

REVIEWS

EDITED BY KENNETH C. PARKES

The feathers and plumage of birds.—Anatolii A. Voitkevich, 1966. New York, October House, Inc. Pp. i-xvi, 1-335, 74 figs., 21 tables. Cloth. \$7.80.—Comprehensive works on the avian feather are so few that this book, with its bibliography of 834 titles is of definite value if only as a landmark. It is a translation (by Scripta-Technica) of *Pero Ptitsy (The birds' feather)* published in Moscow, 1962 (reviewed, *Auk*, 83: 691, 1966; *Bird-Banding*, 37: 219, 1966). The liberty taken in the translation of the title is apparent elsewhere in the omission of 30 of the 104 figures from the original text, the elimination of five paragraphs of the original introduction, and the skipping of a 19-line paragraph which should follow paragraph two on page 3.

Beyond Chapters 1 ("The structure, pigmentation, development and renewal of plumage") and 2 ("Experimental analysis of some conditions necessary for the formation, growth and development of the feather") the book is mainly a treatise on the relationships of the feather to glands and other internal elements. Chapters 3 ("The role of the thyroid gland in the development of plumage and in moulting"), 4 ("The role of sex glands in the formation of plumage characters"), 5 ("The pituitary [anterior lobe] and feather formation"), and 6 ("The role of the nervous system in the development and renewal of feathers") are quite comprehensive and reveal results of some research that antedates similar investigations performed outside the Slavic countries. There follows a chapter of conclusions (Chapter 7 in the original text) and the bibliography, which, while remarkably inclusive, contains nothing published since 1959.

Whereas Russian texts are generally hard to obtain, especially a few years after publication, this translation is readily available here and abroad. Definitely damping the enthusiasm of this reviewer, however, is the terminology, which betrays a non-ornithological translator or editor, or both, and which is compounded by Russian (and perhaps British) differences in the interpretation of terms: e.g., "helm feathers" for rectrices or tail feathers; "primary feather" where primordial or natal down is meant; "Anlage," sometimes correctly, but sometimes where rudiment is meant; "cornification" for keratinization; "barrel" for calamus; "permanent feather" for definitive or mature feather; "third order barbs" for barbicels; "covering feathers" for coverts, etc. The reader, however, can call upon his own knowledge, via the context, to determine what is meant in most cases. And he can reserve judgment on some statements in the preliminary review chapters (1 and 2) which, at least as translated, are misleading or erroneous.

The writing, and the translation thereof, in the subsequent chapters (3-6) elaborates on the author's own extensive researches and is based on much more secure ground, reviewing not only the literature on the various topics from Slavic countries (269 titles), but that of American, English, and other countries (565 titles) with a most unusual thoroughness.

Points of exceptional interest, and perhaps unavailable to ornithology at large, are too numerous to detail in a review, and are available in this translation which is a must for any reasonably complete biological library.

Worthy of note, perhaps, in the large amount of ingenious experimental work reviewed is the following (p. 83):

An extract was made from skin with young quills taken from pigeons; various amounts of extract were then injected into pigeons in which preliminary growth of feather germs had been induced so they could serve as detectors. Observations on the growth of the coverts over the secondary flight feathers showed that the extract exerted a stimulating influence and the feathers developed at an earlier time The likelihood of the formation of biologically active substances in the developing (feather) follicles can hardly be disputed. It is sufficient to cite the formation of active substances in the antlers of the deer. Something akin to the non-ossified deer's antlers also occurs in bird skin during the development of plumage.

This recalls the pigeon-fancier's belief that pulling out a few tail feathers makes for a healthier, more active bird. Also of significance is (p. 250):

Avian skin, with its highly differentiated derivatives, is not outside the sphere of influence of the nervous system. [Then a sentence omitted in the translation: Undoubtedly the Pavlov principle of neural control of physiological processes also applies to the tissues of feather formation.] The published references to the innervation of avian skin and the role of neural regulation of feather forming phenomena indicate the relative scarcity of experimental investigations in this field.

One point which is repeated in this (pp. 19, 88) as well as in some other texts is: "Its development completed, the feather loses all vascular and nervous connections and becomes physiologically isolated from the rest of the body." Yet (p. 12): "Because the capillaries do not enter the epithelial cylinder of the feather shaft, it follows that all parts of the developing feather receive their nutrients by means of diffusion." Actually the feather proper never has innervation or vascularization to begin with, as is usually true for the outermost dermal layer of vertebrates as a whole. Therefore, it could not lose such connections, and could even retain some capacity to receive or transmit material by diffusion, and *could* even have some degree of sensitivity (G. P. Dementiev, *The migrations of birds and mammals*, Acad. Sci. U.S.S.R., 1965; see p. 17). The concept of the feather as dead, dry, and detached renders interpretation of anting and other forms of plumage treatment more difficult.—LEON KELSO.

