

ORNITHOLOGICAL LITERATURE

AUDUBON BIRD GUIDE: EASTERN LAND BIRDS. By Richard H. Pough. Illustrated by Don Eckelberry. Doubleday and Company, Inc., New York, 1946: $4\frac{1}{2} \times 7\frac{1}{4}$ in., xl + 312 pp., 48 color plates. \$3.00.

This book is the National Audubon Society's contribution to the rapidly growing list of bird guides. It opens with an elaborate foreword; then the land birds found in eastern North America (275 species—the hawks, gallinaceous birds, and doves being omitted) are covered individually. The book follows the order of the current A.O.U. Check-List and includes the last eight orders of birds, from the Carolina Parakeet to the Snow Bunting. In the middle of the book are 48 color plates from paintings by Don Eckelberry, illustrating all of the species treated. The section on birds is followed by a bibliography, and the volume closes with an index of the English, the scientific, and some colloquial names. There is no identification key: "The color plates in this book are a key to the birds." "Eastern North America north of Mexico, excluding East Greenland," indicated on a frontispiece map of the "Ornithological Regions of North America," is the area covered in the Guide.

Since many will receive their first introduction to ornithology from this volume, it is gratifying to note that the author in the foreword has started them on a sound basis. In addition to a description of the area covered and an outline of the scope of the book, there are sections on song, on psychology and behavior, on habitat, territorial needs, seasonal movements, economic relations, conservation, and other topics. Pough has done a splendid job of summarizing the fundamentals of modern bird study in a few pages.

Treatment of individual species is more thorough than that in the usual handbook. Subheads cover identification, habits (including food preferences), voice, nest, and range. All distribution data are taken from the A.O.U. Check-List. Much up-to-date information on ecology, predation, and bird behavior has been smoothly woven into an exceptionally readable text.

Probably the most important innovation in this guide is the omission of all subspecies names. Even forms that differ considerably in appearance, such as the sapsuckers, are treated as one species. Obviously there was difficulty in following this procedure because of English names: how could several subspecies, all bearing different names, be grouped under one head? To solve this problem the author has introduced many new names. The various subspecies of nighthawks *Chordeiles minor* are combined under "Common Nighthawk"; the sapsuckers *Sphyrapicus varius* under "Common Sapsucker." The Northern and Southern Flickers become the "Yellow-shafted Flicker." Other changes are more radical: the American Pipit is renamed "Water Pipit"; the Arkansas Kingbird (a full species), the "Western Kingbird." The Arctic Three-toed Woodpecker, also a full species, becomes the "Black-backed Woodpecker," although the text admits that it is "often called the Arctic three-toed woodpecker."

This change in and creation of English names is, in my opinion, very bad practice but is perhaps inescapable since the A.O.U. Check-List Committee has not yet issued its report on the vernacular names it proposes for North American bird species. Authors of many post-war bird books and articles show a very commendable tendency to emphasize the species rather than the subspecies unit, but they must either create new vernacular names or revive old ones for many species. The longer this situation continues the more confused ornithological literature will become.

A few of Pough's statements about certain species are somewhat misleading. For instance, the absence of trees cannot be said to determine the Flicker's choice of telegraph poles for nesting sites, since in northern Ohio, where trees are com-

mon, this habit is of frequent occurrence. The statement that Alder Flycatchers (*Empidonax traillii*) of the Middle West nest in "dry upland pastures" should be qualified: Alder Flycatchers normally nest in swampy areas in the Middle West though they are sometimes found there in upland situations. Concerning Bell's Vireo, the author writes, "Its most surprising habit is singing on the nest"; he neglects to state that both the Yellow-throated and the Warbling Vireo have the same habit. There is an important omission from the Golden-winged Warbler "voice" section: no mention is made there of the second, 8- to 10-syllable song of this species, which is almost indistinguishable from the second song of the Blue-winged Warbler. Both these warblers sing this second, longer, song more frequently as the season progresses.

Don Eckelberry's paintings will earn him a place among the better bird artists of the day. Most of his figures are accurate and well reproduced. This is especially true of the sparrows: with the exception of the Vesper Sparrow, all of this difficult group is done remarkably well.

