ORNITHOLOGICAL LITERATURE

SPECIATION AND ECOLOGIC DISTRIBUTION IN AMERICAN JAYS OF THE GENUS APHELOCOMA. By Frank A. Pitelka. University of California Publications in Zoology, Vol. 50, No. 3, July 20, 1951:iv + pp. 195–463, plates 17–30, 21 figs. in text. $3.00.

This important paper analyzes the known populations of three species of jays of the undefined genus "*Aphelocoma.*" The most familiar of these are the Scrub Jay (including such races as the California, Woodhouse's, and Florida Jays) and the Arizona ("Mexican") Jay. Of each population represented by an adequate sample in the nearly 5000 specimens examined, coloration and eight measurements are thoroughly analyzed. Presentation of the resulting data parallels the general pattern of such other papers, in the same series, as those on Juncos (Miller, 1941) and on Mexican populations of Red-eyed Towhees (Sibley, 1950). For reviews of these see *The Wilson Bulletin* (Brodkorb, 1941, 53:246–247; and Dickinson, 1951, 63:349–350). Geographic variations within these jays are of course far less striking than in the extreme cases of those fringillids; nevertheless Pitelka recognizes no less than 31 subspecies, of which two are newly named and others revived or described in this paper, which climaxes his years of work on the group. This is a 35% increase over the number of forms recognized by Hellmayr in the last complete review of these jays (1934).

In many ways, this paper is a model revision which will well repay careful study. Particularly satisfying are the careful analyses of molt and of variations with age and sex. Specimens were examined in many public and private collections, both in and out of the United States; nearly all the type specimens were studied either by Pitelka or by the late A. J. van Rossem. Museum work was supplemented by eight expeditions and other field studies. There is a strong and usually sound emphasis on ecology almost throughout the paper. Color is described from fresh fall-plumaged skins in all, or nearly all, cases. Readers who lack Ridgway's "Color Standards and Color Nomenclature" will be grateful for tables 1 and 2, which compare various shades of blue.

Pitelka also emphasizes unsolved problems for future workers. He points out geographic areas where special taxonomic study is needed. His discussions show the need for detailed studies of food habits on a geographic basis, in order to determine whether the geographic variations in size and proportions of the birds are correlated with their feeding habits. Weight variations remain obscure; variations in length, wingspan, and in the skeleton remain unstudied, as well as many questions of interspecific and "intergeneric" competition.

Reliance on the inadequate and misleading ornithological literature of the Southwest and Mexico has led Pitelka to underestimate the migrations of Scrub Jays. He even speculates (p. 272) that a weak humerus may prevent flights of five to twenty-five miles! His map of their, presumably, breeding and permanent resident distribution covers almost all of the states of Arizona and New Mexico, including the entire Rio Grande of New Mexico and the Salt and Gila River valleys of Arizona west to Gila Bend. Actually, Scrub Jays are winter visitants in such places, and have been recorded even farther from their main breeding range; see for example Huey (1942. *Trans. San Diego Soc. Nat. Hist.*, 9:368) and Monson (1949. *Condor*, 51:264). Because specimens taken away from breeding grounds are mostly first-year birds (the reviewer has adults, from Phoenix, Arizona), Pitelka considers that such records indicate "the dispersal" of young birds and concludes that all these jays "are nonmigratory." This may be partly a matter

of definitions; but at any rate the reader will not learn from Pitelka's paper the obvious differences in migratory behavior between the two Arizona species treated.

Taxonomically, Pitelka's concept of the species is exceptionally broad; it includes all forms occupying a similar ecological "niche," even if reproductively isolated (pp. 378–379). Behavior, call-notes, and life histories are barely touched upon. Among subspecies, the limits are narrow and uneven. A single "*Aphelocoma*" occurs in Oregon and California; on the Pacific slope north of Santa Barbara and Ventura counties, it is represented by populations that vary slightly and irregularly, without well-marked clines; the largest exceeds the smallest by 5.67 millimeters (4.5%) in mean wing length of adult males. In tail length maximum variation is 6.17 millimeters (4.4%), and in weight 18.3 grams (18.9%). In color, the paler population is inseparable from the darker in 15 to 20% of the birds, while "with an additional 15 to 20 per cent, separations would be doubtful" (p. 256); we are not told what percentage, if any, of the darker population is separable from the paler. Anywhere else, such a situation would be covered by one or at most two names; but in California and Oregon it is covered by five, with a broad "area of intergradation" which is not allowed to interfere with the drawing of neat, sharp lines on maps. Two of the populations so separated (in Santa Clara County, California) differ appreciably in only one minor respect: adult females of the "smaller" population average 5.43 millimeters (4.2%) *longer* in tail measurements than do the "larger" ones! Where, in this sort of thing, is what George Willett termed the "benefit to ornithology"?

