that the group was composed of 2.2 adults is correct, then two females are capable of producing at least 61, and possibly more, offspring in a single breeding season

Hatchlings are capable of attaining near adult size in less than a year (Fig. 1). Growth rates of the sirens maintained indoors at a relatively constant temperature of 25–27°C were greater than those maintained outdoors and subjected to seasonal fluctuations in temperature. As far as we could determine, the density of hatchlings per enclosure had little effect on growth and mortality as long as there was adequate supplemental feeding.

Wild-caught *Pseudobranchus s. striatus* collected as juveniles reproduced in their fourth year. Captive conditions in earlier years might not have provided appropriate stimulus for reproduction. Nevertheless, F_1 offspring kept under identical conditions to those under which the adults bred had not yet reproduced by their third year. Two of the six original, wild-caught sirens, presumed to be 1.1, were continually housed indoors in a transparent plastic aquaria. To facilitate observation, the aquaria were maintained with clear water, few plants, and only a gravel substrate. Although this arrangement apparently did not compromise husbandry, no attempts at reproduction were ever observed. The oviposistion period for *P. striatus* was mid-June through August. The oviposition period for wild *P. axanthus* is reported to last from early November through March (Petranka 1998). The maximum length attained by a captive-raised *P. striatus* is 230 mm TL, slightly exceeding the published maximum length of 220 mm (Petranka 1998). No published data regarding longevity of *Pseudobranchus* could be found. At RZG, two captive-raised *P. s. striatus* are seven years old at the time of writing and still alive.

Unfortunately, conditions that stimulated reproduction in *Pseudobranchus*, e.g. turbid water, dense mats of vegetation and substrate, also prevented ready observation of some behaviors such as courtship and fertilization. Searching for eggs and offspring involved draining the tank, capturing the sirens and sorting through the vegetation and substrate. It was believed that this level of disturbance might compromise animal health and inhibit reproduction, hence frequent and continuous observations were not made. Nevertheless, these might represent the only observations for size and age at first reproduction as well as growth, fecundity, oviposition, and longevity for this species.

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NATURAL HISTORY NOTES

The Natural History Notes section is analogous to Geographic Distribution. Preferred notes should 1) focus on observations with little human intrusion; 2) represent more than the isolated documentation of developmental aberrations; and 3) possess a natural history perspective. Individual notes should, with few exceptions, concern only one species, and authors are requested to choose a keyword or short phrase which best describes the nature of their note (e.g., Reproduction, Morphology, Habitat, etc.). Use of figures to illustrate any data is encouraged, but should replace words rather than embellish them. The section's intent is to convey information rather than demonstrate prose. Articles submitted to this section will be reviewed and edited prior to acceptance. Send two copies of manuscripts, double-spaced, directly to the appropriate section co-editor (addresses on inside front cover): Marc P. Hayes (lizards, amphisbaenians, crocodilians, *Sphenodon*); Charles W. Painter (amphibians); or Brian Butterfield (snakes, turtles). Authors are requested to include a 3.5-inch disk containing pertinent files along with hard copy submissions. Indicate disk format (e.g., Macintosh, Windows), word processor name and version used to create the manuscript file, and include a Rich Text Format (RTF) version of the file. Alternatively, authors may submit manuscripts electronically, as e-mail attachments. Figures can also be submitted electronically as JPG files, although higher-resolution TIFF files may be requested for publication.

Standard format for this section is as follows: SCIENTIFIC NAME, COMMON NAME (for the United States and Canada as it appears in Crother (2000. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding*. Herpetol. Circ. 29:1–82); for Mexico as it appears in Liner (1994, *Scientific and Common Names for the Amphibians and Reptiles of Mexico in English and Spanish*, Herpetol. Circ. 23:1–113), KEYWORD. DATA on the animal. Place of deposition or intended deposition of specimen(s), and catalog number(s). Then skip a line and close with SUBMITTED BY (give name and address in full—spell out state names—no abbreviations). (NCN) should be used for common name where none is recognized. References may be briefly cited in text (refer to this issue for citation format).

Recommended citation for notes appearing in this section is: Lemos-Espinal, J., and R. E. Ballinger. 1994. *Rhyacosiredon leorae*. Size. Herpetol. Rev. 25:22.

CAUDATA

AMBYSTOMA LATERALE (Blue-spotted Salamander) and ***AMBYSTOMA MACULATUM*** (Spotted Salamander). **PREDATION**. Predation by wood frog (*Rana sylvatica*) tadpoles on *A. maculatum* egg masses has been described in detail (Petranka et al. 1995. Herpetologica 54:1–13). However, nothing has been written on *R. sylvatica* predation on *A. laterale*. In Maine, all three species commonly breed in the same temporary woodland pools, where *R. sylvatica* hatch first, then *A. laterale*, then *A. maculatum*. *Ambystoma laterale* masses have fewer eggs, and are encased in jelly that is less dense than that of *A. maculatum* (Petranka 1998. Salamanders of the United States and Canada. Smithsonian Inst. Press, Washington, D.C. 587 pp.).

On several occasions during Spring 2001, in woodland ponds in northern and central Maine, we observed *R. sylvatica* behavior that suggested preferential predation on egg masses of *A. laterale* over those of *A. maculatum*. A single predation event witnessed in captivity confirmed that *R. sylvatica* does attack and ingest larval *A. laterale*.

On 7 May 2001 between 1655 and 1725 h, two observers counted all egg masses in an approximately 900 m^2 temporary pool (44°57.72'N, 68°32.61'W) in Sunkhaze Meadows National Wildlife Refuge, Maine, USA. Average counts of two observers resulted in the following estimated egg mass numbers: *A. maculatum* (372), *A. laterale* (260), and *R. sylvatica* (172). Many of the *R. sylvatica* masses had already hatched. We observed *R. sylvatica* tadpoles "swarming" around egg masses of *A. laterale*. The same behavior was not observed on masses of *A. maculatum* eggs. Swarming consisted of many tadpoles on and inside a mass, some making violent, alternating, side-to-side motions of the head and body, apparently tearing at the egg mass. This behavior was much more active than typical algae grazing behavior. We observed several tadpoles using the same behavior eating tissue of a dead, submerged gray tree frog (*Hyla versicolor*). In contrast to their abundance on *A. laterale* egg masses (50+/egg mass), we observed very few on or near the *A. maculatum* egg masses in the pond and none of the tearing motions.

Similar behavior was observed on 15 May in a pool ca. 200 miles north, and a week later at a third pool close to the first. Between 1355 and 1500 h on 15 May at 44°11.89'N, 68°39.28'W one observer counted 128 *A. maculatum* egg masses and 546 *A. laterale* egg masses. *Rana sylvatica* had recently emerged. Another observer counted 132 egg masses prior to hatching. Again, *R. sylvatica* were observed in great numbers around *A. laterale* egg masses (with some penetrating the interior), and in small numbers at *A. maculatum* masses. On 22 May at 44°53.17'N, 68°41.11'W, the same behavior was observed. On 5 May, at this same pool, 705 *A. laterale*, 22 *A. maculatum*, and 82 *R. sylvatica* egg masses were counted.

Observations in captivity confirmed that *R. sylvatica* does ingest newly emerged *A. laterale* larvae, and suggest differences in composition of the ambystomid egg masses that might explain this differential predation observed in the field. On 11 May, *R. sylvatica* tadpoles, newly emerged *A. laterale*, *A. laterale* egg masses (ca. stage 37) (Harrison 1969. Organization and Development of the Embryo. Yale University Press, New Haven. 290 pp.) and 2 *A. maculatum* egg masses were placed in a light colored basin for close observation. Almost immediately, a tadpole was observed ingesting a larval *A. laterale*. The *A. laterale* eggs within the masses were a much brighter shade of green (denser concentration of algae) than those of *A. maculatum*.

Thanks to the U.S. Fish and Wildlife Service and the Department of Plant, Soil, and Environmental Sciences, University of Maine for Spring 2001 field support.

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HEMIDACTYLIUM SCUTATUM (Four-toed Salamander). **REPRODUCTION**. Observations on nesting of *Hemidactylium scutatum* have indicated an overall seasonal progression from south to north (Petranka 1998. Salamanders of the United States and Canada. Smithsonian Instit. Press, Washington, D.C. 587 pp.). On 4 Feb 2001 in Jasper County, Georgia, we discovered three female *H. scutatum* communally nesting in a moist, rotten log overhanging shallow water at the edge of a beaver pond. The locale, Monticello Glades, Oconee National Forest (33°14'N, 83°42'W), is on the lower Piedmont Plateau of Georgia, and is a complex of marsh, shrub, and forested wetlands immediately surrounded by upland hardwood forests, some mixed with pine. Sphagnum moss is scarce within the complex. Insofar as we can determine, this is the earliest range-wide date for which nesting has been recorded for this species (Petranka, *op cit.*). Additionally, it is the first record of *H. scutatum* nesting in Georgia. Communal nesting appears to be common for this species throughout much of its range (Petranka, *op cit.*).

In addition to the nesting females, several other individuals were observed underneath logs in the immediate vicinity. One female was photographed beside the communal nest. The photograph was deposited in the Georgia Museum of Natural History (GMNH 46761). This individual and one other (GMNH 46762; both verified by M.E. McGhee) represent the first vouchered records for *H. scutatum* in Jasper County (Williamson and Moulis 1994. Distribution of Amphibians and Reptiles in Georgia. Savannah Science Museum Special Publication No. 3. 712 pp.).

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PLETHODON GLUTINOSUS (Slimy Salamander). **TREE CLIMBING**. Observation of climbing activity in *Plethodon glutinosus* is limited to reports describing rocky substrates (Brode and Gunter 1958. Herpetologica 13:279–280; Cliburn and Porter 1986. J. Mississippi Acad. Sci. 31:91–96). However, we observed plant climbing by this species at a barrow pit east of Westall Swamp (35°24'N, 86°05'W), Arnold Engineering and Developing Center (AEDC), Coffee County, Tennessee, USA. On the evening of 4 June 2001 at 2230 h, we discovered an adult *P. glutinosus* on the limb (19 cm diameter) of a mature loblolly pine (*Pinus taeda*) at a height of 53 cm. The air temperature was 22°C. The forest floor litter, tree limbs, and leaf surfaces were wet following a brief period of rainfall that ended less than an hour before our arrival, thus our observation supports Jaeger's (Copeia 1978:686–691) conclusion that plant–climbing activity occurs almost exclusively during wet nights. With the aid of its prehensile tail, *P. glutinosus* frequently ascends cavern walls (Brode and Gunter, *op. cit.*) and enters sandstone cliff crevices using near-horizontal connections with the base of the cliff (Cliburn and Porter, *op. cit.*). Although the salamander might have vertically ascended the trunk to its position on the limb, the end of the arched limb contacted the ground ca. 4 m from the base of the tree and also provided a sloped, near horizontal, route of entry.

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ANURA

ELACHISTOCLEIS ERYTHROGASTER (Red-bellied Oval Frog). **DEFENSIVE BEHAVIOR.** *Elachistocleis erythrogaster*, a small microhylid endemic to the southeastern *Araucaria* plateau of Rio Grande do Sul, southern Brazil, was recently described by Kwet and Di-Bernardo (1998. Stud. Neotrop. Fauna Environ. 33:7–18). On 15 January 2001, six *E. erythrogaster* were collected at a pond near the CPCN Pró-Mata reserve, municipality of São Francisco de Paula, Rio Grande do Sul (960 m elev.). They were carried to the laboratory and kept in a terrarium. On 18 January, one individual was placed on a wooden table to be photographed. Immediately, the frog inflated its lungs, stretched out the hindlimbs and elevated the posterior part of the body. This posture was maintained for about one minute and it was possible to trigger this behavior several times by touching lightly. Of the six specimens tested, five demonstrated this defensive behavior when handled.

The antipredator behavior of presenting a larger image to potential predators is common among heavy-bodied anurans, although this is the first record for a New World microhylid. Puffing up the body and outstretching the limbs makes *E. erythrogaster* larger and should help protect against ingestion. Additionally, this microhylid produces a whitish, sticky skin secretion that might be toxic to predators. When handled, *E. erythrogaster* did not expose the aposematic ventral coloration consisting of bright red or orange-red spotted with black; therefore the function of the red and black ventral coloration remains unclear.

We thank Wolf Engels, Marcos Di-Bernardo, and Andreas Schlüter for support.

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ELEUTHERODACTYLUS COQUI (Puerto Rican Coqui). **IMMOBILIZATION.** The plant *Urera baccifera* (Urticaceae) is a common nettle in the rain forest at the El Verde Field Station (350–400 m elev.) in the Luquillo Mountains of northeastern Puerto Rico. When touched by humans it produces minor irritation and itching. Both leaves and stems are covered with stinging thorns, which are ca. 3–4 mm in height on the upper surface of the leaves. Extracts of this plant have known acute toxicities in mice and rats (Badilla et al. 1999. Revista de Biologia Tropical 47[4]:723–727). I (GRT) have observed *E. coqui* for many years in the Caribbean National Forest surrounding the El Verde Field Station and have rarely seen *E. coqui* or other vertebrates on this plant. When I have observed frogs that have either accidentally jumped or fallen on this plant, they immediately leap off.

On the evening of 29 May 2001 at 2250 h in the forest 0.5 km northeast of the El Verde Field Station, we found an adult male *E. coqui* immobilized on the upper leaf surface of *U. baccifera*. When we approached, the frog was unresponsive, and remained stationary with its ventral surface flat to the leaf. Furthermore, it did not move when touched on its dorsum. After approx. one minute, the frog was gently removed from the leaf and it was immobilized. This state of immobility lasted for 3–4 minutes. After this time, the frog jumped into the forest vegetation. When we tried to capture it, it appeared to be functioning normally, and jumped upon detecting our approach. Steward (1985. J. Herpetol. 19:391–401) noted that *E. coqui* parachutes or falls from trees to the ground. Therefore, *U. baccifera* could be a potential hazard, possibly causing injury or death via immobilization. Further, if parachuting frogs were impaled on its thorns, they could be vulnerable to predation. Although Steward (*op. cit.*) reported no instance of *E. coqui* landing on this plant, we believe that this poses potential danger. It is not clear whether this immobilization was the result of the plant's chemical toxin, shock from the fall, or other consequences. However, because *E. coqui* is rarely seen on *U. baccifera*, and the plant has physically threatening spines with a known irritant, we conclude that immobilization was the result of abusive contact with *U. baccifera*.

We thank the staff of the El Verde Field Station for the use of their facilities. The El Verde Field Station is part of the Long Term Ecological Research Project funded by the National Science Foundation.

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HYLA NANA (Dwarf Tree Frog). **PREDATION**. Metamorphosing anurans are common prey for a variety of vertebrate and invertebrate predators. Spiders have been considered one of the most important predators of small terrestrial anurans (Hayes 1983. Biotropica 15:74–76) and numerous authors have reported them feeding on metamorphosing and adult hylid frogs.

On 27 Nov 2000 at 2300 h, we collected a *Hyla nana* metamorph at a swamp located in the Department of Itapúa, Alto Vera, San Pedro Mí, Paraguay (26°31'25"S, 55°48'19"W). The *H. nana* (TL ca. 10 mm) was being eaten by a juvenile spider (cephalothorax-abdomen length ca. 12 mm) of the genus *Thaumasia* (Araneae:

FIG. 1. A pisaurid spider, *Thaumasia* sp., shown with *Hyla nana* metamorph, following preservation.

Pisauridae). At the time of collection, the spider had the frog in its jaws and was sitting ca. 30 cm above the water on vegetation growing at the perimeter of the swamp. The frog was dead upon discovery and continued to dissolve prior to preservation. Both specimens were collected and deposited at the Museo Nacional de Historia Natural del Paraguay (MNHNP, CR [counter reference] #2061). The spider and the remaining frog prey were photographed after preservation (Fig. 1). To our knowledge, this is the first account of a pisaurid (*Thaumasia* sp.) feeding on a metamorph *H. nana*.

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LEPTODACTYLUS FUSCUS (NCN). **PREDATION**. Snakes of the genus *Liophis* are known to prey upon frogs, including species of *Leptodactylus* (Michaud and Dixon 1989. Herpetol. Rev. 20(2):39–41). Herein is the first report of *Liophis meridionalis* feeding upon *Leptodactylus fuscus* that we are aware of. On 7 Dec 2000 (1500 h), at Clube Caça e Pesca Itororó de Uberlândia (Uberlândia, Minas Gerais, Brazil: 18°59'S 48°18'W), workers cleaning the grasses around a dry pond killed a snake while it was preying on a frog. We identified the snake as an adult female *Liophis meridionalis* (610 mm SVL; UFU 1107, Museu de Biodiversidade do Cerrado, Universidade Federal de Uberlândia) and the frog as an egg-bearing female *Leptodactylus fuscus* (45 mm SVL; AAG-UFU 2250). In the laboratory we examined the digestive tract of the snake and found two feet of other adult *L. fuscus*. In the summer, adult *L. fuscus* congregate around ponds to reproduce, and if conditions are not appropriate for egg laying, the females might wait for rains, thus becoming more susceptible to predation by snakes.

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PHYLLOMEDUSA ATELOPOIDES (Purple Leaf Frog). **REPRODUCTION**. Little is known about the natural history of many recently discovered neotropical frogs. The recently described *Phyllomedusa atelopoides* is the only terrestrial member of the arboreal hylid subfamily Phyllomedusinae. Arboreal phyllomedusine frogs typically lay their eggs on leaves above forest pools, however only one clutch of *P. atelopoides* has been reported (Duellman et al. 1988. Herpetologica 44:91–95). Herein we report new observations on reproduction in *P. atelopoides*.

Observations were made during the rainy season from 28 Dec 2000 to 14 Jan 2001 in the seasonally dry rainforest of the Reserva Cuzco Amazónico on the north bank of the Río Madre de Dios, ca.15 km ENE of Puerto Maldonado, Departamento Madre de Dios, Peru (see Duellman and Koechlin 1991. Occas. Pap. Mus. Nat. Hist. Univ. Kansas 142:1–38). An amplectant pair of *P. atelopoides* was discovered by eyeshine at 2300 h on 29 Dec 2000. The pair was located in terra firma forest, ca. 10 m W of Trail B ca. 750 m from Cuzco Amazónico lodge. The nesting site was ca. 20 m east of a slow moving stream, the Quebrada Mariposa. The amplectant pair was laying eggs and wrapping them in a leaf on a short (ca. 30 cm) herbaceous plant with 3 leaves. The plant was isolated from other low-lying vegetation by ca. 2 m, but was under an enclosed tree canopy. The nesting plant was located on the bank, ca. 30–45 cm from water's edge of a small (1 m x 2.5 m), shallow (ca. 30 cm max. depth), temporary pool. The adult frogs were gone at 2400 h and could not be found. Two days later (31 Dec) at 1700 h, the leaf enclosing the eggs was opened to reveal 25 yellow eggs adhered to the leaf in a clear gelatinous-like substance. The leaf was then closed. By 3 Jan 2001 the nest remained intact but the pool had completely disappeared, with only wet earth remaining. The eggs were present and showed signs of development at 1620 h on 8 Jan. On the following day (9 Jan) at 2148 h only 9 eggs remained, and on 10 Jan the leaf was found open with only two eggs remaining.