Because of poor color printing, however, some of the species would scarcely be recognized by the novice in bird study. The Warbling and Philadelphia Vireos and the immature Bay-breasted and Black-poll Warblers, in particular, are poorly printed. In a number of the plates, olive-green and greenish-yellow colors have registered badly. From the standpoint of draughtsmanship, it is my impression that most of the warblers are shown with slightly over-large heads.

In titling the Purple and Bronzed Grackles pictured on Plate 33, the author refers to them as the "brassy-green phase" and the "bronze-purple phase." The use of the word "phase" (which on another plate the author applies to the red and gray Screech Owls) is confusing, since the variation in the grackles is geographical, whereas that in the owls is individual.

Comparison of the "Audubon Bird Guide" with Peterson's "Field Guide to the Birds" is, of course, inevitable, but in my opinion the two books fill different needs. Peterson's "Field Guide" is primarily a book for identification of birds (its other points are incidental) and, as such, it is superior to Pough's volume, especially in its treatment of subspecies. The "Audubon Bird Guide" is a very condensed general book on birds—a pocket manual to take the place of the usual cumbersome reference volume. If a novice in bird study could have but one book, he would probably receive a better all-round understanding of the birds covered and of their place in the biological scheme from the "Audubon Bird Guide" than from any other book of its size.—Louis W. Campbell.

WOODCOCK WAYS. By Henry Marion Hall. Illustrations by Ralph Ray. Oxford University Press, New York, 1946: $8\frac{1}{2} \times 11$ in., xii + 84 pp., 8 col. pls., 10 figs. \$6.50.

The best that can be said of this latest popular book on the American Woodcock (*Philohela minor*) is that it is attractively published and sumptuously illustrated with sketches both in color and in black and white. There are twenty-three titled chapters purporting to describe the species' habits, to evaluate its qualities as game, to tell how, when, and where it may be hunted, and to plead for its conservation. Although Mr. Hall speaks authoritatively of hunting procedures, he fails to demonstrate any intimate knowledge of the Woodcock's habits or familiarity with recent researches, management practices, or protective measures. The text is a curious jumble of indifferent field observations, personal anecdotes, indecisive comments, and vague references to "authorities" whose names he seldom divulges. The book neither adequately informs nor satisfactorily entertains. The illustrations are incredibly poor, both from the artistic and the ornithological point of view.—Olin Sewall Pettingill, Jr.

LAS AVES DE CHILE. By J. D. Goodall, A. W. Johnson, and R. A. Philippi B. Platt Establecimientos Gráficos S. A., Buenos Aires, 1946: 6 × 9 in., 358 pp., 50 col. pls., many text figs. Paper, \$5.00; cloth, \$6.00.*

The appearance of this volume marks the beginning of a new epoch in the ornithological history of Chile. This does not mean that the study of birds in that republic has been neglected—since ornithological literature for nearly 150 years has contained many references to Chilean birds. In general the avifauna of Chile is well known from the systematic viewpoint, a knowledge that culminated in Hellmayr's "Birds of Chile" (*Field Mus. Nat. Hist. Publ. Zool.*, 19, 1932).

"Las Aves de Chile" is a "handbook" written in Spanish, by three men who have a good working knowledge of Chilean birds, gained from thirty years' experience in the field. The authors state in the preface that knowledge of and interest in Chilean birds has been handicapped by the lack of a suitable manual in Spanish, and that this ignorance is responsible for the progressive destruction of numerous species, and they express the hope that this book will explain the need for additional conservation measures as well as for better observation of those now in force.

This first volume, which follows the sequence employed by Hellmayr, includes all the passerine families, the hummingbirds, swifts, goatsuckers, woodpeckers, cuckoos, kingfishers, parrots, and pigeons. A second volume is planned to deal with the remaining families, but the authors estimate that about three years will be required to prepare the manuscript and plates for publication.

The book opens with an eloquent foreword in Spanish by William Vogt, followed by an English translation; then the authors' preface, also with an English translation. The remainder is entirely in Spanish. The work begins with acknowledgments and brief chapters on physiography and climate, zonal distribution, nomenclature, geographic variation, migration, topography and measurements of birds, and classification of Chilean birds.

