

The highest concentration was eastbound on July 25, when there were 13 skunks over 132 miles from east of New Haven to west of Lowell, or 1 per 10.15 miles. Returning August 10 from south of Richmond, Quebec, via Sherbrooke, the Rock Island-Derby line, St. Johnsbury and Wells River to Bradford, Vermont, 4 dead skunks were counted over 141 miles, or 1 per 35.25 miles. There remain only 3 skunks, one 15 miles south of Woodstock and one 13 miles west of Sussex, New Brunswick, July 26, and one 7 miles north of Meriden, Connecticut, August 10. To the north and east we were presumably getting out of the animal's range of abundance; to the south and west its numbers along the highroad were too reduced, or those killed were too quickly obliterated by traffic to be noticed.

Figures of dead skunks on the highways are of interest as an index of their comparative abundance, and raise the question whether or not, how and how long, the species will be able to withstand this considerable and unnatural mortality. Other such figures have recently been published. Stoner (Wilson Bull., vol. 48, p. 277, 1936) listed 50 dead skunks for 1905 miles in Ontario, Illinois, Indiana, Iowa, New York, and Ohio combined (1 per 38.1 miles), with a concentration in New York State of 28 for 400 miles (1 per 14.29 miles). Wilford and Wilford (Science, p. 421, Nov. 6, 1936) listed 22 for some 600 miles in New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia and West Virginia (1 per 27.27 miles). The figures are rather comparable over the whole territory.—J. T. NICHOLS AND H. C. RAVEN, *American Museum of Natural History, New York City.*

#### LATE SUMMER AND EARLY FALL FOODS OF THE RED FOX IN CENTRAL MASSACHUSETTS

The part of the Harvard Forest at Petersham, Massachusetts, and surrounding property in which fox droppings were collected, contains a great variety of cover types. It has developed mainly from the gradual abandonment and reversion of fields and pastures to forests. Most of the area grew up to white pine in pure stands, much of which has now been cut, and has been followed by hardwoods. Some pastures are seeded in with hardwoods or pine-hardwood mixtures. The result is that nearly all stages of successional development are represented, mainly as small types. There are still some cultivated areas, hayfields and brushy fields, as well as a spruce swamp, numerous hardwood swamps, and approximately 100 acres of coniferous plantations.

Most of the scats were picked up along the numerous roads and paths. A few were found around dens and others in the open woods.

During the period of collection, the ruffed grouse cycle was at a low point in this locality, but there was still approximately one bird to 25 acres. No pheasants were known to be present. Cottontail rabbits were in numbers fair for this region, but sparse compared with those of the agricultural sections of New York or of the midwest. Snowshoe hares also were fairly numerous, but it is doubtful if there was more than one to 50 acres of woodland. Red squirrels were abundant, and gray squirrels less numerous. Woodchucks were rather scarce, since there are few fields in the area and these do not offer abundant food for woodchucks.

The droppings of red foxes were collected from the middle of August to early October. All specimens were relatively fresh (estimated from one to three weeks old) and afford a good indication of the mid-summer dietary habits of foxes in the Harvard Forest.

Examination of 131 scats indicates a pronounced vegetative diet during this period. Of the total examined, 86 per cent contained fruit, in the order of frequency of their occurrence, *Prunus*, probably *P. serotina*, blackberries, *Vaccinium*, *Aralia nudicaulis*, *Vitis* and apple. Insects, chiefly grasshoppers (*Melanoplus femur-rubrum*), were second in frequency, appearing in 53 per cent of the scats. Mammals (cottontails, field mice, shrews, deer mice, squirrels, woodchuck and a mole) were identified in 30 per cent of the

droppings. Bird remains (one, possibly two grouse, one bluejay, one domestic fowl and one an undetermined fringillid) were found in 5 droppings.

One lot of 36 scats, collected chiefly on November 21 and 22, 1936, are a few days to three weeks old, although several are palpably older. These are indicative of the feeding trends of the foxes during the fall.

TABLE I

MID-SUMMER FOOD OF THE RED FOX IN THE HARVARD FOREST, AS INDICATED BY 131 SCATS

FOOD	NO. TIMES OCCURRING	PER CENT OCCURRENCE
Cherries (principally <i>Prunus serotina</i> ).....	71	54.2
Insects (grasshoppers and beetles).....	69	52.7
Blackberries.....	45	34.4
Blueberries.....	19	14.5
Cottontails.....	15	11.5
Field mice.....	12	9.1
Birds.....	5	3.8
Grapes.....	4	3.0
Shrews ( <i>Blarina</i> ).....	4	3.0
Wild sarsaparilla ( <i>Aralia nudicaulis</i> ).....	4	3.0
Deer mice.....	4	3.0
Woodchucks.....	2	1.5
Gray squirrels.....	2	1.5
Wool.....	2	1.5
Red squirrel.....	1	.75
Chipmunk.....	1	.75
Mole ( <i>Parascalops</i> ).....	1	.75
Undetermined mammals.....	1	.75
Apple.....	1	.75
Extraneous (sand and dirt).....	4	3.0

TABLE II

FALL FOOD OF THE RED FOX IN THE HARVARD FOREST, AS INDICATED BY 36 SCATS

FOOD	NO. TIMES OCCURRING	PER CENT OCCURRENCE
Fruits.....	20	55.5
Mammals.....	18	50.0
Insects.....	9	25.0
Birds.....	2	5.5
Snakes.....	1	2.7
Grasses.....	1	2.7

In the fall collection, fruits are represented, in order of their frequency, by apples, wild cherries, grapes, sarsaparilla and service berries. Mammal remains are chiefly of field mice and cottontails, while deer mice and woodchucks each are represented once. Poultry and grouse are represented in a single scat, while another contained the belly plates of a garter snake.—W. J. HAMILTON, JR., N. W. HOSLEY AND A. E. MACGREGOR, *Cornell University Ithaca, New York, and Harvard Forest, Petersham, Massachusetts.*