REPTILES & AMPHIBIANS

First Record of Cannibalism in the Orange-throated Whiptail (*Aspidoscelis hyperythrus*), with a Review of Cannibalism in the Family Teiidae

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The family Teiidae is widely distributed across temperate and tropical America (Pianka and Vitt 2003). Of the 18 currently recognized teiid genera, *Aspidoscelis*, with approximately 45 species, is the most species-rich (Uetz et al. 2025). Many North American species of *Aspidoscelis* exhibit complex evolutionary histories involving hybridization, polyploidy, and unisexuality, which have long intrigued biologists (Barley and Cole 2025). We herein follow the nomenclatural recommendation of Steyskal (1971) in treating the name *Aspidoscelis* as masculine and using the appropriate suffixes for specific epithets (Tucker et al. 2016; Walker 2024).

Teiid lizards are generally diurnal, actively foraging predators that eat arthropods, and many are reported to specialize on termites (Pianka and Vitt 2003; Smith et al. 2023). However, some larger species, particularly those in the subfamily Tupinambinae, commonly eat mollusks, vertebrates, carrion, and/or plant matter (Pianka and Vitt 2003; Carvalho et al. 2024). Saurophagy has been documented in at least seven genera of teiid lizards, and many of these cases involve cannibalism (Oliveira et al. 2025). Nevertheless, the only global review of cannibalism in the family Teiidae was published nearly 40 years ago (Mitchell 1986), and a considerable amount of new information has since accumulated (Oliveira et al. 2025). A deeper understanding of the prevalence of this predator-prey interaction could help elucidate ecosystem dynamics by revealing how trophic relationships structure biotic communities and influence intraspecific competition (Pianka 1973; Fox 1975; Oliveira et al. 2025).

We herein report the first documented case of cannibalism in the Orange-throated Whiptail, *Aspidoscelis hyperythrus* (Cope 1863), a small sexually reproducing species (SVL < 10 cm) found in arid and semi-arid landscapes of southern California, USA and the Baja California Peninsula, Mexico (Thompson and Crother 1998; Hollingsworth and Hammerson 2007; Taylor and Walker 2014). Until now, *A. hyperythrus* was thought to feed exclusively on arthropods, particularly termites (see Grismer 2002 and references therein). We accompany this report with an updated review of cannibalism in teiids, based on an *All Databases* query of *Web of Science* performed on 20 May 2025 using the search keywords "Teiidae" and "cannibalism," supplemented with references from a recent review of saurophagy in South American lizards (Oliveira et al. 2025).

At 1610 h on 9 October 2024, we observed an adult *A. hyperythrus* chasing a juvenile conspecific on a private ranch located 12 km southwest of La Ventana, Municipality of La Paz, Baja California Sur, Mexico (24.01, -110.10; elev. 600 m). The site was a semi-disturbed hilltop with abundant open ground in a transitional zone between tropical deciduous forest and xerophilous scrub. The chase occurred near an artificial water source, among and atop leaf litter in a species-rich thicket of shrubs and cacti with the following plants (listed in alphabetical order): *Antigonon leptopus*, *Bahiopsis tomentosa*, *Bebbia atriplicifolia*, *Bursera microphylla*, *Colubrina viridis*, *Cyrtocarpa edulis*, *Ferocactus townsendianus*, *Indigofera frutiticosa*, *Jatropha cinerea*, *Lysiloma divaricatum*, *Melochia tomentosa*, *Mimosa tricephala*, *Solanum hindsianum*, *Stenocereus gummosus*, and *Stenocereus thurberi*.

Both lizards were clearly identifiable as *A. hyperythrus* based on the absence of prominent markings in the dark dorsal fields and the presence of bluish tails (Fig. 1). These traits distinguish them from *Aspidoscelis maximus*, which is the only other teiid that occurs in the region (Grismer 2002).

The constant movement of both individuals through the leaf litter, stems, and foliage limited our visibility, but as we

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Figure 1. Cannibalism in Orange-throated Whiptails (*Aspidoscelis hyperythrus*) in Baja California Sur, Mexico: Adult attacking a juvenile (upper left), adult ingesting the juvenile (upper right), and adult after fully ingesting the juvenile (bottom). Photographs by Emmanuel Javier-Vázquez.

watched, the adult *A. hyperythrus* actively chased the juvenile for several minutes, repeatedly capturing it by biting its neck. On several occasions the adult appeared to violently shake the juvenile. The latter escaped from or was released by the adult at least three times before the adult recaptured it by the neck, immobilizing and killing it. After holding the juvenile by the neck for several seconds, the adult began to ingest it head-first. Each time the adult attempted to swallow, it rhythmically moved its head from side to side between two and eight times. Ingestion lasted in excess of a minute. At no point did the juvenile lose its tail, although the tip of its tail was missing due to prior loss (Fig. 1B).

