

ORNITHOLOGICAL LITERATURE

THE BOOK OF BIRD LIFE: A STUDY OF BIRDS IN THEIR NATIVE HAUNTS. By Arthur A. Allen. Second edition. D. Van Nostrand Company, Inc., Princeton, New Jersey, 1961: 6 × 9¼ in., xxii + 396 pp., 53 col. photos., 200 figs. (incl. many bl. and wh. photos and 76 paintings in bl. and wh. by William C. Dilger). Trade edition, \$9.75; text edition, \$7.50.

Witmer Stone, in his review of the first edition of "The Book of Bird Life" (see *The Auk*, vol. 47, pp. 432-433, 1930), wrote: "Dr. Allen's ability to transmit clearly to others his knowledge of birds through the medium of pen and camera make this book particularly valuable both as a text book and as a reference work in the home." Dr. Stone's remarks hold for this new edition. In my opinion, it sustains the reputation of the earlier edition as the best general introduction to ornithology.

Dr. Allen states in his introduction that "The book never was intended as an all-inclusive text and the omissions will be quite conspicuous to the technically-trained ornithologist. On the other hand, those who are interested chiefly in extending and interpreting their own observations and who need a readable introduction to general ornithology may find this new edition helpful."

There are three major, beneficial changes in the edition. The first is a new chapter on ethology. The last half, on instinct and intelligence in birds, was taken from Chapter 11 of the first edition and nicely rounds out an extremely valuable and interesting account of bird behavior.

The second change is in Chapter 2 on classification. Two new figures diagrammatically illustrate relationships of orders and families in accordance with Wetmore's (1951) system of classification. Dr. Dilger's paintings, representing the North American families, are exceptionally well done. Each shows a typical head (with neck) and tarsus and, in many cases, a distant view of the bird in its habitat. With these illustrations the chapter presents a concise summation of North American bird classification. Reproductions of some of the author's colored pictures of warblers are misplaced here and break up the sequence of Dilger's paintings between Tyrannidae and Alaudidae. In my copy some of the plates are off register and the colors have been poorly reproduced.

A third change is in the section called "Suggested Readings" which is designed to expand various topics covered in the text. This has been brought up to date and appears at the back of the book arranged under various subject headings such as "Anatomy," "Banding and Bird Behavior," etc. One important source which unfortunately missed inclusion is Marshall's "Biology and Comparative Physiology of Birds."

The rest of the book remains little changed except where obvious errors have been corrected (e.g., Ostriches in Europe and Asia instead of Europe and North America, p. 7) and where outmoded examples occurred. One statement that was not revised on p. 72 reads: "One would not expect the live oaks and cabbage palms of Florida to shelter the same birds as the hemlocks and *chestnuts* of New York. . . ." Some statements in the section on ecology might be questioned by specialists of the subject, particularly the statement that "a forest of trees is a poor place for birds." But these statements of the author tend to stir up the critical mind, as no doubt they were intended.

One particularly distressing thing about the copy at hand is that several of the color photographs of birds are poorly reproduced and sandwiched into places far from where they illustrate the text. A more direct reference in the text to these plates would help the reader.

It is apparent that there has been lack of communication between author and publisher in working out production details. One is also inclined to question the ethics of a trade

edition selling for \$9.75 (price listed in the "Cumulative Book Index") and a text edition (not as well advertized) for \$7.50, the only apparent difference being in the jacket.

All in all, this second edition, like its predecessor, is a fine contribution to ornithology from one of America's foremost teachers.—STEPHEN W. EATON.

BIRDS OF ANAKTUVUK PASS, KOBUK, AND OLD CROW: A STUDY IN ARCTIC ADAPTATION. By Laurence Irving. Smithsonian Institution, United States National Museum Bulletin No. 217; 1960: x+409 pp., 13 pls., 36 figs., 19 tables, several line drawings. \$2.00.

Lately there has been an increase in the experimental approach to the ecology of homoiothermal ("warm-blooded") animals. Most of these new studies have concentrated on some limited feature such as temperature regulation, metabolism, and water loss. In ecological literature the faunal listing is common, and the experimentalists have overlooked this form. But one experimentally based fauna is now available. This is Laurence Irving's book on the birds of Arctic Alaska, which shows how a group of species maintain themselves in a cold environment.

The book first surveys, in separate chapters, the distribution of birds in three northern Alaska localities: Anaktuvuk Pass, Kobuk, and Old Crow. Each chapter contains a description of the region and a commentary on each of the species found. Included is valuable information rarely presented in avifaunal studies—for example, six-year records of arrival dates for the birds of Anaktuvuk Pass. In gathering these data and others, Dr. Irving has greatly profited from the activity and perceptivity of the resident Eskimos and Indians. Occasionally the species accounts give interesting fragments of native folklore.

In later chapters the book takes up a discussion of migration, residence of birds in the Arctic, the influence of Arctic environment on migration and nesting, and the bioenergetics of Arctic birds. Dr. Irving suggests that extreme environmental conditions regulate the physiology and behavior of Arctic birds. Much of the book's importance lies in these chapters for it is here that the author (an experimentalist himself) gives an excellent synthesis of field and laboratory observations and at the same time provides a fine summation of current knowledge on the adaptation of warm-blooded animals to a cold climate.

