

## REVIEWS

EDITED BY KENNETH C. PARKES

**The dynamics of condition factors in Canada Geese and their relation to seasonal stresses.**—Harold C. Hanson. "December 1962" [issued January 1963]. *Arctic Inst. of N. America, Tech. Bull.* 12, 68 pp., illus., 10 × 6¾ in., paper. \$1.00 to members of Arctic Inst., \$2.00 to non-members.—This is an important study and is, in this reviewer's opinion, Harold C. Hanson's most important contribution to date. The study has three general aspects, all interdependent. These are: (a) an attempt to assess in terms of homeostasis of the individual the effect of "shortstopping" and concentrating Canada Geese (*Branta canadensis interior*) in refuges in Wisconsin, Illinois, and Missouri; (b) an attempt to elucidate some of the physicochemical changes which occur in geese throughout the year; (c) presentation of an hypothesis of the biochemistry of fat deposition and utilization in Canada Geese in particular and birds in general.

Harold Hanson knows more about the Canada Geese of the Mississippi flyway than does anyone else. He was the logical choice to undertake the first scientific study of the impact of the refuge system on the bird itself. Refuges have two primary purposes: to provide food and resting areas for birds, and more recently, to attract them to an area in sufficient numbers to permit hunting by local residents. In the case of Canada Geese this is a proven technique, but Hanson poses the question: "are such large concentrations inherently damaging to the birds?" He correctly points out that after birds have been on near starvation diets in some areas, hyperphagia results when food becomes abundant again. The result is a fat goose, but not necessarily one in a state of balanced nutrition. Hanson's recommendation of increased supplemental feedings of high protein diets late in the winter makes biological and management sense. A practical method must still be developed.

Hanson has used as indications of condition body weight, weight of sternal muscles, weight of muscles of the tibiotarsus, extent of fat deposits, and liver weights. He has indicated relative changes in size, tone, and chemical composition of these tissues throughout the annual cycle of the geese. The pitfall of using weights without relating these to phenological events is successfully avoided. Most interesting to me was the clear-cut demonstration that the size and development of sternal and tibiotarsal muscle masses are reciprocal. This is particularly marked in the case of molting Snow Geese (*Anser c. caerulescens*). During the early stages of the complete pre-basic molt, muscles of the tibiotarsus became ostrich-like in size and development, whereas those of the sternal area were almost non-existent.

It is during egg-laying, incubation, and especially molting periods that seasonal and physiological stress is greatest. Hanson's point (although not stated unequivocally) is that malnutrition on the wintering grounds and low protein diet there may become important during these periods of great physiological stress. He postulates further that the unbalanced sex ratios in some waterfowl might be attributed to the greater stress directed against the female due to the specialized metabolic demands of egg production and feather growth occurring in rapid succession. By extrapolation, one would expect that female Canada Geese might suffer most from refuge rations deficient in protein.

I am not qualified to comment in detail on the biochemical aspect of this study, some of which was originally part of a doctoral dissertation, and I look forward to competent reviews in appropriate journals. I am somewhat disturbed by the reliance placed on an organ as labile as the liver. I would have preferred data on glycogen

levels from muscles of the tibiotarsus and sternum in support of changes of weights of those tissues. This observation in no way detracts from the apparent validity of Hanson's general thesis of protein degradation from unused pectoral muscles and release of amino acids for feather development during the prebasic (postnuptial) molt. There is also the need in flightless geese for a well developed ability to escape from predators through increased powers of running and swimming.

Because this is a pioneering attempt to relate physiology from the laboratory to the field, and to relate those findings to various aspects of life history, experts in both camps may balk at some apparent shortcomings which have escaped the notice of this reviewer.

The study, as is usual with Hanson's papers, is abundantly documented. Some tables (notably 13-16) are confusing to me. It might have been more meaningful to segregate the data by age and present the results in phenological sequence for each age group, rather than present all age groups in the same table. These are minor points and in no way detract from this important study. I feel certain that Hanson's present work will stimulate others to carry out similar studies, especially in waterfowl and gallinaceous birds. It is to be hoped, too, that agencies and individuals charged with refuge establishment will read and understand the message that has been conveyed in this paper and give cognizance to the axiom that the quality of the habitat is often a deciding factor in the well-being of the bird.—F. G. COOCH.

