TRANSACTIONS, ILL. STATE ACAD. SCI.
Vol. 67, No. 1, (1974)

AN IRRUPTION OF LEAST SHREWS, CRYPTOTIS PARVA, IN ILLINOIS

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Abstract:--Thirty-nine least shrews were trapped on a two acre plot in Pope County, Illinois. The population density was estimated to be 35± 18.8 (2SE). Four other species, 21 individuals, were taken from the plot.

The least shrew, Cryptotis parva, is commonly trapped in the eastern United States but in relatively low numbers compared to other small mammals. This is a report of an irruption of the least shrews in Pope County and of some characteristics of the population.

The field in which the shrews were collected (SW ¼, Sec 26, T12S, R5E) was seeded to wheat and alta fescue in the fall of 1963. Alfalfa, redclover, ladino and lespedeza were broadcast over the field the following spring. After the wheat was harvested in 1964 a three-strand barbed wire fence was placed around a two-acre (200 x 450 feet) tract in the field for a study of the interrelationships of leptospirosis in small mammals and cattle. Vegetation within the enclosure was not disturbed, but the remainder of the field was pastured each year by cattle. By 1967 vegetation in the enclosure was a dense growth of fescue with three years accumulated litter forming a heavy ground cover. Annual weeds were common and small patches of blackberry were scattered over the plot.

The enclosure was trapped for 3295 trap-nights from 1964 through 1967 (Table 1). Least shrews dominated the 1967 captures although they were not trapped during the first three years. Comparisons of species densities cannot be made due to differences in trapping effort and in seasons trapped. The total number of least shrews trapped in 1967 and their absence in earlier years was, in part, a reflection of these variations. Trapping success for other species was low in 1967, but shrew captures were not dependent on removal of other species; six least shrews were the only mammals captured during the first four nights of live trapping.

Table 1. Small mammals trapped in a two-acre fenced enclosure in a pasture in Pope County, Illinois

Trapping Period	Trap Nights	Mus musculus	Microtus ochrogaster	Peromyscus maniculatus	Peromyscus leucopus	Cryptotis parva
1964-Aug	760[1]	4	1	-	-	-
1965-Apr	200[1]	1	13	4	-	-
-Jun	160[1]	3	0	7	3	-
-Sep	200[2]	8	0	14	5	-
1966-Jan	200[2]	22	18	19	2	-
1967-Aug	800[1] + 975[2]	8	7	5	1	39

[1]Live traps

[2]Snap traps

During the live trapping in 1967 10 shrews were toeclipped and released and nine others died in the traps. Subsequently, during the removal trapping, 8 marked and 20 unmarked shrews were trapped. The population density, estimated by the Lincoln Index, was 35 $\pm$ 18.8 (2SE) least shrews for the two acre tract. Other than an estimate of 40 least shrews per 14.6 acres (Howell, 1954), least shrew populations have been measured relative to other species collected. Such estimates generally indicate the shrews to be relatively scarce (Hamilton 1944). Food habits studies of barn owls (Davis 1940) and rough-legged hawks (Cope 1949) suggest that these shrews may be more abundant than trapping data indicate. My data indicate that when environmental factors are suitable, least shrews will be abundant and that trapping will reflect their abundance.

Twenty-one of the shrews were males, 16 were females and 2 were partly eaten and could not be sexed. Fifteen of the males and thirteen of the females were considered adults on the basis of size and sexual maturity. There was evidence of reproductive activity in 10 of the 13 adult females; 3 were lactating, 6 were gravid and 1 was gravid and lactating. Embryo counts in the gravid females ranged from 1 to 7 and averaged 4.9.

There was no apparent relationship between the distribution of shrews and the other species trapped. Shrew captures, however, were not uniform over the enclosure but were concentrated at each end of the enclosure supporting reports of intraspecies tolerance in least shrews (McCarley 1959). My data on ranges and movements of least shrews were limited, although 11 shrews were trapped at two or more points: one immature male moved 125 feet, six adult males moved an average of 158 feet with a maximum of 335 feet, four adult females moved an average of 78 feet with a maximum of 100 feet.

This study is a contribution from the Department of Zoology, Eastern Illinois University, Charleston and a grant from the U. S. Public Health Service (CC-00070) to the College of Veterinary Medicine, University of Illinois, Urbana.

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