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DISPERSAL FROM A BANDING STATION: STARLINGS AND ROBINS

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STARLINGS

Bird-banders realize that a proportion of the birds at their feeding-and-banding station carry their bands, but that the proportion falls off abruptly a short distance away, and not far away a banded bird is rarely seen. I have computed a theoretical ratio between the proportion of banded Starlings where banded, and an estimated 650 yards away, where I take the railroad train from Garden City, Long Island,

to New York. At the railroad, there are almost always Starlings present, which compete with House Sparrows for bits of bread or other food thrown out to the birds. Meanwhile I have made proportional counts by sight of banded and unbanded Starlings from day to day at both places, for a period of four years, February 1953 through January, 1957, to check against the computed ratio.

The same individuals are counted over and over again, so the counts will be higher than the number of Starlings actually counted, but comparable as proportional percentages. It is also probable that a high percentage of the banded ones are homing to my station, while unbanded individuals tend to be there merely by chance, perhaps only once, so that the percentages merely indicate the proportions present at my station, overstating the proportion of banded birds in the whole population which visits the station.

The results should provide more tangible evidence of what we have known in a general way when considering a bird's daily range, home area, and migration.

Within a radius of 650 yards (and more) from my banding station, Starlings are everywhere abundant. They occur concentrated in flocks at one place at one time, at another place at another, but in the long run one may assume that their numbers vary with the area, which varies as the square of the radius. They can go in any direction from my station, and the proportion of my birds at any place should vary inversely as the square of its distance.

The counts at my banding station total 3504, unbanded 2342, banded 1162, 33.2 percent. Those at the railroad total 2309, unbanded 2305, banded 4, 0.174 percent, or between 1 and 2 per thousand. At the close of the first 27 months they totalled 489, unbanded 485, banded 4, 0.840 percent, or over 8 per thousand; but in the last 21 months, though counts were higher, there was not a banded individual.

Assuming that the percentage of my banded birds does not vary greatly for a radius of 45 yards or a little more, as most Starlings come in to my feed from as far as that, or when as near are likely to come to it, the expected percentage of banded at the railroad would be 33.2 divided by 14 squared, or 0.17 percent. I conclude that the chance of an individual being recorded at my station, at a time when it is based 650 yards away, is remote.

In Juncos and White-throated Sparrows, the percentage of banded individuals at my station rises notably through late fall and winter with the number of new ones banded. But there is no definite correlation between rise of percentage and new birds banded in the Starling. I assume that being trapped is more of a repellent to Starlings, but when individuals have acquired the habit of using the station before they were banded, they tend to return to it later. Important factors in a bird's homing are probably mental qualities it shares with man, namely habit formation, the pleasure of recognition and the kind of possession which recognition implies.

The Starling is a bird with a wide daily range. It is probable that banded individuals which come to my station know an appreciable surrounding "home area" intimately, and home to the station visually, as a

man might, and likely that such of them as are permanent or summer residents nest not far away in this home area. The borders of what I call their home area may not be well defined, and are probably considerably more rather than less than the distance to the railroad, but when they range a score of miles or more outside these borders (something not unlikely for a Starling to do, even in the course of its day), I question if they have much knowledge of the intervening territory, beyond distances and directions, and the ability to come home across it. It is not unreasonable to suppose that there are other feeding stations in their home area which my banded Starlings use (and home to), but they probably do not move from mine to another sufficiently as a unit to make an appreciable percentage of Starlings there.

The percentage of banded Starlings at my station varies greatly from one month to the next, in any year, showing some correlation with season, though the same months show wide differences in different years. The actual counts, though somewhat fortuitous, when added together for the four years in the following table are more revealing than the percentages alone.

	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Total	335	506	495	309	149	49	70	175	252	572	404	188
Unbanded	237	360	284	148	76	37	45	122	201	437	273	122
Banded	98	146	211	161	73	12	25	53	51	135	131	66
Percent Banded	29	29	43	52	49	24½	36	30	20	23½	32	35

ROBINS

Data to hand on Robins may make clearer my present hypothesis of a bird's home area, and more restricted and temporary home station, with which view I have correlated the above Starling data.

The spring of 1956 was cold and backward. Snow lay on the ground, at least in patches, until the latter part of April. I trapped only two Robins that spring, a male on March 25, which I banded, and a female on April 8, which was a return from April 30, 1955. But several frequented my feeding and trapping station by a small spruce tree in front of the house, where there was some bare ground, for twelve days or so in April. From proportional counts made, there were more banded (68½ per cent) than unbanded (31½ percent) individuals present. From slight plumage differences, there were at least two each of banded males and females involved, probably more. Then, as the snow melted and their feeding ground elsewhere opened up, after April 19, Robins ceased abruptly coming to my station. Only occasionally, one drifted through the yard, so far as I could see an unbanded individual.

An interesting point is, that while frequenting it, individuals that did so, particularly the banded ones, took a proprietary, "territorial" interest in the station, often driving away other Robins that came along. I have no doubt they were in their general home (nesting) area, presumably in the territorial phase of their annual cycle, but judge their ultimate home stations (nesting "territories") were well outside my yard.

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