



Fig. 2. DiceCT scan of the prey animal's head, 3D rendered in Dragonfly ORS: A) many abrasions can be seen along the dorsal surface of the salamander's snout and head, possibly indicating past altercations; B) a digital, sagittal section shows multiple rows of teeth. Scale bar = 1 mm.

and *Mysis* shrimp. Salamanders are fed twice weekly, and the salamanders had been fed about three hours before the time of this observation. However, it is not known how long the cannibal had been in the process of consuming its prey and whether it had begun ingesting it prior to the scheduled feeding. Previous accounts of cannibalism among *E. rathbuni* adults (Lee et al. 2021, *op. cit.*) reported a disparity in size between the cannibal and its prey. Moreover, all previously reported events have described a “headfirst” approach by the cannibal. Herein, we report a cannibalism event of two similarly sized adult *E. rathbuni* individuals with a “tail first” approach by the cannibal.

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BRITTANY A. DOBBINS, Department of Biology, Texas State University, 601 University Drive, San Marcos, Texas 78666, USA (e-mail: bd1217@txstate.edu); **DESIREE M. MOORE**, U.S. Fish and Wildlife Service, San Marcos Aquatic Resources Center, 500 E McCarty Ln, San Marcos, Texas 78666, USA (e-mail: desiree_moore@fws.gov); **RUBEN U. TOVAR**, Department of Integrative Biology, University of Texas at Austin, 2415 Speedway, Austin, Texas 78712, USA; **DANA M. GARCÍA**, Department of Biology, Texas State University, 601 University Drive, San Marcos, Texas 78666, USA.

SQUAMATA — LIZARDS

HOLBROOKIA LACERATA (Plateau Spot-tailed Earless Lizard).
MATING. *Holbrookia lacerata* is phrynosomatid lizard that was recently elevated from subspecies status (*Holbrookia lacerata lacerata*) and is now recognized as a full species (Hibbitts et al. 2019. *Zootaxa* 4619:139–154). Following this split, *H. lacerata* is found in central Texas, USA, north of the Balcones Escarpment (Hibbitts et al. 2019, *op. cit.*). Few studies have been conducted on this species; therefore, little is known of their basic natural history, life history, and general ecology (Hibbitts et al. 2021, *op. cit.*). Due to the recent attention on assessing the conservation status of this species, data such as these are necessary and imperative.

On 11 June 2021, we captured 5 adult *H. lacerata* (1 male: 61 mm SVL; 4 females: 59.5 mm mean SVL, range: 51–65 mm) from near San Angelo, Tom Green County, Texas (31.381°N, 100.160°W; WGS 84; 563 m elev.). Upon returning to a laboratory at Texas A&M University-Kingsville, we individually housed the lizards in 38-L aquaria equipped with heat lamps, UV lights, and a substrate of 10 cm deep sandy loam soil. The five aquaria were positioned side-by-side along the 51 cm length side and we placed a visual barrier of construction paper along half (ca. 25 cm) of the aquaria length, which allowed each lizard the option of viewing its neighbor or positioning themselves out of line of sight of the other lizards.

Within minutes of being placed in its aquaria, the male *H. lacerata* noticed the female in the adjacent aquarium and began a series of rapid head-bobs, then sprinted towards her until he was pressed against the aquaria glass. The male used its front legs to kick away soil in what appeared to be an attempt to dig its way to the female. When first checked on the following day, 12 June 2021, the male had completely kicked away the soil substrate along the aquaria edge abutting the female's aquaria by continually running against the glass in what appeared to be futile attempts to get to her. At this point, we introduced the male into the female's aquarium, and he immediately ran to the female, climbed on her back, bit the skin on the back of her neck, and grasped her sides with his forelimbs. The female attempted to escape the male's grip with slow, jerky forward movements for ca. 20 s, however, the male continued to hold on to her. At this point the female ceased trying to escape and the male positioned himself to allow for cloacal apposition and inserted his hemipenes and rhythmically flexed his tail for 15–20 sec (Fig. 1). The male then partially retracted his hemipenes, which were removed from the female's cloaca; however, hemipenes remained partially exposed for 3 s. The male remained latched onto the female for another 30 s, laying completely motionless with his eyes closed as she began to slowly move around the aquarium dragging the male. After 75 sec from the initial grab by the male, the male released his grasp of the female, separated completely from the female, and laid motionless, which ended the interaction.

PHOTO BY E. DRAKE RANGEL



FIG. 1. A male *Holbrookia lacerata* holding down female by grasping her body with his forelimbs in order to insert his hemipenes.

We left the male *H. lacerata* in the female's aquarium for the next 8 h to determine if they would continue to mate throughout the day but no additional copulatory behaviors were observed. We then returned the male to his own aquarium. To our knowledge this is the first descriptive report of copulation in *H. lacerata*.

Funding was provided by the Office of the Texas Comptroller of Public Accounts. Collection of specimens and research was conducted in compliance with Texas Parks and Wildlife Department Scientific Collection Permit SPR-0620-085 and received approval from the Texas A&M University-Kingsville IACUC (#2021-03-08/1469).

E. DRAKE RANGEL (e-mail: evan.rangel@students.tamuk.edu), **SCOTT E. HENKE** (e-mail: scott.henke@tamuk.edu), **CHRISTIN MOELLER** (e-mail: christin.moeller@students.tamuk.edu), **LUKE WILLARD** (e-mail: luke.willard@students.tamuk.edu), Caesar Kleberg Wildlife Research Institute, MSC 218, Texas A&M University-Kingsville, Kingsville, Texas, 78363, USA; **CORD B. EVERSOLE**, Arthur Temple College of Forestry and Agriculture, Stephen F. Austin State University, Nacogdoches, Texas 75965, USA (e-mail: cord.eversole@gmail.com); **RUBY AYALA**, Department of Biology and Chemistry, Texas A&M International University, Laredo, Texas 78041, USA (e-mail: rubbyayala87@gmail.com).