This naming of minor variations and small intermediate populations is, however, quite in accord with current practice in other species in the same region. The other newly named population in this paper, *cana*, is an intermediate one inhabiting a single mountain, of small extent, and possibly scattered points elsewhere. It is difficult to understand why minor variant populations are separated in the text by such distinct races as *hypoleuca*.

Away from California, subspecies limits seem to follow the conventional 75% rule. A cline of as much as 4.7% in mean wing length of adult males (11.4% in weight) is included within the race *A. u. arizonae*. But guesswork is obvious in the maps, particularly in northeastern Arizona. Fortunately, the questionable nomenclature and the idealized maps do not conceal the admirably thorough analyses of variation.

Of the three species treated, Pitelka regards *unicolor* as the least modified. The phylogenetic discussions treat fully of juvenal bill colors and molts, but ignore juvenal plumages. The reviewer doubts that any jay existed in nearly modern aspect in the Miocene.

Like other papers in the same series, this one is not easy to use. There are no keys. The characterizations of races are scattered through the text. Specimens examined are listed without dates of collection; and though these specimens are the very basis of the entire work, the lists are relegated to a lengthy nomenclatural appendix. Partial or sectional maps, and tables, are also scattered, and are not indexed. A brief table of contents, and many cross references, however, enable the reader to find the characters of particular races.

Pitelka's summary is well written, but elsewhere there are many long and involved sentences. The discussion of ecological factors (p. 380) seems unduly technical. Readers will not easily grasp why "negative correlation between hue and intensity in *grisea* indicates that the bluest forms are not necessarily the grayest" (p. 362). "Comparable" is often used to mean "identical" or "indistinguishable." The word "variant" is also overworked. Such language tends to discourage the wide audience which this paper so richly deserves. The plates, however, help to visualize the races, and the colored frontis-

piece by Sutton forms an excellent introduction to these jays. The nine habitat photographs will aid readers unfamiliar with California vegetation, but there are none of the habitats of the other species and races. Such minor details will not deter serious students of evolution, speciation, and ecology from a careful study of the many ideas presented in this important contribution.—Allan R. Phillips.

ARIZONA AND ITS BIRD LIFE. By Herbert Brandt. Bird Research Foundation, Cleveland, Ohio, 1951:7½ × 10 in., xvi + 723 pp., 20 color plates, 16 full-page photographs, 18 pen sketches, 2 figs., 1 map. Indexed. $15.00.

This is a rambling account of the ornithological adventures of a "naturalist bird reporter" in Arizona. Although the title might seem to include the entire state, the book in fact is limited to the southeastern one-ninth. This consists of the Mexican border wonderlands of the Sulphur Springs, San Pedro, Santa Cruz, and Altar valleys, and the marvelous Chiricahua, Huachuca, Santa Rita, Santa Catalina, and Baboquivari mountain ranges.

The book is based on field experiences of parts of eight nesting seasons during the years from 1935 to 1948. In this time, Brandt acquired a competent knowledge of southeastern Arizona's ecology, and his concept of the relation of climate to birds is quite good. Chapter 3, which treats the ecology, is well worth serious study. He loses no opportunity to attack man's abuse of soil and moisture, which is so readily apparent in the desert landscape.

A valuable part of the book, scientifically, is the appendix, in which Brandt has assembled considerable data on the nesting activities of the birds known to breed within this area; not only are his own notes included, but also those of the late Frank Willard, for many years a resident of this region. Thus he presents a wealth of data which will be a boon to all who wish to know when they may find each species at the height of its breeding season. Subspecies are listed separately, in the occasional cases where two breed in this limited area. One new subspecies is proposed, *Progne subis oberholseri*, for the Purple Martin inhabiting the saguaros of central-southern Arizona.

