

Submitted by **SIMONE P. BRITO, AUGUSTO S. ABE,** and **DENIS V. ANDRADE,** Departamento de Zoologia, Universidade Estadual Paulista, UNESP, Av. 24-A, 1515, Caixa Postal 199, CEP 13506-900, Rio Claro, São Paulo, Brazil; e-mail (SPB): spbrito@rc.unesp.br.

VARANUS GRISEUS (Desert Monitor). **TOXICITY.** Bites received from many varanid lizards during prey acquisition or in defense may result in significant wounds and secondary bacteremia, producing illness in 1 to 3 days. Except for *Heloderma*, reports on salivary toxins capable of producing immediate systemic effects are generally lacking in Lacertilia. In a case report (Sopiev et al. 1987, Turkmenistan Acad. Sci. 598:615, in Russian) on the toxic effects of a bite from a male *Varanus griseus* (mass = 900 g, SVL = 400 mm, TL = 550 mm), a male keeper was bitten on the right middle finger. The lizard secured its bite for 60 s with a chewing motion. Within 30 minutes the victim reported symptoms including muscular weakness, dizziness, lack of appetite, pain in the eyes, aches and pains in all muscles especially the bottom of the mouth cavity, and pain when swallowing. Difficulty in breathing through the mouth was also noted although no edema was present in the soft palate. One hour post-bite additional symptoms included lymph node pain at the right elbow and arm pit and an increased pulse rate. Here we report two new cases of bites by *V. griseus* with similar physiological effects.

A female keeper at Central Florida Zoological Park was bitten by a *V. griseus* (176 g, 220 mm SVL, 530 total length) as it was being removed from an enclosure after sustaining injuries from a conspecific cage mate. The keeper was bitten on the right hand between the thumb and index finger. Attempts to disengage the bite resulted in a tighter, chewing reflex. The lizard released after ca. 75 s. The wound was immediately cleansed and disinfected with betadine. Within 20 minutes the victim experienced dysphagia, tightness of the chest muscles, and dyspnea. Muscle soreness became generalized during the next hour, progressing downward into the lower extremities. By 1 hour 20 minutes post-bite the facial bones, particularly the frontal, zygomatic, maxilla and mandibular bones became very painful when the skin over them was touched. Within 1 hour 35 minutes post-bite symptoms included dizziness, difficulty in walking due to muscle soreness, and an increase in respiration. The dysphagia and chest tightness increased steadily. By 5 hours 20 minutes post-bite the symptoms began to stabilize. At 16 hours all symptoms had dissipated except muscle soreness in the hands and arms, and a feeling of euphoria was experienced for an additional 4 hours. The bite site remained unremarkable with no swelling, discoloration, or bacterial infection.

A second incident occurred (D. Blanchard, pers. comm.) at Detroit Zoological Park when a male keeper was bitten on the left forearm by a *V. griseus* (ca. 530 mm total length). The duration of the bite was ca. 15 s. Moderate bleeding was noted at the bite site. Within 20 minutes the victim experienced dysphagia and "could hardly swallow." The victim sought clinical treatment one hour post-bite and received epinephrine which relieved the symptoms. The bite wound healed uneventfully.

Auffenberg (1994, The Bengal Monitor. Univ. Press of Florida, Gainesville, 561 pp.) reviewed the mandibular gland as a source

of salivary toxins in anguimorphs and indicated that venom production is suspected in at least some individuals of *V. g. caspius*. Gorelov (1971, Izv. Akad. Nauk. Turkman, SSR, 1:75-76, in Russian) experimentally induced an "intoxicated state" in sparrows and rats following the injection of *V. griseus* saliva (Auffenberg, *op cit.*). In the two new cases reported here, both victims were experienced herpetologists who had received previous bites from other varanid species with no resulting systemic effects. Neither were aware that toxic effects have been suspected in bites from *V. griseus*. We believe that this decreases the likelihood that the symptoms were psychogenic. As salivary peptides, proteins, and enzymes have not been characterized in varanid lizards, research on the toxicity of *V. griseus* may reveal salivary constituents which are effective in prey acquisition or in defense.

We thank David Blanchard for his case report and Fred Bohler, Andrew Snider, George Van Horn, and Tim Walsh for their assistance.

Submitted by **VICKIE BALLARD** and **FREDERICK B. ANTONIO,** Department of Herpetology, Central Florida Zoological Park, P.O. Box 470309, Lake Monroe, Florida 32747, USA; e-mail (FBA): fbanonio@hotmail.com.

