

ORNITHOLOGICAL LITERATURE

THE LIFE OF BIRDS. By Joel Carl Welty. W. B. Saunders Company, Philadelphia and London, 1962: $6\frac{1}{2} \times 9\frac{3}{4}$ in., xiii + 546 pp., numerous figures. \$9.00.

This book has two stated aims—to present simply the basic facts of bird biology, and to make the reader enthusiastic about birds. The author has done a thorough job of presenting the facts; so much so, in fact, that he may cause bewilderment rather than enthusiasm in some of the students for whom the book was written. The majority, however, will probably find this an unusually interesting text. There is no question of the author's enthusiasm for the subject and there is no trace of pedantry in his style. Although the author assumes little or no biological training in his readers, he develops each of the topics covered at some length, and mastery of the book should constitute adequate preparation for advanced courses in ornithology.

About one-quarter of the book covers the anatomy and physiology of birds, taken up by organ systems, and including such topics as molt, surface-volume relationships, feeding adaptations, and photoperiodism. Almost one-third of the book covers aspects of the breeding cycle: vocalizations, territory, courtship, nests, eggs, incubation, and care and development of young. The remainder is concerned with the kinds of birds, flight, behavior, ecology, zoogeography, migration, and evolution.

To judge from the selected list of about 800 references (out of some 8,000 consulted) at the end of the book, the literature is well covered up to 1960, with the addition of a few more recent titles. Other more recent information on breeding cycles in the tropics, immunological importance of the bursa of Fabricius, hummingbird metabolism, and many other topics is thus the responsibility of the lecturer.

The author has taken much information from Stresemann's "Aves" volume and has obviously supplemented this with an extensive sampling of the literature. Suggested readings at the ends of chapters are mostly general works such as other textbooks and broad surveys, rather than original articles. The list of 800 references, arranged alphabetically by author, might better have been divided into separate lists after each chapter to give the student easy access to the literature of a particular topic. Text citations are sometimes omitted where they would have been useful. For example, we are left with no citation for such statements as ". . . the gamecock's eyes, which have no fovea, revealed a minimum visual angle of 4.07 minutes."

A problem which must be faced by the author of an ornithology text for beginners is to present the remarkable diversity of birds in a way which will not completely overwhelm the student and at the same time present the principles to make the facts meaningful. Welty has chosen to divide his book into a series of subject-matter segments within each of which he presents certain generalizations or principles followed by miscellaneous examples selected from birds of the world. Although this may be the best way to present an enormous number of facts, the method suffers from lack of continuity for any one species, and it invites generalizations which may conflict. "Nesting sites can reveal taxonomic differences" (p. 14) and ". . . patterns of nest building have relatively little taxonomic or evolutionary significance" (p. 254); also, ". . . much of their behavior is, by mammalian standards, fragmentary, stereotyped, at times amazingly stupid" (p. 159), and "While it is probably true that typically a bird's action is largely stereotyped and instinctive, it does not follow that it is non-adaptive or stupid" (p. 168). Such statements, while not entirely contradictory, may confuse and discourage innocent students.

There are, inevitably, other errors or inconsistencies in the text which will probably be corrected in a future edition and which are not important liabilities to the total work.

The caption of Figure 8.13 definitely and erroneously implies that the spangled plumage of the Common Starling becomes glossy black through endocrine action; on page 155 it is implied that isolated pairs of gulls are incapable of breeding; the "hatching muscle" (which is *M. complexus*) does not disappear shortly after hatching, as stated on page 316; the Ivory-billed Woodpecker is not extinct, as stated on page 346. In the chapter on Migration and Orientation there are sections headed "Visual Orientation," "Astronomic Navigation," "Orientation by Special Senses," and "Sense of Direction." The "sense of direction" is described as a more formidable idea than kinesthetic memory or sensitivity to the earth's magnetism and to Coriolis force, but the evidence presented for it is equally unacceptable. Another unconvincing discussion at the end of the book centers around the production of "freaks" such as the Dodo. It is claimed that small, isolated populations may evolve extreme and bizarre characters such as flightlessness because "mutation frequency and isolation are stronger than selection pressure." This is an unnecessary appeal to genetic drift and orthogenesis to explain the evolution of specialized forms.

An unfortunate feature is a full-page family tree of birds which shows some striking differences from Wetmore's list of orders and families with which it is included. The tree closely allies loons and grebes, includes the button-quail and bustards with the galliforms, separates pigeons and doves, separates skimmers from gulls and terns, allies the blackbirds and ploceids with swallows, larks, and thrushes, has two widely separated branches, one for turacos and one for plantain eaters (!), etc.—all with no word of explanation. In the list that follows, Ichthyornithiformes are still placed in the Odontognathae.

There is no mention of the terminology of molts and plumages proposed by Humphrey and Parkes, although this terminology will be encountered by students in the "Handbook of North American Birds" and in the current literature.