Well organized and written in an easy style, the book is highly recommended to anyone interested in the ecology of animals.—BRIAN K. McNAB.

A FIELD GUIDE TO WESTERN BIRDS. By Roger Tory Peterson. Houghton Mifflin Company, Boston, 1961: 4½ × 7½ in., xxvi + 366 pp., 60 pls. (36 col.). \$4.95.

Twenty years after the appearance of the first field guide to western birds a second revised edition has appeared (publication date: 31 March 1961). Not only has it been completely rewritten, but it is enlarged and vastly improved. It is amazing how much more information has been included, yet the size is seemingly not much larger. It is still a convenient "pocket-sized" book, handy for field use. This edition has 126 more pages than the first. As an incidental feature it is sponsored by the National Audubon Society and the National Wildlife Federation.

The biggest innovation is that it includes the birds occurring in the Hawaiian Islands. Accordingly the book is arranged in two parts, Part I being concerned with the birds of North America west of the 100th Meridian and Part II with those of the Hawaiian Islands. In addition there are two appendixes, one on accidental and marginal species in western North America and the other on casual and accidental species in the Hawaiian Islands. An attractive feature pertains to the inside covers. In front there are 30 roadside silhouettes and at the rear 24 shore silhouettes. A complete index terminates the book.

Mention of the index brings up the matter of names. The ones used are those of the fifth edition (1957) of "The AOU Check-list," but in the index and species accounts names are given in parentheses that were in use in the fourth edition (1931) of the Check-list and which have now been changed—e.g., Dunlin (Red-backed Sandpiper). Obsolete or little-used vernacular names are not listed except for an occasional one that has wide popular use, even though it has not been officially sanctioned—e.g., "Winter Chippy" for Tree Sparrow. In these instances the common name appears in quotes. Both common and scientific names are listed in the index where the page number in boldface, following the common English name of the species, refers to the page on which the illustration is found. Unlike the earlier edition virtually no attention is paid to subspecies, which with few exceptions cannot be distinguished in the field, and which do not properly belong in a popular field guide. Occasionally there is reference to two types like the Solitary Vireo on plate 49 (p. 246) which shows the so-called typical form and a plumbeous form.

The illustrations are all new for this book although a few have been borrowed from the eastern and Texas guides, and there are more color plates. Of the 60 plates, 36 are in full color, which is six times as many color plates as in the first edition. Black and white illustrations are used (e.g., hawks in flight and gulls) when they afford more aid in field identification than color. However, in some instances groups are shown both in black and white and color. The color plates are superb. The color reproduction is much better than before and thus every figure approaches "true to life" conditions. Impressing me as particularly fine examples are plates 59 and 60 (pp. 310 and 311) on native and introduced Hawaiian land birds. In the latter even the orange colored variant of the male house finch is shown. I wish the author had devised a way to include in color plate 16 (p. 67), showing the hawks, two western species, namely the Prairie Falcon and the Aplomado Falcon, even though each is shown in black and white on plate 17 (p. 74). I would like to have had included a color plate of the owls, yet I realize there were limitations of what could be included and the publishers are to be congratulated on keeping the cost down to a reasonable figure. The colored illustration of the Gray-headed Chickadee (*Parus cinctus*) (plate 45, p. 214) of Eurasia, which occurs in northwestern North America, is the first I have seen of this interesting form. The plates are nicely spaced throughout the book and so are fairly close to the families and species accounts. The several illustrations per plate are for the most part representatives of the same family. Beneath each bird on the plate is printed its name and on the opposite page the kinds are listed and under each the principal diagnostic characters are given. Many of these features are further emphasized by short lines extending from the particular marking shown on the colored figure. It was called to my attention by Clayton White that one figure has partially incorrect coloring, namely the male Ladder-backed Woodpecker on plate 40, opposite p. 167. It should have a black tail in the center, not green as shown. In the colored plates different colored backgrounds are very effective (*cf.* pp. 67, 98, 151, 198, 263). Two plates impressed me as a bit overcrowded, namely the woodpeckers, plate 40, p. 167 and the finches, plate 55, p. 274, yet it is advantageous to have the similar kinds grouped together. A very utilitarian feature is a system of cross references between figures and textual material. Under each species account there is a page reference to the colored illustration, while on the page facing the plate, where the kinds are listed, there is a page reference to the descriptive material.

