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RABIES IN WILD ANIMALS TRAPPED FOR PELTS

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Abstract

The brains of 1,634 wild animals trapped for pelts were examined for rabies by the fluorescent antibody procedure. Twenty-one of 268 striped skunks and 2 of 52 spotted skunks examined were positive for rabies. Thirteen hundred twenty three animals including 7 badgers, 65 coyotes, 365 foxes, 1 weasel, 377 mink, 52 muskrats, 208 opossums, 219 racoons and 1 wolf were negative.

Introduction

Rabies in animals has been recognized in Iowa for many years.¹ In recent years skunks appear to have been a major reservoir of the disease. A high percentage of skunks routinely submitted to the laboratory for rabies examinations have been found positive.² These routine specimens, however, constitute a selected sample. They usually were animals that

had been acting abnormally. The study being reported here was an effort to gain knowledge of the incidence of rabies in commercially trapped wild animals.

Investigators engaged in a study of trichinosis in commercially trapped wild animals graciously agreed to collect the heads of these animals and make them available for examination for rabies.

Materials and Methods

The animals were trapped in 11 counties in Iowa as determined by a commercial pelting enterprise. (See Fig. A) They were delivered, intact, to a central fur buyer. They were then pelted and the specimens, including heads, for laboratory examination were collected and identified by species, sex and county of origin. The heads were transported by messenger to the laboratory.

Specimens were obtained during the trapping seasons (Oct., Nov., Dec., Jan., and Feb.) of 1964-1965, 1965-1966, 1966-1967, and 1967-1968.

At the laboratory, impression smears of a cross section of the hippocampus of each specimen were examined, using the fluorescent rabies antibody (FRA) test procedure described by Dean.³

Results

The numbers of animals examined and the numbers found positive by the FRA test in each trapping season are shown in Table 1.

FRA positive specimens were found only among skunks. Animals among all other species examined were negative. Table 2 lists the results by trapping season.

Table 3 shows the numbers of animals examined in each of the species in which no positives were found. Skunks were the only species examined during the 1964-1965 season.

The sex of the positive animals is shown in Table 4. Positives were found among animals from Dickinson, Wright, Tama, Story, Poweshiek, Montgomery and Union Counties (See Fig. A).

Discussion

The finding of FRA positives among striped and spotted skunks, trapped for pelts, seems to support previous observations that these animals serve as a major reservoir for rabies. The relatively high rate in skunks during the first year of the study is of interest. A comparison of the findings during the years of study, with routinely reported cases for the same period, suggests the high rates observed in trapped animals in the 1964-1965 season may be related to the generally high incidence of the disease at that time (See Table 5).

While the number of positive animals of which the sex is known is too small to warrant conclusions, it does show the disease was present in both sexes.

The geographic distribution of animals for this study reflects the pattern of the commercial enterprise used as a source of animals. While it is not considered a random sample, finding evidence of rab-

ies in trapped animals in several counties, confirms the observation based on routinely reported cases that the disease is widespread in skunks in Iowa.

The striped skunks and spotted skunks referred to in this article are *Mephitis mephitis* and *Spoilgale putorius* respectively.⁴

TABLE 1.
Rabies Examinations—Trapped Animals

Trapping Season	Total Examined	Number FRA Positive
1964-65	75	13
1965-66	634	3
1966-67	595	7
1967-68	339	0
	1643	23

TABLE 2. *Rabies Examinations — Trapped Animals by Species and FRA Results*

	STRIPED SKUNK		SPOTTED SKUNK		OTHER ANIMAL SPECIES	
	Examined	Positive	Examined	Positive	Examined	Positive
1964-1965	75	13	0	0	0	0
1965-1966	105	2	23	1	506	0
1966-1967	81	6	29	1	485	0
1967-1968	7	0	0	0	332	0
TOTALS	268	21	52	2	1323	0

TABLE 3. *Rabies Examinations — Trapped Animals: numbers of animals examined in the species in which no positives were found*

	1965-1966	1966-1967	1967-1968	TOTALS
Badger	7	0	0	7
Coyote	0	33	32	65
Fox	109	110	146	365
Weasel	1	0	0	1
Mink	113	110	154	377
Muskrat	52	0	0	52
Opossum	101	107	0	208
Raccoon	113	106	0	219
Wolf	10	19	0	29
Totals	506	485	332	1323

TABLE 4. Rabies Examinations — Trapped Animals — Sex of Positives

	STRIPED SKUNKS			SPOTTED SKUNKS		
	Male	Female	Unknown	Male	Female	Unknown
1964-1965	4	3	6	0	0	0
1965-1966	1	1	0	1	0	0
1966-1967	4	2	0	1	0	0
1967-1968	0	0	0	0	0	0
TOTAL	9	6	6	2	0	0

TABLE 5. Rabies in Skunks in Iowa

FRA positives in trapped animals and FRA positives routinely reported

TRAPPING SEASON	TRAPPED SKUNKS		ROUTINELY REPORTED
	EXAMINED	FRA POS.	FRA POS. SKUNKS*
1964-65	75	13	305
1965-66	105	2	118
1966-67	81	6	94
1967-68	7	0	77

*Data from Iowa Department of Health records and refer to calendar year of the first year of each trapping season.

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