ORNITHOLOGICAL LITERATURE

THE SHOREBIRDS OF NORTH AMERICA. Editor and sponsor, Gardner D. Stout; paintings by Robert Verity Clem; text by Peter Matthiessen; species accounts by Ralph S. Palmer. The Viking Press, New York, 1967: 10½ × 14¼ in., 270 pp., 32 col. pls., two-tone pl. dealing with shorebird plumages. $22.50.

It would be easy to dwell exclusively upon the good features of this handsome book. In it are some of the most completely satisfying paintings of birds I have ever seen. In it is a wealth of distinguished prose and much valuable reference material. But the investigator who has travelled a long way to observe shorebirds on their far northern breeding grounds; who has witnessed their courtship behavior and made rounds of nests weeks on end in an attempt to ascertain which sex spends the night on the nest, which predators are responsible for destroying eggs, etc., who has, in short, lived with the birds during the whole of their brief but exciting reproductive cycle—that person is bound to feel that the book is primarily about shorebirds as transients, as visitors to the United States. Furthermore, when the "average" bird student, eager to be brought up to date about this important avian group, starts to use the book, he soon finds that the index is far from adequate (it applies largely to the "species accounts" and hardly at all to the first 135 pages); that the "off-plumages" every observer has to deal with—no matter what the area or season—are neither illustrated nor very fully discussed; that the taxonomy and nomenclature are bewildering in that they involve wholly unexplained departure from that which has been widely accepted for some time; and that there is an unfortunate inconsistency in presentation of subject matter.

In the eleven opening chapters by Matthiessen (pp. 19–135) there is no evidence of attempt to shorten, to save space in any way. In the "species accounts" by Palmer (pp. 143–267), on the other hand, abbreviations are so numerous as to be offensive. Page-size is ample, margins are generous, yet despite this abundance of space we are obliged to read (concerning the Black-necked Stilt): "Breeds from s. Oregon and n. Utah southward to s. Louisiana and locally s. to n. Brazil and, w. of Andes, to cent. Peru" (p. 152). The captions on virtually blank pages opposite the colorplates might have included meaningful comment on elements of habitat shown in the pictures; or mentioned facts concerning molt (the Lesser Yellowlegs on Plate 16 is obviously molting, yet the caption tells us that the plumage shown is "definitive"); or discussed behavior. The beautifully drawn Killdeer on Plate 9 is feigning injury. Some users of the book will know this instantly; others may decide that the bird has been shot, or that it is sunbathing. The caption for the plate, instead of making at least one point pertaining to behavior memorably clear, reads as if author and publisher had grimly resolved to keep the wording as short, dry, and uninformative as possible.

The "inconsistency" in presentation that I have mentioned may well be a by-product of today's overweening desire to bring out something patently marketable as rapidly as possible. I have dealt with publishers enough to know how demanding—indeed how infuriating—they can be at times. There is that almighty deadline. The fall catalogue has already announced a publication date. The field force are ready to sell. Review copies must go out. "Yes, we decided that some of the background in that picture was extraneous, so we took some off; what we did doesn't change the picture at all; in fact it looks better than it did. No, there's no time for preparing the sort of index you have in mind; most people won't need any sort of index. This part of the book is dull; use abbreviations wherever possible and we'll liven it up by running it in two columns. The two columns

improve readability." I have heard all this many times over. Worse than the publishers are the engravers: "Just leave it to us. When you see our final product you'll agree that we've improved on the original. It will be a lot brighter, a lot more pleasing to everyone!"

Justifiable cynicism aside, let me discuss the work of Robert Verity Clem. Briefly assayed, it is more than exceptional; it is thrilling. I have long had an aversion for composite plates, especially for such impossible assemblages as that in Plate 2 (Common and Red-throated Loons, Greater Shearwater, Arctic Tern, Great Auk) in H. H. Bailey's "The Birds of Florida" (1925)—an unsavory goulash cooked up, alas, by myself! But in Clem's gifted hands groups of assorted shorebirds are wholly acceptable—even those as in Plate 11 (Hudsonian and Marbled Godwits, Golden Plover) and Plates 31 and 32 (phalaropes) in which both breeding and winter plumages are shown side by side. The point of my approval is, of course, that such motley assortments not only might be, but occasionally are, seen together in late summer and fall. Indeed, now that I have observed shorebirds in Oklahoma during the past 15 years or so, I am prepared to see "almost anything" from the end of June through August and September in this part of the continent.

Clem's groupings are pleasing pictorially and sound ecologically. I deeply regret that so few of them show what can conceivably be identified as tundra vegetation. Many of them tell a story. His four Sanderlings and three Semipalmated Sandpipers (Plate 20) have finished their morning feeding and are drowsing off the heat of mid-day. Since all are facing the same way, a light wind must be blowing. His Dunlins, Knot, and Ruddy Turnstone (Plate 25) have been quieted down by fog. Whether conscious or not of the little comedy created, Clem shows his Lesser Yellowlegs eyeing a food item that a Greater Yellowlegs also sees (Plate 16). But Clem does not depend on extremes of posture—grotesque stretching, mad scrambling after food, agonized effort to escape—in giving life to his subjects. He is, in other words (and fortunately), no Audubon.

A fact about Clem's special genius merits emphasis. He paints what he sees. In his plover portraits the highlight of the eye is often so subdued, so muted, as to be almost imperceptible (see, especially, the juvenal Piping Plover in Plate 7). This handling is far from traditional, yet it helps to give his plovers that innocent, mellow facial expression that plovers have. How fortunate are they (and we!) in having a portraitist who knows them so well!