As pertains to the text, the summaries of family features are improved and strengthened. For the species accounts there is more factual data than before. The plan is to give in capital boldface letters the common name. Under this in italics is the specific name followed by an indication of the size of the bird and the page reference to the illustration in color and/or black and white. Field marks (formerly description) come next with the

most distinctive features italicized. A very useful addition is a section on similar species with the distinguishing features briefly noted. Then comes voice and where found (formerly range). Both breeding and winter occurrence are noted. Then there are two new entries on habitat and nest. The data are remarkably thorough throughout and up-to-date. For instance, information is included on the rediscovery on the island of Kauai by Frank Richardson in 1960, of several of the Drepanids feared to be extinct (see *The Condor*, vol. 63, p. 179, 1961). I like the notation of different opinions in cases of doubtful taxonomic position, e.g., the Blue Goose (p. 37), the Wrentit (p. 218), Brown-throated Wren (p. 220), and the placement of the subfamily Carduelinae either in the Ploceidae (p. 264) or the Fringillidae (p. 278), as well as different concepts as to the number of species in the family, e.g., Sylviidae (p. 234), Laniidae (p. 239), Parulidae (p. 245), and Thraupidae (p. 276). Throughout there are many added helpful notations like the frequent occurrence of rust staining on the heads of Snow Geese and Sandhill Cranes.

The author went to great lengths to insure accuracy of his distributional data both in the main body of the text and the appendixes and after carefully going through the literature himself, he submitted the write-ups to many regional ornithologists. It is remarkable how complete and accurate the data are. However, one slight omission was called to my attention by Robert Sundell, that the Roseate Spoonbill (p. 339) is also casual in Arizona, there being several sight records and a published photograph of a specimen (*The Condor*, vol. 46, pp. 19-20, 1944).

Western ornithologists and bird finders have long awaited this second edition of "A Field Guide To Western Birds" by Roger Tory Peterson. With the appearance in recent years of the fifth edition of "The AOU Check-list," several state publications on birds, and now this revised field guide, the way is cleared for a new era of accentuated study and pleasure with standardized names and improved tools.—WILLIAM H. BEHLE.

DAWN IN A DUCK BLIND: A GUIDE TO THE CALLS OF WATERFOWL. By Peter Paul Kellogg and Arthur A. Allen. Cornell University Records, Ithaca, New York, 1960: 10-inch vinylite record, 33 $\frac{1}{3}$ r.p.m. \$5.95.

This record will be of particular value to the ornithologist and waterfowler wishing to hear certain waterfowl calls which they might never hear in a lifetime afield.

The spring display notes of the Common Goldeneye, the high-pitched squeak of the drake Blue-winged Teal, the low chattering goldfinch-like notes of drake Wood Ducks, and the sonorous calls of the Trumpeter Swan are rarely heard. Few observers in interior America have seen Oldsquaws, let alone heard their melodious calls so familiar to the waterfowlers of the New England coast. Yet the calls of these and other waterfowl may be readily heard from the comfort of an arm chair because this record simulates a morning in what could be called a unique duck blind. The blind is unique because of the geographic range of the species represented and because of the seasonal nature of many calls. Only the most cosmopolitan hunter would ever be exposed to all the waterfowl voices presented.

Some of the species represented are provincial in their occurrence, as exemplified by the Fish Crow, Common Loon, Oldsquaw, and Trumpeter Swan. Other species such as the Pied-billed Grebe, Redhead, Canvasback, and Common Goldeneye rarely call during the fall; the calls presented are to be heard mainly during the spring.

The calls of several important ducks are not given (e.g., Green-winged Teal, Gadwall, Shoveler), but calls of several species (Mallard, American Widgeon, Pintail, Redhead, American Coot) are presented three or more times. The value of such prosaic calls as

those of the Killdeer and Ring-billed Gull is questionable to those interested in "A Guide to the Calls of Waterfowl," the subtitle of the record.

Most species of ducks have several calls but usually only the principal call of each species is given. The rarely heard notes of the drake Wood Duck are presented, yet the characteristic alarm call of the hen Wood Duck is not. The record has a good repertoire of Mallard calls and a special band of three series of Mallard calls which duck hunters could emulate in decoying this species.

The rendition of most calls is good, but the clamor of Snow Geese is so loud that it obscures many of their characteristic barking notes.

This record will be enjoyed by all who thrill to the particular wildness conveyed by waterfowl conversation in the air, in the marsh, and on the water. It is of value to the duck hunter interested in perfecting his technique in decoying Mallards and Black Ducks. As a guide to the calls of waterfowl, it is somewhat disappointing because the extent of its coverage is incomplete.—FRANK C. BELLROSE.

HUMMINGBIRDS. By Crawford H. Greenewalt. Doubleday & Company, Inc., New York, 1960: $8\frac{3}{4} \times 11\frac{3}{4}$ in., xvi + 250 + xvii-xxi pp., 69 col. pls., numerous bl. and wh. drawings. \$25.00.

"Hummingbirds" is a really thrilling presentation of a series of 75 superb color photographs of 58 species of this very challenging group of birds. It is indeed a rare pleasure to thumb through page after page of exquisite, life-sized, color prints of these iridescent avian jewels. One feels that each one encountered must surely be the best. The quality, although varying somewhat, certainly holds up well throughout the entire series. The short paragraphs of explanation of each plate are not profound statements of factual data regarding the birds depicted, but in most cases give intimate, often amusing, details about the circumstances under which the pictures were taken. One, for instance, states "This bird and her mate were photographed in the garden of Mr. and Mrs. Wm. Phelps, Jr. in Caracas, where Mr. Phelps was kind enough to provide sugar solution for the birds and an occasional gin and tonic for the photographer."

