

ORNITHOLOGICAL LITERATURE

AVIAN BIOLOGY. VOL. VIII. By Donald S. Farner, James R. King, and Kenneth C. Parkes (eds.). Academic Press, New York, New York, 1985: xxiii + 256 pp., 10 black-and-white photos, 8 text figs. \$49.50.—Because of the great disparity in subject matter of the two chapters in this volume, each chapter is given a separate review.—(G.A.H.)

Chapter 1.—THE ADAPTIVE SIGNIFICANCE OF COLONIALITY IN BIRDS. By James F. Wittenberger and George L. Hunt, Jr.—Because literature on the evolution of colonial behavior had not yet reached a level of sophistication to warrant inclusion of a chapter on coloniality in “Avian Biology,” Wittenberger and Hunt’s contribution was not anticipated when the series was originally planned. This situation changed quickly, however, as demonstrated by the proportion (half) of the 500 references used in this paper that were published within the past 10 years. This chapter is a synthesis of the rapidly growing literature on the adaptive significance of coloniality, and the authors begin by outlining their objectives: (1) to evaluate existing hypotheses for explaining the evolution of colonial behavior, (2) to identify the evidence still needed to test them, and (3) to present new hypotheses and perspectives where current thinking seems inadequate. Their ultimate goal is to achieve a more integrated body of knowledge that will enhance our current understanding of avian coloniality and help focus future research on important unanswered questions.

A section follows the Introduction in which the authors define their use of the term “colony” and review the occurrence of coloniality among birds. They define a colony as “a place where a number of individuals or pairs nest or regularly roost at a more or less centralized location from which they recurrently depart in search of food.” Because the term colony typically is used to refer to a group of individuals rather than to the location where they congregate (e.g., see Kushlan’s recent commentary on terminology, *Colonial Waterbirds* 9:119–120, 1986) this definition surely will make some readers uncomfortable; others will disagree with the inclusion of nonbreeding assemblages of birds in this review. The authors obviously anticipated some of these criticisms and carefully justified their definition as one that allows a parallel discussion of breeding and roosting systems which they deemed desirable because in some cases theories developed for one system are applicable to both.

Some of the more stimulating ideas found in the entire chapter are in the next section titled “Toward a Better Theoretical Perspective.” Here the authors point out that a common approach to studying the evolution of colonial behavior is to catalog the costs and benefits experienced by individuals that live in groups and to identify the benefit with the greatest positive effect as the most likely reason why coloniality evolved (or conversely, the cost with the greatest negative effect is used to explain why a given option has not been adopted). Wittenberger and Hunt emphasize that this approach has major problems: (1) it implies a single selective pressure has been responsible for the evolution of a behavioral trait, and (2) it fails to consider that many variables may enter the argument as both a cost and a benefit (e.g., colonial behavior may attract predators [cost]; colonial behavior may enhance predator deterrence [benefit]). The authors propose that a more comprehensive approach is to consider the net effect of coloniality. To demonstrate the usefulness of this direction they use the next five sections of the chapter to examine the net effect that coloniality has on food intake (“Energetic Effects”), predation pressure (“Predation Effects”), conspecific interference (“Egg Destruction and Chick Killing”), mate acquisition (“Extrapair Copulations”), and miscellaneous factors (“Other Considerations”). The authors evaluate the evidence available to support each factor hypothesized to favor colonial behavior and present the reader with a

clear picture of questions yet to be answered as well as good suggestions for future lines of research. I did have problems with the section on "Egg Destruction and Chick Killing" in which the authors state that increased egg and chick loss due to the presence or activities of conspecifics represents a potentially severe cost of coloniality. The nature of their discussion implies that they accept that loss of chicks and eggs to conspecifics is a widespread and normal event. Numerous studies have documented that the presence of investigators in colonies causes egg and chick loss to conspecifics. Shugart and his coworkers (Wilson Bull. 93:565-569, 1981) recently documented that chick mortality in Herring Gull (*Larus argentatus*) and Caspian Tern (*Sterna caspia*) colonies could be decreased significantly by minimizing investigator disturbance using a system of tunnels to gain access to blinds. Based on their results, I will not be convinced that studies of chick deaths caused by neighboring conspecifics tell us anything about the evolutionary history of a population unless investigators have taken precautions similar to those outlined by these authors.

In the last two sections, Wittenberger and Hunt evaluate the net effect of factors influencing coloniality and summarize their synthesis with the following conclusions: (1) the adaptive significance of avian coloniality is not yet understood, and (2) no single hypothesis is likely to provide a general explanation of avian coloniality. The authors recommend that investigators focus on testing the more important predictions that arise from the variety of hypotheses that have been proposed to explain why coloniality evolves; in addition, they suggest another important task is to delineate different forms of coloniality that are associated with a distinctive set of selective factors.

Wittenberger and Hunt have produced an important synthesis that students of social behavior will read to obtain a current perspective of this exciting topic; some will continue to use it as a springboard to new research directions, as this chapter is infused with enough new ideas to keep many investigators busy for decades.—FRANCESCA J. CUTHBERT.

Chapter 2.—THE FOSSIL RECORD OF BIRDS. By Storrs L. Olson.—Olson's contribution covers a much wider field than the title suggests. That interest in paleornithology is increasing is evidenced by the fact that over 60% of the 500 references cited by Olson were published within the last 15 years, approximately the period since the publication of Brodkorb's 1971 "Catalog of Fossil Birds" that brought all nonpasserine fossil records up to date. At least 100 have appeared within the last five years. For the paleontologist, therefore, the chapter provides a valuable source of up-to-date information, including unpublished studies now in progress.

Of equal importance to the recording of fossil species, genera, etc., is the interpretation of what this knowledge reveals with regard to relationships and distribution of modern birds. It is in this area that all ornithologists will profit from careful perusal of the analyses provided.

In his introduction Olson states that the Chapter does not pretend to treat the entire fossil record of birds. He has, instead, concentrated on the Mesozoic and Tertiary history of the group in an attempt to relate what he believes "paleontology currently tells us about the first appearance and evolution of the major taxa."

The analysis of Mesozoic birds includes recently published fossil records from the Cretaceous of Mongolia, Russia, and Baja California. The most notable of these, from the Lower Cretaceous of Mongolia, was *Ambiortus*, a volant bird that exhibits similarities to a recently reported, but unnamed, paleognathous carinate from the Eocene of North America. Although, for the most part, the Mesozoic birds are maintained in extinct orders, Olson indicates that the Charadriiformes and possibly the Procellariiformes are also represented.

Twelve pages are devoted to the paleognathous birds and their possible origin. Morphological studies of living birds, as well as the fossil record, are included. Ornithologists who are involved in studies of this group of birds will find much of significance in Olson's treatment of the various theories of their origin.

Olson notes that the present classification of birds "in no way reflects the probable evolutionary history of the class." The fossil record of extant orders is, therefore, presented in what he terms a "working arrangement" based on the assumption that birds originated on land and that highly specialized water birds (such as loons and penguins) are the most derived. The latter half of the Chapter is, therefore, arranged under the headings of "Basal" Land Bird Assemblage, "Higher" Land Bird Assemblage, and Waterbird Assemblage. Should the reader find this arrangement difficult to follow, the carefully prepared index (which, however, includes subject matter for Chapter 1 as well as Chapter 2) provides a ready means of locating a desired taxon.

