

ORNITHOLOGICAL LITERATURE

FORM AND FUNCTION IN BIRDS, VOL. 2. By A. S. King and J. McLelland (eds.). Academic Press, London (U.S. edition published by Academic Press Inc., New York, New York), 1981:xi + 496 pp., numerous black-and-white photos and line drawings. \$97.00.—This is the second in a projected three-volume series on the functional anatomy of birds. As in volume 1, which was reviewed earlier, the emphasis is on thorough descriptive anatomy as the basis for functional analysis at a non-biochemical level. There is a strong coverage of reproduction in this volume, with chapters on the male genital organs (P. E. Lake) and on the cloaca and phallus (A. S. King). Other chapters cover the endocrine glands (R. D. Hodges), cardiovascular system (N. H. West, B. Lowell Langille, and D. R. Jones), lymphatic system (M. E. Rose), and cranial nerves (A. Bubić-Waluszewska). These are mostly lengthy chapters giving much more anatomical detail than the coverage provided in "Avian Biology." In most cases there is a strongly comparative aspect with the conditions in various kinds of birds as well as reptiles being considered. Nevertheless, the limitations of the primary literature often make it impossible to avoid a strong emphasis on a few domestic species. The final chapter is a concise account of the functional anatomy of the jaw apparatus by P. Bühler. It is quite short (30 pp.) by the standards of this series, giving a descriptive account of the morphology of the jaw apparatus followed by an analysis of its kinetics. The discussion is based heavily on Bühler's own work on caprimulgids, but with numerous references to other studies. Despite this, the account is general rather than comparative, and does not review the diversity of avian jaw mechanisms. A fuller appreciation of the avian feeding mechanism may be obtained by reading Bühler's chapter in conjunction with the section on the oral cavity and pharynx in J. McLelland's chapter on the digestive system in volume 1 of this series, which includes discussions of the tongue, oral sacs, salivary glands, taste buds, bill, and deglutition.

This book continues the high level of scholarship established in volume 1, but unfortunately the price will again put it beyond the reach of most of those who would benefit from owning their own copy.—ROBERT J. RAIKOW.

BEHAVIORAL MECHANISMS IN ECOLOGY. By Douglass H. Morse. Harvard University Press, Cambridge, Massachusetts, 1980:383 pp., 99 numbered text figs., 3 tables. \$25.00.—Hitherto, there has never been an adequate text on behavioral ecology, but Douglass Morse's book goes a long way towards filling this gap. Although this book does not deal only with birds, well over half of the studies described concern birds. This does not merely reflect the author's bias, but rather the suitability of birds for field studies of behavior.

The book opens with three chapters on foraging behavior, and provides a useful and original review of this best-studied aspect of behavioral ecology. Other topics treated include habitat selection, predator avoidance, thermoregulatory behavior, reproduction, competition for mates, territoriality, spacing patterns, competition between species and social groups. Most chapters conclude with a useful 'synthesis' section, and the final chapter attempts to look ahead to future developments. The literature coverage is broad and cosmopolitan and I found the treatment well-balanced and fairly easy to read. There are, however, one or two surprising omissions. Brood parasitism is not discussed and coevolution in general gets little attention.

The layout of the book is clear and the figures adequate, though unimaginative. (Maybe imagination is too costly, for the price of the book is quite reasonable!) The book contains few errors and stresses empirical evidence, rather than fashionable theorizing, although theoretical issues are considered extensively. Most examples are given in limited detail, but

I sometimes wished for more detail on fewer examples and more enthusiasm for particularly significant studies. Overall, Morse is quite successful at walking the tightrope between excessive detail and conceptual clarity.

The book is a good introduction to the literature on behavioral ecology and should make a suitable text for advanced college courses, as well as providing an accessible account of the field to all students of natural history. There is, however, one respect in which the book differs from the average text. Morse has chosen to include a lot of material from his own studies on flocking and resource partitioning in birds. This is indeed significant work, and it has been skilfully integrated into the appropriate chapters, but it makes the book a partial hybrid between a text and a monograph. Despite my minor reservations, this is clearly the best text yet written on behavioral ecology. It contains both a useful survey of the field and a critical and perceptive look to the future.—JAMES N. M. SMITH.