The species-by-species account starts with the thrushes. First a page or less is given to a brief characterization of the family under consideration. Then each species and subspecies is given, with its Chilean and English vernacular names, the current scientific name, reference to the original description, other local names, general distribution, description, and a table of measurements. Remarks on habits, identification, zonal and altitudinal distribution, and habitat requirements follow. Considerable life history data are given.

Perhaps a better idea of the authors' treatment of distribution and life history may be gathered from a rather free translation of the account of the Diuca (*Diuca diuca diuca*).

"If we conceive abundance in terms of the number of individuals that inhabit a given space or territory, then the Diuca is without doubt the most abundant species throughout the extensive zone included between southern Coquimbo and Aysen, excepting only the mountain regions above 1,500 meters, being met with literally everywhere and at all seasons. It also inhabits the eastern side of the Andes from the Argentine province of Mendoza to Patagonia.

"The Diuca is such a well known bird that a description is hardly necessary; suffice it to say that it has the typical fringilline bill and that it is entirely gray with the exception of the throat and abdomen which are white but separated by a gray band that crosses the breast. In flight it generally, though not always, shows a white border at the edges of the tail.

"The Diuca is equally at home in the country and towns, mountains and valleys, open or wooded regions, in gardens and in city parks and in the most distant solitude of the forest where man rarely penetrates. During the winter it

* Orders for copies, accompanied by remittance, may be addressed to A. W. Johnson, Casilla 327, Santiago, Chile.

gathers in large flocks, sometimes alone, at others in company with other birds such as Cowbirds, Red-breasted Starlings and Yellow-shouldered Blackbirds. As a rule beneficial to agriculture, but on occasion eating the young plants and seeds of the gardeners, it is the object of an unjustified persecution on the part of hunters, in spite of which it maintains itself without any difficulty.

"Laying begins in September, reaches its maximum in October and November, and ends in February. The nest, made of grasses and root fiber and lined with wool or soft vegetable material, is similar to that of the Chilean Song Sparrow [*Zonotrichia capensis chilensis*] but considerably larger, placed in any handy bush, shrub, or small tree, but never on the ground as is the Chilean Song Sparrow's. The clutch is almost always three eggs but sometimes only two, at other times four. The ground color is light Niagara green, and the eggs are profusely spotted and blotched with brownish green and brownish olive, without a hint of the reddish tint which characterizes Song Sparrow eggs.

"This species is a favorite victim of the parasitic Argentine Cowbird (*Molothrus bonariensis*)."

The volume is illustrated with forty-eight plates of birds and two plates of eggs, all in color. The birds are by Goodall, and while some are better than others, the average is good; in some the color registration is a little off, but they are a useful adjunct to the book, and will undoubtedly be of great help in visualizing the species which they represent.

Surprisingly enough, four new races are described; the authorship, however, is not to be credited to all three authors jointly but only to those whose names appear after each. The new forms are:

Xolmis pyrope fortis Philippi and Johnson, Chiloe Id. (p. 152)

Tachuris rubrigastra loaensis Philippi and Johnson, Province of Antofagasta (p. 183)

Phleocryptes melanops loaensis Philippi and Goodall, Province of Antofagasta (p. 261)

Pteroptochos megapodius atacamae Philippi, Province of Atacama (p. 274)
The types of all four races are in the Museo Nacional de Historia Natural de Santiago.

It is a great pleasure to recommend this work to all interested in Chilean birds and to wish the authors all speed in their progress with the second volume.—
J. L. Peters.

LAS AVES DE CHILE. By P. Rafael Housse. Ediciones de la Universidad de Chile, 1945: 390 pp., 15 pls.

Parts of this most astonishing book, in somewhat abridged form, have previously appeared in French in *Annales des Sciences Naturelles, Zoologie* [Paris]—written by the same author, but published under the name of M. l'Abbé Emile Housse. These previous installments and the volumes in which they appeared are:

"Les Oiseaux du Chile." 1937, ser. 10, vol. 20, pp. 93-107.

"Les Oiseaux de Proie du Chile." 1939, ser. 11, vol. 2, pp. 123-233; 1941, ser. 11, vol. 3, pp. 1-96.

