



A Black Spiny-tailed Iguana (*Ctenosaura similis*) Preying on a Central American Boa Constrictor (*Boa imperator*) in Belize

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The Black Spiny-tailed Iguana (*Ctenosaura similis*), classified as Least Concern on the IUCN Red List of Threatened Species (Pasachnik 2015), has a broad distribution that spans central and southern Mexico, the Yucatán Peninsula, and Central America (Buckley et al. 2016). Additionally, *C. similis* has established invasive populations in Florida, Venezuela, and the Malpelo and San Andrés Islands in Colombia (Buckley et al. 2016; Briggs-Gonzalez et al. 2023; McKnight et al. 2023). While primarily herbivorous and playing a crucial role in seed dispersal (Traveset 1990; Briggs-Gonzalez et al. 2023), this species demonstrates significant dietary plasticity, consuming not only plant material but also eggs of various avian and reptilian species, invertebrates, and small vertebrates such as rodents, birds, lizards, marine turtle hatchlings, and frogs (Fitch and Henderson 1978; Traveset 1990; Jackson and Jackson 2007; Avery et al. 2009; Briggs-Gonzalez et al. 2023).

On 2 August 2024, we observed a predation attempt by an adult *C. similis* on a juvenile Central American Boa Constrictor (*Boa imperator*) at the Lamanai Outpost Lodge in the Orange Walk District, Belize (17.75202, -88.65340). The lodge is located in a region characterized by flat topography, a relatively dry climate, average temperatures around 27 °C, and encompasses diverse habitats, including scrub forests, swamps, and riparian vegetation (England 2000). The iguana had the boa in its mouth (Fig. 1) on a pedestrian pathway within the Lamanai Outpost Lodge. Upon noticing our presence, the iguana fled, leaving the headless snake behind, suggesting that the iguana had killed the boa and consumed the head. When we returned to the site ~5 minutes later, neither the iguana nor the remains of the boa were present, suggesting that the *C. similis* had returned to finish eating the *B. imperator*.

Previous reports have documented interactions between *C. similis* and various species of snakes. Engeman et al. (2009)

described a “non-predatory killing” event in which an invasive *C. similis* attacked a Black Racer (*Coluber constrictor priapus*) on Gasparilla Island, Florida, USA. The iguana exhibited a vigorous shaking attack but did not consume the racer after the snake appeared dead. The authors noted that the attack continued in response to twitching movements from the snake’s body, with the iguana rushing and shaking the snake repeatedly. The incident was monitored for 20 minutes, during which the lizard did not consume the snake, and its carcass was still present the following morning. Although the motivation for this behavior remained unclear, the authors suggested it could be a defense mechanism, as *C. similis* was not known to prey on snakes.

Janzen and Brodie (1995) investigated the role of visual cues in the foraging behavior of *C. similis* by employing snake replicas with varying color patterns. Their findings indicated that iguanas frequently bit brightly colored replicas, suggesting that this behavior could stem from feeding confusion, high-



Figure 1. A Black Spiny-tailed Iguana (*Ctenosaura similis*) abandoning a partially consumed, headless juvenile Central American Boa (*Boa imperator*) on a pedestrian pathway near the Lamanai Outpost Lodge, Orange Walk District, Belize. The lizard was ingesting the snake until it was disturbed by our presence. Photograph by Daniel Chaic.

lighting the role of visual cues in *C. similis* behavior, where color patterns might lead to misinterpretations during foraging. Although *B. imperator* is not as vividly colored as some snakes, the snake's coloration or pattern possibly created a contrast that *C. similis* mistakenly associated with flowering plants or fruits, perhaps leading to interactions driven by misguided foraging attempts rather than considering snakes as prey. However, the *C. similis* might well have simply been exploiting an opportunity to consume a prey item of suitable size.

Our observation provides new insights into the behavior of *C. similis* suggestive of generalist and opportunistic feeding habits, which could allow for greater flexibility and resource exploitation than previously recognized. Although we are uncertain whether our observation was an attempt at feeding, a defensive strike, or merely a mistaken attack, the absence of the head and the disappearance of the body of the snake underscore the need for further research to investigate the frequency and ecological implications of such predatory behaviors.

Also of note is that, while *C. similis* has been introduced to southern Florida (Butterfield et al. 1997; Krysko et al. 2016), *B. imperator* has not been documented in the area, although two subspecies of the closely related *B. constrictor* (*B. c. constrictor* and *B. c. occidentalis*) are known to be established in parts of Florida (King and Krakauer 1966; Krysko et al. 2016), including areas of sympatry with *C. similis*. Further studies of interactions between these species in their invasive range could provide valuable insights into behavior, resource use, and ecological dynamics during a biological invasion.

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