

REVIEWS

EDITED BY JOHN WILLIAM HARDY

A field guide to the birds of Mexico.—Ernest P. Edwards. 1972. Sweet Briar, Virginia, published by the author. Pp. vi + 300, 2 maps, 24 col. pls., $5\frac{3}{4} \times 9$ in. Heavy paper, \$7.50. **A field guide to the birds of Mexico and Central America.**—L. Irby Davis. 1972. Austin, Univ. Texas Press. Pp. xv + 282, 48 col. pls., $5\frac{3}{4} \times 8\frac{3}{8}$ in. Hard cloth, \$10.00; flexible binding, \$6.50.—For years, bird watchers in Mexico have had to rely for help in field identification on good old reliable "Birds of Mexico" by Emmet R. Blake (Chicago, Univ. Chicago Press, 1953). A handy pocket-sized book, it packed a surprising amount of information into its text and dichotomous keys; even some of its black-and-white drawings, such as those of the many confusing Mexican orioles, could be useful. Its chief drawback was its lack of colored plates. Now after years of drought we have a torrent. Two field guides to Mexican birds, illustrated in color, are now available, and a third is promised in the near future (as of this writing).

Other than the birds included, the Edwards and Davis books have only two things in common: (1) the colored plates are by relatively unknown artists, and (2) neither the text nor the plates are by Roger Tory Peterson. Detailed coverage in Edwards' book is confined to Mexico, with an appendix listing and briefly describing non-Mexican birds found south through Nicaragua. Davis lists and figures most species through Panama, thus adding a small but distinct South American element to his book.

The colored plates in these books constitute the element that will immediately attract many bird watchers, so they will be discussed first. In the case of the Davis book, this is appropriate, as the plates, by F. P. Bennett, Jr., are its sole asset. They are in traditional field guide format, with figures in essentially identical poses densely crowded together. One useful feature, exemplified by the sparrows of pl. 48, is a $\frac{3}{4}$ horizontal view of the heads of species for which crown color or pattern may be important in identification (although, typically for this book, the crown characters are not mentioned on the plate caption and are given in the text for only four of the seven "head-turned" forms of *Arremonops* shown). One constantly misses the little lines (copyrighted) of the Peterson plates, indicating significant characters for field identification. Given the size of the Central American avifauna, crowded plates are inevitable, and Bennett has, in general, designed his layouts well, although a beginner may well be frightened by his first look at, say, the hawk or hummingbird plates. I have been unable to discover any consistent rationale for the placement of the individual figures on the four plates of hummingbirds, neither close taxonomic relationship nor physical resemblance guaranteeing juxtaposition of species.

No scale is given on the plates, a shortcoming shared by Edwards' book. When groups of birds of two different size classes are shown on one plate, Bennett sometimes divides the plate into two parts separated by a heavy line; for example, on pl. 35 the upper half figures *Polioptila* and *Diglossa*, the lower half the Mimidae and (!) *Tersina*, but there is nothing to indicate the relative scale of the two parts. Relatively few families occupy more than one plate, but when they do, the division can sometimes be confusing. For example, the figure on pl. 5 of *Micrastur mirandollei* is decidedly larger than the figure of *M. semitorquatus* on pl. 4, although the former is actually much the smaller bird. The importance of scale is suggested by a comparison of plates in the two books. On Davis' pl. 1, Bennett portrays *Eurypyga helias* as somewhat

larger than *Burhinus bistriatus*, whereas *Heliornis fulica* is shown as only about half the size of either. On pl. 4 of Edwards' book, *Burhinus* is much larger than *Eurypyga*, which in turn is scarcely larger than *Heliornis*; in this case it is the scale of the Edwards plate that is most grossly distorted.

In general, Bennett's plates are quite successful; some that are rather crude and badly proportioned (pl. 37, vireos and *Coereba*; pl. 47, *Pipilo*, *Atlapetes*, and other large emberizines) may, I suspect, have been among his first attempts. All colors tend to be a little too bold, but the blues are devastatingly overbright. What should be little more than a subtle iridescence completely dominates the Black Catbird (pl. 35) and the martins (pl. 31), while the jays (pl. 32) are virtually fluorescent, and *Corvus imparatus* on the same plate looks like an African glossy starling. A few misidentifications have crept into the plates. Figure 21 of pl. 37 could not possibly have been painted from a specimen of the distinctive dull green Cozumel Island race of *Cyclarhis gujanensis* (which, again typically, Davis calls a full species, *C. insularis*). On pl. 25, Figure 2 was apparently painted from a specimen of one of the black-throated South American races of *Myrmeciza laemosticta* rather than the appropriate black-chested Costa Rican race. The alleged "female" of *M. exsul* on the same plate appears to be a gray-throated male.

The plates in the Davis book, in spite of the points mentioned in the preceding paragraphs, constitute a useful addition to the iconography of neotropical birds. A serious bird watcher who is willing to pay \$6.50 for a set of plates can remove them from the book, relabel them with the generally accepted English names scorned by Davis, and perhaps bind them into a copy of Edwards' book. This procedure is suggested partly as an indication of the worthlessness of the text (more on this later), and partly as a reflection of the superiority of most of the plates to most of those in Edwards; the latter also figure fewer forms.

Four of the colored plates in Edwards' book, painted by the author, have been reproduced from his earlier "Finding birds in Mexico." The color reproduction of these was mediocre in the first book; it has now degenerated to the extent that the Rufous-backed and San Lucas Robins (pl. 17) have become a sickly green. Pl. 1, in color here, was reproduced in halftone in "Finding birds." Although the initials on the colored plate, EMB, are those of Edwards' chief illustrator for the "Field guide," E. Murrell Butler, the earlier version makes it plain that only the bottom row of hawks is his, the rest of the birds on the plate having been done by Edwards himself. Pl. 5, of parrots, is a relatively routine painting by the well-known and brilliant young ornithologist-artist John O'Neill. Douglas Pratt painted a rather somber half-plate (24) of sparrows and juncos, rounded out with an odd assortment of outline drawings, presumably by Edwards. All the rest were done by Edwards' discovery, Murrell Butler. These are, in general, excellent, and often surpass the figures of the same species done by Bennett in the Davis book (notably the galliform birds, doves, kingfishers, wood warblers, and finches). Color reproduction of the Butler plates is quite good, although the colors of the wood warbler plate on the cover were startlingly different among three copies directly compared. Captions are directly on the plate rather than on a facing page (a time-saver), and include code letters indicating the regions of Mexico inhabited by the species, an especially useful innovation to help eliminate geographical improbables while attempting identification of a newly seen bird.