"Les Oiseaux des Andes." 1941, ser. 11, vol. 3, pp. 97-161; 1942, ser. 11, vol. 4, pp. 137-238.

These earlier accounts, however, do not include even all the non-passerine groups, and they leave the passerines entirely untouched; hence this volume, in Spanish, may be looked upon as the final and complete product. The author, a Redemptionist Father, has made the study of Chilean birds an absorbing interest for many years, but his contacts with ornithologists appear to have been few and his ideas of writing on birds are entirely original.

No effort is made in the book to give any means of identification. Each species heading begins with the Chilean vernacular name, the scientific name, and a Spanish translation of the latter. The amount of space devoted to any species varies from a few lines to several pages and may cover any or all of the following subjects: distribution, nest, eggs, incubation, early stages, other breeding habits, food, plumages, temperament, susceptibility to domestication, pursuit and capture, enemies, economic value, and diseases—to name only the subjects most frequently dealt with. There are many valuable original observations, but there also seems to be included a certain amount of hearsay and it is not always simple to tell where the original part ends and the hearsay begins.

Fr. Housse seems to have been particularly intrigued by the Condor, the Black Vulture, and the Turkey Vulture, and he devotes ten or more pages to each. He performed experiments to determine whether Black Vultures find their food by sight or by smell—using dead cats for the purpose (a good use for a cat by an ornithologist)—and concluded that it was by sight alone. The most stinking carrion was undetected even when only lightly covered.

There is no question but that Fr. Housse's work contains many important contributions to life history (perhaps in the old sense rather than from the point of view of the modern "behaviorist"), but there is some chaff that must be winnowed out.

The author is not interested in the systematic side of ornithology, which doubtless accounts for his peculiar arrangement of families and genera. Although he indicates in the subtitle that a modern classification is employed, he explains in the preface that he has not observed a strict sequence because "there is neither an international nor a zoological rule which fixes the sequence of orders or families" and that a departure from the usual classification makes the work less monotonous! The non-passerines, headed by the rheas, start the volume, but some of the subsequent families occupy rather strange positions. The tracheophone groups and the Tyrannidae follow the bulk of the true oscines, and the hummingbirds conclude the volume. Scientific names are frequently misspelled; patronymics are often terminated with *y* instead of *i* (*bullery* and *granty*, for instance). The authority's name after a species is invariably enclosed in parentheses, whether these are required or not. The derivations given for the scientific names are not always fortunate—*himantopus* is believed to mean "bloody-footed" (*Sangriento Pié*).

The bibliography is very sketchy, consisting of some thirty defective citations of works published either in Chile or Argentina. The author does not mention either Hellmayr's "Birds of Chile" or Wetmore's "Observations on the Birds of Argentina, Paraguay, Uruguay, and Chile," although he is aware of the existence of at least the former, since he mentions it in his 1937 paper.

Housse lists 373 forms of birds for Chile as against Hellmayr's 335, but the latter omitted oceanic birds, which accounts for a large part of the discrepancy.—J. L. Peters.

LIFE HISTORIES OF NORTH AMERICAN DIVING BIRDS: ORDER PYGOPODES. By Arthur Cleveland Bent. Reprinted. Dodd, Mead & Co., New York, 1946: 6¼ × 9¼ in., xiii + 237 pp., 32 pls. \$5.00.

Probably no other American bird book in recent times has been so sought after as Bent's "Life Histories of North American Diving Birds." Published by the National Museum in a strangely small edition, it went out of print in a short time, and with the publication of more and more volumes of this very successful series, the "Diving Birds" has become practically unobtainable, even at forty times the original price. It is, therefore, very good news that the book has been reprinted.

The book was first published 18 years ago, and its merits are well known; therefore the task of a reviewer is simply to report how well, especially how faithfully, the reprinting has been done.