BIRDS OF PREY OF THE WORLD. By Friedhelm Weick. Paul Parey, Hamburg and Berlin, 1980:159 pp., 40 color plates, many line drawings. Text in German and English. \$48.00.—Friedhelm Weick of Bruchsal, West Germany, has long been fascinated by the diurnal birds of prey. When he first saw Peter Scott's admirable "Coloured Key to the Waterfowl of the World" in 1967, Weick conceived the idea of doing a similar book on the Falconiformes. He was commissioned to illustrate volume 4 (1971) of the "Handbuch der Vögel Mitteleuropas" (Glutz von Blotzheim, ed.), an assignment that gained him valuable experience in drawing raptors. There are only three color plates in that book, a pretty good one of Bonelli's Eagle (*Hieraetus pennatus*), a pretty bad one of the Red-footed Falcon (*Falco vespertinus*), and a painting of study skins of two races of *Buteo buteo*. The text, however, is liberally illustrated with line drawings. Many of these were adapted from photographs, and it is clear that the experience of preparing these drawings gave Weick a good feel for postures and proportions of birds of prey. In his new book, the color plate figures are in the stylized field guide tradition, all standing or perched and facing left. In spite of these constraints, Weick has managed to capture remarkably successfully the *Gestalt* of each of the various groups. His main fault is a tendency to draw heads overly large in some groups (*Accipiter* on pl. 21; several plates of *Buteo*; some of the kites on pls. 3–5).

Although the plates are crowded with figures, the large format permits the individual birds to be portrayed in good detail. The coloring is anything but subtle, and there is a marked tendency to exaggerate color contrasts: the sea-eagles (pl. 6) and many others look much too scaly, and the tail barring of *Milvus* kites on pl. 5 is far more conspicuous than in any specimens I have examined. Reddish colors tend to be exaggerated (see adult ♂ Merlin [*Falco c. columbarius*], pl. 37, and all figures of Red-shouldered Hawk [*Buteo lineatus*], pl. 24). All of these faults are relatively minor, and are greatly outweighed by the comprehensiveness of Weick's work. He has illustrated all of the species and most of the subspecies of Falconiformes, adding immatures, color phases, and both sexes as appropriate, thus providing a truly significant contribution to the iconography of the order.

The plate captions, which, like the text, are in parallel German and English columns, have been reduced to an extent that may drive some readers to the point of getting new eyeglass prescriptions. This reduction has permitted the inclusion of a tremendous amount of information: scientific name (with author and date), German and English names, characters of species and subspecies, distribution, standard measurements, and weight. Taxa illustrated are named in boldface, those not figured are in ordinary type. Spot-checking reveals a few discrepancies between captions and plates hardly unexpected in a work of this magnitude. There is a figure of *Falco columbarius subaeson*, although the caption typeface would indicate otherwise. A figure of a Peregrine (*F. peregrinus*) on pl. 40 is labelled only "♂ adult" with no subspecies name, but appears probably to represent the adult female of *F. p.*

japonensis. The characters of the very dark race *F. p. pealei* are given only as "Proportionally longer and broader tailed" (than what?). No subspecies of Philippine Falconet (*Microhierax erythrogenys*) are listed in the caption of pl. 35, but figures are provided for the nominate race and for *M. e. meridionalis*. However, the latter is shown as having buffy rather than white flanks, whereas the two races differ only in size (Parkes, Nemouria 4:3-4, 1971). The scale is too coarse to show size differences well. The smallest *Buteo* in the world is the Isla Cozumel race of Roadside Hawk (*B. magnirostris gracilis*); size is not mentioned as a character of the race, and it is figured the same size as a race that averages 35% heavier.