Drawings, diagrams, charts, and graphs are uniformly clear and attractive. There is no doubt that the illustrative material is unusually good. The numerous photographs, mostly by Eric Hosking but also by Ronald Austing and others, are excellent and well reproduced. For the most part they have been carefully chosen, but two photographs on pages 180 and 347 show gannet colonies and have similar captions. "The Life of Birds" differs from other elementary texts in that its examples and illustrations are not chosen primarily from North American birds, but are worldwide with an emphasis on European birds, perhaps derivable from the heavy reliance on Stresemann and Hosking.

The book is well bound and printed. There are very few typographical errors and relatively few misspelled scientific names. In the extensive index appear such items as "Aeschylus, death of," "arteriosclerosis," 22 subjects dealing with "eye," "grit, as a limiting factor," "Kurische Nehrung," 67 subjects dealing with "migration," and "Svardson's principle." Diverse subjects of this kind are not merely mentioned in the text but are generally well explained.

If a review is to be useful it must also be constructively critical. Unfortunately, criticisms take considerable space and the reviewer may find that he cannot enlarge on the many admirable aspects of a book after covering its few weak points. Such is the case here. The book is attractive, readable, interesting, enthusiastic, well organized, and remarkably complete. It represents an unusually successful attempt to meet the needs of the student and teacher of introductory ornithology.—RICHARD L. ZUSI.

PRELIMINARY FIELD GUIDE TO THE BIRDS OF THE INDIAN OCEAN: For Use during the International Indian Ocean Expedition. By George E. Watson, Richard L. Zusi, and Robert E. (*sic*) Storer. United States National Museum, Smithsonian Institution,

Washington, D.C., 1963: $7\frac{7}{8} \times 10\frac{1}{4}$ in., x + 214 pp., 25 black-and-white plates, 18 maps. No price given.

Both the pelagic and insular birds of the Indian Ocean are poorly known. An unusual opportunity to at least partially remedy this will be available during the International Indian Ocean Expedition 1963-64, when scores of scientists will converge on the area for a unique, large-scale, oceanographic study. The majority of the investigators will be biological and physical oceanographers. However, given a modicum of information about what is known of the avifauna of the region and what needs to be learned, and also means for identifying the birds, the oceanographers may collect information of importance to ornithology. In a commendable effort to provide the needed background and to encourage ornithological research, the United States National Museum has issued this useful guide, which is being distributed to all vessels participating in the expedition and to many of the scientific personnel.

The area covered by the guide extends from Lat. 20° N to Lat. 40° S. Within this region there are about 17 islands or archipelagoes, and approximately 300 species of marine and terrestrial birds. The composition of the avifauna of some islands, such as Réunion and the Seychelles, is fairly well documented, while that of others, such as Tromelin and Rodriguez, is unknown or poorly known. There have been only the most cursory studies of the distribution of the pelagic species, and knowledge of the general biology of nearly all 300 species, even of the endemic terrestrial forms, is negligible.

After a brief introductory account of the status of knowledge of Indian Ocean birds and a discussion of the potential contributions of the I.I.O.E., there is a section describing methods of preserving specimens and recording observations. This is followed by a synoptic list of species ("Synoptic Species List"), in which is given the scientific and vernacular names of each form, a concise description of its range, reference to identification plates in the volume, notes on morphological features not apparent in the plates, and, usually, comments on food and breeding habits. Indices to the scientific and vernacular names employed in the list conclude the section.

Field identification is treated next in a series of 18 black-and-white plates, drawn by Zusi. The plates are arranged systematically and illustrate all the birds of the area. Opposite each plate there is a list of the species shown and brief notes on general and specific characters by which the taxa may be differentiated. The illustrations are sketches, rather crudely executed, but adequate for field identification. Unfortunately, the species are not drawn to scale and there is no indication of size, either on the plates or in the descriptive material on the facing pages. In fact, notations on size have been neglected throughout the work. This would be of little hindrance to the experienced ornithologist, but the novice, for whom the guide has been written, will surely be confused. To be certain I am not being unduly critical, I showed various plates in the guide to a student, familiar with North American birds but with no acquaintance with foreign species, and asked him to estimate the size of various forms. The marine birds offered few problems, but the terrestrial birds were frequently misjudged. For example, *Bebrornis* and *Nesillas* were thought to be the size of the American Robin, and *Coracina* and "*Coquus*" were estimated to approximate the dimensions of *Vireo olivaceus*!

The final portion of the guide is devoted to the island groups. There is a map of every island or archipelago, descriptions of topography, vegetation, and climate, and a short history of human occupancy. What is known of the ornithology of each island is summarized, particularly important problems needing investigation are noted, and, finally, there is an annotated list of the recorded species.

Like most field guides it has no bibliography. This is unfortunate because the publication was conceived as a research tool rather than as a guide to the enjoyment of the birds of the Indian Ocean. The potential investigator wishing to do some homework before his visit to the area, the individual who may want to compare his observations with those of earlier workers, and the ornithologist looking for a handy bibliography will find the absence of references disappointing. Also peculiarly lacking is any mention of identification guides, such as Alexander's "Birds of the Ocean" or Roberts' "The Birds of South Africa," which would be useful supplements to the present publication.—RAYMOND A. PAYNTER, JR.