The publishers advertise this volume as "the unrevised reprint of Bulletin 107" of the National Museum and state that it is "the complete text reproduced exactly as the author originally prepared it." However, the book is by no means a facsimile of the first edition. The reader will note immediately the absence of the 12 colored plates of eggs, which added so much to the value of the original publication. It is understandable that the publishers might have felt that color plates would add too much to the cost of printing a new edition, but they should have mentioned this omission in their advertising. Less understandable is the series of substitutions and omissions of half-tone plates. Of the 43 half-tone plates in the original volume, only 22 are reprinted unchanged; other plates have at least one photograph substituted, and 11 plates, including the frontispiece, are omitted entirely. The half-tone plates in the new volume are published as a single group (following page 206), and the plate numbers and part of the information in the legends are omitted. Pages 233-239, which gave the full scientific data to accompany the pictures, are left out of the new edition, and thus the pagination of the index, which follows them, is changed.

For the most part, the text is reprinted unchanged and with the same page numbers, but even this has not been carried out completely and exactly. There are many cases in which a few lines from one page are carried over to the top of the next page (or the reverse change made), and in at least one case (the nine lines quoted from Dr. Roberts on page 32) a paragraph has been omitted entirely.

The nomenclature has been modernized in the case of the American Eared Grebe (which becomes the "Eared Grebe"), the Murre, *Uria troille troille* (which becomes "Atlantic Murre, *Uria aalge aalge*"), and the Puffin (which becomes "Atlantic Puffin"), but, strangely, the corresponding changes have not been made in the index. The publishers have not, however, been consistent in modernizing the nomenclature, and other changes to be found in the current A.O.U. Check-List have been ignored.

One change which the publishers of the new volume have made is perhaps justifiable. The name of the species treated is given in the running head on every odd-numbered page—a very useful aid to the reader which the editor of the original series did not employ until he came to the seventh volume.

This new edition is cloth bound and is well printed on good paper. The half-tones are reproduced rather better than in the original edition.

The publishers announce their intention of producing a series of these early out-of-print volumes of the Bent "Life Histories," but if they are not willing to make them exact reprints which can be safely used and quoted from, they would do ornithologists a great service by resigning the task in favor of a publisher that is able to meet the needs of scholars and students.—Josselyn Van Tyne.

LONDON'S NATURAL HISTORY. By R. S. R. Fitter. The New Naturalist Series. Collins, London, 1945: $5\frac{7}{8} \times 8\frac{1}{2}$ in., xii + 282 pp., 72 pls. (40 col.), 2 diagrams, 11 maps. 16 s.

We have in Mr. Fitter's work (as well as in Ford's extraordinarily intelligent and scientifically satisfactory volume on butterflies in the same series) a model for the popularization of science that most urgently needs to be called to the attention of the leaders in American science, American education, and American publishing. I so heartily concur with the introductory editorial remarks that no better review is needed than to quote and comment on them.

The editors write: "The aim of this series is to interest the general reader in the wild life of Britain by recapturing the inquiring spirit of the old naturalist. The Editors believe that the natural pride of the British public in the native fauna and flora, to which must be added concern for their conservation, are best fostered by maintaining a high standard of accuracy combined with clarity of exposition in presenting the results of modern scientific research. The plants and animals are described in relation to their homes and habitats and are portrayed in the full beauty of their natural colors, by the latest methods of colour photography and reproduction." (How pleasant it would be to read America and American for Britain and British in this paragraph!) To this, the editors add about the author ". . . a young social scientist and writer who has been a naturalist all his life . . . Mr. Fitter has always lived in London, as have his father, grandfather and great-grandfather; and he has made a special study of London's natural history—and the history of its natural history—for over ten years. He has, clearly, the material qualifications for the work he has chosen to do; and the reader will soon agree that he has done it well. And it is time that it was done—high time that this book was written. For up to now there has been no real attempt, in any biological literature we are familiar with, to write the history of a great human community, in terms of the animals and plants it has displaced, changed, moved and removed, introduced, dispersed, conserved, lost or forgotten. In certain ways Mr. Fitter's book makes gloomy reading, for the progressive biological sterilisation of London is a sad history. But the discerning reader will soon notice that the sterilisation is not complete. Indeed, in this remarkable history not all is on the debit side. There is the fascinating story of the adaptation of wild life to an environment which is almost wholly man-made. There is also the fact that London natural history to-day has its special compensations, even its new and particular treasures."