These observations are consistent with those reported previously for *P. atelopoides* and corroborate their terrestrial habitat preference. This species has never been reported to be more than 30 cm above the ground, and the only other observed amplectant pair was laying unpigmented eggs in a wrapped leaf 5 cm above the ground at the edge of a shallow pool (Duellman et al., *op. cit.*). The clutch size reported herein of 25 eggs is close to the number reported for the only previously known clutch that had 20 eggs (Duellman et al. *op. cit.*). We suspect that the disappearance of the eggs was not because of hatching. When last observed, development of the eggs was not very advanced and only twelve days had elapsed since they were laid. Furthermore, there was no evidence of hatchlings in the vicinity. We suspect that the disappearance may have been the result of predation, as snakes (e.g., *Leptodeira* spp.) are known to prey on phyllomedusine clutches.

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PHYSALAEMUS BILIGONIGERUS* and *PHYSALAEMUS GRACILIS (Weeping Frog and Graceful Dwarf Frog). **REPRODUCTIVE BEHAVIOR.** In contrast to explosive breeders, in anurans with a prolonged breeding season males typically remain stationary at calling sites waiting for females. In such lek-like mating systems, females move through choruses and freely select mates with little interference from males. Therefore, heterospecific amplexus is rarely found in nature in species with female choice. Herein I report amplexus between specimens of two species of lek-breeding dwarf frogs of the genus *Physalaemus*.

On 25 December 1997 at 2300 h, I observed an amplectant pair of a male *P. gracilis* (Stuttgarter Museum für Naturkunde, Germany, SMNS 9190) and a female *P. biligonigerus* (SMNS 9189) at a flooded pasture near Lamí, municipality of Porto Alegre, Rio Grande do Sul, southern Brazil. At this locality, males of both species were calling. The heterospecific pair was photographed and carried to the laboratory. During the night, the frogs maintained the axillary amplexus but did not construct a foam nest as frequently observed in conspecific pairs of this genus kept together in a small container. Next morning both specimens were separated. Although the dissected female contained eggs, no spawning had occurred. *Physalaemus gracilis* and *P. biligonigerus* are morphologically different species, belonging to different species groups. However, they possess similar advertisement calls that are nearly indistinguable to the untrained human ear. It may be assumed that the female *P. biligonigerus* was misled, being attracted by the call of the heterospecific male *P. gracilis*. Although call discrimination by the females of these species may not always function, I found no evidence of hybridization.

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PSEUDACRIS BRACHYPHONA (Mountain Chorus Frog). **VERIFICATION OF HISTORICAL OCCURRENCE.** The last confirmed record of *Pseudacris brachyphona* within North Carolina was on 20 February 1954: North Carolina State Museum (NCSM 11123–11125); Charleston Museum (Ch.M. 54.32.11). However, on 25 and 26 February and 9 March 2001, several choruses were observed within Cherokee County, North Carolina (35°02'30"N, 84°03'08"W). Males were observed calling from a flooded roadside ditch adjacent to an upland slope containing *Pinus virginiana* and *P. echinata*. *Juncus* sp., *Andropogon virginicus*, and other vegetation were growing within the roadside ditch. Males were seen calling from the base of vegetation at or slightly above the surface of the water. Calling males were also observed within an adjacent, regularly cut field that contained temporary puddles near a small stream. These temporary puddles were sparsely vegetated and had fine woody debris and bark along the margins. Males were seen calling among the debris. *Pseudacris crucifer* were often heard calling with *P. brachyphona*. Clemson University (CUSC 987 [vocal recording: accession # 987]; specimen photographs: catalog #s 2065, 2066). H. LeGrand (North Carolina Natural Heritage Program) and J. Beane (NCSM) provided documentation of the last confirmed report of *P. brachyphona* within North Carolina.

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PSEUDACRIS CRUCIFER (Spring Peeper). **PREDATION.** Observations of predation on *Pseudacris crucifer* have identified odonate and beetle larval or nymphal stages, fish, and salamanders as predators of tadpoles (e.g., Skelly 1996. Copeia 1996:599–605), and snakes as predators of adults (e.g., Rowe et al. 2000. Herpetol. Nat. Hist. 7:145–152). Little is known about predators on metamorphs. On 21 June 2001 at 0830 h, I observed a ground beetle (*Scarites subterraneus*: Carabidae) consuming a metamorph *P. crucifer*. The beetle and metamorph were found under a board near a temporary pond in the Taylor-Ochs section of the Denison University Biological Reserve, Granville, Licking County, Ohio. This observation suggests that terrestrial insects may be a potentially overlooked source of mortality for metamorphic anurans.

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SCINAX CRUENTOMMA (NCN). **PREDATION.** Although some information is available concerning the predation of frogs, fewer data exist concerning species-specific predators. Herein we report an adult *Scinax cruentomma* (Hylidae) being preyed upon by a wolf spider (Lycosidae). This small (25–31 mm) frog is generally found in forests and clearings, and breeding occurs in temporary pools where males call from leaves or blades of grass above the water (Rodriguez and Duellman 1994. Guide to the Frogs of the Iquitos Region, Amazonian Peru, Asociacion De Ecologia Y Conservacion. 48 pp.).

On 9 May 2000, at 2130 h, a breeding aggregation of ca. 50 *S. cruentomma* was discovered at the ExplorNapo Lodge Reserve ca. 75 km northeast of Iquitos, Departamento Loreto, Peru. The individuals were in flooded forest adjacent to the Guebrada Grande on the western border of the reserve.

A single adult *S. cruentomma* was observed as it was being consumed by a large wolf spider on the side of a small tree ca. 1 m above the ground. When disturbed, the wolf spider carried the frog underneath a log.

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TESTUDINES

CARETTA CARETTA (Loggerhead Sea Turtle). **NESTING BEHAVIOR**. The general nesting process is essentially the same in all species of sea turtles, including the steps involved in excavating the egg chamber. Using her rear flippers, the female turtle typically digs a flask-shaped egg chamber with a narrow neck and wider bottom. The turtle accomplishes this excavation through a methodical series of steps that result in a single-chambered egg chamber with a single opening at the top (Hailman and Elowson 1992. Herpetologica 48:1–30). Variations in the shape of the egg chamber are observed most often in response to variations in sand type (Miller 1997. *In* Lutz and Musick [eds.], The Biology of Sea Turtles, pp. 51–81. CRC Press, Inc., Boca Raton, Florida), however the general shape of one egg chamber with one surface opening is consistent. A nest of two conjoined egg chambers with one common opening has previously not been reported. During the 1997 nesting season, however, researchers with the University of Florida's Cooperative Fish and Wildlife Research Unit observed

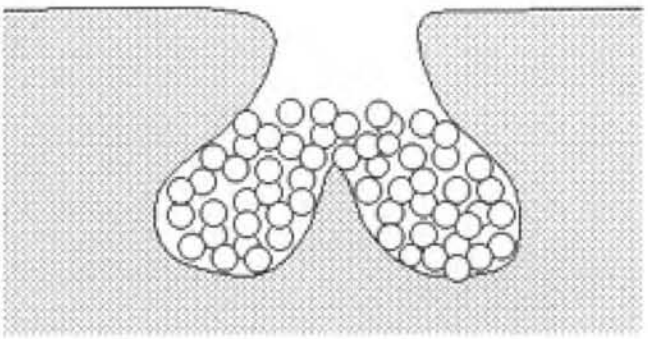

FIG. 1. Diagrammatic representation of double-chambered nest of *Caretta caretta* from Cape San Blas, Florida.

two loggerhead sea turtle (*Caretta caretta*) nests that each had two conjoined egg chambers with a single common opening (Fig. 1). Discussions of this phenomenon with other sea turtle monitoring groups in Northwest Florida revealed that double-chambered nests had been observed on four other occasions on panhandle nesting beaches.

Since 1994, the UFL Coop Unit has been conducting daily morning nesting survey along three miles of beach owned by Eglin Air Force Base (EAFB) on Cape San Blas, Florida, USA. Surveys are conducted on foot or all-terrain vehicles, and data are collected on false and nesting crawls. Nests threatened by erosion or water inundation are relocated to a more protected site along the EAFB beach. Nests are screened and staked to prevent depredation and marked with signs and flagging. Incubating nests are monitored daily for signs of hatchling emergence and are excavated to determine hatching success 72 hours after emergence or after 85 days of incubation.

During the 1997 nesting season, two separate nests possessing double-chambered egg chambers were observed at Cape San Blas. On 3 July 1997, at 0635 h, a *C. caretta* nest (designated as nest 33) was located at mile marker 2.55 along the north beach of EAFB property on Cape San Blas. Due to threats of water inundation and erosion, the nest was relocated. While excavating the nest for relocation, it was observed that the nest had two egg chambers connected with one common opening. Eggs were located in both sides and in the common neck of the chamber. Several weeks later it became apparent that this had not been a unique event along Cape San Blas. On 20 June 1997, a *C. caretta* nest (designated as nest 15) was located at mile marker 2.56 along the north beach and 60 eggs were relocated to the east beach. At the time of excavation it was noted that the egg chamber was narrow and tilted to one side. On 20 August 1997, while obtaining GPS coordinates for the original site of nest 15, eggshells and hatchling tracks were observed. Upon investigation, it was determined that nest 15 also had a double egg chamber, but only one side of the chamber had been discovered originally. One half of the nest (containing 36 eggs) had inadvertently been left *in situ* along the north beach (15a), and the other half had been relocated to the east beach (15b).

There are four other known occurrences of double-chambered nests in Northwest Florida between 1996 and 1998. In 1996, a double-chambered nest was found on St. Vincent Island (reported by Thom Lewis, St. Vincent National Wildlife Refuge) that contained 106 eggs, with 30 in one chamber and 76 in the other. In 1997 a double-chambered nest was found during hatching success evaluation on the St. Joseph Peninsula (reported by Joe and Carolyn Hooper, Gulf County Turtle Patrol) only a few miles north of Cape San Blas. This nest contained 96 eggs with 34 in one side and 60 in the other. Two double-chambered nests were found on Panama City Beach during the 1998 nesting season (reported by Martha Maglothin and Bob Gilmore, St. Andrew Bay Resource Management Association). The first nest was found on 29 May and contained 159 eggs. The distribution of the eggs between the two chambers is unknown. The second nest was found on 13 June and contained 142 eggs with 79 in one chamber and 63 in the other. Hatching success for each of the double-chambered nests is summarized in Table 1.

Upon examination of the data from the nests at Cape San Blas, it appears the same turtle laid both double-chambered nests. The primary difference between the two nests was crawl width, which could be attributed to variation in weather and sand conditions. The 13-day inter-nesting period and the proximity of the two nests are supportive of the theory that a single female laid both nests. It is also possible that this same female laid the double-chambered nest found on St. Joseph Peninsula on 28 July 1997. Similarly, the 14-day period between the laying of the double-chambered nests found on Panama City Beach in 1998 indicates one female may have been responsible for both.

It is unknown how female turtles dug the double-chambered egg chambers. The shape of a sea turtle's egg chamber is influenced by several factors including buried debris, variations in substrate, and flipper physiology and function (Miller, *op. cit.*). Because the nests described were laid in close geographic proximity to typically shaped nests, debris and substrate variations appear to have had little influence. Also, the shape of each individual chamber within the double-chambered nests was typical, and the crawls had a normal appearance. Therefore, it does not seem likely that this situation could be attributed to abnormal shape in the rear flippers. The depth/length of the dual chambers seemed to indicate no truncation of flipper length, however this cannot be ruled out as a mechanism without direct observation of the animals. Most likely, the double-chambered egg chambers are a result of abnormal function of the rear flippers. Normal digging is accomplished by reaching inward and scooping outward. The right rear flipper is placed into the hole

TABLE 1. Hatching success of double-chambered *Caretta caretta* nests in Florida.

Location	Nest Number	Date Laid	Date Hatched	Percent Hatching
St. Vincent Island	9637	17 July1996	—	0.0
Cape San Blas	15a	20 June 1997	19 August 1997	97.2
Cape San Blas	15b	20 June 1997	20 August 1997	90.0
Cape San Blas	33	3 July 1997	30 August 1998	72.7
St. Joseph Peninsula	H110	28 July 1997	25 September 1997	97.9
Panama City Beach	1	29 May 1998	26 July 1998	59.0
Panama City Beach	7	13 June 1998	10 August 1998	56.0

medially and used to scoop downward, forward and to the left. The right flipper excavates the left side of the hole and the left excavates the right side. The observed digging aberration could be achieved by the female shifting laterally to a greater degree as she places her flippers into the hole, and allowing a "septum" to develop between the digging efforts of the two flippers. This may result from a behavioral or kinesiological deviation by the nesting female.

Hatching success indicated that eggs laid in the double-chambered nests had no greater disadvantage than those laid in a typical single-chambered nest. Whatever abnormality the female turtle had did not prevent her from laying viable eggs. In nest 15, eggs left in the original nest had hatching success comparable to eggs that were relocated; indicating the structure of the individual chambers within each nest was adequate for successful incubation and hatching conditions. Although double-chambered nest construction appears to be anomalous, there may be adaptive value in this pattern of egg deposition. Nest predators may be fooled into excavating only one side of the cavity, as were the researchers. Lack of observed deleterious effects from the clutch splitting enhances the usefulness as a possible strategy to limit predation and maximize production.

We thank Thom Lewis, Joe and Carolyn Hooper, Bob Gilmore, and Kennard Watson for contribution of their observations. We also thank personnel at Eglin Air Force Base, particularly Carl Petrick, Bruce Hagedorn, Dennis Teague, Debby Atencio, and B.A.E. Systems (formerly Vitro Technical Services) for support throughout this project. Research was conducted under Florida Department of Environmental Protection Permit number TP#094.

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LACERTILIA

AMEIVA ALBOGUTTATA (Mona Island Ameiva). **ARBOREAL ACTIVITY**. Lizards in the genus *Ameiva* commonly are characterized as actively foraging ground-dwellers (e.g., Sproston et al. 1999. J. Herpetol. 33:131–136). However, on 19 October 1999 near Playa Sardinera, Isla Mona, one of us (RP) observed a juvenile *A. alboguttata* 4 m above the ground on the trunk of an Australian Pine (*Casuarina equisetifolia*). At 4 m, the trunk diameter was ca. 60 cm. With binoculars it was evident that this lizard was following an ant trail, periodically taking a prey item while continuing to climb until it disappeared in foliage at a height in excess of 6 m. Careful examination around the base of the tree (to > 2 m) failed to reveal the presence of ants. This observation suggests that these typically terrestrial lizards may occasionally (and intentionally) climb in order to exploit food resources not readily available or evident at ground level. We are unaware of any published accounts of *Ameiva* climbing to find food, but one of us (EJC) has observed adult *A. corax* on Little Scrub Island feeding on prickly pear cactus flowers and fruits at heights approaching 2 m and *A. plei* on Anguilla ascending tree trunks to heights of ca. 1 m in search of land snails.

Miguel A. Garcia, Department of Natural Resources, Puerto Rico, facilitated the visit by RP to Isla Mona in association with the West Indian Iguana Specialist Group.

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EMOIA CAERULEOCAUDA (Pacific Blue-tailed Skink). **BEHAVIOR**. Males of *Emoia caeruleocauda* exhibit a high frequency of intraspecific conflicts in captivity (McCoid et al. 1997. Herpetol. Rev. 28:202; Porej, unpubl. data), which often lead to injuries and death. Here I report observations on display and combat behavior in male *E. caeruleocauda* in the wild. Observations of adult male *E. caeruleocauda* were made on the island of Rota in September 1999, on a wide, sunny concrete support wall at the Teteto Beach. An adult male approached another basking male to a distance of ca. 40 cm, and both individuals started head-bobbing with their tails slowly waving. After less than 10 s both individuals highly arched their backs, and started to rapidly flick their tails. This was followed by a series of ca. 25 short, side-to-side and forward bouncing jumps with all four limbs fully extended. As they approached each other, they turned more and more sideways until they were facing away from each other, with their tails almost touching. Then they slowly backed toward each other such that their slowly waving tails were directly over their opponent's head. When one of the combatants would bite the opponent's tail the other lizard would spin and bite its now exposed head or neck. A melee would then ensue, which lasted until the lizard bitten on the neck broke the grip on its neck. At that point the combatants would assume their original positions. This sequence repeated four times, except for the initial head bobbing which was not observed again.

The conflict was interrupted twice by other *E. caeruleocauda*, which were not collected, but whose sex I am inferring from their size, color pattern, and head width. In field conditions, males of *E. caeruleocauda* can be distinguished from females by their larger maximum SVL (52.8 mm males, 47.8 mm females), loss of yellow dorsal stripes and blue tail coloration in larger males (the largest striped male had a SVL of 43 mm in my sample of 253 individuals from Rota), and broader heads. Based on the same sample, regression analysis indicates that males have significantly broader heads (measured at the widest point) than females ($p<0.0001$, two-sided t-test), and the difference in the means after accounting for body size is estimated to be 0.74 mm (0.62–0.86 mm, 95% C.I.), which is 15–18% of the average female head width.

The first inquisitive individual was considerably smaller than the two combatants, was blue-tailed and striped with a relatively narrow head and thus assumed to be a female. Although it came very close to the two combatants, and at one point even passed between them, they appeared to ignore it. The second individual to approach the combatants was only slightly smaller than the two of them, but had a broad head and was uniform gray in dorsal coloration and thus, assumed to be a male. Because it was climbing the wall, this individual did not notice the two fighting at the top. It stopped and then immediately started retreating upon see-

ing them. Although the combatants were well into the "jumping" stage, it was chased, grabbed, and violently shaken, then thrown off the wall by one of the two, after which the original combat resumed. There was no head bobbing in this case.

The observed ritual might represent the introductory part of a conflict between two established (and possibly neighboring) males whereas wandering intruders might be encountered with a much more aggressive approach. This suggests that males of *E. caeruleocauda* might be territorial, a behavior observed in its congener *E. physicae* in New Guinea (Zwickel and Allison 1983. Can. J. Zool 64:752–755), but rarely observed in other skinks (Stamps 1983. *In* R. B. Huey et al [eds.], Lizard Ecology: Study of a Model Organism, Harvard Univ. Press, Cambridge, Massachusetts. 512 pp.). Specimens are deposited at the Ohio State Museum of Biological Diversity, Columbus, Ohio.

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IGUANA DELICATISSIMA (Lesser Antillean Iguana). **ACTIVITY.** The genus *Iguana* is native to the Lesser Antilles, and both recognized species are known from the region. *Iguana iguana* is associated largely with the southern islands, although a natural introduction to the northern island of Anguilla has been documented (Censky et al. 1998. Nature 395:556). *Iguana delicatissima* has a more northerly distribution. Extant populations, some critically endangered, occur on the islands of Anguilla, St.-Martin/St. Maarten, St.-Barthélémy, St. Eustatius, Martinique, Dominica, Basse Terre and Grande Terre (Guadeloupe), and Désirade. Populations on St. Kitts, Nevis, Barbuda, Marie-Galante, Antigua, and Les Îles des Saintes have been extirpated (Malhotra and Thorpe. 1999. Reptiles & Amphibians of the Eastern Caribbean. Macmillan Educ. Ltd., London and Oxford, 134 pp.).