The "Basal" Land Bird Assemblage includes the Galliformes, Cuculiformes, Falconiformes, Columbiformes, and Psittaciformes. But, as Olson notes that the ordinal limits in this group need redefinition, many of the birds discussed are at the family level.

The remaining land birds are treated at length under the "Higher" assemblage, with revision particularly in the Coraciiformes and Piciformes, both of which are considered to be polyphyletic.

Several innovations are offered in the Waterbird Assemblage. Notable among these, the probable evolution of ostriches (Struthionidae) from three Eocene and Oligocene crane-like birds, is discussed under the Gruiformes. Olson adds that these early families (Geranoididae, Eogruidae, Ergilornithidae) "will perhaps later be combined under the Struthionidae much as *Hyracotherium* ("Eohippus") and later horses are all placed in the Equidae." The "New World Vultures" (Vulturidae = Cathartidae) and the extinct Teratormithidae are included in the Ciconiiformes. Regarding the Vulturidae, the fossil record suggests that "New World" is a misnomer for this group. The ibises (Plataleidae) are considered "mosaics of gruiform and charadriiform characters." The flamingos (Phoenicopteridae) are placed in the Charadriiformes. The excellent record of the charadriiform genus *Presbyornis* is cited as indicating that the Order Anseriformes likely evolved from a primitive charadriiform ancestor, a conclusion of especial interest to me in view of my study of the South American Eocene *Telmabates* (later synonymized with *Presbyornis*). I found in *Telmabates* a synthesis of flamingoid (now charadriiform) and anseriform characters so notably evidenced that I often, jokingly, referred to the bird as a "flamoose." Although Olson agrees with Storer that loons, grebes, and hesperornithiforms did not share a common diving ancestor, he questions Storer's suggestion of a charadriiform ancestry for loons, and proposes a closer relationship to the Procellariiformes and Sphenisciformes—adding, however, that "the evidence is as yet quite tentative."

The message Olson conveys throughout this Chapter is that the fossil record of birds is very much alive. Not only are there continuing studies from sites in North America and Europe, but new discoveries are coming from Mongolia, South America, Australia, and China. Many of these suggest distributional, as well as anatomical, changes within the avian groups recognized today. We may not agree with all the conclusions Olson offers, but the Chapter is a challenge to preconceived ideas.—HILDEGARDE HOWARD.

PROCEEDINGS OF THE FIFTH PAN AFRICAN ORNITHOLOGICAL CONGRESS. Edited by J. Ledger. South African Ornithological Society, Johannesburg, 1984:885 pp. \$45.00 (paper).—The Pan African Congress is unique, there being no other continental ornithological congress. The present Congress met at Lilongwe, Malawi, in 1980. Its proceedings were published December 1984. (A Sixth Congress convened in 1985.)

The 57 papers of the Congress are grouped under seven sections: "Systematics," 4 papers; "Population Studies," 6; "Ecology," 18; "Miscellaneous," 7; "Conservation," 8; "Behavior," 4; and "Breeding Biology," 10. Numbers of papers within these sections may be more or

less indicative of current (1980) emphases of investigation regarding the African avifauna. Review of the papers probably affords a reasonable sample of ongoing ornithological research in that continent.

"Systematics" is introduced by a 13-page edited version of a manuscript by the late Leslie Brown: "Systematic Problems in African Falconiformes." T. Farkas' "Taxonomic Features Common to Mimidae, *Erythropropygia* and Some Other Genera" concludes that African genera surveyed and the New World Mimidae probably have descendancy from ancestors of the Timaliinae. This reviewer became uncomfortable at ruling out convergence for many of the characters selected to suggest homology (e.g., rounded wings, colored irides, etc.). I found "*Corythornis* Systematics and Character Release in the Gulf of Guinea Islands" (C. H. Fry and R. de Naurois) and "Secondary Contacts in Central Africa" (A. Prigogine) substantial papers.

"Population Studies" range from treatment of a single species, "The Brown-throated Golden Weaver (*Ploceus xanthopterus*) from Moçambique and Malawi" (D. N. Hanmer) to "Population Dynamics of Birds in *Brachystegia* Woodland" (C. J. Vernon). In "Changes in the Avian Population of the Kalahari National Park," R. Liversidge grouped 63,427 bird sightings by feeding habits and plotted these data against rainfall. The conclusion: in semiarid areas "nomadism and rapid reproduction enable birds to capitalize on the super abundance of food resources which occurs after good rains." In "Studies of Birds in a Semi-arid Region of Kenya," D. E. Pomeroy and C. Muringo report that highest avian densities correlated with rainfall of 400–600 mm/yr (highest mammalian densities at > 1000 mm/yr). Again bird mobility is emphasized, this enabling effective exploitation of food resources subsequent to unpredictable rainfall. D. B. Hanmer's "Life Expectancy and Productivity Estimates for Three Species of Bulbul from Southern Malawi" provides useful data for comparison with other passerine species. Considering the tempo of change of African landscapes, one wishes that population studies could be increased manifold.

"Ecology" offers one third of the papers. Many emphasize G. J. Morel's comment ("Congress Review," pp. 27–30) that the Congress "provides more facts than theories." Two papers discuss waterfowl distribution, but a blank page (p. 403) eliminates figures. Raptor diversity and density in Zimbabwe are discussed and habitat preferences of 16 species of Zimbabwe rails are described. A blank page (p. 390) diminishes appreciation of a paper regarding the ecology of South African kingfishers. Two papers on vultures deal with: scavenging in South Africa (P. R. K. Richardson) and a comparison of food supplies of African and South American vultures (D. C. Houston). The statement (p. 251) that "most of the New World vultures are found in areas of dense rain forests" needs qualification. M. Louette's "Apparent Range Gaps in African Forest Birds" is interesting. J. M. Winterbottom's "Islands and 'Islands' in Bird Distribution" re-emphasizes that avifaunas of ecologically isolated areas within continents can exhibit characteristics of those of oceanic islands.

Four of the "Ecology" papers describe responses of native birds to "disturbed" habitats. Rameron Pigeons (*Columba arquatrix*), frugivores important in seed dispersal of indigenous trees, have "shifted their niche" to Natal's exotic flora (T. B. Oatley). Also in Natal, Thick-billed Weavers (*Amblyospiza albifrons*) adapt to agricultural areas as these replace forest habitats (H. T. Laycock). Pest statuses of some granivorous birds of Kenya are discussed by N. N. Gichuki. Changes in population and division of resources of four birds of the Benguela upwelling system are correlated with commercial fisheries' activities (J. Cooper). Numbers of Jackass Penguins (*Spheniscus demersus*) have decreased fourfold in 24 years.

A. Guillet's "Ecological and Ethological Aspects of the Nest of the Shoebill" is welcome. G. C. Backhurst and D. J. Pearson extrapolated numbers of migrants at lights to probable numbers and timing of Palaearctic migrations over southeast Kenya. F. Dowsett-Lemaire and R. J. Dowsett evaluated forest size regarding montane bird populations of the Nyika

Plateau. Groupings of small forests rather than a few large ones were found to achieve higher densities of many species. To be noted is D. N. Johnson's study of two "similar" flycatchers (genera *Tchitrea* and *Dyaphorophya*) of the Nigerian rain forest. Where territories of these overlapped, competition was not discernible: it is suggested that given ample food and commodities, "high niche" overlaps are ecologically feasible.