Guide des oiseaux de la Nouvelle-Calédonie et ses dépendances.—Jean Delacour. 1966. Éditions Delachaux & Niestlé, Neuchâtel, Switzerland. 172 pp.; 4 col. pls., 54 line drawings (by Lloyd Sandford). 24 Swiss francs.—This guide to the birds of New Caledonia and its dependencies (the Loyalty Islands) is designed to stimulate interest on the part of the inhabitants and is motivated by the hope of encouraging the conservation of the remarkable avifauna of this southwest Pacific area. All the 116 recorded species (as well as 11 subspecies on the Loyalty Islands) are briefly described, their habitat is indicated, and available information on status and biology is given for the breeding species. Most of the latter are included among the 72 species illustrated in color or in black and white.

What is extraordinary about New Caledonia is the extent of endemism for so small an area: one monotypic family (Rhynochetidae, the Kagu), four genera (a pigeon, a parrot, a warbler, and *Rhynochetos*), 20 species, and over 40 subspecies. New Caledonia itself is a narrow mountainous island only 400 km long. It possesses a considerable variety of habitats, including remnants of a wonderful humid forest characterized by giant endemic ferns and other plants found nowhere else. The Kagu, a large, handsome bird of uncertain affinities (currently regarded as gruiiform), is the species whose preservation creates most concern. Found in mature humid forest, occurring in widely separated pairs, laying but a single egg a season, and unable to fly, it is highly vulnerable not only to hunting but to feral cats and dogs. Probably the greatest menace is the destruction of its essential habitat.

While the importance of preserving the Kagu has been widely publicized in New Caledonia, the need for protecting other endemics now menaced has been less realized. Notable among these are certain parrots desired for caging and much-hunted pigeons. Most New Caledonian breeding species are non-passerines; they are good-sized birds more likely than smaller ones to suffer from human activities. The economy of New Caledonia is based on production of nickel for export and the mining is essentially surface mining. The methods used have often been unnecessarily destructive of the forest. Burning has also had a very damaging effect.

The first step in building local concern for bird preservation is to provide books by which the people may identify the birds and thus become interested in them. This is the first book in French, the language of New Caledonia, intended to serve that purpose. Wildlife conservation being of worldwide concern, it is appropriate that this book was partly subsidized by the International Council for Bird Preservation, U. S. Section.

Students will find the introductory chapter especially interesting, because it summarizes the geology, climate, and topography of the islands, highlighting those aspects and problems relating to the exceptional avifauna. Appended is a very full ornithological bibliography. I regret the absence of a map, but assume that most literate New Caledonians know the shapes and locations of their islands. This little book should enable them to recognize and appreciate their birds, and should stimulate some to begin studies of bird life history and behavior. It is encouraging to learn that there is already an active ornithological society on New Caledonia.—
E. EISENMANN.

Birds of North America. A field guide to identification.—Chandler S. Robbins, Bertel Bruun, and Herbert S. Zim. Illustrated by Arthur Singer. Golden Press, New York. 340 pp. \$2.95 soft bound (with durable cover), \$4.95 hard bound (not seen).—At \$2.95, with 154 full-page color plates plus additional color illustration, this book is a monument to modern mass printing techniques, and to Herbert S. Zim, commercially the most successful "junior" author-editor in the field of natural history publications. This small guide illustrates in color all of the species in the A.O.U. Check-list for which there are five or more records since 1900, plus several additions to the avifauna since the last Check-list. Not only is each species illustrated with figures of typical male and female definitive basic and alternate (= winter and breeding) plumages where these differ, but often also with figures of the less commonly illustrated first basic and juvenal plumages. Occasionally, where dramatically different, two subspecies are illustrated, although the lack of precise labeling (e.g., a "western" Fox Sparrow rather than an identified form) and poor choice of forms (e.g., a "gray" and a "brown" Song Sparrow, both eastern subspecies) detract from this good idea. Equally distinctive forms of other polytypic species are not illustrated (Great Horned Owl, Scrub and Gray jays, Hermit Thrush, Yellow Warbler, Seaside Sparrow, etc.). Smaller figures scattered throughout the plates illustrate many additional characters and make the book much more enjoyable (Chimney Swifts spiralling to roost, mobbing of a Saw-whet Owl by chickadees, many flight patterns, including that of the Yellow Rail, and courtship flights of hummingbirds, etc.). Because of the number of species covered, the plates are crammed with figures, although these are well handled and there is little confusion. With plates so full, binding and trimming should be done with precision; however,

