

Shortly after the nesting, the eggs were counted and moved to a safer location ca. 0.5 km W of the nest site by North Carolina Wildlife Resources Commission personnel. Forty-eight hatchlings emerged during the late evening of 26 August 1992. One dead hatchling was deposited in the North Carolina State Museum of Natural Sciences (NCSM 32024). Photographs of the nesting female are also on file at the NCSM.

Sally Murphy (pers. comm.) reported a *L. kempii* nest at Litchfield Beach, Georgetown County, South Carolina (ca. 50 nautical miles south of Long Beach) on 28 May 1992. That nest was carefully monitored, and 61 hatchlings emerged with assistance on 5 August from the 95 eggs that were laid. It is possible that these nestings were by the same turtle, although that has not been verified. These nestings are the first ever reported for *L. kempii* along the Atlantic Coast.



FIG. 1. Kemp's ridley (*Lepidochelys kempii*) nesting at Long Beach, Brunswick County, North Carolina, 17 June 1992.

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Submitted by **ROBERT PALMATIER**, 2507 Pickett Rd., Durham, North Carolina 27705, USA.

LACERTILIA

AMEIVA EXSUL (Ground Lizard). **BEHAVIOR.** A large male *Ameiva exsul* was observed following a smaller female, the distance between them being approximately 2 m. When she was in his apparent line of vision, he walked directly toward her. When she was concealed, having moved behind a boulder or tuft of grass, the male followed her path through olfaction, indicated by rapid tongue flicking of the substrate. I have not found an account of the alternative use of vision and olfaction in a male *A. exsul*, trailing a female, in the literature available to me.

Submitted by **ARNOLD GROBMAN**, The Valley, Virgin Gorda, British Virgin Islands.

CNEMIDOPHORUS UNIPARENS (Desert Grassland Whiptail). **BEHAVIOR.** While presenting indirect evidence for the natural occurrence of pseudocopulation in the unisexual lizard *Cnemidophorus uniparens*, Crews and Young (1991. *Anim. Behav.* 42:512–

514) noted that there were limited direct observations substantiating the occurrence and prevalence of this behavior in natural populations.

I spent June and July of 1991 and 1992 studying the foraging behavior of a natural population of *C. uniparens* located three miles east of Portal, Cochise County, Arizona. During these periods, pseudocopulation was observed four times (three times by me and once by a field assistant, Dennis Skalla). During 1991, this behavior was observed twice on 3 July and once on 4 July. In each of the 1991 occurrences, a foraging female approached another female who had crossed her path and mounted her in the manner depicted by the upper *C. uniparens* picture in Fig. 1 of Crews (1989. In R. M. Dawley and J. P. Bogart, (eds.), *Evolution and Ecology of Unisexual Vertebrates*. New York State Museum, Albany). Some of the females had been individually marked; there were four to six lizards involved in the three interactions, with a different combination of lizards each time.

Pseudocopulation was observed for a fourth time on 7 July 1992. As described above, a foraging female approached another female and mounted her while biting her neck. After 94 s, the biting lizard moved into the doughnut position shown by the lower *C. uniparens* picture in Fig. 1 of Crews (1989, *op. cit.*). The pair separated after a total contact time of 146 s.

These observations support the notion that pseudocopulation is a regular event in nature and provide some information on its seasonal occurrence.

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HYDROSAURUS WEBERI (Weber's Sail-Fin Dragon). **MORPHOLOGY.** The holotype of *Hydrosaurus weberi* (MCZ 7505) collected at Weeda, Halmahera Island, Indonesia, has a bifid tail. Both branches of the tail are regenerated. The longer branch measures 98.8 mm (SVL=330 mm, tail=668 mm). The shorter branch measures approximately 11 mm and is encircled by at least four scale rows. Bifurcation occurs 533 mm from the cloaca. Tail autotomy and regeneration are poorly noted in the Agamidae. In fact, Moody (1980. Doctoral dissertation, Univ. of Michigan, 327 pp.) states that tail autotomy reportedly does not occur within Agamidae. At best, tail autotomy and regeneration occur sporadically within the Agamidae with the distribution of the trait within the family being unknown (Halliday and Adler (eds.) 1986. *The Encyclopedia of Reptiles and Amphibians*. Equinox Ltd., Oxford, p. 143; S. Moody, pers. comm.). This is the first report of tail regeneration and bifurcation in *Hydrosaurus*, and is likely the first known case of tail bifurcation for the Agamidae.

