the two-volume "Birds of the Southern Third of Africa," served ornithologists in southern Africa from 10 degrees south latitude to the Cape. Recently several other excellent African field guides have been published. Kenneth Newman's books are among them.

"Birds of Southern Africa 1: Kruger National Park" is an attractive, compact, and well-organized guide of the park, which at 1,948,528 hectares is South Africa's major conservation area. The park is located in the Transvaal Lowveld, in the northeastern area of the country. No fewer than 480 species of birds have been recorded within its boundaries.

The format is convenient for field use: full color plates of paintings appear on the right hand page, and species descriptions and maps of their ranges within the park, when known, appear on the left hand page. No species measurements are included, but the paintings are scaled to size. The author has prepared all paintings and the text. Two pages of weaver-nest sketches are included. A major disadvantage of the guide is that 71 species that have been recorded within the park and are listed in the two appendixes, are neither described nor illustrated.

Newman's "Birds of Southern Africa," published in 1983, is a more comprehensive field guide that covers all of Africa south of the Cunene, Okavango, and Zambesi rivers. All species known to occur in this region are illustrated and described in this more recent book, including all species known to occur in Kruger National Park. For the bird student visiting or residing in Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland, or Zimbabwe, Newman's "Birds of Southern Africa" is more useful than "Birds of Southern Africa 1: Kruger National Park," and it is therefore recommended for general field use in a far wider area of southern Africa.—LARRY SCHWAB.

WILDFOWL. By Eric Hosking, text by Janet Kear, and foreword by Konrad Z. Lorenz. Facts on File, New York, New York, and Bicester, England, 1985:153 pp., numerous color and black-and-white photographs. $24.95.—This volume is intended to showcase the work of well-known British bird photographer Eric Hosking. The text, by Janet Kear, presents a popular overview of waterfowl throughout the world, in seven chapters, covering such areas as evolution, courtship, nest and eggs, parental care, and flight and migration. Hosking's photographs are intended to illustrate the subject matter of each chapter.

What could have been a visual treat is, unfortunately, visually annoying. Printed in Singapore, the color plates are very grainy, and many are also somewhat off register in appearance. Others are badly out of focus, perhaps in some cases due to excessive enlargement in an attempt to illustrate a special courtship posture or some other behavioral con-

sideration. (The relatively few black and white photographs are uniformly sharp.) The text itself is accurate, well written, and covers a remarkable diversity of subject matter in a concise style. In contrast to the color photographs, however, Kear's writing is at times too crisp, often leaving the reader wishing for more details. A useful addition to the end of each chapter would have been a list of suggestions for further reading, or at least a section of major references at the end of the book would have been helpful; no such information is provided. "Wildfowl" is dedicated to England's noted conservationist Sir Peter Scott. The intent was good, but the poor quality of photographic reproduction renders the book disappointing and not worth the price. This certainly does not represent Hosking at his best.—ROBERT C. LEBERMAN.

BIRD ETCHINGS: THE ILLUSTRATORS AND THEIR BOOKS, 1655–1855. By Christine E. Jackson. Cornell Univ. Press, Ithaca, New York, 1985:292 pp., 4 colored and 79 uncolored plates. $55.00.—Most of the recent spate of books on bird art, whether on the work of a single artist or of a genre, have tended to be of the coffee-table ilk, designed to appeal more to the eye than to the intellect (even though the text may sometimes be genuinely authoritative). This generic designation by no means applies to Christine Jackson's latest scholarly book (she is also the author of "Bird Illustrators: Some Artists in Early Lithography" [Witherby, London, England, 1975], which, although adorned with 14 colored plates, is equally scholarly.) Ms. Jackson is identified on the jacket of her new book as a former college librarian and "an amateur naturalist in the same tradition as the people she writes about in *Bird Etchings.*" These two aspects of her life are precisely reflected in her text. She is obviously professionally familiar with the world of books and printing, and her research into the lives of authors and illustrators of early ornithological works appears to have been thorough (this book was already mentioned as being "in preparation" on the jacket of her 1975 book) and nearly impeccable.

