ORNITHOLOGICAL LITERATURE

THE BIRDS OF NOVA SCOTIA. By Robie W. Tufts. Nova Scotia Museum, Halifax, 1961: 6¾ × 9¼ in., xviii + 481 pp., 40 col. pls., 30 line drawings, end-papers map. $7.50.

This book is the culmination of the author's lifetime spent in the outdoors and in promoting conservation in his native province.

While in large part a very fully annotated checklist, the book is actually much more. The 18-page introduction presents Nova Scotia itself, its topography (highlands, shoreline, and islands), geological history (briefly treated), vegetation, and climate. Also included are a historical summary of the ornithological work done previously and notes on bird distribution, protection, and conservation in the province. The contributions of a host of collaborators are acknowledged.

The format is very similar to "Birds of Newfoundland" (1951) by H. S. Peters and T. D. Burleigh. When anyone familiar with it opens "The Birds of Nova Scotia," he will have a feeling that he has seen it all before, as indeed he has insofar as most of the colored plates are concerned. Prepared by Roger Tory Peterson especially for the "Birds of Newfoundland," the plates were loaned by the Government of Newfoundland for use in this work and have been reproduced here in toto even though in several cases, such as the Robin, the Newfoundland subspecies illustrated are noticeably different from the common subspecies found in Nova Scotia. Eight color plates prepared by John A. Crosby of the National Museum of Canada illustrate additional birds found in Nova Scotia. Through no fault of the artist these plates suffer by comparison with Peterson's. The color reproduction is not only poor but the artist had to crowd on them illustrations of species which needed 12 to 14 plates. The species are consequently presented on a much smaller scale than in the Peterson illustrations. In addition to the color plates there are 30 fine drawings by John Henry Dick.

The information under each species is organized under (1) Status of Occurrence, (2) Description, (3) Range of Species, and (4) Remarks. The inclusion of data on description and range, which are available in all standard field guides and occupy so much space here, might be considered superfluous in this type of work. Of greatest importance is the up-to-date information on the occurrence of the various species of birds found in Nova Scotia. This has never before been available in summary. The author's own observations over many years comprise a large part of the data and are very valuable.

The author is to be congratulated on this addition to the regional books on North American birds, and the Nova Scotia Museum and the Government of Nova Scotia on making its publication possible.—W. AUSTIN SQUIRES.

TWO IN THE FAR NORTH. By Margaret E. Murie. Alfred A. Knopf, New York, 1962: 6¼ × 8¼ in., xii + 438 pp., line drawings by Olaus J. Murie. map. $5.95.

Probably no two people have been more concerned over the destruction of our wilderness areas than Olaus and Margaret Murie. This is their story—not of their struggles against the ax and the bulldozer, but of the pleasures and satisfactions derived from their experiences in the wilderness.

There are four parts: Part I, Fairbanks, 1911–1919, deals with Mrs. Murie's girlhood in Fairbanks, Alaska, which she describes as "a flat platter of hodgepodge buildings

and low log cabins, a fanshape on the lonely land, fog over the river, smoke plumes rising up from impudent little iron stoves defying the cold and the loneliness and all the powers of the unbeatable North."

Part II, the Upper Koyukuk, begins in June 1921, when, after an absence of two years, Mrs. Murie returned to Fairbanks to finish her education and become the first woman to graduate from the University of Alaska. It includes her meeting with Olaus Murie, from the U.S. Bureau of Biological Survey, who was in Alaska to study the caribou, their August wedding at Anvik on the Yukon, and a honeymoon trip by boat and dog team far up the Koyukuk River. This was Mrs. Murie's introduction to life with a naturalist–scientist–artist who was eager to study, sketch, or collect every bit of wildlife they encountered—mosses, meadow voles, chickadees, grizzly bears—in addition to caribou. The dogs "traveled so slowly that Olaus could point out all the birds. Redpolls and chickadees sang greetings from every side; ravens made patterns across the blue sky, wheeling back and forth over the river below us; pine grosbeaks flitted across the trail; a willow grouse cuddled serenely under some low branches; and flitting through the trees, keeping us company and questioning in liquid rippling notes, were the gray jays. . . ." She passed her initial test well.