Both of these guides deliberately omit illustrations of species found in the United States and thus figured in the Peterson and Robbins field guides. This admittedly saves space, and is all very well for North American migrant and wintering species, few of

which will be confused with Mexican residents. But it is carried to a somewhat ridiculous extreme by Edwards, who omits figures of the completely neotropical Spotted-breasted Oriole (*Icterus pectoralis*) and Blue Tanager (*Thraupis episcopus*) because of the resident introduced colony of each in southern Florida. It would certainly be advantageous to the bird watcher to have a figure of the Great Kiskadee (*Pitangus sulphuratus*) to compare with that of the very similar Boat-billed Flycatcher (*Megarhynchus pitangua*), even though the former does barely penetrate the U. S. along the Mexican border and is therefore missing from Edwards' plates. Davis figures these essentially Mexican species, although not the migrants. Some of the species omitted by Edwards as being U. S. birds, such as *Centurus aurifrons* and *Arremonops rufivirgatus*, have Mexican races decidedly different in appearance from those found north of the border. Edwards' illustration policy, while no doubt economical, is a real disservice to the beginner in Mexico (as already attested to by my wife).

Edwards' text is well-organized and thorough. The introduction reprints in full a typical species account, and then analyzes it line by line to illustrate its use. The species name is given in English, Spanish, and Latin; Edwards fairly often uses English names differing from those in the near-standard Eisenmann list, but gives the alternative name as well. Seasonal status and altitudinal distribution are then given, followed by a letter code referring to regions of Mexico mapped and explained both in the introduction and on the back cover; if the species is not found uniformly throughout a region, its range is given in terms of states occupied. Another code number refers to the species' position in the rough draft of Edwards' proposed "Worklist of birds of the world"; this might better have been omitted, as the draft (which I have seen) demonstrates that although the worklist concept may prove to be useful, its execution to date leaves much to be desired, hence these numbers in the "Field guide" will undoubtedly be transitory.

The first paragraph in the main text for each species gives an assessment of relative abundance, preferred habitat, distinctive habits, and (usually) voice. The next paragraph is the description, with sex, season and age variants given when appropriate, and diagnostic features italicized. An Edwards innovation is a brief paragraph of description (only) in Spanish. These are much more abbreviated than the English descriptions and are not always accurate. The male Myrtle Warbler is said to have a *black head* with yellow crown and white throat; the American Robin is said to have a white throat; the crown stripes of *Arremonops chloronotus* are described as "café" although its *black* crown stripes help to distinguish it from *A. rufivirgatus* in areas of sympatry, etc.

The species accounts for each family are preceded by a brief general description of the family, with emphasis on the kinds of things that are important in field identification for each group. These introductions are especially well-done.

In summary, the Edwards guide is well worth having, in spite of certain illustration shortcomings mentioned above. Visitors to Mexico need not wait for the publication of Roger Peterson's volume to be assured of a useful and authoritative field guide.

The Davis book is something else again. One is tempted to avoid wasting valuable Auk space in listing its deficiencies, but at least some documentation of any complete condemnation is expected of a reviewer. Three paragraphs of the Introduction are devoted to a rationale for Davis' highly original concepts of taxonomy and nomenclature at the genus and species levels, supposedly "intended to be useful" to the "birders and field students" for whom Davis has elected himself spokesman. Anyone morbidly interested in pursuing this subject further will find a much longer and even more eccentric essay by Davis in "Birding with sound" (*Birding*, 3: 123-150, 1971).

The chief manifestation of this strange taxonomic concept is that virtually all populations recognizable in the field as being in some way different from other populations are given full species status. Of course, some of these that are currently considered as conspecific were in fact first described as separate species (viz. *Atlapetes apertus* and *A. brunneinucha*), and the specific status of some is still being debated by serious taxonomists (viz. *Icterus fuertesi* and *I. spurius*). It comes as no surprise to find that Davis regards all such forms as species. But the appalling extreme to which the practice is carried is well-illustrated by the bobwhites of the genus *Colinus*, all of which constitute a superspecies divided by most authors into either three or four species. Davis lists no less than *ten* full species! I note that he gives the range of *C. cristatus* as extending from Panama to Brazil, thus admitting only a single species in South America. Were he familiar with the variation of *cristatus* on that continent (see color plate, Auk, 37: pl. 5, facing p. 189, 1920), he would no doubt raise the number of "species" of *Colinus* to over a dozen. Four "species" of Canada Goose are listed; three each of the Blue-crowned Motmot, Golden-fronted Woodpecker, and Mangrove Vireo (*V. pallens*); two apiece of the Common Cardinal, Steller's Jay, and Great-tailed Grackle, etc. Lest it be thought that there is anything *consistent* about this policy, I note that there is only one species of Song Sparrow, although the Mexican populations include both the palest and the blackest races of *Melospiza melodia*; this variation is neither described nor figured—in fact, there is no description at all of the species.

Davis in most instances follows standard literature at the generic level, but when he departs from this, it is with a real flourish. His splintering of the genus *Caprimulgus* is well-known, with *Setoalcalis*, *Antrostomus*, *Antiurus*, and *Setopagis* all revived. The Fork-tailed Flycatcher, transformed into the Swallow-tailed Flycatcher, retains its familiar name *Muscivora tyrannus*. The Scissor-tailed Flycatcher, on the other hand, appears as *Tyrannus forficata* [*sic* = *forficatus*] under the name Scissor-tailed Kingbird. If Davis is going to play games of this kind with nomenclature, he should at least discover that the type species of the genus *Muscivora* is *M. forficata*, so that if this species is in fact a kingbird, *Muscivora* becomes a synonym of *Tyrannus* and there is no generic name left for the Fork-tailed Flycatcher—in the unlikely event that these two species are not congeneric.

As suggested above, Davis wreaks as much havoc among English names as among scientific names. In dividing *Tyrannus melancholicus* into three "species" (one of the few "splits" with at least some basis in biological fact), he transfers the English name "Western Kingbird" from *T. verticalis* to his *T. occidentalis*, reviving "Arkansas Kingbird" for the former. His incredible reasoning behind this transfer is not given in the "Field guide," but is explained in the article mentioned earlier. Davis rejects many other English names for neotropical birds, just as they were beginning, blessedly, to become standardized in recent years. Typical is his revival of the utterly inappropriate translation "Large-billed Hawk" for *Buteo magnirostris*, substituted for the charming and appropriate "Roadside Hawk" introduced by George M. Sutton in 1951 and universally adopted thereafter.

Thus far this review might be taken as mere overreaction by a huffy "museum ornithologist" offended by the Davis version of taxonomy. There is, after all, some merit in describing and portraying populations that *can* be distinguished in the field, so long as field distinctiveness is not made the sole basis of a new "taxonomy." But the other defects of the Davis book are much more fundamental, and render the text wholly useless.

The emphasis, commensurate with Davis' specialization, is on identification by sound. Most of the introduction is devoted to a complicated explanation of the terminology

used in this book to describe bird vocalizations. It is possible that thorough familiarity with this terminology *might* make useful to a bird watcher such descriptions as this, from *Tyrannus melancholicus*: "Most of the figures used are those of the type that will be referred to as *wit* (0.03 to 0.04 sec. duration), but there are some that will be referred to as *pit* that are shorter and some called *chip* that are longer (about 0.1 sec.). The overall pitch varies from about A⁴ to E⁵." Davis even admits at the end of some of these interminable paragraphs that the characteristics he describes can only be appreciated when the song is recorded and played back at one-fourth speed!