For two species, the Madagascar Serpent Eagle (*Eutriorchis astur*) and New Britain Grey-headed Goshawk (*Accipiter princeps*), Weick has provided an outline figure to stand in for the unknown immature plumage. There may well be other tropical forms of which the immature plumages are unknown, and it is a certainty that plumage sequences in many are poorly understood, as exemplified by the Fishing Buzzard (*Busarellus nigricollis*), a fairly common Neotropical species that has a plumage stage that I have never found figured or described in the literature.

The first 62 pages of the book constitute the text, liberally illustrated with line drawings. The birds are arbitrarily divided into six size classes, with figured examples, from very small (*Microhierax*) to very large (*Vultur*). There are the usual diagrams of topography and of standard measurements. A useful table lists the plates drawn to each of seven size-scales; although the actual scale ratio is not given, at least one knows which figures may be compared directly.

Pages 15-40 are devoted to a "Key for identifying." A true key should ideally be dichotomous, and should at least present contrasting characters. Weick's "key" would probably take as long to use for identification as would flipping through the plates. In the first part of the "key" the species are divided by the six size classes, with brief descriptions of each species. Oddly, the classes are not given in size sequence, but as very large, large, rather large, very small, small, and medium-sized. Appropriate species are then grouped under a series of non-contrasting characteristics: first those with long necks, then those with long tarsi, areas of bare skin on head, head and neck naked, bill yellow, bill red, "conspicuous shapes of bill" (six categories), three groups of cere colors, four groups of iris colors, three groups of leg colors, "big head, large eyes," different shapes of crest, conspicuous tail shapes, and six plumage color categories, some of which seem arbitrary or even inappropriate.

A "Compendium of the order Falconiformes" follows, in which suprageneric categories are listed and genera described and illustrated. Again, the characters by which the genera are identified are all too often non-contrasting. For example, *Haliastur* is characterized as having the outer toe larger than the inner, but relative toe proportions are given for no other genus of kites nor for the related sea-eagles. Thus, the generic descriptions do describe the members of the genus, but do not define them in relation to other genera. Each such description is accompanied by a line drawing of the head and often the foot of a typical member of the genus.

Indices are provided for German, English, and scientific names of birds. The latter index has a useful feature in that synonymized genera are included (although not mentioned in the text) and their equivalencies given.

The book ends with an "Annotated bibliography," which, unfortunately (and contrary to the rest of the book) shows every sign of careless preparation. For one thing, it is not "annotated" in the least. It is loaded with misspelled names and wrong initials of authors ("Amodon," "Friedman," "G." R. Blake) and erroneous or incomplete citations. Mayr is wrongly given as coauthor of Delacour's "Birds of Malaysia" and the date given as 1971 instead of 1947. The Bent "Life histories" volumes are attributed to "Bull. US Nat. Mus.

New York." Pagination and publishers' names are given or omitted at random. Regional works consulted were not always the most recent; thus, Delacour and Mayr (1946) and Herklots (1961) are listed for the Philippines and Trinidad respectively, but duPont (1971) and French (1973) are omitted.

It is understandable that the author could not consult all pertinent periodical literature as well as standard regional works and check-lists. Although the Preface is dated "Spring 1980," Weick had obviously finished his manuscript before the 1979 publication of the revision of volume I of the "Peters" check-list, as he omits such relatively recently described forms (all listed in "Peters") as *Aviceda leuphotes wolfei* Deignan, 1948; *A. l. andamanica* Abdulali, 1970; *Melierax canorus argentior* Clancey, 1960; *Accipiter virgatus quagga* Parkes, 1973; *Falco sparverius nicaraguensis* Howell, 1965; and a number of others. Weick also overlooked Monroe's demonstration (Ornithol. Monogr. 7:80-82, 1968) of the specific distinctness of *Buteogallus anthracinus* and *subtilis*, and Schwartz's parallel finding (Condor 74:399-415, 1972) that *Micrastur gilvicollis* and *ruficollis* are separate species, both "splittings" accepted by Stresemann and Amadon in "Peters."

