

*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
<b>ANURANS</b>	
Leptodactylidae	
<i>Eleutherodactylus antillensis</i>	1,3,6
<i>Eleutherodactylus coqui</i>	2
<b>LIZARDS</b>	
Anguidae	
<i>Diploglossus pleei</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
<b>SNAKES</b>	
Colubridae	
<i>Arrhyton exiguum</i>	1
Typhlopidae	
<i>Typhlops platycephalus</i>	1
<b>MAMMALS</b>	
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.

We thank M. Canals, J. C. Gillingham, and R. W. Henderson for sharing their records of natural prey items of *Alsophis portoricensis*, and H. W. Greene for reviewing the manuscript.

Submitted by JAVIER A. RODRÍGUEZ-ROBLES and MANUEL LEAL, Department of Biology, P. O. Box 23360, University of Puerto Rico, Río Piedras, Puerto Rico 00931-3360, USA. Present address (JAR): Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, Berkeley, California 94720, USA.

**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.

All snakes and some of their gut contents (including the snakes above) are deposited at the Museu Paraense Emilio Goeldi (MPEG), Belém, the State of Pará, northern Brazil. Logistical support and permission to examine snakes at MPEG were kindly provided by T. C. S. Ávila-Pires and F. P. Nascimento; S. G. Egler helped in laboratory work; I. Sazima and M. E. Oliveira provided helpful suggestions on the manuscript. The CNPq provided a grant to M. Martins. This note is a contribution of the Convênio Universidade do Amazonas/Instituto de Medicina Tropical de Manaus.

Submitted by **MARCIO MARTINS** and **MARCELO GORDO**, Departamento de Biologia, Instituto de Ciências Biológicas, Universidade do Amazonas, 69077-000 Manaus, Amazonas, Brasil.

## GEOGRAPHIC DISTRIBUTION

Instructions for contributors to *Geographic Distribution* appear in volume 24, number 2.

### CAUDATA

**AMBYSTOMA OPACUM** (Marbled Salamander). USA: INDIANA: Ohio Co: Pike Township: Bear Branch-Aberdeen Road, 3 km E Bear Branch above South Fork Creek. 4 May 1993. Paul X. Hellmann. Verified by John W. Ferner. Cincinnati Museum of Natural History (CMNH 3860). New county record; first confirmed specimen from extreme southeastern Indiana (Minton 1972, *Amphibians and Reptiles of Indiana*. Indiana Acad. Sci., Indianapolis, Indiana. 346 pp.).

Submitted by **PAUL J. KRUSLING**, Department of Herpetology, Cincinnati Museum of Natural History, Frederick and Amy Geier Research and Collections Center, 1720 Gilbert Avenue, Cincinnati, Ohio 45202, USA.

**AMBYSTOMA TIGRINUM MAVORTIUM** (Barred Tiger Salamander). USA: NEBRASKA: Deuel Co: 11.3 km N Big Springs. 28 June 1993. Carl E. Bock and H. M. Smith. Verified by David Chiszar. UCM 56785. County record (Lynch 1985, *Trans. Nebraska Acad. Sci.* 13:33-57).

Submitted by **HOBART M. SMITH**, **CARL E. BOCK**, and **JANE H. BOCK**, Department of EPO Biology, University of Colorado, Boulder, Colorado 80309-0334, USA.

**CRYPTOBRANCHUS ALLEGANIENSIS ALLEGANIENSIS** (Eastern Hellbender). USA: TENNESSEE: Lawrence Co: 22 July 1992. Buffalo River, ca. 1 km downstream from Hicks Branch tributary. T. Casey and B. T. Miller (Tennessee Scientific Study Permit 654). Verified by J. L. Miller. Middle Tennessee State University (MTSU 110-C). Four individuals branded, weighed, measured and released. Fifth individual returned to lab and photographed. County record (Redmond 1985, *A Biogeographic Study of Amphibians in Tennessee*. Doctoral Thesis, Univ. Tennessee, Knoxville. 290 pp.).

Submitted by **BRIAN T. MILLER**, **TIM CASEY**, and **GARY PRITTS**, Department of Biology, Middle Tennessee State University, Murfreesboro, Tennessee 37132, USA.

**GYRINOPHILUS PORPHYRITICUS** (Spring Salamander). USA: KENTUCKY: Adair Co: Gundy Hollow Creek (trib. to Green River), 2.4 km NE Rt. 76 on Winfrey Hill Road. 31 December 1992. G. A. Marvin. County record. Verified by P. V. Cupp, Jr. Eastern Kentucky University. Department of Biology Collection (EKU 1100). New county record.