In Part III, The Old Crow River, 1926, she returned North with her nine-month-old son and her husband whose assignment was to band young geese and molting adult geese on the nesting ground. This expedition, by boat up the Old Crow River, was without doubt the most difficult—the care of the baby, the wretched mosquitoes, a motor damaged beyond repair before the goal was reached. The Muries took it in stride, finding time to examine fossil bones, listen to White-throated Sparrows, and look over the tundra—"Wavering, hummocky, softly green, it stretched to the sky, here and there a stunted spruce, a small feathery birch, tussocks of white Labrador tea in bloom."

Part IV, Sheenjek, 1956, is a "fur piece" from the Old Crow River. This expedition into the Sheenjek Valley of the Brooks Range was completely modern with planes and two-way radios, nylon tents and movie cameras, and the company of three young scientists who made ecological studies of the animals and plants. Yet with all the new developments the spirit of the book never falters. With the same zest the Muries shoulder their packs and set off on foot toward the mountains and the head of the river. They lunched "beside a talkative stream of the most delicious ice-cold water," they followed century-old caribou trails, and they camped on a gravel bar edged with willows and spruce. Olaus drew arctic poppies and made a cast of a wolf track, while Margaret cooked dinner over the open fire. And on the day that they were farthest north, they looked northwest at "the snow-covered peaks, with glaciers on their sides" and at the canyons. "Canyons, folding in and shouldering into one another, sharply knife-edged and rugged, and all of a dark-reddish and purple tone, cut their way into the heart of the mountain range under the crest."

Hardships and frustration never burden this book which grows better with every page. Anyone who has camped will admire the Muries' organization; anyone with an appetite will rush out and buy Jersey Creams, and anyone with an ounce of adventure and love of the wilderness will catch the spirit and enthusiasm and realize long before he reads the last page that these two people have had a wonderful time.

The illustrations are charming—enchanting. The reviewer has only one complaint: The inadequate map is worse than none at all. What can be done to make editors and publishers realize that the reader wants to know *where* he is *all* of the time?—ELEANOR RICE PETTINGILL.

BIRDS OF TIKAL, GUATEMALA. By Frank B. Smithe and Raymond A. Paynter, Jr. Bulletin of the Museum of Comparative Zoology at Harvard College, 1963, Vol. 128, No. 5, pp. 245–324, 1 col. pl. $1.50.

Petén, the largest and most inaccessible of the departments of Guatemala, had been largely ignored by ornithologists until the advent of airplanes and archeologists. The extensive Central American activities of Salvin and Godman in the last half of the nineteenth century barely touched on the area. Prior to the present work only two important studies had been made there: Van Tyne collected at Uaxactun in the spring of 1931 (1935, "The Birds of Northern Petén, Guatemala," *Univ. Mich. Mus. Zool., Misc. Pubs.*, No. 27, 46 pp.) and Taibel at Lake Petén Itzá in the autumn of 1932 (1955, "Uccelli del Guatemala con speciale riguardo alla region del Petén raccolti dal Maggio al Settembre 1932," *Atti Soc. Italiana Sci. Nat.*, 94:15–84).

The "Birds of Tikal, Guatemala" is based largely upon the field work of Smithe in the Petén during parts of the years 1956 through 1960. Paynter, Jorge Ibarra of the Guatemalan National Museum, and others participated in the field study. The time periods covered nearly exclude the autumn and early winter so, as the authors point out, little is known of the fall migration at Tikal.

In 1959, Smithe published a check-list of the birds recorded in the preliminary years of this study. However, Paynter appears to have done the major work on the present manuscript. Following the introductory paragraphs in which the section on vegetation seems especially well done is an annotated list including 231 species (28 based upon sight records). Spanish common names, included in Smithe's original list, are omitted. Weights of specimens are given as they are in Van Tyne's 1935 paper. In a few species weight variations are discussed in relation to distribution. This type of analysis will be increasingly important as data accumulate but must be used with caution until daily and seasonal weight variations are better understood. It is regrettable that few of the early collectors made any effort to weigh fresh specimens.

