



**Figure 1.**  
Male *Sceloporus magister* in act of swallowing an immature of the same species. (Photo by Dean Koenig, Starizona)

## *Sceloporus magister* at Tohono Chul Park: Diet, Cannibalism, and Predation

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Tohono Chul Park, on Tucson's northwest side, is an excellent site to observe *Sceloporus magister*, the Desert spiny lizard, up close and personal. Not only is the species common there, but regular encounters with people have made them decidedly unwary. Their density is greatest around the riparian areas where trees receive regular watering and standing or flowing water is always present. Although they tend to be arboreal over much of their range (Parker and Pianka, 1973), at Tohono Chul they are commonly seen on the ground. Visitors particularly enjoy watching the potbellied, bright-colored males doing two-legged "pushups" and swaggering in their characteristic bowlegged fashion across the walkways.

Due to the lack of wariness by the lizards and other animals in the Park, it is often possible to observe natural history events that are rarely seen in wilder locales. The junior author makes regular trips to Tohono Chul to photograph the wildlife and plants. Twice this spring,

he had the opportunity to witness and photograph two such little-seen events concerning Desert spiny lizards, cannibalism and predation (Figures 1, 2).

On April 16, 2003 at 0830h, he encountered an adult male Desert spiny lizard swallowing a relatively large immature of the same species (Figure 1). The immature (as evident in the photo) was rather large. However, by the time the large male moved away into the vegetation, it had mostly swallowed the body of the immature. Feeding on other species of lizards and cannibalism have been reported previously in *Sceloporus magister* but are seemingly rare events. Desert spiny lizards at Tohono Chul seem to be chiefly insectivorous. We commonly observe them feeding along the walkways and in the mesquite trees, taking ants, caterpillars, and beetles. On June 1, 2003, the senior author collected and examined six fecal pellets that varied in size from 2.75 x 0.8 cm to 1.65 x 0.6 cm in length and width. Each had a cap of uric acid that varied from 1.65 to 0.67 cm in length. Three of the pellets contained cicada and ant parts, one contained beetle and ant parts, one beetle parts alone, and one ant parts alone.

Several major food studies have been conducted on this species (Table 1). In the five studies listed, 271 *Sceloporus magister* stomachs were examined. Insects, particularly ants, were the most common food items in each study. Out of the 271 stomachs, only four contained vertebrates. One was not identified, two were whiptail lizards (*Cnemidophorus* sp.) and one was a

hatchling *Sceloporus magister* (the only other example of cannibalism in the wild that has been reported in this species). An additional report of lizard predation by *S. magister* is Perkins et al. (1997) who found bones of *Xantusia vigilis* in the feces of a yearling female.

The rarity of lizards in these diet studies suggest that they are an atypical food item. Cannibalism appears to be even more rare. Smith and Fritts (1969) reported a case of cannibalism in *Sceloporus chrysostictus* but concluded this was unusual behavior in the genus. They could find only two other reports of cannibalism in the genus *Sceloporus*. In a review of intraspecific predation in reptiles and amphibians, Polis and Myers (1985) reported instances of cannibalism in eight species of *Sceloporus*, but it appeared to be a relatively rare event in all cases. They concluded that most cases of cannibalism in reptiles occurred “opportunistically as a by-product of normal predatory behavior.”



**Figure 2.** Greater Roadrunner feeding on a *Sceloporus magister*. (Photo by Dean Koenig, Starizona).

Another possibility is that the cannibalism event photographed here may have started as territorial defense but ended up as predation. For example, a colleague observed the following at the Park. On June 1, 2003 at 0900, two male *S. magister*, with a female nearby, began doing pushups. One was moderately larger than the other. Both turned sideways and began crab-walking toward the other. Their bodies appeared inflated and the dewlap area of their throats seemed expanded. As they came side to side, the lizards continued to do pushups and began to lash each other with their tails. The larger then grabbed the head of the smaller in its mouth. The smaller frantically increased the tempo of its

tail lashing forcing the larger to release it. This seemed to complete the engagement and the two commenced to crab

Region of Study	#	Major Food Items	Vertebrates	Citation
So. Utah	12	Ants, Caterpillars, Beetles	1 Lizard	Knowlton & Thomas 1934
So. Utah	49	Ants	0	Knowlton & Nye, 1946
Nevada	21	Beetles, Ants	1 Lizard <i>S. magister</i>	Tanner and Krogh, 1973
SW U.S., Sonora	123	Ants and Beetles	1?	Parker and Pianka, 1973
Colorado River, Arizona	66	Ants and Beetles	1 Lizard	Vitt and Ohmart, 1974.

**Table 1.** Food studies based on stomach contents of *Sceloporus magister*. Major food items are based on frequency of occurrence in stomachs examined. The symbol # indicates the number of stomachs examined in each study.

walk in opposing directions. It is conceivable that a similar confrontation could have taken place with the lizards involved in the cannibalism event. However, in this scenario the smaller was unable to force the larger to release it. The feeding reflex may have then taken over and the smaller was swallowed.

The predation event involving the Roadrunner (Figure 2) was photographed on May 9, 2003. The Greater Roadrunner (*Geococcyx californianus*) is a known lizard predator (Kaufman 2000) and it is not surprising to find it feeding on Desert spiny lizards at Tohono Chul. Ruthven (1907) and Vitt and Ohmart (1974) suggested Roadrunners as likely predators of *S. magister*. This photograph confirms their suspicions.

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