

ORNITHOLOGICAL LITERATURE

AN INTRODUCTION TO ORNITHOLOGY. By George J. Wallace. New York; The Macmillan Company, 1955: 6¼×9¼ in., xii+443 pp., 180 figs. \$6.00.

This book aims to fill the need for an introductory text in ornithology dealing with the whole field in a nontechnical yet academic manner. It is to be recommended for use in courses for college freshmen and sophomores or in courses of cultural aim for the layman.

The book starts with the historical background of man's interest in birds together with comments on opportunities today for professional work in ornithology and the extent of amateur activity. In the next four chapters the bird itself is described as a member of the animal kingdom, and its external and internal features are discussed. A chapter is devoted to sense organs and behavior. Three full chapters are given to annual cycle and one to migration. From then on the topics cover a wide sweep, with separate chapters on the distribution of birds, food habits and economic relations, conservation and management, classification and nomenclature, the fossil record, ornithological methods, and even ornithological organizations and their journals. The book is concluded with a bibliography of 314 titles and a 31-page index.

The broad range of subjects which must be included in a modern textbook of ornithology is impressive. In this book the excursions into anatomy, physiology, behavior, classification, practical management, history, and many other topics reveal how involved the science of ornithology has become. Obviously it is now difficult to prepare a textbook giving fair representation to the many facets of ornithology and yet held sufficiently brief and simple for students with slight background in biology. The author has definitely succeeded in touching on almost every active phase of ornithology. The difficulties which become apparent here and there have resulted in part from attempting to keep the book down to beginners' size.

An outstanding merit is the comprehensive coverage of modern research as reported in the American ornithological journals through 1953. A fair number of foreign research reports are also cited. Documentation is quite thorough. Bibliographic entries are conveniently located at chapter endings and in the terminal bibliography and include titles. This is a truly strong feature and will be useful to students seeking to go beyond the often tantalizingly-brief extractions presented in the text itself. In many places the information cited is alluded to so briefly as to make a reasonable understanding of it impossible short of recourse to the original papers. This makes reading for the students laborious and frustrating. The book has an elementary flavor, belying its nature as a compact summary of recent information, due to the inclusion of trite background material on birds, such as is found in many standard zoological texts.

The three especially-valuable chapters on annual cycles are effectively illustrated with many photographs from nature. Elsewhere, however, some of the illustrations, such as photographs of mounted birds, lack interest. It would increase the meaning of the sketch of the soaring hawk, page 119, if the reader were informed as to whether it was drawn from direct observation or from a photograph. The explanation of territoriality is accompanied by a hypothetical map, page 128, whereas a genuine example would be preferable.

Few important research papers have been overlooked, but a valuable addition to the discussion on distribution of birds in relation to life zones, ecologic formations, and biotic provinces would be a reference to A. H. Miller's, "An Analysis of the Distribution of the Birds of California." Little is given on the physiology of annual cycle

mechanisms, though recent ornithological research articles discuss this topic vigorously. The word chromosome does not occur in the index, though the Japanese workers since World War II have reported several pioneer cytological researches significant to avian systematics and evolution.

The chapter on ornithological methods refers to procedures which may be applied by the bird watcher and student of life histories. Yet elsewhere in the book one misses practical information which would instruct the student how to carry out original studies of his own, as, for instance, if he wished to analyze molt in a specimen at hand. Research techniques have not been included to the degree that this book could serve as a handbook or tool. However, the author has pointed out the need for research in many places.

This volume is cast as a beginner's text, and it has been written in such a way as to preserve its usefulness to beginners in the classroom. Undoubtedly it will serve as an effective springboard for participation in ornithological work by students and amateurs. For the more advanced worker it provides a summary of recent work and a convenient guide to modern literature.—PAUL H. BALDWIN.

THE WATERFOWL OF THE WORLD. By Jean Delacour. Vol. I—The Magpie Goose, Whistling Ducks, Swans and Geese, Sheldgeese and Shelducks. Country Life Limited, London, 1954: 8 × 10 in., 284 pp., 33 maps and 27 color plates by Peter Scott. \$15.00.