Crawford Hallock Greenewalt, the author, is president of the DuPont Chemical Company and a highly capable chemical engineer and executive, but both ornithologically and photographically he is an amateur. One might feel that this "amateur" status would give encouragement to other amateur photographers but, when the chapter dealing with his equipment is read, one finds that the word is hardly applicable in its ordinary sense in this case. As the writer states in this chapter, the account does not contain "do it yourself" directions. Not that Mr. Greenewalt is selfish or exclusive about his methods—he is not. The point is, how many camera fans are in a position to design and build electronic flash equipment of such special nature as to produce 30/1,000,000th-second exposures? If a continuous light were to burn as brightly, he states, it would require 5,000, not watts, but kilowatts of power. The gear weighs about 250 pounds. An extensively modified Hasselblad camera was used. Surprisingly enough, a telephoto lens was not found necessary; nor did it have a large, high speed lens, only f 5.6. Actual exposures were usually made by the birds themselves tripping an electronic eye. Numerous anecdotes about how pictures were or were not secured sustain the interest even in this technical chapter. His collector's use of blow pipes and flyrods for catching hummers unharmed might well be suggestions for bird banders.

Although the major feature of the book is the series of superb photographs, Chapter One gives a very informative and entertaining discussion of hummingbird "Behavior and Characteristics." Two other chapters delve deeply into the subjects of "Flight" and

"Feathers, Color and Iridescence." The latter chapter is an attempt to make understandable a very complicated subject with opinions differing, perhaps, as to whether he has succeeded. Barbules, rami, and pennula become laths, poles, and hooks and eyes (all well illustrated) to explain feather structure as resembling a venetian blind. Some preliminary basic discussions on the nature of light introduce the complications of structural color in feathers. The subjects of refraction, dispersion, and interference colors are handled in such a way as to give a lucid basis for understanding iridescence. Even the electron microscope is drawn upon to examine the feather structures, and masses of measurements are handled with electronic computers to bring the experimental results and the theories together in explaining the hummingbird's gorgeous colors.

In the chapter on "Flight" one will find a number of new facts on hummingbird flight, as well as flight in general. He points out, for instance, that in this highly specialized flier the humerus and the radius and ulna bones of the wing are so shortened and incorporated in the muscle mass of the body as to eliminate the flexing of the wrist and elbow joints in flight. This closely parallels the situation where in the highly specialized swimmer, the loon, the proximal bone (femur) of the leg is likewise bound into the body muscles, thus limiting swimming movements to the distal leg joint only. The hummer's wing being "all hand" eliminates the partial folding of the wing on the up beat, thus rendering the aerodynamics of its flight quite different from that of other birds. The surprising fact is brought out that a Ruby-throated Hummingbird's wing beats at 53 strokes per second (plus or minus three beats) regardless of the bird's flight speed. Another surprise is his statement that "at a given wing length or weight hummingbirds beat their wings less rapidly than ordinary birds." Not only do the interesting facts and his lucid manner of presenting them make for good reading but the ingenious techniques devised to gain new information are fascinating. For example, Mr. Greenewalt lured the birds to a sugar-water feeder, then placed the feeder in the throat of a wind tunnel in order to use a stationary camera in taking high speed movies of the bird as it neared its maximum speed. He has compared and contrasted flight data on insects and birds of many different types and even ventures, with tongue in cheek, to determine how large the wings of an angel would have to be!

The decorative sketches scattered at strategic places throughout the text, and those illustrating the technical chapters, are the work of Mr. Dale Astle. They are direct copies of high speed photos, to be sure, but they are executed with a delicate pencil technique that shows a beautiful appreciation of the structure as well as the texture of the subject.

The price (\$25.00), which puts this beyond the reach of many people, might draw some criticism. However, the writer's aim is extreme excellence in the focal sharpness and color rendition of his exquisite subjects and anything but the best of reproduction of the plates would be a definite retreat from his high ideals. The fine color plates, without question, merit equal quality in the accompanying text and format—hence the price.

The American Museum of Natural History and Doubleday and Company, as well as the author, are to be congratulated on a really fine book.—W. J. BRECKENRIDGE.

POSTCRANIAL OSTEOLOGY OF THE WATERFOWL. By Glen E. Woolfenden. Bulletin of the Florida State Museum (Gainesville), Vol. 6, No. 1, 1961: 129 pp., 6 figs., 2 tables. \$1.60.

Dr. Woolfenden recommends the following changes in the classification of the Anatidae: "*Anseranas* is placed in a monotypic family; *Stictonetta* is removed from the Anatini and placed tentatively in the Dendrocygnini of the Anserinae; *Cereopsis* is removed from the Tadornini to a monotypic tribe of the Anserinae; *Plectropterus* is moved from the Cairinini to the Tadornini; *Tachyeres* is moved from the Tadornini to the Anatini; the

tribe Cairinini is merged with the Anatini; *Merganetta* is moved from the Anatini to a monotypic tribe; *Rhodonessa* is moved from the Anatini to the Aythyini; the tribe Somateriini is merged with the Mergini. The following genera are resurrected: *Olor*, *Nesochen*, *Callonetta*, *Pteronetta*, *Metopiana*, *Mergellus*, *Lophodytes*, and *Nomonyx*, and, tentatively, *Asarcornis* and *Salvadorina*."