In a "Miscellaneous" paper E. C. Collias evaluated 1000+ eggs produced by 34 female Village Weavers (*Ploceus cucullatus*) during their lifetimes. Sizes, shapes, color, and aspects of spotting were statistically consistent for each bird. He suggests that a female can discriminate between her eggs and variously similar eggs of a brood parasite, the Didric Cuckoo (*Chrysococcyx caprius*). A. J. F. K. Craig postulates that multiple nests built by monogamous male Spectacled Weavers (*P. ocellatus*) suggest a "mechanism" whereby the widespread polygyny in weavers could have originated. Techniques for monitoring weights of adult and nestling bee eaters are described by C. H. Fry et al. Among information possible from chemical profiles of feathers is knowledge of where, geographically, the feathers were "grown" (J. P. Kelsall). Finally, there is an interesting contribution to natural history of the Madagascar ground rollers (D. A. Turner).

"Behavior's" four papers feature analysis of almost 1800 h of Black Eagle (*Aquila verreauxii*) activities (V. Gargett), nonbreeding behavior of African Black Oystercatchers (*Haematopus moquini*) at offshore islands (P. A. R. Hockey), group sizes of Cape Turtle Doves (*Streptopelia capicola*) at desert waterholes (W. R. Siegfried), and duetting in some ground barbets (L. L. Short and J. F. M. Horne).

"Breeding Biology" offers the second largest number of papers, data of some affording thresholds for theorizing. Blackshouldered Kites (*Elanus caeruleus*), for successful breeding, depend upon seldomly predictable maximum rodent populations (J. Mendelsohn). As they breed whenever suitable feeding conditions arise, it is theorized that some feature of the prey before a peak of abundance triggers reproduction; four are suggested. White-fronted Sandplovers (*Charadrius marginatus*) of South Africa are paired and territorial throughout the year, adaptations, it is believed by A. A. and T. M. Crowe, for opportunistic breeding (e.g., "close pairing allowing quick response to suitable conditions"). The late L. H. and C. H. Brown question food supply as the "main determinant" of breeding in African birds. E. K. Urban sets the normal annual figure of breeding pairs of White Pelicans (*Pelecanus onocrotalus*) in Africa between 10,000 and 40,000. N. E. Collias reports on behavior and reproduction in the heretofore little known Grey-capped Social Weaver (*Pseudonigrita arnaudi*). From Mali, R. T. and M. P. Wilson contribute to knowledge of Hammerkop (*Scopus umbretta*) breeding biology. There is discussion of sibling aggression and chick starvation of African Fish Eagles (*Haliaeetus vocifer*) in Uganda (S. J. A. Sumba). The Didric Cuckoo, from frequency of parasitism and degree of likeness of its eggs to those of its hosts, is shown to have host-specific genes (J. F. R. Colebrook-Robjent). C. J. Vernon presents evidence that the Thickbilled Cuckoo (*Pachycoccyx audeberti*) is promiscuous. The effect of position in hatching sequence on the growth of Jackass Penguin chicks is documented by A. J. Williams and J. Cooper.

"Conservation" opens some "windows" into the changing African landscape. In "An Assessment of Rare, Vulnerable and Endangered South African Breeding Birds," R. K. Brooke applied the Landry Scale to the 167 species of the "South African Red Data Book." Six were deemed in need of more protection and active management, 70 in need of ongoing monitoring. Attesting all too eloquently to civilization's effects is the Yellow-billed Oxpecker (*Buphagus africanus*), which no longer breeds in South Africa; the game with which the species was symbiotic is largely gone and thus, too, the ticks the birds feed upon. Potential symbionts, cattle, are dipped in arsenic to control ticks. A. F. Boshoff and C. J. Vernon sent

questionnaires to *all* farmers of South Africa's Cape Province; 14,800 (48%) replied! Because conservation of raptors apparently depends largely upon the farming community, increased conservation education is urged. Cape Vultures (*Gyps coprotheres*) now number but 50 breeding pairs in the Province. On the other hand, Red-breasted Sparrow Hawks (*Accipiter rufiventris*), colonists of homestead tree-claims, have increased, and so have African Fish Eagles in response to increasing numbers of water impoundments. P. L. Britton et al. ("East African Endangered Species") found that 9 of the 10 endangered species are forest birds and pronounced that the Uluguru Bush-Shrike (*Malaconotus alius*) may have become "Africa's first avian extinction."

Seven of the eight "Conservation" papers are by delegates from South Africa. R. K. Brooke writes (p. 569): "South Africa's public consciousness of its need to conserve its avifauna is both quite developed and quite well oriented to those species which need it." Laudable indeed. But only two areas outside South Africa are subjects of "Conservation" papers. There are nearly 50 "countries" in Africa—what of the rest of them?

Inspection of the list of Congress delegates elicits a somber note. I count only 11 African "countries" represented—about 20%. There are, of course, other organs for reporting research in Africa. Whether or not the Proceedings affords a "barometer" regarding ornithological activity in the continent is uncertain. Attending this Congress were 118 delegates. There were 250 at the Fourth Congress and 217 at the Third. A reviewer may not have "license" to stray from the role of textual criticism; however, in review of the Congress, Morel (p. 29) wrote that outside of South Africa the resident ornithologist is "on the decline" and "endangered." Education and incentive from governments, he believes, are necessary to remedy this situation. We can but try to be optimistic that, as Morel hopes, we can "absolutely make the governments understand that ornithology, especially in Africa, is necessary." A heritage, both unique and magnificent, is slipping rapidly away from us. We need to learn all we can of it now—that we can wisely conserve and document what we still have. If we do not accelerate research, we will surely, as Moreau (Bird Faunas of Africa and its Islands 1966:vii) put it, be reduced to "scrabble about in the ruins of . . . a flora and fauna" in reconstructing what was there.

The Fifth Proceedings contains a wealth of ornithology. Its editor is to be commended on a presumably difficult task well done. The volume should be available to all serious students of vertebrate biology. Much will be gleaned from it. Additionally, many will, as did I, find the papers interesting and pleasant reading.—OSCAR T. OWRE.

LIFE OF THE WOODPECKER. By Alexander F. Skutch, illus. by Dana Gardner. Ibis Publ. Co., Santa Monica, California, 1985:136 pp., 67 color plates. \$49.95.—Alexander Skutch has long been one of my favorite authors and ornithologists; perhaps it has been his sense of intimacy with individual species, perhaps the lure of the Central American habitats he has often written about. With my own interest in woodpeckers, it was with great anticipation that I began reading "Life of the Woodpecker."

"Life of the Woodpecker" is a coffee-table sized book (24 × 31 cm) that is lavishly illustrated with color plates. It seems to be intended for the serious amateur, but it is a fascinating book—perhaps because woodpeckers have such amazing structural and behavioral adaptations—that holds something for anyone with at least a casual interest in nature. Yet Skutch's intimacy with rarely studied Central American woodpeckers provides meat for even the most advanced woodpecker "specialist."

