ARE NESTING TERRITORIES ALWAYS AVAILABLE FOR RETURNING JUVENILE SONG SPARROWS?

By CHARLES L. WHITTLE

F. W. CHAPMAN in the second revised edition of his "Handbook of Birds of Eastern North America," under the heading "Historical Review," pp. XXXIV and XXXV, remarks on the "apparent failure of migrants to return to the place of their birth" as one of the conclusion to be drawn from the work of bird-banders. While it is not definitely stated, I assume that Dr. Chapman refers to the apparent failure of young birds to return to the place of their birth to nest the first nesting season following their birth. That the published banding records to date lend considerable support to such an influence is certain, but I know of no intensive study of any species having been made in this connection.

It may be that we are too hasty in coming to a conclusion, for many young birds, juveniles we will call them, may return to their birthplaces the following season and yet not nest there, especially uncolonizing species and those exacting strict territorial areas. Perhaps all the factors entering into the matter of nesting have not been taken into account. It does not follow that because young birds return to the place of their birth and attempt to nest there, or in the immediate vicinity, that *opportunity* exists for them to do so. There are at least four factors which have a bearing on the matter:

(1) the great loss of juvenile birds during their first year, a continuation during their first two migrations of the fatalities due to inexperience so common before their migration begins;

(2) the well-established fact of high returning ratios of old birds as compared with young birds, which may reasonably indicate high survival ratios also;

(3) the well-known fact in case of some species that the old birds, particularly the males, precede the young on their migration to their nesting grounds, where, in the case of birds returning to places where they nested previously, they preëmpt former nesting territories; and

(4) scarcity of nesting territories or nesting sites.

Of these four factors, the most important and testable appear to be the third and fourth ones, and their application in the case of Eastern Song Sparrows at my banding station during the nesting seasons of 1931 and the early part of 1932 will be pointed out below in this connection.

Before doing this, however, reference should be made to an

earlier, theoretical article by Whittle appearing in the *Bulletin of the Northeastern Bird-Banding Association* under the title, "The Bearing of a Knowledge of Nest-Spacing among Birds on the Work of the Bird-Bander," see Vol. II, 1926, pp. 78 to 81. In this article consideration is given the question: To what extent do birds born the previous season return to their place of birth to nest? (page 79). Reference is made to the possibility that young returning Barn Swallows might find the available territories within the barn in which they were born already occupied by returning adults which had arrived earlier, thus forcing them to nest elsewhere. No confirmatory observations, however, are offered to support this hypothesis. Stress is laid on the fact that the percentage of recorded adult birds of several species returning to my banding station in Cohasset, Massachusetts, during the summer season greatly exceeded the percentage of returning young birds.

The following data on this problem were gathered at my banding station in Peterboro, New Hampshire: Between July 13 and August 13, 1931, I banded nineteen Song Sparrows. Of these, eighteen were young birds. None was banded as a nestling. That these eighteen birds were young-of-the-year was shown by their behavior and by their unworn plumage. Fourteen of them carried hippoboscid flies, either *Ornithomyia avicularia* or *Ornithoica confluens,* which in my experience occur only on young birds recently out of the nest.

Of my four nesting Song Sparrows in 1931, two were returns-2, having been banded in 1929, and one was a return-1, banded as an adult in 1930. These birds remained throughout the nesting season and were three of the four birds nesting in the two territories within two hundred feet of my station. The opportunity for juveniles to nest in the nesting territories occupied in 1931 was accordingly limited to *one* bird, but no juvenile bird banded in 1930 was taken as a return in 1931, so that the age of the fourth bird is unknown.

The case for 1932 was strongly contrasted with that of 1931, for out of the eighteen juvenile Song Sparrows banded in 1931, four were returns in 1932—B69371, B69411, B69413, and B69417—and were recorded three on April 8th and one on April 10th. Only one adult returned in 1932, B69257, and was first recorded April 10th, a female nesting here in 1931. It will be noticed that the scarcity of returning adult Song Sparrows in 1932 left *three* gaps to be filled to complete the two pairs now nesting in the two territories occupied in 1930, 1931 and 1932.

That only four Song Sparrows were nesting here this season was quite apparent by early May. One male sang regularly from a small elm, and the other from an apple tree one hundred and

eighty feet from the elm. The two pairs did not visit each other's territories, but all four birds visited my ground trap for canary-seeds, one at a time, or occasionally in pairs. This trap was situated approximately one hundred and twenty-five feet from one territory and about one hundred and eighty feet from the other.

On May 27th it was decided again to establish the identity of the four nesting birds, and they were accordingly all trapped in the forenoon, one at a time. Two of the four nesting birds were B69411 and B69417, banded in 1931 as birds-of-the-year. The third bird was my only adult return Song Sparrow, B69257, which nested here also in 1931, and the fourth was a new bird banded by me May 18, 1932.

The above records are given for what they are worth. Alone, they are not conclusive in proving that the reason juvenile Song Sparrows do not nest here regularly year after year is because old returns preëmpt the nesting territories used, yet the facts recorded indicate that such may be the case, and they prove that occasionally young birds do nest in the same area in which they were born some ten months previously.

Peterboro, New Hampshire, May 20, 1932.

REPORT OF THE RECORDING SECRETARY OF THE NORTHEASTERN BIRD-BANDING ASSOCIATION FOR THE YEAR 1931

ONE hundred and fifty thousand birds, approximately, are now entered on the banding records of this Association. The totals which we give include those of the Austin Ornithological Research Station, where the work of several of our members reporting individually last year is included in the Research Station report. A separate account of the Station was published in the April, 1932, issue of *Bird-Banding*.

The total number of birds banded in 1931 was 27,202 (over four thousand more than last year), of one hundred and fifty species or races. Total returns were 1086, embracing 44 species. Included in these totals are the bandings and returns of William P. Wharton at Summerville, South Carolina. The species banded in largest numbers were Terns (Common, Arctic, and Roseate), 11,206; Song Sparrow, 1690; Junco, 1332; Purple Finch, 1289; Gulls (Laughing and Herring), 1137. The species returning in greatest numbers were Purple Finch, 185; Tree Sparrow, 162; Song Sparrow, 162; Chipping Sparrow, 154; Junco, 70.

Individual members banding the largest number of birds last year were: Mrs. Prince S. Crowell, 2572; William P.