BIRD BANDING IN NORTHERN MICHIGAN DURING THE SEASON OF 1920

BY DAYTON STONER

Bird banding, as has many another phase of zoölogical science, has had its inception in a rather sporadic and ill-defined manner. And, like most things, it has undergone a process of evolution during which time various modifications and vicissitudes have been encountered.

So far as the writer is aware Audubon was the first person in America to attempt bird banding. He writes as follows: "I attached light threads to their (young Phœbes in the nest) legs; these they invariably removed, either with their bills, or with the assistance of their parents. I renewed them, however, until I found the little fellows habituated to them; and at last, when they were about to leave the nest, I fixed a light silver thread to the leg of each, loose enough not to hurt the part, but so fastened that no exertion of theirs could remove it." The next season, "Having caught several of the birds on the nest, I had the pleasure of finding that two of them had the little ring on the leg."*

Since the first attempts at bird banding, considerable development and progress are to be noted, particularly since 1908, when the first concentrated movement in this work was undertaken by the New Haven Bird Club. Previous to this time some headway had been made in Europe where banding was indulged in about 1899 and beginning with 1902 a few individuals in the United States engaged in this phase of ornithological endeavor in an effort to throw some light on the travels of birds by means of attaching to them inscribed metal bands.

It was soon found that the efforts of only a few persons in so large a field would avail little and the matter having been brought to the attention of the American Ornithologists' Union in November, 1908, it was considered with fa-

*Audubon, John James, American Ornithological Biography, II, 1834, 126.

vor and within approximately the next eight months 5,000 bands were issued of which about 1,000 were placed and from which 30 return records were obtained by December, 1909.

A more definite organization now seemed advisable and accordingly at a meeting of the American Ornithologists' Union held in New York City on December 8, 1909, the American Bird Banding Association was formed. However, owing to various difficulties, little was accomplished by this organization and late in 1911 the Linnaean Society of New York offered to come to the rescue. A committee of five was appointed to arouse interest and raise funds both of which were done with gratifying results. In the spring of 1912, 4,173 bands were distributed among forty-four persons in widely separated parts of the country. 800 of the bands were placed on seventy-three species of birds.

Since 1912 it again seems that the bird banding work was continued only by an occasional enthusiast here and there, but with the announcement of Mr. E. W. Nelson, Chief of the United States Biological Survey, in May, 1920, that that organization would henceforth conduct this work, banding has taken on a new lease of life. Under the direction and guidance of the Biological Survey definite and valuable results should soon be forthcoming. In spite of the numerous handicaps encountered by the Survey in taking over this work it has succeeded in interesting to date about one hundred observers to whom approximately 5,000 bands have been issued.

Since the work of banding is encouraged among all persons and organizations interested in birds it is desirable that only a limited number of styles of bands be used in order to avoid confusion and that the work of distribution and recording of the bands and returns be done most effectively by this responsible central organization. Accordingly the experience of earlier investigators has been drawn upon and this more or less mechanical part of the work has been elaborated and standardized and a system of recording has been carefully worked out.

The Biological Survey is now considering plans to secure the permanent coöperation of Universities, Colleges and Agricultural Colleges throughout the country in bird banding and when these plans have been developed more carefully and a larger number of organizations and individuals have become interested in this effort the volume of data and results should accumulate rapidly.

Up to this time two principal methods of securing birds for banding have been followed. First, securing young birds just before they are ready to leave the nest, and second, taking adult birds by means of systematic trapping. The latter method is a more recent development of the work although it has been carried on with unusual success by Baldwin in Ohio and Georgia and valuable results have already been obtained without in any way injuring the birds.

Bird banding is not to be construed as offering encouragement in the shooting or taking of birds for the express purpose of recovering the bands but sooner or later many of these banded birds will fall into human hands. Every field observer, collector and sportsman should be on the lookout for banded birds and whenever one is found the number or, better still, the band itself if the bird is dead, should be forwarded to the United States Biological Survey, Washington, D. C., along with any pertinent data concerning the taking of the bird in order that the records may be kept as complete and up to date as possible.

Procedure to be followed in banding birds.

Any person or organization expecting to band birds must first secure, through the offices of the United States Biological Survey, a Federal permit authorizing the taking of migratory birds for scientific banding purposes only. The State Game Department concerned is then advised of the granting of such permit and a State permit is issued.