**Birds of the Detroit-Windsor area A ten-year survey.**—Alice H. Kelley, Douglas S. Middleton, Walter P. Nickell, and the Detroit Audubon Society Bird Survey Committee. 1963. Cranbrook Institute of Science, Bloomfield Hills, Michigan. 119 pp. Paper, \$1.00.—This little book is a pleasant surprise, for it delivers so much more than its title promises. Primarily it is a summary of the occurrences of the 286 bird species seen in the Detroit region over a 10-year period, 1945-1954. But it is much more than that. It is also a source of many nesting data gathered right up to 1962 on 147 species, including notes on the incidence of cowbird parasitism and a table summarizing the breeding records for 15 years by counties (5 in Michigan and 3 in Ontario).

In a sense, this is a general report on the birds of a region; but in contrast with the usual such report, it limits itself, and gains precision by doing so, to a stated period of study. The records were collected systematically four times a year from known observers and were reviewed promptly by judges who were well acquainted with the people and conditions. The information seems to have been screened critically and doubtful items silently suppressed. It should offer a good basis for other surveys in future times.

A praiseworthy attempt has been made to express the abundance of species quantitatively. Each species account begins, not just with the usual words "common" or "rare," but with two numbers in the form of a fraction, the numerator telling the number of individuals seen and the denominator, the number of occasions on which the species was seen. (I would prefer to refer to this entry as a pair of numbers rather than as a fraction, because I do not believe the quotient has much meaning.) Although the conditions of observation are not sufficiently standardized for us to regard these numbers as exact measurements of abundance, they give useful comparisons, particularly for species of similar size and habits.—HAROLD MAYFIELD.

**Danmarks Fugle.**—Finn Salomonsen and Gustaf Rudebeck, editors. 1962. Copenhagen, Branner and Korch, parts 1–11 (392 pages), 176 color pls., 126 figs. and about 130 maps,  $11 \times 7\frac{1}{2}$  inches. 19 Danish crowns per part.—A set of phonograph records, edited and recorded at a speed of 45 rpm by Sten Wahlström, accompanies this work, priced at 14.25 Danish crowns each. The publisher announces that the complete work will describe 350 species, about 300 of which will be illustrated in color, and that the set of records will consist of 12, supplying the vocalizations of more than 100 species. Parts 1 to 11 describe 146 species and consist of 32 to 48 pages of text each with 16 color plates. The only two records (nos. 7 and 8) which are available to this reviewer, supply the vocalizations of 8 species each.

This impressive publication is a semipopular account of the birds of Denmark. Each species is described after the order, family, and genus to which it belongs have been briefly characterized, and the descriptive text is organized in three sections devoted to morphology, field characters, and vocalizations. This is followed by a general and often lengthy discussion of distribution, breeding biology, behavior, ecology, and migratory movements if any. Emphasis has been placed on ethology and many simple but effective drawings and sketches illustrate aspects of behavior or characteristic postures and flight silhouettes.

The other illustrations consist of maps and color plates. The maps, which are furnished for nearly all species, outline the whole of the breeding range of the species and its wintering grounds if migratory; sometimes the migratory routes are shown also. These maps are certainly a praiseworthy feature but they often attempt to show too much and have been printed on such a small scale (about  $2\frac{1}{2} \times 1\frac{1}{2}$  inches) that they lose much of their value. The color plates, on the other hand, though adequate in a didactic way, belong to another era of ornithology. The majority are by Wilhelm v. Wright and are not very good adaptations from a work on the birds of Scandinavia originally published in 1888.

This publication is clearly not designed as a work of reference or as an exhaustive handbook but the high competence of its editors insures that the information it supplies is thoroughly sound. It is modern in concept with the exception of the shortcomings noted in the illustrations. Danes can be congratulated for having such a good general book at their disposal whereas the English reader can only regret that it is wholly in Danish.—CHARLES VAURIE.

**Birds of the Atlantic islands.** Vol. 1.—David A. Bannerman. 1963. Edinburgh and London, Oliver and Boyd; pp. i–xxxi, 1–358, 17 pls. (4 half-tones, 13 col.), 2 maps and many line drawings. 84 sh.—This volume is the first of two dealing with the birds of the Atlantic islands and has for a subtitle “A history of the birds of the Canary Islands and of the Salvages [= Selvagens]”; volume 2, in preparation, “will include Madeira, the Desertas, Porto Santo and adjoining islets and the islands of the Azores.” The present volume consists of an introductory section devoted to the ornithological exploration of the Canaries and to the work done there subsequently, an account of 61 breeding species, a list of 152 migrants, and two hypothetical lists of 73 species. The introductory section supplies also a bibliography and a list of banded birds that have been recovered in the Canaries and is illustrated by the two maps and two half-tone plates consisting of photographs of the author. In the account of the breeding birds most of the text (following the synonymy, description of the bird, and of its distribution) is devoted to a discussion of “habits” and “nesting” and occasionally includes also systematic notes and remarks on changes in the status of

the species in the islands. The migrants are briefly commented upon and their status is assessed, whether as regular winter visitor, passage migrant, or irregular or accidental visitor, but probably many of these assessments will be modified as our knowledge increases. Very little work has so far been done on migration in the Canaries and the list of banded birds that have been recovered in these islands, supplied by Bannerman, enumerates only 21 individuals of 14 species.