The habitat of each form is mentioned and a few taxonomic simplifications are suggested, such as merging *Platypsaris* into *Pachyramphus*, which seems to be a good move. A color plate is included of the *Myiarchus* flycatchers of the Petén. No attempt is made to standardize or define the terms of relative abundance but a variety of words is used, seemingly chosen to avoid repetition. One could wonder, however, whether a form listed as "ubiquitous" is more likely to be seen than another described as "numerous" or "very abundant." Also, upon reading under *Trogon violaceus* that "*T. collaris* and this species are about equally abundant," I was surprised to turn back and find *T. collaris* to be "rather uncommon." The use of dual expressions such as "fairly common but seldom seen" or "abundant and conspicuous" is good in indicating not only the number present but the chance of encountering the species, two facets of relative abundance which are not necessarily correlated.

The annotated list is followed by a slightly prolonged discussion which lists species recorded elsewhere in the Petén but not yet at Tikal and compares the avifauna of the northern Petén with the remainder of the Yucatán Peninsula. Emphasis is placed upon the changes in habitat which are taking place as the human population increases, and on the value of future work at Tikal to determine the effect of these changes on the birdlife.

The importance of this study is evident in that it adds over 40 species to the check-list of Petén birds. It is also good to know that the Tikal area has been set aside as a national park, the first in Central America.—HUGH C. LAND.

DEVELOPMENT OF BEHAVIOR IN PRECOCIAL BIRDS. By Margaret Morse Nice. Transactions of the Linnaean Society of New York, New York, Vol. 8, 1962: 6 × 9 in., xii + 211 pp., 19 figs., 18 tables. $4.00.

If not already in debt to Margaret Morse Nice for her oustanding contributions to their science, ornithologists will be so now for this summary of the literature and known facts on the development of precocial behavior in birds. The title is actually too restrictive—altricial birds, as well as other forms of animal life, receive treatment in this work.

It is difficult to prepare an adequate review. It seems best merely to indicate the main subjects covered. There is little attempt in this paper to interpret or evaluate behavior, or to discuss, except very superficially, the inheritance of patterns of behavior. Mrs. Nice summarizes, analyzes, and compares the stages of development of behavior, drawing upon a wealth of published references as well as her own intensive and extensive studies and observations. Her own preface is an excellent outline of the organization of the subject matter.

The first chapter takes up parental care in invertebrates and in five classes of vertebrates. The second compares, in text and tabular form, some of the outstanding aspects of development in seven species of five classes of vertebrates, including a precocial and an altricial bird, and a precocial and an altricial mammal. In the third chapter Mrs. Nice breaks down the usually accepted, too-broad classification of precocial and altricial into eight finer subdivisions—describes them and, in tabular form, gives the stage of development at hatching for all the orders of living birds recognized by Wetmore. In eight of these orders, where differences occur, stages of maturity for the families are also given.

In the fourth chapter Mrs. Nice discusses and modifies Kuhlmann's stages of development of young while in the nest (post-embryonic, preliminary, and transition) and those of the period immediately following leaving the nest (locomotory and socialization). Much of the material presented in the rest of the paper is considered in respect to these five stages. In the next seven chapters Mrs. Nice describes the development of various forms of behavior in the eight types of young she has listed (four groups of precocial chicks, one semi-precocial, two semi-altricial, and one altricial) with minutely detailed examples from her own observations at Delta, Manitoba, and elsewhere, and with tables which show the age at first appearance for various coordinations associated with the five stages.

In the twelfth chapter Mrs. Nice gives the stage of appearance of various basic motor coordinations in precocial and semi-precocial birds compared with the appearance in the Song Sparrow (altricial), and found that 15 appeared in the same stages in all the birds.

The two concluding chapters summarize the present knowledge of embryological development of precocials and altricials. It is shown that a newly hatched altricial is markedly like a precocial embryo aged 12 to 13 days. Temperature control develops rapidly in altricials, slowly in precocials. The benefits and possible reasons for this difference are brought out.

There is a well-organized general summary of the paper as well as detailed summaries of each chapter. The bibliography contains over 400 titles. There are two indexes, one of subjects, the other of species and taxa. Both are workable and complete, and this will assist in making this paper an essential reference tool for every ornithological library.—SALLY F. HOYT.

HOST RELATIONS OF THE PARASITIC COWBIRDS. By Herbert Friedmann. Smithsonian Institution, United States National Museum Bulletin No. 233, 1963: 276 pp. $1.25.

