

Another year it is my intention to visit all the nesting islands of this group and carry on banding operations on a much larger scale. Mr. H. H. Cleaves, formerly of New York, visited Lake George some years ago and secured some remarkable photographs of gull life. This colony of Great Black-backed Gulls is said to be one of the largest in North America.

THE INFLUENCE OF GROUPS OR CLANS AS AFFECTING THE PRESENCE OF BIRDS AT BANDING STATIONS

BY CHARLES L. WHITTLE

DURING my early banding work it seemed that the movements of birds at my station during the winter season were so unaccountably erratic that little could be learned by their study. Some birds like Juncos coming regularly in groups and feeding long, while others dropped in for a minute only, feeding nervously and soon flying away. Certain ones were seen daily; others were irregular attendants. Among these seemingly chaotic comings and goings, especially in the winter season, can we detect hidden causes which account for such contrasted behavior.

The presence of Goldfinches, Pine Siskins, and Purple Finches is in particular subject to great variations, the make-up of the flocks visiting the station varying every day, new birds appearing and old ones disappearing for a short time only or for the season in many instances. These three species are characteristically roamers, as shown by the fact that banded birds of all three are frequently taken at several different stations in Cohasset. On the other hand, Juncos and Tree Sparrows have rarely been known in this town to move about from one station to another.

Juncos and Tree Sparrows, in contrast to Purple Finches and Goldfinches, characteristically occur as small local groups or clans throughout the winter season, and such groups may remain during the daytime within narrow limits for months, their fixity being governed by the food-supply, other things being equal. We thus have here in Massachusetts, in winter at least, two well-marked types of birds having strongly contrasted habits—roaming species and sedentary species.

After five years of active banding, I can offer little to explain many of the puzzling movements of Goldfinches and Purple Finches at banding stations during the winter season, and even their movements during nesting time, when regularity should be the order of the day, have thus far defied analysis.

In the case of Juncos and Tree Sparrows, however, I think that to an important extent a better explanation of their behavior is now possible than was the case five years ago, and the following notes are offered as perhaps helpful in enabling banders properly to estimate the comings and goings of these two species to and from their winter quarters and the behavior of the birds during the winter season.

I will illustrate what I mean by citing my observations on the habits of a group of Chipping Sparrows on their nesting-grounds after they had flocked together in late August, applying the clan control shown to exist to help explain the behavior of certain Tree Sparrows.

About Mrs. Whittle's banding station in Peterboro, New Hampshire, from six to ten pairs of Chipping Sparrows nest each season. Of these, only about two pairs nest sufficiently near—say within two to four hundred feet—to visit the traps during nesting-time. Immediately after the nesting-season is over and the young are shifting for themselves, two sorts of Chipping Sparrow units visit the trap, the mated parents and the broods of youngsters. Shortly after this period, as molting begins, these two units suddenly disappear and a new unit takes their place—the group or clan unit made up of the banded adults and banded young plus several more families of locally-nesting birds from the immediate neighborhood, up to a total of perhaps twenty-five or thirty birds. This group in the late summer of 1924 took up its quarters in and about a large barnyard some four hundred feet from her banding station, where ample food occurred. At this time, with equal suddenness, the visits of banded Chippies to the traps dropped almost to the vanishing point. With bird-glasses, however, it was noted that the barnyard group contained several and probably all of her banded Chipping Sparrows, mostly birds banded during 1924.

A new force now controlled the behavior of the birds, which served to keep them together, and so strong was this clan attraction, that each day only occasionally would one or two of Mrs. Whittle's banded birds leave the group to visit the traps, where, with haste and apparent nervousness, they would feed for perhaps a minute, after which they would fly

straight back to join the group, or clan. Later, in September, after the molt, the group would range about and be away for days, but it would on occasion suddenly reappear for a few minutes. In another connection this group of Chippies has previously been described by me.¹ At this writing attention is called in particular to the *prepotency* of the bond which bound the members of the clan together, a group which it is believed persisted and became a migratory unit as it left for its winter quarters and during the journey south. It should be pointed out, also, that the coming of the few banded birds to the traps did not serve in the least to cause the group as a whole to do so, and it is likely that had the group been quartered two or three times as far away, none of its banded birds would have come to the traps.

During the winter of 1924-25 there were two or more groups of Tree Sparrows within five hundred to two thousand feet of my banding station at Cohasset, Massachusetts, but none of the birds visited the station even occasionally. A swampy area, which in places was free from snow during the winter, supplied sufficient food to support the birds within a small acreage.