The book is very well illustrated. The many line drawings are helpful and the 11 color plates by D. M. Reid-Henry are outstanding. These include some of the best examples of the work of this illustrator that have been published so far and their reproduction is superb. One of the other two color plates is by Lodge and the other is by Grönvold. The latter has been published before in the works of Bannerman but it is instructive and its reappearance is welcome.

The text contains a great deal of information, especially in the sections devoted to "habits" and "nesting" where Bannerman has combined his field observations with those of many other ornithologists, but it is very verbose and confusing at times. It does not help, for instance, to be told on one page that a species breeds on a certain island, only to be told on the next that this island is completely devoid of the essential habitat.

This is only a slip but, unfortunately, the more "technical" sections of the text show much evidence of haste, carelessness, and neglect of the literature. These flaws are too numerous to enumerate and I can mention only a few characteristic examples, such as the use of trinomials when the species is monotypic and no subspecies have been described (for instance in the case of *Bulweria bulwerii*); scientific names that are consistently misspelled (such as in the case of Cory's Shearwater which is referred to as *Puffinus diomedea* when *diomedea* is correct); or the use of obsolete names such as *Dryobates* for *Dendrocopos*. Sometimes the extralimital range of a species is not outlined accurately, and we are misled when we are told, for instance, that the Goldcrest is represented in the Azores by one race when, in fact, it is represented there by three endemic races. The two that Bannerman overlooks were named in 1929 and 1954. Errors of the type that I mention would have been avoided if Bannerman had paid more careful attention to the literature, and, if he had done so, he would also have spared us a number of taxonomic comments on questions that have already been more fully and ably investigated elsewhere.

This is not the place to discuss systematic concepts, but systematists (to whom Bannerman refers contemptuously as "modern" in quotes) are not trying to do away with species—as Bannerman tells us—when they come to the conclusion that some representative forms are conspecific, "a craze which [he says] has already gone too far and which is generally practised by those with the least experience of taxonomic work." The truth rather lies the other way and, indeed, one soon arrives at the unavoidable conclusion that Bannerman's mind was made up long ago and that he resents as personal affront the opinions of other men when they differ from his own. My criticisms concern chiefly systematics and, no doubt, some of Bannerman's readers will therefore dismiss them as of no importance, but they undermine confidence in a work of scientific pretensions.

I regret to add that Bannerman indulges repeatedly in acrimonious remarks that are in bad taste and out of place. He characterizes a man, now dead, as "a totally unscrupulous collector" of illegitimate birth. This person (von Thanner) may have been overzealous at times but he was active at the beginning of the century when the status of the birds of the Canaries was less well known, and he should be judged

by the standards of his time. He actually was a very competent observer as even Bannerman has to grant. Bannerman's many contemptuous remarks concerning Dr. Helge Volsøe and his work cannot be taken seriously. Dr. Volsøe, a trained biologist and now Professor of Zoology at the University of Copenhagen and director of its museum, visited the Canaries for about four months in the spring of 1947 and has published three main reports (1950-1955, *Vidensk. Medd. fra Dansk naturh. Foren.*, vols. 112-117) that are the most able work we have to date on the avifauna of the Canaries, and on its origin and affinities. Seemingly they have aroused the ire of Bannerman because Volsøe's training and wide experience led him to question some of the opinions that he had expressed in his own reports on the birds of the Canaries published in 1919-1922.

We should not, perhaps, take Bannerman's book too seriously because he tells us in the introduction that he has "not attempted to give a modern interpretation of the Canarian avifauna," but, nevertheless, I felt that I had to call attention to its flaws because it appears at a time when systematic biology is under serious and widespread attack as passé and old fashioned. It can only, I believe, furnish additional reason for these criticisms.—CHARLES VAURIE.

