1990

Natural History Note: Crotalus Viridis Viridis (Prairie Rattlesnake). Predation.

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More potential refuges seemed to be available to the second skink. In addition to the large board near which I first saw it, yucca and other terrestrial vegetation was available a few meters up the gently sloping slope from the pond. In both cases, algae and other aquatic vegetation obscured my view into the water. Both times I felt around on the bottom of the water but was unable to locate either skink, and did not see either one return to land.

Submitted by LAUREN J. LIVO, 1215 S. Osceola Street, Denver, CO 80219, USA

UTA PALMERI (San Pedro Side-blotched Lizard). CANNIBALISM. Cannibalism in iguanid lizards, which typically are insectivorous or herbivorous, is infrequently reported (Polis 1981. Ann. Rev. Ecol. Syst. 12:225-251; Polis & Myers 1985. J. Herpetol. 19:99-107), although in some populations it has been observed frequently (J. Stamps, pers. comm.).

On 15 April 1987 we observed an incidence of cannibalism in the insular endemic iguanid Uta palmeri by an adult male (75 mm SVL) on a juvenile (ca. 40-50 mm SVL). We first observed the adult carrying the limp body of the juvenile, biting it at the middle of the trunk. The male then carried the body several m, disappearing under a rock for less than 10 sec. He was next seen biting the body by its head and, after a few seconds, he began engulfment. His forelimbs were not used to assist in engulfing the body, but we observed small, side-to-side head movements during this period.

The frequency of cannibalism in U. palmeri is unknown. Wilcox (1980. PhD Dissertation. University of California, San Diego) observed an adult male carrying a dead juvenile, but was unsure if subsequent ingestion occurred. We and our coworkers have conducted over 3,000 man-hours of observation on U. palmeri during two-month field seasons in three different years (not always the same months each year), and have seen only one case of cannibalism. However, only the 1987 field season coincided with a period when hatchlings and very small juveniles were abundant on the study grids.


Submitted by DIANA K. HEWS, Department of Zoology, The University of Texas at Austin, Austin, TX 78712, USA and JEFFREY C. DICKHAUT, 3822 Hope Lane, Erlanger, KY 41018, USA

CROTALUS VIRIDIS VIRIDIS (Prairie Rattlesnake). PREDATION. Among vipers, mark-recapture studies have suggested that survivorship of young snakes is low, however, little information is available concerning causes of such mortality. The following observations concern prairie rattlesnakes that overwintered in a perennially occupied hibernaculum in Coal Creek Canyon, Colorado County, Wyoming in the spring of 1986. These animals were captured as they emerged, transported to camp for SVL and mass measurements as well as radio telemetry implants (X mass of telemeters = 3.4 g, range = 3.1 - 3.5 g), then released to the den site for release.

On 27 May at 1500 h and 1900 h, a 14.9 g, 28 cm snake which had a transmitter implanted surgically on 7 May was found dead and being eaten by many ants (Formica spp.). It had moved 57 m south by 2045 h on 25 May and 1620 h on 26 May. On 26 May at 2000 h a 14.0 g, 27 cm snake which had a transmitter implanted surgically on 3 May was found dead and being eaten by Formica. This snake had moved 35 m east between 1415 and 2000 h on 28 May. On 30 May at 1700 h an 18.2 g, 30 cm snake that had a transmitter implanted surgically on 28 May was found with its transmitter wedged between a rock and a sagebrush root. Many Formica were on the snake and biting it, and there was a column of ants traveling between the snake and an ant mound. The snake was alive, although it responded very sluggishly to tactile stimuli. The snake had moved 36 m southeast between 1000 h on 30 May (when it was released) and the time of the above observation. Many ants clinging to it by their mandibles were removed manually and the snake was returned to camp where it died during the night. On 4 June at 1940 h a 9.0 g, 21 cm snake that had a transmitter forced into its mouth on 3 May was found dead and

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CROTALUS SCUTULATUS SCUTULATUS (Mojave Rattlesnake). MATING BEHAVIOR. We have seen references to the minimum length of the gravid rattlesnake (Klauber, L.M. 1972. Rattlesnakes. Univ. Calif. Press, pp. 175-176). However, we have no knowledge of reports that indicate the minimum age or length for copulation. This is a report of the copulation of two juveniles (both one year old) observed on 13 October 1988 in the Museo de Historia Natural, Facultad de Ciencias Biologicas, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Nuevo Leon, Mexico.