After the adult finished consuming the juvenile, we captured it using a lasso and photographed it (Fig. 1C) before releasing it at the site of capture. We used a non-digital caliper (Accusize Industrial Tools) and a digital scale (Ohaus HH 320) to gather morphometric data. The adult measured 63 mm SVL and 111 mm tail length (73 mm of which was regenerated), and weighed 7.6 g (including the ingested prey). Our attempts to induce regurgitation were unsuccessful, so we did not measure relative prey mass.

The results of our review of cannibalism in teiid lizards (Table 1) provide a useful context for this new observation. *Aspidoscelis hyperythrus* is now the seventh member of the approximately 45 species in the genus for which cannibalistic behavior has been documented. Interestingly, cannibalism remains unreported in any of the unisexual species in the genus.

Head-first ingestion that we observed is consistent with all but two previously reported cases of adult-on-juvenile cannibalism in teiids (Milstead 1957; Zúñiga Pérez 2019). The occurrence of our newly-documented cannibalistic event in an open, shrubby landscape also aligns with patterns identified by Oliveira et al. (2025), who found that

Table 1. Documented cases of cannibalism in lizards of the family Teiidae. Taxonomy follows Uetz et al. (2025).

Species	Type of Event	Country (department, state, province)	Reference
Ameiva ameiva	Prey	Brazil (Pernambuco)	Nino et al. 2021
Ameiva bifrontata	Stomach contents	Venezuela (Falcón)	Mijares-Urrutia et al. 2000
Ameivula nigrigula	Stomach contents	Brazil (Bahía)	Travassos de Oliveira et al. 2017
Ameivula ocellifera	Stomach contents	Brazil (Rio Grande do Norte)	Sales et al. 2010
Aspidoscelis costatus	Stomach contents	Mexico (Guerrero)	Güizado-Rodríguez et al. 2009
Aspidoscelis deppii	Prey	Mexico (Oaxaca)	McKay 2024
Aspidoscelis deppii	Prey	Nicaragua (Rivas)	Alemán and Sunyer 2014
Aspidoscelis hyperythrus	Prey	Mexico (Baja California Sur)	This work
Aspidoscelis inornatus	Stomach contents	USA (Texas)	Milstead 1957
Aspidoscelis sackii gigas	Stomach contents	Mexico (Morelos)	Chávez-Martínez and Ramírez-Bautista 1998
Aspidoscelis sexlineatus	Stomach contents	USA (Alabama)	Etheridge and Wit 1982
Aspidoscelis tigris gracilis	Stomach contents	USA (Arizona)	Mitchell 1979
Aspidoscelis tigris punctatus	Prey	Mexico (Sonora)	Ponce-Rosales et al. 2025 (“2024”)
Aurivela longicauda	Stomach contents	Argentina (San Juan)	Blanco et al. 2012
Callopistes maculatus	Prey	Chile (Atacama)	Vidal and Ortiz 2003
Callopistes maculatus	Prey	Chile (Cordillera)	Zuñiga Pérez 2019
Glaucomastix itabaianensis	Stomach contents	Brazil (Sergipe)	Lima da Silva et al. 2020
Holcosus festivus	Prey	Costa Rica (Limón)	Abarca and Knapp 2010

saurophagy in South American lizards was less frequent in forested habitats.

To date, the 18 documented cases of teiid cannibalism we found in the literature (Table 1) account for fewer than 9% of currently recognized species but nearly 39% of currently recognized genera in the family. With the exception of two observations reported for the tupinambine species *Callopistes maculatus* (Vidal and Ortiz 2003; Zúñiga Pérez 2019), all confirmed cases involved members of the subfamily Teiinae and the records span North, Central, and South America. Nearly all cases involved adults cannibalizing juveniles, although one report described an adult that consumed eggs (Chávez-Martínez and Ramírez-Bautista 1998), and another described an adult that cannibalized just the tail of a conspecific (Milstead 1957).

More than half of reported cases of teiid cannibalism were discovered via dissection of preserved specimens. This highlights both the difficulty of observing trophic interactions in the field and the critical role played by museum collections in advancing basic ecological knowledge (Nachman et al. 2023; Oliveira et al. 2025).

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