This study was based on the examination of 432 skeletons representing 105 of the 167 species of waterfowl recognized by James L. Peters. From one to 25 skeletons of these species were studied. The "relative taxonomic usefulness" of 10 postcranial bones was analyzed: humerus, carpometacarpus, coracoid, sternum, tarsometatarsus, femur, tibiotarsus, scapula, pelvis, and furculum.

Descriptive osteological studies of a family or order of birds are always welcome additions to the literature. I believe, however, that taxonomists should adopt Dr. Woolfenden's "diagnostic" characters with considerable caution when attempting to understand the evolutionary history of, and closeness of relationship among, the waterfowl. Without intending to detract from the value of the osteological study itself, it should be pointed out that little thought was given to the functional significance of the osteological characters cited as diagnostic features for the various genera. Although there must be a genetic factor involved in the growth and conformity of bones, ridges, crests, tuberosities, and other bone features are, as far as we know, directly related to the forces exerted on the bones by muscles and/or ligaments. It may be a statement of fact that "the pneumatic fossa is greatly reduced" or that the capital shaft ridge "is situated more medially" but I fail to see any basis for asserting, for example, that "*the structure of the humerus shows Anseranas to be a primitive anatid*, and completely justifies its removal from the Anatinae" (*italics mine*).

Let us consider also one of the bones of the lower limb: "The tarsometatarsus is the best taxonomic element of the leg. The many articulating surfaces partly account for its usefulness. As with other leg bones, adaptive modifications frequently obscure the more basic features" (page 79). Here, again, the articulating surfaces of the bone are directly related to the function of the limb. What are the "more basic features" that are obscured by adaptive modification?

One can say that Dr. Woolfenden has presented diagnostic features of the skeletons (only one or two for some 70 species examined) of a large number of anatids, but I am skeptical of the significance of these data by themselves in attempting to ascertain the course of evolutionary processes among the Anatidae.—ANDREW J. BERGER.

INSTRUCTIONS TO YOUNG ORNITHOLOGISTS. II. BIRD BEHAVIOUR. By Derek Goodwin. Museum Press Limited, London, 1961: 5½ × 8¾ in., 123 pp. 17 photos., 11 figs. 12s 6d (about \$1.75).

This highly readable small book might well be entitled "Instructions to *Beginning Ornithologists*," for the information and suggestions contained therein are useful for any student, regardless of age. The introductory chapter on instinct and learning covers this sometimes touchy subject carefully and adequately in the light of present knowledge. Succeeding chapters concern food-finding, escaping predators, reproductive behavior, social life, preening, bathing, and anting. Currently accepted behavioral terms are used and well defined.

Black and white photographs illustrate some of the aspects of behavior outlined in the text, and these are supplemented by simple, clear, line drawings. One wishes there were even more of these. The specific examples which are given to illustrate basic principles of behavior naturally concern British species and the suggested "useful refer-

ences" are likewise British, but this should serve to lead the American reader into possibly heretofore unknown fields.

The author points out many unanswered questions and many gaps in our knowledge and observations. These suggestions in themselves are helpful as guides to study, and, in addition, stimulate thought along other lines of investigation not covered here. The presentation is not didactic. The author suggests, inquires, theorizes—and makes it clear that he is only theorizing. This is a worthwhile addition to the library of any ornithologist or student of animal behavior, be he young or old, beginning or advanced.
—SALLY F. HOYT.

THE BIRD WATCHER'S GUIDE. By Henry Hill Collins, Jr. Golden Press, Inc., New York, 1961: 6¼ × 9 in., 125 pp., many photos. (majority in col.); several paintings (7 by James Gordon Irving, 1 by Arthur Singer; end-paper illus. of flyways uncredited). \$3.95.

Another bird-watching book has been put on the market. This one differs more from J. J. Hickey's "A Guide to Bird Watching" (Oxford University Press, 1943) than the similarity of title might lead one to expect. Textually, it is much skimpier, as its two-page index (Hickey's has 12 pages) indicates. The poverty of text, however, is more than made up for by its color pictures. These, taken from such sources as the National Audubon Society and the Fish and Wildlife Service, add greatly to the color of the book, as they must to its price. It would be interesting to know how the illustrations were selected. Why, for example, was almost half a page devoted to a color picture of a cowbird, accompanied by the legend, "In many places the brown-headed cowbird would be a 'common' bird for a Big Day list"? This is entirely true, but, except for filling space, is it any more necessary than the instruction on page 97 that when one wishes to photograph gulls following a boat, one should "take the picture from the stern"?