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SERPENTES

ALSOPHIS PORTORICENSIS (Puerto Rican Racer). **DIET.** *A. portoricensis* is a West Indian colubrid snake known to feed in the wild on frogs (e.g., *Eleutherodactylus*), lizards (*Hemidactylus*, *Sphaerodactylus*, *Anolis*, *Ameiva*, and juvenile *Iguana*) and snakes (*Arrhyton* and *Typhlops*) (Henderson and Crother 1989. Biogeographic patterns of predation in West Indian colubrid snakes. In C. A. Woods (ed.), *Biogeography of the West Indies: Past, Present, and Future*, pp. 479–517. Sandhill Crane Press, Gainesville, Florida; Schwartz and Henderson 1991. *Amphibians and Reptiles of the West Indies: Descriptions, Distributions, and Natural History*. Univ. Florida Press, Gainesville, Florida. 720 pp). However, information about specific prey items is lacking, and all but *Iguana* and *Arrhyton* are represented by several species on the islands where

A. portoricensis occurs. In Table 1 we list prey species taken by *A. portoricensis* at ten sites in Puerto Rico and other islands within the species range: Cambalache and Río Abajo Forest Reserves, Arecibo, Puerto Rico (PR) (Subtropical Moist Forests); Luquillo Experimental Forest, Luquillo, PR (Subtropical Wet Forest); and Guayama, PR; Water Island; Saint Thomas; Virgin Gorda; Caja de Muertos; Culebra; and Mona islands (Subtropical Dry Forests) based on stomach contents of an indeterminate number of preserved and live specimens.

TABLE 1. Natural prey species of *Alsophis portoricensis* taken at (1) Cambalache Forest Reserve, Arecibo, Puerto Rico (PR), (2) Luquillo Experimental Forest, Luquillo, PR, (3) Ranchos de Guayama, Guayama, PR, (4) Río Abajo Forest Reserve, Arecibo, PR, (5) Caja de Muertos Island, (6) Culebra Island, (7) Mona Island, (8) Saint Thomas, (9) Virgin Gorda, and (10) Water Island.

Prey Items	Locality
ANURANS	
Leptodactylidae	
<i>Eleutherodactylus antillensis</i>	1,3,6
<i>Eleutherodactylus coqui</i>	2
LIZARDS	
Anguidae	
<i>Diploglossus pleii</i>	1
Gekkonidae	
<i>Hemidactylus</i> sp.	1
<i>Sphaerodactylus macrolepis</i>	6
<i>Sphaerodactylus nicholsi</i>	5
Iguanidae	
<i>Iguana iguana</i>	10
Polychridae	
<i>Anolis cristatellus</i>	1,5
<i>Anolis evermanni</i>	4
<i>Anolis monensis</i>	7
<i>Anolis pulchellus</i>	1,4,6,8
<i>Anolis stratulus</i>	6,9
Teiidae	
<i>Ameiva exsul</i>	1,5,6,8
SNAKES	
Colubridae	
<i>Arrhyton exiguum</i>	1
Typhlopidae	
<i>Typhlops platycephalus</i>	1
MAMMALS	
Muridae	
<i>Rattus rattus</i>	1

Our records confirm that *A. portoricensis* is an opportunistic predator on small vertebrates. Despite this, *A. portoricensis* employs different techniques when feeding upon *Anolis cristatellus* and *Eleutherodactylus coqui* (Rodríguez-Robles and Leal 1993. J. Herpetol. 27:163–168). Whether *Alsophis* also shows different behavioral repertoires when preying upon snakes and mammals deserves further study.

