

fresh from its nest, make this long journey? Was it straight across the North Atlantic, or by easy stages of a longer route via Greenland, Iceland, and the islands north of Great Britain, to France? Do all our American-bred Arctic Terns cross to Europe en route to their wintering resorts in South Africa, South America, and the Antarctic Circle? Some day, perhaps, with increased interest in bird banding resulting in a great mass of records, we may be able to solve these and other perplexing but exceedingly interesting questions.

Cohasset, Massachusetts.

BIRD-BANDING AT SUMMERVILLE, SOUTH CAROLINA

BY WILLIAM P. WHARTON

Summerville, South Carolina, is situated on the coastal plain about twenty-four miles back from the coast at Charleston. Through the wise foresight of the founders of the town, a large part of the original pine forest has been preserved, and under this have been planted many ornamental shrubs and vines, which in the spring make the town a fairyland of beauty. The combination of old timber with thickets offers attractive conditions for many kinds of birds. On the outskirts of the town to the southwest, construction of a large golf-course has created many open areas which are inhabited by species preferring such conditions, while the adjacent woods and natural thickets harbor some birds not often seen in the more thickly settled district.

It was in this section that the writer lived during the first four months of 1926 and of 1927, and carried on banding operations. In the first season, 425 birds of 17 species were banded, and in the second 407 birds of 18 species. During the four months (January, 1927 to April, 1927), a total of 25 returns from the previous season's banding were taken.

The first year the following traps were used: one self-adjusting sparrow-trap, one auto-trip shelf trap, one funnel-type warbler-trap, and one automatic tree-climber trap, all products of A. W. Higgins, of Rock, Massachusetts. In addition to these, during the month of April, a five-foot by five-foot pull-string drop trap, made locally after specifications of the Biological Survey, was used. Since the latter came late upon the

scene, it was not given as full a trial as during the succeeding season, and the sparrow-trap was therefore the standby, taking more birds than all the rest put together. The so-called warbler-trap caught no warblers, and only a few other birds, while the trap for tree-climbers produced no birds. Both traps were discarded the second year. On the other hand, one new sparrow-trap and one new auto-trip trap were operated as was the pull-string drop trap, during the entire season.

At the outset the traps were all set in the door-yard of the house which I occupied. During the first two and a half weeks the birds came freely to the principal station, 57 individuals of 9 species being taken. Then repeats became so troublesome, especially the White-throated Sparrows, that the sparrow-trap was moved about two hundred feet into the edge of some wild growth near the corner of a hen-yard. Immediately an almost entirely new lot of birds was taken. These were chiefly Chewinks. In about two weeks the possibilities of this location appearing to have been exhausted, the trap was again moved, this time to the open pine woods in the near vicinity. There, as might be expected, a lesser number of individuals was taken, but a Hermit Thrush and a Tufted Titmouse were added to the list of species. About the middle of February the traps were moved to the edge of an openfield, and an increased proportion of Chipping Sparrows was banded. Subsequently the traps were moved several times, the most notable results being from the sparrow-trap in the comparatively open country of the golf-course about March 20th. From that date until about the first of April, approximately 155 birds chiefly Chipping Sparrows, but with a considerable sprinkling of Savannahs and Vespers, were taken at two or three spots in this general locality. On March 26th, the record day, 47 birds were banded. During the remainder of the writer's stay up to April 25, the 70 birds banded were mostly taken in the home yard by means of a pull-string drop trap.

During the second season, as above indicated, another self-adjusting sparrow trap and another auto-trip shelf trap were employed, and the pull-string drop trap was used the entire season. Despite this increased use of traps, which extended the territory covered somewhat, and the increased knowledge of the locality acquired from the preceding season's experience, 23 fewer birds were banded in 1927 than in 1926. A probable explanation of this failure to measure up to the previous year's standard is to be found in the very abundant food-supply which was available during the past winter.

When, about the first of January, in company with Dr. T. Gilbert Pearson, I had an opportunity to look over the situation in the banding territory of the preceding year, I felt optimistic of surpassing by a substantial figure the banding-record of the year before. In one weed-patch in particular, small sparrows, Chippies chiefly, were present in thousands. With great enthusiasm and high anticipation, we prepared baited spots and set the traps. Dr. Pearson even spent numerous solitary hours carefully concealed, watching the drop trap. Yet few birds were taken, and of these not one was a Chipping Sparrow. White-throated and Fox Sparrows and Chewinks predominated among the captures. After eight or ten had been taken in a particular location, however, these repeated so persistently that practically no new birds could be taken, and it was then necessary to move the traps again. Thus in the month of January, 1927, despite the use of double the number of traps and considerably increased effort, slightly fewer birds were banded than during January, 1926. February was even worse, for, as compared with 87 birds banded during February, 1926, but 27 were banded in the same month in 1927. Even March showed an increase of but seven birds over the same month of 1926, despite the additional equipment employed; the gain of 23 birds in April was the factor which brought the total of 1927 above the 400 mark. In view of the great number of birds and their reluctance to come to the traps during the first part of the season, it would seem that the abundance of natural food severely handicapped operations in 1927.