From February to April, 1926, a group of thirteen birds of this species regularly and frequently visited my station many times during February and March when the ground was covered with snow, the birds first appearing immediately after the first real snow-fall of the season on February 2nd. I banded all but one of these with colored bands. Later, in April, when the snow had nearly or quite gone, the attendance became desultory, only two to four birds coming at a time up to the time of their migration northward.

On November 13, 1926, after the first snow of the present winter season, a small group of Tree Sparrows, some eight to ten in number, appeared say fifteen hundred feet from my station, and on December 7th a single banded Tree Sparrow, a sight return, No. A26625, came to my feeding-shelf, followed in a day or two by two more sight returns. For the last month these three birds, part of my banded group of February, 1926, have come singly, or occasionally two together, to the shelf, where they feed hastily and nervously, usually flying away towards the locality where I first saw this species on November 13th. I have not secured all the

¹"On the Nature of the Relationship Existing among Land Birds in Sustained Aerial Migration." *The Auk*, Vol. XLIII, 1926, p. 493.

data that I should like regarding the unbanded Tree Sparrows now near my station which do not visit it, but from the fact that wintering groups of this species often form a remarkably fixed and constant number, and move about in a restricted area, the behavior of the three returns may be accounted for, perhaps, by the fact that, of the number of Tree Sparrows composing such a local group near my station, there are three of the birds which fed at my trap last season, namely the three returns. The behavior of these birds as described may be accounted for largely by the mass or group behavior of the flock of which they may be minority members, the majority of the group having no knowledge of my feeding station and accordingly not visiting it. On the other hand, my three returning birds which visit the station erratically, but usually every day, commonly one at a time, are insufficient in number to draw the other members of the group away from their local wintering area. Were over seventy-five per cent of the neighboring group made up of my last winter's birds, it is quite probable that the entire flock would now be visiting my traps. In other words, group or clan behavior determines the location and the range of the flock; individuals of the flock may come and go, but the majority ignore their movements and remain fixed inside their chosen limits.

In advancing these considerations, I am but applying analogically the very definite and well-ascertained behavior of the Peterboro Chipping Sparrow group as described. We are dealing with two species belonging to the same genus (*Spizella*). In this small genus of closely similar species it is rather to be expected that the habit of forming groups common to both should also carry with it similarity of behavior.

The considerations outlined above should make us cautious in arriving at conclusions regarding the interpretation to be placed on bird movements about our stations, or even in interpreting failures of the birds to appear or reappear at our feeding-places. To illustrate, it is probable that banded Tree Sparrows of previous years may winter as part of a group of this species quite near one's station and yet not visit it; or that banded Tree Sparrows taken one year as migrants may on a succeeding year, as part of a group, quite pass by the station as an effect of clan control. In these instances, particularly if repeated year after year, the bander's bird journal will be apt to contain notes to the effect that Tree Sparrows appear not to come back to the old wintering area or to follow the same migration route season after season.

In a previous article (*Bulletin of the Northeastern Bird-*

Banding Association, Vol. II, pp. 78-81) attention was called to the existence of limited nesting-areas, outside of which many nesting species are unlikely to go during the nesting-season, as affecting bird attendance at near-by banding stations and the necessity of considering these areas in interpreting the banding records and observations made at such stations. Above, the existence of restricted wintering areas in the case of some species is also pointed out, with a very limited discussion of the reasons why such areas should be taken into account when interpreting the phenomena at banding stations.

COLORED BANDS

ATTENTION is called to the opportunity now available to secure suitable colored enamels with which to color bird bands and also to have bands colored to order. Mr. A. W. Higgins's advertisement in this issue gives prices for coloring bands and for enamels.

In recommending to him that he should make it possible for banders easily to have this service, we feel that the use of colored bands should not become so general as to endanger their value as an aid in scientific work, which might result if they were used at stations so close together that birds wearing them would visit more than one banding station, thus destroying or impairing their use in permitting sight returns and sight repeats. In certain cases, however, stations close together may use them effectively if the operators use no colors in common.

It is also felt that to a considerable extent their employment should be largely confined to the most active banders and those wishing to investigate specific ornithological problems. It is recommended, therefore, that their use be restricted as a rule to operators planning to use them in helping solve some definite problem, since to use them otherwise is likely to yield results of importance only by accident.

A MYSTERY SOLVED¹

The Canadian National Parks Branch, which keeps a record of all wild-bird banding operations of interest to

¹ Communicated by the Canadian Department of the Interior (Canadian National Parks). Originally appeared in *The Canadian Field-Naturalist* for May, 1925.