ORNITHOLOGICAL LITERATURE

ALEXANDER WILSON: NATURALIST AND PIONEER. By Robert Cantwell. Decorations by Robert Ball. J. B. Lippincott Company, Philadelphia and New York, 1961: 9¼ × 12¼ in., 262 pp. + Appendices, 8 col. and 16 bl. and wh. pls. $15.

With good reason our Society is named for Alexander Wilson (1766–1813). His contribution to ornithology has been great, much greater than many students of birds have realized, and his influence has not disappeared from this science. Wilson's literary and artistic abilities enabled him to stimulate an interest in birds far beyond what his carefully executed life histories would have alone. In addition, Wilson led a life that was both adventurous and inspiring, features which have stimulated biographical studies. Those previously published have been of varying quality, but none has been of the scope which Wilson's significance requires. Yet a knowledge of the incentives of outstanding contributors to a science is quite relevant to understanding why that science has assumed its present form.

Robert Cantwell has published the first detailed biography of Wilson and he has brought to the task literary skill and a fine ability to synthesize scattered information. Because of the diverse and fragmentary data which are available, the writing of Wilson's biography is a greater task than might appear to one who reads Mr. Cantwell's book with no knowledge of the sources. His book is designed for a general public. It has a beautiful format and the narration is extremely interesting throughout. It is of large size to accommodate the plates, all of which are excellent reproductions. In conformity with the plan for a general work, footnotes are omitted and very often sources are not mentioned. This is unfortunate, because Mr. Cantwell usually does not differentiate between definite information and his inferences, which are extrapolated beyond the evidence.

It is disappointing to discover that Mr. Cantwell has made use of this vague documentation in order to inject a sinister undercurrent throughout the book which is contrary to all the evidence. His background as novelist and journalist has evidently led him to feel the need for maintaining tension and suspense. Fortunately, when introducing this sinister theme, he does provide the evidence (court records in the appendix), which the reader can study and judge for himself the validity of Mr. Cantwell's interpretation.

Wilson was convicted of writing a libelous poem and attempting to blackmail the party libeled in order to suppress its publication. A warrant was sworn for his arrest on 26 July 1792. The date of his arrest is not apparent, but he was released on bond on 11 August. Thus he could not have been jailed more than 17 days. There is no evidence of further attempts to imprison him until a warrant was issued for his arrest on 22 January 1793 [incorrectly given as 1792, p. 273] for having allowed the poem to be printed contrary to court order. After two weeks in jail, Wilson was released when he complied with a court order to burn copies of the poem in the market-place and posted bond for two years to insure his good behavior. He had been imprisoned no more than one month under circumstances which might have provoked considerably more severe punishment at such a time of stress in European history. The court document of 23 April and 14 May 1793, which are included, are exceedingly ambiguous and it is not even clear that they in any way pertain to Wilson, because his name is not mentioned on either. Evidence that Wilson was arrested for a third time is dated 4 January 1794. He stated that he was innocent of the charge "of having circulated (six months past) certain Hand Bills" considered seditious [276]. He was released on that date, which seems to have been the date of arrest [77]. Yet, Mr. Cantwell asserts [68], apparently on the strength

of the questionable documents of 23 April and 14 May, "that Wilson had been imprisoned a good deal of the time in that period [22 May 1792 to 5 January 1794]."

The motive for such a flimsy assertion is to magnify this experience far beyond its actual proportions. Wilson is then pictured as running away from his stained past for the rest of his life (even though we are asked to believe that he had taken the blame for someone else [78]). There is no doubt that his encounter with the law was a factor in Wilson's decision to emigrate to America, but his failures in Scotland—literary, financial, romantic—were certainly the chief factors. It is evident from the contents of a poem, "Epistle to Thomas Wotherspoon" (1791), that he had contemplated such an action before his entanglement with the law. There is no mention of either this or the fact that Wilson had seen an advertisement in 1793 for the passenger ship he took to America and had then begun to save money for the voyage.