**A revised check list of African flycatchers, tits, tree creepers, sunbirds, white-eyes, honey eaters, buntings, finches, weavers and waxbills.**—C. M. N. White. 1963. Govt. Printer, Lusaka, Northern Rhodesia; vi + 218 pp., 8 $\frac{3}{8}$ "  $\times$  5 $\frac{3}{8}$ ". 7/6. Paper bound.—The present volume completes White's revised check-list of African passerine birds, the first four parts of which were reviewed in *The Auk* for October, 1963, pp. 560-561. The style of this last part follows that of the previous ones. There is a brief introductory section discussing his treatment of the various families and occasionally citing recent reviews. The check-list proper lists those species and subspecies which White considers valid, with synonymies including all forms described since Sclater's *Systema avium Aethiopicarum* (1930). There is a general discussion of variation within each species and the diagnostic characters are given for each subspecies, without doubt the most valuable feature of the list. Unfortunately, except for the few citations in the notes on families, there are no references to recent revisions by either White himself or other authors. At the end of the volume is a section of addenda, bringing up to date the previously published parts.

In the treatment of families there are few innovations. As noted in the previous review, *Muscicapa gabela* Rand is considered a *Sheppardia* and is in the Turdidae, and *Stizorhina* has likewise been transferred to that family. *Pholidornis* and *Hylia* have been removed from the Ploceidae and Nectariniidae respectively, and placed in the Sylviidae. White follows Moreau (1957, *Bull. Brit. Mus. Nat. Hist.*, 4: 309-433) in his treatment of Zosteropidae, and "no synonyms are quoted as the disposal of them can be found in Moreau's paper." This is an awkward arrangement for those who do not have Moreau's paper at their elbows.

A number of type localities have been restricted or corrected: *Serinus gularis canicapilla* (p. 119), to Ghana; *Ploceus a. albinucha* (p. 142) to Sierra Leone; *Petronia superciliaris* (p. 170) to Port Elizabeth; *Amadina fasciata meridionalis* (p. 186) to Livingstone. Under *Plocepasser mahali pectoralis* (p. 162), originally described from Inhambane, it is stated that "Tete has been substituted." However, no reference is given.

Perhaps the most interesting innovation is White's treatment of the subgenus *Hypochoera* in the genus *Vidua*. In these combassous, the breeding males are black

with green, blue, or violet gloss and also vary in color of wings (brown or black) and bill and feet (red to white). As many as three forms have been found living together without apparent intergradation, and from three to eight species are usually recognized. White, however, recognizes only one polymorphic species, and he has argued his case carefully in two recent papers (*Bull. Brit. Orn. Cl.*, 82: 22-26, 1962, and *ibid.*, 83: 83-88, 1963), neither of which he cites in his check-list. Unfortunately, the difficulties of confirming or refuting his theory by field studies are almost insurmountable, for the females are indistinguishable, and the species are (is) brood parasites.

White's check-list is an indispensable tool for any student of African birds. It can never be the convenient one that Sclater's was, for it appears in two formats and five separate paginations, making an index virtually impossible. In this regard I owe a sincere apology to my colleagues in England for stating in my previous review that White was unable to find anyone in that country to publish the check-list as a whole. According to Moreau (*in litt.*), White has stated definitely that he made no attempt to publish outside the Rhodesias, so the English ornithologists had no opportunity to accept it. Fortunately, the list can be bound in one volume, for the margins of the *Occ. Pap. Nat. Mus. So. Rhodesia* can be trimmed to fit the parts from the Govt. Printer, Lusaka. We can only hope that the non-passeres will be brought out as a single volume, for they fully deserve such respectful treatment.—MELVIN A. TRAYLOR.

**Finding out about birds.**—William C. Dilger. 1963. New York, Home Library Press, 56 pp., 8 pp. of color inserts, and illus. by the author. \$2.95.—This is a recent addition to a well known series of nature books "aimed for the elementary school pupil." Dilger has included an amazing amount of material in his text and has presented it in an easy yet scholarly style. The vocabulary will challenge even the sixth grader, but this is as it should be. The type is adequate and there is a useful index.

Unfortunately the book will require considerable amendment by parents and teachers before it can be released to children. Most of the errors involve the picture legends and labels and in a book designed specifically for children this is especially lamentable. Some superb colored photographs by A. A. Allen are poorly reproduced in my review copy and, in some instances, do not effectively accomplish the presumed objectives. The "normal foot of perching bird" cannot be appreciated in the photo of a Blue Jay that was selected to show it, and the significance of the photo of the "Scarlet Tanager family" on a page of photos devoted to migration will be obscure to most children *and* their parents. The sketches by Dilger are far more satisfactory, though the single portrait of a Purple Finch (misabeled "Bullfinch") does not lend itself well to a demonstration of the topographical features of a bird. There appears to be an unwarranted repetition of illustrative material: no less than three different pictures of Evening Grosbeaks feeding on sunflower seeds, and there is a Peregrine attacking a Red-wing (misabeled "Swift") on one page and a Peregrine attacking a Blue Jay on another page.