Apparently only those species that Davis has personally recorded have these paragraphs on voice. At least half the species listed lack any voice description at all, although these include many that are far more often heard than seen. The importance of voice in field identification of wrens, for example, is properly stressed in Edwards' account of the family Troglodytidae, yet Davis presents voice descriptions for only 17 of the 50 "species" of wrens in his book. Even when voices are described in painful detail, the account may be inadequate. For example, the Peppershrike (*Cyclarhis gujanensis*) has two wholly different songs, which frequently alternate, and are adequately described by Edwards (although in my field experience with the Yucatan and Cozumel races, the "descending song" is given more often than Edwards suggests). Davis devotes 6½ lines to one of these two songs, then dismisses all other vocalizations with the dubiously useful statement: "Various other calls are quite different but seldom heard." I would never have recognized the song of the Yucatan Wren (*Campylorhynchus yucatanicus*) from Davis' description. Its most distinctive characteristic is the growling or chortling quality of the sound; Davis devotes almost all of his account to pitch and phrasing, both of which are highly variable, and omits any mention of the quality of the song.

Information presented for those species lacking a "voice" paragraph is variable, generally perfunctory, and not always accurate. There is often (but not always) a paragraph entitled "Field Marks." This is virtually never comparative; one must turn to the plates to try to figure out which species these "field marks" serve to separate. Many times the "field marks" are the subspecific characters of allopatric forms raised to species level by Davis; a bird watcher who knows where he is will scarcely need "field marks" to tell allopatric "species" apart! Examples (p. 119): *Gymnocichla nudiceps* and *G. [n.] chiroleuca*; *Myrmeciza exsul* and *M. [e.] maculifer*. The paragraph headed "range" is, in general, so perfunctory as to be completely useless. There are occasional broad indications of habitat (oak woods, pine woods, cloud forest, etc.), but altitudes, so important in this region of high relief, are given only sporadically. For the 111 "species" of hummingbirds, altitudinal distribution is given in feet for 27; in general terms ("highlands;" "mts.;" "lowlands") for 32; and not at all for 52. Winter ranges of North American birds are usually given in such general terms as "winters to Mexico and Guatemala" or "winters in w. Mexico," without any indication of habitat or suggestion that the species may not blanket this winter range uniformly. The more widely distributed a species, the less space is given range, as a rule. A bird watcher seeing a Black-crowned Night Heron on the Yucatan Peninsula would hardly know he had an unusual record if he had to rely solely on Davis' range statement: "All continents except Australia."

Typical of the book is the account of the Inca Dove, given here in its entirety: "INCA DOVE, *Scardafella inca*. 7 [inches long]. (Considered a race of *S. squamata* [*sic*: = *squamata*] of South America by some.) RANGE: S.w. United States to n.w. Costa Rica." That's it. No indication of where in Mexico it may or may not occur (again, a Yucatan Peninsula record would be a "first"); no plate (the species

occurs in the U.S.); no description or indication to a novice as to how to tell an Inca Dove from anything else, either by sight or sound.

The text is sprinkled with typographical errors ("Wundemann's" for Wurdemann's; "Fulvicolinae" for Fluvicolinae; "S." for P. (twice) in scientific names of martins; "Beechy" for Beechey; "MacGillavray" for MacGillivray; "*pulustris*" for *palustris*; etc.). Some of these are probably not the fault of the printer; some misspellings that I at first took for typographical errors are repeated, so were apparently intended: "fulmer" for fulmar; "grasquit" for grassquit.

It is clear that the University of Texas Press did not submit this book to an ornithologist ("museum" or otherwise) for critical reading. In fact, one eminent specialist on neotropical birds has already expressed to me his indignation at finding his name listed among those who had provided Davis with advice on taxonomic points; it is obvious that Davis did not follow any such advice when it was given. The publication of Bennett's colored plates is, as indicated above, a genuine service to bird watchers, amateur and professional alike. The publication of the text, on the other hand, is a profound disservice. We can only devoutly hope that nobody is naive enough to take it seriously and that all "field students" will avail themselves of Edwards' fine guide and of Peterson's when it appears.—KENNETH C. PARKES.

Handbuch der Vögel Mitteleuropas, Falconiformes, vol. 4.—Urs N. Glutz von Blotzheim, Kurt M. Bauer, and Einhard Bezzel. 1971. Frankfurt am Main, Akademische Verlagsgesellschaft. 943 pp., 3 pls., 128 text figs., 23 tables. 138 DM (subscription price, 119 DM).—With the publication of this volume, the "Handbuch der Vögel Mitteleuropas" has passed the one-third mark toward the original goal of 11 volumes in the short space of 5 years. Although many monographs on the Falconiformes have been published in recent years, Glutz, Bauer, and Bezzel have made an important contribution to ornithology by collecting and summarizing the information on the European species into a single source. The depth of their coverage is far greater than other general monographs on hawks; special attention should be directed to their treatment of changes in distribution and breeding status. The general scheme and coverage for each species in this volume follow those established in the first three volumes as discussed in my earlier reviews (Auk, 85: 522, 1968; 87: 597, 1970). The same excellent standard established for this series has been maintained in this volume. No need exists to repeat my general comments on this "Handbuch" or general remarks on problems of multivolume sets, nor will I attempt to evaluate critically the material presented in each species account; such remarks are better left to reviewers more familiar with the European avifauna and the biology of hawks. Rather I wish to offer a few general comments on this volume.

The only major objection I have is a lack of discussion of the factors, especially pesticides, affecting the decline of many hawk populations. The role of pesticides is mentioned briefly in a few species accounts and reference is made to "Peregrine Falcon populations" (J. Hickey, Ed.), yet this critical factor for the future of hawks is almost ignored. The argument that the pesticide problem is well covered in other works is not valid if the "Handbuch" is a compilation of the biology of central European birds.

The difficult problem of literature citation mentioned in my earlier review (1970: 598) must be noted again. The reader must have all published volumes, plus forthcoming volume 5, available to find the references for all citations; references covering recent distributional data will be included in the next volume. Before using any volume, the reader should note carefully the instructions on literature in the introduction. Any multivolume set published over many years will almost automatically have a cumber-

some scheme of literature citations. One unfortunate consequence of the system adopted in this work is that a person wishing to obtain only one volume must copy much of the references from other volumes.

A similar problem involves citation of this work, which may become a nightmare for bibliographers. Each volume has an editor and authors; the editor changed from Niethammer to Glutz after volume 2, and the sequence of authors switched from Bauer and Glutz to Glutz and Bauer after volume 3. A suggested citation is given on the dust jacket, namely: Bauer and Glutz von Blotzheim (1, 1966; 2, 1968; 3, 1969), and Glutz von Blotzheim, Bauer, and Bezzel (4, 1971). Although the editor is not mentioned in this suggested citation and quite rightly so, I am sure that many libraries will catalog and file this work under Niethammer. Hopefully no additional major changes in authors will be made in future volumes.