The critically endangered population of *Iguana delicatissima* on Anguilla has had to cope with an exceedingly xeric climate and periodic hurricanes. Since European colonization, additional pressures have been imposed in the form of habitat alteration and competition with, and predation by, introduced mammals. Recent estimates of population size suggest that fewer than 100 animals survive (Gerber 1997. Unpubl. rept., Fauna & Flora Internatl., Anguilla Natl. Trust, 22 pp.; E. J. Censky, pers. comm.). The recent arrival of *I. iguana* on Anguilla may represent a threat to the genetic integrity of the population. Day and Thorpe (1996. *In* Powell and Henderson [eds.], Contributions to West Indian Herpetology: A Tribute to Albert Schwartz, pp. 436–437. SSAR Contrib. Herpetol. Vol. 12. Ithaca, New York, 457 pp.) detected hybridization between *I. iguana* and *I. delicatissima* on Les Îles des Saintes through multivariate analysis of morphological characteristics and DNA testing. However, contact between the two species on Anguilla has not been documented.

Anguilla has an area of ca. 90 km^2. *Iguana delicatissima* utilizes only about 2 km^2 (3% of the total island area) along the northern coast of the island, from Little Bay west to the Brimigen Coast (Gerber, *op. cit.*). In the past, *I. delicatissima* had a much broader distribution along most of the northern coast, from Road Bay to Island Harbour (E. J. Censky, in litt., 26 July 2000). Despite the precarious state of the population, little is known about its natural history, although Gerber (*op. cit.*) noted habitat associations and diet. In an effort to begin documenting daily activities, focal animal observations were conducted over a three-week period in June 2000. We visited the entire current range of *I. delicatissima* on Anguilla; however, most observations occurred in the western portion, a ca. 100-m wide strip of land along the coast between Little and Limestone bays. This area consists of rocky limestone cliffs that rise to 25 m above sea level. Many of the iguanas that were observed used crevices and caves in the vertical faces of these cliffs as burrows. The dry thorn scrub vegetation above the cliffs rarely exceeded 3 m in height. Most of the area is relatively undisturbed by human activity, although some homes are present and the secluded beaches often attract tourists.

These iguanas are extremely secretive and sensitive to disturbance. Many Anguillians have never seen a wild iguana and the impression that this population had been extirpated was widespread as recently as the mid-1980s (E. J. Censky, pers. comm.). During >260 person-hours in the field, we spent ca. 47 hours observing animals. Some additional observations (all < 2 min in duration) consisted primarily of escape behavior in response to our presence and were not included in total observation time. Forty sightings were made of at least eleven different individuals (1 iguana/6.5 hr). Only five animals were observed for extended periods, most by a single observer using binoculars or a spotting scope to minimize the likelihood of altering behavior.

During the observation period, iguanas spent most of their time basking on rocks (86.0%) and considerably less time basking in trees (6.5%). Other activities included non-reproductive interactions (4.0%), courtship or mating (2.0%), roaming (1.8%), and feeding (0.2%). Additional time (0.4%) was spent in extended (> 2 min) responses to an observer. Variation was substantial among the five individuals observed for extended periods (Table 1). For example, some individuals were seen basking only in trees, whereas most were observed on rocks. We observed animals as early as 0700 h and as late as 1830 h, corresponding to about one hour after sunrise to sunset. No peaks in activity were observed; however, individuals were seen in trees primarily from 1100–1300 h.

Our observations are, at best, preliminary. Time spent feeding may have been underestimated in the context of general behavior, because individuals may have been more concerned about repro-

TABLE 1. Percent time spent per individual and total time spent per category: basking on rock (BR), basking in tree (BT), feeding (FF), non-reproductive interaction (NR), courtship and mating (CM), roaming (RR), and extended response to observer (RO).

Individual Observed (Minutes Observed)	Activity						
	BR	BT	FF	NR	CM	RR	RO
Lizard 1 (580)	79.0	0.0	1.0	12.0	6.0	0.0	0.0
Lizard 2 (1911)	97.0	0.7	0.1	1.0	2.0	0.5	0.0
Lizard 3 (33)	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Lizard 4 (80)	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Lizard 5 (201)	8.0	67.0	0.0	0.0	0.0	20.0	5.0
All (2805)	86.0	6.5	0.2	4.0	2.0	1.8	0.4

duction than feeding during the mating season. Also, the overwhelming amount of time spent basking may merely reflect the fact that animals felt most secure and were most readily observed at those times.

Ellen J. Censky facilitated our work on Anguilla, helped in the field, and commented on an earlier draft of this note. Karim Hodge, Anguilla National Trust, helped us initially locate areas where animals were known to exist. Cleophis Gumbs kindly allowed us access to his property. Fieldwork was supported by Grant No. DBI-9732257 awarded by the National Science Foundation to RP.

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KENTROPYX PAULENSIS (NCN)**. REPRODUCTION.** The terrestrial teiid lizard *Kentropyx paulensis* occurs in open habitat formations of central and southeastern Brazil (Gallagher and Dixon 1980. Copeia 1980:616–620). Data on natural history of species of the *K. paulensis* Group (*K. paulensis*, *K. vanzoi*, and *K. viridistriga*) are scarce. Here we describe reproductive information from five gravid female *K. paulensis* collected in a protected area of cerrado (savanna-like formation; 22°12'30"S, 47°54'45"W, 760 m elev.) at Itirapina Ecological Station (IES), municipality of Brotas, São Paulo State, southeastern Brazil. Three of the females laid eggs in the laboratory after collection. The first female (Zuec 02483; SVL = 70.0 mm; tail length = 137.8; mass = 10.5 g), collected on 27 August 1999, laid four white calcareous shelled eggs (15.2 x 8.8 mm, 15.3 x 8.8 mm, 14.5 x 9.8 mm, and 9.4 x 8.7 mm) on 1 September 1999; the total mass of the four eggs was 2.6 g (Relative Clutch Mass [RCM] = 0.25). The second female (SVL = 73.0 mm; tail length = 130.0; mass = 12.4 g), collected on 13 March 2000, laid five eggs on 17 March 2000; the total mass of the five eggs was 3.5 g (RCM = 0.28). The third female (SVL = 63.8 mm; tail length = 124.0 mm; mass = 9.0 g), collected on 13 February 2001, laid four eggs between 28 February and 1 March 2001. Afterwards the latter two females were marked and released in the field. Two additional females (Zuec 02485 and 02486; SVL = 71.3 and 73.0 mm; tail length = 123.0 and 139.0 mm; mass = 10.0 and 10.5 g; respectively) collected on 16 March 2000 and 17 February 2001 respectively, were preserved. They had three and five vitellogenic ovarian follicles respectively. Our data indicate that females of *K. paulensis* lay few (3–5) but large (RCM = 0.25–0.28) eggs. Teiid lizards generally have relatively low RCMs (0.11–0.21) which may be related to their widely foraging mode (Vitt and Price 1982. Herpetologica 38:237–255). The RCM for other species of the genus *Kentropyx* ranges from 0.15 to 0.22 (Vitt et al. 1995. Can. J. Zool. 73:691–703). The comparatively high RCMs we found for *K. paulensis* are among the highest within the Teiidae and the genus *Kentropyx*, which lead us to hypothesize that this species may have lower foraging intensity than other teiids.

The voucher specimens of *K. paulensis* cited above are deposited in the Museu de História Natural, Universidade Estadual de Campinas (ZUEC). D. Zanchetta and the staff of Instituto Florestal allowed and facilitated our fieldwork at IES. FAPESP provided grants to LAA (99/09125-1) and RJS (99/05664-5), and CNPq to MCK (146442/1999-7). We thank P. R. Manzani for laboratory assistance; V. R. Ariedi-Jr., V. Bonato, C. A. Brasileiro, C. Monteiro and F. Spina for field assistance; C. F. D. Rocha and M. Martins for suggestions. This is publication number 7 of the project Ecology of the Cerrados of Itirapina.

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LIOLAEMUS PETROPHILUS (NCN). **SAUROPHAGY**. *Liolaemus petrophilus* is a tropidurid lizard found in the central massif of northern Patagonia (Chubut and Rio Negro Provinces), in Argentina. Data concerning biology and ecology of this species are scarce and diet of this species is unknown. Here we report an observation of interspecific saurophagy by an adult male *L. petrophilus* on a hatchling *L. bibroni*. On 29 January 2000, during the course of a herpetological trip carried out in central Rio Negro Province, we collected by hand from a small crevice situated on a rocky outcrop, an adult male L. *petrophilus* (FML 09145, SVL 84.5 mm, TL 224.0 mm, weight 20.35 g). We hand-captured the lizard and as we sought a more secure hold, the head of another lizard protruded from its mouth. We grasped the head and pulled out a complete, dead hatchling *L. bibroni* (FML 02170, SVL 23.6 mm, tail broken, weight 0.33 g). The stomach of the *L. petrophilus* was subsequently examined and found to be empty. Previous saurophagous behavior in *Liolaemus* lizards of Argentina has been documented under natural conditions for *L. koslowskyi* in northern La Rioja Province (Avila and Belver 2000. Herpetol. Rev. 31:174). *Liolaemus petrophilus* and *L. bibroni* are common and widespread in the Patagonian steppe and occasionally share similar microhabitats, such as rocky outcrops with spiny bushes. The frequency of predation on hatchlings of *L. bibroni* by adult *L. petrophilus* may thus be potentially common in this region.

Lizard identifications were verified by Fernando Lobo and specimens were deposited in the Herpetological Collection of the Instituto de Herpetología, Fundación Miguel Lillo, San Miguel de Tucumán, Tucumán, República Argentina (FML).

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MABUYA BISTRIATA (NCN) **DIET.** *Mabuya bistriata* is a diurnal, forest-dwelling species that occurs on tree trunks, large limbs, and leaf litter; it feeds on a variety of invertebrates as well as vertebrates (Vitt and Blackburn 1991. Copeia 1991:916–927). Eco-

TABLE 1. Diet of 27 *Mabuya bistriata* from Silvânia, Brazil: (f) represents absolute frequency of each prey taxon in the sample; (f%) is relative frequency of each prey taxon; (C) is constancy or total number of stomachs in which each prey taxon was found; and (C%) is percentage of the total number of stomachs in which each prey taxon was found.

Categories	f	f%	C	C%
Unidentified Arthropoda	1	0.7	1	3.7
Unidentified Arachnida	7	5.0	6	22.2
Araneida	7	5.0	6	22.2
Scorpionida	4	2.9	2	7.4
Blattoidea	1	0.7	1	3.7
Coleoptera	16	11.5	9	33.3
Diptera	1	0.7	1	3.7
Hymenoptera (Formicidae)	28	20.1	2	7.4
Hymenoptera (excluding Formicidae)	3	2.2	1	3.7
Isoptera	20	14.4	6	22.2
Orthoptera	46	33.1	21	81.5
Insect eggs	4	2.9	1	3.7
Gastropoda	1	0.7	1	3.7
Total	139	100	58	218.5

logical data on the scincid genus *Mabuya* in the cerrado are scarce, other than a few data for *M. frenata* (Vitt 1991. J. Herpetol. 25:79–90); Vrcibradic and Rocha 1998. J. Herpetol. 32:229–237). We examined the stomach contents of 27 *M. bistriata* collected September 1997 to August of 1998, from the cerrado at Estação Florestal de Experimentação do IBAMA, Silvânia municipality, State of Goiás, Brazil (16°39'26"S, 48°16'16"W). Table 1 summarizes the data. We found some plant material in the stomachs of 5 lizards (18.5%), but we considered it to be of incidental ingestion. We also found nematodes infecting 7 (25%) of the lizards. Orthopterans, ants, termites and beetles dominated the diet numerically, with orthopterans being the most numerous taxon in the diet of *M. bistriata*.

We thank A. P. Peña, S. L. Dutra, B. B. Santos, and L. G. Oliveira for help in the laboratory and with identification of animals; J. A. F. D. Filho, L. M. Bini, E. F. Júnior, C. M. Vieira, A. T. A. Jácomo, L. Silveira, D. Brandão, C. Hoffmann, and D. Blamires for help with data processing and statistics. RPB and RFJ are grateful to CNPq for fellowships. This research was supported in part by CNPq (process n. 400381-97.4) and IBAMA.

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MICROLOPHUS ALBEMARLENSIS (Galapagos Lava Lizard). **CANNIBALISM**. Hamilton's Rule (Hamilton 1972. Ann. Rev. Ecol. Syst. 3:193–232) predicts that cannibalism should occur when the individuals involved are not likely to be closely related. On small islands, cannibalism may be selected against due to increased relatedness of individuals. Islote Punta Bowditch Norte is a small islet (2.9 ha, 0°31'57.7"S, 90°31'1.7"W) near the center of the Galapagos Archipelago, Ecuador. On 4 February 1994, while conducting a census of lizards, we observed a female lava lizard, *Microlophus albemarlensis*, eating a juvenile. The female was eating the juvenile head-first, with the back legs and tail of the juvenile protruding from the female's mouth. Our presence did not interrupt the interaction and neither lizard was captured or collected. The female moved away and out of sight within two minutes, before completing ingestion of the juvenile. The female appeared to be normal size for this island (ca. 73 mm SVL) and the juvenile appeared to be a young of the year (ca. 40 mm SVL). The only other lizards on this island are the marine iguana (*Amblyrhynchus cristatus*) and the gecko (*Phyllodactylus galapagoensis*), neither of which are in the size range of the juvenile. Thus, the identification of the juvenile is certain. Stebbins et al. (1967. Ecology 48:839–851) collected the tail of a juvenile *M. albemarlensis* from the stomach of a male *M. albemarlensis* on the large island of Santa Cruz, but because of tail autonomy it is not clear if this was cannibalism or scavenging. Werner (1978. Z. Tierpsych. 47:337–395) reported cannibalism in *M. delanonis* on the large island Española, and Carpenter (1970. Herpetologica 26:377–386) reported cannibalism in *M. habelii* on the large island of Marchena. Our observation is noteworthy because it is the first record of cannibalism in *M. albemarlensis*, and because the cannibalism occurred on such a small island.

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PHELSUMA MADAGASCARIENSIS KOCHI (Madagascar Day Gecko). **DIET**. *Phelsuma* are conspicuous diurnal gekkonids which comprise more than 20 species living on Madagascar. During a long-term fieldwork project in the Ankarafantsika Reserve, western Madagascar (Ampijoroa Forest Station, 16°20'S, 46°47'E, altitude ca. 70 m above sea level) one of us (GG) had the opportunity to observe the behavior of the large species *P. madagascariensis kochi* (up to 305 mm total length; Glaw and Vences 1994. Fieldguide to the Amphibians and Reptiles of Madagascar, second edition. Serpents T, Köln. 480 pp.). Although mostly diurnal,

FIG. 1. *Phelsuma madagascariensis kochi* capturing a *Hemidactylus* specimen (probably *H. frenatus*) at Ampijoroa forestry station.

these geckos showed regular nocturnal activity, especially when living in or close to human settlements with artificial light at night. On a white wall, specimens were observed regularly at night hunting other geckos (*Hemidactylus* sp.). Under a roof constructed by leaves of Baobao (*Raphia farinifera*) and Satrana (*Hyphaene shatan*) palms at Ampijoroa forestry station, the otherwise nocturnal *Hemidactylus* were sometimes seen during the day, and then were also actively hunted by *Phelsuma*. One such act of predation was photographed (Fig. 1). *Phelsuma* may be one of the most important predators of *Hemidactylus* under such conditions at Ampjoroa.

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TROPIDURUS NANUZAE (NCN). **DEATH FEIGNING**. The saxicolous lizard *Tropidurus nanuzae* is a small tropidurid restricted to parts of the Espinhaço Mountain Range, Brazil, at altitudes above 1200 m (Rodrigues 1988. *In* Heyer and Vanzolini [eds.], Proceedings of a Workshop on Neotropical Distribution Patterns, pp. 305–315. Academia Brasileira de Ciências, Rio de Janeiro). Present knowledge of the natural history of this species is scarce. Here we describe a new antipredator behavior for this species.

From 9 to 12 July 2001, during field work at the Serra do Cipó (19°0'S, 43°40'W), Minas Gerais, Brazil, we observed that, during manipulation, five young and one adult *T. nanuzae* extended their limbs upward and closed their eyelids, remaining motionless for several seconds while laying belly-up (for one individual, we registered a duration of 50 sec for such behavior). Some young also feigned death when placed inside plastic bags to be weighed.

Death feigning or thanatosis is a relatively widespread defensive tactic among lizards, being observed in species of different families (Greene 1988. *In* Gans and Huey [eds.], Biology of the Reptilia, vol. 16. Allan R. Liss, Inc., New York. 672 pp.). Death feigning has been previously observed in another tropidurid, *Liolaemus lutzae* (Rocha 1993. Ciência e Cultura 45:116–122), and is here reported for a second species of this family.

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TROPIDURUS TORQUATUS (Calango). **DIET.** *Tropidurus torquatus* is a terrestrial, heliophilous lizard (Giaretta 1996. Herpetol. Rev. 27:80–81) that feeds mostly on mobile prey (Bergallo and Rocha 1994. Aust. J. Ecol. 19:72–75). Studies of its food habits in the cerrado (neotropical savanna) are scarce. We

TABLE 1. Diet of *Tropidurus torquatus* in Silvânia, Brazil: (f) represents absolute frequency of each prey taxon in the sample, (f%) is relative frequency of each prey taxon, (C) is constancy or total number of stomachs in which each prey taxon was found), and (C%) is percentage of the total number of stomachs in which each prey taxon was found.

	Gallery Forest (N = 10 lizards)				Cerrado *sensu stricto* (N = 22 lizards)			
Categories	f	f%	C	C%	f	f%	C	C%
Unidentified Arthropoda	3	3.5	3	30	11	2.3	7	31.8
Unidentified Arachnida	0	0	0	0	3	0.6	2	9.1
Araneida	4	4.7	2	20	9	1.9	8	36.4
Scorpionida	0	0	0	0	2	0.4	2	9.1
Blattoidea	0	0	0	0	2	0.4	2	9.1
Coleoptera	39	45.3	9	90	69	14.5	19	86.4
Diplopoda	0	0	0	0	1	0.2	1	4.5
Diptera	1	1.2	1	10	10	2.1	5	22.7
Hemiptera	0	0	0	0	2	0.4	1	4.5
Homoptera	0	0	0	0	2	0.4	2	9.1
Hymenoptera (Formicidae)	27	31.4	8	80	259	54.3	19	86.4
Hymenoptera (excluding Formicidae)	0	0	0	0	2	0.4	1	4.5
Isoptera	5	5.8	3	30	74	15.5	8	36.4
Larvae	1	1.2	1	10	3	0.6	3	13.6
Lepidoptera	1	1.2	1	10	0	0	0	0
Orthoptera	3	3.5	2	20	12	2.5	8	36.4
Insect eggs	2	2.3	1	10	15	3.1	2	9.1
Insect Pupae	0	0	0	0	1	0.2	1	4.5
Total	**86**	**100**	**31**	**310**	**477**	**100**	**91**	**413.6**

examined the stomach contents of 32 specimens collected from September 1997 to August of 1998 from the cerrado and in a gallery forest, at the Estação Florestal de Experimentação (16°39'26"S, 48°16'16"W), Silvânia municipality, State of Goiás, Brazil. Table 1 summarizes the data. The diet of *T. torquatus* was similar in both habitats: Coleoptera, Formicidae, and Isoptera were the dominant food items. The niche breadth (*sensu* Pianka 1986. Ecology and Natural History of Desert Lizards. Princeton University Press, Princeton, New Jersey. 208 pp.) was also very similar (cerrado = 2.92; gallery forest = 3.19).

