



SCREECH OWL

This Screech Owl was banded as an adult on Feb. 28, 1948, at Memphis, Tenn., and returned to roost in the same box at intervals until April 10, 1950.

—Photo by JOHN J. O'CALLAGHAN

THE MIGRANT

Published by the Tennessee Ornithological Society, to Record and Encourage the Study of Birds in Tennessee. Issued in March, June, September and December

VOL. 24

MARCH, 1953

No. 1

SOME NOTES RELATING TO THE MORTALITY OF SCREECH OWLS IN GREAT SMOKY MOUNTAINS NATIONAL PARK

By ARTHUR STUPKA

Over a fifteen year period beginning in December, 1936, the writer examined a total of 41 Screech Owls which had been killed by automobiles along highways in or near Great Smoky Mountains National Park. My primary interest in these birds was in analyzing their stomach contents; a record was also kept of where and when the owl was found and the color-phase represented. Although most of these birds were found by the writer, some were brought in by wardens, rangers, and other people. More than half the number were discovered within a few miles of Gatlinburg. It would be interesting to know how many additional Screech Owl carcasses were removed from the roads and vicinity by Crows and by such mammals as foxes, bobcats, opossums, skunks, dogs, and house cats. In the stomach of an opossum which I examined in this area in November, 1938, were the remains of a Screech Owl.

In addition to the 41 dead owls which were handled, 28 others were observed sufficiently well during this period to determine their coloration. Of the total of 69 Screech Owls, 56 were of the red phase and 13 of the gray phase—a ratio of 4 red to 1 gray.

One might assume that the mortality of these non-migratory birds would prove to be proportional to the amount of automobile travel over the roads of this area—at least to some degree. However, a comparison of the park's travel figures, by months, with the numbers of Screech Owls killed during these months, reveals a lack of correlation so complete that one is forced to seek elsewhere for a possible explanation of why the birds are killed more frequently at one time of year than another.

Using official figures for 1950 as a basis for determining the percentage of park travel, by months, we find that whereas 70 percent of the travel took place in the five months' period, April through August, only 5 percent of the Screech Owls were found during that time. No owls were found during the May—June—July period when 42 percent of the travel takes place. Whereas only 26 percent of the travel comes in the five-month interval of September through January, 85 percent of the dead birds were discovered during that time. Altogether 35 of the 41 owls were found in the five month interval of September through January while only six were found in the seven months period of February through August. October, with 14 birds, was by far the month of greatest mortality. Following in order came January, 7 birds; December, 6 birds; September and November, 4

each; February and March, 2 each; April and August, 1 each; and, as already stated, no birds in May, June and July. If we group the 41 dead owls according to seasons, we find 3 in Spring (March-May), 1 in Summer (June-August), 22 in Autumn (September-November), and 15 in Winter (December-February).

Remains of food were found in 39 of the 41 stomachs. Based on these 39 specimens, the percentage of owls with one or more insects in the stomach was 85; spiders, 33; other arthropods (centipedes, millipedes, and crayfish), 23; small mammals, 15; and small bird, salamanders, and earthworms, 2½ percent each. (Insects occurred in 33 of the 39 stomachs; spiders, in 13; other arthropods, in 9; small mammals, in 6; and small bird, salamanders, and earthworms in 1 each). A Screech Owl which I found near Gatlinburg on the morning of January 19, 1951, had eaten 4 red-backed salamanders, 4 spiders, 2 earthworms, 8 centipedes, 1 millipede, 5 carabid beetles, and 14 noctuid larvae resembling army or cut worms. No other specimen had taken such a variety of food, although there were two instances of owls having consumed a greater number of individuals. One of these owls had eaten 37 noctuid larvae, 2 spiders, and 2 centipedes, while another had taken 27 noctuid larvae, 10 carabid beetles, 3 spiders, and 1 millipede. One might raise the question as to whether a bird with so much food in its stomach would be handicapped in its attempt to escape an on-coming car. The large numbers of noctuid larvae, all of which were taken in December and January, can be explained, in part, by the fact that these insects are nocturnal in their activities. The wide variety of food items which are acceptable to this owl has been recorded by A. K. Fisher, A. C. Bent, E. H. Forbush, A. A. Allen, and others; and the proportion of these items varies from place to place.

Here in the Great Smoky Mountains National Park and vicinity the availability of orthopterous insects during the autumn season appears to be of real significance. Of 23 owls found dead in the four months period August through November, 19 had remains of Orthoptera in the stomachs; 12 of the 14 owls found in October, the month of peak mortality, had eaten katydids, grasshoppers, camel crickets or other kindred insects. The sudden drop-off in the number of owls found dead during the month following the October peak could possibly be correlated with the die-off of these Orthoptera following the mid-autumn frosts.

Since the prevailing kind of road-surfacing in the area in question is a black asphalt, the warmth-retaining properties may be a factor in the occurrence thereon of insects and other prey on cool autumn nights. Whether attracted to, or temporarily stranded upon, the road, the insect is exposed to an avian predator who finds more ready passage along the open course of the road than in the dense young forest growth on either side. Over much of this area, at low and middle altitudes, the highways are passage-ways through more or less dense stands of young trees; for this reason, they appear to be acceptable hunting grounds for Screech Owls. The fact that automobiles kill or injure large numbers of insects and other small animals whose bodies remain on or near the road may have further bearing upon the occurrence of Screech Owls along our thoroughfares.

It is my belief that in most instances the death of these birds came about not from any tendency to be drawn to the glare of on-coming headlights, as some birds are drawn to lighthouse beacons, but by being struck while occupied in feeding upon prey in the highway.

NATIONAL PARK SERVICE, GATLINBURG, TENNESSEE. JANUARY 1953.

*This paper was read April 26, 1952, before the 33rd Annual meeting of the Wilson Ornithological Club, in Gatlinburg, Tennessee.

MOVEMENTS OF ROBINS BANDED IN NASHVILLE, TENNESSEE

By AMELIA R. LASKEY

For a number of years it has been obvious that a bountiful crop of fruit on hackberry trees (*Celtis* sp.) is coincident with a large winter population of Robins (*Turdus migratorius*) as well as of blackbirds (*Sturnus vulgaris*, *Molothrus ater*, *Agelaius phoeniceus*, *Quiscalus* sp., *Euphagus carolinus*). These congregate for weeks or months in a great roost at night and scatter for miles daily to feed over the country and in residence areas. It has been my aim to learn through banding something about the status of these winter Robins—whether they are migrants from the north, Tennessee breeding birds, or a combination of the two groups.

However, winter trapping of this species at my banding station has been very disappointing. The birds are seldom lured into traps; they find ample food in the trees and plenty of water in the numerous "wet-weather creeks".

The greater number of the 2,945 Robins that have been banded from 1931 to 1951 has been trapped with water-drips as bait in the dry years from August into November when they are migrating or wandering. A lesser number of those banded are adult breeding birds, nestlings, and summer first-year birds. In addition, 126 Robins were banded in their roosts at night. From this total number, 132 return and recovery reports have been accumulated in subsequent years (4.5% of the number banded). Robins do not re-enter traps readily, therefore, without color-banding, it is not easy to find out how long an individual remains in a given area. As examples: a Robin that had never been retaken at the banding station was found dead on the road a few hundred yards away three years after banding. A sick Robin was found by a neighbor 500 yards from the banding station almost nine years after banding, yet it had never been retrapped in that long interval.

There were 110 returns after a migration in this group of 2,945 Robins, involving 96 individuals, some of which came back several years. There were 22 recoveries as follows: in Tennessee, outside of Nashville—6 birds;