Shortly after I received my review copy, my nine-year-old daughter glanced through it and her first comment was: "That's no Cactus Wren. That's a flicker." I then discovered the list of errata that the publishers had inserted before the Table of Contents. The objective of the ensuing game was to see how many of the errors she could find by herself. Though hardly a testimonial to the publishers' claim for the "best in technical accuracy," there remains a remote possibility that this is the basis of their "exciting new way of conveying factual knowledge."—WESLEY E. LANYON.

**A study of bird song.**—Edward A. Armstrong. 1963. London, New York, and Toronto: Oxford Univ. Press, pp. xv + 335, illus., cloth; 45 shillings.—This book deals with the characteristics, ontogeny, and functions of song in the broadest sense and in context with other aspects of avian biology. From the welter of information presented, a number of generalizations can be made:

(1) Audible communication (vocal and non-vocal) in birds has tremendous diversity, in its own way seemingly greater than the diversity in birds themselves.

(2) The whole subject is complex and diffuse; not many concise textbook sorts of definitions occur in this book. For some concepts, motivation of the bird(s) can be guessed at and self-explanatory terminology applied, such as “contact call,” “food call,” “nest-invitation song,” etc. Other concepts, such as “counter-singing” and “duetting” can be defined tersely; still others—“song,” “sub-song,” “whisper song,” etc.—continue to defy more than general categorizing. When plural motivation is assumed, or change in emotional level, or motivation(s) grading into other(s), about all that can be done is to try to describe in a meaningful way what is assumed to occur. The upshot is that many concepts and interrelationships can be brought into clearer focus by discussion and citation of relevant examples; but the subject does not lend itself to neat summarizing.

(3) In chapter 12 Armstrong parts company with those who would limit themselves to strictly mechanistic interpretations. What “goes on” in a bird’s “mind”? The late Wallace Craig, a life-long student of psychology whose studies included several bird species (emphasis on wood pewee) believed that the question “is the bird esthetic?” (i.e., does it “enjoy” vocalizing?) can be answered affirmatively. Armstrong, who has wider field experience and familiarity with recent behavioral work, arrives (p. 245) at this conclusion: “If we think thus of aesthetic experience, not as an achievement fully realized by humanity but as a road along which we have made some progress we can acknowledge that birds, though limited by their relatively stereotyped responses, have advanced some way along the same road.”

(4) The day is far from over for the field observer who lacks elaborate recording equipment and advanced degrees in physics. Example: mention is made in this book of some behavior that occurs immediately prior to migrating, but hardly anything about what happens when migration terminates—which is an important event also. (Several times I have noted the phoebe, immediately on arriving back on territory, perform a vigorous aerial dance with much vocalizing.) Again, in considering everything in context, how does one fit in those stereotyped situations when a bird’s role is to be seen and *not* heard?

There is a brief appendix on acoustic communication in the animal kingdom, with a single mention of studies of cetaceans. There is an extensive list of references cited, also four indices: “birds,” “organisms other than birds,” “authorities,” and “general index” to subject matter. The reader who may be curious about the Zanzibar Boubou or Willie Wagtail will learn (in the first index) that the former is a shrike and the latter a species of *Rhipidura*. The book has some trivial slips, such as several minor inconsistencies in text, a wrong citation or two, and a few misspellings.

Bio-acoustics is burgeoning, now even having its own journal. In such circumstances, delays in getting this volume published must have been aggravating to its author; he did recoup considerably by supplying important addenda (pp. 257–268), which are keyed into the main text. By any standards, this book is a considerable achievement. It is scholarly, yet non-technical, and stimulating. It deserves to be widely read.—RALPH S. PALMER.