Markings at camp for SVL = 345 mm; CL = 25 mm; mass = 101.3 g. The temperature in the container was 26° C. Copulation began at 0900 h and ended at 1726 h. The female shed before copulation; the male shed after copulation. We suggest that ecdysis of the female stimulated copulation in a manner similar to that reported for adult snakes. In reptiles, precocious adult behavioral development may be observed in turtles (Kramer 1987. Joint Ann. Meet. Veracruz, Mexico. Programs and Abstracts). We thank David Lazcano for providing information, and Ivan Parra and Lea Anderson for criticism and suggestions.

Submitted by MANUEL NEVARES, Facultad de Ciencias Biologicas, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Nuevo Leon, Mexico, and ADRIAN QUIJADA-MASCARENAS, Escuela Superior de Ecologia, Centro de Estudios Superiores del Estado de Sonora (CESUES), Calle Ley Federal del Trabajo, Col. Apolo, Hermosillo, Sonora, Mexico

CROTALUS VIRIDIS VIRIDIS (Prairie Rattlesnake). PREDATION. Among vipers, mark-recapture studies have suggested that survivorship of young snakes is low, however, little information is available concerning causes of such mortality. The following observations concern prairie rattlesnakes that overwintered in a perennially occupied hibernaculum in Coal Creek Canyon, Colorado County, Wyoming in the spring of 1986. These animals were captured as they emerged, transported to camp for SVL and mass measurements as well as radio telemetry implants (X mass of telemeters = 3.4 g, range = 3.1 - 3.5 g), then returned to the den site for release.

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being eaten by Formica. The snake was 30 cm from a large Formica colony. It had moved 48 m southeast between 1020 h (when it was released) and 1515 h on 4 June, and another 76 m south by the time of the above observation.

These four observations suggest that ant predation on small rattlesnakes may not be uncommon. Between four and five instances snakes were found dead (and thus could represent instances of scavenging rather than predation), the snake found on 30 May was alive, currently being attacked by ants, and died later presumably from toxins delivered via ant bites. Also, all of the snakes made lengthy movements that seemed to mean daily movements for all neonates tracked in the spring of 1986 was 3.7 m; SE = 3.9; Graves, B. M. Unpubl. Ph.D. dissertation, University of Wyoming, Laramie) immediately prior to their deaths, suggesting that they were in relatively healthy states and that their movements may have brought them vicinal to foraging ant colonies.

Submitted by BRENT M. GRAVES, Department of Biological and Environmental Sciences, McNeese State University, Lake Charles, LA 70609, USA.

ELAPHE BAIRDII (Baird's Rat Snake). DRINKING BEHAVIOR. On 13 February 1988, at 1600 h, a captive-bred (hatched July 1985) male Elaphe bairdii (TL = 136.9 cm, SVL = 89.54 cm), maintained in a 30.5 x 25 x 30 cm terrarium was accidently splashed with water. As beads of water on its head rolled down to the upper labial scales, swallowing was observed. The water on the labial scales was drawn into the mouth while it was closed. This behavior lasted 42 sec.

This behavior was repeated 23 out of 24 trials conducted during the next 24 days. The duration of swallowing was 9-62 sec (X = 35.8, N = 25). Swallowing was observed when water touched the head, even though it did not always reach the mouth. During two of the trials the snake tilted its head and rubbed its labial scales along its dorsum, sucking water droplets off its body.