SERPENTES

ARRHYTON EXIGUUM (Puerto Rican Garden Snake). **DIET.** The Puerto Rican garden snake is a small species that reaches ca. 45 cm in total length. It is terrestrial and has secretive habits. It is found under logs, rocks, tree stumps, and in termite nests. It actively forages during the day (Henderson and Crother 1989, *In* Woods [ed.], Biogeography of the West Indies: Past, Present, and Future, pp. 479-518, Sandhill Crane Press, Gainesville, Florida).

Here I report an observation of an individual *Arrhyton exiguum* feeding on an *Anolis* sp. egg at night. The egg (21 x 11 mm) was probably from the giant anole (*A. cuvieri*) based on its size. The observation occurred in a haystack hill located in the Sabana Seca area of Bayamón, Puerto Rico, on the northern karst belt of the island. Previous diet records include frogs (*Eleutherodactylus*), lizards (*Anolis*), worm-like lizards (*Amphisbaena*), and adults and eggs of blind snakes (*Typhlops*) (Rivero 1998, Los Anfíbios y Reptiles de Puerto Rico. Editorial de la Universidad de Puerto Rico, San Juan, Puerto Rico, 510 pp.). This observation represents the first record for the island of a snake preying on an *Anolis* egg.

Submitted by **ALBERTO R. PUENTE-ROLÓN,** Box 1112, Ciales, Puerto Rico 00638-1112, USA; e-mail: culebron@atenas.com.

BOA CONSTRICTOR (Boa Constrictor). **DIET.** *Boa constrictor* is a widely distributed, large-bodied generalist, feeding on diverse types of prey items including mammals, birds, and lizards (Green 1983, *In* Janzen (ed.), Costa Rican Natural History, pp. 380-383, The University of Chicago Press, Chicago.), yet little is known of its life history. Boa constrictors have been documented to eat a wide variety of prey; however, only a few rodents have been listed, including "spiny rats," black rats (*Rattus rattus*), agoutis (*Dasyprocta*), and a juvenile tree porcupine (*Coendou rothschildi*) (Beebe 1946, Zoologica 31:11-52; Davis and Smith 1953.

Herpetologica 8:133–43; Mole and Urich 1894. Proc. Zool. Soc. London 1894:499–518; Tschambers 1949. Herpetologica 5:141). Here we report an additional rodent prey item, an adult big-eared climbing rat (*Otodylomys phyllotis*; Rodentia: Muridae). This rat plus an unidentifiable immature rat were obtained from an immature *B. constrictor* (84 cm SVL, 450 g without prey item) on 10 February 2000 at Parque Nacional Palo Verde, Guanacaste Province, in northwestern Costa Rica, at ca. 30 m elevation (10°21'N, 85°20'W). The snake was captured late in the afternoon near the intersection of the main road and the Cerro Calizos trail and placed in a cloth bag, where it regurgitated its stomach contents during the night. The snake was released at the point of capture after data were collected. Both prey items were well digested and identified from their teeth. The immature rodent was perhaps only a few days old and would have been dependent on its mother and possibly the offspring of the adult *O. phyllotis*. One of us (RMT) observed boas consuming additional prey items at Palo Verde, including a subadult opossum (*Didelphis virginiana*) (13 June 1982) and an adult male ctenosaur (*Ctenosaura similis*) (January 1991).

Otodylomys phyllotis is a common species of small, nocturnal rat that is found in a wide variety of habitats, often around rocks, caves, sink holes, or fallen trees. This species forages both on the ground and among vines and low vegetation, usually 3 m or less from the ground. Nests are found at ground level among rocks, under logs, or in low tree holes (Emmons 1990. Neotropical Rainforest Mammals: A Field Guide. The University of Chicago Press, Chicago. 281 pp.). This is the first record of predation by any species on *O. phyllotis*, and the first report of boas consuming *D. virginiana*.

We thank Andres Vaughan for capturing the snake, the Ministerio del Ambiente y Energia and Sistema Nacional de Areas de Conservación for providing us with the opportunity to work at Parque Nacional Palo Verde, and we especially thank Javier Guevara S. for facilitating our research permits. Deedra McClearn and the Organization for Tropical Studies provided outstanding logistic support for this project.

Submitted by **KRISTIN A. BAKKEGARD**, Department of Biological Sciences, Auburn University, Auburn, Alabama 36849, USA, and **ROBERT M. TIMM**, Natural History Museum and Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, Kansas 66045, USA.