The book begins with a discussion of the position of woodpeckers among the birds of the world, then details the woodpecker niche: how they get their food, where they make their

homes, and what they do within their environment. Other chapters deal with (1) vocalizations, drumming, and displays; (2) nesting; (3) fledged young; (4) social life; (5) usurpers, parasites, and predators; and (6) woodpeckers and man.

Skutch relies greatly on his own experiences in each chapter, but also draws freely from the technical literature. His coverage of the literature, while far from comprehensive, is good. A Literature Cited section with entries arranged by chapter includes approximately 107 references to the technical literature and will be very useful to budding "picophiles." Admirably, Skutch makes extensive use of the German literature.

In spite of enjoying the book, I was at times very frustrated with it. There are more than an average number of typographical errors, and many sentences are shy of needed commas.

Although there is a glowing introduction by S. Dillon Ripley, there is no acknowledgments section, and it appears that no woodpecker specialist reviewed the manuscript for accuracy. As a result, there are a few inaccuracies. For example, Skutch tells us (p. 11) that woodpeckers have a "white tongue." I have examined the tongues of living adults and nestlings of seven species of woodpeckers in eastern North America and the tongue of an adult Black-cheeked Woodpecker (*Melanerpes pucherani*) from Costa Rica. The nestlings do have a white tip on their pink tongue, but all of the adults have had a slate or darker gray tip on a pink tongue. The white tip of the tongue is the central of five spots of white on the nestlings of many species of woodpeckers (the other four are egg teeth on upper and lower mandibles and oral flanges). These white areas seem to form a "target" that facilitates feeding of the young by the adults in the dark cavity.

An error that is more obvious is on p. 37, where Skutch informs us that "Only one other North American bird besides the Northern Flicker (the Mourning Dove [*Zenaida macroura*]) nests in all of the 49 mainland United States." Indeed, there are several species that have such a range, including the Hairy Woodpecker (*Picoides villosus*) and Downy Woodpecker (*P. pubescens*).

I question the suggestion (p. 11) that the barbed tongue of woodpeckers functions in capture of soft-bodied insects by piercing them, implying that the barbs then keep the skewered prey from slipping off the tongue on the way out of the tree. Logic suggests that isn't the case. If it were, how would the woodpecker then remove the prey from his tongue to swallow them? My observations of captive Red-bellied (*M. carolinus*) and Red-cockaded (*P. borealis*) woodpeckers indicate that the tongue extends into a tunnel or crevice beyond a prey item and that in withdrawing the tongue, the saliva coated barbs drag along the prey.

The color plates are generally fine illustrations that add to the appeal and usefulness of the book. Tree surfaces and the minimal backgrounds of most are generally appropriate, and compositions are pleasing. Most birds, however, are flat and a few seem misproportioned (e.g., the Downy Woodpecker, p. 60, has a large head-to-body ratio). Many have exceptionally small eyes (e.g., the Hairy Woodpecker, p. 56). I found the Ladder-backed Woodpecker (*P. scalaris*, p. 116) to be one of the more pleasing illustrations.

My favorite chapter is the last one, in which Skutch discusses similarities between woodpeckers and men, and the problems each creates for the other. He concludes by sounding an alarm that we have heard all too frequently in recent years: "Already many beautiful species, of whose habits we know next to nothing, are threatened by the appalling destruction of tropical forests." We are indebted to Skutch, for he is one who has made us aware of these species, the beauty, and the threats.—JEROME A. JACKSON.

AN ANALYSIS OF PHYSICAL, PHYSIOLOGICAL, AND OPTICAL ASPECTS OF AVIAN COLORATION WITH EMPHASIS ON WOOD-WARBLED. By Edward H. Burt, Jr. Ornithol. Monog. 38, American Ornithologists' Union, Washington, D.C., 1986:126 pp. \$15.00.—The coloration of

birds is among their most obvious yet least understood features. Why are birds colored as they are? The question has elicited many conjectures and observational explanations but hitherto little rigorous study. This monograph makes a bold advance toward some solid answers and shows that the problem is amenable to further testing.

Burt examines a series of hypotheses that may account for the evolution of a particular color or color pattern in birds. Resistance to abrasion, energy balance, minimizing reflection that interferes with vision, creation of optical signals during routine or display behavior, and contrast with the coloration of the habitat are investigated. These ideas are tested with wood-warblers (Parulinae), an appropriate choice as the author explains.

Prompted by long-standing observations, Burt conducted experiments that confirmed that black parts of feathers are more abrasion-resistant than white parts. His findings suggest that durability may be a selective factor in the evolution of melanic colors and patterns. He notes that the dark dorsal, pale ventral pattern that is common among wood-warblers may be due to countershading for concealment as well as abrasion-resistance of the back. These theories are not mutually exclusive and cannot now be separated.

Hypothesizing that the color of the legs and the mandibles might be a factor in behavioral energetics, Burt examines the energy flow for these structures. He develops an equation to test this idea and applies it to large sets of field observations on leg and bill postures. Leg color is found to affect energy absorption but yet be unrelated to potential convective heat loss. Further analysis confirms that dark-legged warblers "are able to arrive earlier and remain later on their northern breeding grounds" than pale-legged species. The latter spend the winter in warmer regions than the former. Mandible color, by contrast, appears to be unimportant for energy flow in these birds and probably evolved under other selective pressures.

Analysis of colors and behavioral observations indicates that in warblers, "color of the upper mandible is an adaptation to minimize reflection that interferes with vision." The facial markings do not seem related to reflectance but may serve other visual functions.

Conspicuous color patterns, exemplified by wingbars and tailspots, are found, not surprisingly, to be associated with movements that display them. The complex evolutionary relationship between the patterns and the behavior is beyond the scope of this study.

Lastly, Burt investigates whether the colors of warblers may have evolved so as to contrast with their background habitat. After an elaborate explanation of theory and methodology, he quantifies the "color-space" of his birds (i.e., differences in the light in different kinds of forest and at different times of spring). Subsequent analysis of behavioral observations on American Redstarts (*Setophaga ruticilla*) and Yellow Warblers (*Dendroica petechia*) supports his hypothesis but does not rule out other possible selective forces. The argument is hedged with assumptions and limitations, and its conclusion is very modest in proportion to the long preamble. Nevertheless, the notion of color space appears to deserve further exploration, especially with woodland birds.

This study adds some new ideas to the many that have already been advanced to account for the coloration of animals. More importantly, it tests some existing ideas and demonstrates the value of a quantitative, predictive approach to the subject. Burt offers explicit hypotheses and shapes his experiments or fieldwork to give clear answers. These results yield new predictions, which are themselves tested. The author appears to understand well energy balance and color vision (beyond this reviewer's competence to judge). At the same time, he recognizes the assumptions and limitations of his "evolutiono-engineering" approach—chiefly that it ignores evolutionary history.

The monograph has been carefully written and edited. Although it retains a measure of typical dissertation style, this has been leavened by apt quotations at the chapter headings, some chosen from Will Cuppy, Kenneth Grahame, and A. A. Milne. It is furnished with illustrations, references, and appendices of supplementary information.