Clem's juvenal Piping Plover just mentioned has dark legs. I must not say that a mistake has been made here, for some juvenal Piping Plovers may indeed be dark-legged; but a juvenal specimen collected 1 September 1968 near Oklahoma City had *orange* legs. I prepared this specimen myself. Its skull and major wing- and leg-bones were not yet fully ossified; the gray plumage of its upperparts was beautifully edged or "veiled" with white; its bill was all dark; but the bare tibial area, tarsi, and toes were of a shade of orange fully as bright as that shown by Clem in his drawing of the adult bird.

The plates showing groups of shorebirds are pleasing; but Clem is at his best, in my opinion, with single birds—e.g., his exquisite Upland Plover and the neglected fence (Plate 14), his Golden Plover on the beautiful rock (Plate 5), and his brooding Woodcock among the suntouched dead leaves (Plate 27). His Common Snipe (Plate 28) was cropped without permission—an unforgiveable blunder (or worse) on the part of the publisher—though the picture as it stands is a superb portrait of both bird and habitat.

Plate 21 (Pectoral, Western, Least, and White-rumped Sandpipers) is for me the least satisfactory of the plates. In my copy of the book the buff on the breast of the White-rump is far stronger than in any spring or summer specimen of either sex in the considerable series before me. The Pectoral and Least are somewhat wooden in appearance

and, unfortunately in another way, the White-rump is standing in water considerably deeper than would be at all likely along so flat a shore.

All in all, the Clem plates are an outstanding contribution to ornithology; more than this, they are glowing proof of humanity's appreciation of a wonderful part of the world in which it exists. Of themselves they give "The Shorebirds of North America" a completely valid *raison d'être.*

Matthiessen's several chapters, which appeared in two long installments under the title "The Wind Birds" in *The New Yorker*, in 1967, are excellent reading. They provide a fine accompaniment for the Clem plates. I wish they had been based to a much greater extent than they were on first hand experience in the far north. Peter Matthiessen should have been with me on Jenny Lind Island on 11 June 1966, when, on a gravel slope above the frozen ocean, I happened upon a pair of Sanderlings. The wind was sharp; light snow was falling. The handsome male (brick-red all over the head and chest) and drab female were pecking at the thin grass. They must have been eating tiny seeds, for I could find no gnats or animal life of any other sort in the area they so thoroughly covered. I wanted to ascertain what they were feeding on; but I was so convinced that they were a pair and that they had a nest in the vicinity that I decided not to collect them. Thirteen days later David F. Parmelee found a nest (four fresh eggs) not far from where I had seen the birds. What a time we had at that nest—hour after hour of vigil, partly to protect the eggs from predators, partly to ascertain which sex did the incubating. Not for one minute during a 22-hour period was that nest without a human guardian. The whole experience was memorable (see Parmelee, Stephens, and Schmidt. The birds of Southeastern Victoria Island and adjacent small islands, *Natl. Mus. of Canada Bull.*, 222:224, 1967). If only Peter Matthiessen could have been there!

So full of feeling and on the whole so convincing is Matthiessen's writing that coming upon gross errors is worse than shocking; it obliges us to wonder how many thought-provoking and exciting pronouncements may be misleading or wrong. Take, for example, the statement that the "gular sac" of the Pectoral Sandpiper "has an almost identical counterpart in the prairie chicken, not only in color (orange) and appearance but in resonating effect produced" (p. 82). I have observed hundreds of transient and breeding Pectoral Sandpipers. I have handled many freshly killed specimens both in the United States and in the Canadian Arctic Archipelago. Fascinated by their courtship behavior, I have watched them by the hour. Never have I seen anything that could conceivably be called an orange neck sac ("gular sac" is hardly a correct designation for the flaccid, highly vascularized, subcutaneous mass of tissue that the Pectoral puts to such spectacular use); nor can I find in the literature so much as a phrase that might be construed as description of such a thing. The wonder of a mistake of this sort is that none of Matthiessen's several consultants caught it. I call attention to a related misconception. The Pectoral's "gular sac" is not truly "unique in the shorebirds." In lesser degree the White-rumped Sandpiper has it (see Sutton. The birds of Southampton Island, *Mem. Carnegie Mus.*, 12, Part 2, p. 132, 1932); in still lesser degree the Buff-breasted Sandpiper has it (see Sutton, *Arctic*, 20:6, 1967).

Matthiessen reveals the fact that he has not spent much time *himself* making the rounds of shorebird nests when he says that "chicks must be removed from the scrape and the telltale eggshells as rapidly as possible" (p. 97). Many galliform birds leave a nestful of empty shells when the nidifugous young depart; not so with shorebirds. What happens is this: the parent bird flies off with pieces of shell as soon as the chick is out. It would not surprise me, indeed, to learn that the parent lifts or pries the chick loose and makes off with the shell while the chick still is damp. On scores of occasions I have visited

shorebird nests containing whole broods of young near which there was not a sign of egg-shell. Parmelee, Greiner, and Graul (*Wilson Bull.*, 80:17–18, 1968) graphically describe the haste with which female White-rumped Sandpipers make off with empty half-shells.

My criticism of Matthiessen is intended to be severe. He has erred either because his imagination has run away with him or because he has incorrectly interpreted the writings of others. May he not be discouraged. He loves shorebirds; no one doubts that. May he go right on observing them—more closely than ever before. And may he continue to inform us, in his own highly literate way, of what he himself sees, hears, *and knows*.