Evidently Mr. Cantwell did not have sufficient confidence either in the inherent interest of Wilson's life for the general public or in his ability to present the material, because he goes to great length to introduce sensational, but extraneous, elements into his narrative. The scandals of Dr. John Witherspoon, James T. Callender, and Alexander Hamilton are described, and then an effort is made to show some faint way in which each was involved in Wilson's life: "In a world dominated by political scandals of this character, and with Scottish refugees creating many of them, Wilson remained in obscurity. He was a convicted blackmailer. . .and it behoved him to be circumspect [93]." This was after Wilson had established himself as a school teacher in America. There were no longer economic oppressors for him to oppose, and he had no lingering fear of further repercussions from his past.

When discussing Wilson's writings, Mr. Cantwell is at his best. He offers a good general evaluation of Wilson's earlier poetry [60, 62] and his extensive paraphrase of Wilson's long nature poem, "The Foresters [127–32]," is most enjoyable. In spite of there being no indication that Mr. Cantwell knows anything about birds which he has not read in "The Foresters" and the "American Ornithology," his extensive paraphrases of them are mostly satisfactory.

There are, however, exceptions which should be mentioned. Wilson is celebrated for the accuracy, clarity, and brevity of his written descriptions no less than for his paintings. A fine example is the plumage description of the American Goldfinch:

> . . .of a rich lemon yellow, fading into white towards the rump and vent. The wings and tail are black, the former tipt and edged with white, the interior webs of the latter are also white; the fore part of the head is black, the bill and legs of a reddish cinnamon color.

Mr. Cantwell's abbreviation of this is unsatisfactory: "the rich lemon-yellow, the reddish cinnamon of the goldfinch. . .[99]." If only two colors are used to describe this bird, they should be yellow and black.

Possibly for poetic effect, Wilson described in "The Foresters" [line 460] an encounter with a Ruffed Grouse, which he calls a pheasant, but in a footnote he gives the correct common and scientific names. Mr. Cantwell misleadingly states that "two pheasants" were shot by Wilson [128]. In similar fashion, Wilson's names are used throughout the book, even when archaic. This would not have been confusing if Mr. Cantwell had made it clear what he was doing, but it does not appear that he realized the names have changed. In three instances he gives the modern name in parentheses (Louisiana tanager = western tanager [141, col. pl. V]; yellow-rump warbler = myrtle warbler [163]; turtle dove or Carolina pigeon = mourning dove [172]), which implies the others are still valid. The confusion is the worst in the labels substituted for Wilson's on the black and white

plates. Three warblers are dismissed as "shy and elusive flycatchers" [pl. 7]; Surf Scoter is labeled "black duck" [pl. 10], etc.

In several instances there are errors in the discussions of birds. Clark's Crow is *not* "purely a Pacific Coast native. . .[141]" Wilson did *not* indiscriminately apply the name "snow-bird" "to any one of the winter sparrows [163]" but reserved the name specifically for the Slate-colored Junco. Mr. Cantwell implies [250] that Wilson had no basis for stating in Volume 3 of the "American Ornithology" that the female Black Capt [Blackpoll] Warbler is similar to the male, since in Volume 6 Wilson illustrates and describes it as being different. In the earlier account Wilson was describing the species in the fall plumage in which he discovered it, when, indeed, the sexes are similar. Because Mr. Cantwell did not bother to equate Wilson's names with their modern equivalents, he did not realize that Wilson described the spring plumage of the male under another name in Volume 4.

It is incorrectly stated [175] that Wilson first described the Red-cockaded Woodpecker. This was done by Vieillot, as could easily have been discovered from the AOU Checklist or by comparing Wilson's specific, *querulus*, with the one now employed, *borealis*. However, Mr. Cantwell shows that he has no understanding of procedures in systematics when he states that it is an injustice for Wilson to receive credit in ornithological literature for naming the Black-billed Cuckoo, which was pointed out to him by John Abbot [184–5]. "Credit" is not given to honor the finder, but to stabilize the name of the species, and it is only given for an adequate published description, which in this case never came from Abbot.