Burt's approach and findings significantly advance our understanding of the possible selective pressures in the evolution of colors and color patterns in warblers. One hopes that his lead will be followed with other groups and in other habitats.—PETER STETTENHEIM.

BIRDS IN SCOTLAND. By Valerie M. Thom. T. and A. D. Poyser, Carlton, England, 1986: 392 pp., 151 drawings, 173 distribution maps, 33 photos, many diagrams. £24.00 (distributed in the U.S. by Buteo Books, Vermillion, South Dakota, \$47.50).—Scotland is a small country, covering 7,720,000 ha (29,806 mi²), falling in size between the 40th (West Virginia) and 41st (South Carolina) of the states of the U.S. However, it has almost 4000 km of mainland coast, plus 126 inhabited and 664 uninhabited islands, which add another 6300 km of coastline. It is therefore hardly surprising that slightly more than 50% of the space devoted to species accounts in this fine book deals with water birds, whereas these groups occupy less than 38% of the species accounts in Sprunt and Chamberlain's "South Carolina Bird Life."

For many of us inlanders, the 1966 cruise of the "Devonia" around the periphery of Scotland was our first, and highly memorable, exposure to northern seabird colonies. Although gross and relative numbers of seabird species have varied over the years, one feels that their habitats have persisted with little change since before mankind reached the British Isles. The Scottish mainland, however, bears little resemblance to its original state. At present, according to Valerie Thom, 63% of the area of Scotland is devoted to "rough grazing and ungrazed uplands," 23% to agriculture (including pasture), and only 11% to productive forest (the missing 3% presumably being urbanized). The original Scottish forest was dominated by Scots pine and birch in the north and oak and ash in the south. Very little native woodland can now be found in Scotland, and "even the planted broadleaf woodlands characteristic of the big lowland estates are dwindling." Yet the total area of woodland increased by about 75% between 1947–49 and 1979–80. This increase has been brought about by massive planting ("afforestation" in Britain) of conifers—not, unfortunately, the native Scots pine, but chiefly with Sitka spruce and Lodgepole pine from North America. Such plantings are even encroaching on large areas of the classical heather moorlands, the preferred habitat of such species as the Merlin (*Falco columbarius*), Greater Golden-Plover (*Pluvialis aprinaria*), and Red Grouse (*Lagopus lagopus*).

All of these dramatic changes in ecology help to explain why a new major work on the birds of Scotland was needed only some 30 years after the publication of the (then) definitive two-volume work "The Birds of Scotland" (1953) by E. V. Baxter and L. J. Rintoul. Much of the emphasis of Thom's book is thus, understandably, on changes in status, especially on details of distribution and population sizes. The distribution maps for individual species do not attempt to show historical changes, but do differentiate, by variations in hatching, areas of widespread versus scarce or sporadic distribution. As a purely local avifauna, "Birds in Scotland" omits any reference to extralimital distribution, nor does it attempt to emulate most of the American state bird books by including field marks or expensive color plates. The text is nevertheless enlivened by small, attractive line and wash drawings of birds, created by a team of 13 people under the direction of Donald Watson, dean of Scottish bird artists (who also contributed a handsome color painting of a family of Arctic Loons [*Gavia arctica*], reproduced, unfortunately, only on the dust jacket).

I found the 11 introductory chapters especially interesting and surprisingly thorough considering their brevity (averaging 4.3 double-column pages). They include "Scotland—its avifauna and geography," followed by 6 chapters devoted to particular habitats. Then come "Developments in bird study," "Protection and conservation—progress and prob-

lems," and "Recent changes in status and distribution," all emphasizing changes since the publication of Baxter and Rintoul's book. The last introductory chapter gives the "Background to the species accounts."

British reviewers, with their specialized knowledge, have been able to spot a few errors and omissions (see Furness, *Bird Study* 33:144, 1986; and Boyd, *Scottish Birds* 14:44, 1986), but have been as enthusiastic about the book overall as is the present reviewer.

In view of my decidedly favorable impression of "Birds in Scotland," it is tempting to say to authors and organizations contemplating the preparation of regional avifaunas in North America, "Go thou and do likewise." One must wonder, however, whether there is, in any comparable area of this continent, a group as devotedly enthusiastic, knowledgeable, and downright numerous as the Scottish Ornithologists' Club (which sponsored this book), plus supporting national organizations comparable to the three that supplied major assistance to the project: the British Trust for Ornithology, the Wildfowl Trust, and the Royal Society for the Protection of Birds. Although there is no question about the tremendous accomplishment of Valerie Thom, that this was truly a cooperative project is indicated by a reading of the two full pages devoted to acknowledgments.

Because it is, after all, highly local in its coverage, I can recommend "Birds in Scotland" chiefly to two audiences: those especially interested in British birds and those who wish to study the book as an exemplary model for a regional avifauna.—KENNETH C. PARKES.

MONTEREY BIRDS. By Don Roberson. Monterey Peninsula Audubon Society, Carmel, California, 1985:266 pp., 64 color plates, 24 black-and-white plates, individual breeding range maps, temporal bar graphs. \$14.95.—Monterey County, California, including the offshore waters up to 200 miles from land, comprises the geographic scope of this latest work by Roberson. This is the first study devoted exclusively to the status and distribution of the 427 species of birds found in the fourth most well-endowed county in California. Although various state and regional works form the backbone of the present work, Roberson draws upon unpublished field notes and articles from numerous journals. The book is an important contribution, despite some flaws. I recommend it to a limited audience.

Twenty-eight introductory pages precede the species accounts. An all too brief description of habitat features and general bird distributions includes a confusing discussion of the unique pelagic conditions that account for the occurrence of many uncommon species and a few of the rarest North American species within and beyond Monterey Bay. The text describes the locations of the Davidson Seamount, the Monterey Bay submarine canyon, and the Santa Lucia Escarpment in feet and miles. The accompanying map (using fathoms and statute miles) labels none of these features. The pelagic extensions of the northern and southern boundaries of Monterey County are not explained and encroach upon an area seemingly within San Luis Obispo County to the south. Roberson acknowledges that this boundary is a point of contention among those who chronicle California bird records. However, without a firmly established southern boundary, latitude and longitude coordinates for sightings in the text, and an adequate map, the reader is unable to piece together patterns of pelagic bird distribution beyond Monterey Bay. A perfunctory conservation section confirms the threat of pesticides and habitat loss and lists the established habitat preserves. Phone numbers for two very helpful bird-alert hotlines are given as well as information on boat charters for pelagic birding.

What makes this book valuable to birders from outside Monterey County are the 10 detailed birding routes, most of which cover the more lucrative northern and western portions of the county. Whereas the trip maps are less than adequate, the directions and mileages

are good, and with a county map in hand, there should be no problems getting to the described areas. Trip times are not given, and fees for entering or passing through state parks and beaches would have been helpful.