SCINCELLA LATERALIS (Little Brown Skink). PREDATION. There are many records of spiders catching and consuming lizards (Reyes-Olivares et al. 2020. *Ecol. Evol.* 10:10953–0964; Valdez 2020. *Global Ecol. Biogeog.* 29:13). Most of these involve large spiders such as members of the families Theraphosidae, Ctenidae, or Lycosidae; however, there are instances of smaller spiders consuming lizards. For example, Nyffeler et al. 2021 (*J. Arachnol.* 49:397–401) reported jumping spiders (Salticidae) consuming small anoles and geckoes. The likelihood that a small spider will be able to catch, subdue, and consume a lizard is increased if the lizard is unable to escape a spider's attack by being in a confined situation. Here I report just such an incident in which a jumping spider gained entrance into a cage housing a neonate *Scincella lateralis*.

On 12 August 2022, I captured several neonate *S. lateralis* from an oak-hickory forest in Cherokee County, Oklahoma, USA for use in behavioral studies in my lab. Each neonate was placed in a 300 × 130 × 70 mm clear plastic box with 4 mm diameter holes drilled into the box lids for airflow. Although these holes were large enough for the neonates to pass through, their inability to climb the boxes' smooth sides prevented this. The lizards were left undisturbed for 7 d, except for daily checks to add food and water and remove waste. On 19 August 2022, one neonate (21 mm SVL, 0.2 g) was alive at 1140 h, however, the next day, 20 August 2022, at 1315 h, remains of the neonate, its tail and left foot, were found under paper towels next to a *Phidippus audax*

(Bold Jumping Spider; 14 mm body length). Since the box was checked 19 August when mealworms were added and no spider was detected, I suspect the spider gained entrance into the box through one of the holes in the lid sometime after the box check, then killed and consumed the neonate skink.

Spider predation on *S. lateralis* has been reported previously and include *Latrodectus mactans* (Black Widow) and *Hogna carolinensis* (Carolina Wolf Spider; Neill 1948. *Herpetologica* 4:158; Hampton et al. 2004. *Herpetol. Rev.* 33:269–270). To my knowledge, this is the first record of any jumping spider, including *P. audax*, consuming a *S. lateralis*, and while not a *ex situ*, or wild predation event, it seems possible it can occur under field conditions. Jumping spiders in general, and *Phidippus* in particular, are capable of taking vertebrate prey much larger than themselves (Nyffeler et al. 2017. *J. Arachnol.* 45:238–241; Nyffeler et al. 2021, *op. cit.*) and in this observation the lizard's SVL was 1.5× larger than the spider's body length. This observation underscores the need for researchers to check for potential invading predators in their containers while keeping lizards in captivity or taking measures such as putting screening on air holes.

Research protocols were approved by the Northeastern State University IACUC (#03082021-2). Lizards were collected under the authority of Oklahoma Department of Wildlife Conservation Scientific Collecting Permit number 7275.

MARK A. PAULISSEN, Program in Biology, Department of Natural Sciences, Northeastern State University, Tahlequah, Oklahoma 74464, USA; e-mail: paulisse@nsuok.edu.

XANTUSIA VIGILIS (Desert Night Lizard), FRUGIVORY. *Xantusia vigilis* is a small lizard endemic to the arid regions of southwestern North America and is sporadically distributed within California, Utah, Nevada, Arizona, USA, and Mexico (Bezy 1982. *Cat. Am. Amphib. Rept.* 302:1–4). *Xantusia vigilis* are associated with *Yucca brevifolia* and tend to be found within decayed branches and loose bark of *Yucca*, where they rarely venture from concealed spaces (Miller 1951. *Copeia* 1951:114–120). Prior studies have outlined the diets of members of Xantusiidae. *Xantusia vigilis* have been reported to be entomophagous, with a diet mostly made up of small insects and occasionally other arthropods (Miller 1951, *op. cit.*; Brattstrom 1952. *Copeia* 1952:168–172). This is in contrast to the larger-bodied tropical night lizards (*Lepidophyma*) and Island Night lizard (*Xantusia riversiana*) where omnivory has been previously reported (Bezy 2019. *Night Lizards: Field Memoirs and Summary of Xantusiidae*. ECO Herpetological Publishing and Distribution, Rodeo, New Mexico. 220 pp.). While not a study on wild lizards, in captivity, a pair of privately held captive born *X. vigilis* were found to consume fruit and nectar on a regular basis. The lizards were maintained on *Drosophila melanogaster* as well as commercially available fruit and insect-based meal replacement diets intended for fruit eating geckoes. Lizards readily consumed date fruits, banana and honey puree, agave nectar, lychee, figs, and fruit flavored gecko diets. To the best of our knowledge, here we present the first instance of documented frugivory among *X. vigilis*. We believe the cryptic nature and small size of these animals may have impeded detecting the breadth of their diet in the wild previously and that future efforts should investigate a broader potential diet among wild small-bodied *Xantusia*.

FERRIS E. ZUGHAIYIR (e-mail: f_z22@txstate.edu) and **MICHAEL R.J. FORSTNER**, Department of Biology, Texas State University, 601 University Drive, San Marcos, Texas 78666, USA (e-mail: mf@txstate.edu).