On the other hand, Jackson's *ornithology* is what we might expect of the keen but somewhat provincial British amateur naturalist. Her nomenclature of non-British birds, both scientific and English, is often neither up-to-date nor accurate; her authorities were the 5th (1957) edition of the A.O.U. "Check-list" (which she misspells as "checklist") for "North American and Nearctic species [*sic*]," and Gruson's 1976 "Checklist of the World's Birds" (which she cited as "Checklist of the Birds of the World"). Her problems with nomenclature are exemplified by the caption to Plate 19: "Mark Catesby's plate depicting the blue jay, now the crested jay (*Cyanocitta cristata*); Plate 15 of *Natural History of Carolina.*" Catesby's plate is clearly labeled "The crested jay"; Jackson got the chronology of the English names backward. A more extreme example of Jackson's ornithological naïveté is the caption to Plate 7, on which is reproduced a drawing by William Swainson from his monograph "Flycatchers" (Jardine's Naturalist's Libary, Ornithology, Vol. 10, Plate 22, 1838). This portrays a female *Platysteira cyanea,* an African monarchine for which (at least) the names Wattle-eyed Flycatcher, Common Wattle-eye, Brown-throated Wattle-eye, and Scarlet-spectacled Wattle-eye are used in recent world lists and African field guides (Gruson calls it just "Wattle-eye"). Swainson's plate, however, is lettered "spectacle tody"; Jackson took that name literally, looked up the distribution of todies, and consequently attributed *Platysteira cyanea* to the West Indies! On p. 111 she correctly associates the British name "great white heron" and the scientific name *Egretta alba,* but then goes on to state that "the American form is the common egret, *Casmerodius albus.*" She obviously meant that this was the American *name usage,* not realizing that the word "form" would imply a *taxon* to many readers. On p. 115 she gives the English name of *Otus asio* as "red owl" and misidentifies the "Bastard Baltimore

of Catesby i.49" as "now the northern oriole, *Icterus galbula*" (it is, in fact, the Orchard Oriole, *I. spurius*). No sex is given in the original caption by George Graves for his Red-breasted Merganser (*Mergus serrator*) reproduced here as Plate 61; Jackson erroneously calls it a female. Several additional problems with the identification or nomenclature of birds could be cited.

But this isn't really a "bird book," and in the context of Jackson's biographic, bibliographic, and iconographic research, the errors listed above are relatively unimportant. I don't know enough about most of the artists discussed in this book to detect errors of fact or interpretation as easily as I could the ornithological errors. I noted only two during my reading of the entire book. On pp. 92–93, Jackson states that George Edwards "resolved not to part with any colored or uncolored prints while he was alive in case unskilled colorers should work on them and spoil them." This just doesn't make sense, and consultation of Vol. 1, p. xx of Edwards' "A Natural History of Uncommon Birds . . ." (1743) reveals that, as one might expect, Jackson's words ". . . colored or . . ." should be deleted. On p. 231 she reports as fact Audubon's oft-repeated tall tale that he had studied art with the famous French painter Jacques-Louis David (see Harwood and Durant, Audubon 87[3]:58–118, 1985).

With errors thus disposed of, what does Jackson's book have to offer? The bulk of her text is devoted to biographies of 16 author-artists of early ornithological works, many of whom will be unfamiliar to most American readers: Francis Willughby (1635–1672), John Ray (1627–1705), Eleazar Albin (d. 1741/42), Mark Catesby (1683–1749), George Edwards (1694–1773), Thomas Pennant (1726–1798), William Hayes (1735–1802), John Latham (1740–1837), John Walcott (1754/55–1831), William Lewin (1747–1795), James Bolton (d. 1799), Edward Donovan (1768–1837), George Graves (b. 1784), Prideaux John Selby (1788–1867), Sir William Jardine (1800–1874), and John James Laforest Audubon (1785–1851). Jackson has been, in my opinion, highly successful in giving the reader a "feel" for the times and the places (mostly England) in which these men lived. The continuing improvements in ornithological knowledge, in style and accuracy of depiction of birds, and in methods of reproducing illustrations, are all faithfully described. One is inevitably left with a sense of admiration for the perseverance of these pioneers, especially those without great inherited wealth. Many contemporaries of the biographees are mentioned, including especially those who contributed their artistic or technical talents to the production of the listed ornithological works, and those who supplied living or preserved birds as models for the artists.