The "species accounts" by Palmer include much useful material, some of it unavailable elsewhere. Parts of the accounts are presented in the tersest, driest possible way, as if to conform to agreed upon word-limit. The numerous abbreviations oblige us to realize that all extraneous material is to be excised; yet under the heading of "habits" we come upon repeated reference to vaguely identified molluscs, crustaceans, worms, and the like. Why did Palmer not prepare a succinct foreword making clear that shorebirds eat a great deal of animal food and some vegetable food, but that for most species little has been ascertained as to exactly what this food is? Such a statement would have saved a great deal of space. We observers are all to blame for this lack of concise information. I know from examination of Red Phalarope stomachs and esophagi that that species often eats the "rat-tailed" aquatic larvae of some such insect as the syrphid fly *Eristalis tenax*. I made a crude life-sized drawing of the larva in the field. But I have never, until now, published a word about the finding. My friend Harley P. Brown has done his best to identify the creature from the drawing, but specimens are needed. Adding to the sum of knowledge is a slow process. Information is gathered "bit by bit," even as Celia Thaxter and her "one little sandpiper" gathered driftwood, but neither Palmer nor anyone else can add to knowledge with verbose generalities.

Palmer's foisting of an unfamiliar and wholly unexplained classification on his public in this sort of book is unpardonable. Many of his innovations (too numerous to list here) may be quite sound; but they are meaningless to the layman and confusing to the professional. I do not consider myself much of a professional, to be sure, yet I know enough about generic characters to wonder whether Palmer considers *Erolia* an out-and-out synonym of *Calidris* or whether, to his way of thinking, some scolopacids belong in *Erolia* and others in *Calidris*. Palmer's placing of the three phalaropes in the Scolopacidae rather than in a family by themselves is unacceptable to me at this writing, but Palmer may know something that I do not; in fairness to all concerned he should share what he knows and permit his co-workers to weigh this knowledge in their own balances, so to speak.

Palmer's "species accounts" and the captions for most of the plates fairly resound with the word *definitive*, a term used (I take it) for a feathering that, once achieved by the individual, is repeated season by season for the rest of that individual's life. I can't free myself of the feeling that this word, as so used, is pompous and virtually meaningless, especially if it is to be applied to such as an individual as the above-referred-to Lesser Yellowlegs in Plate 16. Attempts to get away from errors of the past are wholly laudable; the coining of new words and phrases is part of this process of moving forward; but unless the new words and phrases are truly an improvement, no progress has been made.—GEORGE MIKSCH SUTTON.

GAMEBIRDS OF SOUTHERN AFRICA: BEING A GUIDE TO ALL THE MAJOR SPORTING BIRDS OF AFRICA SOUTH OF THE CUNENE, OKAVANGO AND ZAMBEZI RIVERS. By P. A. Clancey. American Elsevier Publishing Company, New York, 1967: 7¼ × 10 in., xviii + 224 pp., 12 col. pls., 35 figs., 10 maps. $15.75 or R8.00.

In 1912 Major Boyd Korsbrugh published his "Game-Birds and Water-fowl of South Africa," a lavishly illustrated volume containing all then known of this interesting group. This book has long been out of print, and Clancey has taken this opportunity to summarize the taxonomic and biological knowledge accumulated over the past half century and to present it for us in a useful and attractive form.

Clancey's "gamebirds" are defined not on taxonomic lines but on their actual importance to the shooting fraternity. He gives a full discussion of the francolins and quail (Phasianidae), the guineafowl (Numididae), the waterfowl (Anatidae), and the Sand Grouse (Pteroclididae), and then considers in less detailed fashion the Buttonquail (Turnicidae), the Bustards (Otididae), the Painted Snipe (*Rostratula*), two true Snipes (*Gallinago*), and the Green Pigeon (*Treron australis*). Systematic treatment for each species includes: (1) *description*—elaborate and detailed descriptions of each plumage stage from downy young to adult, including sexual differences, and measurements of adults; (2) *distribution*—range in detail within southern Africa (south of the Cunene, Okavango, and Zambezi rivers), and extralimital range; (3) *general biology*—ecology, food, general habits and breeding behavior where known; (4) *nidification*—descriptions of nests and eggs, and dates of breeding. Where more than one subspecies occurs in southern Africa, the best known race is treated in detail, and the others are compared to it.

In his preface, Clancey states that his purpose in presenting his new information is to enable sportsmen and landowners to identify the species that they hunt, and to stimulate in them an interest in the conservation and wise exploitation of their gamebird resources. This is an especially valid approach in southern Africa, where in a vast area with a sparse population, only local measures are effective. The conservation picture in southern Africa at present is satisfactory, although not one to cause complacency. Of all the gamebirds, only the Karkloof Forest Crested Guineafowl (*Guttera edouardi symonsi*) is in danger of extinction. The status of the francolins, quail, and guineafowl as a whole is one of decreasing numbers or even extirpation in heavily populated areas, but of holding their own in unspoiled country. The reduction in numbers is not apparently due to hunting pressure but to the destruction of cover through agriculture or overgrazing. In areas where sufficient cover exists, birds thrive despite high population densities and constant shooting and trapping. This presents a conservation opportunity for the landowner to recreate stands of original cover on his lands to permit the recovery of the gamebird population. In contrast to the upland gamebirds, the waterfowl population has increased over the past half century, primarily through man's activity in building dams for urban, industrial, and agricultural use. With the minimum of protection during the breeding and flightless periods, the waterfowl can be expected to continue to increase as irrigation projects already planned are completed.