The present volume treats 43 species of which 5 are accidental in central Europe. The falconiform volume is the first in this series covering land birds, hence only 8 of the 38 nonaccidental species are also found in North America. The total of 141 species included in the first four volumes continues the low rate of species coverage that I lamented earlier (1970: 599). Moreover the size and cost of volume 4 has grown far beyond those of the first three; indeed the present volume contains almost as many pages as volumes 2 and 3 and costs as much as these two. The biology of hawks is well-known and has been summarized in several recent monographs; I must repeat my earlier conclusion about the anatinid volumes, that the decision to treat the diurnal birds of prey in such detail is unfortunate. I hope that the same energy and care is devoted to groups of less well-known birds for which good monographs do not exist. And I hope that this can be accomplished without increasing the total number of volumes and cost of this series beyond reasonable limits.

In my earlier reviews, the difference between single volume and subscription price was noted. I would like once again to urge all ornithologists to order the "Handbuch der Vögel Mitteleuropas" for their institutional libraries while it may still be obtained at the lower subscription rates. The "Handbuch" is an important review source for ornithologists working in almost every branch of avian biology. However I would not recommend this book for someone wishing to have a single work on the Falconiformes because of the price compared to the coverage of the entire order. Brown and Amadon's "Eagles, hawks and falcons of the world" with its excellent color plates, for example, is a much more useful monograph for most ornithologists at a slightly higher price. I do not gainsay the value of this latest volume of the "Handbuch," but I believe that it has been priced out of the reach of most individuals and possibly a number of libraries.

The speed at which these volumes are being published is noteworthy and we can expect to see the completion of this series in the early years of the 1980s; I wish the authors every success in attaining their goal. Ornithologists are again indebted to Drs. Glutz von Blotzheim and Bauer for continued excellence in their monumental task, and they, together with Einhard Bezzel, are to be congratulated for writing an outstanding volume on falconiform biology.—WALTER J. BOCK.

Spechte fremder Länder.—Dieter Blume. 1971. Die Neue Brehm-Bücherei, Band 434. Ziemsen, Wittenberg-Lutherstadt. 117 pp. 12.40 DM.—The bird monographs of the Brehm paperback series, written in German, enjoy a wide circulation among amateur ornithologists for their uncomplicated and objective presentation and interpretation of scientific facts. With his "Woodpeckers of foreign countries," Dieter Blume, an ardent woodpecker investigator, gives us the third and final part of a

monograph on the Picinae. With the incorporation of more than 80 references, 10 of which are his own, Blume presents a neat and well-illustrated account of the biology and systematics of the woodpeckers. Thereby he points out the special anatomical, morphological, ecological, and behavioral features of this distinct group of birds.

In the general introduction, Blume describes such adaptations as ground-probing, wood-pecking, climbing, tongue mechanisms, and other traits. He compares allopatric and sympatric patterns of distribution, nesting habits, behavioral adaptations and communication. His special attention is focused on six groups of woodpeckers, a system used by Berndt and Meise (1962) in their "Natural history of birds."

1. The "scimitar-beaked" woodpeckers include the genera *Geocolaptes*, *Colaptes*, *Nesoceleus*, and *Chrysopytilus*. L. Short's study of the flickers serves as the example of the distribution and speciation of *Colaptes* in North and Central America. The account of the flickers' behavioral peculiarities is based on the well-known studies by L. de K. Lawrence, L. Kilham, and G. J. Noble.

2. The "barred" woodpeckers, predominantly ground-probing species in search of ants or termites, involve the genera *Piculus*, *Campethera*, *Celeus*, *Micropternus*, *Picus*, *Dinopium*, *Gecinulus*, and *Meiglyptes*. Little is known about the behavioral and ecological systems of most of these birds, some of which are surface-collectors rather than peckers.

3. The systematics of the "woodpeckers that store food" remains unsatisfactory. Blume lists the genera *Asyndesmus*, *Melanerpes*, *Centurus*, and *Leuconerpes* but adopts the suggestions of Selander and Giller, who restrict this group to two genera, *Centurus* and *Melanerpes*, although they noted certain transgressions of characters that might warrant a monogeneric treatment in the sense of Peters' Check-list. Courtship and ecological differentiation are mentioned as isolating mechanisms in the case of sympatric species. Kilham's study of the Red-bellied Woodpecker serves as the example of an analysis of storage, territorial, and courtship behavior of a typical representative of this group.

4. The "sapsuckers," *Sphyrapicus*, are derived from the group of "pied woodpeckers" although certain behavior patterns show a close resemblance to those of the food-storing species. Systematics and distribution are exemplified by T. R. Howell's study of racial and sexual differences in migration in *Sphyrapicus varius*, which reveals an inverse correlation between the intensity of plumage coloration and distance of migration. Aspects of the social and reproductive behavior are based on L. de K. Lawrence's field work.

5. The 35 species of *Dendrocopos* comprise the majority of the "pied" woodpeckers with their 12 genera: *Trichopicus*, *Veniliornis*, *Dendropicos*, *Dendrocopos*, *Picoides*, *Sapheopipo*, *Xiphidiopicus*, *Polipicus*, *Mesopicos*, *Thripias*, *Hemicircus*, and *Blythipicus*. These small to medium-sized woodpeckers are rarely found on the ground. Sympatric occurrence is correlated with differences in body size and ecological diversity. Again, an important part of the discussion of behavior is based on L. de K. Lawrence's field studies. A paragraph of special interest involves data by K. Ruge on the behavior of the little-known Three-toed Woodpecker, *Picoides tridactylus alpestris*.

6. The group of "giant" woodpeckers encompasses birds of a body length between 300 and 565 mm, the genera *Chrysocolaptes*, *Mulleripicus*, *Dryocopus*, *Phloeocastus*, and *Campephilus*. They are thought to rank at the top of the respective phylogenetic lineages of the woodpeckers. Compilations of data on the Pileated Woodpecker (*Dryocopus pileatus*) and Ivory-billed Woodpecker (*Campephilus principalis*) form the nucleus of this chapter.

The names of the genera, species, and subspecies of the woodpeckers are listed in a register. Blume created the crude but sufficiently informative pictures of 65 woodpecker species shown on four color plates. His survey serves its purpose well as a simple, stimulating, and thoroughly biological introduction to the Picinae.—E. G. FRANZ SAUER.

The ecology and behavior of the Lewis Woodpecker (*Asyndesmus lewis*).—

Carl E. Bock. 1970. Berkeley, University of California Press. 100 pp., 6 pls., 15 text figs., 18 tables. Paper. \$3.00.—This publication combines an extensive review of the literature with personal observations on the feeding, food-storing and, to a limited extent, the breeding habits of the Lewis Woodpecker (*Asyndesmus lewis*). *Asyndesmus*, with its slow, almost soaring type of flight, is highly specialized for flycatching, but in fall and winter months it gathers and stores large quantities of acorns, or in some areas, almonds. Bock stresses that the species is highly opportunistic, settling in localities where insects in spring or mast in the fall are locally abundant.