The title of the book is misleadingly restrictive. Although Jackson carefully distinguishes the techniques of etching and engraving, both in her introductory pages and in an appendix, many of the featured ornithological works were illustrated with engravings rather than etchings.

The book closes with several appendices and indices: "Continental Illustrated Bird Books Published to 1660"; "The Use of Metal for Bird Illustrations," a useful explanation of the principal techniques ("etch" is from the Dutch word *etsen,* "to bite away"); "The Main Periodicals with Engraved/Etched Bird Illustrations" (of 6 listed, published between 1790 and 1853, 3 were not "periodicals" in the sense that we generally use this word, but *books* that appeared in parts); "Editions, Impressions, and Special Issues" (clarifying the reasons for the many variations seen in extant copies of these books); "Notes" to each of the chapters, giving sources in abbreviated form; "Selected Bibliography and Chapter Sources" with full citations; "Name Index" (i.e., people and institutions), and "Index of Avifaunal Species" (i.e., scientific names of birds).

Although this review does begin with traditional nit-picking, I must close by emphasizing that I thoroughly enjoyed reading "Bird Etchings," I learned a lot, and I highly recommend it to anyone interested in the history of ornithological art and literature.—KENNETH C. PARKES.

THE WILDLIFE GARDENER. By John V. Dennis, illus. by Matthew Kalmenoff. Alfred A. Knopf, New York, New York, 1985:293 pp., 65 drawings. $17.95.—John V. Dennis, author of "A Complete Guide to Bird Feeding" and "Beyond the Bird Feeder," explains how to create and enjoy a wildlife garden in his latest book. His purpose is to encourage many to start wildlife gardens, believing that the more such minihabitats there are, the better it is for the wildlife he wants to help, and that even small gardens, suitably planted for wildlife, help take the place of lost natural habitat. In fact, Dennis argues that such a garden can support a larger and more diverse wildlife community than a similar area of natural habitat. His book is written for the general reader, one with at least some land to plant and an affinity for wildlife.

"The Wildlife Gardener" differs from many books that emphasize attracting birds. Dennis encourages one to improve a yard's attractiveness to all kinds of wildlife by using plantings that provide shelter and food, arguing that all manner of living things add to our enjoyment of suburban and rural life. He encourages us to enjoy a larger variety of animals. He includes chapters on plantings, use of ponds, pools and other sources of water, food plants for birds, nesting sites for birds, hummingbirds, and mammals. There are four chapters devoted to attracting insects: bees, butterflies, moths, and other insects. Other chapters cover earthworms, reptiles, and amphibians. The excellent appendix supplies an annotated list of small trees, shrubs, vines, and flowers useful as food or shelter for wildlife. There is a bibliography and index.

The best thing about this book is the hundreds of interesting and useful hints, recommendations, and facts. For example, there is a list showing insect pests and their insect enemies. Dennis recommends setting aside a remote corner of the yard, if it can be spared, to grow weeds to attract butterflies and other insects. He has counted 38 species of butterflies coming to dogbane (*Apocynum* sp.). Many plants he recommends are plants we consider to be weeds, but are used as garden plants in Europe (i.e., sumacs [*Rhus* spp.] and goldenrods [*Solidago* spp.]).

Birds are not neglected. Ideas, such as providing mud for nesting material, and the use of dripping water and other sources of water, in addition to the standard bird bath, will increase the variety of species using the garden. Trees and shrubs are analyzed for their usefulness as nesting sites and are grouped according to how many species have been observed to nest in each kind. The emphasis is on garden and landscaping, not bird houses and feeders.