in the copy before me several tails and legs have been trimmed off, and even some printing! The artistic quality is high and errors are slight. For example, a brown-backed Violet-crowned Hummingbird must have been painted from a badly foxed specimen, but how many ornithologists have described subspecies on such "characters"! The brown-headed Connecticut Warbler marked "♀" could represent either sex in the first basic plumage, and that labeled "imm. ♀" looks like the female in definitive basic plumage.

The method of printing the book has led to the major shortcoming of the illustrations, its *raison d'être*. Since numerous plates were printed on a single sheet, color correction had to be an average affair. This can be noticed in the color of the small range maps which, from page to page, vary from pale to deep orange, and has led to the creation of a too green immature Glossy Ibis, a green-headed Pygmy Nuthatch, extra rich coloration of *Myiarchus*, and highly irregular depth of color in the sparrow plates.

Unfortunately, the text has many inaccuracies, and we are not informed of the respective contributions of the three co-authors.

Short, 3 to 10 line, paragraphs for each species face each plate. These give ranges (often duplicating in words range map data), habitat, field characters, song and call notes, abundance (on a predefined scale), etc. The accounts vary from concise and useful to uninformative; those of western species are more often in error and less informative. Small range maps accompany most species accounts. Some are grossly inaccurate (e.g., Yellow-bellied Sapsuckers breeding into Mexico), while some ignore southwestern and Mexican portions of the species' nesting range (Peregrine Falcon, Robin, Golden-crowned Kinglet, and Song Sparrow, for example). A number of maps could have been eliminated where ranges could be easily described in the text. The maps in general represent a valuable addition, however, especially when corrected.

An innovation which seems to me less successful is the experimental inclusion of highly reduced, fragmentary sonograms of songs or call notes for nearly a third of the species covered. To those not in this field of study it is often impossible to interpret these. For example, I can not believe the calls of the Short-billed Marsh Wren and the Everglade Kite are as similar as they appear in their respective sonograms. The blob representing the call of the Woodcock is less informative than the accompanying description—"a nasal peent." The sonograms do not present comparable vocalizations for each species.

In summary, although flawed, this book is an outstanding bargain whose revised and corrected second edition will be looked forward to.—ROBERT W. DICKERMAN.

Wildlife investigational techniques.—Second edit., Henry S. Mosby (ed.). 1963 (revised 1965). Washington, D. C., The Wildlife Society. Pp. xxiv + 419, 166 figs., 111 tables. $8\frac{3}{4} \times 11\frac{1}{4}$ in. \$4.50.—Prepared by the Wildlife Techniques Committee of The Wildlife Society, this volume is intended for use "by the practicing field biologist, by the wildlife administrator, and by college instructors of wildlife management" (p. vi). It is not a text on wildlife management, but rather a reference book on modern techniques for studying game birds and mammals.

Ten authors prepared the book, each signing the chapter(s) for which he was responsible. Sixteen topics are covered: instrumentation in wildlife investigations; record keeping; reconnaissance mapping; habitat evaluation; population estimates;

sex and age criteria; population analyses; field preparation of specimens; autopsy procedures; capturing and marking; measuring mortality; control of nuisance species; food-habits procedures; project planning; literature techniques; and preparation of research reports. Each chapter briefly introduces its subject and then outlines many of the techniques involved. Because of space limitations, there is little attempt to describe the techniques fully or to include all possible study procedures. Instead, the major techniques are mentioned (usually with illustrations), and then several references are given to more complete discussions in the literature. In a few cases, the names and addresses of equipment suppliers are given, and there may even be some indication of cost.

This book illustrates the benefits available to the general ornithologist from the extensive field experience of wildlife managers. Although it is almost entirely concerned with game species (and sometimes generalizes too broadly on "birds" when the statements apply only to anseriforms and/or galliforms), most of the techniques can be adapted to studies of other birds. There are ingenious solutions to such common problems as the marking and tracking of elusive species. The long (71 page) chapter on sex and age criteria contains numerous tables on game birds, which would be valuable to anyone who does not handle these species regularly enough to remember the many differences between sex and age classes. The final chapter, "Reporting research results," is short but has useful tips and reminders to authors: practical methods for handling data (the mechanics of writing a paper, presentation of graphic material, proofreading, etc.) along with a strong statement that research results are wasted unless they are published.