In the Central Valley of California, for example, where oak trees have been largely removed, *Asyndesmus* stores almonds from the extensive orchards in the bark of oaks or in split telephone poles. Each bird caches and defends its stores individually. In addition a woodpecker spends much time working over the stores and rearranging them in winter months. An indication of the importance of these stores is the vigor with which the birds defend them. Here Bock devotes a main section of his account to the competition between *Asyndesmus* and the ecologically similar Acorn Woodpecker (*Melanerpes formicivorus*). When *Asyndesmus* arrives in areas where the Acorn Woodpecker is already in residence, it is able to establish itself after a period of competition in which it has the advantage of larger size. The end result of conflicts is an inter-as well as an intraspecific spacing. Bock discusses well the biological aspects of the competitions involved and of factors that bring about a balanced co-existence. *Asyndesmus*, he stresses, defends stores but has no definite territorial boundaries.

Lewis Woodpeckers are capable of nesting semigregariously, occasionally within 15 m of each other or even in the same tree, without strife. This tolerance may enable the species to take advantage of localities where insect populations are especially large. Bock goes into details of feeding behavior in such situations. Most prominent is flycatching, the bird initiating hawking flights from prominent perches. The birds have remarkable eyesight, being able to see and fly after insects 60 m away. *Asyndesmus* may also forage in ground-brush for such prey as beetle larvae or caterpillars. Essentially none of its foraging involves pecking into wood in the more usual woodpecker manner.

Bock's account of the breeding behavior of *Asyndesmus* takes up only a fraction of his publication. A difficulty here is that the species is so nearly monomorphic that it is almost impossible to tell the sexes apart in the breeding season. *Asyndesmus* may remain paired year after year and even return to and reuse the same nest hole, as Bock demonstrated by capturing and color marking two of them. Their preference for using old nests and the tendency to nest in natural cavities probably reflects their poor ability to dig into wood.

It is impossible to cover all the topics presented in this publication in a short review. Among other features, Bock discusses the anatomy of *Asyndesmus* in relation to its habits, the question of sexual dimorphism, and possible evolution and relationships.

Looking at the work critically, one wonders whether the original and personal observations might not have been presented in a single and substantial article in the periodical literature. With possibly fewer restrictions as to length, the account in monograph form is often repetitious, and extensive citations from the literature often

obscure what is new. Bock stresses that *Asyndesmus* is a unique species, but devotes almost no discussion to the Red-headed Woodpecker (*Melanerpes erythrocephalus*) that has many remarkably similar habits, such as its manner of flycatching. It should be emphasized also that the breeding behavior of *Asyndesmus* is still far from adequately described and is in need of further investigation. The above criticisms, however, are minor. In this monograph on the ecology and behavior of the Lewis Woodpecker Bock has made a valuable and readable contribution on a most interesting species.—LAWRENCE KILHAM.

Journey across Africa.—Recorded and narrated by Rowan B. Martin. Cover photographs by Michael Eustace. 1971. Parlophone Records PCSJ(D) 12079. EMI Ltd., London, England. 33 $\frac{1}{8}$ rpm monaural phono-disc in jacket.—The recordings on this disc were made during an 8-month journey across southern Africa from Mozambique to Angola by way of Rhodesia, Botswana, and South West Africa. Each of the 15 bands represents a major camping area and presents the typical mammal and bird vocalizations to be heard there. A wide range of sounds is heard, from lions to fruit bats and from sandgrouse to starlings—in all, 35 bird species and 17 mammals. This is not an identification record—on the jacket you are invited to “relax in an armchair, close your eyes, and allow yourself to escape into the African bush.” Mr. Martin’s narration tells you what is going on at all times. The narration is simple, explicit, and—best of all—reasonably brief. Mr. Martin has a pleasant speaking voice, but most of the time the mammals and birds speak for themselves. The jacket gives a chronological list of the birds and mammals, but instead of scientific names, each bird is keyed by number to Roberts’ “Birds of South Africa,” which is somewhat inconvenient if one doesn’t happen to have a copy of Roberts handy.

The production is good and clear with no distortions, and the recordings themselves are technically excellent. Though Mr. Martin is not an ornithologist, he has identified all the birds correctly. I cannot answer for all the mammals, but if he can correctly identify a *Cisticola* I suspect he got the mammals right as well.

The bird recordings are of uniformly high quality, and while many are of common birds, I suspect about six may be “firsts.” Among these a plover (*Vanellus albiceps*), a chat (*Thamnolaea arnotti*), and a starling (*Onychognathus nabouroup*) are of particular interest. The star performers are the Morning Warbler (a turdine) (*Cichladusa arquata*) and the Damara Rock Jumper (*Achaetops pycnopygius*). In deference to their beautiful and varied songs, each has been given nearly a full band to itself, for which the producers are to be commended highly.

The most ornithologically interesting thing on the record is unquestionably the song of the Rock Jumper, a bird of uncertain relationships and I suspect heard here for the first time on a disc. Placed by Roberts (The birds of South Africa, London, H. F. & G. Witherby Ltd., 1951) in Timaliidae, White (Bull. Brit. Ornithol. Club., 80: 20, 1960) transferred it to the genus *Sphenoeacus* (Sylviidae). Anyone hearing its rich, thrushlike warble might tend to doubt the latter classification, but on the other hand, the song is not like that of any other African bird I know and I would not know where to place it.

The mammal recordings are about the finest I have ever heard. Many are surely “firsts,” and of particular interest are the suricate meerkat (Viverridae) and the honey badger (*Mellivora capensis*). In sum, Rowan Martin’s production is a fine piece of work and contains much more of interest than the title or the jacket might imply. I can recommend it for both information and entertainment.—G. STUART KEITH.

Systematics and behavior of some North American woodpeckers, genus *Picoides* (Aves).—Lester L. Short. 1971. Bull. Amer. Mus. Nat. Hist., vol. 145: article 1. 118 pp.—This paper presents the results of field and museum studies on the ecology, behavior, hybridization, and evolution of North American woodpeckers in the genus *Picoides*. Short includes *Dendrocopos* in this genus; it is generally agreed that *Picoides sensu strictu* and *Dendrocopos* are closely related, although Goodge (Auk, 89: 65, 1972) recently presented anatomical evidence supporting continued separation of the genera.

This work is a wide-ranging but by no means all-inclusive study of this group of birds. The major emphasis is on the relations between the Nuttall Woodpecker (*nut-tallii*) and the Ladder-backed Woodpecker (*scalaris*) in southern California and northwestern Baja California. A total of 6 months' field work was conducted in the two regions, with limited data also gathered on the Downy (*pubescens*) and Hairy (*villosus*) Woodpeckers. The paper builds from discussions of distribution, hybridization, and behavior ultimately to a phylogeny and evolutionary history of all New World "*Picoides*."

The Nuttall and Ladder-backed Woodpeckers are nearly allopatric throughout their ranges in the western United States. Short investigated the two areas of limited contact—one of parapatry in southeastern California, another of sympatry in northwestern Baja California. Although occasional hybridization does occur, Short retains their specific status, but places the two in the superspecies *scalaris*. Short also discusses three known hybrids between *nut-tallii* and *pubescens* (two, discovered by Short, were collected in southern California near the limit of *pubescens*' range). The only other known hybrid in New World "*Picoides*" is a *scalaris* × *villosus* specimen collected by Miller (Evolution, 9: 317, 1955). Miller felt that this hybrid strongly resembled the Red-cockaded Woodpecker (*borealis*) and suggested this cross as a possible origin of that species; Short's phylogenetic scheme discounts this possibility (see below).

