

LOCAL MOVEMENTS OF BIRDS

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By no means least among the many problems which may be studied by bird banding is that of the local movements of birds. Are the "resident" birds which winter in a certain locality the same individuals which will nest there the following summer? How restricted are the movements of a bird during its winter or summer residence in a certain locality? How extensive a feeding range do our migrants cover in the few days they remain with us? A satisfactory answer can be given to such questions only by systematic banding in a particular locality.

The observations here recorded are some of the results of six years bird banding at a small station on the outskirts of West Lafayette and should be considered merely as a preliminary report.

The bluejay will generally be considered a typical resident bird. In banding some 120 individuals of this species there have been approximately 10 percent returns, all from West Lafayette, either at the original banding station or within a few blocks of it. Most of those not taken at the station were found dead by neighbors. A few typical examples of birds captured more than once are: 338352 banded Dec. 11, 1924, recaptured March 18, 1925, April 4, 1925, Jan. 15, 1927; 284364 banded Oct. 29, 1925, Jan. 11, 1926, May 21, 1926. These two birds would certainly have to be considered as true residents. On the other hand captures have been more frequent in late summer and early spring which may indicate a more or less general movement at these times, or simply that the young are beginning to spread out in search of food or that breeding season makes the food problem more acute.

Juncos may be taken as typical winter residents and migrants. The results of banding something over 300 juncos indicate that many individuals are true winter residents remaining in a particular locality much of the winter, visiting the same feeding station again and again. Some typical examples taken from our junco records are of special interest. The record of capture for six birds are: 78168 Dec. 19, 1925; Jan. 26, Feb. 12, 27, 1926, Mar. 27, 1926. 78174 Jan. 10, 13, 27, Mar. 27, 1926. 78176 Jan. 11, 14, 27, Feb. 12, 27, 1926. 185806 Nov. 22, Dec. 27, 1926, Jan. 22, 1927. 469716 Nov. 29, 1928, Jan. 2, Feb. 1, 9, 12, 1929. A169360 Nov. 15, 23, and 15 times between Nov. 23 and Dec. 24, 1929. 78168 shows a resident period of over three months.

It is of interest to note that during December, January and February most of the birds visiting the traps are banded individuals and in all cases have been banded at this station. The large number of unbanded birds caught in late fall and spring with few repeats, seems to indicate that these birds pass on quickly both north and south and are not winter residents as those caught in the winter.

In the spring of 1930 an experiment was undertaken to learn something definite of the feeding range of birds. An additional banding station was established on the grounds of Prof. Dukes, a little less than a quarter of a mile from our main station at 511 Russell St. and separated from it in a direct line by open fields. Here a Government sparrow trap was maintained under a tangle of native bushes and vines near the driveway leading to the house. Conditions were not greatly

different from those at our home station except that the place was a little more isolated and the bushes offered more protection. The same bait, mixed seeds, chick feed and bread, was used at both stations and the traps visited usually three times a day.

The first captures made at this new station were two song sparrows banded March 18 and the last captures two bobwhites banded May 12, a period of eight weeks. During this time 214 birds were banded representing 23 species. Of these 68 were banded at the new and 146 at the main station, 16 species being banded at each place. The only species of which large numbers were taken at one station and very few at the other was bronzed grackle, 61 being banded at the main station and only one at the new.

Of the 214 birds banded many repeated from one to more than 30 times but only five individuals, of three species were taken at both stations, a bluejay, three juncos and a white-throated sparrow. The only bluejay caught at the new station was A309436 April 7, which repeated at the main station April 17. At the latter station five bluejays were banded none of which repeated during this period.

Next to the grackles the juncos were second in abundance, 37 being banded at the home station and 17 at the new. Although there were many recaptures at both stations only three, two banded at the new station and one at the home were recaptured at the other station. Junco A169390 banded March 19 at the new station was recaptured at the main station March 25. Junco A169395 banded at the new station March 21 was recaptured at the main station March 25 three times in two different traps and was captured again at the new station March 26 during a blizzard. Junco A169405 banded March 25 at the home station repeated at the same station March 30 and was captured at the new station April 11. One junco repeated 24 times at the new, but was not caught at the home station, while another repeated 21 times at the home station but was not captured at the new. The only other bird trapped at both stations was white-throated sparrow A169392 banded at the new station March 19 and recaptured at the home station March 25. This bird was later caught at the new station on the following dates: April 15, 26 (three times), 29, 30, May 7, 9. It seems remarkable that this bird should have spent nearly eight weeks in the locality before continuing its migration north. It was the first of the white-throats to arrive this spring and the last to leave.

It is of interest that Song sparrow A169388 caught at the new station and banded March 18 repeated more than 30 times in less than a month but was never seen at the other station.

Of the 16 species of birds banded at the new station all but two, Fox sparrow and Towhee have at various times been taken at the home station, and during this experiment some of the species were caught in about equal numbers at each station.

The only other banding station in this locality is one maintained for the past five years by A. W. Cole about a mile from our station. During this period though we have each banded many hundreds of birds, in only three instances have birds taken at one station been taken at the other also. A Tufted titmouse and two Downy woodpeckers banded by Prof. Cole at his station were later taken at our station.