Submitted by **GLENN A. MARVIN**, Department of Zoology, University of Oklahoma, Norman, Oklahoma 73019, USA.

**NECTURUS MACULOSUS** (Mudpuppy). USA: TENNESSEE: Bledsoe Co: Sequatchie River at McWilliams Road crossing. 28 July 1992. T. Casey and B. T. Miller (Tennessee Scientific Study Permit 654). Verified by J. L. Miller. Middle Tennessee State University (MTSU 111-C). County record (Redmond 1985, *A Biogeographic Study of Amphibians in Tennessee*. Doctoral thesis, Univ. Tennessee, Knoxville. 290 pp.).

Submitted by **BRIAN T. MILLER** and **TIM CASEY**, Department of Biology, Middle Tennessee State University, Murfreesboro, Tennessee 37132, USA.

**PLETHODON OUACHITAE** (Rich Mountain Salamander). USA: OKLAHOMA: LeFlore Co: North Slope Spring Mountain, SE side of Forest Road 6007, 3.5 road km E jct. State Hwy 1, 488 m elevation. 5 November 1988. C. D. Anthony, M. E. Dorcas, J. R. Mendelson III, and J. A. Wicknock. Verified by J. A. Campbell. University of Texas at Arlington Collection of Vertebrates (UTA A-31154-31163). Spring Mountain is located 3.2 km north of, and parallel to, Rich Mountain, and directly east of Winding Stair Mountain. Although *P. ouachitae* occurs on both Rich and Winding Stair Mountains, the species has not been previously found on Spring Mountain. In subsequent years (1991-1993), we observed ninety-seven additional individuals on Spring Mountain in a continuous area 0.6 km W and 0.5 km E of the above locality. We found both the Rich Mountain and Winding Stair Mountain color variants of *P. ouachitae* (*sensu* Blair and Lindsay 1965, *Copeia* 1965:331-335) at these localities.

Submitted by **CARL D. ANTHONY** and **JILL A. WICKNICK**, Department of Biology, University of Southwestern Louisiana, Lafayette, Louisiana 70504-2451, USA.

**PSEUDOTRITON RUBER** (Red Salamander). USA: TENNESSEE: Cannon Co: wooded hillside off Sinks-Miller Road, ca. 8.7 km SE Rt. 64. 6 July 1992. B. T. Miller (Tennessee Scientific Study Permit 522). Verified by D. E. Metter. Middle Tennessee State University (MTSU 50-C, 51-C). Extends the known distribution into the low rolling hills of the eastern edge of the Outer Nashville Basin in middle Tennessee (Redmond 1985, *A Biogeographic Study of Amphibians in Tennessee*. Doctoral thesis, Univ. Tennessee, Knoxville. 290 pp.).

Submitted by **BRIAN T. MILLER**, Department of Biology, Middle Tennessee State University, Murfreesboro, Tennessee 37132, USA.

**SIREN INTERMEDIA NETTINGI** (Western Lesser Siren). USA: LOUISIANA: West Carroll Parish: 0.1 road km S Newhope, Rt. 577, Sec. 35, T20N, R9E. 8 May 1992. L. Kemp and S. G. George. Verified by Neil H. Douglas. Northeast Louisiana University Museum of Zoology (NLU 70398). New parish record.

Submitted by **STEVEN G. GEORGE**, Department of Biology, Northeast Louisiana University, Monroe, Louisiana 71209, USA.

### ANURA

**BUFO COGNATUS** (Great Plains Toad). USA: NEBRASKA: Deuel Co: 11.3 km N Big Springs. 28 June 1993. Carl E. Bock and H. M. Smith. Verified by David Chiszar. UCM 56783-4. County record (Lynch 1985, *Trans. Nebraska Acad. Sci.* 13:33-57).

Submitted by **HOBART M. SMITH**, **CARL E. BOCK**, and **JANE H. BOCK**, Department of EPO Biology, University of Colorado, Boulder, Colorado 80309-0334, USA.

**BUFO COGNATUS** (Great Plains Toad). USA: COLORADO: Logan Co: Rt 138, 3.1 km E Crook. 29 May 1982. W. Lippincott. National Ecology Research Center, Ft. Collins, Colorado (BS/FC 2339). Verified by Stephen Corn. New county record (Hammerson 1982, *Amphibians and Reptiles in Colorado*. Colorado Div. Wildlife, Denver. 131 pp.).