NATURAL HISTORY NOTE

Climbing Behavior in *Phrynosoma orbiculare* as a Fleeing and Antipredatory Mechanism

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Phrynosoma orbiculare is one of 17 recognized species and belongs to the Tapaja clade of *Phrynosoma* which includes the other viviparous species of *Phrynosoma*: *P. ditmarsi*, *P. hernandesi*, and *P. douglassi* (Leaché and McGuire 2006). *Phrynosoma orbiculare* is endemic to México and has a distribution that spans from the northern part of Sonora through the central Plateau giving this species a wide geographical and ecological range; as such, distinct lineages have been recognized (Moreno-Barajas et al. 2013) leading to discussion regarding the phylogenetic status of this species. The wide distribution of this species also leads to a wide-range of habitats from pine-oak woodlands to semiarid shrubland. Despite its wide distribution, little is known about habit use in this species. Here we report climbing behavior in *P. orbiculare* in a population from central Mexico.

During fieldwork on 3 July 2026 we witnessed an individual of *P. orbiculare* utilize a prickly pear cactus (genus *Opuntia*) for escape behavior. The field site was in San Francisco Cheje, Jocotitlán, Estado de México, México (19° 41' 39.79" N, 99° 44' 33.55" W; WGS84; 2706 m a.s.l.), and the habitat was mainly semiarid shrubland (Fig. 1A) with dispersed bushels of grasses, prickly pear cacti (Fig. 1B), and agave plants. Cloud cover was approximately 80% during the time of field work. The individual was a juvenile male (43 mm SVL; Fig. 1C) and climbed to approximately 0.5 m in height (Fig. 1D) when approached. The body temperature was 31.9 °C, the air temperature was 21.6 °C, and the substrate temperature was 20.5 °C.

From our knowledge, this represents the third report of climbing behavior in *Phrynosoma* as similar behavior has been described in *P. coronatum* (Whitford and Bryant 1979) and *P. cornutum* (Lara-Resendiz et al. 2020). This behavior has been hypothesized to be a result of thermoregulation (Whitford and Bryant 1979) and antipredatory behavior (Lara-Resendiz et al. 2020). Our observation supports the hypothesis of climbing behavior within cactus species to avoid predation. However, based on niche diversity within this species, and *Phrynosoma* in general, more studies on habitat use and niche selection should be completed in these species as this work will help elucidate diversification patterns and provide better context for conservation efforts.

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Fig. 1. A) Overview of semiarid habitat with sagebrush grass, prickly pear cactus, and agave plants in San Francisco Cheje, Jocotitlán, Estado de México, México. **B)** Image of prickly pear cactus in which *Phrynosoma orbiculare* was found. **C)** Image of *P. orbiculare* scaling the prickly pear cactus. **D)** Close up view of *P. orbiculare* in prickly pear cactus showing spines impaling individual.

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