The Species Accounts comprise 70% of the book and contain information compiled through December 1984 (with extended coverage for several species through September 1985). The terse and dry delivery is relieved by the small but good quality color plates. Each account includes a temporal bar graph and discussions of seasonal occupancy, habitat preference, and abundance. Subspecific designations are offered for 19% of the species. These were apparently extracted from computer printouts of specimen holdings at the Museum of Vertebrate Zoology, University of California, Berkeley, and do not reflect a rigorous personal evaluation. Whether subspecific designations have been assigned to sight observations is sometimes unclear. Roberson frequently associates subspecies with color shades—a misleading use of the subspecies concept. A 2.5 × 2.5-in. county map accompanies each breeding species account. It seems that the author was conscientious in showing distribution disjunctions, but without a detailed knowledge of Monterey County birds, I cannot comment on this. The author cited helpful articles (129 in all) for species he felt were poorly described in field guides. The bar graphs are consistent with the text with respect to timing and abundance, and all bar graphs are conveniently repeated as a group at the end of the book. Typographical and editing errors are occasional. A larger, more detailed topographic map would have eliminated some of the frustration I encountered in locating sightings mentioned in the text.

There is no doubt that regional faunal works are still needed. The value of a particular work depends upon the quality of documentation and how well it stimulates further field investigation. To his credit, Roberson has harnessed the vast and often ignored resource of birders' field notes. But incomplete gathering of hard data from museum study skins (only one of five important southern California collections is cited) and no reference to egg set holdings weakens the attempt to document historical patterns. Roberson fails to present the curious cases of distribution and abundance in an intriguing light. This could have been done by pointing out anomalous distributions or migration times relative to those from other parts of a species' range or by placing question marks on the range maps where work is most needed. "Monterey Birds" is an important synthesis of many data to which Roberson has special access as chairman of the California Bird Records Committee. Because his identification criteria are those of the Committee, this work is as rigorous as can be expected when dealing with sight records. Ideal for visitors to the area, this is a work that any student of the complex and fascinating patterns of west coast bird distribution will need to own.—
MARK A. HOLMGREN.

HARRIER: HAWK OF THE MARSHES. By Frances Hamerstrom, illus. by Jonathan Wilde and Frederick Hamerstrom. Smithsonian Institution Press, Washington, D.C., 1986: 171 pp., 23 black-and-white sketches, 22 black-and-white photos, 18 figs., 11 tables. \$24.95 (cloth), \$10.95 (paper).—This is a very personal book. Although 12 appendixes contain considerable original data (pesticide levels in 45 harriers, breeding performance in relation to mating system, etc.), the brief episodic narrative (22 chapters, prologue, and epilogue average less than six pages each) is not so much a report on harrier breeding biology as it is a detailed accounting of how and why the author's 25-year study was conducted at all.

Hamerstrom's largely self-funded study of the breeding ecology of Northern Harriers (*Circus cyaneus*) on the 50,000-acre Buena Vista Marsh in central Wisconsin was truly a monumental effort (326 nests found, 647 nestlings banded, many adults individually marked

with impeded feathers and color jesses). Reading this account only reinforces my impression of the urgent need for such science. Studies of this magnitude are an all too rare commodity.

Although Hamerstrom initiated the study in hopes of answering the "simple" question "Do harriers mate for life?" (they do not), the length of her study allowed her to do much more. For example, she documented both a decline in nesting during a period of widespread aerial application of DDT, and a subsequent increase in nesting after application of the pesticide was halted. Hamerstrom was assisted in the field by her husband, as well as an army of 48 "gaboon" volunteers. She graciously dedicates the book to them, and acknowledges their contributions throughout the work.

Hamerstrom's narrative very much succeeds in capturing the flavor of harrier research on the Buena Vista Marsh, but a book of this length, even if written in telegraphic "journal" prose (it is not), can offer but a glimpse at her heroic study. Readers wanting to know more about harriers, both on the author's study site and elsewhere, will need to consult the references cited in the text. The book is profusely illustrated with over 60 sketches, photographs, maps, and graphs, but, unfortunately, none of these is numbered, and many have only brief legends. As a result, at least some of the information available therein will be lost to the reader. — K.L.B.

THE OXFORD DICTIONARY OF NATURAL HISTORY. By Michael Allaby (ed.). Oxford Univ. Press, New York, New York, 1985:688 pp. \$29.95.—Webster's Ninth New Collegiate Dictionary (1983) defines a dictionary as "a reference book containing words usually alphabetically arranged along with information about their forms, pronunciations, functions, etymologies, meanings, and syntactical and idiomatic uses." "The Oxford Dictionary of Natural History" fails to achieve this definition on two counts: it contains neither pronunciations, nor, except in a few rare instances, etymologies for the 12,000 entries it describes. There are no illustrations in the book (the dust cover illustrates two organisms that are not defined in the text!), nor are there any tables.

Although the flyleaf credits the work to a "team" of specialists under the direction of Michael Allaby, several entries left me wondering just how much teamwork occurred. For example, "isogamy," which is noted as being uncommon, is listed, but the presumably more common condition of anisogamy is not mentioned, let alone defined. Although mammalian anatomical features (homiothermic, four-chambered heart, hair, milk, etc.) are spelled out nicely under "mammalia"; the definition for "Aves" fails to include any anatomical characteristics, not even feathers! Many of the behavioral entries, with which I am most familiar, are fuzzy at best and include far too many errors of omission. There are also significant errors of commission in many entries, including the archaic definition of "interphase" as "the resting phase of the nucleus between succeeding mitoses."

More than half of the text is devoted to taxonomy, but it too has problems. For example, the entry "egrets" refers the reader to "*Egretta*," which, although it defines the genus nicely, fails to mention that other genera of egrets exist. Similarly, the entry for "night-herons" refers the reader only to "*Nycticorax*."

The book includes 75% of the 67 different items eight colleagues I queried suggested in their lists of 10 items that should be included. Most of the terms that were not included are new, and probably ephemeral, jargon; notable exceptions include "colonization," "population," and "survivorship."

Although my comments are highly critical, the book is overwhelmingly correct as written, and it does provide a listing of plant and animal taxonomy to the family level. Nevertheless, there are far too many problems with this "invaluable" "general reference" (the publisher's

words, not mine) for me to recommend it as an important addition to an ornithologist's reference shelf.—K.L.B.

THE FALL OF A SPARROW. By Sálím Ali. Oxford Univ. Press, Delhi, India, 1985:265 pp., 71 black-and-white photos, facs., letters, appendices, glossary. \$16.95.—Sálím Ali, now in his 90th year, spans the entire history of ornithology and ecology as we know it today. How fortunate he has been to be part of the progress. As a child he grew up in a Muslim family in Bombay, India, which was closely knit (many members married cousins), prolific, interesting, vigorous, and deeply involved for centuries in trade and commerce from Hyderabad west to the Coast, and east to Burma, Malaysia, and Japan. Gregarious and enterprising, in business and the profession of the law, the family was notably above the divisiveness of religious partisanship, the historic bane of the Subcontinent.

Sálím Ali came to his interest in birds as a childhood hobby, keeping small birds in the kitchen garden of their compound, aided by small cousins and the clandestine help of the family cook. From here he went on during his school days and at college with an interest in sport and the out-of-doors. Gradually becoming aware of his abiding interest in nature and wildlife and forsaking all hope of a realistic business career, he left an attempt at pursuing money-making as a partner in an unsuccessful family commercial firm in southern Burma in 1917 and again, finally, in 1923, to resume a brief spell at St. Xavier's College in Bombay, finishing up a Bachelor of Science degree. In the meantime, his sojourn in Bombay had produced an engagement and marriage to a perfect wife, for him a companion and helpmeet in the field and abroad, Tehmina Latif. Tehmina must have been the light of his life, for Sálím Ali describes her transition from a sheltered childhood with a finishing school in England thrown in, to a sturdy, uncomplaining companion on trips by bullock cart into the jungles of an earlier India, who could make overnight camps in hut or bivouac liveable while subsisting on the inevitable rice and "dal" (dried split peas). Tehmina tragically died in 1939 of blood poisoning. The change in Ali's life must have been an incredible wrench.