The proper permits having been secured, application should then be made to the Biological Survey for an assortment of bands of different sizes. In the writer's experience the sizes most commonly used are Nos. 1, 1A, 2 and 4, while occasionally a few of the large adjustable bands may

be employed to advantage. These bands are of thin pressed aluminum and each bears a number stamped in the metal. This number is registered in the files of the Biological Survey.

When the band is about to be placed the smallest sized band that will close around the tarsus of the bird without binding or chafing should be selected. The band should not hang loosely, since grasses, twigs or thorns might catch beneath it and cause inconvenience or even death to the bird, thereby frustrating the very thing for which the banding was done. It is often convenient to lap over the ends of the band instead of having the ends meet. Where this is done care should be taken to see that the edges of the lap are smooth and that the band does not pinch or bind. A pair of small round-nosed pliers or a pair of heavy tweezers is the best instrument for manipulating the bands.

Before placing the band the number that it bears should be carefully noted (do not trust to memory for this) along with the name of the species banded, the locality in detail, date, approximate age of the bird, name of the person doing the banding and any other remarks pertinent to the occasion. These data should be transferred to a book or card system maintained by the bander and in addition they must be transferred to a special sheet or schedule furnished by the Biological Survey; this should be sent in about every two to four weeks during the banding season.

Banding at the Michigan Biological Station.

One of the most feasible means of securing birds for banding is to detail the young birds, before they are ready to leave the nest, as bearers of these aluminum legends. Birds which are just hatched or which are only a few days old should not be banded. In our experience, we found it much better to wait until the birds were fully fledged. Although the tarsi of birds in this stage are more or less fleshy, they do not become larger so that allowance need not be made for increase in size.

This method of securing birds to be banded was pursued by the writer at the University of Michigan Biological

Station on Douglas Lake during July and a part of August, 1920, at which time he had charge of the work in Ornithology at the Biological Station. The Douglas Lake region offers many favorable habitants for nesting birds. Suitable nesting sites are present in great variety, food is plentiful and the habitations of man are comparatively few. However, it was surprising to discover the extraordinary mortality among young birds due to what we may term natural causes. In all probability our attention should not have been called to this as well as to many other interesting and instructive facts concerning young birds had it not been for the intimate contact experienced while banding these birds in the nest. For the students, the banding seemed to lend added interest and zest to their bird study work and they were the more easily encouraged to be on the alert for something new and different. Additional opportunity was thus given for observation and study on behavior, nesting sites, nest materials, etc., all of which afforded the student a wealth of first-hand knowledge as well as created interest in the marking of the birds themselves.

As a result of our activities which extended over a period of six weeks, a total of 115 birds belonging to 20 different species were banded. 106 of these represented nestlings occupying 39 nests; eight others were young birds which were captured after leaving the nest and the additional one was an adult bird.

Following is the list of species banded along with the number of individuals of each species.

Spotted Sandpiper (*Actitis macularia* (Linn.))—4 juvs.
Black-billed Cuckoo (*Coccyzus erythrophthalmus* (Wils.))—3 juvs.
Belted Kingfisher (*Ceryle alcyon* (Linn.))—6 juvs.
Northern Flicker (*Colaptes auratus luteus* Bangs)—1 juv.
Whip-poor-will (*Antrostomus v. vociferus* (Wils.))—2 juvs.
Nighthawk (*Chordeiles v. virginianus* (Gmel.))—1 ad.
Kingbird (*Tyrannus tyrannus* (Linn.))—3 juvs.
Crow (*Corvus b. brachyrhynchos* Brehm.)—2 juvs.
Cowbird (*Molothrus a. ater* (Bodd.))—3 juvs.
House Sparrow (*Passer d. domesticus* (Linn.))—4 juvs.

Chipping Sparrow (*Spizella p. passerina* (Bech.))—12 juvs.
Slate-colored Junco (*Junco h. hyemalis* (Linn.))—9 juvs.
Song Sparrow (*Melospiza m. melodia* (Wils.))—11 juvs.
Cliff Swallow (*Petrochelidon l. lunifrons* (Say))—14 juvs.
Cedar Waxwing (*Bombycilla cedrorum* Vieill.)—14 juvs.
Red-eyed Vireo (*Vireosylva olivacea* (Linn.))—4 juvs.
Redstart (*Setophaga ruticilla* (Linn.))—1 juv.
House Wren (*Troglodytes a. aedon* (Vieill.))—4 juvs.
Hermit Thrush (*Hylocichla guttata pallasi* (Cab.)—6 juvs.
Robin (*Planesticus m. migratorius* (Linn.))—11 juvs.