Considering that Clancey explicitly aims his book at the sportsman and landowner, much of it seems overwritten. His descriptions are phrased in the technical language of the professional ornithologist, and, for some of the complex patterns of the cryptically colored francolins, are in almost feather by feather detail. Such terms as "medial

elliptical zonations," "sagittate markings," "tertials" (even professionals disagree on these), "desquamate," and "accuminate" will convey nothing to the average sportsman or landowner, and Clancey offers no definitions or figures to clarify them. It is true that there are color plates figuring the adults of each species, and these are the primary means of identification, but there is great overall similarity among many of the francolins, and a short paragraph giving the diagnostic and field characters of each species would have been more useful than an elaborate description. Similarly, his terms for the different plumage stages are nowhere defined, and "first basic plumage" will convey nothing to the sportsman. Simply to number the plumages and to state their approximate duration would have been much more informative. On the other hand, the sections on general biology, particularly where it is evident that Clancey is writing from personal experience, are well done and give a clear picture of the bird against its usual habitat and pursuing its daily and seasonal routines. Of special interest to sportsmen are the time and duration of the periods of flightlessness in the waterfowl, when they are most vulnerable to human predation. However, the descriptions of courtship behavior, most of which are taken from the literature, are too interspersed with technical terms to mean much to the layman.

The above criticisms of Clancey's book as directed to sportsmen are not meant to detract from its value as a handbook of the gamebirds of southern Africa. The descriptions and measurements were made afresh for this volume, and the biological sections are careful summaries of what is known of each species and are thoroughly documented. The color plates, all by the author, are well done and attractive, although they have suffered in the reproduction, possibly from an attempt to make these essentially dull colored birds more vivid. Certainly the violet tones on Plate 9 are more striking to the eye than faithful to the birds. Nevertheless this is a volume that will be of value to all who are interested in gamebirds.

Although technically published in New York, the actual printing and binding were done in Cape Town. This may explain, but it certainly does not justify, the 40-per cent-increase in the U.S. price.—MELVIN A. TRAYLOR.

PRELIMINARY SMITHSONIAN IDENTIFICATION MANUAL: SEABIRDS OF THE TROPICAL PACIFIC OCEAN. By Warren B. King. United States National Museum, Smithsonian Institution, Washington, D.C., 1967: 7¾ × 10⅛ in., xxxii + 126 pp., 11 pls. (bl. and wh. drawings) and many distributional maps. No price stated.

The aim of this manual is "to fill the needs of ornithologists, fishermen, oceanographers, and ocean travelers who want a guide to identification and distribution of seabirds they may encounter at sea." The manual covers the area between latitudes 30°N and 30°S, including the Hawaiian Islands, Bonin Islands, south to the Kermadec Islands and Easter Island. Migrants from outside the area are included, and rare vagrants are briefly treated. The area includes 28 island groups and 107 species.

I would prefer to have the area covered by the manual extend farther east toward the American continents and farther west into Malaysia. Perhaps the reason for its present boundaries has to do with the present Smithsonian banding scheme in the Pacific. The larger area would give a more general picture of distribution and movements, especially of the wide-ranging species, even though the inclusion of the Humboldt Current area would not have conformed with the title of the manual.

The introduction consists of excellent, concise discussions of seabird distribution,

oceanographic surface water zones, their representative birds, and the principles of marine ecology and seabird migration. These are followed by guides to at-sea identification, methods of preserving and shipping specimens, a brief note on landbirds at sea, and references to groups of seabirds. All these are cleverly simplified and readable. Material on general matters was taken from its sister-volume on Atlantic seabirds by Dr. G. E. Watson; material dealing only with the Pacific is original.

The principal part of the manual consists of keys and specific descriptions of morphological characters (length and wing span are given in inches), flight techniques, food, marine habitat, and distribution with very useful maps. These accounts are concise and up to date. For example, *Oceanodroma matsudairae* is stated as migrating south to the Indian Ocean, a fact first reported by Bailey in 1965. Also, *Pterodroma longirostris* is treated as a species, in which is included the race *pycrofti*. The aim of the guide is field identification so, understandably, the literature references for the above-mentioned are not given, but the scientific value of the manual for the serious bird student would be raised considerably if such references were given.

The figures showing color patterns of seabirds in flight are fairly complete for each species. They show with sufficient accuracy the characteristic dorsal and/or ventral patterns of different ages or sexes. It may be pointed out that two (darker and paler) types of dark phase *Puffinus pacificus* are illustrated in addition to the white-breasted phase without comment in the text. The size difference between Sooty and Slender-billed Shearwaters is not shown, and the underwing of the former is too uniformly white. (There is a variable amount of white in the underwing of Slender-billed Shearwaters—Kuroda, *Misc. Rept. Yamashina Inst.*, 28:194, 1967.) The tails of the Streaked and Wedge-tailed Shearwaters are more cuneate than shown. Dorsal patterns of skuas (jaegers) would have provided a better comparison of the relative amount of white in the primaries of each species. (The white on the ventral wing surface of *Stercorarius longicaudus* is too large.) The juvenal plumages of *S. pomarinus* and of frigatebirds should be added. Excellent drawings of the gradual change with age of the body and dorsal wing patterns of *Diomedea albatrus* were recently published by Mr. Norio Yanagisawa (*Yacho*, 32:123, 1967). These should be consulted to supplement the manual.