As a summary of the Falconiformes, Weick's text may prove to be more useful than I have suggested here, but there is no doubt that his meticulously prepared illustrations represent a major accomplishment. For these alone, this book belongs in ornithological reference libraries in general, as well as in libraries of raptor specialists. Its cost is by no means out of line with current book prices, especially in view of its many color plates.—KENNETH C. PARKES.

THE MERLINS OF THE WELSH MARCHES. By D. A. Orton. David and Charles, Inc., North Pomfret, Vermont, 1980:168 pp., 8 black-and-white plates with captions. \$18.50.—In the 1950's and 60's, it became evident that the population of Merlins (*Falco columbarius*) in the Welsh countryside had been depleted just as it had in other areas of the world where organochlorines were in use. In the early 70's, these birds began to reappear in limited numbers. It was at this time that D. A. Orton and his associates ferreted a small section of Welsh moorland for four consecutive seasons in order to discover as many nesting pairs of this tiny falcon. Orton, a retired business executive, amateur ornithologist, and novice Merlin watcher (at least initially) made repeated day-long visits to the nests on weekends and other holidays. From carefully detailed notes, he presents various aspects of the Merlin breeding cycle beginning with courtship in mid-April and concluding with young on the wing in late June. Although centered on nesting Merlins, there is considerable description of behavior by other species in the area of observation, including Kestrels (*Falco tinniculus*) and even Hobbies (*Falco subbuteo*).

The book is of a popular nature seasoned with subtle humor. The style of presentation is that of an adventure series or even a mystery which covers Orton's field experiences year by year, trip by trip. One frequently wonders what will occur during his next visit to the nesting area or whether the young will be alive at all.

Orton continually asks questions about everything he observes in the field, and he frequently derives conclusions from even singular observations, a liberty associated with this style of writing. He makes a habit of putting into print the type of interrogative supposition which all field biologists ponder in their own minds, but because of strict training, fail to state aloud. Initially, some of these suppositions which I considered to be totally erroneous were disturbing, but I later found this approach somewhat intriguing. Orton does not portray himself as an omniscient authority, and in fact with the close of his book he states that "the time has arrived for the ball to be passed from the observant amateur to the professional scientist . . . to do the whole of the job as it needs to be done."

This book will be appreciated by every biologist who has spent any time at all in the field.

The author seems to really enjoy his day-long field excursions and relates experiences ranging from interesting observations of Whinchats (*Saxicola rubetra*) to the sometimes trying and wholly unpleasant weather conditions experienced in the field. For example, during a severe hail storm he first expressed his concern for the brooding adult falcon and her downy young, but soon admitted that he forgot all about the Merlins out of concern for his own welfare.

Although this work does not present vast quantities of new information on Merlin behavior, both falcon enthusiasts and serious students alike will want to review Orton's observations. I found the book to make pleasurable reading.—STEVE SHERROD.

HACKING: A METHOD FOR RELEASING PEREGRINE FALCONS AND OTHER BIRDS OF PREY. By Steve K. Sherrod, William R. Heinrich, William A. Burnham, John H. Barclay, and Tom J. Cade. The Peregrine Fund, 1424 N. E. Frontage Rd., Fort Collins, Colorado 80524, 1981:61 pp., 16 figs., paper cover. Price not given.—A detailed manual of the methods used by The Peregrine Fund to release young peregrines into the wild as part of its program to restore natural populations. At least some of the information is probably useful with other species as well.—R.J.R.

BIRDS OF EAST AFRICA: THEIR HABITAT, STATUS AND DISTRIBUTION. By P. L. Britton (ed.). East Africa Natural History Society, Nairobi, Kenya, 1980:271 pp., 4 color plates, 8 black-and-white plates, 4 maps. \$17.00. **THE BREEDING SEASONS OF EAST AFRICAN BIRDS.** By L. H. Brown and P. L. Britton. East Africa Natural History Society, Nairobi, Kenya, 1980:164 pp., 2 maps. \$15.00.—These two volumes were published by the East Africa Natural History Society to commemorate the Society's 70th anniversary in 1979. They cover the area of Uganda, Kenya and Tanzania, which includes the most complex topography in Africa and practically all vegetation types known from that continent; a total of 1293 species are recorded, roughly 15% of the known bird species.