Mistakes such as these reveal an inadequate attention to the late Emerson Stringham's summary essay on his study of Wilson's ornithology, and makes desirable the publication of Dr. Stringham's own two-volume study of Wilson's life and work. Dr. Stringham's summary is incorrectly placed under the list of "Supplementary Material" rather than with "Works about Wilson." This is far from being the only shortcoming of the bibliography. Herrick's biased biography of Audubon (1917) is cited rather than the more objective works of Buchanan (1869) and Arthur (1937). Many articles by and about Wilson which were used are not cited. Worst of all is the outrageous treatment of George Ord.

None of the Ord publications which are used are cited at all in the bibliography and only vague references are given for them in the text. Yet many of the important facts which are presented come from Ord's biography of Wilson. Mr. Cantwell goes to excessive extremes to defame Ord, whose crime was the defense of Wilson's name from the unjustified attacks of Audubon (which Mr. Cantwell admits, 250–1). He enlarges upon Ord's eccentricities (understandable in a man whose only child died and whose wife had to be committed to an insane asylum for life) and minimizes his contributions. It is a ridiculous assertion and a disservice to the history of ornithology for Mr. Cantwell to lead his readers to believe that Wilson resented Ord's assistance [250]. This is clearly disproved by Wilson's will which names Ord his literary executor. Ord was Wilson's only student and upon him fell the burden of continuing and completing the work of his master. This Ord did, and produced a respectable contribution to American ornithology and mammalogy. The statement that the discovery of the Cape May Warbler "was George Ord's one claim to ornithological fame [251]" is so preposterous that it needs no refutation. It illustrates Mr. Cantwell's irresponsibility toward history of science.

The treatment of Wilson's relationship with William Bartram also contains a serious distortion (as well as a comparatively minor erroneous statement, that Bartram had ever

married [120]). It is stated that Wilson formed the idea for his projected work on ornithology in the summer of 1803, "But years passed before he told Bartram what he meant to do [120]." This is an oversimplification of the facts which implies that Bartram's influence on Wilson was slight, when in fact Bartram was the most important single influence on Wilson as an ornithologist. This is never made clear.

The mistakes and distortions mentioned are but a sampling of those present. Mr. Cantwell's biography may thus be recommended as highly readable but not as authoritative. This is a pity, because he shows the ability to have written a definitive biography, had he shared Wilson's concern for accuracy. Nevertheless, the book should render an important service by drawing attention to the role Wilson has played in the cultural history of America.—FRANK N. EGERTON.

BIRD-SONG. THE BIOLOGY OF VOCAL COMMUNICATION AND EXPRESSION IN BIRDS. By W. H. Thorpe. Cambridge University Press (American Branch), New York, 1961: 5½ × 8½ in., xii + 143 pp., 65 figs., 2 tables. $3.75.

Developments in the last two decades in tape recorders and sound spectrographs have revolutionized the study of animal sounds. The aim of this book is to survey recent developments in the field of bird vocalizations, especially those utilizing these new techniques. The book reviews the findings of the author and others on the musical nature and general character of bird vocalizations, the circumstances under which they are uttered, and their biological significance, and concludes with a discussion of sound production and hearing in birds.

The section and chapter headings indicate the scope of the book: Preface; Notes on the Illustrations; Bird-song as Music and as Language, and Methods for its Study; Call-notes; Song; The Characteristics of Full Song and Subsong; The Development of Song in the Individual; Specific and Subspecific Differences in Vocalisation; Sound-production and Hearing; References; Index; Index to Species (giving scientific names).

Bird vocalizations are considered as a form of language. The chapter on call-notes emphasizes the functions of bird calls, and presents a classification of the various calls. The chapters on song deal with the functions of song, the characteristics which enable songs to perform their functions, the development of song in the individual (based mainly on the Chaffinch) and variation in song (in species and individuals). Field observations and experiments are repeatedly described to illustrate the points under discussion.

The book is profusely illustrated with sound spectrographs. These graphs are reproduced in black and white, and are often somewhat diagrammatic rather than exact reproductions of the original graphs. The result is that many low amplitude sounds are lost, and amplitude variations within the song are not indicated—features which in my opinion detract from the value of the graphs. The time scale in a few graphs is too small to show many of the finer details. The author occasionally misinterprets his graphs, e.g., in Fig. 51, in indicating the frequencies of the energy peaks.