The final part of the manual is a very useful appendix which consists of seabird lists of the 28 island groups with known status for each species, a brief note on general status of our knowledge of the seabirds of the island group, and reference literature.

In conclusion, this manual of 126 pages is concise and well documented with keys, plumage patterns of birds in flight, clear distribution maps, and avifaunal lists by island groups. It should certainly prove to be a very useful and accurate guide for the sailors, marine ornithologists, and ocean travelers for whom this booklet was aimed. Photographs of representative species and treatment of waters surrounding the area covered by the manual would make the guide more complete. I would like to end this review with congratulations to the author for such a fine work.—NAGAHISA KURODA.

THE BEHAVIOR OF BICOLORED ANTBIRDS. By Edwin O. Willis. University of California Publications in Zoology, Vol. 79, 1967: 127 pp., 3 pls., 21 figs. $3.50.

This paper represents a major advance in our understanding of tropical forest birds. There is so much in it that it is hard to know what to single out for special mention; and there is a lot to learn from it not only about the birds themselves, but also about how to tackle a piece of ornithological field work in the tropics and how to write it up afterwards.

Dr. Willis studied his birds over a period of six years, mainly on Barro Colorado Island, Panamá, with briefer observations for comparative purposes elsewhere. He does not give the grand total of hours spent watching them, but by 1963 he had put in nearly 1,400 hours and his observations continued until 1966. Bicolored Antbirds (*Gymnopithys bicolor*) are specialized followers of army ants and rarely ascend more than a few feet above the ground. And as they tend to be concentrated at certain points within the forest, they can be caught in mist nets, and all their activities can be observed by a human observer at ground level. Moreover, soon after they have been banded they become very tame again. Another great advantage is that the behavior of their associates, the army ants, is already well understood. Thus Bicolored Antbirds are in many ways ideal subjects for detailed study, and the author took full advantage of the fact. He got to know his birds individually, and was able to make sense of the outward confusion characteristic of bird parties as they follow the ant raids.

He shows that there is an elaborate hierarchical system of dominance among Bicolored Antbirds at the ant swarms, and that this is related to the birds' territoriality. Territories are however not "defended areas" from which conspecifics are excluded; they are areas in which the territory-holder is dominant to other individuals. As an army ant swarm crosses from one pair's territory to that of another, the dominance relationships of the birds concerned may be reversed within the space of a few yards. The territorial system thus revealed leads the author to a stimulating discussion of territories in general, and he suggests that the Bicolored Antbird's system may be paralleled in many other species which are usually thought of as nonterritorial.

In describing the Bicolored Antbird's various postures Dr. Willis goes into great detail as to the angles of flection of the limb joints and neck, the orientation of the body, head, and tail, and the position of the feathers of the various tracts; so that I wondered at times whether all these minutiae could be relevant to the main theme. But in fact they are: they lead up to an analysis of display postures which, it is suggested, may be more fruitful than the more usual interpretation in terms of conflicting drives. It would not do justice to what the author calls "the rule of angles" to attempt to discuss it in a few words. The rule itself can be stated simply, that "in aggressive behavior, angles at the extremities are closed and ones nearer the center of the body are opened; in submissive behavior, the reverse is true." The author's development of this theme should be read by anyone interested in the origin and significance of displays.

Detailed description of the Bicolored Antbird's stance and movements is also highly relevant ecologically. One learns that its habit of clinging to vertical perches near the ground and catching its food in the way it does is based on subtle structural adaptations. At the same time, the fact that another antbird of about the same size but with longer, thinner legs, *Myrmeciza longipes*, frequents thicker undergrowth where there are more horizontal perches, takes on a new significance. I believe that detailed studies of this sort, which illuminate the finer structural and behavioral adaptations of tropical forest birds, will throw more light on the general question of bird species diversity than will more superficial, quantitative analyses of bird faunas and vegetation structure.

The presentation and style of this very fine paper are up to the standard of its content. The author is not afraid to make the reader work hard. Sometimes I felt that it would be easier to follow some of the discussions if there were more of the connecting words and phrases that guide one through an argument—"hence," "on the other hand," and so on. But there is a danger in the over-use of such words, as they tend to draw the reader along a predetermined argument uncritically, and their

avoidance may have been deliberate. The drawings, maps, and diagrams are very clear, but it would have been an advantage, and not just an adornment, if there could have been a color plate of male and female Bicolored Antbird. It would often have been a help to have a clear visual image of a species that nobody interested in tropical forest birds can now afford to ignore.—D. W. Snow.

The Parrots of Australia: A Guide to Field Identification and Habits. By William R. Eastman, Jr., and Alexander C. Hunt. Illustrations by William R. Eastman, Jr. Livingston Publishing Company, Narberth, Pennsylvania, 1966: 7¼ × 10 in., xiv + 194 pp., many paintings in col. and photos in bl. and wh. and col. $12.50.

The subtitle of this book states that it is a guide to field identification and habits. But the size of the book and its price suggest either a scholarly monograph or an art work. A cursory examination, however, shows that it is neither of these things and indicates that it should be judged as a naturalist's guide.

It is a matter for praise that the attempt should be made because Australia is lacking in first-rate books on natural history. For birds there is no book equal to the Peterson guides, or "A Field Guide to the Birds of Britain and Europe," though "The Birds of Western Australia" by Serventy and Whittle is a fine work. A book devoted to a small taxonomic group of birds and reduced further by concerning itself with those of one continent is of very different scope from the field guides I have mentioned. One might well ask: What might one expect of such a book?

