

PREDATION ON DESERT MAMMALS BY *LANIUS LUDOVICIANUS* (LANIIDAE)

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The loggerhead shrike (*Lanius ludovicianus*) is known to prey on many species of mammals, such as *Microtus*, *Peromyscus*, *Reithrodontomys*, and *Perognathus* (Bent, 1964). Its distribution covers much of North America, including the Baja California peninsula (American Ornithologists Union, 1998). In the state of Baja California Sur, populations of small mammals were studied over a 6-year period beginning Octo-

ber 1994. Sherman traps were set each month for 5 nights. Upon arrival at the study area in the mornings from August 1999 to March 2000, a single individual of *L. ludovicianus* was generally seen in the sampling area perched on the top of a cardon (*Pachycereus pringlei*) about 4 m above the ground and 50 m away from where I stood. When Sherman traps containing live mammals were lifted, the shrike

TABLE 1.—Number and weight of small mammals captured and not captured by a loggerhead shrike during a 6-month period. The last column is the percent of the weight of the rodent in relation to the shrike.

Status	Species	n	Average weight (range) g	Percent
Captured				
Heteromyidae	<i>Chaetodipus arenarius</i>	9	11.0 (9.0–13.0)	13
Heteromyidae	<i>Chaetodipus baileyi</i>	1	20.5	25
Muridae	<i>Peromyscus eva</i>	5	15.0 (14.0–16.0)	
Not captured				
Heteromyidae	<i>Chaetodipus arenarius</i>	12	11.6 (9.0–12.5)	13
Heteromyidae	<i>Chaetodipus baileyi</i>	4	18.5 (8.0–20.0)	23
Heteromyidae	<i>Dipodomys merriami</i>	6	33.0 (29.0–40.0)	41
Muridae	<i>Peromyscus eva</i>	8	14.1 (12.0–17.0)	17

flew closer (ca. 20 m) and remained until data recording for the rodent was finished. Rodents often made noises while measurements were made, and during this period the shrike would fly to within 10 m of my co-workers and me. When the mammal was released, the shrike followed and on several occasions caught the mammal that had just been released (Table 1).

At times during data collection, the shrike became frightened and changed its predation strategy. When frightened, it perched on a plant about 1 m above the ground and always to the back of the person working with the mammal. The shrike apparently overcame its fear when the rodent was released because it flew toward the prey.

Those mammals that made a continuous run to a burrow were not captured. However, if they stopped running before reaching cover, the shrike attempted to catch them. The effective rate of capture was 38% for rodents weighing less than 21 g. For those weighing more than 25 g (25 to 37 g), the rate was 0%. These rates are less than those recorded by Yosef (1996), which ranged from 28% to 82% (Table 1). All of the captured specimens that I observed were impaled on an Adam tree (*Fouquieria digetii*). The maximum number of rodents caught by the shrike in 1 d was 2; the maximum attempts at capture in a single d were 4. The shrike never followed in the afternoon when traps were being set.

The shrike appeared to have a preference for *Chaetodipus arenarius*, which is the most common rodent in the area. Considering that a typical specimen of *L. ludovicianus* weighs about 45 g ($n = 3$, Rodriguez-Estrella, pers.

comm.), these small rodents are about 25% of the body weight of the predator. The shrike can also capture larger rodents that weigh 45.5% of its own weight, as was observed when a specimen of *Chaetodipus baileyi* (20.5 g) was captured. The shrike was not successful in capturing *Dipodomys merriami*, and I attribute this to the fact that the prey weighed almost 80.5% of the shrike. However, in New Mexico, Reid and Fulbright (1981) found impaled specimens of *D. merriami*, likely from shrike predation, but size was not recorded. The capture of larger prey has also been documented by Corley (1982), who observed that a shrike caught a horned lark (*Eremophila alpestris*) that was between 50–60% of the weight of a shrike.

Observations by co-workers and myself show that the shrike catches smaller rodents of less than 20 g (i.e., less than 50% of its own body weight) more efficiently than larger animals. Eighty-six percent of capture attempts were successful for smaller rodents, compared to 13% for larger prey. However, the shrike learned quickly to try different methods to obtain prey and also to avoid potential predators, such as human observers in the field.

Resumen—Se observó la actividad del verdugo (*Lanius ludovicianus*) en la depredación de roedores durante un estudio a largo plazo en un cuadrante de captura-recaptura. *Lanius ludovicianus* desarrolló una técnica para la captura de roedores, que después de ser liberados de sus trampas y manipulados intentaban resguardarse en sus madrigueras, siendo ésa la oportunidad para asechar a su presa con un

mayor éxito. Se percibió su preferencia por presas menores de 20 g.

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