As a regional natural history, Mr. Fitter's book has the merit of accepting the existence of man and his culture as a *fait accompli* and of writing his book about the natural history of London as it is and not as it was. The tracing of London's natural history through its origins, its changes, and its human history forms a fascinating story, the lesson of which is the acceptance of the result as a "state of nature" in the best ecological sense.

No comparable account of the natural history of any urban region exists for America. Buenos Aires, Mexico City, New York, and Chicago are candidates for such intelligent treatment. Alas, we need books in order to stimulate the intelligent interest that would make the books possible. Universities have for two generations robbed us of prospective naturalists in order to make geneticists or physiologists, shortsightedly failing to note how few of these carried their interest beyond the Ph.D. degree as compared with the life-long cultural values of the "old-fashioned" natural history.—Karl P. Schmidt.

PRAIRIE WINGS. By Edgar M. Queeny. Photographs by the author; frontispiece and sketches by Richard E. Bishop. Ducks Unlimited (342 Madison Avenue), New York, 1946: 9 × 12 in., xiv + 256 pp., col. frontispiece, 276 photographs, 140 drawings. \$15.00.

This obscurely titled book proves to be a handsomely printed and superbly illustrated popular account, which might better have been called 'The Flight of Ducks.' Five chapters are essays on duck hunting written for duck hunters, but the most important part of the book treats duck flight as revealed by the high-speed camera. The pictures are certainly the finest yet made of ducks in flight, and the engravers and printers have done them full justice. The effectiveness of many of the pictures is increased by parallel series of excellent drawings by Richard Bishop, analyzing, labeling, and explaining the photographs. Mr. Queeny is to be com-

mended highly for the honest, scientific attitude he has taken toward his photographs: although in producing four of the prints that appear in the book he used "photographic artifices," he is careful to tell us which pictures these are and what was done to them.

Glenn Martin has contributed a brief section on flight from the point of view of the aviation engineer, and quotations from C. Townsend Ludington, of the Franklin Institute, further clarify this difficult subject.

There is an annotated "bibliography" of sixteen works which includes some titles whose pertinence is difficult to see, omits such books as Horton-Smith's "Flight of Birds," and is arranged, not by authors, but (*almost* alphabetically) by title. Not all the references are accurately copied.

Even though his discussion is restricted to ducks, Mr. Queeny has produced a book that must be recognized as the best single account of bird flight yet published.—Josselyn Van Tyne.

A BIBLIOGRAPHY OF BIRDS. WITH SPECIAL REFERENCE TO ANATOMY, BEHAVIOR, BIO-CHEMISTRY, EMBRYOLOGY, PATHOLOGY, PHYSIOLOGY, GENETICS, ECOLOGY, AVICULTURE, ECONOMIC ORNITHOLOGY, POULTRY CULTURE, EVOLUTION, AND RELATED SUBJECTS. By Reuben Myron Strong. Publications of Field Museum of Natural History [now Chicago Natural History Museum], Zoological Series, Vol. 25, Parts 1-2, pp. 1-937, 1939 (Author Catalogue); Part 3, pp. 1-528, 1946 (Subject Index).

It is almost incredible that one man could have achieved this monumental bibliography. For many years Dr. Strong has labored faithfully on this work of prime usefulness to investigators, which lists some 25,000 articles and books on birds. Some idea of the comprehensiveness of the work may be gained by looking at the 56 pages in Volume 1 devoted to the "Key List of Abbreviations for Periodicals Cited" (about 2,000) and the 10 pages of more than 450 periodicals not cited, many of which "have little value to the investigator, but which have the spirit of the true naturalist or may be useful in aviculture."

The bibliography is world-wide in scope, and Dr. Strong was tireless in verifying each reference, making for this purpose many trips to libraries in this country and abroad. "The comprehensive search ended with literature for 1926" largely because *Biological Abstracts* started then, but "other references were added as they came to attention, even as late as 1938." Dr. Strong very helpfully indicates the libraries in which he found the rarer publications. The inclusion of articles dealing with "habits" depended to a certain degree on "the scientific reputation of the periodical publishing them"—which points to the heavy responsibility of editors to pass upon the worth of articles they bring out.