A large part of this paper consists of an analysis of intermediates between *nut-tallii* and *scalaris*. In areas of contact *scalaris* is more restricted to desert scrub and isolated riparian vegetation while *nut-tallii* occurs primarily in more extensive riparian situations, especially when associated with chaparral. Therefore even in areas of sympatry contact and subsequent hybridization are limited.

Short encountered considerable difficulty in detecting and analyzing presumed hybrids and introgressants because many of the distinguishing characters of the parental types are subject to seasonal wear and discoloration that make the two species look more alike. He describes 8 hybrids and 36 specimens representing either hybrids or strongly introgressed individuals. In addition (p. 115), "Variation in the two species indicates that introgression is affecting 10 percent or less of their southern California populations, and 12 percent (*nut-tallii*) to as much as 30 percent (*scalaris*) of their populations in northwestern Baja California." This level of introgression cannot be explained via current levels of hybridization, according to Short, suggesting greater contact in the past and perhaps ongoing speciation.

Another major section of this work includes an analysis of agonistic displays and vocalizations. Nearly all of Short's own data are on the Nuttall and Ladder-backed Woodpeckers, with some work on *pubescens*, though he brings in other work on a number of species in the group. The use of sonograms and drawings from motion picture frames is commendable and adds a great deal to the quality of this section. The treatment of visual signals is especially readable and the illustrations give the reader a solid feeling for the behavioral repertoire of these species. The categorization of calls and behaviors greatly simplifies the task of anyone working in the field on these or related species.

Subsequent sections on observed agonistic encounters and breeding activities are brief (as was Short's time in the field) and leave much room for further work. Still it is apparent that interspecific encounters are not uncommon, reflecting the general ecological and behavioral similarity of at least *villosus*, *pubescens*, *nuttallii*, and *scalaris*. From Short's observations behavior related strictly to courtship and pairing is limited in these woodpeckers, especially in contrast to the frequency of agonistic encounters. This may well be a result of the more or less permanent pair relationships in woodpeckers.

The impression one gains from Short's analysis of the behavior of these birds, the hybridization that occurs, and their general ecological similarity is that of a recently evolved and only moderately divergent group of species, the New World "*Picoides*." Similarities seem much more obvious than differences. Although Short comments on this point several times, he nevertheless concludes this paper with a phylogeny of the group. He recognizes four major subgroups in New World *Picoides*: 1) the three-toed species (*arcticus* and *tridactylus*), 2) *albolarvatus*-*villosus*-*stricklandi* (including *arizonae*), 3) *borealis*-*pubescens*-*nuttallii*-*scalaris*, and 4) *lignarius*-*mixtus*. The next level of relationship links groups 1 and 2, and groups 3 and 4.

Perhaps most surprising is the fact that by this scheme the Hairy and Downy Woodpeckers are only rather distantly related within the group, their striking similarity in plumages being considered an example of convergence or parallelism. The evidence Short brings to bear on this is not overwhelming. He presents the three known *pubescens* × *nuttallii* hybrids, the size and ecological similarity, and largely allopatric distributions of *pubescens* and the ladder-backed species as evidence of their close relationship. No hybrids are known between *pubescens* and *villosus*, but Miller collected a *villosus* × *scalaris* hybrid, and Short himself notes that (p. 116) "all of the New World species of *Picoides* are sufficiently closely related that rare hybrids may occur between any two of them." It is tempting to speculate that there may be *pubescens* × *villosus* hybrids around that have escaped detection because of the similarity of parent phenotypes.

It would seem no more arbitrary to consider similar body size the result of convergence than it would plumage patterns. Also allopatry vs. sympatry is not necessarily any indication of close vs. distant relationship. For example, *Picoides arcticus* and *tridactylus* are widely sympatric yet very closely related.

By Short's scheme, "*Picoides*" *villosus* is more closely related to the three-toed species than to the ladder-backed "*Dendrocopos*" group. This seems perhaps a premature conclusion in light of 1) Goode's anatomical evidence cited earlier, 2) the absence of known *villosus* × *arcticus/tridactylus* hybrids, and 3) the lack of detailed ecological-ethological studies of at least New World three-toed woodpeckers.

A major difficulty in evaluating Short's evolutionary scheme lies in the fact that much of it seems to be based upon an as yet unpublished manuscript, "A revision of the genera of woodpeckers," by Short and Walter Bock. Considering Short's field and museum experience with woodpeckers and Bock's anatomical background, this work should be enlightening. Without it the present study remains difficult to interpret. For example, Table 27 (p. 110) lists "primitive," "derived," and "very specialized" characters of New World *Picoides*, yet little explanation is offered of the reasoning behind this classification. One assumes it is contained in the "Bock and Short, MS" cited throughout the paper. It is as if we have been given an appendix without yet having read the book to which it belongs.

Nevertheless this is an important paper contributing to an already sizeable collection of works concerning the ecology and systematics of North American woodpeckers.

Short obviously is more than willing to speculate on matters of evolution and phylogeny (indeed, he calls it a "hypothetical history," p. 112). Presumably such speculation is healthy in that it stimulates work that may help clarify further the relationships in this complex group of birds.—CARL E. BOCK.

The birds of Zambia. —C. W. Benson, R. K. Brooke, R. J. Dowsett, and M. P. S. Irwin. 1971. London, Collins. Pp. 414, maps, photos, 12 col. pls. £2.50.—Of all the larger countries of Africa, Zambia has had its birds collected and their distributions mapped with the greatest vigor. This book is the fifth annotated checklist of Zambian birds to appear in the past 40 years. It covers all 699 species known to occur in Zambia, as well as those of neighboring areas likely to be found in the country eventually, and also includes the dates migrants occur, the months of known breeding, and general comments on habitats of each species.

The recent history of ornithology in Zambia is one of collecting small samples of many species in favored collecting sites near local government headquarters and nice camping spots. These specimens and the local distributional notes resulting from them have soundly documented "The birds of Zambia." More than 500 references are coded in the species accounts and listed in abbreviated form, without author or title, in an appendix. Another appendix gazetteers the latitude and longitude of each locality (some 500) mentioned in the book, and the end sheets are maps of the Zambian districts, provinces, and national parks.

The emphasis on local distribution makes the book particularly useful. Some central African species are more readily seen in Zambia than in other countries because tourism is encouraged there. The choice of the 120 species illustrated in the fine color plates reflects this aspect of Zambian bird life. Pictured are nearly all the uniquely central African gallery forest birds of Salujinga in Zambia's northwest corner, including such species as the White-bellied Kingfisher (*Alcedo leucogaster*), the Honeyguide Bulbul (*Baeopogon indicator*), and the Black-collared Bulbul (*Neolestes torquatus*). The color plates are the work of A. M. Hughes and the birds are big and bright; the iridescent sunbirds come across particularly well. The book should appeal to readers who already have Roberts' "The birds of South Africa" (London, H. F. & G. Witherby, Ltd., 1951), which illustrates most of the other Zambian birds.