Song is here considered as the utterances of the oscines of the order Passeriformes, but the reader is likely to be misled (p. 14) as to just what families are included in the oscines. The majority of the birds discussed are European species, a feature which may be a little disappointing to bird students in this country.

Subsong (discussed principally in the Chaffinch) is considered as nonterritorial and probably in the nature of practicing, later developing into the full song. The discussion contains no indication that such a thing as a whisper song may be uttered, as Mayfield

has shown in the Kirtland's Warbler, in response to playbacks of normal song on a bird's territory, or when another male is nearby.

Much reference is made to the work of other investigators, and approximately 170 references are cited. A feature rarely seen in lists of references, and one certainly worthy of commendation, is the indication in the list of the pages on which each reference is cited. An error in a reference to one paper (Borror and Reese, 1959: the statement that these authors did not indicate the number of recordings from which certain songs were selected, when they gave this information in Table 3 of their paper), and an error in the title of another (Peterson, 1934), make one wonder how many other such errors are present. However, these are minor points, and do not detract from the over-all worth of the discussion.

The book is for the most part very well done, and will be of considerable value to anyone interested in animal behavior in general, or bird vocalizations in particular. It presents an excellent summary of our present knowledge of the nature and significance of bird vocalizations.—DONALD J. BORROR.

ANIMAL SOUNDS AND COMMUNICATION. Edited by W. E. Lanyon and W. N. Tavolga, Publication No. 7, American Institute of Biological Sciences, Washington 6, D.C., 1961: 6¼ × 9¼ in., xiii + 443 pp., 112 figs., 4 tables, and one 12-in. LP demonstration record. $9.50.

The symposium that formed the basis for this publication took place more than three years ago, but time has underlined the wisdom of placing it on public record. The book represents the first authoritative survey of the role and importance of sound communication as a factor in animal behavior, as viewed in the light of recent technical advances made possible by the use of the tape recorder and sound spectrograph.

Each of the book's nine chapters is the work of a different author. Six chapters are based on papers given at the AIBS meeting in 1958, and the remainder were subsequently solicited in order to broaden the coverage of the subject.

Introductory chapters outline the practical problems facing anyone contemplating scientific recording of natural sounds in the field (P. P. Kellogg), and the use of the sound spectrograph for analysis of such sounds (D. J. Borror). They succeed in holding to the middle ground between too superficial and too technically detailed treatment. The next three chapters deal with sound communication in Orthoptera and Cicadidae (R. D. Alexander), Fishes (W. N. Tavolga), and Amphibians and Reptiles (C. M. Bogert). Dr. Alexander covers his subject well and succinctly and Dr. Tavolga outlines what has been accomplished so far in a field that presents its own exceptional difficulties. Mr. Bogert's chapter is something else again—really a book within a book, for it comprises more than 40 per cent of the text. His full and detailed treatment provides a good demonstration of the many avenues of approach that sound communication may now contribute to behavioral and systematic studies of a particular Order (Anura), but I find myself undecided whether this benefit outweighs the imbalance created by its exceptional length in relation to other chapters.

The next three chapters are devoted entirely or largely to bird sounds: "The Ontogeny of Vocalizations in Birds" (W. E. Lanyon); "Bird Songs and Mate Selection" (P. Marler); "An Ecological and Functional Classification of Animal Sounds" (N. E. Collias). These all report on recent experimental work in interesting fashion and make it clear that the present state of our knowledge is still very fragmentary. Extensive

bibliographies in these and other chapters form an important contribution to the value of the whole.

It seems strange that, with the coverage as broad as it is, no chapter was devoted specifically to sound communication in (non-human) mammals, a field that might provide the greatest return in terms of our own linguistic experience. However, C. F. Hockett, who was given the opportunity of reading the contributions of the other authors, does use the final chapter to look at sound communications in various animal groups, including mammals, as they relate to what he considers to be 13 critical components of language. For me, the definition and discussion of these terms tended to obscure the sweeping strokes needed for a broad summing up of the subject as a whole.