The student of natural history has three major interests. The first is the study of the adaptation of the organism. He wants to know to what degree it fits the environment where it is found. For the student of avian natural history today, adaptation tends to be very largely the observation of ecology and behavior. In the second place, this interest requires some aid to species recognition. The third major interest is in the origin of the organism. How did it arrive in the habitat where it is found; where did its adaptations form; what are its relatives and how is it related to them in space and time? These, I believe, are the sorts of questions running through the minds of all naturalists. It is these questions which a book on natural history must seek to answer and it is these questions which a naturalist will try to answer himself if he has access to a suitable book. The degree to which the bird watcher can, and wishes to, contribute to a deepening of understanding of birds should never be overlooked. After all, deep interest comes from familiarity or accurate detailed knowledge. A good book on natural history will pave the way for new discoveries and deepen the understanding of bird watchers.

Measured against these criteria this book falls far short of the ideal. One would expect in the introduction that some attention would be given to the place of the Psittaci among birds generally, even if only to draw attention to the problem and to stress here the possibility of new light being thrown on the problem through accurate descriptions of behavior. Next, one would want to see some introductory description of present-day ideas of the classification of parrots. There is nothing on these matters, except what can be deduced from the arrangement of the species and groups in the book. Here there are some peculiar associations and groupings. For example, such diverse genera as *Probosciger*, *Eclectus*, *Calyptorhynchus*, and *Kakatoe* are grouped together under the heading Cockatoos, while the closely related genera of platycercines (*Neophema*, *Psephotus*, *Lathamus*, *Barnardius*, *Platycercus*, and *Purpureicephalus*) are each taken as separate groups. In my view such treatment will confuse the naturalist and orient

him to expect relationships where they do not exist, and to fail to see behavioral and ecological relationships where they do exist. The banding together of the Quarrion, Pileated Parrot (*Purpureicephalus*) Budgerigar, Swift Parrot (*Lathamus*), and Bourke Parrot (*Neophema*) as an "individuals" group has nothing to commend it.

The naturalist normally has little chance to examine the literature on a group and when he seeks further information about a group in a new book he expects to find some sort of summary or reference to contemporary ideas about evolution and the species problem and how it is affecting the recognition of species and subspecies of the group. In this book the naturalist learns very little of contemporary authoritative ideas such as those of Condon and of Cain, in spite of slight references to some matters by the junior author in his preface. To neglect entirely such an interesting example of a cline as that of the *Platycercus elegans* superspecies is to deprive the naturalist of one of the most interesting examples of this phenomenon in evolutionary studies.

Leaving the taxonomic side of natural history and turning to the geography of parrots, much the same adverse criticism can be advanced. There is nothing to tell us how parrots are distributed on the continents, nor why a book about them in Australia should be of such great interest. When it comes to a summary of the habitats or formations of Australia, on which notes on individual species might be based, we find a classification adapted from one which applies satisfactorily only to southeastern Australia, when an acceptable one for the whole of Australia exists in a readily accessible work, "The Australian Environment," compiled by CSIRO. The classification includes a set of "non-natural habitats." Among this set occurs what must be a unique parrot habitat—"tanks, ground-tanks or dams, watering troughs." This poorly presented but important section is supported by a series of fuzzy photographs. One of these illustrates a completely new category in community classification called grass savannah, and in the illustration of this strange new formation we see trees! The so-called *Banksia* blossoms on page 14 are actually bottle-brush spikes of *Callistemon*; not only is the genus wrong but the family also. There are, in this section of the book, a large number of serious errors too numerous to mention here, and the general impression left with the discerning reader is that it would be unwise to try to make use of this part of the work.

The naturalist at this point would like to have a brief survey of some of the salient behavioral, ecological, and morphological features of parrots, so that his attention might be focused on interesting similarities and differences among these birds. This is almost entirely lacking. It is especially sad when so much has been learned of the behavior of Budgerigars by Dr. Barbara F. Brockway.

Finally, we may turn to the main part of the book where the authors seek to show us how to recognize the species and to tell us systematically about their habits. The reader will anticipate from the strictures already put before him that here also the book is very disappointing. The paintings are unlifelike. The colors are frequently inaccurate and the postures sometimes verge on the grotesque. The plate illustrating the *Neophema* group may be the worst. The colors of the female Red-backed Parrot make identification impossible, and I doubt if the Many-colored Parrot could be recognized from the illustration. The photographs are all poor, invariably lacking sharpness. The notes have the merit that they are succinctly set out, and the detail is easily found, but serious inaccuracies appear. For example, the notes for two species on page 24 referring to the plate opposite are interchanged so that correct identification is impossible. Under habitat we find categories such as wet scrub, dry woodland, and brush not listed in the introduction.

As already stated, this is a large and expensive book. It has many imperfections and inaccuracies. The most glaring of these appear to be the work of the senior author who is also the illustrator. The junior author is known to have a good knowledge of the Australian parrots, especially in respect to aviculture. This may account for the notes being markedly better in level than the rest of the book. It is sad but inescapable that this work is ostentatious and at the same time unreliable and superficial. A really worthwhile naturalist's guide to this very colorful and extremely interesting array of species has unfortunately not yet been written.—J. Le Gay Brereton.

The Ray Harm Nature Sketchbook. Written and illustrated by Ray Harm. World Publishing Company, Cleveland and New York, 1967: 8½ × 11 in. (opening lengthwise), vi + 138 pp., 4 col. pls., 88 pencil and wash drawings. $7.95.