**Where is that vanished bird?**—Paul Hahn. 1963. Toronto, Life Sciences Division, Royal Ontario Museum, 347 pp. \$3.50, paper-bound.—The body of this book consists of a list of collections containing specimens of seven extinct or endangered North American birds, a summary of holdings, and a detailed tabulation of specimens. Paul Hahn's enthusiasm and persistence are reflected in the total of specimens: 1,548 specimens (skins, mounts, and skeletons) of Passenger Pigeons, 367 Eskimo Curlews, 80 Great Auks, 418 Ivory-billed Woodpeckers, 317 Whooping Cranes, 736 Carolina Parakeets, and 54 (no skeletons) Labrador Ducks. Except for the Great Auk and Labrador Duck, where data are very full, information is categorized by owner, owner's catalog number, sex, locality, date, and collector. Unfortunately, such data do not exist for nearly all specimens. At least in regard to the Carolina Parakeet (data for which I was courteously allowed to see before publication), curators did not always supply all information they had, in part because they were not asked explicitly for it. Furthermore, it appears that in a very few instances mistakes crept in because the questionnaire sheet was not ruled; one presumes that data meant for one species have been taken for another. However, anyone studying specimens of the species covered will find himself greatly indebted to Paul Hahn, dedicated naturalist of Toronto, and to James L. Baillie, Assistant Curator of Ornithology in the Royal Ontario Museum, whose organizing genius put the work into final form after Mr. Hahn's death in 1962. One wishes that those men's dedication and genius had been matched a century ago in finding out how the Carolina Parakeet nested and perhaps in saving the species from extinction.—DANIEL MCKINLEY.

**A comparative study of bird populations in Illinois, 1906–1909 and 1956–1958.**—Richard R. and Jean W. Graber. 1963. *Illinois Natural History Survey Bulletin*, 28: 383–528, 36 figs. \$1.00.—It is reasonable to think of the quantitative study of bird populations as beginning in 1906 when A. O. Gross and H. A. Ray began to put into practice the strip census designed by the pioneer American ecologist and founder of the Illinois Natural History Survey, Stephen A. Forbes. In these censuses the two observers walked parallel lines a definite distance apart and counted all the birds they observed within a strip of given width, usually 150 feet. In Forbes's view, the result was as if a huge plankton net, of a mesh for birds, were drawn across the state. The censuses were continued through 1909, and in all about 3,000 miles were walked. Fifty years later, the Grabers repeated the censuses and in so doing have produced a study of great interest and worth.

The bulk of the publication deals with a comparison of bird populations by year (mainly 1907, '09, '57, and '58), by season, by vegetation type (in all about 17), and by zone (northern, central, southern) and a species account discussing individually about 50 species. There is also an evaluation of the strip census method against the now-standard Williams spot-map method (for one vegetation type, hay fields), a summary of weather patterns for the census years, a discussion section, a literature cited section, and a good index. The whole publication shows the meticulous, mildly eccentric editing that one has come to expect from the sponsoring agency.

The conclusions drawn, and especially the data presented, are of unique value to students of avian ecology and evolution. Summer densities varied from less than one to about ten birds per acre with row crops consistently having the lowest populations. In the 50-year interval there seemingly has been some reduction in species diversity for the state but little change in the statewide total breeding population (about 60 million birds). A number of changes in geographical or ecological distribution are



documented with good, quantitative data. For example, the Red-winged Blackbird and the Horned Lark are two species whose statewide populations increased greatly during the 50-year period. This increase accompanied a greater utilization of hay fields by Red-winged Blackbirds and a greater use of row crops for nesting and harvested hay fields and small grain fields for post-nesting foraging by Horned Larks. Red-winged Blackbirds showed no change in density in marshes (although here we are not so sure because the marshes censused in 1909 may have been very wet prairie rather than the cattail-bulrush emergent aquatic vegetation censused in 1957-58) and the Horned Lark showed little, if any, change in pastures between the two census periods. The data of the Forbes censuses allow us to confirm or correct impressions about changes in the populational status of these and other species and, further, give us good estimates of the actual magnitude of the changes. In northern Illinois in 1909, for example, the density of Red-winged Blackbirds in mixed grass-legume hay fields was 8 birds per 100 acres; in 1957-58 density was 220-230 birds per 100 acres. All that now remains is to provide some explanations.

There are few criticisms to be made. One is that too little use is made of relevant literature for supplementing population figures and also in interpreting and corroborating results. A second is a product of inherent limitations of the census method. It is poorly suited to forests and dense forest edge. Although such communities were censused (using a strip of reduced width) when encountered, no effort was made to assure adequate representation. For these reasons the authors present their forest censuses simply as "forest" and do not attempt to discuss differences between forest types. This is rightfully so; nevertheless, the result is that half or more of the vegetational spectrum, from black jack oak-red cedar cliff edge forests and silver maple-black willow floodplain forests to beech-maple-tulip tree-sour gum forests, is lumped into one category.