FAUNAL RELATIONSHIPS OF BIRDS IN THE ILIAMNA LAKE AREA, ALASKA. By Francis S. L. Williamson and Leonard J. Peyton. Biological Papers of the University of Alaska, No. 5, 1962: 6 × 9 in., iv + 73 pp., 16 figs., 10 tables. \$1.00.

Not since W. H. Osgood's "A Biological Reconnaissance of the Base of the Alaska Peninsula," published in 1904 and based on a quick passage through the country in the summer and fall of 1902, has there been any comprehensive study of the avifauna in the Iliamna Lake region. The area is ecologically interesting because elements of the tundra, taiga, and coastal coniferous-forest biotas meet and interdigitate there in a complex manner. Williamson and Peyton spent a total of 86 man-days in the field during 23 May to 13 June 1958, and 2 to 25 June 1959, mostly in a 50-square-mile area around the village of Iliamna, where birds were studied incidentally to investigations of animal-borne diseases for the Arctic Health Research Center. This coverage brought the authors in contact with most of the avian habitats of the region, except those in alpine country, which they did not visit. Their report is based on collected specimens and observations, a review of previous literature, as well as on a good deal of information reported by other biologists and local residents.

The title is somewhat misleading, since faunistics as such is discussed only initially and briefly on two pages under the heading, "General Ecological Considerations," and again terminally on four pages under the heading, "Faunal Affinities of Iliamna Birds." The authors conclude that "The Iliamna avifauna is comprised of Sitkan (5 species), Hudsonian (38 species), and Eskimoan (20 species) avifaunal elements associated with the Moist Coniferous Forest, Coniferous Forest, and Tundra Biomes respectively."

The rest of the report is taken up with a consideration of habitat utilization by the birds of the area (12 pages), an annotated list of species (36 pages), and a discussion of the racial relationships of six species, the populations of which in the Iliamna area manifest intergrading characteristics between inland and coastal subspecies (seven pages). The section on ecologic formations consists of a concise description of 12 habitats, well supported by photographs and a summarizing table (pp. 19-21) showing primary, secondary, and tertiary preferences of the birds for these formations. There are occasional inconsistencies between the scoring of a particular species in this table and information contained in the annotations, but for the most part the table represents a clear and convenient summary of the ecological distribution of the birds in the locally available habitats around Iliamna.

The meat of the report is contained in an annotated account of 103 species which are known or reputed to occur in the Iliamna area. The authors consider all of the 81 species observed by them to have been breeding during the time of their study and that the additional 22 species listed as occurring in the area are probably also breeding birds. The annotated accounts provide important information on local occurrence, relative abundance, habits, breeding, and data on the collected specimens.—TOM J. CADE.

BIRD WATCHING, HOUSING AND FEEDING. By Walter E. Schutz. The Bruce Publishing Company, Milwaukee, 1963: $6\frac{1}{4} \times 9\frac{1}{4}$ in., 168 pp., many illus. incl. photos. \$3.75.

This attractively illustrated little book contains a number of suggestions and ideas which are not to be found in other sources, and therefore it is a fine addition to a library of references on bird watching and attracting birds. I disagree with some of the theories, conclusions, and suggestions, but am willing to admit that there is more than one acceptable point of view. Certainly open to argument are such statements as: "Generally bird banders set up a very fine black nylon net about 10 ft. high and 40 ft. wide. This is placed in a known flyway. . . ." Many banders do not use nets; many nets are set elsewhere than in "known flyways"—unless flyway is being used in an extremely broad sense. And it may be true that "Of the three essentials for attracting birds, food, water and shelter, food is the most important," but most people with feeding stations have learned that food alone will not attract birds unless there is shelter close by. To express other, minor points of disagreement, I feel that seeds should not be added to suet mixtures, that water is more important in winter than the author indicates, and that suet poured in coconut shells can present hazards.

The greatest value of the book lies in the detailed instructions and diagrams for feeders and houses. Few books or pamphlets on the subject offer so much help, not only in regard to types of houses and feeders, but in descriptions of methods and materials, for building and mounting them, and for constructing squirrel and cat guards. True, the directions call for considerable knowledge and talent in the use of tools and for more tools than the average person possesses. Most of the houses are more elaborate than necessary for the birds' requirements, but detailed directions are nevertheless there to be followed or modified to suit one's own ideas.

It is unfortunate that so little emphasis is placed on the fact that the houses shown are adaptable for other species than those listed. This fact is buried in the text, and the casual reader, leafing through to find a plan for a bird house, is confronted, for example, with a six-sided house labeled for a Red-headed or Hairy Woodpecker, a little triangular one for a nuthatch, and two houses looking very similar except for roof design, one for a chickadee, the other for a Downy Woodpecker. The complete novice could well be misled.

The sections on winter care of birds and bird houses, care of sick birds, and some of the natural enemies of wild birds are fine additions, though the author missed the chance to put in a favorable word for hawks and owls. All in all the good features outweigh any points open to questions. The book will be helpful to everyone in one respect or another.
—SALLY F. HOYT.