



The Redstart

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SOME PROBLEMS FOR BIRD STUDENTS

by
M. Graham Netting

Oftentimes, opportunities for worthwhile studies of birds are overlooked merely because the need for such investigations has not been emphasized. In this article a few recent reports have been abstracted to illustrate the diverse types of simple problems which merit further study by students of ornithology.

At the 1936 American Ornithologists' Union meeting in Pittsburgh, Dr. Josselyn Van Tyne read an interesting paper on the birds of Yucatan, in which he stressed the paucity of information about the drinking habits of North American birds. Although many gardens boast bird baths, there is little irrefragable testimony as to which common birds use them for drinking, and which both bathe and drink. This question could be answered simply by watching the birds which use such baths. There is evidence from other sources that doves require water almost daily, in contradistinction to many native species which may subsist for months, and possibly in some instances for life, without partaking of liquid water. A complete investigation of this problem would necessitate keeping weather records and marking specimens distinctly, since it appears probable that drinking habits may vary with weather and that individual birds may develop the custom of drinking even though the particular species is normally abstinent. Nevertheless, critical observations by competent persons will yield many pertinent facts.

Dr. Stanton C. Crawford, of the University of Pittsburgh, in an interesting report (Proc. Pa. Acad. Sci., 1934, 8.: 96-99) on the evening activities of birds in his yard, writes as follows:

"Animal life of the crepuscular zone merits more study than it has had. What dictates the moments when the daytime species drop out of the scene, one by one? Why do the species preferring the night appear in sequence throughout the period of dusk, rather than together, when the shadows finally merge into darkness? Many species seem to be attuned to a certain range of intensity of light. The nocturnal forms gradually replace the diurnal ones until a whole new population is abroad. In a succession of intervals different species are dominant. This brief report is made as a reminder ----- that the opportunity for research in this field is open in some form to almost every student, and that many important problems remain to be solved in this connection."

Dr. Crawford naturally kept his records in number of minutes before and after sunset, rather than by clock time, in order to secure comparable data. He found, in brief, that no Chimney Swifts were seen or heard after sunset, and that pigeons, except for a single laggard, retired with the same promptness. Starlings were observed until about five minutes after sundown. Chipping Sparrows enjoyed about seven minutes of twilight, and Song Sparrows disappeared barely a minute later. Some common birds "stayed up" quite late; English Sparrows were active seventeen minutes, grackles twenty-two minutes, flycatchers almost thirty minutes, and Robins as much as thirty-six minutes after sunset. If twenty minutes is taken as an average figure for the duration of the evening twilight in Summer, it will be seen that grackles, flycatchers and Robins were the only diurnal birds which were active after vespers. These species continued calling into the period of apparent darkness. Nighthawks were active during the entire one and one-half hour period of observations, which extended from forty-five minutes before sunset to forty-five minutes after sunset. The study just summarized was made in Edgewood, Pennsylvania, but parallel investigations which require only a watch, a sheet of ruled paper, attentive ears and the patience, or lethargy, to sit quietly for several hours, should be made in other localities. Early risers may prefer to record the times at which birds become active, or vocal, in the morning, while other students might devote their attention to the season "die-away" of the song in late summer.

A recent number of "Ecology," (1936, 17, No. 3; 491-499) contains an admirable article, "A Winter Bird Community in Western New York," by William C. Van Deventer, that should stimulate equally critical observation of the resident winter birds in other areas. A careful repetition of such a study in Oglebay Park each winter would be of tremendous value to students of bird populations. Van Deventer limited his study to four species; the Northern Downy Woodpecker, Dryobates pubescens medianus, the Northern White-breasted Nuthatch, Sitta carolinensis carolinensis, the Black-capped Chickadee, Penthestes atricapillus atricapillus, and the Eastern Tree Sparrow, Spizella arborea arborea. He made thirty-six observation trips in