A bowl of clean water was always present and the snake has been observed drinking from it. Water falling on the head seems to stimuli swallowing regardless of the snake's hydration state. This may be a stimulus-response behavior that is an adaptation to living in an arid environment with limited standing water (e.g., west Texas). It would allow the snake to utilize water in the form of precipitation or condensation.


I am indebted to John F. Lokke for providing me with the snake and its breeding history.

Submitted by LOUIS A. SOMMA, Department of Zoology, University of Florida, Gainesville, FL 32611, USA.

LOXOCEMUS BICOLOR (Burrowing Python). SIZE. Wilson and Meyer (1985. Snakes of Honduras. Milwaukee Public Museum, Milwaukee, 150 pp.) list Loxocemus bicolor as having a maximum recorded total length of 130.9 cm.

In Dr. Rafael Lucas Rodriguez National Wildlife Refuge (Palco Verde, Costa Rica (10° 21'N; 85°21'E), eight live individuals of L. bicolor were measured during March and April, 1984. Their SVL measured to the nearest 0.5 cm in order of capture were: 1) 121, 2) 127.5 (UCR9376, female), 3) 129 (UCR8757, female), 4) 115, 5) 141.5 (UCR9375, female), 6) 75, 7) 79.5, and 8) 78.5. UCR initials indicate the catalog number of the specimen at the Museum of Zoology, University of Costa Rica. The fifth individual caught was the longest (SVL 141.5, TL 153 cm) specimen of L. bicolor that has been recorded anywhere.

The eight Palco Verde snakes were found at, near, or nests of Ctenosaura similis and Iguana iguana, whose eggs they are known to predate (Mora, J. M. 1987. J. Herpetol. 21:334-335). The nest sites lacked vegetation because of the lizards' burrowing activities. The nests were located in the interface between two types of habitat: fresh water swamps, where cattail (Typha domingensis) was the dominant vegetation, and the tropical dry forest.

We thank J. Monge and M. Di Mare for their help in the preparation of this manuscript. Financial and logistic support was provided by the Universidad Nacional, research project #7809285 (Wildlife ecology and management in Costa Rica), and the Subdirección de Vida Silvestre del Ministerio de Agricultura y Ganadería de Costa Rica.

Submitted by JOSE M. MORA, Escuela de Ciencias Ambientales, Universidad Nacional, Heredia, Costa Rica (Current address: Department of Wildlife and Fisheries Science, Texas A&M University, College Station, TX 77843, USA), and ANNY C. CHAVES, Organization for Tropical Studies (OTS), Universidad de Costa Rica, Ciudad Universitaria "Rodrigo Facio," Costa Rica.

MASTICOPHIS FLAGELLM TESTACEUS (Western Coachwhip). PREDATION. On 18 June 1988, on the northeast bank of the Colorado River (35 km south, 24 km west of Coleman, Coleman County, Texas), we observed a male western coachwhip (SVL = 915 mm, TL = 1149 mm, mass = 190 g without prey items) preying upon a female western rough green snake (Opheodrys aestivus majaill; SVL = 366 mm, TL = 616 mm, mass = 21.2 g). The encounter lasted 3 min when we first noticed the snakes at 0640 h.

We were drawn to the snakes by a rustle in the vegetation under a pecan tree (Carya illinoinsis) 7 m from the river. There we observed the coachwhip searching for the nearby, slowly-moving green snake. The coachwhip sighted the green snake as it was half-way up a 30 cm cedar elm (Ulmus crassifolia) sapling, and seized its dorsum just anterior to the cloaca. The green snake reacted by wrapping its tail around the coachwhip's neck and pulling the rest of its body into the branches of the cedar elm. After 28 min of occasional tugging by both snakes, the green snake was released. The green snake immediately crawled to the upper limbs of the cedar elm sapling. It was seized in the tail region after a short struggle, seemingly-frantic search by the coachwhip.

After 2 h 7 min of repeated seizing of the green snake near the cloaca, the coachwhip finally grasped the green snake in the neck region. This was the coachwhip's first grip near the head in eight attempts. The green snake immediately bit the coachwhip on the