

Scientific note

Predation on camel spiders by spiders in Northwest Mexico

(Solifugae and Araneae)

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Arachnids are top predators of desert arthropod communities. Scorpions along camel spiders and true spiders constitute the most common arachnids in these arid environments and tend to exploit similar resources (guild) (Polis 1991, Cardoso et al. 2011). The potential encounter and interaction with other predators of the same guild can lead to intra-guild predation events (IGP) (Cardoso et al. 2011, Polis & McCormick 1986). Camel spiders, also known as solpugids, are often described as nocturnal fearsome predators, that regularly feed on insects (Cloudsley-Thompson 1977, Hrušková-Martišová et al. 2007). Nevertheless, they are often consumed by scorpions and spiders (Polis & McCormick 1986, Wharton & Reddick 2014). Few observations involve spiders capturing and feeding on camel spiders, these include jumping spiders (Salticidae), huntsman spiders (Sparassidae), and recluse spiders (Sicariidae) (Wharton 1987, Wharton & Reddick 2014, Taucare-Ríos & Iuri 2021).

Here we document two intra-guild predation events concerning camel spiders of the families Ammotrechidae and Eremobatidae being preyed on by two species of spiders that belong to the families Lycosidae and Salticidae. These IGP events were recorded during fieldwork trips, as part of a spider survey in northwest Mexico, during 2021 and 2022 at different times of the day.

Jumping spider predation on camel spider

While collecting vegetation associated spiders around midday (15/03/2021, 12:40 pm) within El Comitán, Reserva Dra. Laura Arriaga, La Paz, Baja California Sur, Mexico (24.1225, -110.426389), we observed an adult female camel spider *Ammotrechula* sp. resting and hiding beneath a dead Cardon (*Pachycereus* sp.) (Fig. 1A). Suddenly, an adult female salticid *Habronattus californicus* Banks, 1904 ambushed and subdue the camel spider by its prosoma, on the propeltidium. Despite the difference in size and that the camel spider initially resisted the attack, the salticid managed to handle the prey for



Fig. 1. Spiders preying on camel spiders. A. An adult female *Ammotrechula* sp. camel spider resting. B. Jumping spider *H. californicus* capturing an *Ammotrechula* sp. female. C. An adult *Hogna* sp. capturing an adult female of Eremobatidae. D. *Hogna* sp. feeding on the camel spider.

a couple of minutes and partially consumed it (Fig. 1B). After the interaction was recorded, both specimens were collected.

Previous observations suggest that salticids can prey on camel spiders. For instance, Wharton & Reddick (2014) mentioned a related event while studying the feeding behaviour of several camel spider species from

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the Namibian desert. Jumping spiders of the genus *Habronattus* Pickard-Cambridge, 1901 comprise a group of diurnal foraging salticids, rather compared to most North American camel spiders that are nocturnal cursorial hunters (Coco & Taylor 2020, Cloudsley-Thompson 1977). The species here recorded, *H. californicus*, is an abundant generalist, widely distributed throughout the Baja California Peninsula (Jiménez et al. 2015). Similarly, at least five species of *Ammotrechula* Roewer, 1934 occur in Baja California (Posada 2004). While it might be possible that the presence of these arachnids can lead to a potential IGP event, we consider that the event here described likely represents an opportunistic encounter.

Wolf spider predation on camel spider

While collecting ground dwelling spiders at night (24/04/2022, 19:55 pm) near Hermosillo, Sonora, Mexico (29.078333, -110.956389), an adult female *Hogna* sp. captured an adult female camel spider of the family Eremobatidae (Fig. C-D). In this case the difference in size favoured the spider and rapidly captured and subdued the camel spider by grabbing it by the underside of its opisthosoma (Fig. 1D). This event was first recorded and after the spider subdued the camel spider, both specimens were collected.

Wolf spiders are considered ground hunting spiders, comparable to other spider families (e.g. Sparassidae) previously recorded feeding on camel spiders (Cardoso et al. 2011, Wharton 1987, Wharton & Reddick 2014). Moreover, Wolf spiders, like camel spiders, dwell in similar microhabitats and rely on similar foraging strategies. Several cursorial species of the genus *Hogna* Walckenaer, 1805 distribute in Northwest Mexico, including the commonly found *Hogna coloradensis* Banks, 1894 and *Hogna carolinensis* Walckenaer, 1805 (Medrano 2018). Based on this observation, we consider that the encounter between these nocturnal arachnids might occur more frequently.

The current knowledge on camel spider biology and natural history is primarily based on a few observations for some species. We believe that the events here described represent fortuitous encounters and provide valuable information on North American desert arachnid communities. Furthermore, it offers insight into the ecological role of camel spiders and their interactions with other predators.

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