a preserve comprising an area of about 1,700 acres, and on each of these trips he endeavored to study fourty acres carefully. The purposes of the study were five: first, to determine which habitats each species frequented; second, to determine at what level above ground each bird occurred; third, to discover which birds were associated together; fourth, to observe how the birds were affected by weather conditions; and fifth, to estimate the number of birds of each kind in a unit area. The investigator began by listing the following eleven kinds of habitats represented in his area: open lake, swamp, swamp edge, swampy woods, upland woods, forest edge, isclated thicket, open weedy meadows, brushy fence row, abandoned orchard, and dwelling envirens. After tabulating his observations, he found that the four species, as a group, showed a marked preference for the swamp edge, and they were concentrated to a lesser extent around dwellings and along the upland forest edge. The swamp and open meadow were practically uninhabited by birds. The Downy Woodpecker and the Nuthatch were seen almost as frequently near dwellings as along the swamp edge, but the Chickadee and Tree Sparrow were found along the swamp edge many more times than elsewhere.

All four species were seen on the ground, -- the Nuthatch and Downy Woodpecker on only two occasions, however. The Tree Sparrow, Chickadee and Downy Woodpecker were most active in the shrub zone between the ground and the ten-foot level. Birds were rarely seen above forty-one feet. Temperature had no apparent effect on bird activity. The Chickadee was most active on sunshiny days, while the remaining three species were most active on partly cloudy days. Strangely enough, all four species exhibited a secondary preference for cloudy days with rain or snow, and were least active on cloudy days which had no precipitation. A careful analysis of the birds counted on each trip indicated an estimated population per square mile as follows:

Tree Sparrow	224
Black-capped Chickadee	128
Downy Woodpecker	37
White-breasted Nuthatch	34
Total	423

A previous worker obtained an estimate of 420 birds per square mile in winter in northern Illinois, approximating very closely the total for the New York locality. Similarly, Van Deventer's figures indicate a population of 2.12 Nuthatches in each 40-acre tract, and a previous worker estimated two in each 48-acre tract.

An article in the Wilson Bulletin (47, 1935; 109-111) stresses how little is known about the changes of weight in altricial birds. Dr. W. J. Hamilton, jr., of Cornell University studied four broods of Robins, paying especial attention to the weight of eggs and nestlings

and to the kinds and amount of food brought to the young. Reading of this report will provoke a feeling of amazement that such a fruitful field of bird study has been so greatly neglected. The results presented indicate that, by evaporation of gases, the eggs lost about 25 per cent. of their original weight before hatching. Newly-hatched birds were removed from the nest and weighed before their first feeding, and then weighed again at 7 a.m. on each succeeding day. When they left the nest on the fourteenth day, the young birds were more than eight times heavier than at hatching. Although their rate of growth fluctuated greatly, losses occurred only on the tenth and twelfth days. These two growth set-backs cannot be explained until further studies of this kind are made. Dr. Hamilton learned that bird parents of large families, unlike human parents, did not work harder to feed their hungry offspring than did the parents of small broods. The adults averaged one hundred food-carrying trips per day and, in the two-week period, they fed the nestlings approximately 6.2 pounds of food (principally cutworms) irrespective of whether there were three, four, or five in the nest. Dr. Hamilton has made a definite contribution to ornithology by presenting these original facts, and his paper has added value because it will unquestionably initiate the collection of additional data on growth changes.

"A Statistical Study of Ohio Winter Bird Life," by Lawrence E. Hicks and Floyd B. Chapman (Ohio Jour. Sci., 1933, 33: 135-150) proves that the Christmas bird census may serve as the basis for studies of avian populations. To those who are statistically inclined this type of project may offer more appeal than watching a bird bath or prying into the mysteries of natal development.