This is the first of three volumes which will provide for the first time a monographic treatment of the waterfowl of the world. It will be hailed as the successor to Phillips' "A Natural History of the Ducks" both because it brings up to date the information and advances in approach of the 30 years since that classic work appeared and because it is much more comprehensive in its scope—it includes the swans, geese and many related and aberrant forms in addition to the true ducks and their relatives. It will be further welcomed because, unlike Phillips, it will be readily available in all libraries and not beyond reach of the individual with a deep interest in this group. Large format, excellent typography and 16 color plates explain the cost.

Both author and illustrator of these volumes have a wide first-hand knowledge of the species through extensive travel and both have lived with most of the species in their aviaries. Thus they have acquired an immense knowledge through day-to-day observations throughout the year. This should provide unusual accuracy in depicting the species in color and in describing their behavior. Any one who pursues this volume will be impressed with the quality of the results.

When an artist must show 12 to 23 birds on a single plate, large enough to depict taxonomic details, he must make illustrations and not paintings. Some may complain that they are too monotonous for illustrations in such a large work and they certainly are reminiscent of the field guide style. However, Peter Scott's skill in arranging so many birds on a plate without making it seem crowded is indeed amazing and shows him to be a master of design. The frontispiece showing Pinkfeet coming in to winter quarters is more in the Scott tradition.

Most of the plates are well executed and the publisher is to be congratulated. However, the color of the bill of the juvenile Black Swan of Plate II is not "brownish black with the nail whitish" as called for in the description.

The present volume is primarily concerned with matters taxonomic, distributional and avicultural. It includes the subfamilies *Anseranatinae* (the Magpie Goose); the *Anserinae*, all true geese, swans and whistling ducks (formerly known as tree ducks); and the

first of the tribes of the *Anatinae*, goose-like ducks, shelducks, South American crested ducks and the steamer drs.

In the introduction Mr. Delacour quotes from his previous paper with Ernst Mayr (1945. *Wilson Bull.*, 57:3-55): "The new classification of the duck family that we propose attempts to do two things: to arrange the species in related groups and in a natural sequence, and to adjust the nomenclature of species and genera to progressive concepts of these categories." The present volume and those to come are to expound further these newer concepts. The influence of this genetic sophistication in making interpretations of species ranges and relationships is evident throughout the volume. It is to be hoped that, with this more formal presentation, this newer approach will gain wide acceptance and may find its way into the A. O. U. Check-list.

The range maps are very clear and will be a most welcome feature of the volumes. Occasionally it is not clear whether the original or present range is depicted (e. g., that shown for the Magpie Goose must not be recent.)

Areas of overlapping breeding range are sometimes referred to as mixed populations (*Anser anser* subsps., p. 100), implying that intermediates are not found and that some isolating mechanism other than a geographic barrier is in operation. But the text shows clearly that intergradation does occur, just as in Bean Geese, *Anser fabalis*. It is not clear what distinction is intended.

From the recent work of Yamashina and others we are told that swans and ducks have the same chromosome number (84 in males) but that the true geese have 90. It is gratifying to learn that chromosome number is not taken as an infallible criterion of species and their phylogeny, a concept so common among the current crop of plant taxonomists. Instead Delacour says: (p. 91) "The significance of chromosome number in establishing relationships is still obscure, and probably of doubtful value."

The literature cited by the author is drawn from a great variety of sources both historical and modern. It is rare to find a man equally aware of sources in both Old and New World. He quotes freely from the best modern works, such as Austin's "Waterfowl of Japan" and Salomonsen's "The Birds of Greenland" and adds a host of unpublished communications and personal observations. His knowledge of avicultural history and practices is most surely unsurpassed in the world today. For those who are not enthusiastic aviculturists the space devoted to this subject (frequently half the total pages allotted the species) may seem out of balance and often a bit tedious.

One searches in vain for much biological and ecological information. Weight data are seldom given and there is no mention of the cloaca and its associated structures so commonly used in America in analyzing age and sex composition of populations handled in banding operations. In fact there seems to have been little use made of band recovery data from North America or Europe. This may stem in part from the fact that most of the goose banding data in America remains in the Washington files, unpublished.