One *A. portoricensis* at Cambalache swallowed an *Eleutherodactylus antillensis* tail-first, whereas another at Guayama swallowed two *E. antillensis*, one head-first and one tail-first. In contrast, all the lizards that we recovered from snakes in the field were swallowed head-first. These findings seem to support our suggestions, based on observations of *Alsophis* during staged predatory episodes with *Eleutherodactylus* and *Anolis*, that *A. portoricensis* may use ventral scale overlap as a signal for head-first ingestion of

reptiles (Rodríguez-Robles and Leal 1993, *op. cit.*). Although the ventral scales of *Diploglossus*, *Sphaerodactylus*, and *Anolis* exhibit some degree of overlap, those of *Ameiva* do not overlap at all. Hence, we hypothesize that *A. portoricensis* should not exhibit any preference for the direction of ingestion of *Ameiva*, which can easily be tested.

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BOTHROPS ATROX (Common Lancehead). **DIET.** The most frequent prey of *B. atrox* are mammals, frogs, birds, and lizards (Campbell and Lamar 1989. The Venomous Reptiles of Latin America. Comstock Publ. Assoc., Ithaca, New York. 425 pp.) Puerto et al. (Resumos, XIV Congresso Brasileiro de Zoologia, Universidade Federal de Juiz de Fora, Juiz de Fora, p. 136) found a large (80 cm) colubrid (*Leptodeira annulata*) in the stomach of an adult *B. atrox* (total length = 72 cm). Ophiophagy has been reported for other species of *Bothrops* although no attempt has been made to quantify the importance of snakes in the diet of a single population (see references in Campbell and Lamar, *op. cit.*).

As part of a study on the feeding habits of *B. atrox*, the gut contents of 107 preserved specimens from Santa Rosa, the Estrada da Vigia, ca. 60 km northeast of Belém, Pará, Brasil (collected from 1973 to 1975), were examined. Santa Rosa is located in a deforested region with patches of remaining forests (see Cunha and Nascimento 1978. Publ. Avul. Mus. Para. Emilio Goeldi 31:1–218). All snakes were killed at the site of capture by locals during an intensive snake survey in the region (see Cunha and Nascimento, *op. cit.*). Each intact prey item or prey remain was recorded. Hair, feathers, and squamate scales were evident when present in the hindgut. When only insect remains were found in the hindgut we recorded the prey as a frog, because no insects were found in the foregut. After being dried with blotting paper, each snake and intact prey item (or a reference specimen of comparable size; Greene 1989. Proc. California Acad. Sci. 46:193–207) was measured to the nearest 1 mm with a flexible rule and weighed to the nearest 0.1 g with spring scales. Snake measurements are presented as snout-vent length (SVL) plus tail length. Prey/predator mass ratio (MR) was calculated when possible.

Fifty-four *B. atrox* from Santa Rosa had prey items in the gut. Two thirds of the snakes were juveniles with SVL's below 450 mm. The diet of the snakes was comprised of frogs (44% of all prey items), mammals (29%), lizards (11%), snakes (7%), centipedes (5%), and birds (4%). Four individual snakes were found as prey. Two nearly intact *Tantilla melanocephala* (183+53 mm 3.0 g; ca. 130+60 mm, 2.3 g) were eaten by a *B. atrox* measuring 437+80 mm (29 g; MR = 0.10) and 332+50 mm (14 g; MR = 0.16), respectively. Two additional individuals of *B. atrox* (333+57 mm and 378+59 mm) had the tail of a *T. melanocephala* and that of an unidentified colubrid. Except for one *T. melanocephala*, all snakes were ingested head first.

Most young *B. atrox* have yellowish cream tail tips that could be used as lures to attract insectivorous prey (see Greene 1992. In J. A. Campbell and E. D. Brodie (eds.), Biology of the Pitvipers, pp. 107–117, Selva, Tyler, Texas; Heatwole and Davison 1976. Herpetologica 32:332–336; Sazima 1991. Copeia 1991:245–248). *Tantilla melanocephala*, as well as centipedes, feed on invertebrates, including insects (Beebe 1946. Zoologica 31:11–52; Cunha and Nascimento, *op. cit.*) and may be attracted by caudal lures.