The aforementioned scientists tabulated a total of 392 censuses taken in Ohio during the 32 years from 1900 to 1931, inclusive. In all, 79 localities in 49 Ohio counties are represented, and 934 census-takers listed a total of 133 species and 222, 825 individual birds. The first surprise is that one individual sees almost as many birds, on the average, as parties of two or three. While the data demonstrates that the most efficient party consists of one person, and that the average number of species per observer, falls with each addition to the party, the accuracy of the identifications may be increased by the presence of additional observers. Furthermore, although the tabulations answer many questions relating to frequency of occurrence and relative abundance, they must be used with due caution because birds are not always recorded in their true proportions. Loud, distinctive calls, conspicuous habits or excessive tameness are among the characteristics which cause certain birds to be observed more frequently than retiring types which may actually exist in greater numbers. However, an analysis of the complete list of birds with each species ranked according to the number of individuals listed indicates that the five most common winter species, in descending order, are the Crow, Tree Sparrow, Starling, Junco and Song Sparrow. Since the Starling did not reach Ohio until 1916, it achieved third place on the basis of counts

made during the latter half of the period, only and it may now be the most common winter bird in Ohio. On the basis of frequency with which each species was observed, the five leaders, also in descending order, are the Downy Woodpecker, Cardinal, Tree Sparrow, Song Sparrow and White-breasted Nuthatch. The Crow, Tree Sparrow and Starling made up over 51 per cent. of the total number, (222,825) of individuals listed in this report.

In recent years, aviators have provided many valuable observations on the speeds and altitudes at which various birds fly, but we have as yet only a few scattered observations on the effect of weather conditions on bird flight. Glider pilots, especially, since they are vitally interested in local air conditions should be encouraged to record the conditions near which they encounter birds.

Countless other problems, fully equal in importance to those which have been discussed, await attack by energetic bird students. Almost without exception, however, the projects which are most pregnant with scientific possibilities will entail patient, methodical, assembling of facts over a long period. Professional ornithologists are alive to the need for such investigations, but often routine duties and absence on expeditions bar their participation in long-term studies. The ability to recognize birds is not the paramount requirement for ornithological research, for such training can be more readily acquired than humility, patience and the unassuageable curiosity which are prime requisites. Each research worker must be humble enough to request and accept advice and criticism from his peers and co-workers; he must be patient enough to stand the sheer drudgery of fact collecting, the laborious arrangement and scrutiny of his data and the cautious writing, many times over, of his manuscripts; and he must be relentlessly spurred on by a monkey-like curiosity which dins repetitiously, "what, how, why." If you lack these qualities, content yourself with "sparrow-cuddling" and do not envy the harassed slaves who labor to add their mites to scientific knowledge.

The Carnegie Museum
Pittsburgh, Pa.

THE ORNITHOLOGICAL JOURNALS

Auk, The, Vol. 54, No. 4, October, 1937: An unusual range of material is presented in this issue, with comparatively few items which bear directly upon the ornithology of West Virginia and the tri-State area of the Upper Ohio Valley. In the latter field, a note by Alexander Wetmore upon the taking of the Southern Winter Wren, recently described, Nannus hiemalis pallus, in Virginia; Louis Campbell's note on the collection of an American Magpie, Pica pica hudsonia, near Toledo, Ohio, first of the species for the state; and Lawrence E. Hicks notes on "An Ohio Invasion of Leconte's Sparrows" in the Fall of 1936, seem "closest to home." Dr. Hicks' note mentions the collecting of Leconte's Sparrow by Dr. Sutton at Beech Bottom. Nest life of the Bay-breasted Warbler, the Spotted Sandpiper and the Virginia Rail are described in some detail in separate, longer articles by Howard Mendall, Henry Mousely and Lawrence Walkinshaw, respectively.