The long-play record will never become a best-seller, but was not intended as such. The quality of the contributions ranges from very good to very poor but, in the main, they provide provocative and helpful support for the text. This is an idea that could be developed more fully and used more widely in a variety of publications.—WILLIAM W. H. GUNN.

BIRD SONGS IN YOUR GARDEN. By Arthur A. Allen and Peter Paul Kellogg. Cornell University Press, Ithaca, New York, 1961: Bookalbum, 10 × 10 in., 24 pp., 53 illus. (31 col.), and 10 in. 33⅓-rpm vinylite record. $5.95.

The songs of twenty-five species have been faithfully recorded by Dr. Kellogg. Side one contains all the songs, each identified by Dr. Allen. Side two has the same songs without the interruption of human voice. The birds recorded are the Eastern Wood Pewee, Cardinal, Robin, Rose-breasted Grosbeak, Catbird, Scarlet Tanager, Song Sparrow, Chipping Sparrow, Red-eyed Vireo, Wood Thrush, Veery, Cedar Waxwing, Brown-headed Cowbird, Blue Jay, Rufous-sided Towhee, Baltimore Oriole, Orchard Oriole, Purple Finch, Yellow-shafted Flicker, White-breasted Nuthatch, Eastern Kingbird, Eastern Phoebe, Yellow-billed Cuckoo, Black-billed Cuckoo, and Screech Owl.

The album holding this record has excellent color plates of birds represented in the record and some interesting printed information. There are also pictures and printed information on molting changes, plantings to attract birds in gardens, birdhouses and their dimensions, directions for feeding stations and bird baths, and twenty-two references to books in which to learn more about birds.

Dr. Allen and Dr. Kellogg are to be congratulated for producing another excellent work that should find widespread acceptance in homes, schools, and universities.—MERRILL WOOD.

VERTEBRATE SPECIATION. Edited by W. Frank Blair. University of Texas Press, Austin, 1961: 6¼ × 9¼ in., xvi + 642 pp., illus. $8.50.

Ornithologists have for many years considered their science to be in the forefront of vertebrate zoology. This has been true especially in taxonomy, and Mayr's statement that "There is little doubt that birds are better known taxonomically than any other class of animals" is probably as true today as when published 20 years ago ("Systematics and the Origin of Species," p. 5: 1942). As the purely descriptive phase of taxonomy merged almost imperceptibly into the study of speciation, ornithologists (notably Dr. Mayr himself) contributed greatly to the interdisciplinary synthesis that became known as "The New Systematics." We ornithologists dare not rest on our laurels, however, and any

tendency toward a smug satisfaction in being the foremost students of vertebrate evolution will quickly be dispelled upon examination of the present volume.

The book consists of 21 papers originally given at a symposium on vertebrate speciation held 27–31 October 1958, at the University of Texas. Of this number, only *three* deal exclusively or primarily with birds. Of the remaining papers, five are based on studies made of fishes, six on amphibia, three on reptiles, and two on mammals. The other two are a broadly based discussion of the subspecies concept by Inger and a survey of recent advances in Pleistocene stratigraphy and biogeography by Deevey.

The papers tend to be of two general types: reports on particular studies or experiments, and broader survey papers, well salted with references, covering recent work in a given aspect of vertebrate speciation. The only paper wholly devoted to birds is somewhat of a blend of these two types: "Habitat distribution and niche relationships in North American species of *Parus*," by Keith L. Dixon. Dr. Dixon's paper is based primarily on his own field work with titmice, but he has used this as a core for a really thorough review, as suggested by his bibliography of 108 titles. He presents an excellent analysis of the ecological factors influencing local distribution of titmice, with special emphasis on those areas in which two or more species are known or said to be sympatric. In the "*Poecile*" group of species (the chickadees), it is quite evident from the number of times Dixon has been forced to rely on inferences based on isolated statements in the literature, that insufficient attention has been paid in the past to exact ecological relationships between such species pairs as *Parus atricapillus* and *P. hudsonicus*, and *P. atricapillus* and *P. gambeli*. And, although this question is barely touched on by Dixon, we need to know much more about the interactions of *P. atricapillus* and *P. carolinensis* where their ranges meet. Although concentrating on the North American titmice, Dixon constantly refers where appropriate to the important work done in Europe by David Snow and others, and to pertinent parallel work on other groups of birds.