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Submitted by **RAFAEL F. JULIANO** and **ROGÉRIO P. BASTOS**, Depto. de Biologia Geral - ICB- UFG, Campus II, Caiman Postal 131, 74001-970, Goiânia, Goiás, Brazil (e-mail [RFJ]: rafa@icb1.ufg.br) and **JOSÉ AUGUSTO DE O. MOTTA**, IBAMA, Rua 229, n. 95, St. Universitário, 74605-080, Goiânia, Goiás, Brazil.

SERPENTES

AGKISTRODON PISCIVORUS PISCIVORUS (Eastern Cottonmouth). **DIET**. Data on the diet of the eastern cottonmouth were collected opportunistically at Back Bay National Wildlife Refuge

TABLE 1. Summary of stomach contents collected from 56 adult *Agkistrodon p. piscivorus* at Back Bay National Wildlife Refuge, Virginia Beach, Virginia, USA. Mean mass or volume and associated standard errors are given where appropriate.

Category	Natural marsh males (N = 23)	Natural marsh females (N = 9)	Anthropogenic marsh males (N = 15)	Anthropogenic marsh females (N = 9)
Fish				
Lepomis spp	N = 2 mass = 12.0 g SE = 0.01	N = 1 mass = 28.0 g	N = 1 mass = 35.1	N = 0
Amphibians				
Rana clamitans	N = 2 mass = 26.5 g SE = 23.24	N = 1 mass = 22.5 g	N = 1 mass = 10.0 g	N = 2 mass = 18.2 g SE = 3.20
Rana utricularia	N = 2 mass = 31.0 g SE = 12.55	N = 0	N = 0	N =1 mass = 20.0 g
Reptiles				
Nerodia sipedon	N = 1 mass = 28.02 g	N = 0	N = 0	N = 0
Turtle (unidentifiable)	N = 2 1. 40 x 40 mm 2. 54 x 40 mm	N = 0	N = 0	N = 0
Mammals				
Microtus spp.	N = 0	N = 0	N = 1 mass = 8.46 g	N = 0
Insects				
Unidentifiable	N = 0	N = 0	N = 1	N = 0
Miscellaneous				
rock	N = 0	N = 0	N = 1 mass = 5.0 g	N = 1 mass = 7.2 g
sand/dirt	N = 3	N = 3	N = 4	N = 2
wood material	N = 1	N = 0	N = 1	N = 0
plant material	N = 3	N = 1	N = 2	N = 0
Liquid (volume)	N = 4 (11.3 ml) SE = 1.25	N = 3 (16.8 ml) SE = 2.84	N = 7 (11.3 ml) SE =2.67	N = 5 (12.0 ml) SE = 3.00
Stomachs containing food items (including liquid)	N = 13 57%	N = 5 56%	N = 11 73%	N = 8 89%
Empty stomachs (no gut contents)	N = 8 35%	N = 4 44%	N = 4 27%	N = 1 11%

(Refuge Headquaters: 36°40'19"N, 75°54'55"W) in Virginia Beach, Virginia, USA, from September 1995 through May 1998. This study was undertaken as part of an extensive ecological investigation of heretofore unstudied populations of the eastern cottonmouth in southeastern Virginia in order to compare the ecology of this species in two very different marsh habitats: (1) a 1200 ha relatively undisturbed marsh containing mostly late successional vegetation (natural marsh) and (2) a 1900 ha actively managed series of waterfowl impoundments kept at a low seral stage via burning, plowing, dredging activities, and seasonal manipulations of water depth (anthropogenic marsh) (Cross 1998. Ph.D. dissertation. Old Dominion University, Norfolk. 164 pp.).

Stomach contents were obtained from 56 adult cottonmouths captured as part of a mark-recapture study; additionally, three snakes found dead on the Refuge were dissected to obtain stomach contents. After cottonmouths were captured and marked by scale-clipping, snakes were secured by placing their head and ca. 10 cm of their neck into an appropriately sized clear acrylic tube. Stomach contents were gently palped by finger pressure to within a few centimeters of the head (see Fitch 1987. *In* Seigel et al. [eds.], Snakes: Ecology and Evolutionary Biology, pp. 143–164. McGraw-Hill, New York.), after which the snake was placed into a squeeze box (Cross 2000. Herpetol. Rev. 31:34) where the food was regurgitated. Items were collected, bagged, sealed, labeled for future identification, and frozen. Contents were later weighed, measured, and identified in the laboratory.

A majority (66%) of the stomachs examined contained food items or liquid material; 30% of examined stomachs were empty. Green frogs (*Rana clamitans*) were the most common food item, followed closely by sunfish (*Lepomis* spp.) and southern leopard frogs (*R. utricularia*). Reptilian prey items were found in three stomachs; one contained a northern water snake (*Nerodia sipedon*) and two contained turtles (evidenced from the shape of the food bolus; they were not palped out of stomachs due to the possibility of injuring the snakes). Only one stomach contained mammalian remains (*Microtus* sp.). Twenty stomachs contained liquid with a slurry of nearly fully digested, and hence unidentifiable, prey. Twenty-two snakes contained non-food items, including rocks, sand, dirt, vegetation, and wood material (Table 1). A large male snake was seen in a slow and presumably predatory approach of a plover (*Charadrius* spp.), but the bird escaped before a strike was made. A large female cottonmouth was seen swallowing a large *Rana clamitans*. The frog, which was being swallowed by the posterior end first, was still alive and delivered a loud distress call.

I thank A. H. Savitzky for helpful suggestions and support throughout this investigation. I thank J. B. Gallegos, J. Stasko, F. G. James, and all of the other BBNWR staff that assisted in this project. Partial funding for this research was provided by a grant from the U.S. Fish and Wildlife Service, Back Bay National Wildlife Refuge. I thank D. Bradford for making useful comments on earlier versions of this manuscript. *NOTICE*: The research described here was developed by the author prior to his employment with the U.S. Environmental Protection Agency's Office of Research and Development. The manuscript has been subjected to administrative review but the conclusions drawn are solely those of the author. Mention of trade names or commercial products does not constitute endorsement or recommendation by EPA for use.

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CROTALUS VIRIDIS OREGANUS (Northern Pacific Rattlesnake). **COSTS OF FEEDING**. In cases where locomotion is a critical aspect of predator avoidance and the ingestion of prey items reduces locomotor performance, the eating of a large meal should reduce the ability to escape from a predator. Reduction in snake locomotor capacity after the ingestion of a large meal has been documented in juvenile garter snakes (*Thamnophis* sp.)(Garland and Arnold 1983. Copeia 1983:1092–1096; Ford and Shuttlesworth 1986. Copeia 1986:999–1001). In these studies, the impact of prey items up to 50% of the snakes' body mass was examined. In crotalines, the ability to consume prey up to 156% of the snakes' weight has been documented (Greene 1983. Amer. Zool. 23:431–441). However, only a single anecdotal account suggests how locomotory capabilities of these vipers may be impacted by the ingestion of such large prey items. Fitch reported that the movements of a young *C. v. oreganus* were so hampered after consuming a pocket mouse (*Perognathus*) that it was unable to reach its usual shelter before dying of exposure to sunshine (1949. Amer. Midl. Nat. 41:513–579).

Here we report on an observation of a juvenile female *C. v. oreganus* (272.5 mm SVL, 296.5 mm TL, 11.91 g mass with prey item removed) that was found at 1300 h on 6 May 2000 at Stebbins Cold Canyon Reserve, Solano Co., California, USA. Although the snake was found alive, it had recently sustained a presumably lethal wound after the consumption of a large meal. The wound extended the length of 12 ventral scales (16.1 mm, ca. 6% of TL) and the height of eight dorsal scale rows (10.1 mm, ca. 25% circumference), and it included the loss of a section of skin, ribs, and stomach. The remaining hole revealed the left hind limb and a portion of the ventral surface of a male *Sceloporus occidentalis* (66.9 mm SVL, 153.7 mm TL, 9.04 g). The relative prey mass of this meal is 0.76. The *S. occidentalis* was swallowed headfirst and exhibited only a minor degree of decomposition.

Based upon the severity of the wound and the removal of the large section of tissue, we infer that the wound did not result from prey capture but from a predatory attack, possibly due to the reduced escape ability of the engorged *C. viridis*. Mobility may also have been reduced by weather conditions. The temperature was ca. 15°C with a light rain falling. However, a second juvenile *C. v. oreganus*, found ca. 200 m upstream, was capable of reaching a nearby shelter after being disturbed. As a result, we suggest that the greatest contributing factor to a reduction in escape ability, and therefore an increase in predation risk, was the ingestion of the large prey item.

The specimen was collected under California Department of Fish and Game Permit 803027-01 to GBP and deposited at the University of California, Davis Museum of Zoology (UCDMZ 12277). We thank H. Bradley Shaffer for support and helpful comments on this note.

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LEIOHETERODON MADAGASCARIENSIS (Madagascar Menarana Snake). **DIET**. The diet of captive *Leioheterodon madagascariensis* (Colubridae) includes fish, frogs, reptiles, birds, and rodents (Campbell and Murphy 1977. J. Herpetol. 11:228–230; Conant 1938. Zoologica 23:389–393; Dathe and Dedekind 1996. Zool. Garten 66:69–76; Groves and Groves 1978. Herpetol. Rev. 9:19–20; Henkel and Schmidt 1995. Amphibien und Reptilien Madagaskars der Maskarenen, Seychellen und Komoren. Eugen Ulmer, Stuttgart. 311 pp.). However, only frogs are reported as prey of wild individuals (Preston-Mafham 1991. Madagascar, A Natural History. Facts On File, Oxford. 224 pp.).

During a field study at the Jardin Botanique A of Ampijoroa, Madagascar, we recovered stomach contents from six individuals of *L. madagascariensis* by forced-regurgitation. All snakes were collected while they were crawling on trails in the dry forest. The stomach contents consisted of eggs of a lizard, *Oplurus cuvieri cuvieri* (Opluridae), partially digested adult rodents (Nesomyinae), and tufted feathers of an adult, unidentified bird (Table 1). The eggs were identified based on their size, shape, coloration, and roughness of the shells (Randriamahazo, unpubl. data).

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TABLE 1. Stomach contents of *Leioheterodon madagascariensis* collected in Ampijoroa, northwestern Madagascar.

Collection Time	Collection Date	SVL (mm)	Body Mass (g)	Stomach Contents
0832 h	10 Nov	1245	—	3 eggs of *Oplurus c. cuvieri*
1800 h	13 Nov	1430	1892	feathers
0830 h	16 Nov	1170	—	4 eggs of *O. c. cuvieri* and 1 nesomyine mammal
0955 h	16 Nov	1090	—	4 eggs of *O. c. cuvieri*
1718 h	19 Nov	1050	546	4 eggs of *O. c. cuvieri*
1618 h	3 Nov	1310	718	1 nesomyine mammal

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LEIOHETERODON MODESTUS (Madagascar Brown Snake). **DIET**. On 2 November 1999, at 0815 h, an adult male *Leioheterodon modestus* (Colubridae) was captured crawling out of a burrow on an ant mound in the dry forest at the Jardin Botanique A of Ampijoroa, Madagascar. The snake (886 mm SVL, 347 g mass) was force-regurgitated, and a snake egg was recovered from its stomach. Dissection of the egg revealed a fully developed embryo of the colubrid snake, *Mimophis mahfalensis* (156 mm SVL, 1.3 g mass).

Blanc (1984. *In* Jolly et al. [eds.], *In* Madagascar, pp. 105–114. Pergamon Press, Oxford) noted that *L. modestus* hunts lizards. Preston-Mafham (1991. Madagascar, A Natural History. Facts On File, Oxford. 224 pp.) observed this species foraging on the forest floor and detecting a frog hidden in the sand. The egg of *M. mahfalensis* was obviously ingested in its oviposition site, indicating that the snake employed a widely foraging tactic.

This study was financially supported by Grants-in-Aid under the Monbusho International Scientific Research Program (Field Research, no. 11691183). I thank the staff of Parc Botanique et Zoologique de Tsimbazaza for their assistance in this field study.

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MASTICOPHIS FLAGELLUM FLAGELLUM (Eastern Coachwhip). **DIET**. On 1 June 2000 at 1430 h (air temperature = 30°C), as one of us (DJS) approached a drift fence in longleaf pine (*Pinus palustris*)-turkey oak (*Quercus laevis*) sandhill on the Fort Stewart Military Installation, Bryan County, Georgia, USA, a male *Masticophis f. flagellum* (914 mm SVL; 1226 mm TL) crawled rapidly away from the fence. A few seconds later the snake paused ca. 15 m from the fence; a moderate-sized lump, presumed to be a prey item was evident in the throat of the snake. When captured, the snake immediately disgorged the item that was an adult male six-lined racerunner (*Cnemidophorus sexlineatus*; 69 mm SVL). The snake weighed 130 g after regurgitating the lizard. The racerunner, examined immediately after being disgorged, was putrid and had ca. 20 live red imported fire ants (*Solenopsis invicta*) clinging to its body near a hole (8 x 6 mm) which extended into its neck from the dorsum. A pitfall trap close to where the snake was first observed contained 1 live and 1 dead adult *C. sexlineatus*, as well as fire ants.

These observations indicate that this *C. sexlineatus* was already dead and had been partly consumed by fire ants before being eaten by the coachwhip. We believe it is likely that the snake took the dead lizard from a pitfall trap along the drift fence. Although western subspecies of *M. flagellum* have been reported to feed on carrion, including a dead snake (Small et al. 1994. Herpetol. Rev. 25:28) and a dead bird (Cowles 1946. Herpetologica 3:121–122), this is the first report of carrion feeding by *M. f. flagellum*, as far as we are aware.

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MICRURUS FULVIUS (Eastern Coral Snake). **PREY**. *Micrurus fulvius* has been documented to feed on a variety of vertebrates including mammals, anurans, amphisbaenids, anguids, iguanids, scincids, teiids, leptotyphlopids, colubrids, viperids, and other elap-

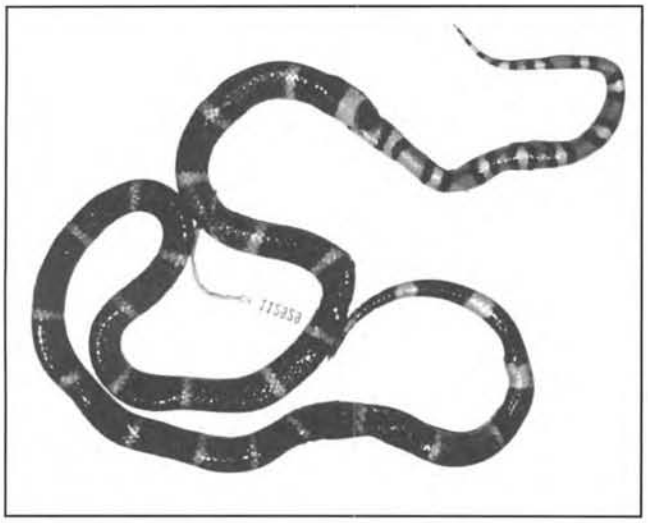

FIG. 1. *Micrurus fulvius* feeding on *Lampropeltis triangulum elapsoides*, Gilchrist Co., Florida.

ids (Jackson and Franz 1981. Herpetologica 37:221–224; Greene 1984. Spec. Publ. Univ. Kansas Mus. Nat. Hist.10:147–162; Tennant et al. 1997. A Field Guide to the Snakes of Florida. Gulf Publ. Co., Houston, Texas. 272 pp.). Here we report a prey item not previously recorded.

On 4 April 1998, a neighborhood dog near Newberry, Gilchrist County, Florida, USA, killed an adult male *M. fulvius*. This snake was in the process of eating an adult scarlet kingsnake (*Lampropeltis triangulum elapsoides*)(Fig. 1). Both snakes were deposited in the Florida Museum of Natural History (UF 112929). This note demonstrates the predation of an ophiophagous, Batesian mimic (*L. t. elapsoides*) by its ophiophagous model (*M. fulvius*), as well as conservation implications associated with domestic carnivores.

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MORELIA AMETHISTINA (Scrub Python). **DIET**. *Morelia amethistina* is Australia's largest snake and feeds on a wide range of vertebrates, mainly birds (Loop 1995. Mem. Qld. Mus. 38[2]:504) and mammals (Shine and Slip 1990. Herpetologica 46:283–290.). Although it is reported that *M. amethistina* commonly feeds on large macropods, quantification of this aspect of their feeding ecology is rudimentary (Greer 1997. The Biology and Evolution of Australian Snakes. Surrey Beatty & Sons. NSW, 358 pp.).

On 30 March 2001, I was requested to remove a large *M. amethistina* which was in the process of constricting a wallaby at a residential property at Balgal Beach (19°01.540'S, 146°24.334'E), 50 km north of Townsville, northeast Queensland. The snake had already commenced ingestion of an adult female agile wallaby (*Macropus agilis*) when I arrived (Fig. 1). The wallaby was estimated to weigh 10 kg. Several days later, an adult female *M. agilis* of very similar dimensions was examined as a road kill and found to weigh 10.2 kg with a head/body length of 63 cm, which is typical for adult females of this taxon (Strahan 1995. The Mammals of Australia. Reed Books. Sydney, 756 pp.). The wallaby was attacked from the ground on the edge of a narrow path through dense, woody vegetation. The path is regularly used by *M. agilis* individuals when entering the property for feeding by the owner. The wallaby was attacked shortly before 1910 h and the property owner reported a violent struggle before the wallaby succumbed. This was corroborated by the presence of two large wounds in the anterior venter of the snake, the largest of which (4 cm x 3 cm) penetrated the snake's body cavity, exposing underlying structures, particularly the trachea (Fig. 2). The long and powerful fourth toe of the wallaby's right hind foot was covered in blood but exhibited no apparent injury and appeared to be responsible for the wounds inflicted on the snake.

Ingestion was completed at 2125 h with the snake apparently undisturbed at being watched by torch light and flash photographed at numerous intervals. The peculiar bulbous body shape of large macropods appeared to be responsible for most of the time that elapsed between initiation and completion of ingestion. The snake made rapid progress until it reached the wallaby's pelvic region. During ingestion of this portion of the carcass the snake took long pauses between attempts to draw more of the prey into its mouth and could be heard exhaling heavily through its protruding glottis. The snake appeared to be continually working its coils in an attempt to laterally compress the carcass at its widest diameter to facilitate swallowing.

At the request of the property owner, the snake was removed shortly after ingestion and returned to Townsville for further observations. The snake was placed in a 120 x 60 x 60 cm cage and maintained at ambient temperatures in a room of a brick house with an easterly aspect. Cage temperatures were recorded with a digital thermometer five times each day and night (between 0900 and 2400 h) during the digestive period. Mean diurnal temperature was 29.8°C (range 27.8–31.1°C) and mean nocturnal temperature 28.1°C (range 26.8–29.2°C).