In 1929 the Bombay Natural History Society commissioned Sálím Ali to visit Berlin to work for a year with Professor Erwin Stresemann, the leading authority on ornithology in Europe, one of the successful museum protagonists of *biological* ornithology who set the path towards closing the "yawning gap," as Sálím Ali describes it, between systematics and biology. This was a fortunate choice indeed, for here he met and worked with Oskar Heinroth, one of the fathers of ethology; Professor Rudolph Drost, pioneer bird ringer of Heligoland Island fame; and younger men such as Bernhard Rensch. This trip to Germany was partly inspired by the current ferment in India over nationalism and the Congress movement and the actual or assumed sense of paternalistic snobbery emanating from the British Museum. On his return to India he began working closely with the Bombay Society, soon becoming Honorary Editor of the esteemed journal of the Society, as well as a field collector and research director. It was in this year that Sálím Ali was commissioned by the Society to collect notes and brief descriptions to produce finally, in 1941, *The Book of Indian Birds*, which listed some 180 bird species, including brief description, field identification, distribution, habits, food, calls and nesting, and color illustrations, including also a few general chapters on migration, flight, bird watching, utility of birds to man, in sum the ushering in of India to the "world of Peterson" as we Americans might describe it. (I can remember seeing the book on sale in railway station stands along with "Penguins" during the war.) The book was an instant success, went into eleven editions, and no doubt was greatly helped by its publication during the years of World War II. India, up to then not a well-known tourist haunt, of course had been invaded by hordes of foreign troops, mostly British, thus

starting the train of circumstances that has resulted in a continuing stream of books by this wonderfully talented author and spokesman for natural history.

Although Sálím Ali's books and definitive natural history survey volumes on regions of India have continued to come out in a steady progression, it is perhaps as a technical writer in the field of ecology that his personal satisfaction resides. His monograph on the weaver birds delineated the life history, nesting behavior, and courtship of these sparrow-relatives in as comprehensive and authoritative terms as our own Margaret Nice on Song Sparrows (*Melospiza melodia*). His observations in the field have helped to illuminate the monumental 10-volume *Handbook* series, 1968–74, and extend its boundaries beyond description and into the realm of original observation.

In the end Sálím Ali will be known as one who successfully opened the eyes of the population of the Indian Subcontinent to the present dangers threatening their environment. It is a fascinating progression from his initial love of birds as a subject, through a study of the history of the Moghul Emperors and their hunting exploits which revealed—in the manner of the reading of diaries of the Asian Courts—the change and inherent decline of the original environment, on through bird study, not only to ethology and behavior, but also patient encyclopedic knowledge. Finally all this leads to the present ferment on conservation and environmental control. In his continual teaching, and his constant search for knowledge, he has given special meaning to the world of ornithology, a higher, larger meaning implicit with a lesson for the welfare of mankind. Thus the essential value of this extraordinary story of one man's journey to enlightenment.—S. DILLON RIPLEY.

A GUIDE TO BIRD FINDING IN NEW JERSEY. By William J. Boyle, Jr., illus. by David A. Sibley. Rutgers Univ. Press, New Brunswick, New Jersey, 1986:512 pp., 10 bird drawings with captions, 77 maps. \$19.95.—A good guide to birding in New Jersey has been a desideratum for some time. With existing guides and books on the Delaware Valley, South Jersey, the New York City region including North Jersey, and site guides scattered abundantly over various magazines (*Birding*, *Records of New Jersey Birds*), birders had to accumulate fragmented information that was hard to use. Now birders have all that information in one place, and a wealth of useful information it is, with sections on birding by season, rare bird alerts (4 cover New Jersey), birding ethics, general precautions, birding spots organized by region (all the best with maps), pelagic trips, hawk-watching, and nature clubs and Audubon chapters. A bibliography, index, and an annotated list of the state's regularly occurring birds are also included.

The book is divided into six sections by state birding regions (the regions bounded by major highways) indicated in Map 1 (Northeast, Northwest, Central, North Coast, South Coast, Southwest). Each section is prefaced with a regional map showing counties and main roads. The birding places are numbered on the regional maps, making location easy. Each major birding location (77 from High Point to Cape May) has a clear set of directions, a good map by the author (from experience), and a section on birding the area (i.e., how, when, and what to look for). Generally the seasons are treated thoroughly. Both common and rare species are noted for birding locales (not always well done in birding guides but well done here). At the end of each regional section are briefer accounts of additional birding spots without maps but with concise directions. The virtue of these additions is that they will stimulate more investigation of these lesser-known areas, like Beaver Swamp in Cape May County (p. 431). Although New Jersey is one of the most thoroughly birded (and reported) states in the country (what with four alerts, *Records of New Jersey Birds*, *Cassinia*, numerous books, including those by Stone, Bull, Fables, and Leck), and although it has

Brigantine, Princeton, and Cape May, it still has hidden places that need to be explored. Directions to birding spots were frequently field-tested and birding accounts reviewed by the local birder most familiar with the area before printing. This shows in the end product, a meticulous account of the best places in the state. Very little information is omitted from the birding area accounts. The author is already gathering information on the inevitable road closings, gate closings, etc. since publication, against a possible updating for a second printing, further testimony to the thorough work done in the writing.

This guide will prove most useful to out-of-staters and out-of-country birders as well as to experienced resident birders seeking to know the state better, to researchers looking for study areas, to beginning birders seeking to learn where to go and how to bird, to big day birders planning a route, to seasonal and once-a-year birders, and to backyard birders. The section on Nature Clubs provides a list of local birding contacts, and the bibliography provides sufficient references for understanding the status of New Jersey birds and their distribution. The annotated checklist of New Jersey's birds (45 pp. and 360 regularly occurring species) is especially valuable for birders or researchers looking to find a particular species. The probability ratings (borrowed from the Lane guides) are geared to the birder's desire to know the likelihood of encounter, not necessarily to true abundance (i.e., "Hard to miss," "Should see," "May see," "Lucky to find," "How lucky can you get"). Caution: the annotated checklist should not be read as an exhaustive description of species distribution; in most entries only a few locations are listed, usually the more famous ones. This caveat aside, the checklist does answer the basic birder questions: when and where in New Jersey, and what are my chances?