With the exception of the illustrations, which are present on all but eight of the 123 text pages (the publisher counts the outside of the cover as page one), Collins' book follows the pattern of other available guides. This is to be expected, for unless an author were to strike out in a new direction, there are not many ways of advising about the size and weight of binoculars, the use of a telescope, or the plants which often attract birds. Collins has followed the beaten path, as a run-down of his table of contents shows. Starting with "Becoming a Bird-watcher," he has short chapters on equipment, identification, location, voice, "bird golf," lists and censuses, means of attracting birds, and, with a bow to conservation, ends with three pages listing bird clubs. Here his information is inadequate, at least for the two Illinois organizations with which I am acquainted. Neither one could be reached through his list.

The price of "The Bird Watcher's Guide" is high, for the market at which it appears to be aimed. Nevertheless, it should be a useful beginning book, and a good present to give to a boy or girl who is showing signs of interest in birds. Its color illustrations, its clear type, and its heavy paper should make it an attractive gift for any young person.—ORMSBY ANNAN.

ORNITHOLOGICAL BOOKS IN THE YALE UNIVERSITY LIBRARY INCLUDING THE LIBRARY OF WILLIAM ROBERTSON COE. Compiled by S. Dillon Ripley and Lynette L. Scribner. Yale University Press, 1961: 7¼ × 10½ in., [x] + 338 pp., 3 unnumbered pls. \$6.00.

This is essentially a catalogue of the extensive ornithological collections in the Yale Library. An introduction by Dr. Ripley explains, among other things, that the book "attempts where possible to point out certain details and facts about less known volumes,"

that it has a section listing bibliographies which include bird items and another section on falconry, that it has no entries after 1955, that it does not list works in journals and monograph series, and that certain books have been omitted.

Conspicuously missing in the introduction or elsewhere in the book is an explanation of methods, abbreviations, and symbols used in describing the works. One who consults the book must figure out for himself just what the compilers have attempted to show. Authors' names have been given in full, regardless of how they appeared on the title pages, with one evident exception. For some reason, known only to the compilers, appellations such as "Jr.," "II," etc., have been arbitrarily dropped. (This reviewer, whose name happens to be one thus treated, considers Junior to be an integral part of his name, not a terminal flourish!) The reason seems all the more puzzling when one notes that the names of certain European authors have been unnecessarily lengthened by including titles of noble and royal rank. The size of each book is indicated by one dimension only—and in centimeters. Unless a person is familiar with the work, he has no way of knowing with certainty that the figure refers to height, and his problem is compounded by the fact that he normally thinks of book sizes in inches.

The fact that the book has two special sections—on bibliographies and on falconry—is mentioned only in the text of the introduction (and in the case of falconry, again on the jacket). Both should have been prominently indicated somewhere in the front matter, preferably on the title page. As it is, without reading the introduction, one can easily overlook them because they are in the back of the book.

Following many of the book descriptions are brief though nonetheless helpful comments as to contents. These greatly augment the catalogue's value.

The book was made possible through the generosity of the late Mr. Coe, the arduous task of the compilers, and the encouragement and help of several other persons. To them we are grateful, because we now have an invaluable reference tool and a welcome companion to the classic works by John T. Zimmer ("Catalogue of the Edward E. Ayer Ornithological Library," 1926, Field Museum of Natural History, Chicago), and Casey A. Wood ("An Introduction to the Literature of Vertebrate Zoology," 1931, Oxford, London).
—OLIN SEWALL PETTINGILL, JR.

SEA BIRDS. By Charles Vaucher and translated by James Hogarth. Oliver and Boyd, Edinburgh, 1960: 8¾ × 11¾ in., 254 pp., 255 photos. (15 col.). £5. 5s (about \$14.10).

A translation of "Oiseaux de Mer" (published by Delachaux et Niestlé in Paris), this book is primarily an album of photographs with complementary text. In all respects it is a superior work, combining, as George Waterston has well said in its introduction, "all the artistry of good typography, magnificent plates, and well-written text." It should be a worthy addition to any collection of fine books.

The photographs were taken in Scandinavia and Britain, in such places as Tvärminne in Finland, Bass Rock and Tentsmuir in Scotland, and the Farne Islands off the coast of Northumberland. Quality and reproduction of the photographs leave nothing to be desired. Many have been reproduced one to a page and the others rarely more than two to a page; all except those in color are bled. From them one receives an exhilaration of intimacy, as if he were standing before the subjects. In the selection of the photographs, no attempt was made to give all bird species equal coverage. The Fulmar, Shag, Gannet, and Common Puffin, for example, are generously illustrated whereas the Black Guillemot is represented once. Along with the sea-bird pictures are those of three shorebirds (Oystercatcher, Ringed Plover, and Turnstone) and the Rock Pipit. Monotony of composition from plate to plate is avoided successfully by varying the views from close-up to medium-distant to distant, and these are interspersed with seascapes that vividly show

physical features together with the capricious moods of water, sky, and wind. Legends accompanying the photographs identify the species, usually without comment. Through some strange mix-up, the color photograph on page 117 and the one in black and white on page 132 are labelled, respectively, Lesser Black-backed Gull and Great Black-backed Gull. Each picture shows an adult sitting on what is obviously the *same* nest. The species in both cases is undoubtedly the Great Black-backed Gull.