Digestion of such a large prey item was rapid, with the snake passing large uric acid deposits on April 1, 3, and 4. A large stool was produced on the evening of April 5. By April 6, the snake's mid-body bulge was greatly reduced and it was decided to manually remove the snake from the cage for cleaning. The same evening, the remaining portion of the wallaby was regurgitated,

FIG. 1. Adult *Morelia amethistina* ingesting an adult female agile wallaby (*Macropus agilis*).

FIG. 2. Prey bolus in adult *M. amethistina* following ingestion of adult *Macropus agilis*. Note gaping wound in anterior venter of snake inflicted by claw of wallaby's large fourth toe.

possibly in response to handling. The regurgitation consisted of a 1.6 kg portion of rump and two femurs. Forty-eight hours later the snake was sexed, weighed, and its dimensions recorded: female, 3705 mm SVL, 625 mm tail, 260 mm mid-body girth, 13.5 kg, 95 mm head length along lower jaw, from tip of snout to posterior edge of quadratearticular projection, 64 mm head width at base of skull, 37 mm head width between eyes). Body length was determined by stretching the snake along a tape measure, head measurements were obtained with Vernier calipers, and sex was determined with a sexing probe.

Morelia amethistina is one of the world's largest snakes and macropods are the most abundant and readily available large prey resource throughout the snake's Australian range (Strahan 1995, *op. cit.*). Mark/recapture and radiotelemetric evidence (SF, research in progress) indicates that mature *M. amethistina* specifically target macropods (particularly *Macropus agilis* and red-legged pademelons, *Thylogale stigmatica*) and spend long periods of time waiting in ambush at localities frequented by these mammals.

The wounds inflicted on the snake in this report are very similar to those described for a 3.3 m *M. amethistina* that appeared to be specifically targeting Bennett's tree kangaroos (*Dendrolagus bennettianus*) near Cooktown, northeast Queensland (Martin 1995. Herpetol. Rev. 26:74–76). The snake in this report, in addition to the fresh wounds described, also displayed recently-healed scars in the same region of its neck. The presence of such wounds and scars may be a reliable indicator of recent predation on large macropods. Wounds and scars from biting inflicted during intraspecific male combat in this taxon are of a very different configuration, occurring dorsally at various places along the body and taking the form of clean cut, straight-edged parallel striations (pers. obs.).

Sincere thanks to D. Seabright for bringing the snake to my attention. Thanks also to J. Elliott, D. Frier, S. Patane, and D. Trembath for assistance with snake handling and data collection. D. Barton and R. W. Hansen commented on the manuscript. This work was conducted under permit number F1/000330/00/SAA from the Queensland Environment Protection Agency and James Cook University Ethics Approval Number A594-00.

Submitted by **SIMON FEARN**, School of Biological Sciences, James Cook University, Townsville, Queensland, Australia, 4811; e-mail: simon.fearn@jcu.edu.au.

SISTRURUS CATENATUS EDWARDSII (Desert Massasauga). **MAXIMUM LENGTH.** Boundy (1995. Bull. Chicago Herpetol. Soc. 30:109–122) reports the maximum length of this subspecies as 530 mm TL based on a specimen originally reported by Gloyd (1955. Bull. Chicago Acad. Sci. 10:83–98). I have examined two specimens from the San Bernardino Valley, Cochise County, Arizona, USA, which exceed this length. A live male collected 27 July 1994 measured 578 mm TL (534 mm SVL) and a male collected 24 July 1995 (DOR) measured 588 mm TL (541 mm SVL). The former was marked (1F30491E4A) and released; the latter resides in the Arizona State University vertebrate collection (ASU 30622).

Submitted by **ANDREW T. HOLYCROSS**, Biology Department, Arizona State University, Tempe, Arizona 85287-1501, USA; e-mail: holycow@asu.edu.

THAMNOPHIS RADIX (Plains Garter Snake). **BROOD SIZE.** Brood sizes for *Thamnophis radix* show much geographical variation (Fitch 1985. Misc. Publ. Univ. Kansas Mus. Nat. Hist. 76:1–76). While brood sizes can range up to 60 (Fitch, *op. cit.*; Collins 1993. Amphibians and Reptiles in Kansas. Univ. Kansas Mus. Nat. Hist., Lawerence, Kansas, 397 pp.), the brood sizes reported for Colorado have fallen far short of this. Hammerson (1999. Amphibians and Reptiles in Colorado, Second Edition. University Press of Colorado, Niwot, Colorado, 480 pp.) observed brood sizes in Colorado of 16–21 (N = 9), with a mean of 16. Rossman et al. (1996. The Garter Snakes: Evolution and Ecology. University of Oklahoma Press, Norman) reported a range of 5–20 (N = 8) for Colorado, and a brood of 20 was recorded by Ellis and Henderson (1913. Univ. Colorado Studies 10:39–129). Other records include brood sizes of 7, 9, 14, 20, and 21 (Hammerson, *op. cit.*).

On 23 July 2000 we captured a gravid 58 cm SVL female *T. radix* near Spring Ck in Fort Collins, Colorado, USA. By the morning of 24 July she had given birth to 32 young. The time of year for appearance of young appeared typical (Hammerson, *op. cit.*), but the brood size was substantially (50%) in excess of the maximal brood size previously reported for Colorado.

Submitted by **RICHARD M. ENGEMAN**, National Wildlife Research Center, 4101 LaPorte Avenue, Fort Collins, Colorado 80521-2154, USA, **ISABEL M. ENGEMAN** and **ALEXANDER N. ENGEMAN**, 3902 Carrick Road, Fort Collins, Colorado 80525, USA.

GEOGRAPHIC DISTRIBUTION

Herpetological Review publishes brief notices of new geographic distribution records in order to make them available to the herpetological community in published form. Geographic distribution records are important to biologists in that they allow for a more precise determination of a species' range, and thereby permit a more significant interpretation of its biology.

These geographic distribution records will be accepted in a **standard format** only, and all authors *must* adhere to that format, as follows: SCIENTIFIC NAME, COMMON NAME (for the United States and Canada as it appears in Crother 2000. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding*. SSAR Herpetol. Circ. 29:1–82; for Mexico as it appears in Liner 1994, *Scientific and Common Names for the Amphibians and Reptiles of Mexico in English and Spanish*. Herpetol. Circ. 23:1–113), LOCALITY (use metric for distances and give precise locality data), DATE (day-month-year), COLLECTOR, VERIFIED BY (*cannot* be verified by an author—curator at an institutional collection is preferred), PLACE OF DEPOSITION (where applicable, use standardized collection designations as they appear in Leviton et al. 1985, *Standard Symbolic Codes for Institutional Resource Collections in Herpetology and Ichthyology*, Copeia 1985[3]:802–832) and CATALOG NUMBER (required), COMMENTS (brief), CITATIONS (brief), SUBMITTED BY (give name and address in full—spell out state names—no abbreviations).

Some further comments. This geographic distribution section does not publish "observation" records. Records submitted should be based on preserved specimens which have been placed in a university or museum collection (private collection depository records are discouraged; institutional collection records will receive precedence in case of conflict). A good quality color slide or photograph may substitute for a preserved specimen *only* when the live specimen could not be collected for the following reasons: it was a protected species, it was found in a protected area, or the logistics of preservation were prohibitive (such as large turtles or crocodilians). Color slides and photographs *must* be deposited in a university or museum collection along with complete locality data, and the color slide catalog number(s) must be included in the same manner as a preserved record. Before you submit a manuscript to us, check Censky (1988, *Index to Geographic Distribution Records in Herpetological Review: 1967–1986*; available from the SSAR Publications Secretary) to make sure you are not duplicating a previously published record.

Please submit any geographic distribution records in the **standard format only** to one of the Section Co-editors: **Alan M. Richmond** (USA & Canadian records only), Biology Department, Morrill IV South, 611 North Pleasant Street, University of Massachusetts, Amherst, Massachusetts 01003-9297, USA; **Jerry D. Johnson** (Mexico and Central America, including the Caribbean islands), Department of Biology, El Paso Community College, P.O. Box 20500, El Paso, Texas 79998-0500, USA; **Hidetoshi Ota** (all Old World records), Tropical Biosphere Research Center, University of the Ryukyus, 1 Senbaru, Nishihara-cho, Okinawa 903-01, Japan; or **Gustavo J. Scrocchi** (South American records), Instituto de Herpetología, Fundación Miguel Lillo, Miguel Lillo 251, 4000 Tucumán, Argentina. Short manuscripts are discouraged, and are only acceptable when data cannot be presented adequately in the standard format. **Submissions by e-mail are encouraged where possible**. Refer to inside front cover for e-mail addresses of section editors.

Recommended citation for new distribution records appearing in this section is: Marques, O. A. V., and G. Puorto. 1996. Geographic Distribution. *Chironius laevicollis*. Herpetol. Rev. 27:212.

CAUDATA

DESMOGNATHUS WRIGHTI (Pigmy Salamander). USA: NORTH CAROLINA: Jackson Co: Panthertown Valley, a 2700-hectare management 5 area within the Nantahala National Forest Highlands Ranger District in a *Rhododendron maximum* thicket along an unnamed headwater tributary of Greenland Creek, ca. 1280 m (35°8.42'N, 82°59.81'W). 12 October 1997. Joseph Bernardo and Pamela T. Plotkin. Frostburg State University (JB 9712), NCSM 62157–158. All verified by Alvin Braswell. Extends verified range to just north of the Tennessee Valley Divide along the Southern Blue Ridge, ca 19.7 km SSE Rough Butt Bald (Great Balsam Mountains), which is north of Tuckasegee River and Tanasee Gap, and 37.2 km SSW Blackrock Mountain (Plott Balsam Mountains), which is also north of Tuckasegee River. Within Cowee Mountains, this locality extends range SE of the low elevation valley (ca. 710 m) that contains Savannah and Watauga Creeks. SE of the West Fork of Tuckasegee River (750–800 m), and 37.8 km SE of the Cowee Bald locality reported by Bruce (J. Herpetol. 11:244–246).

Submitted by **JOSEPH BERNARDO**, Department of Biology, Frostburg State University, 101 Braddock Road, Frostburg, Maryland 21532, USA; e-mail: jbernardo@frostburg.edu.

NECTURUS MACULOSUS (Common Mudpuppy). USA: IOWA: Scott Co: Bettendorf, Pleasant Valley Township, foot of 4th Street bridge. 20 April 1957. Bob Alex. HDW-NIU 1830; Davenport, Davenport Township. 16 October 1965. Gladys McGrath. HDW-NIU 1919. Verified by Christine Chandler. (Christiansen 1998, Proc. Iowa Acad. Sci. 105[3]:109–114) records the last specimen having been taken before 1950 in eastern Iowa, whereas, these records give indications of isolated populations still present in the Mississippi River. Christiansen (*op. cit.*) noted that populations have declined or have been extirpated from downstream regions in Iowa. This also holds true for southwestern Wisconsin where a commercial fisherman, Jim Hagensick, has informed me that "this species was taken in set lines during the winter and early spring months, although for the past few years only one or two specimens are taken each year." The floods of 1995 and 2001 have drastically altered the flow of the Mississippi, as have locks and dams, which have added to the siltation problem.

Submitted by **HARLAN D. WALLEY**, Department of Biology, Northern Illinois University, Dekalb, Illinois 60115, USA.

NECTURUS MACULOSUS (Common Mudpuppy). USA: ILLINOIS: Kane Co: Aurora, Fox River. 12 May 1952. J. D. Barton, Jr. HDW-NIU 766. Verified by Phil Senter. Validates a previous record cited without a voucher specimen by Smith (1961, Bull. Illiinois Nat. Hist. Surv. 28:1–298) and Phillips et al. (1999, Illinois Nat. Hist. Surv. Manual 8:1–282).

Submitted by **HARLAN D. WALLEY**, Department of Biology, Northern Illinois University, Dekalb, Illinois 60115, USA.

NOTOPHTHALMUS VIRIDESCENS (Eastern Newt). USA: MICHIGAN: Charlevoix Co: Garden Island (N45°47.90' W85°30.39'), under a log on West Side Trail near the Native American Cemetery. 15 May 2001. Kenneth D. Bowen. Verified by Nancy E. Seefelt. Central Michigan University Museum of Culture and Natural History (CMU A-1610). First verified record of this animal for Garden Island.

Submitted by **KENNETH D. BOWEN** and **JAMES C. GILLINGHAM**, Department of Biology, Central Michigan University, Mt. Pleasant, Michigan 48859, USA.

NOTOPHTHALMUS VIRIDESCENS (Eastern Newt). USA: LOUISIANA: Cameron Parish: Lowry area; 4 mi S jct. Hwy 14 and Hwy 3056, Lacassine National Wildlife Refuge. 25 June 2001. Elizabeth Johnson and Bradley Bordelon. Seale Museum of Louisiana, McNeese State University (SML 9327–9). Verified by Steve Shively. First Parish record. This record extends the State distribution south from Calcasieu Parish and west from Vermilion

Parish as mapped by Dundee and Rossman (1989, The Amphibians and Reptiles of Louisiana, Louisiana St. Univ. Press, Baton Rouge. 300 pp.).

Submitted by **AVERY A. WILLIAMS**, Division of Sciences, Louisiana State University at Eunice, Eunice, Louisiana 70535, USA.

ANURA

AMOLOPS SPINAPECTORALIS (Spinyback Torrent Frog). VIETNAM: QUANG NAM PROVINCE: Ngoc Linh Mountain Range, Tra My District, 980–1020 m elev. (15°11'41"N, 108°02'25"E). Nguyen Quang Truong. Verified by Nikolai Orlov. American Museum of Natural History (AMNH) A-163707. First provincial record for Quang Nam (Inger et al. 1999. Fieldiana Zool. 92, pp.12–13, Fig. 4).

Submitted by **RAOUL BAIN**, Center for Biodiversity and Conservation, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024, USA, and **NGUYEN QUANG TRUONG**, Department of Zoology, Institute of Ecology and Biological Resources, Hoang Quoc Viet St., Cau Giay, Hanoi, Vietnam.

ANODONTHYLA BOULENGERI. CORRECTION OF LOCALITY RECORD: MADAGASCAR: MAROJEJY. Verified by Annemarie Ohler. Marojezy (current spelling: Marojejy) in northeastern Madagascar was the northernmost record of this species (Blommers-Schlösser and Blanc 1991. Amphibiens (première partie). Faune de Madagascar 75[1]:1–379) but has not been verified in recent surveys (pers. obs., and Raselimanana et al. 2000. Fieldiana Zoology 97:157–174). The locality records of Blommers-Schlösser and Blanc (*op. cit.*) were almost exclusively based on the collections of the Muséum national d'Histoire naturelle, Paris (MNHN) and the Zoölogisch Museum Amsterdam, which we have recently revised. Two vouchers originating from Marojejy and catalogued as *Anodonthyla boulengeri* were found, namely MNHN 1972.688 ("Marojezy 1300 m," collected on 2 December 1972) and MNHN 1975.2309 ("Marojezy 1700 m," collected on 1 December 1972). Both are juveniles of 10.4 and 12.0 mm snout–vent length which cannot be reliably determined at species level. However, they have a fifth toe which is only slightly shorter (MNHN 1972.688) or even longer (MNHN 1975.2309) than the third toe, while in *A. boulengeri* the fifth toe is always much shorter than the third toe. Therefore, these specimens clearly are not *A. boulengeri*. All species of *Anodonthyla* are characterized by a reduced first finger without an evident terminal disc, a state already recognizable in juveniles (e.g., *A. rouxae*, MNHN 1973.634, SVL 10.5 mm). The two Marojejy vouchers do have a normal-sized first toe, and we therefore refer them to the genus *Platypelis*.

The next northernmost record (and the only other record in the northeastern biogeographic region) of the genus *Anodonthyla* is Anjanaharibe-Sud (Raxworthy et al. 1998. Fieldiana Zoology, n.s. 90:79–92). However, our re-examination of vouchers from this locality in the Museo Regionale di Scienze Naturali, Torino, showed that they belong to undescribed cophyline species which are likely to be assigned to the genus *Platypelis*. Similarly, the only voucher from Anjanaharibe in the Museum of Zoology of the University of Michigan (UMMZ 214153) has been re-determined by S.-H. Wu as undescribed species of *Platypelis* (G. Schneider, pers. comm., September 2001). Further surveys at several sites in northeastern Madagascar (e.g., Ambolokopatrika, Besariaka, Tsararano) carried out by one of us (FA) did not yield specimens of *Anodonthyla*. This also includes sites in the Masoala reserve (e.g., Ambatoledama, Beanjada, Ilampy, Menamalona), although *A. boulengeri* was observed at Nosy Mangabe Island, close to Masoala and to the northern limit of the eastern region. We therefore propose to consider the Marojejy record for *A. boulengeri* as erroneous and the Anjanaharibe record as in need of confirmation. As a conclusion, the species and the whole genus is currently not known from the northern biogeographic regions, confirming that its centers of diversity and endemism are in the southern part of Madagascar.

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HYLA CALCARATA (Rana de Espolones). VENEZUELA: ESTADO DELTA AMACURO: Caño Guaramo, tributary of Caño Ibaruma, lower Delta del Orinoco. 23–28 February 1995. J. C. Señaris. Museo de Historia Natural La Salle, Caracas (MHNLS 13056, 13106). Verified by César Molina. In Venezuela this species has been reported to the upper Orinoco River in the Colombian-Venezuelan border (Duellman 1973. Copeia 1973:515–533) and to middle Caura River Basin in Bolívar State (Molina 2001. Herpetol. Rev. 32:114). Donnelly and Myers (1991. Am. Mus. Novitates 3017:1–54) reported this species from Cerro Guaiquinima, and Barrio (1998, Acta Biol. Venez. 18[2]:1–93) observed the species in Río Aguas Negras, south Cerro Santa Rosa, in Bolívar State. The specimens reported here represent the first state record and extend the known range for this species ca. 300 km to the NE from the nearest locality, Río Aguas Negras, Bolívar state (Barrio, *op. cit.*). This finding corroborates the occurrence of Upper Amazonian herpetofauna in the delta of the Orinoco River, and supports the hypothesis that this region acts as an Amazonian corridor to NE Venezuela and Trinidad.

Submitted by **JOSEFA CELSA SEÑARIS**, Museo de Historia Natural La Salle, Caracas (e-mail: celsas@mixmail.com), and **CÉSAR LUIS BARRIO**, Fundación AndígenA, Apartado Postal 210, Mérida 5101-A, Venezuela (e-mail: cesarlba@yahoo.com).