This book is made up of a miscellaneous gathering of folksy paragraphs recounting the artist-author's experiences with a wide variety of wildlife from angleworms to foxes with some botany mixed in and even how to make basswood branch whistles and persimmon pie. In fact these "nature notes" together with most of the illustrations originally appeared in the *Louisville Times* as a nature column. It is copiously illustrated with at least one large drawing on each of the double page spreads. It is divided into major sections covering the four seasons.

Many of the drawings are excellent but there is considerable variation in quality. The author boldly attempts some difficult subjects such as the Indigo Bunting feeding young on page 34 or the Woodcock striking a tree on page 79 without too much success. Occasionally he makes a mistake not too infrequently found among bird artists of failing to get the proper proportions of head, body, and tail as in the Blue Jay drawing on page 73, or the Pileated Woodpecker on page 89. He appears a bit weak in his knowledge of anatomy in the colored Ring-necked Pheasant painting opposite page 26 in which the neck is unpleasantly arched. On the other hand, some of his bird drawings are excellent such as the baby Robin on page 36, the Black-and-white Warbler on page 11, and the Purple Finch on page 100. I was somewhat bothered to find the Purple Finch drawing repeated in a slightly larger size on page 130. He exhibits excellent copying ability in the fruit and seed drawing and his snakes are consistently well drawn.

Although there are a few errors in his natural history statements, the great majority contain convincing details indicating that they are accounts of actual happenings as he saw them in the field. I might challenge his portraying a crow carrying a young bird in its claws. Do they not almost invariably make off with such prey in their beaks? Here again I find, page 41, the description of how a female Wood Duck flies full speed into its nesting cavity. Many writers have made this comment whereas I have watched Wood Ducks enter nesting cavities literally hundreds of times and I have yet to see this happen. I find they normally brake their flight a bit as they approach the hole; they alight at least momentarily on the edge of the hole, then tip up and enter the cavity.

Where the author mentions facts derived from reading, he unfortunately fails to mention the sources of his information. For instance on page 95 "a banded Golden Plover covered a distance of over 2,000 miles in two days over water." If this surprising flight is actually authenticated, I would appreciate the reference.

I am sure that the amateur naturalist will find a great deal to interest him in Mr. Harm's Sketchbook even though the $7.95 price for a book with only four colored plates seems high even in these days of rising prices.—W. J. Breckenridge.

HAWAII'S BIRDS. By Hawaii Audubon Society. Hawaii Audubon Society, Honolulu, 1967: 5 × 7 in., 88 pp., 72 col. illus., 4 maps. $2.00.

This attractive little paperback, a product of the Hawaii Audubon Society, and especially its past-president W. Michael Ord, is a completely revised edition of an earlier work ("Hawaiian Birds"). It is profusely illustrated, and each of the 74 species described is accompanied either by a colored photograph, some of them excellent and most of them reproduced quite well, or a reproduction of the magnificent plates from Wilson and Evan's classic "Aves Hawaiiensis" (1890–1899). These latter illustrations, 19 of them in all, picture most of the native land birds, including 13 of the extant drepaniids, and are probably the best illustrations of these birds to be found anywhere at modest price. The presentation of the material is crisp and orderly: a full page is devoted to each species, and contains, in addition to the illustration, brief statements on the distribution, description, voice, and habits of the bird considered. Following this section are three lists of other birds encountered in Hawaii: 41 species of casual or accidental migratory birds; 33 species of introduced gamebirds, with comments on their current status; and 13 recently introduced birds, mostly exotic estrildine finches seen in urban Oahu. The book concludes with maps of the four largest islands, with suggested bird-finding trips on each of them.

The major limitations of the book are its omissions. It fails to mention several of the birds found on the Hawaiian Leeward Islands. Such birds as the Bonin Petrel (*Pterodroma hypoleuca*), Sooty Storm Petrel (*Oceanodroma markhami*), Laysan Duck (*Anas laysanensis*), Millerbird (*Acrocephalus familiaris*), and Laysan Finch (*Psittirostra cantans*) should certainly be mentioned, even if few people have access to them. Harcourt's Storm Petrel (*Oceanodroma castro*) should be listed as probably occurring, at least on Kauai, where its calls may be heard. Certainly a list of extinct birds belongs in any work on Hawaii—such a list would also underscore a brief conservation plea in the preface by Dr. Andrew J. Berger. In spite of this, however, the book (available from the Hawaii Audubon Society, Box 5032, Honolulu, Hawaii 96814) is a bargain, and will be most useful to anyone interested in the birds of Hawaii.—CAMERON B. KEPLER.

HUMMINGBIRDS. By Walter Scheithauer. Translated from the German by Gwynne Vevers. Thomas Y. Crowell Company, New York, 1967: 8½ × 10 in., 176 pp., 76 col. photos, numerous marginal drawings, map. $10.00.

Seventy-six color photographs illustrate a fantastic variety of poses of birds in flight and perched. All show exceptional craftsmanship by the photographer, as well as great patience, for an average of 100 exposures were made in each instance before a satisfactory photograph was obtained. High-speed photography tends to be dull because the wings of birds are frozen in positions which the eye never sees. These photographs are endlessly varied as the hummingbirds twist, turn, fan their tails, and shift their wing positions. The iridescence of their plumage is captured and reproduced to a high degree.