The last pages of the book contain a 33-page bibliography, a short glossary, an index, and an appendix of tables on clutch sizes and hatching success of game birds, gestation periods of mammals, band sizes, etc. In general, this book does a good job of accomplishing its stated aims. The style is clear and consistent throughout, in spite of multiple authorship. The book is exceptionally well illustrated and almost entirely free of typographical errors.

For the information of those who already have the first edition (1960), the following changes are stated (preface) to have been made in the second, revised edition: a new chapter on instrumentation (radio-tracking, radioisotopes, etc.); a rewriting of the chapters on report preparation; consecutive pagination; inclusion of important literature through mid-1962; and correction of editorial errors.—MARY A. HEIMERDINGER.

Waterfowl tomorrow.—Edited by Joseph P. Linduska. 1964. U. S. Department of the Interior, U. S. Government Printing Office, Washington, D.C. Pp. xii + 770. \$4.00.—There is probably more deep concern over the future of waterfowl in North America than in any other part of the world. The widespread interest in the welfare of the continental duck and goose populations stems directly from the value attached to these birds by hunters. The need for reliable information on waterfowl as a "resource" has provided the impetus for a great deal of research aimed toward the wise management of this valuable group. *Waterfowl tomorrow* provides a summary of what has been done over the last 30 years to achieve this aim, and makes predictions for the future.

Technical reports on all aspects of waterfowl management are available in a multitude of diverse publications, but this seems to be the first serious attempt to summarize this material in a form suitable for the general public. Articles on "the

duck situation" appear regularly in the popular press, but brief, authoritative accounts of the many facets of management in either the technical or the popular literature have been rare. This book attempts to fill the gap. Its aim is to "help all thinking people to a better understanding of the needs of waterfowl and of the things . . . affecting them adversely." The editor also predicts that the book will help in shaping governmental policy.

The book contains 69 articles (many by two or three authors) pertaining to North American waterfowl, especially their distribution and migrations, environmental factors influencing their abundance, the impact of human population, efforts being made to manage them, and the outlook for the future. More than half of 103 contributors are biologists of the Bureau of Sport Fisheries and Wildlife or the Canadian Wildlife Service.

Much of the book is addressed to hunters, but some chapters provide summaries of recent research of interest to many ornithologists. For example, the chapters on goose and swan biology emphasize the different requirements and characteristics of each species. Conditions affecting waterfowl in Mexico ("South of the Border") are presented vividly. The influence of glaciation on today's waterfowl breeding habitat is discussed in an interesting chapter ("Mammoths and Mallards"). The significance of aquatic vegetation, predators, botulism, blood parasites, lead poisoning, insecticides, and algae is assessed by leading authorities. Much attention is given to habitat conditions in different parts of North America, and the future of all kinds of "wetlands" is discussed in detail.

In the concluding chapter, Daniel H. Janzen summarizes: ". . . the basic long-range problem is competition for land and water between waterfowl on the one hand and civilization with its steadily increasing human population on the other." Between 1936 and 1958, over a million acres of the finest waterfowl breeding habitat in the United States were drained. Janzen suggests that still more research is needed. "Somehow we must find ways and means of getting more breeding pairs to nest on the suitable breeding areas available to them. We must cut down the very high mortality rate of the birds at the egg and duckling stage." The greatest hope seems to lie in habitat manipulation, but knowledge of the requirements of each species is still inadequate.

This book is not intended to serve as a textbook of wildlife management, nor does it pretend to be a scholarly work on waterfowl biology. Nevertheless, it is likely to be widely used by professional biologists because of its convenient summaries of various topics by acknowledged authorities. To the professional the book presents certain problems.

The most serious is the scarcity of documentation. The editor explains that "most of the pertinent literature is not generally available in libraries" and that references were omitted for want of space. For more information readers are encouraged to write to the authors or to the wildlife services, but the additional effort, expense, and delay involved in such correspondence may discourage many readers. It is a pity that 30 blank pages scattered through the book were not used for references.

Further, despite the care taken by most authors to make their accounts reliable, some chapters show evidence of hasty preparation with resulting inaccuracy and oversimplification. A "folksy" style and the inclusion of "a minimum of qualification and hedging" have not helped.

