

enter the hole and remain inside, presumably the brooding female. The nest-cavity was inspected with a flashlight June 11th, and three fledglings about three days old were discerned in the nest, which was located some three and one half feet from the entrance. On the above date the adult female was captured in the nest-hole, and banded on the *right* leg. The adult male (sex determined by larger size, slower wing-beats, and less frequent visits to feed young) was trapped and banded on the *left* leg on June 15th, and was taken by automobile in a northwesterly direction to Springfield, Pennsylvania, four miles distant, and released at 7.40 p.m. Upon the return to the banding-site at 7.55 p.m., as dusk was settling down, an adult was seen to enter the nest-hole, from which it did not emerge, and it is assumed this was the female.

The following morning, at 6.45 a.m., both adults were in evidence at the nest, and a *Sight Repeat* was secured of the male, the band on his left leg gleaming in the sunlight as he perched on a dead limb overhanging the water. Trapped again on that evening at 7 p.m., the adult male was taken seven miles away in a southerly direction and released at Upland, Pennsylvania, at 7.46 p.m. The nest was not visited by the writer until 2.20 p.m. the following day, at which time two adults were in evidence, but it was not until 3.15 p.m. that both birds were seen to enter the nest-hole, furnishing satisfactory evidence that the male had returned, and that the female had not found a new mate. The actual capture of the male at 7.30 p.m. that day verified this conclusion.

The writer, accompanied by Mr. Julian K. Potter, on the following day drove to Milford, Delaware, and *en route*, liberated the male Rough-wing at St. Georges, Delaware, at 7.10 a.m., 32.8 miles, as recorded by speedometer, due south from Glenolden, Pennsylvania. Upon our return that day at 6.48 p.m., two adult Rough-wings were observed carrying food into the nest-cavity, at which time Mr. Potter obtained a satisfactory view of the band on the left leg of the adult male.

Further investigations were frustrated the next morning upon the departure of the five fledglings from the nest, all of which were readily located and banded.

The difference in the reactions of the parent birds to the flashlight, when trapped in the nest-cavity, was very apparent. Invariably the female covered her young and refused to leave the nest for several minutes, and never until the light was turned off. On the other hand, the male always was eager to leave the premises, and would at once *hop* in bow-legged fashion toward the entrance. On several occasions, prior to the departure of the young from the nest, the two adults were observed pursuing a Sparrow Hawk (*Falco s. sparverius*), keeping up the chase until all three birds were mere specks in the sky.—JOHN A. GILLESPIE, Glenolden, Pennsylvania, November 27, 1933.

An Estimate by Means of Bands of the Number of Terns on Penikese Island, Massachusetts, in 1933.—In early July, 1933, on Penikese Island, 3266 young of Common and Roseate Terns were banded by Mr. Laurence B. Fletcher, Mr. Charles B. Floyd, Dr. Winsor M. Tyler, and others. Later, on July 19th and 20th, Mr. Francis H. Allen and the writer recovered from dead young terns some 60 bands. In one colony of Common Terns the writer examined 150 dead young terns; among these 36, or one quarter, bore bands. If one assumes that this represents the proportion of banded to unbanded young terns throughout the island, one would infer that the total number of terns hatched would be at least four times the number of birds banded, or 13,064. Assuming again that each

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.¹—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.

¹Read 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."