To the person who has banded only birds to be found commonly in New England, it is an interesting experience to handle some of the typical Southern birds. Among these it was my fortune to take, during the two seasons, 43 Cardinals, 23 White-eyed Chewinks, 6 Carolina Wrens, 2 Mockingbirds, and one Carolina Chickadee. As all these are resident birds, little result, so far as study of migration is concerned, can be expected from banding them; but interesting information can doubtless be secured regarding their local movements, their plumage-changes, the age to which they normally live, etc. To one who has never handled a Cardinal in life, a never-to-be-forgotten experience is likely to occur when the bird's beak closes on his finger. No less tenacious than that of the bulldog is the grip of the Cardinal when he once takes hold. The only way of breaking it, so far as my experience went, was to insert a narrow paper-knife or similar implement through the mouth near the base of the bill, and, by turning it, pry the

mandibles apart. They are panicky birds, if one may judge by the outcry they make when taken in the hand, but they are not quitters in any sense, as one might judge the jays to be. The White-eyed Chewinks do not seem to differ in disposition from their red-eyed relatives. Several birds were taken whose irises were of varying shades of brown or had even a slight hint of red in them, and there is a possibility that there may be some inter-breeding between the two forms. The Carolina Wrens and Titmice have the characteristics of their families, and the Mockingbird is, of course, in a class by himself, and in my experience mighty shy of any trapping device.

For those who are interested in the study of bird parasites and diseases, it will be of interest to learn that in 1926 at least eleven birds were found affected with "ticks," (so-called by residents of this region), fastened to some part of the head, while in 1927 not a single tick-infested bird was taken. Some of these parasites had grown to the size of a small pea and had apparently inflicted a good deal of damage, probably of a temporary nature, on their hosts. They were usually removed by the use of thin scissors, cutting them off as close as possible to the skin of the head. Birds thus relieved, which were trapped subsequently, appeared to be none the worse for their experience. The disease which so commonly affects the feet of Chipping Sparrows was found among them there,—38 birds out of the 358 banded having been noted as having the disease or showing unmistakable signs of having had it. One Savannah Sparrow, one Field Sparrow, and one Junco were also recorded as affected with this disease.

An opportunity was offered to observe the head-molt of the White-throated Sparrows. This occurred over a considerable period, the earliest being noticed on January 25, 1926 (probably an unusual date), and it was still in progress in some birds when banding operations ceased late in April, 1926, and early in May, 1927. Indeed a few dull heads showed no signs of molting at these late dates. Of all the White-throat returns, even those taken early in January, every bird had a fairly bright-colored head, indicating that all the dull-headed birds were those hatched during the summer of 1926.

The returns of 7 White-throated and 3 Savannah Sparrows, banded in 1926 and retaken in 1927, have already been reported and commented on in a note in the October, 1927, number of this *Bulletin*. Other returns taken in 1927 were: 10 Chipping Sparrows, 2 Cardinals, 1 Hermit Thrush, 1 Brown Thrasher, and 1 White-eyed Chewink—a total of 25 returns, all birds banded by me the year previous. Of these, it is fair

to assume that the Hermit Thrush had gone north during the summer; the Chippies may have been local breeders in part, and the others, with the possible exception of the Thrasher, doubtless were permanent residents.

Banding as at present carried on necessarily brings one into contact with a very limited number of species. Dr. Pearson and I, however, spent much of our time in observing those which we were unable to trap, and took a few short trips to nearby marshes to look for water-birds. In fact, we made a little list of the winter birds we saw during January, 1927, which, together with a little story written by Dr. Pearson was printed by the National Association of Audubon Societies under the title "Winter Birds of Summerville, South Carolina." Doubtless copies of this little leaflet are still available at the office of the Association.

As I finish this article, word comes from the Biological Survey that Brown Thrasher No. 424880, which was banded by me at Summerville on April 3, 1927, and which I took as a repeat on April 5, 6, 8, 10, and 14 was taken on November 14th at Clinton, North Carolina, at least one hundred and fifty miles in an air line northeasterly from Summerville. Since Thrashers winter at Summerville and were nesting there the latter part of March and the first part of April, and since this bird stayed in a restricted locality for at least twelve days, I had assumed it to be a resident bird. This return record, however, seems to indicate either that it was a migrant, or else that it took to a wandering life after domestic cares were over, the former view being the more probable. It would be most interesting to know the true story of this particular bird.

THE WHITE-THROATED SPARROW AT ST. ANSELM'S COLLEGE BIRD SANCTUARY

BY REV. EUGENE GOELLNER, O. S. B.

A VISIT at any season to St. Anselm's College Bird Sanctuary at Manchester, New Hampshire, would convince the uninitiated that birds appreciate and respond to human kindness. Furthermore, a visit would reveal the fact that bird attraction, conservation, protection, and in a certain sense, bird propagation are within the power of many, entailing no