Dr. Friedmann's classic work, "The Cowbirds. A Study in the Biology of Social Parasitism" (Charles C Thomas, 1929), has long been out of print. The present excellent monograph up-dates the earlier work and summarizes the accumulated information about cowbird parasitism since 1929.

The book contains complete annotated catalogs of the hosts of the Brown-headed and Bronzed Cowbirds. Tabular accounts of the hosts of the South American cowbirds are included, and specific data are presented on new hosts found since 1929. The Bronzed Cowbird is known to parasitize 52 species (in 12 families) of birds. Most of the hosts are members of the blackbird and finch families.

The three races of the Brown-headed Cowbird are now known to parasitize the nests of 206 species (333 species and subspecies) of birds. According to the information available to Dr. Friedmann, the 17 most frequently parasitized species are: Yellow Warbler, Song Sparrow, Red-eyed Vireo, Chipping Sparrow, Eastern Phoebe, Rufous-sided Towhee, Ovenbird, Yellowthroat, American Redstart, Indigo Bunting, Yellow-breasted Chat, Red-winged Blackbird, Kentucky Warbler, Traill's Flycatcher, Bell's Vireo, Yellow-throated Vireo, and Field Sparrow. Dr. Friedmann points out, however, that "at times, and in some localities, still other species may be found to be as important, if not more so, to the parasite" (page 7). He notes that 50 hosts "account for approximately 7,800 records out of a total of about 9,000 instances of cowbird parasitism. It would seem that the proportionate role they play in nature is, if anything, even greater than these figures would suggest, since many instances of parasitism upon common hosts are left unrecorded because of their repetitive nature, while most cases involving uncommon victims are published as records of particular interest."

Important as the annotated lists of hosts of the cowbirds are in themselves, the greater value of Dr. Friedmann's monograph lies in his analysis of the data on brood parasitism and of its significance in the life of the cowbird and its hosts. Of interest to all life-history students are the discussions of egg size and egg color among the cowbirds, the frequency of host selection, changes in host selection, intensity of parasitism of frequent hosts, breeding success of host and parasite, hatching potential of host species, mutual effect of parasite and host on egg production, duration of parasite's interest in host nests, foster parent-offspring relationship, reactions of host to parasitism, and hosts known to have reared young cowbirds.

Two selected quotations point up the need for caution in interpreting limited data on cowbird parasitism of a species and in drawing broad conclusions from those data.

In speaking of those hosts which respond "adversely to the intrusions of the parasite," Dr. Friedmann remarks: "Even here, the adverse responses (which constitute desertion of the nest, covering over the parasitic egg with a new nest floor, or actually throwing out the intruder) are not behavior patterns that appear to have been developed as defenses against parasitism. These responses are not specifically 'anti-cowbird' in their organization but rather are generalized types of reaction to something foreign entering the nest. As far as I know, no bird has actually developed a special defense against parasitism. In fact, it is difficult to imagine a clearly defined defense against an unspecialized parasite. In most cases, the normal fecundity of the host species enables it to survive the inroads of the parasite" (page 3). The Kirtland's Warbler may be an exception to the last sentence, as Dr. Friedmann notes.

"It must be kept in mind that, in the case of many of the single-brooded species of hosts, these birds may succeed in raising young of their own by renesting after the

desertion or the destruction of the first parasitized nests. Parasitism may thus cause an extension of the hosts' breeding season. It follows that a mere calculation of the percentage of parasitized nests of these species gives only a partial picture of the situation. The critical point, namely the effect of parasitism on the total fledging success of the host species, is not accurately described by such percentage figures" (page 24).

Dr. Friedmann has done a typically outstanding job in writing about our current knowledge of cowbird parasitism, and he has pointed the way for more thorough studies of the subject.—ANDREW J. BERGER.

Dr. Friedmann has called our attention to an unfortunate error on page 85 of his paper. The printer, subsequent to corrected galley proofs, dropped out the first line of the account of the Gray Vireo, reading "This vireo has been recorded only once in print as a host of the . . ." In its place he repeated the first line of the following species, the Yellow-throated Vireo, reading "This is a frequently imposed upon victim, for which I have noted. . . ."—ED.