The "Birds of East Africa" emphasizes distribution by species, although distribution details for all subspecies are given throughout. The relationship between species is stressed, and liberal use is made of the superspecies concept. The introduction contains detailed descriptions of the topography, climate and vegetational zones, without a knowledge of which the distributions would make no sense. Of particular value are the definitions of various habitats such as woodland, bushland, thickets, etc., which have been used loosely and ambiguously in the past. The distributional notes contain an enormous amount of detail that has been scattered through the literature of the last 50 years, and its compilation must have been a formidable task. The authors are to be congratulated for persevering in their undertaking and making this material available in one place. The four attractive color plates by Rena Fennessy feature many of the East African endemics.

"The Breeding Seasons" is likewise a major contribution which includes not only published records but those from the EANHS nest-record card scheme. Altogether 86,331 dated records were available, not counting those for colonial species like *Quelea quelea* for which there are literally millions. However, as in all tropical countries, the coverage was spotty. Dated records for only 861 of the 1123 resident species exist, and of these 861 only 422 had more than 10 records. Because of the complexities of topography and rainfall patterns, the area was divided into five climatic regions, defined by the presence of one or two rainy seasons per year, and by the period of the year in which they fall. In the individual species accounts, the records are listed by months under each region, which further dilutes the available data for any one region. However, there is still a vast array of breeding data for East Africa that is available nowhere else, and the general discussion of tropical breeding seasons that concludes the book will be of interest to any student of tropical birds.

The EANHS is to be congratulated for their two anniversary volumes. The only unhappy

note is that my expectation that two lists published by the same society and sharing an author would follow the same order was unfulfilled. "Breeding Seasons" follows the systematic order of White (Revised Check-list of African Birds, 1961-1965), while "Birds" has genera and species listed alphabetically within families. However, this is a minor defect in two books that anyone studying African birds should have.—MELVIN A. TRAYLOR, JR.

BIRDS OF THE CAROLINAS. By Eloise F. Potter, James F. Parnell and Robert P. Teulings. The University of North Carolina Press, Chapel Hill, 1980:viii + 408 pp., 338 color photographs (321 of birds and 17 of habitats), end paper maps, 1 black-and-white drawing. \$14.95.—This reasonably priced book summarizes the latest information on the bird life of North and South Carolina. Brief introductory chapters cover bird identification, migration through the Carolinas, the annual cycle, habitats, and conservation. Species accounts for 415 species are included in 335 pages of text followed by a five page glossary, two pages of suggested readings, and a six page index of vernacular bird names.

Each species account includes the vernacular and scientific names, the range of lengths (and for some pelagic species the wing span) measured in inches and centimeters, and four principal subheadings: range, nesting habits, feeding habits, and description. "Range" contains information on seasonal abundance, residence status, and distribution in the Carolinas, while nesting habits are mentioned only for species breeding in the two states. The species descriptions are brief and are not provided for those species having hypothetical status of occurrence. Although the color photographs are quite good in general and may be helpful for identification, they are no substitute for field guide illustrations. Several species have no photographs, and for other species only one sex is pictured.

The most notable omission in the book is information on vocalizations. Only when calls or songs are critical to the identification of two similar species is mention made of vocalization. Despite this and some other minor shortcomings, the authors are to be congratulated for producing an informative and attractive book. The publisher also deserves kudos for the affordable price it is asking for a volume containing so much color.—SIDNEY A. GAUTHREAU, JR.

A FIELD GUIDE TO THE BIRD SONGS OF BRITAIN AND EUROPE, RECORD 15. By Sture Palmer and Jeffrey Boswall. The Swedish Radio Co. (Sveriges Riksradio AB), Stockholm, Sweden, 1981. Price not given.—This 12-inch 33 $\frac{1}{3}$ r.p.m. phonograph record includes vocalizations of 54 species. It is a supplement to a series of the same title published between 1969 and 1973 comprising 14 discs. The entire series of fifteen provides recordings of 585 species. This disc (No. RFLP 5015) and the earlier ones may be ordered from Conifer Records, Horton Road, West Drayton, Middlesex UB7 8NP, England.—R.J.R.