While Brandt's style, familiar to many ornithologists in earlier writings, is apt to be repetitious and discursive, his enthusiasm and delight in birds reveals itself between the lines and is conveyed to the reader in a wholly interesting manner. The book would be more enjoyable if the use of adjectives were not so artificial, and if trite descriptive phrases were not so frequent.

Brandt does not profess to be so much a scholar as a bird adventurer. This may account for his employment of common names for subspecies, many of which are not in the A.O.U. Check-List; this does not achieve any particular object, but only adds to the confusion already existent and further muddles the amateur. It may also account for such an oddity as the wedding of the Palmer and Plateau Thrashers (p. 132).

The book is a handsome one. It is heavy enough (five pounds) to be difficult to hold comfortably. Paper and type are pleasing. Certainly one of its most laudable attributes are the splendidly-reproduced paintings by Brooks, Peterson, Sutton, and Shortt. Especially choice are those of the Coppery-tailed Trogon, Arizona Jay, and Painted Redstart by Major Brooks, and the two plates of Blue-throated and Rivoli Hummingbirds, and Mexican Chickadee and Audubon Warbler, by Roger Peterson. The pen sketches, mainly Dr. Sutton's, add much to the attractiveness of the volume.

It may be of interest to note that the book was featured in the May, 1952 issue of *Arizona Highways* (Phoenix, Ariz.), a magazine noted for its pictorial qualities. Nine of the color plates were reproduced, one of them being used as the cover illustration. The magazine also reproduced the excellent chart of "schematic cross section of a high desert mountain range and outwash basin," which gives Brandt's views of the principal breeding association of each bird in southeastern Arizona.—Gale Monson.

BIRDS OF AN IOWA DOORYARD. By Althea R. Sherman. Edited by Fred J. Pierce. Christopher Publishing House, Boston, 1952:5½ × 8 in., 270 pp., 9 plates. $3.75.

Miss Sherman's most valuable work as a pioneer student of life histories was with Flickers (*Colaptes auratus*), Sparrow Hawks (*Falco sparverius*), Screech Owls (*Otus asio*), and Chimney Swifts (*Chaetura pelagica*). For the first three she contrived nesting boxes with peep holes through which she watched the nestings from egg laying to fledging; there were also hand holes for removing eggs and young to be weighed. For observation of the Chimney Swifts she built a unique tower and artificial chimney, the whole 8 feet square and 30 feet high.

In this posthumous book are reprinted the monograph on many nestings of the Yellow-shafted Flicker and shorter papers on single nestings of Sparrow Hawks and Screech Owls. One long chapter, including excerpts from her notebooks, is devoted to the swifts. There are, also, nine chapters of new material which Miss Sherman had written in popular style for a book she was never able to finish, and nine papers that were either read at scientific meetings or published in *The Auk* and *The Wilson Bulletin*. Among the shorter papers is "Down with the House Wren Boxes," in which she held that this species' egg-piercing habits were responsible for the decrease of many birds, notably Bluebirds (*Sialia sialis*) and certain warblers. One wonders if it isn't time for another general check-up on the influence of the House Wren (*Troglodytes aëdon*).

Her discussion in Chapter 4 on the "guerilla warfare" that results from birds' overcrowding, especially the Brown Thrasher's (*Toxostoma rufum*) destruction of the eggs of other Brown Thrashers, will come as a revelation to students who have watched this species in sections that afford plenty of territorial room. In the same chapter is a surprising account of a Barn Swallow (*Hirundo rustica*) that came after a female had lost her mate and repeatedly tried to kill the young in her nest. One chapter reports seven years' experiments with artificial feeding of Ruby-throated Hummingbirds (*Archilochus colubris*), and another covers 25 years' observations of Phoebes (*Sayornis phoebe*). Birds briefly considered are the Catbird (*Dumetella carolinensis*), Red-winged Blackbird (*Agelaius phoeniceus*), Short-billed Marsh Wren (*Cistothorus platensis*), Sora (*Porzana carolina*), and Virginia Rail (*Rallus limicola*). Six of the author's charming bird drawings are reproduced.

Miss Sherman was plainly a most extraordinary personality. Her book reflects great energy, genuine concern for individual bird life, impatience for human stupidity, and through all a scientist's exact regard for the smallest details. She wrote with a directness that is sometimes sharp, often vivid, and always vigorous. Her bibliography includes 67 papers published from 1905 to 1932. Fred J. Pierce, the editor, deserves the gratitude of the students of bird behavior.—Ruth Thomas.