Further shortcomings are an incomplete index and the absence of regional maps. Much repetition, especially in the chapters on breeding areas, species, and flyways,

has resulted from an attempt to make each chapter stand by itself. Conversely, there are conspicuous gaps in the coverage of relevant topics, for example, home range and territoriality, subjects of considerable significance as suggested by Janzen's remarks on competition for space.

But it would be unfair to judge a book clearly intended primarily for hunters solely on its usefulness to biologists. It should stimulate hunters to help in promoting efficient management, and for most of them this will be a fascinating book.

Hopefully the book will also appeal to land-owners, farmers, and others in a position to contribute directly to habitat management. No ornithologist will quarrel with the basic aim—to ensure that there will be waterfowl tomorrow.

The book is very well illustrated with photographs and attractive drawings by Bob Hines.—FRANK MCKINNEY.

OTHER BOOKS RECEIVED

Birds in the balance.—Philip Brown. 1966. New York, October House. 124 pp., illus. $8\frac{1}{2} \times 6\frac{5}{8}$ in. \$7.50.—This is certainly an *unusual* book, and of interest to an American audience because it is a detailed account of bird conservation in the British Isles (with brief comparisons with the U.S. and parts of Europe). The author, a former officer of the Royal Society for the Protection of Birds, is a colorful writer to say the least, and presents his version of the “unvarnished” truth about British bird protection. He minces few words, and is variously interesting, amusing, astounding, cynical, and arrogantly opinionated. Few readers will accept the book as wholly accurate, or even as a reasonable approach to bird conservation, but it is worth reading as a curiosity piece or just to get furious about. Borrow it, don't buy it at \$7.50.—M.A.H.

Handbook of birds of eastern North America.—Frank M. Chapman. 1966. New York, Dover Publications. Paper, pp. xxxvi + 581, illus. $8\frac{1}{2} \times 5\frac{3}{8}$ in. \$3.00.—Any American ornithologist over 40 knows and cherishes this, the standard manual of his youth. This is stated to be a reprint of the “1939 edition,” although there was no real revision after 1932. The page size has been increased (improving legibility); the original color plates are printed in half-tone (except that of the thrushes, now on the cover); the life-zone map has been much enlarged; data on ornithological societies and journals has been brought (almost) up-to-date; and a new color chart has been prepared. This book remains one of the best available guides to identification of birds in the hand, and thus important to bird banders.—K.C.P.

An annotated check-list of the birds of Hong Kong.—A. M. Macfarlane and A. D. Macdonald. Second edition, revised by J. R. L. Caunter and A. M. Macfarlane. 1966. Hong Kong Bird Watching Society. Paper, pp. xvi + 96, map. $8 \times 5\frac{1}{2}$ in. [\$1.75 U. S.].—The popularity of bird watching in Hong Kong may be deduced from the fact that a revised edition was thought necessary of a check-list first published in 1960. A brief (sometimes inaccurate) statement of the total range of each species is given, followed by a detailed account of the status of the race or races found in Hong Kong. The sequence and nomenclature of genera and species is said to be a synthesis compiled from several sources plus the judgment of the authors; the end-product definitely leans toward “lumping.”—K.C.P.

Vertebrate biology.—Robert T. Orr. 1966. Second edit. Philadelphia, W. B. Saunders Co. Pp. xii + 483, illus. $9\frac{1}{2} \times 6\frac{1}{4}$ in. \$8.00.—An expansion of the first edition (1961), this textbook on the biology of vertebrates is divided into two approximately equal sections. The first deals with the classes of vertebrates as such: general and special anatomical and physiological characters of each class; and a classification down to the family level (except for most of the fishes). The second section is concerned with general vertebrate biology, and covers such subjects as systematics, distribution, reproduction, etc. It appears to be a good comprehensive text, but overgeneralizations leading to misstatements must be watched for.—M.A.H.

Fundamentals of ornithology.—Josselyn Van Tyne and Andrew J. Berger. 1966. New York, Wiley (Science Editions). Paper, pp. xi + 624, illus. $8\frac{1}{4} \times 5\frac{1}{2}$ in. \$2.95.—A real bargain; the hard-bound edition of this important text, published in 1959, cost \$11.75. To refresh his memory about the strengths and weaknesses of this book, the reader is referred to two excellent critical reviews: by Eisenmann (*Auk*, 77: 96–98, 1960) and Mayr (*Wilson Bull.*, 71: 391–394, 1959).—K.C.P.