HYLORINA SYLVATICA. ARGENTINA: NEUQUÉN: DEPARTAMENTO LÁCAR: Lanín National Park, Yuco, N side of Lácar Lake, 40°10'06"S, 71° 31'37"W, ca. 700 m elev., 9 January 2000. Marcelo L. Ochoa. Fundación Miguel Lillo, Tucumán, Argentina (FML 10373, color slide). Adult. Verified by N. G. Basso. Lanín National Park, Escondido Lake, 40°14'S, 71°33'W, 940 m elev., 31 March 1977, M. Gentili, Museo Argentino de Ciencias Naturales "Bernardino Rivadavia," Buenos Aires, Argentina (MACN 35795). Verified by G. Carrizo. The specimen from Yuco was found at night crossing a dirt road, in a temperate and shady

forest of *Nothofagus obliqua* and *N. dombeyi*, with an open understory dominated by the bamboo *Chusquea culeou*. The species is endemic to the austral forests of Chile and Argentina with a narrow distribution along the eastern slopes of the Andes. In Chile, this species is distributed from the western slopes of the Cordillera de Nahuelbuta (37°18'S, 73°17'W) (Ortiz et al. 1990. Comun. Mus. Reg. Concepción 4:31–43) to Laguna San Rafael (46°40'S, 74°00'W) (Williams and Díaz-Páez 1999. Research and Conservation News [20]). In Argentina, it has thus far been recorded for a few localities at the Nahuel Huapi National Park, in southern Neuquén Province and northwestern Río Negro Province (40°47' to 41°11'S) (Vellard 1947. Acta Zool. lilloana 4:145–153; Gallardo 1962. Rev. Mus. Arg. Cienc. Nat., Bs. As. Zoología 8 [10]:113–122; Barrio and Rinaldi de Chieri 1971. Physis 30[81]:673–685), and at Los Alerces National Park in northern Chubut Province (42°50'S, 71°52'5"W) (Vellido and Úbeda 2001. Herpetol. Rev. 32:54). These two vouchers represent the first records for the Lanín National Park and extend the known range of species in Argentina ca. 70 km air line N from the previously northernmost vouchered citation, at Villa Angostura, Neuquén (Barrio and Rinaldi de Chieri, *op. cit.*). Further, this record decreases the distributional hiatus between the northern distribution limit in Chile and Argentina. The area where the voucher specimens were found is relatively rich in amphibians, and is also inhabited by *Pleurodema thaul*, *Batrachyla leptopus*, *B. taeniata*, *Eupsophus calcaratus*, *Alsodes monticola*, *Rhinoderma darwinii*, and *Bufo variegatus*.

Submitted by **MARÍA SOL MUT COLL** (e-mail: solapio@hotmail.com), **MARCELO L. OCHOA** (e-mail: mochoa@millic.com.ar), Administración de Parques Nacionales, Argentina, and **CARMEN A. ÚBEDA**, Centro Regional Bariloche, Universidad Nacional del Comahue, Unidad Postal Universidad, R 8400 FRF Bariloche, Prov. de Río Negro, Argentina (e-mail: cubeda@bariloche.com.ar).

***MANTIDACTYLUS KLEMMERI*. CORRECTION OF LOCALITY RECORD.** MADAGASCAR: CHAÎNES ANOSYENNES. Verified by Annemarie Ohler. This mantellid frog has been described from the Marojejy Massif (under the name Marojezy) in northeastern Madagascar (Guibé 1974. Bull. Mus. natn. Hist. nat. Paris 171:1171–1192). A second locality for the species, the Anosy Massif (Chaînes Anosyennes) in far southeastern Madagascar was later added (Blommers-Schlösser and Blanc 1991. Amphibiens [première partie]. Faune de Madagascar 75[1]:1–379). This was based on a voucher specimen in the Muséum national d'Histoire naturelle, Paris, catalogued as MNHN 1975.781 (Vences Glaw and Andreone 1997, Alytes 14:130–146). Later surveys failed to confirm the presence of *M. klemmeri* in this area. According to old notebooks of J. Guibé available in the MNHN the specimen was collected by Ch. P. Blanc and originally given the field number F2060. However, Blanc used a repeated numbering system in his expeditions to the Marojejy and Anosy Massifs. While one F2060 originated from "Camp IV et IIIbis" in the Chaînes Anosyennes, a second voucher with that field number came from "Marojezy 1300 m." One of these specimens was catalogued as *M. klemmeri*, a second one as *Mantidactylus microtympanum* according to Guibé's notes. Since *M. microtympanum* is a conspicuous species endemic to the southeast and has never been found in Marojejy, we are convinced that this specimen was correctly catalogued as originating from the Anosy Massif (Chaînes Anosyennes). As a conclusion, the *M. klemmeri* individual was wrongly given that locality and actually originated from the Marojejy Massif at an elevation of 1300 m. This removes one further biogeographic anomaly from the distributions of Malagasy frogs and emphasizes the high degree of endemism of the Marojejy Massif.

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NYCTIXALUS PICTUS (Spotted Treefrog). MALAYSIA: PENINSULAR MALAYSIA: PULAU TIOMAN; along Tekek-Juara trail (02°49'N, 104°08'E; ca. 100 m), calling while perched on leaf of sapling ca. 20 cm above ground. 16 July 2001. Tzi Ming Leong and Karen M. Crane. Raffles Museum of Biodiversity Research: Zoological Reference Collection (ZRC.1.8268, male, SVL 31.1 mm). Verified by Kelvin K. P. Lim. New island record; represents the third rhacophorid species on the island (Lim and Lim 1999. Raffles Bull. Zool. Suppl. 6:131–155). This species is also known to inhabit other islands of comparable size, such as Penang in the north, and Singapore in the south (Manthey and Grossmann 1997. Amphibien & Reptilien Südostasiens. Natur und Tier - Verlag, Münster, Germany. 512 pp.).

Submitted by **TZI MING LEONG**, Department of Biological Sciences, National University of Singapore, Singapore 119260 (e-mail: scip0132@nus.edu.sg), and **KAREN M. CRANE**, Department of Biology, La Sierra University, Riverside, California 92515-8247, USA.

PHYSALAEMUS CENTRALIS (Central Dwarf Frog). BRAZIL: MINAS GERAIS: UBERLÂNDIA MUNICIPALITY (18°59'S and 48°18'W). 18 September 1999. Ariovaldo A. Giaretta. Museu de Biodiversidade do Cerrado of Universidade Federal de Uberlândia (AAG-UFU 2289). Verified by Ariovaldo A. Giaretta. Adult male (SVL 39.3 mm). First record for the state of Minas Gerais. This record confirms the presence of this species in Minas Gerais state (Brandão et al. 1997. Herpetol. Rev. 28:93). Known distribution was in the states of Mato Grosso and São Paulo, Brazil, and in northeastern Paraguay (Frost 1995. Amphibian Species of the World. Version 2/95. Electronic Manuscript. Herpetologists' League). All the reports confirm the presence of this species in Cerrado Bioma Domain and not in the Atlantic Forest Domain (Duellman 1999. *In* Duellman [ed.], Patterns of Distribution of Amphibians. A Global Perspective, pp. 255–328. Johns Hopkins Univ. Press).

Submitted by **MARCELO N. DE C. KOKUBUM** and **MARCELO MENIN**, Laboratório de Ecologia e Sistemática de Anuros Neotropicais, Programa de Pós-Graduação em Ecologia e Conservação de Recursos Naturais, Universidade Federal de Uberlândia, 38400-902, Uberlândia, Minas Gerais, Brazil; e-mail (MNK): mkokubum@bol.com.

POLYPEDATES COLLETTI (Hourglass Treefrog). MALAYSIA: PENINSULAR MALAYSIA: JOHOR; 7 km east of Jemaluang (02°16'N, 103°50'E; ca. 50 m), forest beside road, perched low on

understory vegetation. 6 July 2001. L. Lee Grismer and Jesse L. Grismer. Raffles Museum of Biodiversity Research: Zoological Reference Collection (ZRC.1.8228, female, SVL 73.2 mm; ZRC.1.8229, male, SVL 51.5 mm; ZRC.1.8230, male, SVL 48.3 mm). Verified by Kelvin K. P. Lim. New state record, in addition to Selangor, Pahang, and Negri Sembilan (Berry 1975, The Amphibian Fauna of Peninsular Malaysia. Tropical Press, Kuala Lumpur. x + 130 pp.). Southeasterly range extension of ca. 185 km (from Pasoh Forest Reserve, Kuala Pilah, Negri Sembilan).

Submitted by **TZI MING LEONG**, Department of Biological Sciences, National University of Singapore, Singapore 119260 (e-mail: scip0132@nus.edu.sg), **L. LEE GRISMER** and **JESSE L. GRISMER**, Department of Biology, La Sierra University, Riverside, California 92515-8247, USA.

PSEUDACRIS CRUCIFER. USA: WISCONSIN: KEWAUNEE CO: NW 1/4 Sec. 8, T23N, R24E, Lipsky Swamp State Wildlife Area (44°28'45"N 87°37'15"W). 14 April 2001. Melissa Saeland. UWSP Herp 3933 - female and UWSP Herp 3934 - male. Verified by Erik Wild. Specimen 3933 had a SVL of 33.2 mm, weight = 1.9 g; specimen 3934 had a SVL of 24.6 mm, weight = 1.7 g. First county record (Casper 1996, Geographic Distributions of the Amphibians and Reptiles of Wisconsin. Publ. Milwaukee Public Museum. 87 pp.).

Submitted by **MELISSA J. SAELAND**, Department of Biology, University of Wisconsin - Stevens Point, Stevens Point, Wisconsin 54481, USA (e-mail: msael739@uwsp.edu), and **MARK W. DOPERALSKI**, University of Wisconsin - La Crosse, La Crosse, Wisconsin 54601, USA.

PSEUDACRIS MACULATA. USA: MONTANA: GLACIER CO: Glacier National Park, temporary wetland (48°24'55"N, 113°14'48"W) in the Railroad Creek drainage. 15 July 2001. B. H. Hossack and K. J. Yale. Deposited in the Glacier National Park Museum (GLAC 22540). Verified by P. S. Corn. *P. maculata* had not previously been found in Glacier National Park (Marnell 1997. Northwest. Nat. 78:17–33), although it had been collected outside the park less than 5 km from the current collection site. Specimen was collected under permit GLAC-2001-SCI-0004.

Submitted by **BLAKE R. HOSSACK** and **KATHLEEN J. YALE**, Division of Biological Sciences, University of Montana, Missoula, Montana 59812, USA, and Aldo Leopold Wilderness Research Institute, 790 East Beckwith Avenue, Missoula, Montana 59807, USA.

RANA ATTIGUA. VIETNAM: QUANG NAM PROVINCE: Ngoc Linh Mountain Range, Tra My District, 860 m elev. (15°11'41"N, 108°02'25"E). Nguyen Quang Truong. Verified by Nikolai Orlov. American Museum of Natural History (AMNH A-163692). First provincial record for Quang Nam (Inger et al. 1999. Fieldiana Zool. 92, pp. 14–16, Fig. 5).

Submitted by **RAOUL BAIN**, Center for Biodiveristy and Conservation, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024, USA, and **NGUYEN QUANG TRUONG**, Department of Zoology, Institute of Ecology and Biological Resources, Hoang Quoc Viet St., Cau Giay, Hanoi, Vietnam.

RANA CATESBEIANA (Bullfrog). MÉXICO: MÉXICO: Municipio de Villa Guerrero: 5 km S Villa Guerrero (18°55'18"N, 99°38'00"W), 1990 m elev. 22 July 1999. X. Aguilar, R. Cruz, and G. Casas. Colección Nacional de Anfibios y Reptiles del Instituto de Biología, Universidad Nacional Autónoma (IBH 13292–294). Verified by Fausto R. Méndez de la Cruz. First record for the state (Camarillo-R and Smith 1992. *In* Strimple and Strimple [Eds], Contributions in Herpetology, pp. 39–41. Greater Cincinnati Herpetological Society. 111 pp; Casas et al. 1997. Anfibios y Reptiles, Lista Taxonómica de los Vertebrados Terrestres de Estado de México. Univ. Autón. Edo. México, Cienc. Tec. No. 32:9–53).

Submitted by **GUSTAVO CASAS-ANDREU**, Instituto de Biología, UNAM, Apdo. Post. 70-153, 04510 México, D.F., México (e-mail: gcasas@servidor.unam.mx), **RICARDO CRUZ-AVIÑA** and **XOCHITL AGUILAR MIGUEL**, Facultad de Ciencias Universidad Autónoma del Estado de México, Instituto Literario #100, 50000 Toluca, Estado de México, México.

RANA CLAMITANS (Green Frog). USA: MICHIGAN: CHARLEVOIX CO: Garden Island (N45°47.90' W85°30.39'), small creek feeding the eastern side of Indian Harbor. 10 July 2001. Christopher Zurenko. Verified by Nancy E. Seefelt. Central Michigan University Museum of Culture and Natural History (CMU A-1609). First verified record of this animal for Garden Island.

Submitted by **KENNETH D. BOWEN** and **JAMES C. GILLINGHAM**, Department of Biology, Central Michigan University, Mt. Pleasant, Michigan 48859, USA.

RANA FORRERI (Forrer's Grass Frog). MÉXICO: CHIHUAHUA: Arroyo El Camuchil, Batopilas (27°01'34.1"N, 107°45'44.5"W), 435 m elev. 17 July 2000. Julio A. Lemos-Espinal. Herpetological collection of Unidad de Biología, Tecnología y Prototipos (UBIPRO 5923). Verified by Richard L. Holland. First record for Chihuahua, extending range ca. 160 airline km NE from Estación Don, Sonora, and 175 km NE from Camajoa, Sinaloa (Frost and Bagnara 1976. Copeia 1976:335).

Submitted by **JULIO A. LEMOS-ESPINAL**, Laboratorio de Herpetología, UBIPRO, Escuela Nacional de Estudios Profesionales Iztacala, UNAM, Apdo. Post. 314, Avenida de Los Barrios s/n, Los Reyes Iztacala, Tlalnepantla, Estado de México, 5409 México (e-mail: lemos@servidor.unam.mx), **DAVID L. AUTH**, 4425 N.E. 7th Street, Gainesville, Florida 32601 USA (e-mail: davidauth@hotmail.com), **DAVID L. CHISZAR** and **HOBART M. SMITH**, Univeristy of Colorado Museum, Boulder, Colorado 80309, USA (e-mail: hsmith@spot.colorado.edu).

RANA NEOVOLCANICA (Transverse Volcanic Leopard Frog). MÉXICO: MÉXICO: Municipio de Villa de Allende: Granja Garidosac, Km 12 carr. Toluca Zitácuaro, entre Bosencheve y Casitas (19°24'35"N, 100°08'30"W), 2550 m elev. 30 May 1999. R Cruz A. Colección Nacional de Anfibios y Reptiles del Instituto de Biología, UNAM (IBH 13284–291). Verified by Fausto R. Méndez. First record for state (Hillis and Frost 1985. Occas. Pap. Mus. Nat. Hist. Kansas [117]:1–14; Camarillo-R and Smith 1992. *In* Strimple and Strimple [Eds.], Contributions in Herpetology, pp. 39–41. Greater Cincinnati Herpetological Society. 111 pp.).

Submitted by **GUSTAVO CASAS-ANDREU**, Instituto de

Biología, UNAM, Apdo. Post. 70-153, 04510 México, D.F., México (e-mail: gcasas@servidor.unam.mx), **RICARDO CRUZ-AVIÑA** and **XOCHITL AGUILAR MIGUEL**, Facultad de Ciencias Universidad Autónoma del Estado de México, Instituto Literario #100, 50000 Toluca, Estado de México, México.

RHACOPHORUS BIPUNCTATUS (Twin-spotted Treefrog). MALAYSIA: PENINSULAR MALAYSIA: SELANGOR-PAHANG border, Genting Highlands (03°46'N, 101°47'E; ca. 1750 m). June 2001. Oh Kim Sang. Raffles Museum of Biodiversity Research: Zoological Reference Collection (ZRC.1.8061, male, SVL 40.2 mm; ZRC.1.8062, female, SVL 61.9 mm; ZRC.1.8063, female, SVL 57.7 mm; ZRC.1.8064, female, SVL 60.1 mm; ZRC.1.8065, female, SVL 61.8 mm). Verified by Kelvin K. P. Lim. Previously known from only three montane localities: Bukit Larut (Perak), Cameron Highlands (Perak-Pahang border), and Fraser's Hill (Selangor-Pahang border) (Berry 1975. The Amphibian Fauna of Peninsular Malaysia. Tropical Press, Kuala Lumpur. x + 130 pp.). This is a new montane locality record and represents a southerly range extension of ca. 40 km (from Fraser's Hill).

Submitted by **TZI MING LEONG**, Department of Biological Sciences, National University of Singapore, Singapore 119260 (e-mail: scip0132@nus.edu.sg), **NORSHAM SUHAINA YAAKOB**, Forest Research Institute Malaysia, Kepong, 52109 Kuala Lumpur, Malaysia, and **BOO LIAT LIM**, Department of Wildlife and National Parks (Peninsular Malaysia), Km 10, Jalan Cheras, 561000 Kuala Lumpur, Malaysia.

RHACOPHORUS EXECHOPYGUS (Spinybottom Tree Frog). VIETNAM: QUANG NAM PROVINCE: Ngoc Linh Mountain Range, Tra My District, 980–1020 m elev. (15°11'41"N, 108°02'25"E). Nguyen Quang Truong. Verified by Robert F. Inger. American Museum of Natural History (AMNH A-163707). First provincial record for Quang Nam (Inger et al. 1999. Fieldiana Zool. 92, pp.12–13, Fig. 4).

Submitted by **RAOUL BAIN**, Center for Biodiveristy and Conservation, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024, USA, and **NGUYEN QUANG TRUONG**, Department of Zoology, Institute of Ecology and Biological Resources, Hoang Quoc Viet St., Cau Giay, Hanoi, Vietnam.

RHOMBOPHRYNE TESTUDO. CORRECTION OF LOCALITY RECORD. MADAGASCAR: RÉUNION. Verified by Annemarie Ohler. This endemic Malagasy microhylid frog has been reported from Réunion Island (Guibé 1978. Les Batraciens de Madagascar. Bonn. zool. Monogr. 11:1–140) but this locality was later doubted (Blommers-Schlösser and Blanc 1991, Amphibiens [première partie]. Faune de Madagascar 75[1]:1–379). However, the source of this confusion has never been clarified. The record was almost certainly based on a voucher in the Muséum National d'Histoire Naturelle, Paris (MNHN 1829), recently revised by us. According to the original entry in the regular catalogue, it originated from "Île de la Réunion," but according to the glass label from "Nossi Bé: Mus. de Saint-Denis." Nosy Be is the type locality of *R. testudo*. An old catalogue in the Paris museum refers to the same specimen (entry 1869.104) as originating from "Nossi-Be et Nossi-Cumba (Madagascar)" and having been granted in exchange by the "Commission Scientifique de Bourbon" (Bourbon being an old name of Réunion). Apparently this information was omitted when the data were copied to the regular catalogue. We therefore conclude that the species does not occur outside Madagascar. The locality "Sambava-Andapa" in the map of Blommers-Schlösser and Blanc (1991) is corroborated by the well-preserved specimen MNHN 1973.576, confirming that *R. testudo* is not restricted to its type locality. However, the locality "Marojezy" given by the same authors and by Guibé (1978) is not corroborated by any voucher and probably refers to the same specimen MNHN 1973.576 which is catalogued as originating from "Sambava, km 17 route d'Andapa (massif Marojezy)," having been collected on 19 December 1972 (see also Blommers-Schlösser and Blanc 1991, p. 92).

Submitted by **FRANK GLAW**, Zoologische Staatssammlung München, Münchhausenstr. 21, 81247 München, Germany (e-mail: frank.glaw@zsm.mwn.de) and **MIGUEL VENCES**, Laboratoire des Reptiles et Amphibiens, Muséum National d'Histoire Naturelle, 25 rue Cuvier, 75005 Paris, France (e-mail: m.vences@t-online.de).