In Parts 1 and 2 authors are arranged alphabetically and their titles "chronologically as to years and alphabetically as to publications within the same year." In the Subject Index there are 6½ pages devoted to bibliographies and 2½ to periodicals containing abstracts or reviews of publications referring to birds. The main part of the volume is concerned with 120 main topics, such as (alphabetically) Distribution, Ear, Ecology, Economic Ornithology, Education, Embryology, Endocrinology, Evolution, and a vast number of sub-topics. Text references give a brief note on content, the author, and year; the complete citation is given in the Author Catalogue. The Subject Index is an amazing storehouse of information. For instance, take the 12 pages under "Migrations": after 1½ columns of citations of books (in five languages) and general articles, the sub-titles are: Areas (by continents, then countries); Different Birds (cited with scientific names); a page of miscellaneous articles; Altitude in Flight; Banding Observations; Halts and Retardations; Irregular Migrations; Length or Distance of Migration; Lighthouse

and Tower Observations; Lightship Observations; Nocturnal Migrations; Physiology of Migrations (with 5 sub-titles); Routes; Seasonal Migrations; Sex Differences in Migrations; Speed or Rate of Migrations; Weather, Effects on Migration (with 5 sub-titles). In the 21 pages devoted to "Habits" there are 39 sub-titles. Indeed, the Subject Index boasts such a wealth of material that it requires an index of its own: Volume 4, the Finding Index, in which each topic is arranged alphabetically, is in preparation.

Universities, libraries, and serious students will find this bibliography a basic tool. The Chicago Natural History Museum may well be proud of its part in the undertaking. Ornithologists and other zoologists owe a great debt to Dr. Strong for his erudition, his determination, and his endless patience in carrying to completion such a work as this.—Margaret Morse Nice.

THE SYMBOLIC GOLDFINCH: ITS HISTORY AND SIGNIFICANCE IN EUROPEAN DEVOTIONAL ART. By Herbert Friedmann. The Bollingen Series VII. Pantheon Books, New York, 1946: $7\frac{1}{2} \times 10$ in., xxxii + 254 pp., 157 pls. (Nos. 1-141). \$7.50.

"The Symbolic Goldfinch," by Herbert Friedmann, Curator of Birds at the National Museum, Washington, D.C., is a beautiful book—beautiful in form and craftsmanship, beautiful as a product of high scholarship and intellectual power. Mr. Friedmann became interested in devotional art as an avocation, especially in the forms which showed birds in their design, and his analysis of 486 paintings attributed to 254 artists of the late medieval and baroque periods led him to explore many paths of learning. The conclusions, as contained in this volume, are thoughtful and thought-provoking and provide the reader interested in art and medieval symbolism with a convenient and valuable reference.

"The goldfinch, one of the brightest plumaged of the small, common, widely distributed birds of Europe, obviously lent itself readily as a symbol because it was as well known to the town dwellers as to the country folk, for it had long been a favorite household pet. Its role in the household was not exactly that of a common cage bird such as the canary is today, but more of that of an animate plaything for the children. Children were often given a live bird on a long string, and would amuse themselves by letting it fly about." Mr. Friedmann carefully traces the transmission of the representation of the goldfinch as a symbol, from its probable origin in France to other countries of Europe, including Russia. The various attributes, such as the Soul, the Resurrection, Sacrifice, the Passion, and augur of disease, which the bird is presumed to have symbolized, are ferreted out and developed with skill and ingenuity (though the reader who comes fresh to the allegorical and symbolic ideas of the medieval mind may feel that Mr. Friedmann's reasoning is somewhat attenuated and finespun). Consideration is also given to the significance of the size, position, and posture of the bird and of its juxtaposition to the Christ Child, all of which contribute to the exact symbolic meaning.

The careful documentation of the text, the well-selected bibliography, and the acknowledgments given in the long list of names of persons high in their special fields of learning attest Mr. Friedmann's intellectual integrity and his amazing industry and skill in a field outside his profession. His selection of the 157 half-tone illustrations is interesting and discriminating.

The publishers are to be congratulated upon the beautiful design of the book. The selection of type, the form of the text, and the excellent printing of both text and illustrations contribute to the pleasure one has in returning to the book again and again.—Helen B. Van Tyne.

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