I believe the balance in use of literature is sometimes open to question. For example, trivial unpublished facts are included in the General Habits of the Lesser Snow Goose (including the Blue Goose as a color phase), but no mention is made of Soper's two outstanding works on the species (1930, "The Blue Goose," *N. W. T. Br. Dep. Int. Canada*, and 1942. *Proc. Boston Soc. Nat. Hist.*, 42:121-225).

But we must not judge too harshly now as to omissions, for we are promised in the Introduction that a general account will be given at the end of volume three. "It will include chapters on morphological, anatomical, and biological characters; on history, sport, conservation, acclimatization, care and breeding, and a bibliography." Let us hope that it will be a large volume!

The usual extravagance of publishers' claims is shown on the dust jacket, which says that these volumes will include "all that is known of the waterfowl of the world." I find that the behavior literature dealing with geese is barely mentioned although several striking original observations are included. One is the fact that aggressive behavior in both swans and geese depends on the similarity of plumage pattern of the intruder and not upon the size. Further (p. 93) the pre-flight intention movement of side-to-side shaking of the head is given as a general characteristic of geese.

A few old wives' tales seem to me to be perpetuated. The notion that Cape Barren Geese will abandon their nests if the eggs are touched by human hand (p. 201) taxes my credulity. Also, if "Flocks migrate in V-shaped formations or trailing lines, *led by an old bird*" (p. 99, italics mine), I should like to know the evidence. This thought has long appealed to my imagination but I have never found support for it.

Again one would like to know the evidence for the following statement made concerning Canada Geese (p. 152). "Various populations have repeatedly changed their breeding grounds, flyways and wintering areas as a result of egg collecting, drives and slaughter by northern natives, and of excessive shooting farther south." I have followed the literature on this species closely for many years and have never found evidence for shifting breeding grounds. Shrinkage, yes, but if much of this shifting went on, the reproductive isolation leading to the extreme subspeciation found in this group would not have occurred.

It is welcome to find that 11 geese of the confusing Canada group have been treated as one species, with 12 admittedly tentative subspecies recognized. Since morphometric differences and behavior deviations will undoubtedly be found between each population (and the banding evidence indicates that there are dozens of them), it is hoped that all will not have to be given common names as this type of information accrues.

Common names must be somewhat arbitrary and no one would agree with all that are used. But this is the author's privilege since he must draw from both A. O. U. and B. O. U. lists and add many from other faunas. Some will deplore the continuation of common names for subspecies, especially for those that cannot be distinguished in the field. These common names tend to sanctify the subspecies in the mind of the layman who has difficulty in accepting the idea of tentative names. The American public will never accept *brent* for *brant*. Again, there is inconsistency in forming common names for species complexes. All the *canadensis* group have Canada inserted in the name—even to the Cackling Canada Goose; but in the *fabalis* group the Pinkfoot does not become the Pink-footed Bean Goose!

I have long been impressed with the fact that the subspecies of Canada geese do not follow Bergmann's rule but are arranged in the opposite manner. In fact, they show a graded series in size from the large southern forms, *fulva*, *moffitti*, *maxima* and *canadensis*, to smaller more northerly *occidentalis*, *taverneri* and *parvipes*, to the smallest forms, *minima* and *hutchinsi*, breeding on the north sea-coasts and islands. This is clearly shown in Plate VIII but the generalization is not found in the text.

It is disturbing to see the emphasis taxonomists have placed upon measurements of soft parts, because Alpheraky pointed out many years ago (1905) that these structures, especially length of bill, differed in size in the two sexes and increased continuously with age. This basic feature of growth in geese seems to have been ignored until the present work.

The use of similar headings in discussing genera, species and subspecies leads to considerable duplication. For instance, there is great similarity in the discussion of General Habits under *Anser*, *Anser anser*, and *Anser anser anser*, and we are told in three

different places that it was the Atlantic Canada Goose that was introduced into New Zealand.