SCAPHIOPUS COUCHII (Couch's Spadefoot). USA: ARIZONA: NAVAJO CO: 2 specimens: State Hwy 87, 14.5 km NE of Jct. with I-40 (at Winslow N35°6.37' W110°31.64', 1600 m elev.), UTA A-53914; and 28.6 km NE of jct. with I-40 (N35°12.03' W110°26.32', 1700 m elev.), UTA A-53915. 10 August 1999. Daniel G. Mulcahy and Kirk W. Setser. Verified by Paul C. Ustach. Both specimens were found alive on the road, during a light rain at 2237 and 2305 h respectively. These specimens represent new county records. Closest known record is one specimen (MVZ 66242) collected in 1957 on U.S. Hwy 260, near Petrified Forest, Apache Co., Arizona (ca. 70 km). These specimens represent the second and third records of this species found north of the Mogollon Rim in Arizona, which may indicate this species is more widespread in this portion of the Colorado Plateau as indicated by Stebbins (1985, Peterson Field Guide to Western Reptiles and Amphibians, Second ed. Houghton-Mifflin, Boston, Massachusetts. 336 pp.). On this same evening, the following anurans were also collected along this highway and deposited at UTA: *Spea bombifrons* (A-53919–20), *S. multiplicata* (A-53918) and *Bufo cognatus* (A-53921–22). These species have all been collected at ca. 30 km to the east, along Hwy 77 north of I-40, Navajo Co., Arizona (specimens at CAS).

Submitted by **DANIEL G. MULCAHY** (e-mail: dmulcahy@biology.usu.edu) and **KIRK W. SETSER** (e-mail: setser@biology.usu.edu), Department of Biology, Utah State University, Logan, Utah 84322-5305, USA.

SCAPHIOPUS HOLBROOKII (Eastern Spadefoot). USA: INDIANA: POSEY CO: 2.0 Km N Griffin. 5 June 2001. Eugene Mumford. Carnegie Museum Natural History (CMNH Accession 36774). Verified by John Weins. Adult male photographed—one of several recent records from loess hill uplands of Bethel Township, near Wabash River. New county record and first record for southwestern "pocket" of Indiana (Minton 2001. Amphibians and Reptiles of Indiana. 2nd ed., revised. Indiana Acad. Sci. 404 pp.) and first record from adjacent region of Illinois (Phillips et al. 1999. Field Guide to Amphibians and Reptiles of Illinois. Illinois Natural History Survey Manual 8. 300 pp.) and from the adjacent

western coal field of Kentucky (John R. MacGregor, pers. comm.).

Submitted by **MICHAEL J. LODATO**, 925 Park Plaza Drive, Evansville, Indiana 47715-4428, USA, and **BISHOP MUMFORD** and **EUGENE MUMFORD**, P.O. Box 50, Griffin, Indiana 47616, USA.

TESTUDINES

CHELYDRA SERPENTINA (Common Snapping Turtle). USA: MICHIGAN: Charlevoix Co: Garden Island (N45°47.90' W85°30.39'), washed up (deceased) on the far eastern shore of Indian Harbor. 14 May 2001. Kenneth D. Bowen. Verified by Nancy E. Seefelt. Central Michigan University Museum of Culture and Natural History (CMU R-1558). First verified record of this animal for Garden Island.

Submitted by **KENNETH D. BOWEN** and **JAMES C. GILLINGHAM**, Department of Biology, Central Michigan University, Mt. Pleasant, Michigan 48859, USA.

CHRYSEMYS PICTA (Painted Turtle). USA: MICHIGAN: Charlevoix Co: Garden Island (N45°47.90' W85°30.39'), found trapped (deceased) in a fishing net in Indian Harbor. 21 June 2001. Michael Sieder. Verified by Nancy E. Seefelt. Central Michigan University Museum of Culture and Natural History (CMU R-1561). First verified record of this animal for Garden Island.

Submitted by **KENNETH D. BOWEN** and **JAMES C. GILLINGHAM**, Department of Biology, Central Michigan University, Mt. Pleasant, Michigan 48859, USA

KINOSTERNON HERRERAI (Herrera's Mud Turtle). MÉXICO: MÉXICO: Municipality of Temascaltepec, El Tule, on the bank of Temascaltepec River (19°00'N, 100°05'W), 1520 m elev. 17 May 1999. Vicente Mata-Silva and Martín Paredes-Flores. Laboratorio de Ecología, Unidad de Biología, Tecnología y Prototipos, FES-Iztacala, Universidad Nacional Autónoma de México (VMS 235). Verified by Edmundo Pérez-Ramos. First record for the state of México (Camarillo-R. and Smith 1992. *In* Strimple and Strimple [Eds.], Contributions in Herpetology, pp. 39–41. Greater Cincinnati Herpetological Society, Cincinnati, Ohio. viii + 111 pp.). Closest record for this species is from the Gulf lowlands in the state of Hidalgo (Iverson 1992. A Revised Checklist with Distribution Maps of the Turtles of the World. Privately printed, Richmond, Indiana. viii + 363 pp.).

Submitted by **VICINTE MATA-SILVA, AURELIO RAMIREZ-BAUTISTA, MARTIN PAREDES-FLORES**, and **MANUEL ESPINO-OCAMPO**, Laboratorio de Ecología, UBIPRO, Facultad de Estudios Superiores-Iztacala, UNAM, Apdo. Post. 314, Avenida de Los Barrios s/n, Los Reyes Iztacala, Tlalnepantla, Estado de México, 54090 México; e-mail (AR): raurelio@servidor.unam.mx.

MACROCLEMYS TEMMINCKII (Alligator Snapping Turtle). USA: LOUISIANA: Calcasieu Parish: Little River, a small tributary of the West Fork Calcasieu River (N30°19.342, W93°17.843). 23 June 2001. Avery A. Williams. Louisiana State University at Eunice Vertebrate Collection (LSUE 583). Verified by Steve Shively. First Parish record as mapped by Dundee and Rossman (1989. The Amphibians and Reptiles of Louisiana, Louisiana St. Univ. Press, Baton Rouge. 300 pp.). Although commercial and recreational trappers in Southwest Louisiana have commonly collected this species, the above record represents the only known museum specimen from Calcasieu Parish. This specimen was trapped in a turtle hoop net baited with canned sardines.

Submitted by **AVERY A. WILLIAMS**, Division of Sciences, Louisiana State University at Eunice, Eunice, Louisiana 70535, USA.

LACERTILIA

DAREVSKIA VALENTINI (Caucasian Rock Lizard). USA: OHIO: Van Wert Co: west Delphos at Kill Brothers Equipment Company on Ohio Rt. 697. August 1986. KU 206727. Misidentified as *Podarcis muralis;* was re-identified by comparing size and scale counts to other members of the genus. SVL 70 mm; exceeds that of *P. muralis*. *Darevskia* is distinguished from *Podarcis* by alternating narrow and broad whorls of scales around tail and keeled scales on tibia and tail. Home range of *D. valentini* comprises southern Georgia, Armenia, and northeastern Turkey at elevations from 1700–3000 m. (Conant and Collins 1998. Peterson Field Guide to Reptiles and Amphibians of Eastern and Central North America. Third edition expanded. Houghton Mifflin Company, Boston, Massachusetts. 616 pp.; Darevsky 1967. Skalnye jasczcerizy Kawzaka. Akademii Nauk, Leningrad, 214 pp.; Bischoff and Deichsel, ms. in prep.)

Submitted by **GUNTRAM DEICHSEL**, Friedr.-Ebert-Str. 62, Biberach an der Riss, Germany D-88400 (e-mail: guntram.deichsel@bc.boehringer-ingelheim.com) and **WOLFGANG BISCHOFF**, Zoologisches Forschungsinstitut und Museum Alexander Koenig, Adenauerallee 160, Bonn, Germany D-53113 (e-mail: w.bischoff.ZFMK@uni-bonn.de).

DRACO QUINQUEFASCIATUS. SINGAPORE: Bukit Timah Nature Reserve. 13 March 2001. Tim Youmans, Jesse Grismer, and Geoff Powels. La Sierra University Photo Collection (LSUPC) L-3296-97. Verified by L. Lee Grismer. Previously known from West Malaysia, southern Thailand, Sumatra, Pulau Singkep, Pulau Belitung, and Borneo (Manthey and Grossmann 1997. Amphibien and Reptilien Südostasiens. Natur und Tier-Verlag, Münster, Gemany. 512 pp.). New island record. One male was found during mid-afternoon on a large dipterocarp tree (at a position ca. 2 m from the ground) along a walking trail in the primary forest with closed canopy. This individual was captured, photographed, and released.

Submitted by **JESSE L. GRISMER** (e-mail: jessgris@lasierra.edu), **GEOFF POWELS**, and **TIM YOUMANS**, Department of Biology, La Sierra University, Riverside, California 92515-8247, USA.

HEMIDACTYLUS FRENATUS (Common House Gecko). EL SALVADOR: LA LIBERTAD: Rancho Belmar near La Libertad. Unknown date. M. Mueke. LACM 9375. Verified by Roy McDiarmid. New record for El Salvador (Dueñas et al. 2001. *In* Johnson et al. [eds.], Mesoamerican Herpetology: Systematics, Zoogeography, and Conservation, pp. 93–99. Centennial Museum Spec. Publ. No. 1, The University of Texas at El Paso, El Paso).

This introduced species has been reported from several Central American countries, but the closest locality is from the Pacific versant of Guatemala (Stuart 1963. A Checklist of the Herpetofauna of Guatemala. Misc. Publ. Mus. Zool. Univ. Michigan [122]:1–150).

Submitted by **ELI GREENBAUM**, Division of Herpetology, Natural History Museum and Biodiversity Research Center, The University of Kansas, 1345 Jayhawk Blvd., Lawrence, Kansas 66045-7561, USA; e-mail: elig@ku.edu.

HEMIDACTYLUS TURCICUS. USA: NEW MEXICO: SIERRA Co: Downtown Truth or Consequences, The Charles Motel and Spa, 601 Broadway, New Mexico, USA; N33°7.718' W107°15.491'. Adult and juvenile. 18 September 1999. Don S. Sias and Pete E. Humphrey. University of New Mexico Museum of Southwestern Biology (MSB 62809–810). Verified by Charles W. Painter. New county record (Degenhardt et al. 1996. Amphibians and Reptiles of New Mexico. Univ. New Mexico Press, Albuquerque, xix + 431 pp.). Extends the distribution in New Mexico approximately 101 km to the NNW from the Las Cruces population (Painter et al. 1992. Herpetol. Review 23:62). Thirty additional individuals were observed of all size classes in the vicinity of the hotel.

Submitted by **DON S. SIAS**, Department of Biology, University of New Mexico, Albuquerque, New Mexico 87131, USA, and **PETE E. HUMPHREY**, University of New Mexico School of Medicine, Albuquerque, New Mexico 87131, USA

OPHISAURUS SOKOLOVI (Sokolov's Glass Lizard). VIETNAM: QUANG NAM PROVINCE: Ngoc Linh Mountain Range, Tra My District, 860 m elev. (15°11'41"N, 108°02'25"E). Nguyen Quang Truong. Verified by Nikolai Orlov. Institute of Ecology and Biological Resources, Hanoi, Vietnam (IEBR 102). First provincial record for Quang Nam (Darevsky and Nguyen 1983. Zool. Zh. 62[12]:1827–1837).

Submitted by **RAOUL BAIN**, Center for Biodiveristy and Conservation, American Museum of Natural History, Central Park West at 79th Street, New York, New York, 10024, USA, and **NGUYEN QUANG TRUONG,** Department of Zoology, Institute of Ecology and Biological Resources, Hoang Quoc Viet St., Cau Giay, Hanoi, Vietnam.

TROPIDURUS HISPIDUS. BRAZIL: PARÁ: Municipio de Monte Alegre, Serra do Erere, Morro da Lua (2°01'49"S and 54°12'21"W, 135 m), left bank of the Rio Amazonas. J. G. da Frota and R. N. Yuki. 23 September 2001. Linha de Pesquisa em Herpetologia da Amazônia, Faculdades Integradas do Tapajós, Pará, Brazil (LPHA 1819–1820, LPHA 1830–31). Verified by Andrei G. Guedes. For Amazonia, the species is known from Manaus city (Amazonas State), eastern limit of Maranhão and eastern Pará; for enclaves of open vegetation north of the Amazon River, in Roraima, southern part of French Guiana (Tumuc-Humac Mountains), Suriname, Guyana, and Venezuela. These specimens represent the first record from western Pará and fill a distributional gap of ca. 1359 km between the known localities. Enlarges the known distribution ca. 688 km from Castanhal to the west, ca. 672 km from Manaus to the east; and ca. 567 km from Tumuc-Humac Mountains at south, and corroborates the hypothesis of Rodrigues (1987. Arq. Zool. 31[3]:105–230), that all *Tropidurus* populations north of the Rio Amazonas are *T. hispidus* (Ávila-Pires 1995. Lizards of Brazilian Amazonia (Reptilia: Squamata). Zool. Verh. [299]:1–706).

Submitted by **MÁRCIA LIA DE SOUSA ABREU**, **JOSSEHAN GALÚCIO DA FROTA** and **RUBENS NOBUO YUKI**, Linha de Pesquisa em Herpetologia da Amazônia, Faculdades Integradas do Tapajós, Rua Rosa Vermelha, 335, Santarém, Pará, Brazil, CEP: 68.010-200; e-mail (MLS): marcialiaa@bol.com.br.

TROPIDURUS OREADICUS. BRAZIL: PARÁ: Municipio de Santarém, Barreira do Tapará (02°10'S and 54°31'W), left bank of the Rio Amazonas. M. S. S. Neves, 6 October 2001. Linha de Pesquisa em Herpetologia da Amazônia, Faculdades Integradas do Tapajós, Santarém, Pará State (LPHA 1858). Verified by Rubens N. Yuki. In Brazil, this species occurs in the cerrados of Mato Grosso, Mato Grosso do Sul, Minas Gerais, Goiás, Maranhão, and Rondônia. Along the lower Tocantins River to Belém (Pará). It also occupies some enclaves of open vegetation in the Amazonian region south of the Amazon River (e.g., in Serra dos Carajás, southern Pará). These specimens represent the first record north of the Amazon River, western Pará, enlarges western distribution ca. 540 km (airline) from reservoir area of hydroelectric dam Tucuruí and ca. 580 km (airline) east from Porto Velho. (Ávila-Pires 1995. Lizards of Brazilian Amazonia (Reptilia: Squamata). Zool. Verh. [299]:1–706; Rodrigues 1987. Arq. Zool. 31[3]:105–230).

Submitted by **ALFREDO PEDROSO DOS SANTOS, JR.** (e-mail: alphredojr@mailbr.com.br), **MÁRCIA LIA DE SOUSA ABREU**, and **JOSSEHAN GALÚCIO DA FROTA**, Linha de Pesquisa em Herpetologia da Amazônia, Faculdades Integradas do Tapajós, Rua Rosa Vermelha, 335, Santarém, Pará, Brazil, CEP: 68.010-200.

SERPENTES

ANILIUS SCYTALE. VENEZUELA: MÉRIDA: CBX 13 Island, Borde Seco Dam (07°44'30"N, 71°32'50"W). 21–22 September 2001. Grupo Ecología Animal 2001. Colección de Vertebrados, Universidad de los Andes, Facultad de Ciencias (CVULA IV-6344–45). Verified by D. Cadena. First state record, north of Orinoco River and westernmost in Venezuela, ca. 430 km NW of the closest record, sector Gavilán, Puerto Ayacucho, Amazonas (Rodríguez-Acosta and Fuentes 1995–96. Terra 11–12:77–84). *Anilius scytale* was known from several localities in Venezuela, all south of the Orinoco River (Roze 1966. La Taxonomía y Zoogeografía de los Ofidios de Venezuela. Ediciones de la Biblioteca, Universidad Central de Venezuela, Caracas. 360 pp; Lancini 1979. Serpientes de Venezuela. Armitano Ed., Caracas; Lancini and Kornacker 1986. Die Schlangen von Venezuela. Verlag Armitano, Caracas). This locality shows a wider distribution in Venezuela, not restricted to the southern Orinoco area ("región guayanesa" and "región deltaica" in Barrio (1998. Acta Biol. Venez. 18[2]:1–93), as expected in Hoogmoed (1979. *In* Duellman (ed.), The South American Herpetofauna: its Origin, Evolution and Dispersal, pp. 241–279. Mus. Nat. Hist. Univ. Kansas Monogr. 7). Rainforests in piedmont of the Cordillera de Mérida

(Venezuelan Andes) between 250 m and 1000 m, show a wide biogeographical array, with elements shared from four very different bio-regions: "región andina, región orocostense, región llanera," and "región amazónica," as pointed out by Barrio (*op. cit.*) for amphibians.

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CHIRONIUS EXOLETUS (Green Keeled Racer). BRAZIL: PARÁ: Municipio de Monte Alegre, Serra do Erere, Morro da Lua (2°01'49"S, 54°12'21"W, 148 m), left bank of the Amazônas River, J. G. da Frota, 23 September 2001. Linha de Pesquisa em Herpetologia da Amazônia, Faculdades Integradas do Tapajós (LPHA 1818; female; 1340 mm). Verified by Andrei G. Guedes. The species was known from the east coast of Brazil, northeastern Argentina, and equatorial South America including Amazonian Brazil (is common in the east and south of the state of Pará), Bolivia, eastern Peru and Surinam, and French Guiana; it also occurs at higher elevations in western Ecuador and Colombia, Panama, and Costa Rica. This specimen represents the first record for northwestern Pará, and the distribution of the species becomes more homogeneous. Using airline distances, the Monte Alegre record is between three localities known for the species: it is to the northeast of the Comunidade de São Luis do Tapajós (ca. 349 km); is to the west of the city of Belém (ca. 639 km), and is to the southwest of the city of Cayenne (ca. 801 km) (Cunha and Nascimento 1982. Bol. Mus. Para. Emílio Goeldi, Nov. Sér. Zool. [119]:1–17; Dixon et al. 1993. Revision of the Neotropical Snake Genus *Chironius* Fitzinger [Serpentes, Colubridae] – Monografie XIII. Torino: Museo regionale di scienze naturali, 1–279).

Submitted by **JOSSEHAN GALÚCIO DA FROTA** (e-mail: jgfrota@mailbr.com.br) and **RUBENS NOBUO YUKI**, Linha de Pesquisa em Herpetologia da Amazônia (LPHA), Laboratório de Pesquisas Zoológicas (LPZ), das Faculdades Integradas do Tapajós (FIT), Rua Rosa Vermelha, 335, Santarém, Pará, Brazil, CEP: 68.010-200.

CROTALUS HORRIDUS (Timber Rattlesnake). USA: LOUISIANA: Calcasieu Parish: The area of Sabine River Bridge (Hwy I-10). June 1992. A. Nelly. Seale Museum of Louisiana, McNeese State University (SML 9273). Verified by Steve Shively. First parish record. This specimen represents the southern and westernmost record in the state as mapped by Dundee and Rossman (1989. The Amphibians and Reptiles of Louisiana, Louisiana St. Univ. Press, Baton Rouge. 300 pp.).

