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# PREDATION OF *ASPIDOSCELIS GUTTATUS* (TEIIDAE) BY *OXYBELIS MICROPHTHALMUS* (COLUBRIDAE) IN AN URBAN ENVIRONMENT OF PUERTO ESCONDIDO, OAXACA, MEXICO

## DEPREDACIÓN DE *ASPIDOSCELIS GUTTATUS* (TEIDAE) POR *OXYBELIS MICROPHTHALMUS* (COLUBRIDAE) EN UN AMBIENTE URBANO DE PUERTO ESCONDIDO, OAXACA, MEXICO

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**Resumen.**– Registramos a una nueva presa para *Oxybelis microphthalmus*, con base en un especimen adulto depredando a una lagartija macho de *Aspidoscelis guttatus*. Aunque se han reportado a tres especies de lagartijas del género *Aspidoscelis* como presas de *O. microphthalmus*, no encontramos información alguna relacionada con la depredación de esta especie de lagartija. Por tanto, nuestra observación representa el primer reporte de interacción entre *O. microphthalmus* y *A. guttatus* en un ambiente modificado por humanos.

**Palabras clave**.– Colubridae, dieta, interacciones, presa.

**Abstract.**– We record a new prey species for *Oxybelis microphthalmus*, based on an adult specimen preying on an adult male of *Aspidoscelis guttatus* lizard. Although three species of lizards in the genus *Aspidoscelis* have been reported as prey for *O. microphthalmus*, we did not find any information related to the predation of this lizard species. Therefore, our observation represents the first documented record of interactions between *O. microphthalmus* and *A. guttatus* in a human-modified environment.

**Key words**.– Colubridae, diet, interactions, prey.

Biotic interactions are relations established between at least two individuals from the same or different species. These interactions can result in individual benefiting, sustaining injuries, or nothing (Del Val & Boege, 2012). In general, most interactions between different species occur to obtain resources necessary for survival, which means one individual is food for the other. This interaction is commonly referred to as predation (Del Val & Boege, 2012). One biotic interaction that is particularly interesting can be observed in the feeding habits of arboreal snakes because their hunting strategies vary considerably between and within the different species due to differences in ontogeny and evolutionary history (Rojas-Morales et al., 2021).

*Oxybelis microphthalmus* is a large and thin snake in the *O. aeneus* complex that is primarily arboreal and diurnal (Köhler, 2008). Its distribution extends from 0 – 2,251 m a.s.l., from southeastern Arizona, USA to Oaxaca, Mexico (Jadin et al., 2019). It inhabits in a variety of vegetation types, including low deciduous forest, medium subperennifolia forest, subtropical scrubland, dry forest, riparian vegetation, and occasionally they penetrate the edge of oak forests (Quintero-Díaz & Carbajal-Márquez 2017; Jadin et al., 2020), as well as modified ecosystems (Köhler, 2008).

*Oxybelis microphthalmus* is an opystoglyphous snake (Keiser Jr., 1967; Argôlo, 2004) that spend most of their time on lower vegetation (Fraga et al., 2013), using a sit-and-wait ambush strategy to capture prey (Henderson, 1974, 1982). The diet of *O. aeneus* complex includes birds, small mammals, insects, fish, and amphibians (Sellmeijer & van der Bug, 2020). Until


**Figura 1.** Interacción del evento de depredación de *Oxybelis microphthalmus* sobre un macho adulto de *Aspidoscelis guttata* en el ambiente urbano de Puerto Escondido, Oaxaca. a) *Oxybelis microphthalmus* mordiendo a *A. guttata* por la cintura; b) *Aspidoscelis guttata* intentó liberarse mordiendo la parte de la nuca de *Oxybelis microphthalmus*; c) Hemipenes de la presa evertidos (Fotografías: Jesús García-Grajales).

**Figure 1.** Interaction of the predation event of *Oxybelis microphthalmus* on an adult male of *Aspidoscelis guttata* in the urban environment of Puerto Escondido, Oaxaca. a) O*xybelis microphthalmus* biting *A. guttata* by the waist; b) *Aspidoscelis guttata* tried to free itself by biting the nucal part of *Oxybelis microphthalmus*; c) Prey's hemipenes everted (Photographs: Jesús García-Grajales).

now, *O. microphthalmus* was known to consume lizards, such as *Aspidoscelis deppii* (Ramírez-Bautista et al., 2020), *A. communis* (Bucio-Jiménez & Flores-Loyola, 2021), and *A. gularis* (Carbajal-Márquez et al. 2022).

Here we record a new prey species for *O. microphthalmus*, based on an adult specimen preying on an adult male of *A. guttatus* on November 21, 2023 at 13:13 h, in the urban environment of Puerto Escondido, Oaxaca. This predation case was recorded near an access hall at the Universidad del Mar (15.53216° N, 97.04371° W). We observed and photographed the exact moment when *O. microphthalmus* captured a whiptail lizard biting it by the waist (Fig. 1a). Most of the snake body was hanging and hidden between the branches of a bugambile. The prey tried to free itself by biting the nuchal part of the snake (Fig. 1b); however, the snake began making mandibular movements to move its mouth towards the anterior portion of the lizard. After five minutes, *O. microphthalmus* began to move towards the top of the trees with the lizard still alive. We assumed it was waiting for the venom to take effect (Heyborne & Mackessy, 2021) before positioning the prey to be able to ingest it head first. According to Carbajal-Márquez et al. (2022), anteroposterior (head first) ingestion is the most common way to swallow prey by this snake species. As a result of the pressure of the bite on the waist, the prey's hemipenes were everted, thus it was possible to determine the individual's sex (Fig. 1c). The prey was identified based on the morphological characteristics seen in the pictures and previous sightings of this species in this area (García-Grajales et al., 2018). No additional data was collected so as not to interrupt the predation event.

As far we know, three species of lizards in the genus *Aspidoscelis* have been reported as prey for *O. microphthalmus*, but we did not find any information related to the predation of this lizard species. Which is why we consider this to be the first documented predation of *O. microphthalmus* on *A. guttatus*.

Observing snake's diet in the wild is valuable because predation events are rarely observed (Dias-Silva et al., 2021). Moreover, predators and their interactions with prey in urban environments are of special interest due to the low record of such interactions in man-modified environments (Fischer et al., 2012). Therefore, there are few documented cases of predation. In addition, *O. microphthalmus* is an arboreal species, which makes it rare to record of catching prey at ground level (Bucio-Jiménez & Flores-Loyola 2021). In Carbajal-Marquez et al. (2022) work, documents a case of *O. microphthalmus* preying on an adult male of *Aspidoscelis gularis* in Aguascalientes, Mexico. To our knowledge, our observation represents the first documented record of interactions between *O. microphthalmus* and *A. guttatus* in a man-modified environment.

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