THE MYSTERY OF MIGRATION. By Robin Baker, Chief Contributing Editor. The Viking Press, New York, 1981:256 pp., many color photos and drawings, many black-and-white photos and drawings. \$29.95.—This attractive volume is an American edition of a book produced in England. It was compiled by a six-person board of contributing editors with no actual authors given. In many ways, particularly with its mixture of text, diagrams, drawings, and photos it resembles one of the LIFE publications of past years. Twelve chapters cover the subject of migration in general, and then consider in detail the migration of plants, invertebrates, insects, fish, amphibians and reptiles, birds, bats, aquatic mammals, land mammals, and man. These discussions are at the level appropriate for the general audience but are nonetheless quite accurate and informative.

The chapter on birds is the longest in the book and is up-to-date and quite thorough. The migration patterns in both the Old and New worlds, as well as those of seabirds, are dis-

cussed. Both the techniques of migration study as well as the various theories of bird navigation are discussed. However, it is not emphasized that a migrating bird is probably able to use more than one navigational system as required by conditions.

I consider this book to be highly desirable in school libraries, and it would make a suitable present for young students beginning to be interested in nature. The ornithologist who has been studying migration will find little of value but other ornithologists might find interesting reading, particularly in the non-bird chapters.—GEORGE A. HALL.

THE ILLUSTRATED BIRD WATCHER'S DICTIONARY. By Donald S. Heintzelman. Winchester Press, P.O. Box 1260, 1421 South Sheridan, Tulsa, Oklahoma, 1980:164 pp., numerous photographs of varying quality, a few unnumbered text figs. \$11.95.—Webster (and he should know) defines a dictionary as "A reference book listing terms or names important to a particular subject or activity along with a discussion and their meanings and applications." This book does little more than list terms and names. The text which follows each entry is often incorrect or unclear. Contrary to what Heintzelman states, S. F. Baird was not the first secretary of the Smithsonian. I believe that careful searching will reveal that Joseph Henry had that distinction (and he's not even listed in the book, although his statue is in front of the Smithsonian). Some of the definitions border on inane (e.g., "Bufflehead—a small North American Duck," hardly descriptive and definitely applicable to at least 10 other species. Or how about "Altricial—born requiring nourishment," as opposed to . . . ?).

Many of the "biographical" entries are not only incomplete, but border on humorous (with a little digging). Examples include: Thomas Stewart Traill, "A friend of John James Audubon and respected British citizen . . ." (we find that Audubon had many friends and most are listed). William Swainson, "An English naturalist who roamed widely . . .," Percy Taverner, "A well known Canadian ornithologist who wrote extensively about Canadian birds" (what else?). We are also told that John Bachman's daughter married John Audubon's son (isn't that nice).

The book is vintage Heintzelman, heavily slanted towards hawks and hawk watching. Thirteen lines are given to Accipiters, three words to Alcedinidae, Alcidae, Turdidae, etc. He coins many new terms not found in dictionaries (even unabridged), such as "falconiformologist" (which should make Clay White and his raptor "groupies" proud). A further example of bias is the fact that seven lines are given for Heinz Meng (meaning no disrespect to Dr. Meng), but only 2½ lines for S. F. Baird and five words for Alexander Wilson.

Not only is the book sadly lacking in the coverage of everyday terms, some key items are completely ignored. For example, in the appendix "National Bird Watching and Ornithological Organizations," the Cooper Society is not even mentioned.

The only really interesting entry in the book is listed under C. A. Allen, "An American field ornithologist and collector of birds," which confirms the belief held by many that these two professions are, in fact, different (perhaps mutually exclusive?).

In sum, this book might make good reading for someone with interests in elementary birding, but for anyone else it is definitely a waste of money. I have hidden my review copy behind a cherished edition of the Official Encyclopedia of Baseball given to me by Jon Barlow.—ROBERT C. WHITMORE.