Reasons for banding birds.

It may now be proper to inquire what we may reasonably be expected to learn from the banding of birds. A good deal has been written about this in one place and another so that a brief resume is all that seems necessary at this time. In the following paragraphs the writer has attempted to set forth by a series of questions, followed in some cases by answers, something of what has been learned and what may be learned from the, as yet comparatively meager, information which is now at hand.

1. Do birds return to the same nesting area for several seasons?

An interesting record illustrating this point is given in a recent number of Bird-Lore (XXII, No. 4, 1920, 249). At Lake Forest, Illinois, on May 25, 1919, a male Rose-breasted Grosbeak was banded (No. 49510) and then permitted to escape. He mated and assisted in rearing a brood of young during the summer. On May 2, 1920, No. 49510 returned to the same place and was again taken by the individual who captured him the preceding summer.

Even with the limited data now at hand similar cases might be cited with other species of birds.

2. Do birds return to the same area to winter year after year?

Numerous instances of such returns might be cited but one of Baldwin's records will answer the question for at least one White-throated Sparrow. This individual was banded on February 27, 1915, at Thomasville, Georgia, No. 15053) and was taken in a trap the following March at the same place. During the interim the bird had presumably

spent the winter either in northern United States or in Canada. With the banding of more birds the likelihood will be greater of finding out *just where* in the north these or other birds nest.

3. Do nesting birds use the same nest and have the same mates season after season?

4. Do birds wander far from their nests in search of food?

5. Do certain birds rear a second brood in the same nest or in the same region as the first brood?

6. Do young birds return to breed to the spot in which they were reared?

No. 251, a half-fledged Robin, was banded at Kingston, Rhode Island, August 4, 1908, and was recovered April 9, 1909, at the same place not more than 200 yards from the orchard in which it was reared.

7. Do migrating birds stop off at the same feeding places *en route* year after year?

8. Do certain individual birds come and go over the same migration route?

Records of the movements of *individual* birds will give valuable information concerning some of the general problems of migration. However, some means must be available for positively identifying these individuals, a means to be attained only by banding or otherwise marking in some permanent manner.

9. What is the rate of travel (not flight) of certain species of birds?

10. What is the rate of geographical extension of a given species?

11. How long do birds live?

A young Common Tern was banded at St. Clair Flats Canal, Michigan, August 13, 1909 (No. 4590). The bird was recovered at Whitebread, Ontario, Canada, August 5, 1912.

A young bluebird banded at West Allis, Wisconsin,

July 5, 1909, was killed by a Shrike at Evansville, Illinois, April 1, 1912.

All these and a host of other interesting, inviting and important questions yet remain to be answered more fully. The opportunities are large; the workers are few; only a bare beginning has been made.

In conclusion—the results already obtained from bird banding have justified its practice; but the work should not devolve upon a limited number of persons. It should be made the duty and the effort of many individuals and organizations for it is only by carrying on the work in an extensive way that large and valuable results can be obtained. With the plan now headed by the United States Biological Survey renewed energy and activity should greet the efforts of this active and efficient branch of the Federal Department of Agriculture.

The writer would take this final opportunity of emphasizing to the members of the Wilson Ornithological Club the desirability of their coöperation in furthering the work of bird banding and in seeing to it that every banded bird which is secured shall have a "return" record sent to the proper authorities.

COMPARATIVE PERIODS OF NESTLING LIFE OF SOME NORTH AMERICAN NIDICOLÆ

BY FRANK L. BURNS

[CONTINUED FROM LAST ISSUE]

Again to show the fine detailed work of some of our observers, I have assembled a table exhibiting day by day the increase in weight (in grams) of some nestlings taken in 1906 by the late John F. Ferry, Lake Forest, Ill. The Cedar Waxwing study (Aug. 20-28) is incomplete, but the development and length of nestling life of the Cowbird (June 11-22), Yellow Warbler (June 21-July 2) and Wood Thrush (June 11-22), exhibit a relatively slower growth, considering size, than the Catbird (June 13-24) and the Brown Thrasher (July 8-19).