A STUDY OF BIRD SONG. By Edward A. Armstrong. Oxford University Press, New York, 1963: 5½ × 8¾ in., XV + 328 pp., 16 pls., 43 figs., 14 tables. $10.50.

Mr. Armstrong tells us that his "viewpoint is that song should be regarded as one aspect of a delicately integrated complex of behaviour" (p. xiv); consequently he covers a wide field in subjects with examples cited of birds from all over the world. The 50 pages of bibliography contain some 1,800 references. Thirty-five of these belong to the author, whose field studies have been largely carried out on six races of the European Wren (*Troglodytes troglodytes*).

In Chapter I, Bird Utterances as Language, it is stated that "Next to man, birds have developed auditory means of communication to greatest perfection" (p. 2). Highly socialized birds possess rather large repertoires of call notes, in contrast to typically solitary species. "To some extent birds can interpret the language of other species than their own and even quadrupeds can respond to the language of birds" (p. 27).

The second chapter, The Structure and Components of Song, discusses pitch, intensity, quality, etc. Table IV shows "Approximate frequency in cycles per second of European birdnotes" for eight species, while Table V does the same for six North American species. Spectrographs are given of several species showing the simultaneous rendition of two and even three songs at the same time.

Chapter III, The Development and Learning of Song, was of special interest to me. Details of studies on four European and two North American species are summarized. Whitethroats (*Sylvia communis*) raised in isolation developed the full repertoire of 24 call notes and three types of song (Sauer, 1954, 1955). Blackbirds (*Turdus merula*), with their much more elaborate songs, "can sing normally only when they have had the opportunity to hear other Blackbirds sing" (p. 47). Chaffinches (*Fringilla coelebs*) have received a great deal of attention; it has been concluded that "some characteristics of pitch, quality, intensity, and time relations are inborn, but all else is learned" (p. 52). As with many other species the birds learned their songs before they could sing. The Bullfinch (*Pyrrhula pyrrhula*) normally learns his father's song (Nicolai, 1956, 1959). Hand-raised Oregon Juncos (*Junco oreganus*) were found to "inherit their songs," yet are also "able to copy songs of their own or other species" (Marler, 1959).

A page is devoted to my studies of song development in Song Sparrows (*Melospiza melodia*) (1943). This is a good summary but it is somewhat confusing since Mr.

Armstrong does not distinguish between observations on wild and hand-raised birds. For instance, the bird that "concentrated his learning into a week in December and in so doing acquired all six versions of his rival's repertoire" was alone in our house with his 18-month-old "tutor," the only Song Sparrow he had heard since the age of six days. Mr. Armstrong says further: "Nice concluded that the pattern (form, length and timing) of the Song Sparrow song was inborn but that the quality was learned. This latter is probably too great a generalization" (p. 49). My conclusion was based on the history of the hand-raised birds of 1938; the two males heard no Song Sparrow singing except three or four examples at the ages of 25 and 26 days, when they were too young for song-learning, but in the fall they were exposed to occasional phonograph playings of the songs of British birds—Nightingale, Chaffinch, Song Thrush, etc. When their singing became adult at the end of December it was loud and whistled and resembled "foreign birds" more than that of wild Song Sparrows. Yet the form, length, timing, and even the number of songs in their repertoires were typical of the species.

The development and forms of "Sub-song" are discussed in Chapter IV. Six characteristics are quoted as differentiating it from "true song," but the author finds much to criticize in these categories. He decides that "Sub-song is a useful general term to denote forms of quiet song," (p. 61).

The next two chapters treat of "Vocal Mimicry" and "Song Dialects and the Relationship of Vocalization to Speciation." The Chaffinch is the classical example of different populations exhibiting different dialects of call notes.

In Chapter VII, Territorial Song and Related Forms of Song, Mr. Armstrong writes "A Song Sparrow which sung an exceptional amount was also exceptionally long-lived (Nice, 1943)." 4M was a domineering, intelligent, vigorous bird and he lived for eight or nine years. Yet the next longest-lived Song Sparrow I knew—57M—who died by accident when five years nine months old, was an exceptionally retiring individual who almost never sang! During two breeding seasons I failed to locate him but in three other seasons I found four of his nests on North Interpont.