Travelers and biologists in Africa will also appreciate the photographs of Zambian habitats and the vegetation descriptions and lists of their characteristic birds. The authors recognize more kinds of forests and woodlands than are obvious to my non-botanical eye (and perhaps more than the birds themselves recognize, inasmuch as most of these woods lack any unique or nearly-endemic bird species), but still it is nice to have the descriptions of central African vegetation.

Early in 1972 I had the opportunity to use the book in the field in Zambia and so to evaluate the details of the local distribution of birds on their own home ground. Nearly all my observations on distribution and the seasons of breeding and migration were matched by the book's species accounts. I saw six species in localities not detailed there (including the indigobirds *Vidua chalybeata centralis* and *V. funerea* just west of Sumbu in the Northern Province), extended the seasons of migration or breeding in two species, and determined the first laying date for Zambia in the parasitic cuckoo, *Chrysococcyx cupreus*. Let me compare the situation to that in my home area: several species that breed regularly in Michigan are not shown to occur in the state in that near-excellent field guide "Birds of North America" (Robbins et al., New York, Golden Press, 1966) nor in the most recent state checklist. Although "The birds of Zambia" does not document the occurrence and breeding of every bird with 100 percent precision,

no regional bird book ever will do this, at least so long as birds continue to live and to disperse.

Common names in the book include several new ones, some only locally appropriate. The "Pink-backed Firefinch" (*Lagonosticta rhodopareia*) has a brown back in the nominate subspecies in east Africa, and the use of the name of the host in the parasitic finches (as the "Pink-backed Firefinch Indigobird" for *Vidua purpurascens*) is cumbersome and inappropriate in those cases where the viduines have taken on alternate species of hosts at the individual or population level.

Taxonomic treatment is characterized by lumping of poorly-defined genera and by regarding allopatric forms with the slightest zone of sympatry as distinct species. The book was written before publication of Hall and Moreau's recent "An atlas of speciation in African passerine birds" (London, Trustees Brit. Mus. (Nat. Hist.), 1970), but except for forms treated novelly in that work, the book reflects the most recent systematic thought (much of it by Benson and Irwin) on the birds of south central Africa. One novelty in systematic arrangement is the recognition of a family Malaconotidae for the bush shrikes, and it is argued briefly that they are "oversized warblers."

The species accounts provide a wealth of information, some of it drawn from other parts of Africa. There is no authenticated breeding record of the Osprey (*Pandion haliaetus*) for Africa, though Ospreys are occasionally seen across the continent. Killing for its feathers extirpated the Ostrich (*Struthio camelus*) from Zambia. A few Shoebills (*Balaeniceps rex*) still live around the Bangweulu Swamps. The Grey Heron (*Ardea cinerea*) formed breeding colonies on Lake Kariba shortly after the lake was dammed up a decade ago. White Storks (*Ciconia ciconia*) have decreased drastically in Africa, probably from agricultural poison spraying to control the locusts upon which they feed. A White Stork ringed as a nestling in South Africa in December and recovered in March on the Zambia-Tanzania border may have been migrating north with the storks that breed in Europe. Examination of Barn Owl (*Tyto alba*) pellets turned up the first known record for Zambia of one rodent species. The one species of bird restricted to Zambia, the White-chested Tinkerbird (*Pogoniulus makawai*), is known from only a single specimen. Considerable biological information is included for the swifts, a group studied by Brooke. An appendix lists some ringing recoveries of Zambian birds. Several water birds move between Zambia and South Africa, and European Swallows (*Hirundo rustica*) wintering in Zambia summer in western Europe, Czechoslovakia, and the U.S.S.R.

"The birds of Zambia" not only is of a high standard comparable to North American regional works, but it also is one of the best books ever written on the distribution of bird species in any African country. Of field guide size and nicely produced, the printing errors are not troublesome. This is the first noncommercial book in Collins' field guide series; publication was sponsored from private funds by the Wild Life Conservation Society of Zambia. I hope the book's success leads to more publishing ventures of this kind.—ROBERT B. PAYNE.

Birds of the Lake Tahoe region.—Robert T. Orr and James Moffitt. 1971. San Francisco, California, California Acad. Sci. Pp. ix + 150, 16 black-and-white photos, 1 col. pl. No price given.—This attractively produced work should be of general interest to naturalists in the western United States, particularly to those fond of the biota of the northern Sierra Nevada. Orr has assembled the extensive manuscript notes of the late James Moffitt, records from the literature, notes of several birders now or formerly

resident in the area, and information from his own experience, to provide a summary of historical occurrence and of present status of species of birds in the Lake Tahoe region. Species accounts typically include dates of records, numbers observed, habitats utilized, and data on nests, food habits, and numbers of specimens collected; some of the anecdotal natural history information, for example the 9-page account of the Common Merganser, is rather undigested. A frontispiece in color by Allan Brooks portrays the Sierran race of the Pine Grosbeak, and 16 fine black-and-white photographs, taken between 1920 and 1960, illustrate the major habitats studied. Useful information on winter occurrence of species is provided.

Most of the records that form the basis for the book were obtained from the California portions of the lake basin and are rather old (1920s), but these provide the opportunity for one to seek historical avifaunal change in a region of intense recent human impact. There is no faunal analysis. Although pronounced differences exist between the habitats and avifaunas of western (northern Sierra of California) and eastern (Carson Range of Nevada) montane areas of the Tahoe Basin, these differences receive only casual attention, partly perhaps because of the continuing scarcity of published data for the Nevada section.

When examined from a broad distributional perspective, the information presented offers surprisingly little that represents an advance beyond the statements of Grinnell and Miller (*Pacific Coast Avifauna*, No. 27, 1944) for the northern Sierra. As no compilation of avifaunal data specifically for the Tahoe region has been published previously, the present book will be useful to the multitude of full- or part-time naturalists that visit Lake Tahoe, particularly the California section. Furthermore, at a time when ecologists are preoccupied with geographic variation in species diversity and commonly speculate promiscuously from a basis of anecdotal or poorly documented faunal literature, a paper such as Orr's should have lasting utility. Orr's work is thoroughly grounded on carefully sifted records and on an extensive and critically identified collection of specimens from a fairly restricted area and span of time.—
NED K. JOHNSON.

Birds of the Buffalo Creek Region, Armstrong and Butler Counties, Pennsylvania (including the Todd Sanctuary Area).—W. E. Clyde Todd. 1972. 8468 Peebles School Road, Pittsburgh 15237, Audubon Society of Western Pennsylvania. xi + 21 pp.; illus.; cover, a pair of Magnolia Warblers from a G. M. Sutton plate; frontispiece, an excellent photograph of 87-year-old Mr. Todd; other pictures are an 18th century photograph of the Todd farmhouse, 4 modern photographs, 1 map of Buffalo Creek Region, and 4 bird drawings. \$2.50.—This small fine paper is an ornament to W. E. Clyde Todd's bibliography and to editor Mary Heimerdinger Clench's perceptive, sensitive understanding of his precision. It demonstrates the literary and professional abilities of both author and editor. It is also a rather exciting adventure in which the present and the past are so interwoven it is hard to separate them. Mr. Todd's ornithological production spanned 76 years. He was a contemporary of many legendary greats before the turn of the century and in his work was still a contemporary of the outstanding leaders in ornithology, young and old, at the time of his death. Excerpts in this paper from his teen-age diaries show him to have been a master of English prose in his youth (as were Brewster and Chapman), as well as in his prime and in his declining years. Mr. Todd's systematic list of "Birds of the Buffalo Creek Region" as observed from 1889 to 1898 with notes on the same region—the Todd Sanctuary—made in 1969 by Joe Grom is the basis of an interesting study in faunal changes in one protected region over the years.—ELIZABETH S. AUSTIN.