All in all, this volume is a rich compendium of both the old and the new, interestingly presented and well written. It is a volume that every man interested in waterfowl will want to own.—WILLIAM H. ELDER.

THE SPECIES OF MIDDLE AMERICAN BIRDS. By Eugene Eisenmann. Transactions of the Linnaean Society of New York (vol. 7, no 1), New York, 1955: 6×9 in., vi+128 pp. \$2.00.

The main purpose of this little book is to provide a suggested list of English or "common" names for the benefit of persons visiting Mexico or any of the Central American countries. However, a number of other useful features are included. It offers a list of technical names and numerous foot-notes pointing out the differences of opinion of taxonomists concerning the matter of those names. The range of each species is given in a general way and there is a short discussion of distribution in the Introduction. An ample, well-selected Bibliography is included.

The names provided are intended to apply to "species," without regard to races. However, it seems that we will never know just what constitutes a species and there is no end of opinions as to just which and how many subspecies should be included in a given species. Thus, the list has to reflect, more or less, the author's views on taxonomy. On this point Eisenmann is very fair in his presentation of the views of other authors and he almost always mentions in the foot-notes the fact that other authors may consider what is listed as a full species as being only a race of some other group or vice versa. All of this points up the futility of an attempt to provide a single vernacular name for a "whole species". Species are "lumped" or "split" so frequently by the taxonomists that the amateur field student should not be expected to change his "common" name for a bird, which he has long known, just because there has been a new technical grouping suggested, and his bird has now perhaps been made a race of some South American species that he never heard of before. From the point of view of a field student, any bird which is easily separated in the field by appearance or song from a species group to which the systematist says it belongs (because of real or supposed evolutionary connections), deserves a separate and distinctive vernacular name.

The English names are not as carefully selected as the technical ones and the list contains far too many new names which either were invented by the author or picked up from one of the other writers who have recently shown a desire to develop new "common" names for birds. While a very few new names, proposed to replace others which had become confused in one way or another, would be welcomed by the field students, a multiplicity of new names is so annoying that all are likely to be ignored. Even the name of a family is changed—the time-honored name of the Dendrocolaptidae, the Woodhewers, is changed to "Woodcreepers". A foot-note suggests that this is done because the word Woodhewer (a translation of the scientific name) is a misnomer. This is indeed a deplorable move, not just because the statement that the name is a misnomer is erroneous (some of these birds do hew wood, and quite vigorously at times) but because the scientific name must remain the same whether it be a misnomer or not, and also because Woodhewer has become so well established in the literature from many decades of use. As a matter of policy it is quite useless for one person to change any name because he thinks it a misnomer. In the first place a name is just a "handle"

and it matters not what it is as long as those who use it know what is meant and are satisfied with it. In the second place any new name invented (no matter what it is) to replace the supposed misnomer will in turn be pronounced a misnomer by some other person.

In criticizing the older names such as those from the "Birds of North and Middle America" by Ridgway, it is stated that some of these names have been used to denote more than one species by different authors as though this were something to be abhorred. However, Eisenmann changes the name of the Allied Woodhewer (*Lepidocolaptes affinis*) to Spot-crowned Woodcreeper, although both Hellmayr in "Catalogue of Birds of the Americas" and Chubb in "The Birds of British Guiana" apply the name Spotted-crowned Woodhewer to a bird of a different species. No warning is given even in a foot-note that the name has in the past designated a quite different bird and the reader is not even informed that the name "allied" has been applied to the species in all other literature. When a new name not only attempts to change an old, well-established name about which there never has been any confusion or dispute but actually muddles the name of another species, it is hard to understand what the author is really trying to do. As is illustrated in the example above, another new feature of the vernacular names is that the "doubling of the past participle is avoided for simplicity and euphony." It is doubtful if such a feature really simplifies and some readers might think that "Spot-breasted", for instance, should be applied as a name to a bird with only one spot on its breast rather than to one with many spots.