Some of the mammals Dennis discusses, opossums, moles, bats, raccoons, woodchucks, and rabbits for example, are generally thought of as pests. He stresses methods for controlling wildlife damage and discusses the ecology and beneficial aspects of each. Yet some readers will balk at inviting some kinds of animals into the yard by offering dog food, fruit, and vegetables; and neighbors, whose gardens are raided or fruit trees girdled, may not understand one's wildlife zeal. The serious wildlife gardener will have to show neighbors how to control damage and do some diplomatic education in ecology and conservation. Gardeners who enjoy wildlife are certain to find this book useful and entertaining. Anyone interested in wildlife, especially the food habits of common animals, will find "The Wildlife Gardener" appealing.—ALBERT R. BUCKELEW JR.

AUSTRALIAN BIRD CALLS, 2nd Edition. By John N. Hutchinson. Series 1, Western Australia. No publication date given. Compact Cassette (approx. 30 min/side). Monaural. Published privately by the author and available from him at Wildlife Sound Studios, Balingup 6253, Western Australia. $10.00 Australian currency.—This well-produced recording treats the typical songs and calls of 50 bird species of western Australia. The recordings were made in the period 1962–1969, mostly by Hutchinson, primarily in natural "bush settings,"

although three were of captive birds—Whistling Eagle (*Haliastur sphenurus*), White-tailed Cockatoo (*Calyptorhynchus baudinii*), and Cockatiel (*Nymphicus hollandicus*). Narration is confined to an announcement of each species just before it is heard, by Miss Gillian Waite, a lady with a pleasant voice. The cardboard insert has a color photograph of a logrunner, the Wedgebill (*Sphenostoma cristatum*). On the back of the insert there is a brief paragraph about the recordings (made using an open microphone with no parabola). There also is information that the sounds are available on a 12-inch LP disc and that Series 2 and 3 are available. A folded sheet of paper contains a list of the 50 species by common name, scientific name, general recording locality, and remarks (such as "warning call when lizard entered nest tunnel. Song."). The presentation is in a systematic order, beginning with an Emu (*Dromaius novaehollandiae*), followed by a Yellow-nosed Albatross (*Diomedea chlororhynchus*) and then continuing with an ibis, the Whistling Eagle, 1 stone-curlew, 2 doves, 5 parrots, 2 cuckoos, 1 owl, 1 kookaburra, 1 bee-eater, the Noisy Scrub Bird (*Atrichornis clamosus*), 1 lark, 1 babbler, 3 warblers, 8 flycatchers, the logrunner, 1 Australian nuthatch, 2 flowerpeckers, 8 honeyeaters, 1 waxbill, 1 magpie-lark, 2 wood-swallows, 1 butcherbird, 2 bowerbirds, and 1 crow. The recordings are uniformly very good, although many are not much fun to listen to just for their sonic characteristics. Ths is an important publication of reference material, which together with the other two in the series (I have no information about them) should certainly comprise a useful introduction to Australian bird sounds for amateur and professional alike.—JOHN WILLIAM HARDY.

APPLICATION TO THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

The following application has been received by the Commission and has been published in Vol. 43(2) of the *Bulletin of Zoological Nomenclature* (9 July 1986). Comment or advice is welcomed and should be sent % British Museum (Natural History), London, England. Comment will be published in the *Bulletin*. P. K. Tubbs, Executive Secretary.

Case No. 1051—*Bubo* Dumeril, 1806 and *Surnia* Dumeril, 1806 (Aves): proposed confirmation on the Official List.

SOUTH AFRICAN ORNITHOLOGICAL SOCIETY SYMPOSIUM

Birds of evergreen forest will be the subject of a symposium to be held 8–10 September 1987 at The Wilderness, Cape Province, South Africa. Papers and posters on forest bird communities, biogeography of forest birds, and conservation of forest avifaunas are solicited. Contact the Symposium Organising Committee, E.C.W.B.S., P.O. Box 1305, Port Elizabeth, 6000, South Africa for details.