The value of the data for communities that are well-represented and well-censused makes this lack more noticeable and points up how meager good information on bird populations is. That Forbes in 1906 devised no satisfactory census method for forests and that 44 states had no ecologist with his foresight are irremediable but where, now, are adequate population data being gathered? The answer appears to be that, in the quantity and of the quality desirable, they are not being gathered. Admirable effort though it is, the annual breeding-bird census published in *Audubon Field Notes* does not seem to be doing the job. As one leaves beech-maple forests and the State of Ohio, he passes into almost unexplored country, excepting only a few isolated enclaves such as mountainous West Virginia and Trelease Woods.

In summary, this publication is a uniquely valuable study of bird populations. Its uniqueness appears unlikely to be threatened soon.—RICHARD BREWER.

**Tucaní.**—Helmut Sick. 1961. Barcelona, Spain, Editorial Labor, S. A., 254 pp., 1 col. pl., 61 photos., map.—This is a naturalist's view of an expedition in central Amazonian Brazil, chiefly the upper Rio Xingú and thence to Rio Tapajós. The expedition was intended mainly to provide emergency airfields in an unexplored part of the Amazonian hylaea. Dr. Sick was able to spend considerable time at the various stations collecting birds and other animals. He gives a vivid and sympathetic account of the country, an area whose magnificent forests and their inhabitants, including the indigenous humans, are rapidly disappearing. As Sick is an ornithologist, there are many useful data on birds, although to this reader most interesting of all was the information on the primitive Indians. This is the Spanish edition of a book originally

published in German under the title "Tukani" in 1957 (Verlag Paul Parey, Hamburg and Berlin). An English translation appeared in England in 1959 and was distributed in the United States in 1960 (Taplinger Publishing Co. Inc., New York). From the viewpoint of a naturalist the Spanish edition is distinctly superior to the English, for the scientific names of the animals discussed are given in the text and the translation is more faithful to the German. In the English edition one must refer to a glossary for the scientific names, and sometimes these are omitted altogether. Sick's excellent pictures, chiefly of the native people, are not all the same in the various editions. It is amusing to note that some of the pictures of unclothed Indians have been circum-spectly trimmed in the Spanish edition.—E. EISENMANN.

**Checklist of the birds of Thailand.**—Herbert G. Deignan. 1963. *U. S. Natl. Mus., Bull.* 226; pp. [i]–[iii], iv–x, [1]–[2], 3–263, 1 map, \$1.25.—Few American ornithologists are so closely identified with the avifauna of an Old World country as is Deignan with Thailand. He has collected there extensively, and was responsible for naming no less than 96 of the 1,173 forms recognized as valid in the present check-list (as well as several others considered, with admirable objectivity, to be synonyms by their author). In view of Deignan's thorough familiarity with Thailand, therefore, this long-awaited check-list must be considered a disappointment in some respects. The introductory material, other than routine acknowledgments, consists solely of a map and key to the provinces of Thailand, indispensable to a visualization of the ranges of birds as given in the check-list. However, these ranges make frequent use of broader geographic terms (northern plateau, eastern plateau, central plains) and vegetational terms (bamboo brakes, evergreen forests, mangroves). Neither geographic areas nor vegetational zones are mapped or defined in any way. Detailed discussions of such matters as the history of ornithological exploration in Thailand, location of important collections, geology, climate, vegetation, and human exploitation of the country as they may affect bird distribution, may possibly be awaiting a more complete "Birds of Thailand" in book form. This kind of information is, indeed, available for the northernmost portion of the country in Deignan's "The birds of northern Thailand" (*U. S. Natl. Mus., Bull.* 186, 1945), but the geographic area covered in the earlier work is but a small fraction of a rather diverse country. The present check-list would have been far more useful had it included at least a summary of the major natural (as opposed to political) subdivisions of Thailand. The heterogeneity of the country is suggested by the fact that within its borders Deignan recognizes no less than eight subspecies of *Pellorneum ruficeps* and six each of *Pomatorhinus schisticeps* and *Macronous gularis*.

As we have come to expect of Deignan, scrupulous attention has been paid to nomenclatorial and bibliographic matters. Type localities are cited exactly as originally published, with explanatory additions within brackets where appropriate (including, in many instances, latitude and longitude). If the original description gave only a broad or vague type locality, Deignan ascertained whenever possible the locality data on the label of the holotype itself. For at least 10 forms, he has made a formal restriction or designation of type locality in the present check-list; I may well have overlooked others.