Glover M. Allen's book reviews are becoming, to this reader, an especially interesting and valuable part of "The Auk." In this issue he gives his estimate of the value of the National Geographic Society's recent two-volume "Book of Birds;" and, perhaps of special interest to active members of The Brooks Bird Club at the present time, he discusses Hesse, Allee and Schmidt's "Ecological Animal Geography," a translation from the German to which the reviewer ascribes considerable merit. F. H. Herrick reviews Arthur's "Audubon," and Ernst Mayr critically and briefly assays Volume 3 of Peters' "Check-List."

---J.W.H.

Bird Lore, Vol. XXXIX, No. 5, Sept.-Oct., 1937: Those of us who have never been to Florida will want to make first-hand acquaintance with Florida birds after reading R. J. Longstreet's "Invitation to Florida" which is enlivened by photographs and by another of Roger Tory Peterson's cartographs. Peterson's "Learn a Bird a Week," illustrated by the author is an interesting venture which should have much appeal to beginners (and contain a hint to more advanced ornithologists!). Members of the Brooks Bird Club now about to embark upon a critical ornithological survey of part of Oglebay Park should acquaint themselves with the condensed material gathered in report of the first "Breeding Bird Census" sponsored by "Bird Lore." It is significant that a census taken on the estate of S. P. Baldwin at Gates Mills, Ohio, which is heavily "managed" for birds, showed a density of 850 nests and 620 pairs per 100 acres -- far in excess of the average density reported. The Cleveland Bird Club acquitted itself excellently in returning data in this interesting census.

---J.W.H.

Condor, The, Vol. XXXIX, No. 5, Sept.-Oct., 1937: An account of the nesting of the Saw-whet Owl, by W.M. Granfield, and Smith and Hopkins' "Notes on the Barn Owls of the San Francisco Bay Region,"

are of general interest. Jean M. Linsdale's "Protection of Birds in California," raises points of general application to bird protection anywhere. J. T. Emlen, Jr., in his "Bird Damage to Almonds in California," introduces western "cousins" of familiar Eastern birds in a new light. Of special interest to those engaged in building private libraries of ornithological character is the announcement on the back cover concerning the "Birds of California." There are for sale some 60 de luxe sets of four volumes, unbound, complete excepting for the omission of four plates from Vol. 1, these for \$9.00 plus postage. There are available, also, about 100 sets of the Booklovers' edition, unbound, and apparently perfect except for a few duplicate pages sewn in, these at \$5.00 a set. Inquiries may be addressed to W. Lee Chambers, Business manager, 2068 Escarpa Drive, Eage Rock, Los Angeles, Calif.

---J. W. H.

Raven, The, Vol. VIII, Nos. 7-8, July-Aug., 1937: Dr. J. J. Murray, hard-working Virginia minister-ornithologist, writes with his usual smooth pace of "June Birds of Virginia's Highest Mountain," an account of an expedition by Dr. Alexander Wetmore and the author. The article includes an annotated list of 44 species, very comparable to the various West Virginia "mountain lists" familiar to Redstart readers. Maurice Brooks contributes notes on "Mcurnning Warbler in Highland County," and "Prairie Warbler at 4,000 Feet Elevation in Craig County," respectively. Both counties are adjacent to West Virginia. There are detailed notes on the ornithology of Mountain Lake, Va., by D. Ralph Hostetter, among other interesting Virginia material.

---J.W.H.

Wilson Bulletin, The, Vol. XLIX, No. 3, Sept., 1937: This issue is devoted, almost exclusively, to Harry W. Mann's "Life History of the Oven-Bird in Southern Michigan." This is particularly worth the reading of amateur observers because of the full treatment given ornithological "angles" ordinarily not considered by students to whom field identification is the principal aim of "ornithological existence." The Editor, in the scant space remaining after inclusion of this long article and its numerous illustrative materials, asks the opinion of readers concerning this departure from long-established policy. This reviewer prefers very much the shorter, more diversified contents of a typical issue of the "Bulletin." However, in the amateur eyes of this reader, at least, the Oven-Bird life history appears to be exceptionally well done and its publication a credit to any ornithological paper.

---J.W.H.