Nightwatchmen of bush and plain/Australian owls and owl-like birds.—David Fleay, M.B.E., B.Sc., Dip. Ed., C.M.Z.S. 1968 Australia, 1972 New York, Taplinger Publ. Co. Pp. 12 (unnumbered) + 163, distribution map of Australian Hawk Owls (*Ninox*) [after G. F. Mees 1964] on front and back endsheets, 118 photos, of which 1 of the 17 in color is of an oil painting. \$8.50.—Not since I read Bulletin 170 of the Smithsonian Institution, United States National Museum, "Life histories of North American birds of prey" (part 2, 1938) by Arthur Cleveland Bent have I found as much detailed information about the owls of one continent between the covers of one book, and the photographs—most of them by the author—far surpass any owl photography in the Bent volume. David Fleay has produced a well-written account of the birds he has not only lived with and studied but obviously loved since he was a child. His enthusiasm makes his account exciting as well as thorough. While he is no Shakespeare come to ornithology, his book is too fine to be nit-picked. Still I do wish for the sake of posterity and possible foreign readers he had not used any slang, such as "The comment . . . on this variability of clutch size is obviously on the ball" (p. 126).

Mr. Fleay gives complete life histories of *Ninox strenua*, *N. rufa*, *N. connivens*, *N. novaeseelandiae*, *Tyto alba*, and *T. castanops*—also interesting notes on food habits of *T. longimembris* and nesting data for *T. tenebricosa*. Some of the nesting data are for aviary birds and some for birds in the wild. The accounts are enlivened by odd bits and pieces of information on behavior. A paragraph telling how three caged female Barn Owls without the "assistance" of a male laid more than 50 eggs in 2 months made me feel that it was surprising that Australians had not domesticated Barn Owls instead of chickens.

The first 12 chapters of the book are so very interesting and seem so complete that chapter 13 about "Owl-like birds that are not owls at all" is something of an anticlimax. It is interesting but seems to belong to another book. Perhaps it was added at the behest of the publisher in imitation of some of the bad owl books I have reviewed in the past years where scant owl information was padded with tales of frogmouths and nightjars.

The book has no bibliography, but references are carefully cited and, as much of the material is in print for the first time, a bibliography is unnecessary.—ELIZABETH S. AUSTIN.

Bird walk through the Bible.—Virginia C. Holmgren. 1972. New York, The Seabury Press. Pp. viii + 216, illustrated. \$6.95.—So many books and articles have been written about birds of the Bible that anyone adding to these writings should at least receive an award for bravery. Virginia Holmgren has written a good book with some interesting tables, but she adds very little to the ornithological information Gene Stratton Porter presented in her "Birds of the Bible" in 1909 and Alice Parmelee repeated in 1959. She has ignored research of the past 15 years completely in writing of many birds, for instance the Ostrich, and calling the body of her book a "glossary" stretches the accepted meaning of that word and does not make up for the missing index. I wish she had identified her Hebrew scholar more clearly. David Bernstein is a name as common as John Smith, and tells us nothing. The Seabury Press specializes in publishing religious books, and this will probably be more interesting to Bible students than to ornithologists. (P.S. Each of the three Bible bird books I have mentioned has "to my mother" as a prominent part of the dedication!)—ELIZABETH S. AUSTIN.

Birds of North America.—Austin L. Rand. [1971?] Doubleday and Co., Inc., New York. 256 pp., 51 black and white photos, 66 color photos (unnumbered), cloth, $6\frac{1}{4} \times 9$ in. \$9.95.—This is one of the new series of popular natural history books published by Doubleday on animals of North America. I have also seen the ones on mammals, reptiles and amphibians. They are all cut from the same cloth and in general not of much interest to the professional or the serious amateur, except for their lovely photographs, which are consistently good, and largely excellent. The text is very informal with the discussion divided by families and subfamilies or similar subdivisions. The distinguished author of the bird volume, Dr. Rand is of course too wise and knowledgeable to make outright errors in his text as some less qualified nature writers consistently do. Yet no condensation can possibly avoid the errors of omission and oversimplification, which are not worth pointing out as they convey no misinformation. For readers of this journal, and really all biologists, a work such as Gillard's "Living birds of the world" or Austin's "Birds of the world" is preferable. The lack of publication date is inexplicable.—JOHN WILLIAM HARDY.

The fowles of heauen or history of birdes (by Edward Topsell).—Thomas P. Harrison and F. David Hoeniger (Eds.). 1972. Austin, Univ. Texas Press. xxxiv + 332 pp., 61 reproductions of bird plates in ms. and 3 photographs of the easily-read handwriting of the scribes. \$15.00.—This book will not be useful to the working ornithologist. The manuscript that it reproduces in print is not scientifically significant. Topsell was neither an outstanding author nor a recognized naturalist in his own time (1572–1625?). He was a translator (in his other known works) who decided to undertake a history of birds in English, using the descriptions of Gesner and Aldrovandus and copies of other people's drawings, including those of John White, artist to the Roanoke Colony in 1585. In 1607 he submitted a sample (A, Alcatraz, through C, Cuckowe) of his proposed work to the contemporary Baron Ellesmere (1540?–1617) hoping for patronage, which at that time meant financial backing. He was turned down, but the Ellesmere family kept his sample, to which Dr. Harrison has tried to give importance.

The book is in the Elizabethan English of the manuscript, now in the Huntington Library at San Marino, California. Anyone wanting to learn more about it from an ornithological point of view will find a good article on "Topsell's 'Fowles of heauen'" in modern English by Bayard H. Christy in *Auk* (50: 275–283, 1933) (not in the Harrison bibliography). This reviewer would be grateful for information on the ornithological expert, "Mr. Edgar Kincaid, of Austin, Texas," to whom Dr. Harrison submitted "ornithological problems."—ELIZABETH S. AUSTIN.

Vogelfang und Vogelberingung Teil II [Bird catching and bird ringing, part 2].—Hans Bub. 1972. Wittenberg Lutherstadt, Die Neue Brehm-Bücherei, A. Ziemsen Verlag. Pp. 212, illus., 200 black-and-white drawings and photographs. Paperback. 14 DM.—This is a thorough exposition of bird catching methods of the world to date. A large bibliography adds to the value of the book, and the illustrations are so excellent and well-selected that they tell a good story to those who cannot read the well-written simple German text.—ELIZABETH S. AUSTIN.