The 10 I found are: [*Ardea*] *flavicollis* Latham (= *Dupetor flavicollis*); *Osmotreron Phayrei* Blyth (= *Treron pompadora phayrei*); *N[inox]. burmanica* Hume (= *Ninox scutulata burmanica*); *Halcyon armstrongi* Bowdler Sharpe (= *Halcyon chloris armstrongi*); *M[erops]. ferrugiceps* Anderson (= *Merops orientalis ferrugiei-*

*ceps*); *Phaiopicus grammithorax* Malherbe (= *Meiglyptes tristis grammithorax*); *Hirundo chinensis* J. E. Gray (= *Riparia paludicola chinensis*); [*Lanius*] *malabaricus* Latham (= *Dicrurus paradiseus malabaricus*); *Dendrocitta Himalayana* "Blyth" Jerdon (= *Crypsirina occipitalis himalayana*); *Alcippe phaeocephala davisoni* Harington (= *Alcippe poiocephala davisoni*); [*Certhia*] *longirostra* Latham (= *Arachnothera longirostra*).

The type locality of [*Columba*] *indica* Linnaeus (= *Chalcophaps indica*) is cited by Deignan as: "in India orientali"; type locality restricted to Calcutta, Calcutta District, Bengal State, India, *apud* Stuart Baker." Stresemann, however, showed that this Linnaean name was based on material from Amboina Island (*Ibis*, 94: 511, 1952).

The Introduction states that the check-list is "complete so far as the avifauna of Thailand is known at this date (1962)." The reviewer is aware, however, that the manuscript was essentially completed by 1959, and thus before the appearance of the 1961 edition of the International Code of Zoological Nomenclature. Articles 27 and 32(c) of the Code eliminate the use of diacritic marks and hyphens such as are retained by Deignan ("*rubro-limbatus*," p. 108; "*bélangeri*," p. 150), and alter the German umlaut to an "e" following the letter involved ("*mülleri*," p. 98, = *muelleri*).

A few notes on taxonomy and nomenclature may be of interest. The unfamiliar spelling *Goisakius* is used without explanation, rather than the more usual *Gorsachius* or *Gorsakius* of most of the standard literature; likewise *Macronous* replaces *Macronus*. Deignan tends to favor large genera; for example, he follows Bock (*Bull. Mus. Comp. Zool.*, 118: 59, 1958) in placing all of the lapwings in *Vanellus*, but goes beyond that author in synonymizing *Pluvialis* with *Charadrius*. The starling genera *Acridotheres* and *Sturnus* are lumped (but see Harrison, *Ardea*, 51: 44-52, 1963, for recent evidence against this treatment). The reviewer agrees with Deignan that the cuckoo genera *Chrysococcyx* and *Chalcites* should be merged, but would also point out that, in the same family, broad generic treatment would demand synonymizing *Cacomantis* with *Cuculus* (see Delacour, *L'Oiseau et la Rev. Fr. d'Orn.*, 21: 19, 1951). Deignan does not follow recent authors who have merged *Bubulcus* with *Ardeola*, *Dupetor* with *Ixobrychus*, *Actitis* with *Tringa*, *Pseudosclopax* with *Limnodromus*, *Ketupa* with *Bubo*, *Ampeliceps* with *Mino*, etc. Deignan also tends toward a broad species concept; the reviewer prefers to follow those who consider *Accipiter virgatus* and *gularis*, and *Centropus toulou* and *bengalensis*, as separate species. At the family level it is of interest to note that Deignan follows Wetmore (*Smiths. Misc. Colls.*, 139, no. 11: 19-20, 1960) in placing the genus *Irena* in the family Oriolidae.

The only misprint noted was on p. 82; parentheses should be deleted from the author's name in *Megalaima incognita elbeli* (Deignan). One stylistic peculiarity should be mentioned: for many forms Deignan gives the distribution prefaced with "reported from" or "reported only from," whereas for others this phrase is omitted. Thus *Hirundo daurica stanfordi* is "Reported only from the northern plateau (Chiang Mai)," whereas the range of *H. d. badia* is given simply as "The peninsular provinces from Surat Thani to the extreme South." The reasons, if any, for such qualified or unqualified statements of range are not given.

In summary, Deignan's check-list is a scholarly and authoritative work that will be indispensable to students of the birds of southeast Asia. It is regrettable that the author did not share with the reader more of his vast knowledge of Thailand and the major factors influencing bird distribution within that country.—KENNETH C. PARKES.