Even perched birds show liveliness and character. On page 43 is a perched Long-billed Starthroat that was, so the author-photographer states, "a little bored." While watching hummingbirds in Madera Canyon in southern Arizona, I have seen these tiny birds, particularly pugnacious Rufous Hummingbirds, similarly stare at me with slightly narrowed eyes and wondered what went on in the cryptic brain of each one.

The variety and interest of the photographs are enough to make this a thoroughly satisfactory volume.

The text, quite as interesting as the photographs are beautiful, is the result of years of research about hummingbirds. The galaxy of names, the marvels of hummingbird flight, their energy and habits are presented vividly. Explicit directions for keeping these tiny birds in captivity are included together with the author's food formula and those of several zoos that have housed them successfully.

Finally the camera and light equipment used and the successful techniques of high-speed photography of captive hummingbirds are given.

The species illustrated are listed according to their scientific names on page 7. Since most readers will undoubtedly be laymen, the absence of common names in this list is somewhat frustrating. It is easy to remember Green Thorntail, for instance, but difficult to remember *Popelaria conversii.*

It is difficult to conceive of a reader who will not be enchanted by "Hummingbirds," but a word of caution is in order. Note the high loss of birds due to travel, their specific requirements in the matter of temperature in their housing, the exacting food needs and the care which they must have daily. Hummingbirds are imported from Central and South America by pet shops and they bring prices beginning at $50. This presents a genuine threat to the hummingbirds and should not be encouraged. Unlike many species of cagebirds, hummingbirds do not breed in captivity, and the drain on the population of these beautiful birds, trapped in their native lands, could be fatal. Only qualified zoos and scientists with the patience to devote unstinting care to the shining birds should be permitted to import them. This reviewer hopes the enthusiastic readers of "Hummingbirds" will be content to grow flowers and perhaps supply bottles of sugar water to attract these fascinating birds to their gardens and enjoy them there as incredibly colorful birds with amazing powers of flight that carry many on annual journeys of many hundreds of miles.—HELEN CRUICKSHANK.

WORLD OF THE GREAT WHITE HERON: A SAGA OF THE FLORIDA KEYS. By Marjorie Bartlett Sanger. Devin-Adair Company, New York, 1967: 7 × 10 in., x + 146 pp., many line drawings by John Henry Dick. $10.00.

In this book the Great White Heron appears as the leading character in an enormously varied semi-tropical ecological area: the Florida Keys. But the heron is presented as but one of the species of birds at home there while some of the colorful fish, the corals, sea urchins, rare crocodiles, the plants and insects as well as the complex humans, past and present, whose lives have left an imprint on the history of the area. To many, these people may actually overshadow the herons, for the Florida Keys attracted under five flags a truly amazing array of *Homo sapiens.*

Damage to the Keys and its life by hurricanes is a recurrent fact of life. On Labor Day, 1936, the worst hurricane ever to strike the Western Hemisphere not only killed hundreds of people, wrecked the railway built under fantastic difficulties by Flagler, but almost decimated the Great White Heron population. Only 146 survived the storm that swept the vegetation from their nesting islands.

In 1938 the Great White Heron National Wildlife Refuge was established. Then in September, 1960, Hurricane Donna swept across the upper Keys. Again many Great White Herons fell victim. By 1965 they had apparently recovered, as 2,100 were counted. Recently they survived an attempt by private industry to use the shallow

waters for shrimp farming which would have involved digging a maze of deep canals where many species of herons feed.

Interest is added to this accurate, informative book by the illustrations by John Henry Dick. These not only depict the variety of the birds that inhabit the Keys country, but many of their companions in it.

To all who plan a trip to the Florida Keys, this book is a "must" for complete enjoyment of that colorful region, and wise travelers will take the book with them. But whether bound for the Keys or not, any arm-chair explorer will delight in the vivid story of the Keys where the tallest white heron in the world is at home.—HELEN CRUICKSHANK.

PUBLISHER'S STYLE IN AMERICAN JOURNALS OF ORNITHOLOGY

The editors of the The Auk, Bird-Banding, The Condor, and The Wilson Bulletin have agreed to make some minor stylistic revisions leading to identical or very similar practices in the four journals in matters, principally, of abbreviations and bibliographic citations. The main objective of this concordat is to make it possible for authors to learn and to apply a single style in the preparation of manuscripts intended for publication in American ornithological journals. The following practices and standards will apply henceforth.

For bibliographic citations in a terminal list of references, authors should use forms stipulated by the Style Manual for Biological Journals, Second Edition (Council of Biology Editors, published by the American Institute of Biological Sciences, Washington, D. C., 1964).

For bibliographic citations in texts not having a terminal list of references, authors should conform with these examples: Crowell (Auk, 85: 265, 1968), or (Crowell, Auk, 85: 265, 1968). Citations of publications having three or more authors should be given in the form, for example, "Jones et al.," in all cases in the text. Consult current issues of the journals for further details.

Abbreviation of mensural units should conform with the C.B.E. Style Manual except in the case of thermometric units, where the degree sign is to be retained, as, for example, 20°C (not 20 C, as given by the Style Manual).

Clock-time is to be designated in the 24-hour system and written, for example, as 08:00 or 17:25 (not as 0800 hours, or 1725 hours).

In cases in which both the common name and the Latin name of a bird species are given in a paragraph heading (for example, in regional lists of species), the common name should be given first.

The Auk, Bird-Banding, The Condor, and The Wilson Bulletin will retain numerous idiosyncrasies in publisher's style, but the editors believe that the concessions to uniformity mentioned above will significantly aid authors in the preparation of manuscripts, while not appreciably diluting the distinctive flavors of the four journals.