The last six chapters are titled: Song-flight and Nonvocal Song; Song and the Annual Cycle; Female Song, Duetting, and Corporate Song; The Influence of Light, Weather, and Temperature on Song; Song and Adaptations to Habitat; and Bird Song as Art and Play.

All thirteen chapters are provided with subheadings, which help in the organization of the vast array of information presented. To this reviewer, who may be somewhat of a devotee of summaries, the book suffers from its marked lack of these important aids to comprehension.

A valuable Appendix is devoted to "Acoustic communication in the animal kingdom and the organs involved." There are four useful Indexes which give page references to "Birds," "Other Organisms," "Authorities," and "General," i.e., subjects treated.

The bibliography has been anglicized; in all titles from American journals involving *behavior* this word has been changed to *behaviour*, while Sutton's and Parmelee's paper on "Summer activities of the Lapland Longspur on Baffin Island," appears as "Summer activities of the Lapland Bunting in Baffin Island."

This comprehensive book that deals with such a multitude of topics and examples will serve as an important reference book to workers engaged in the study of bird vocalizations. With the author we can hope "that the reader may here find encouragement to explore further a realm of inexhaustible interest and delight."—MARGARET M. NICE.

GROWING WINGS. By Sarita Van Vleck. Doubleday & Company, Inc., Garden City, New York, 1963. 6¼ × 9½ in., xiv + 128 pp., 35 line drawings. $3.95.

Rarely does one find accuracy of scientific detail combined so well with ease and enjoyment of reading. Miss Van Vleck shows unusual skill in portraying, both in her sketches and in her prose, a complete picture with a minimum of unnecessary detail. There is much information contained in each chapter, as she leads us through the various phases of "the perennial cycle of birds." One hesitates to mention the few errors (not all ducks start their "second molt" in September; not all precocial young hatch on the ground; etc.). The errors primarily are the result of too-broad generalizations or over-simplifications and do not detract appreciably from the value of the rest of the text. The author has observed well and read widely and the reader profits from her ability to condense and interpret what she has seen and read. While one may at times wish for reference to sources, such annotating would detract from the story-like method of presentation. This is a book to be savored, not studied. It is filled with such appealing bits of descriptive prose as "The Ruby-throat's nest is an exquisite one-ounce bump" and, in speaking of fall flocking of warblers, "No noise accompanies their sociability, only a gauze of wispy squeaks." Anyone who has seen a recently hatched altricial bird will appreciate her description of a Redwing hatching. The book deserves success. May it encourage the author to give us more.—SALLY F. HOYT.

THE MOURNING DOVE IN ILLINOIS. By Harold C. Hanson and Charles W. Kossack. Illinois Department of Conservation Technical Bulletin No. 2, 1963: xvi + 133 pp., front. (col.), 75 figs., 39 tables.

Two subspecies seem to comprise the Illinois Mourning Dove population. *Zenaidura macroura carolinensis* made up 44.8 per cent of the sampled population; *Z. m. marginella*, 7.6 per cent; and intermediates, 47.6 per cent. A north-to-south gradient exists in the density of doves. Banding returns, resulting from the concentrated program by banders during recent years and the efforts of Natural History Survey personnel, indicated that doves return to their birthplace to breed. Nesting usually commenced about 1 April and continued for perhaps 24 weeks. All but 2 per cent of the doves were produced before 5 August. Overall nesting success averaged 64 per cent. Doves in nothern Illinois averaged two nesting attempts per season. An average of 2.38 young were produced per pair. The ability of doves to renest repeatedly enables them to compensate for production disadvantages, such as the frailty of nests or the limitations of a two-egg clutch. From 50 to 70 per cent of the dove population produced annually dies within a year as a result of mortality factors.

Of particular interest to the ornithologist will be the guides developed for estimating the daily stages of incubated eggs and nestling growth.

In addition, numerous other aspects of the species' biology are discussed—sex ratios, migration periods and patterns, diseases and parasites, effects of climatic extremes, and the effects of hunting pressures.

This is an outstanding work and a valuable source of information for conservationists, biologists, or laymen interested in the Mourning Dove and its management.—WILLIAM E. SOUTHERN.