

pair of adult terns hatched out two young, the number of adults would also be 13,064, a total of 26,128 tern population for the island.

While mortality among young terns is always great, recent storms and torrential rains were probably large factors this year and not lack of food, for small sea herrings (*Clupea harengus*) were everywhere in great abundance. I am indebted to Mr. Clinton V. MacCoy, Curator of Fishes at the Boston Society of Natural History, for the identification of the small herrings.—CHARLES W. TOWNSEND, Ipswich, Massachusetts.

**Tail Plumes as a Means of Marking Individual Birds.**<sup>1</sup>—At Ithaca, New York, several little flocks of Tree Sparrows (*Spizella a. arborea*) have established themselves year after year in the marsh and brushy fields at the head of Cayuga Lake, and there last November I set up my feeding station and started an intensive study of the local range and permanence of these little groups.

To facilitate observation I decorated the birds with brightly colored feathers. Staining the birds themselves had proved unsatisfactory in this humid Ithaca climate, and so at Dr. A. A. Allen's suggestion I used small white chicken feathers, which could be boiled in "Diamond" dye, thus



Photo by V. E. Gould

A "Plumed" Tree Sparrow.

<sup>1</sup>Read at the Semi-centennial Anniversary of the American Ornithologists' Union, Fifty-first Stated Meeting, in New York, November, 1933, as a portion of a paper entitled, "The Tree Sparrow in Winter and Summer."

assuring permanent colors, and glued them into the base of the tail with "Duco Household" cement (see photograph).

This method proved satisfactory in every respect. It bothered the birds not at all; with very few exceptions the feathers stuck throughout the winter; and they certainly were conspicuous. I soon discovered that by applying the feathers upside down they curled upward and were doubly noticeable. Last winter I used in general only two colors. Dr. A. C. Frazer of the Genetics Department at Cornell was operating a station at his home, where he kindly applied yellow feathers for me; at my station in the marsh the birds flaunted white plumes. For special cases different colors and combinations were used. Colors most conspicuous in the field, and less liable to fade, are brilliant red and yellow, light green, and white. Shades of blue tend to be indistinguishable from green and dirty white. With a reasonable amount of care variations can be procured by tipping the feathers with another color and thus adding to the number of possible combinations.

My conclusions are still in a more or less hypothetical condition, and I intend to go into the matter more deeply this winter, with a different color or combination for each individual. In general, however, I observed that a flock seemed to stay within a radius of from five hundred to one thousand feet. Of the thirty-odd birds that ranged in the immediate vicinity of my station I marked and caught repeatedly practically every one. Five other little flocks had their headquarters about fifteen hundred to two thousand feet in various directions from my blind, in each of which I regularly saw but one or two white feathers. These may have been stragglers from their group, or they may have been captured during the two heavy snows of the year, when I believe whole flocks wandered beyond their normal territory in search of food, for I regularly saw an unusual number of unmarked birds at my station at these times.

There were ten captures and fourteen sight records between the two stations—as the sparrow flies, about three fifths of a mile. Of these, four were regular residents at the original station, repeating frequently both before and after their capture at the other. The others never returned to the place of banding. Number '69 is unique—banded March 20, 1932, by Dr. Frazer, he repeated regularly until the end of April. The following season he was never taken there, but I caught him January 29, 1933, marking him with a red and a white feather, by means of which I secured sight repeats continuously until February 6th.

The status of these non-repeaters can only be surmised. They may have been located somewhere midway between the two stations, and wandered at random in both directions. These records may indicate a real movement during the winter (the captures were all made between January 25th and February 26th, when migration is supposedly at its lowest ebb). They may have been, like the first four, regular residents at one or the other station, with the difference simply that they did not happen to wander again into the traps. The weather does not seem to have been a factor in these wanderings, for the records are about equally divided between snowy and more open conditions.

As in any study, comparisons add materially to the value of the work. I have already had some interesting correspondence with a number of bird-banders in the Eastern States. There are doubtless other towns in which more than one station is being operated. I should appreciate hearing from such stations as to whether or not the operators ever take each others' Tree Sparrows, the distance between the stations, time of year, and conditions under which any may have been taken. Any information not already published in the various ornithological journals concerning captures from

more distant stations will also be gladly received, for, though one of the best repeaters, returning year after year to the same locality, this species is taken only rarely at other stations, and information concerning its routes of migration is almost nil.—A. MARGUERITE HEYDWEILLER, Cornell University, McGraw Hall, Ithaca, New York.

---

**A Semipalmated Sandpiper Recovery.**—A Semipalmated Sandpiper (*Ereunetes pusillus*) banded at this Station in the early evening of August 29, 1933, was "captured" twenty-six days later, September 24th, at Carupano, Venezuela, by A. A. Sentelli. If we assume that the bird took an airline flight, the journey of 2100 miles would have been accomplished at the rate of eighty miles a day. However, if we adopt the more probable belief that the bird followed the coastal route to southern Florida, and then reached Venezuela by way of the Islands of the Caribbean Sea, the bird travelled approximately 2800 miles—an average daily journey of 107.7 miles.—MAURICE BROWN, Austin Ornithological Research Station, North Eastham, Massachusetts.

---

**A Female House Wren Recovery.**—The following record of a House Wren (*Troglodytes a ædon*), C-8008, has just been completed. The bird was one of five nestlings banded on July 15, 1931 by Mr. Jerome Foxman at the Boy Scout Camp, Stambough Reservation, five miles south of Youngstown, Ohio. On the morning of October 13, 1933, this bird was found dead in a yard near a bird-bath in West Newton, Massachusetts and it had apparently died a natural death. The weather was pleasant, there had been no storms worth recording for several days, and there was at the time a migration movement of Juncos, Goldfinches, and Myrtle Warblers which were present in some numbers.

The status of this bird is problematical. It may have summered at or near the place of banding and then wandered east, or it may have summered near its place of recovery.—CHARLES B. FLOYD, Auburndale, Massachusetts

---

**Three Returning Mated Pairs of Chickadees.**—Up to the present twelve Chickadee returns<sup>1</sup> have appeared at my station, including three known mated pairs. Of these the history of F23150 and F23152 is most interesting. These two birds were banded within ten minutes of each other on January 29, 1932, and have kept constantly in each other's company ever since. Although I have not succeeded in tracing them to their nesting territory, their close intimacy seems to leave no reasonable doubt that they are mates. Last fall they returned together on October 8th, this year on October 14th. Their attachment is still as strong as ever, one rarely being seen without the other.

Another returning Chickadee, F23149, mated in 1932 with F23154, the pair returning together in October of that year. F23154 met with some misfortune and was not seen after October 11th. Two new birds were accompanying these birds early in the fall. F23149 mated in the spring with one of these, F31792. This pair were seen together on October 22d of this year and have repeatedly come to the feeding-shelves together since.

---

<sup>1</sup>"Return," in these notes, indicates three months absence from the station, but not necessarily from this region, since these Chickadees are all permanent residents in the locality.