The text, though somewhat incidental to the illustrations, is plain in style, evenly written, and straightforward, giving the kind of information the average reader will want to know about the birds depicted and the places where they nest. The bulk of the text comprises general accounts of the species featured by pictures, followed by a section, "Descriptive Summaries," that gives, for the same species, the common names in French, German, and Italian, a description of adult, juvenile, and nestling plumages, measurements of length and "wing-span," facts concerned with breeding (habitat; shape, color, and measurements of eggs; and incubation data), and distribution.—OLIN SEWALL PETTINGILL, JR.

A KEY TO FLORIDA BIRDS. By Henry M. Stevenson. Peninsular Publishing Co., Tallahassee, Florida, 1960: 6½ × 9½ in., viii + 158 pp., 6 figs. Paper covered; spiral bound. \$4.00.

This work, for students at the college and university level, has a series of dichotomous keys to orders, families, and species of Florida birds, followed by sections titled "Descriptions and Status of Florida Birds," "Collecting and Preserving Birds," "Glossary and Measurements," and an index. Keys and descriptions have to do only with species whose occurrence in Florida is substantiated by at least two records. The keys are designed for the identification of specimens in the hand. Great care has been taken to base the keys on the more apparent morphological characters and on precise, easily determined measurements (millimeters for smaller dimensions) and ratios so that the specimens, if museum skins, need not be excessively mauled by students and consequently damaged. The description and status of each species are in separate paragraphs. The first gives common and scientific names, total length, coloration of plumage or plumages to be seen in Florida, and peculiarities of form, if any; the second gives seasonal status in the state. Directions for skinning and preparing museum skins are illustrated by four instructive photographs. All in all, the work has a wider application than its title implies and should be highly useful in any ornithology course given in the Florida area.

The text has been painstakingly prepared; errors are very few. (A mimeographed list of corrections and omissions is available from the author upon request.) Its convenience as a study tool, however, is impaired in two places. *The keys.* There are no page numbers in the key to orders and families that will refer the user to the keys to species. If he identifies his specimen, for instance, as a fringillid, he must then, to identify the species, search for the key to species of Fringillidae by thumbing through succeeding pages or looking it up in the index. And further, if he wishes to corroborate his identification of species by checking on its description, he must again go through the same procedure because the page number of the description is not given in the key. *The section on descriptions and status.* Here the user cannot see at first glance where the treatment of one species ends and the next begins because the spacing between the two paragraphs in the treatment is the same as *between* one treatment and the next, and the common name of the species at the start of each treatment is in the body of the first paragraph and printed in the same type. Double spacing between treatments only, and boldface type for common names, would be distinct improvements.—OLIN SEWALL PETTINGILL, JR.

THE CHRISTOPHER HAPPOLDT JOURNAL: HIS EUROPEAN TOUR WITH THE REV. JOHN BACHMAN (June–December, 1838). Edited by Claude Henry Neuffer. The Charleston Museum, Charleston, South Carolina, 1960: 5½ × 8¾ in., 128 pp., 4 pls. \$5.00.

It is always a pleasure to read of a long hidden manuscript coming to light, and one responds with friendly interest not only to the discoverer but also to the person who had the foresight to preserve it. "The Christopher Happoldt Journal" was saved first by the daughter and then by the granddaughter of Christopher Happoldt, Mrs. John B. Ross of Washington, D.C. It is fitting that Dr. Happoldt's descendants should have preserved this record of their distinguished forebear. Through Mrs. Ross and the Charleston Museum, Professor Neuffer was permitted to publish it.

Dr. Happoldt (1823–1878), a naturalist of Charleston, South Carolina, made an outstanding reputation in medical research and was editor of the *Charleston Medical Journal and Review*. This publication reached three hundred subscribers and earned well-deserved praise from readers in Europe where Dr. Happoldt had trained in medicine. Its success spurred the Doctor to more intensive research. Dr. Happoldt's long association with the clergyman and naturalist, Dr. John Bachman (1790–1874), was another contributing factor to his complete satisfaction with his work. But as Professor Neuffer says, "Dr. Happoldt had given 'hostages to fortune'" and at thirty-five felt it incumbent upon himself to concur in his wife's wish to return to her girlhood home in North Carolina where she apparently needed a manager for the family's plantation.

Professor Neuffer conveys skillfully the Doctor's deep reluctance to renounce the work he loved so well: to abandon the *Charleston Medical Journal*; to curtail the time for medical research, in order to direct wisely the business interests of the plantation.

In three years the whole picture of the South had changed. The Confederacy seceded from the Union and the War between the States was raging through the land. Happoldt as surgeon in the Infantry was ordered back to Charleston to defend the city, but in 1863 he was taken prisoner and so remained until the war was over. He came out of the war without serious injury, but the glamour of the plantation system, which he only dimly understood, was gone, and he resumed the role of the country doctor of Burke County. No doubt he yearned to serve his fellow man with deeds of greater valor, and the fight against yellow fever, which had broken out, looked like his opportunity to return to research. So he plunged first into Memphis, Tennessee, and then into Vicksburg, Mississippi, where the dread disease engulfed him in the general tragedy. Thus fighting to save others, Happoldt died there in 1878, only fifty-five years of age.