So called descriptive names are given in place of old patronymics and geographical names as the author says the new, more descriptive names aid in identifying or remembering a species. This might or might not be true. In the case of the Boucard Tinamou, we have a bird which was described as *Tinamus boucardi* in 1859; it has never had the species name changed, although it has been moved into the genus *Crypturellus*. It has been known since the earliest days by the English name taken from the scientific specific name. It has not been called by other common names and there has never been any suggestion of confusion or doubt about what anyone meant when he spoke of Boucard's Tinamou; in addition we had the considerable advantage of having vernacular and technical names that were alike. Still, a new name was given the bird, that of Slaty-breasted Tinamou. Aside from the fact that the new name is longer and a bit awkward, it provides no information that aids in identification of the bird in the field, as this tinamou, when seen in the woods, appears to be the same color all over. Hence the new name merely adds confusion in an area where there had previously been none.

Numerous other examples could be cited where old, established names are replaced by less desirable ones because the old ones were thought to be misnomers, nondescriptive, misleading or were of a subspecific nature. It is surprising to note in regard to the last-mentioned category that in some cases a well-established "subspecific" name that might well serve as a name of the whole species in case the name of the nominate form were almost unknown or otherwise undesirable, was discarded in favor of another subspecific name which was itself almost unknown or less suitable than the one discarded.

Thus it is seen that the list of vernacular names would not serve to acquaint a beginner with the names in use by a majority of field men already working in the area, and that it would prove confusing and an actual hindrance to him if he consulted it to identify some bird he found mentioned by common name in an old book or magazine. Consequently, it is likely that the book will prove useful chiefly in ways other than that of its primary purpose.—L. IRBY DAVIS

THE NATURAL REGULATION OF ANIMAL NUMBERS. By David Lack. Oxford University Press, London, 1954: 6 × 9½ in., viii + 343 pp., 52 text figs. \$5.60.

For the serious ornithologist this book is required reading. In a series of chapters a wealth of data about birds is clearly presented. Lack starts out by showing that many populations remain nearly stationary in numbers for periods of years. Then he discusses the significance and variations in clutch size and the breeding season which, of course, determine the reproductive rate of birds. Also, he brings together the data about relation of number of eggs to density of population, which in many cases vary inversely. The next phase in the analysis of regulation is the discussion of mortality. Lack devotes 4 chapters to losses of eggs and young, adult mortality, sex differences, and dependence upon density. The viewpoint now changes from a consideration of forces for increase and decrease to a study of the factors in the environment. Food is described as a limiting factor and then predation and disease are considered. A couple of chapters are squeezed in about the factors limiting mammals and fish and insects just before a series of chapters that, to this reviewer, seem to be a collection of discrete topics that lack a theme. There is a discussion of climate and range, of cycles, of irruptions, of migration, of dispersion and of gregarious and territorial birds. The 4-page conclusion summarizes the main points of the general argument.

No review can cover all the items of importance in a book of this type. Certainly a wealth of data is collected and provocatively analyzed. However, the author may at times seem to stress some ideas more than their general merit permits. For example, Lack at once (p. 21) begins his review of the significance of clutch size. Yet a basic assumption (p. 21, line 16) is that birds are indeterminate layers, which seems to be the exception rather than the rule. It would seem desirable to present the facts as now known and then speculate on their significance. Another question arises concerning the frequent claim that clutch size is related to food supply. Data that illustrate the point are meager because it is difficult to get an experimental situation. Even so, how does this come about—through gonadotropins?

In some places the meanings of terms are not clear. For example, on page 91 in the discussion of avian mortality, Lack does not state whether he is referring to death rate (the number dying divided by the average population) or the probability of dying (the number dying divided by the initial population). Clarification of terms is essential in these confusing problems.

The book is splendidly printed and has only a few typographical errors. The bibliography of 42 pages is an excellent source of references to original data. The index is divided into taxonomic groups and also according to author and subject.

A most valuable aspect of this book is the demonstration that data collected by the amateur in his ordinary pursuits are valuable. The records of clutch-size and nesting dates as well as the results of banding are a real contribution to knowledge.—DAVID E. DAVIS.