CROTALUS WILLARDI AMABILIS (Del Nido Ridgenose Rattlesnake). **DIET.** We obtained fecal remains from a female *Crotalus willardi amabilis* (560 mm SVL, 151.6 g mass) collected 21 July 2000 in the Sierra del Nido, Chihuahua, México. The specimen was collected in a high elevation (2727 m) valley above Cañon del Alamo near a grassy meadow among sparse oak (*Quercus* spp.) and pine (*Pinus* spp.). Examination of these remains revealed dorsal guard hairs, claws, and the partial skull (with teeth) of the southern pocket gopher (*Thomomys umbrinus*).

The only published diet record for *C. w. amabilis* is of unidentified mammal hairs in the scat of wild-caught specimens (Armstrong and Murphy 1979. The Natural History of Mexican Rattlesnakes. Univ. Kansas Mus. Nat. Hist. Special Publ. 5:1–88). In their review of diet records for *C. willardi*, Holycross et al. (*in press*. In Schuett et al. [eds.], Biology of the Vipers. Biol. Sci. Press, Carmel,

Indiana) cited only one record of pocket gopher consumption. In addition, Holycross et al. (*op. cit.*) did not discover remains of pocket gophers among 95 prey of *C. w. obscurus*, though nine of these records were identified only as “small mammals.” However, Holycross et al. (*in press*. Southwest. Nat.) reported finding the remains of *T. u. emotus* in the stomach of a predated *C. w. obscurus*.

We thank Deron Hartman, Javier Banda, and Ray Queen for their assistance in the field.

Submitted by **ROBERT W. BRYSON, JR.**, Department of Biology, Sul Ross State University, Alpine, Texas 79832, USA (e-mail: rbry860@sulross.edu), and **ANDREW T. HOLYCROSS**, Biology Department, Arizona State University, Tempe, Arizona 85287-1501, USA (e-mail: hollycow@asu.edu).

DIADOPHIS PUNCTATUS (Ringneck Snake). **ARBOREAL BEHAVIOR.** On 1 April 2000, I was looking for small arboreal crickets along St Hwy 38, N of jct. St Hwy 9 and St Hwy 38, Santa Clara Co., California, USA. While banging the end of my insect net against the branches of the trees along the highway in order to dislodge insects, I knocked a black-colored ringneck snake from a maul oak (*Quercus chrysolepis*). This snake is typically found on the ground under cover objects (bark, leaves, etc.) and is not known to have arboreal habits (Fitch 1975. Univ. Kansas Mus. Nat. Hist. Misc. Pub. 62:1–53). However, this individual (158 mm SVL, 189 mm total length) was on a branch ca. 1.5 m above the ground and at least 1 m away from the trunk. Once the snake hit the ground, it immediately coiled its tail in a distraction display and then crawled under my boot. The only other animals knocked out of the tree were 4–5 mm long ants, unlikely food items.

Submitted by **THOMAS A. STIDHAM**, Department of Integrative Biology, Museum of Paleontology, and Museum of Vertebrate Zoology, University of California, Berkeley, California 94720, USA.

ELAPOMORPHUS QUINQUELINEATUS (Raddi's Lizard-eating Snake). **REPRODUCTION.** *Elapomorphus quinque-lineatus* is a small, nocturnal, fossorial snake, that is occasionally found in leaf litter. It is distributed in forested areas of southeastern Brazil, from eastern Minas Gerais and Espírito Santo south to Rio Grande do Sul (Peters and Orejas-Miranda 1970. Catalogue of the Neotropical Squamata: Part I. Snakes. Bull. U.S. Natl. Mus. 297:1–347; Ferrarezzi 1993. Sistematica Filogenetica de *Elapomorphus*, *Phalotris* e *Apostolepis* (Serpentes: Colubridae: Xenodontinae). Dissertação de Mestrado, Depto. De Zoologia da Universidade de São Paulo. 199 pp.). It feeds on snakes, lizards, amphibiaenians, frogs, earthworms and insects.

On 9 November 1999, five specimens were collected in a pasture on the left bank of the Rio Itabapoana at the site of the new hydroelectric dam at Rosal, near Guaçuá, Espírito Santo, Brazil (20°55'S, 41°42'W). On 27 December 1999, a female (790 mm SVL, 880 mm total length) laid one egg and on 7 January 2000, she laid a second egg.

The eggs were whitish and elongate. They were incubated in a covered plastic box (15 x 11 x 6 cm), at ca. 24 ± 2°C, on moist soil. The first egg was lost to fungal infestation. The second egg