

## First record of predation by a Bighead Anole, *Anolis capito* (Squamata: Dactyloidae), on an oligochaete in Costa Rica

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The Bighead Anole, *Anolis capito* Peters, 1863, ranges along the Caribbean slope of Central America from Tabasco, Mexico to eastern Panama (Köhler et al., 2005). It is a common diurnal and essentially arboreal species (Savage, 2002). Adults usually perch up to 3 m above the forest floor, while younger individuals are frequently observed in the leaf litter or perched low on tree trunks (Leenders, 2019).

Before the report by Vitt et al. (2005), very little was known about the ecology of the species, and it was included mainly in checklists and some summaries about anole natural history, distribution, and morphology (e.g., Köhler et al., 2005; Acosta-Chaves et al., 2015). Vitt et al. (2005) and additional reports have now shown that the species is most frequently observed off the ground but occasionally descends to capture slugs and arthropods (Savage, 2002). *Anolis capito* preys primarily on orthopterans, spiders, caterpillars (Savage, 2002), formicid ants, dipterans (Lieberman, 1986), homopterans, insect larvae, and roaches (Vitt and Savin, 2005). It is also known to prey on other lizards (Andrews, 1983; Savage, 2002; Guyer and Donnelly, 2005) and leaf-litter frogs (Acosta et al., 2020). To the best of our knowledge, so far, no literature report on the consumption of earthworms by bighead anoles has been published. Herein, we report on *A. capito* feeding on an earthworm (Annelida; Oligochaeta) for the first time.

On 21 June 2021 during a field trip to Santa María Sector, Rincón de la Vieja National Park, Guanacaste, Costa Rica (10.7847°N, 85.3175°W; WGS84; elevation 1345 m), an adult female *A. capito* was observed

consuming an earthworm. The lizard was observed capturing the earthworm in the leaf litter and moving with the prey in its mouth about 40 cm from the capture site to climb up a tree trunk, resting at 30 cm above the forest floor to feed on its prey. The photos (Fig. 1) were taken during the final moments of ingestion. *Anolis capito* was identified following Köhler et al. (2005).

Anoles that eat invertebrates are typically thought of as generalists, due to their consumption of prey generally available in the microhabitats where they live (Rand and Myers, 1990; Losos, 2009). However, it is well known that lizards' diet differs between species and that there are some extreme food specialists (Vitt and Zani, 1996; Vitt et al., 1997). Studies by Lieberman (1986), Savage (2002), and Vitt and Zani (2005) suggest that the diet of *A. capito* consists of a variety of invertebrates, but no annelids have ever been included in these reports.

Our observations suggest that this predation event conformed to the foraging strategies previously reported for this species, which includes feeding along tree trunks (Vitt and Zani, 1998) but also, occasionally, on the forest floor (Savage, 2002). It is also consistent with perch above-ground preferences known for other anole species in Costa Rica (e.g., *Anolis tropidolepis*: Fitch, 1972; *A. polylepis*: Cortés-Suárez and Diaz-Gutierrez, 2013; *Norops alocomyos*: Köhler et al., 2014; *A. aquaticus*: Frank and Flanders, 2016; *A. leditzigorum*: Kaiser and Kaiser, 2021).

It appears that the strategy by *A. capito* to feed in diverse microhabitats will lend itself to a more diverse diet than in species less broad in their range of foraging options, and that while *A. capito* may come across earthworms serendipitously, other species never will. It is also of interest to further examine whether any relationship between sex and foraging activity exists in *A. capito*.

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**Figure 1.** *Anolis capito*, preying on an earthworm in Santa María Sector, Rincón de la Vieja National Park, Guanacaste, Costa Rica. (A) Dorsal view. (B) Lateral view. Photos by Christian G. Herrera.

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