Dr. Charles G. Sibley is represented by a paper entitled "Hybridization and isolating mechanisms," which draws most of its examples from ornithology. Most of the material in this paper will be familiar to readers of earlier papers by Dr. Sibley and his students, but it should be useful as a review, especially of material published since Sibley's well-known longer paper on this general subject (*Condor*, 59:166–191, 1957).

In a paper on "The evolution of visual communication," Dr. Peter Marler strives valiantly to stick to his subject, but finds, as he admits himself, that it is impossible to exclude auditory communication from such a discussion. In fact, many of the principles of animal communication have been first derived by the study of vocalizations and then applied to visual signals. This is undoubtedly due in part to the fact that our modern equipment for the recording, analysis, and playback of sound permits a far more objective approach than is yet possible for most kinds of visual communication. Dr. Marler's excellent and well-illustrated paper takes most of its examples from birds.

I will not attempt to review the non-ornithological papers here, but strongly recommend that anyone interested in modern trends in evolutionary thinking read the entire book. A few of the papers are weak, but most, including the review-papers, are of genuine value. The ornithologist cannot help but be jealous of the experimental techniques available to, say, the student of amphibia, in both laboratory (Moore, Pyburn) and field (Twitty).

A particularly useful aspect of the present volume is the publication of the stimulating discussions that followed the oral presentation of these papers. The transcripts also present unexpectedly revealing insights into the thought processes and personalities of the scientists who took part!

University presses in the United States and Canada, being largely free from certain

of the economic pressures felt by commercial publishing houses, are widely known for the general excellence of design and manufacture of their books. It comes, then, as a distinct disappointment to have to report that the present volume is hardly better than mediocre in typography and binding design. The only colored plates illustrate a paper on polymorphism in guppies (Haskins, et al.), and are very badly reproduced. In addition, the paper on which the color plates are printed in my copy was creased during some stage of the manufacturing process. Current book prices in general are admittedly high, but $8.50 would seem to be too much for the present volume even had it been published by a firm without a university subsidy. It is to be hoped that individual authors received reprints of their papers for distribution to students who cannot afford to buy the entire volume.—KENNETH C. PARKES.

BIOLOGY AND COMPARATIVE PHYSIOLOGY OF BIRDS. Edited by A. J. Marshall. Academic Press, New York and London. Vol. 1, 1960: xii + 518 pp. Vol. 2, 1961: x + 468 pp., 1 col. pl. Both vols. 6⅛ × 9¼ in., many bl. and wh. figs. inc. photos. $14 per volume.

The editor's intent in compiling these volumes was to provide a comprehensive reference work in English on the biology of birds, covering recent findings as well as basic information. It was surely the great need for such a book which aroused the interest and secured the help of his 24 contributing authors. The first volume opens with chapters on the origin, adaptive radiation, classification, and geographical distribution of birds. These are followed by chapters on embryological development and on the integumentary, skeletal, muscular, blood-vascular, respiratory, digestive, and excretory systems. The second volume continues with the nervous system, endocrine glands, sex, reproduction, and energy metabolism, thermoregulation, and body temperature. The remaining chapters concern flight, breeding seasons and migration, long-distance orientation, behavior, and bird populations.

The chapters vary in approach and fullness but all show that much thought has gone into their preparation. Most of the authors have done an excellent job of assembling and evaluating information, and the best of them, furthermore, have written in a lucid manner. Among the chapters which are especially notable for synthesizing diverse materials are those by Storer on adaptive radiation, Salt and Zeuthen on the respiratory system, and King and Farner on energy metabolism. In some sections about subjects with which I have had experience, I found a few erroneous or misleading statements. Colleagues have told me of similar findings in the chapters of their specialties. Hence, I cannot help but feel some hesitancy about the complete accuracy of those chapters for which I have no background.