Pelagic birders and the hawk-watching fraternity will delight in the special sections devoted to their respective addictions. The shorebird buffs will perhaps resent the absence of a special section (possibly deserved in a New Jersey guide), but, on the other hand, one hears no clamorous groundswell of partisan support for "fringillid-watching" or "flycatcher trips." The hawk-watching and pelagic sections will be very helpful to new birders and out-of-staters who do not have these opportunities in their own backyards. The introduction and the sections on birding precautions, how to use the book, and common species are clear and concise. The index is very comprehensive. The birding ethics section (an increasing preoccupation these days) is perhaps too brief to be inclusive or to treat adequately the questions it raises. For instance, secrecy about raptor nests may be desirable to fend off undesirables (kids with bow and arrow, etc.), but published information is also useful in getting areas protected or heading off habitat alterations. This is a two-edged question requiring further elucidation. Moreover, should owl roosts be reported on bird alerts? Also, should private property birds be on rare bird alerts? Should endangered species? The comments on overuse of tape recorders are welcome. Elimination of tapes on big days when scores of birders are afield in the same locales is a conclusion one might draw from what the author has to say. Although the treatment is too cursory, the author is to be congratulated for avoiding pomposity, often the salient feature of birding ethicist monologues.

The drawings are attractive and the selection of species quite appropriate for New Jersey. There are not too many of them; restraint was exercised against the tendency to over-illustrate. The Barred Owl (*Strix varia*) cover design is appealing, but the quality and durability of the cover material is less than satisfactory; other choices were available, covers for instance that are still flexible but of the same durability and quality of the covers on the new Peterson "Field Guide to the Birds East of the Rockies" or the Sierra Club Guides to the National Parks. Perhaps holding down the price was a concern; the cover undoubtedly will help resales or argue for a reprinting with updates. In brief, the book is a necessity for anyone interested in New Jersey birds.—RICHARD KANE.

TALES OF A LOW-RENT BIRDER. By Pete Dunne, illus. by David Sibley. Rutgers Univ. Press, New Brunswick, New Jersey, 1986:xvi + 157 pp. \$15.95.—This book collects 19 short essays or stories originally published in the "Peregrine Observer," the newsletter of the Cape May Bird Observatory, during the last 9 or 10 years. Most concern, at least marginally, Cape May, New Jersey, where Dunne was Director of the Observatory. They range from musings on encounters with birds and bird-watchers, to accounts from the bird's point of view, to satires (at least one of them quite bitter) on future trends in birding. Almost all show a deep concern for conservation; a love of all nature and birds in particular; and a tolerance for people, even those who share neither his concern nor his love. Dunne has a very informal, relaxed, and easy (for the reader, not, I am sure, for the writer) style of writing that makes these collected works seem more like quiet conversations with an old friend than formal essays. Anyone sharing his enthusiasm for birds and birding should find this book good, satisfying, even inspiring, fun. Certainly it makes me want to get back to Cape May as soon as possible.—THOMAS S. PARSONS.

BIRDS WORTH WATCHING. By George Miksch Sutton. Univ. Oklahoma Press, Norman, Oklahoma, 1986:xv + 205 pp., 60 color photographs. \$19.95.—During his long and productive career, George Sutton wrote 14 books, all of which were characterized by lucid prose, an entertaining style, and a knowledgeable and sympathetic treatment of birdlife. This final work consists of short essays averaging about two and one half pages each, covering about 60 selected bird species. Most of these are widespread common species, but a few have restricted ranges. In his usual style, Dr. Sutton relates some rather personal experiences with these species, together with observations obtained from a host of his students and friends. Frequently the observation involves a behavior that puzzled Sutton at the time and for which he may or may not have ultimately gained an explanation. The latter part of most of these essays, indeed, consists of several questions or suggestions for minor research projects. Is the Carolina Wren (*Thryothorus ludovicianus*) susceptible to winter kill because it is lightly feathered? Does the female Downy Woodpecker (*Picoides pubescens*) drum? Where do adult male Hooded Mergansers (*Lophodytes cucullatus*) spend their eclipse period? How do Chuck-Will's-Widows (*Caprimulgus carolinensis*) catch small birds, as they are known to do? I suspect that few of these intriguing questions will attract the new graduate student seeking a thesis title, but rather they should tickle the curiosity of the amateur anxious to make a contribution.

But besides the puzzling questions, there is a lot of information about these common species that can be learned from reading "Doc's" last book. As might be expected, many of these observations were made during the author's long residence in Oklahoma, particularly his favorite Black Mesa country, but other areas of the country are not neglected.

This book will, however, bear one distinction for a Sutton book. To my knowledge it is the only one not illustrated by the author's beautiful paintings. For each species there is an attractive color photograph. These were collected from several sources by John S. Shackford, who indeed took many of them.

There is a fine Foreword by Olin Sewall Pettingill Jr., George Sutton's longtime friend. Sutton's many friends will cherish this last work, and I recommend it highly to those who did not know the man except by repute.—GEORGE A. HALL.

ALSO RECEIVED

THE NEW WHERE TO WATCH BIRDS. By John Gooders. Andre Deutsch, London, England. (Distributed by David & Charles, North Pomfret, Vermont 05053), 1986:224 pp., many maps. \$17.95.—This is essentially the third edition of Mr. Gooders' guide to birdfinding in Great Britain. The island is divided into 14 regions, and numerous areas (each rated by a star system) are included in each. Full directions for reaching the best sites, often with a map, are given together with a list of birds to be seen at various seasons. American birders, used to birding almost anywhere, will upon their first trip to Britain be dismayed by the fact that most of the countryside is unavailable to them. Mr. Gooders' book, which largely discusses reserves and sanctuaries where birding is possible, will be of great use to such visitors. The Preface will also give Americans an inkling of what the conditions for bird watching now prevailing in Britain are like. A "Code for the Bird Watcher" is included.—G.A.H.

BIRD SEEKERS GUIDE. By John Gooders. Andre Deutsch, London, England. (distributed by David & Charles, North Pomfret, Vermont 05053), 1985:208 pp, 21 black-and-white photos. \$6.95 (paper).—This is a reprint of a 1980 publication that attempts to give directions for finding specific species of British birds. As such it is a possible companion of the book in the previous review. For each species a statement of general status, a summary of habitat, and some suggestions as to where to find it are given.—G.A.H.

THE BIRDS OF THE CRESTON VALLEY AND SOUTHEASTERN BRITISH COLUMBIA. By Robert W. Butler, Brian G. Stushnoff, and Edward McMackin. Canadian Wildlife Service Occasional Paper No. 58, Environment Canada, Ottawa, K1A 0E7, Canada, 1986:37 pp., 14 black-and-white photos, maps, and graphs. Free from the publisher.—An annotated list of 250 species recorded in the Creston Valley Wildlife Management Area of which 147 are known or highly suspected of breeding. Quantitative data indicate that waterfowl broods have increased fivefold since 1966 and that landbirds have also increased.—G.A.H.

POPULATION ECOLOGY OF MIGRATORY DUCKS IN LATVIA. By H. Mihelsons, A. Mednis, and P. Blums. Latvian SSR Academy of Sciences, Inst. of Biology, Riga, U.S.S.R. (Zinatne Publishing House), 1986:111 pp. No price given.—In Russian with English summary.—G.A.H.

CHANGE IN EDITOR

Dr. Charles R. Blem will serve as Editor of *The Wilson Bulletin* beginning with Volume 100. All manuscripts submitted for publication in the *Bulletin* should be sent to him at the Department of Biology, 816 Park Avenue, Virginia Commonwealth University, Richmond, Virginia 23284. All manuscripts received prior to 1 May 1987 will continue to be processed by Keith L. Bildstein.

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