The foregoing comments relate to the first part of the book which Professor Neuffer calls "A Biographical Sketch of Christopher Happoldt." In order to keep the Happoldt elements of the book together I mention next the Happoldt "Journal" which occupies most of the latter half of the text. The reader is informed in the book's preface that the Journal is a record of John Bachman's six months of European travel in 1838, during which young Happoldt, aged fourteen years, was invited to accompany him as a companion and assistant. The faithful entries made by Christopher each day, while sometimes rather trivial, are in the main very worthwhile for they furnish the facts of each day's itinerary with hotels, prices, the centers of sightseeing interest, and impressions of the general public. Occasionally he refers to some of Dr. Bachman's museum visits and mentions the names of various professors and curators, for Bachman was already collaborating on "The Quadrupeds" with Audubon. The story is often lightened with quaint, precocious commentaries on public behavior and he evinces surprising perception in his estimate of the different national qualities of English, French, and German character. It is clear also that young Happoldt had a rather mature tact by which he saved Dr. Bachman

unnecessary annoyance and trouble. Although the Journal is much over a hundred years old, it could be enjoyed by boys of today.

It was a pleasant surprise to find Professor Neuffer's biography of John Bachman included between two sections of the Happoldt story. Bachman is another case of a fine naturalist skilled in birds, mammals, and general natural history being thrown into shadow by the luminescent John James Audubon. It is well that Director Milby Burton of the Charleston Museum mentions the unrewarded career of Bachman despite his many contributions to Audubon's knowledge which Audubon duly recognized, although he scarcely realized their importance.

The families of these two men were so closely knit by the marriage of two of Bachman's daughters with the two Audubon sons that they could well take each other for granted, but it is time that Bachman be disengaged from his relatives by marriage and receive his correct position in the scientific world, even though posthumously.

It is clear as one reads the biography of Bachman that Audubon dominated whatever the two naturalists engaged in cooperatively. It is also equally clear that Bachman was intent upon the most accurate and scientific methods of describing the quadrupeds. For this necessary work he begged Audubon to visit museums while he was still in England in order to get the measurements of the mammals of America, these details being essential to every species description. Audubon, on the other hand, was keen primarily on getting their combined work into print, much to the annoyance of his hard working collaborator who rose at 4:30 AM in order to spend three hours each morning on the text of the Quadrupeds. When at last it was completed and released in 1846 it was pronounced by Louis Agassiz "a classic" without any equal in Europe. Bachman was quietly pleased and took courage but the dilatory habits of the Audubons were wearing.

Although of German and Swiss ancestry, John Bachman was born in Dutchess County, New York, and lived in the North for twenty-four years. His allegiance was always with the South and when he came to St. John's Lutheran Church of Charleston, the city was glad to have him develop it as he saw fit. Bachman kept his pastorage until 1871, weathering the War between the States, but he never ceased to miss his able colleague, Christopher Happoldt, as a worker in his parish.

Professor Neuffer has produced a much needed and well documented biography of John Bachman but, in its present form, it would seem to be in danger of being overlooked by those who really need it. Certainly Bachman's name should appear in the title of the book.—ELSA GUERDRUM ALLEN.

FUGITIVE REACTIONS IN AVIAN BEHAVIOUR. By Martin Markgren. *Acta Vertebratica* (Nordiska Museet and Skansen, Stockholm), Vol. 2, No. 1, 1960: 160 pp. Paper covered. 25 Swedish kronor (about \$4.88).

For many years the author has been making field observations on a variety of flight responses in a number of Fennoscandian bird species. This paper is an attempt to show how a diversity of avoidance and other movements made by birds fit his definition of "fugitive reaction," a rubric apparently blanketing most bird activities.

The paper is divided into two parts, each with numerous subsections. Part I, "Escape Behaviour," has four chapters, the longest one dealing with a variety of predator-prey interactions; Part II, "Fugitive Behaviour," consists of one chapter which is largely devoted to a discussion of numerous aspects of bird migration as they relate to the author's main theme. Two appendixes, which take up fifty pages, list field observations made from 1947-59.

My over-all impression is that the author has tried to cover too much ground. A crude

analogy which came to mind after I had finished reading the paper was that of a man who entered a vineyard, sampled a few choice grapes, then left feeling that he had consumed the entire crop. Many of the subjects are merely touched upon, seemingly as afterthoughts; others are not treated in detail even though some dogmatic statements are made and broad generalizations are drawn. The style is irritatingly discursive; too often we are told of experiments to be tried in the future or of other works in press; some usage is archaic ("Regnum Animale," p. 26, for example); the literature cited is heavily Scandinavian; and the extreme subdivision of each section is often distracting and confusing. Finally, the price seems a bit unreasonable for a publication with a stiff paper cover.

The author has gathered many interesting and significant field observations, but I think he was mistaken in trying to interpret all flight as "fugitive reaction." Many of the difficulties in style undoubtedly accrued as a result of his decision to publish in English rather than Swedish.—ANDREW J. MEYERIECKS.