Long lists of references are given at the end of each chapter. Impressive as these are, they raise the paradox that while books such as this intend to be one-stop supermarkets, they are often most useful as directories to the specialty shops. This disparity is evident throughout the present book. It is reasonable not to repeat material which is fully given elsewhere, but in many instances the authors have merely provided guides to the literature. In the preface, Marshall expresses his dismay at having to search through references for relatively simple information. Yet he dismisses the subject of migration with a list of eleven important papers and half a page of discussion.

The book contains an abundance of material, but it is less useful than it might have been because the contents are poorly integrated. It is understandable that a subject may have been discussed in several chapters, but at least there should have been cross-refer-

ences. They would not only facilitate a search for information but would also point out differences in terminology and interpretation. The nasal glands, for example, are discussed both in the chapters on excretion and on olfaction. The latter account follows Technau and Marples in stating that the secretion of these glands has sanitary and protective functions. There is no reference to the other chapter, where recent discoveries on the salt-excreting role of the glands are reviewed. The subject index at the close of each volume is distressingly incomplete as well as inconsistent in style.

The relative merits of the reference books by Groebbels, Stresemann, Grassé, Wolfson, and now Marshall can best be decided by each user on the basis of his requirements and language ability. Certainly the modern approach and coverage of this newest work should make it extremely useful to all concerned with the scientific study of birds.—PETER STETTENHEIM.

A NATURALIST IN ALASKA. By Adolph Murie. Devin-Adair Co., New York, 1961: 6⅛ × 8⅝ in., xii + 302 pp., 16 photo plates. $6.50.

This book is concerned chiefly with accounts of the larger mammals found in Mount McKinley National Park. Treated in greatest detail are the Grizzly Bear and Gray Wolf (Murie is the author of *Wolves of Mt. McKinley*), and more briefly, the Lynx, Moose, Wolverine, Red Fox (erroneously stated "Arctic Fox" on the dust jacket), Alaska Vole, Dall Sheep, and Caribou. The treatment is of particular interest because, whereas popular accounts of these animals are likely to be mostly lore interspersed with a few personal experiences, these accounts are based almost entirely on original observations. The facts are given with the caution of a scientist and the detail of a life-history study.

Since Murie is enthusiastic about the entire wilderness environment and a student of the relationships between living creatures, he gives passing attention also to the birds of the region, especially the Mew Gull (herein called by the former name "Short-billed Gull"), Sandhill Crane, Rock Ptarmigan, Raven, and Magpie. One short chapter is devoted mostly to the gull's practice of dunking mice in water before eating them, presumably as an aid to swallowing.

Murie is unusually well qualified to write a book of this kind. He has lived and traveled at length in the Alaska wilderness, he has had thorough training in biological science, and he writes with clarity and feeling. The book is illustrated with pen sketches by Olaus Murie and with 28 photographs of animals and habitat.—HAROLD F. MAYFIELD.

NATURE'S YEAR: THE SEASONS OF CAPE COD. By John Hay. Doubleday & Co., Garden City, New York, 1961: 5½ × 8½ in., 199 pp., 13 woodcuts by David Grose. $4.50.

This is a wordy recitation, sometimes downright dull, of the outdoors and its wildlife from one winter to the next. The range of species included is wide—from Wood Pewees in July to pill-bugs in February to spring peepers in April. A few of the descriptions, such as those of an Ovenbird feeding in an autumn wood, an eider dying on a winter beach, and alewives rushing toward a spring brook, are original and sharp; the others seem commonplace. Lacking is a feeling for Cape Cod as an entity. The winds and tides, the scurrying shorebirds, and so on that many of us associate with "the Cape" tend to get lost in a welter of irrelevant details and philosophical meanderings. The woodcuts are excellent but, as is the way with woodcuts, lend a somber tone.—OLIN SEWALL PETTINGILL, JR.

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