

Predation of the Southern California Legless Lizard (*Anniella stebbinsi*) by the San Diego Ring-necked Snake (*Diadophis punctatus similis*)

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Species that are associated with a subterranean natural history; or that have a brief ecological window of above ground activity; or occur nocturnally; are inherently difficult to observe. Predation events involving these ecologically cryptic species are thereby scarce in the literature. Such observations and subsequent reports have value for understudied or seldom observed species.

When species are split from a large species complex, observations and reports representing observations of the new species are critical to developing an ecological pattern of behavior for the newly split, discovered, or named species. Herein, we report a predation event by the San Diego Ring-necked Snake (*Diadophis punctatus similis*) on the recently designated species Southern California Legless Lizard (*Anniella stebbinsi*; Papenfuss and Parham 2013).

While conducting a herpetological-based workshop in northern Baja California, Mexico, we searched cover objects on 2 April 2024, at the Meling Ranch (30.974372° N, -115.741553° W). Cover objects included old tires, corrugated metal panels, large tree branches and fallen trunks, and other objects. Upon lifting numerous corrugated metal panels, we discovered *Anniella stebbinsi* in both adult and juvenile life stages. We also encountered California Glossy

Snake (*Arizona elegans occidentalis*) and *D. p. similis* in sub-adult forms. Representatives of both snakes were collected for *ex-situ* photography (and later release) by the senior author.

The snakes were housed in small, round (< 1 L), sterile plastic containers with breathable lids for approximately 16 hours, prior to photography, with the intent of release the day following capture. The *D. p. similis* was inspected prior to removal from the plastic container and a 30 mm portion of the posterior end of *Anniella stebbinsi* was found to have been regurgitated within the container. Both the snake and its regurgitated contents were photographed, and the snake was subsequently released at the site of capture (Fig. 1).

There have been records of snakes preying on the Northern Legless Lizard (*Anniella pulchra*). Cook (1930), Lowe (1948) and Kuhns (1961), reported Glossy Snake (*Arizona elegans*), Coral Snake (*Micrurus fulvius*; captive fed), and Night Snake (*Hypsiglena torquata*), respectively, as preying upon *Anniella pulchra*. Additionally, Bell and Bowden (1995) reported *D. punctatus* preying upon *Anniella pulchra* in Riverside County, California. Additionally, a similar observation in San Luis Obispo County was photographed (14 April 2019) and reported to the

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Fig. 1. San Diego Ring-necked Snake (*Diadophis punctatus similis*) with a portion of a regurgitated Southern California Legless Lizard (*Anniella stebbinsi*), Rancho Meling, Baja California, Mexico. Photo by Ivan Parr.

senior author (Katie Rock, pers. comm.). We believe that this is the first record of *D. p. similis* predating on *Anniella stebbinsi*. This reported observation is possible, in part, due to the designation of *Anniella stebbinsi* as a new species (Papenfuss and Parham 2013). We feel that it is critical to establish an ecological context for new species, despite having a previous connection to a larger species complex. Given time, the association with *Anniella stebbinsi* to *Anniella pulchra* will no longer be relevant and natural history notes directly attributed to *Anniella stebbinsi* will become necessary to understand the ecological context of this relatively new species. We contend that this is the first report of *D. punctatus* predating on *Anniella stebbinsi*.

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HISTORICAL NOTE

Kauffeld and Sagan's Shared Summer in West Texas

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"When we try to pick out anything by itself, we find it hitched to everything else in the Universe." ~ John Muir, My First Summer in the Sierra (1911)

Twenty years ago this season, in the September 16th 2004 issue of the journal *Nature*, a correspondence submitted by science journalist Matt Ridley appeared with a rather puzzling title: "Crick and Darwin's shared publication in *Nature*" (Ridley 2004). Francis Crick had just died on July 28th of that year, and many of the eulogies written to Crick had compared him to other scientific greats, including Charles Darwin. The meaning of the article's title was respectfully, and somewhat romantically, tongue-in-cheek, however. Ridley had discovered that Darwin's final publication in 1882, printed thirteen days before he died, was effectively co-authored with Crick's grandfather, Walter Drawbridge Crick. And printed immediately below Ridley's correspondence on the same page was another letter to the editor of *Nature* lamenting the inaccurate portrayal of science in movies and mentions that "even a scientist as influential as Carl Sagan struggled, not entirely successfully, to preserve verisimilitude in the film version of his novel *Contact*" (Davidson 2004). Following that course of thought, in yet another instance of charming serendipity in the same vein as the Darwin-Crick offering, I have discovered that Carl Sagan shared a summer in West Texas with Carl Kauffeld.

In April 1956, planetary astronomer Gerard Kuiper invited a 21-year-old Sagan to spend the

summer looking at Mars via telescope at McDonald Observatory in Fort Davis, Texas (Druyan 2020). With financial assistance from the National Science Foundation, the young Sagan accepted the offer and responded to Kuiper that he would be arriving in Fort Davis around June 16th and that he would be available to stay at McDonald until his graduate school classes resumed in October (Fig. 1).

Concurrently, the Staten Island Zoo's then-curator of reptiles, Carl Kauffeld, was also passing through Fort Davis on his quest to find Trans-Pecos Ratsnakes (*Bogertophis subocularis*) in the region, especially in Big Bend. The successful search was soon published in the zoo's periodical, *In Animaland*, in November 1956, with the title "New and Rare Rat Snakes" (Figs. 2 and 3; Kauffeld 1956), and the story was fleshed out more famously and poetically as an excerpt of a herpetological soliloquy of sorts called "The Search for Subocularis" in Kauffeld's book, *Snakes: The Keeper and the Kept* (Kauffeld 1969).

The two Carls—both science popularizers and both from New York—would finish out their shared summer deep in the heart of West Texas and would, of course, go on to become perhaps the most influential popularizers of their respective fields of natural history in the latter half of the twentieth century (Conant 1975, Druyan 2020). While one of them was forming his experiences and thoughts that would shape his ability to inspire others who were interested in scanning the Earth's terrain for snakes, the other was doing the same thing at the same time and

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