Submitted by **AVERY A. WILLIAMS**, Division of Sciences, Louisiana State University at Eunice, Eunice, Louisiana 70535, USA.

DRYMOBIUS RHOMBIFER. VENEZUELA: BARINAS: Barinitas city, 550 m. 7 July 2001. H. Sánchez. Colección de Vertebrados, Universidad de los Andes, Mérida (CVULA 6427). Verified by Yoel Morales. This rare species is known in Venezuela from two disjunct localities, the Sierra de Perijá in NW extreme of the country, bordering with Colombia, and the Amazon rainforest (Lancini 1979. Serpientes de Venezuela. Armitano Ed., Caracas; Lancini and Kornacker 1986. Die Schlangen von Venezuela. Verlag Armitano, Caracas; Roze 1966. La Taxonomía y Zoogeografía de los Ofidios de Venezuela. Ediciones de la Biblioteca, Universidad Central de Venezuela, Caracas). This locality reduces the gap between these very different bio-regions. Thus, *D. rhombifer* shows a wider distribution in Venezuela than previously considered, from the Amazon to Perijá along rainforests in Andean foothills.

Submitted by **DANIEL CALCAÑO**, Serpentarium Los Llanos, Barinitas, Barinas, Venezuela (e-mail: reprecal@cantv.net) and **CESAR L. BARRIO-AMORÓS**, Fundación AndígenA. Apartado Postal 210. Mérida 5101-A, Venezuela (e-mail: cesarlba@yahoo.com).

EPICRATES CENCHRIA MAURUS (Rainbow Boa). BRAZIL: PARÁ: Municipio de Almeirim, Missão Jesuita Tiriós (02°15'N, 55°59'W). 19 October 1979. Verified by V. J. Germano. Herpetological Collection "Alphonse Richard Hoge" of Instituto Butantan, São Paulo, S.P., Brazil (IB 42745, sub adult and IB 42746, juvenile). First record of this subspecies from Brazil. The nearest localities are: Caiena, French Guiana, ca. 420 km NE and, in the vicinity of Nickerie city, Surinam, ca. 410 km NW (Abuys 1989. Litteratura Serpentium 9[3]:126–128; Chippaux 1986. Les Serpents de la Guyane Française. Paris, Orstom. 156 pp.; Roze 1966. La Taxonomia y Zoogeografia de los Ofídios en Venezuela. Caracas, Biblioteca Central Univ. Central Venezuela. 362 pp.)

Submitted by **PAULO PASSOS**, Museu Nacional, Quinta da Boa Vista, CEP: 20940-040, Rio de Janeiro, R.J., Brazil (e-mail: ppassos@mn.ufrj.br) and **FRANCISCO LUÍS FRANCO**, Laboratório de Herpetologia, Instituto Butantan, Av. Vital Brazil, 1500, CEP: 05503-900, São Paulo, S.P., Brazil (e-mail: flfrancobuta@hotmail).

GONATODES CONCINNATUS LIGIAE: VENEZUELA: APURE: 7 km NE La Victoria, distrito Páez. 29 April 1987. R. Rico. Colección de Vertebrados, Universidad de los Andes, Mérida (CVULA 5032). An adult male verified by Gilson Rivas. First state record and third for the country, ca. 160 km SSE of previous published records for Barinitas and Reserva Forestal Ticoporo, in the state of Barinas (Rivero-Blanco 1967 "1968." Mem. Soc. Cien. La Salle 27:104–119). This subespecies was predicted to occur in Apure (Rivero-Blanco 1979. The Neotropical Lizard Genus *Gonatodes* Fitzinger [Sauria: Sphaerodactylinae]. Ph.D. dissertation, Texas A&M University. 224 pp.). The species inhabits all piedmont rainforest and gallery forest areas in adjacent Llanos from Perú to Venezuela (Peters and Donoso-Barros 1986. Catalogue of the Neotropical Squamata. Part II. Lizards and Amphisbaenians. Smiths. Inst. Press. Washington, D.C.).

Submitted by **CARLOS RIVERO-BLANCO**, C.R.B. Ecólogos Consultores C.A., Apartado 63011, Chacaito, Caracas 1067-A, Venezuela (e-mail: carivero@telcel.net.ve) and **CÉSAR L. BARRIO-AMORÓS**, Fundación Andígena, Apartado Postal 210, Mérida 5101-A, Venezuela (e-mail: cesarlba@yahoo.com).

HYPSIGLENA TORQUATA. (Night Snake) USA: IDAHO: Cassia Co: CR G3 (Rock Creek Rd.), 20 m N of Sawtooth National Forest, Rock Creek, (N42°19.93' W114°16.80'), 1400 m elev. 28

August 1999. Kirk W. Setser. UTA R-51097. Verified by Paul C. Ustach. Specimen was found alive on the road at 2148 h. The road went through mixed grass/sagebrush with scattered rocks and was within 30 m of Rock Creek. It was partly cloudy, and between 18–21°C. This is a new county record (Laurence and Reynolds 1984. Great Basin Nat. 44[2]:313–316). Most distribution maps show this species continuous from Pocatello, Idaho to Oregon. The closest actual records are from: Pocatello, Bannock Co., Idaho (ca. 160 km); near Craters of the Moon Nat'l. Mon., Blaine Co., Idaho (ca. 120 km); near Grand View, Elmore Co., Idaho (ca. 160 km) (Linder and Fichter 1977. The Amphibians and Reptiles of Idaho, Idaho State Univ. Press, Pocatello, Idaho; Nussbaum et al. 1983. Amphibians and Reptiles of the Pacific Northwest, Univ. of Idaho Press, Moscow, Idaho). This species' range is probably continuous throughout this area, however records are lacking.

Submitted by **DANIEL G. MULCAHY** (e-mail: dmulcahy@biology.usu.edu) and **KIRK W. SETSER** (e-mail: setser@biology.usu.edu) Department of Biology, Utah State University, Logan, Utah 84322-5305, USA.

LAMPROPELTIS TRIANGULUM (Milk Snake). USA: MICHIGAN: Charlevoix Co: Garden Island (N45°47.90' W 85°30.39'), found under a large sheet of plastic on the north side of Graham's Point. 14 May 2001. Kenneth D. Bowen. Verified by Nancy E. Seefelt. Central Michigan University Museum of Culture and Natural History (CMU R-1562). First verified record of this animal for Garden Island.

Submitted by **KENNETH D. BOWEN** and **JAMES C. GILLINGHAM**, Department of Biology, Central Michigan University, Mt. Pleasant, Michigan 48859, USA.

LEPTOTYPHLOPS DULCIS (Texas Blind Snake). USA: NEW MEXICO: Lincoln Co: Adjacent to north side of Highway 70/380 mile marker 298 (.5); N33°20.454', W105°4.352'. Three snakes. 16 June 1999. Don S. Sias. University of New Mexico Museum of Southwestern Biology (MSB) 62812–14. Verified by Charles W. Painter. New county record (Degenhardt et al. 1996. Amphibians and Reptiles of New Mexico. Univ. New Mexico Press, Albuquerque, xix + 431 pp.). Extends range west into the Sacramento Mountain foothills from Pecos River Valley records.

Submitted by **DON S. SIAS**, Department of Biology, University of New Mexico, Albuquerque, New Mexico 87131, USA.

LIOPHIS EPINEPHELUS OPISTHOTAENIUS. VENEZUELA: FALCÓN: Municipio Petit: Curimagua. 1 August 1982. M. González Sponga. Museo de Ciencias Naturales, Caracas (MCNC 7705). Verified by L. F. Navarrete. First state record and northeasternmost locality in South America (Dixon 1983. *In* Rhodin and Miyata [eds.], Advances in Herpetology and Evolutionary Biology, pp. 132–149. Mus. Comp. Zool., Harvard Univ.; Mijares-Urrutia and Arends. 2000. Smithson. Herpetol. Infor. Serv. 123:1–30). In Venezuela, this species was known from Cordillera de Mérida, Venezuelan Andes (Roze 1966. La Taxonomía y Zoogeografía de los Ofidios en Venezuela. Univ. Central de Venezuela. Edic. Biblioteca. Caracas, 362 pp.). This locality reveals a wider distribution of this species throughout the Venezuelan Coastal Range (including now the Lara-Falcón mountain system), east of the Andes (Dixon, *op. cit.*).

Submitted by **GILSON RIVAS FUENMAYOR**, Museo de Historia Natural La Salle, Apartado Postal 1930, Caracas 1010-A, Venezuela (e-mail: gilsonrivas@mixmail.com), and **OSWALDO FUENTES**, 19135 US 19 North, Apt. J8, Clearwater, Florida 33764, USA.

LIOPHIS MILIARIS CHRYSOSTOMUS. BRAZIL: PARÁ: Municipio de Tirios. A. Silva-Filho. 2001. Linha de Pesquisa em Herpetologia da Amazônia (LPHA), Laboratório de Pesquisas Zoológicas (LPZ), Faculdades Integradas do Tapajós, Santarém, Pará State (LPHA 1854). Verified by R. Nobuo Yuki. Species known from dense rainforests of lowland Amazonian parts of Brazil, Colombia, Ecuador, and Peru. First record from northern Amazonas River in the Pará, enlarges the known distribution ca. 420 km airline from the nearest record (Municipio Obidos), also in Pará. (Dixon 1983. Copeia 1983:791–802; Dixon 1989. Smithson. Herptol. Infor. Serv. 79:1–28).

Submitted by **JOSSEHAN GALÚCIO DA FROTA** (e-mail: jgfrota@mailbr.com.br) and **ALFREDO PEDROSO DOS SANTOS, JR**, Linha de Pesquisa em Herpetologia da Amazônia, Faculdades Integradas do Tapajós, Rua Rosa Vermelha, 335, Santarém, Pará, Brazil, CEP: 68.010-200.

LIOPHIS POECILOGYRUS SCHOTTI. VENEZUELA: AMAZONAS: Puerto Ayacucho: Atures, 75 m. 14 September 1979, P. Piñate. Museo de la Estación Biológica de Rancho Grande, Aragua (EBRG 1157, adult male); specimen without date, J. Sánchez and F. Guánchez (EBRG 1750, adult female); 28 July 1985, J. Sánchez. (EBRG 1916, adult female); 23 August 1982, J. Sánchez and P. Piñate (EBRG 1652, adult male); 19 November 1978, E. Armas (EBRG 1543, adult female). Mavaca, upper Orinoco River, May 1979, J. Finkers (EBRG 3048, juvenile). First state records. All specimens verified by César R. Molina. EBRG 3048 is the southernmost known record in Venezuela. *Liophis poecilogyrus* was mentioned as a possible inhabitant in Venezuela by Dixon (1989. Smithson. Herpetol. Inform. Serv. 79:1–28). Dixon and Markezich (1992. Texas J. Sci. 44:131–166), pointed out in their map two points in Bolívar state, without locality data. Later, Fuentes and Barrio (1999. Herpetol. Rev. 30:54) confirmed its presence in Bolívar state. In this note we assign the Venezuelan population to the subspecies *L. p. schottii* and expand the known range about 600 km to the southwest. Puerto Ayacucho is a town surrounded by Guianan savanna. *Liophis poecilogyrus* is a savanna dweller, but Mavaca is the first Amazon rainforest locality for this species in Venezuela.

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MASTICOPHIS FLAGELLUM TESTACEUS (Western Coachwhip). MÉXICO: CHIHUAHUA: Cañon de Barrera, Ejido El Álamo, 1.0 km NW Rancho El Fortín, by Río Conchos (29°32'36.4"N, 104°52'23.0"W), 939 m elev. 20 June 2000. Herpetological collection of Unidad de Biología, Tecnológico y Prototipos (UBIPRO 5497). Verified by Richard L. Holland. First

record for Chihuahua and a slight range extension from localities in the Big Bend region of Texas (Wilson 1970. Tulane Stud. Zool. Bot. 16:31–99), although an intergrade with *M. f. lineatulus* farther southwest was reported by Lemos-Espinal et al. (2000. Bull. Chicago Herpetol. Soc. 35:19–24). All other records for Chihuahua are for *M. f. lineatulus*.

Submitted by **JULIO A. LEMUS-ESPINAL**, Laboratorio de Herpetología, UBIPRO, Escuela Nacional de Estudíos Profesionales Iztacala, UNAM, Apdo. Post. 314, Avenida de Los Barrios s/n, Los Reyes Iztacala, Tlalnepantla, Estado de México, 54090 México (e-mail: lemos@servidor.unam.mx); **DAVID L. AUTH**, 425 N.E. 7TH Street, Gainesville, Florida 32601, USA (e-mail: davidauth@hotmail.com); **DAVID CHISZAR** and **HOBART M. SMITH** (e-mail hsmith@spot.colorado.edu), University of Colorado Museum, Boulder, Colorado 80309, USA.

PHILODRYAS PATAGONIENSIS. BRAZIL: RONDÔNIA: Município de Ouro Preto do Oeste (10°44'S 62°13'W). October 1983. E. Roppa. Museu Nacional, Rio de Janeiro, Brazil (MNRJ 8445, young specimen). Verified by R. Fernandes. First state record, extends the known distribution ca. 830 km northeast of Cochabamba, Bolivia (Thomas 1976. Unpubl. Ph.D. thesis, Texas A&M University, College.Station).

Submitted by **PAULO PASSOS** (e-mail: ppassos@mn.ufrj.br) and **DANIEL S. FERNANDES** (e-mail: danfer@acd.ufrj.br), Departamento de Vertebrados, Museu Nacional, Universidade Federal do Rio de Janeiro, Quinta da Boa Vista s/n, Rio de Janeiro, Rio de Janeiro, 20940-040, Brazil.

PSAMMOPHIS SIBILANS SIBILANS (African Beauty Snake). EGYPT: SUEZ CANAL AREA: ISMAILIA PROVINCE: Al-Ababdah, Serapeum (30°29'44"N, 32°19'02"E). 2 June 2001. Adel A. Ibrahim. Muséum National d'Histoire Naturelle, Paris (MNHN 2001.0601). Verified by Ivan Ineich. A female (660 mm SVL) freshly killed by a farmer at site immediately close to a creek. Two other individuals were also observed in July 2001 at Suez City (29°58'05"N, 32°32'12"E), and at Al-Ganayen, ca 10 km N of Suez City (31°05'47"N, 33°40'06"E). In Egypt, this snake is well known from the Nile Delta as far as Aswan in the upper Egypt. In western desert, only a single record was reported from Matruh (Marx 1968. Checklist of the Reptiles and Amphibians of Egypt. U.S. Naval Medical Research Unit No. III, Cairo, 51 pp.). First record for the Suez Canal area (Saleh 1997. Amphibians and Reptiles of Egypt. Publ. National Biodiversity Unit. No. XI, 234 pp.).

Submitted by: **ADEL A. IBRAHIM**, Department of Biological Sciences and Geology, Faculty of Education at Al-Arish, Suez Canal University, North Sinai, Egypt; e-mail: aibrahim@ismailia.ie-eg.com.

PSOMOPHIS JOBERTI. BRAZIL: AMAZONAS: Município de Benjamin Constant (4°22'S 70°02'W). 1942. A. Parko. Museu Nacional, Rio de Janeiro, Brazil (MNRJ 1293, adult male 241 mm SVL, 65 mm TL). Verified by R. Fernandes. First state record, extends the known range ca. 2310 km northwestern of Barra do Tapirapés, state of Mato Grosso and about 2200 km west of Marajó Island, state of Pará (Myers and Cadle 1994. Am. Mus. Novitates 3102:1–33).

Submitted by **PAULO PASSOS** (e-mail: ppassos@mn.ufrj.br) and **DANIEL S. FERNANDES** (e-mail: danfer@acd.ufrj.br), Departamento de Vertebrados, Museu Nacional, Universidade Federal do Rio de Janeiro, Quinta da Boa Vista s/n, Rio de Janeiro, Rio de Janeiro, 20940-040, Brazil.

THAMNOPHIS MELANOGASTER CHIHUAHUAENSIS (Chihuahuan Black-Bellied Garter Snake). MÉXICO: DURANGO: ca. 2 air km N and 12 km W Teneraca (Tepehuan village) (23°05'N, 104°45'W), in Arroyo de las Cuevas at streamside campsite locally known as Platanillos, 1600 m elev. 24 November 1970. Robert G. Webb. UTEP 11946. Verified by Roger Conant. Found in a clear-water stream surrounded by subtropical vegetation. New record for Durango, and located about 500 air km SE of the nearest records from southwestern Chihuahua in the vicinity of Río San Miguel-Río Verde (Tanner 1985. Great Basin Nat. 45:615–676). Color photographs of this snake, both captioned "Durango," appear on Plate 8 in Rossman et al. (1996. The Garter Snakes: Evolution and Ecology. Univ. Oklahoma Press, Norman Oklahoma. xx + 332 pp.), but its occurrence in Durango was not otherwise indicated in their text or maps.

Submitted by **ROBERT G. WEBB**, Department of Biological Sciences, The University of Texas at El Paso, El Paso, Texas 79968-0519, USA; e-mail: rgwebb@utep.edu.

TRIMORPHODON BISCUTATUS (Lyre Snake). USA: NEW MEXICO: GRANT CO: Burro Mountains; Saddle Rock Canyon; N32°47.363', W108°30.181'. Juvenile. 15 November 2000. Eric M. Brand. University of New Mexico Museum of Southwestern Biology (MSB 62811). Verified by Charles W. Painter. New county record (Degenhardt et al. 1996. Amphibians and Reptiles of New Mexico. Univ. New Mexico Press, Albuquerque, xix + 431 pp.). Fills a large gap in range records from surrounding counties in New Mexico (Hildago, Luna, Sierra, Catron).

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New Distribution Records of Reptiles from Western Venezuela

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The composition and geographic distribution of the herpetofauna of the central portion of western Venezuela is poorly understood primarily because of the limited amount of previous work there. This area is ecologically and physiographically diverse, including several Andean ecosystems at various elevations bordered by a relatively flat upper llanos system to the east of these (Reaud-Thomas 1989). The distributions of many Venezuelan reptilian species depicted in commonly used references (e.g., Roze 1966)

often exhibit gaps or other anomalies in this region, and only sparse and scattered records exist in the literature. This situation clearly precludes assessments of herpetofaunal species richness, diversity indices, percentage endemism, and other ecological parameters that are often important and relevant to current conservation and preservation efforts. The Andean area of western Venezuela has been shown to be very important with respect to the total diversity (i.e., species richness) of mammals and birds in Venezuela (Rodríguez and Rojas-Suárez 1996) but the inadequate knowledge of the this area's herpetofauna does not yet permit such conclusions about its contribution to the herpetofaunal diversity of Venezuela.

I have investigated various aspects of the west central Venezuelan herpetofauna in the field and in museum collections since 1990. This paper reports new regional records, new state records, and geographic range extensions for 44 species of reptiles (29 snakes, 13 lizards, and 2 amphisbaenians), mainly from llanos and piedmont physiographic areas in the state of Portuguesa and adjacent states of Barinas, Lara, and Trujillo. Previous geographic records of species were established by reference to works that document specimens from specific localities and/or from works involving comprehensive local checklists. I have refrained from referring to works that show only stippling or shading on distribution maps to represent a species range since the depicted range usually represents an inductive hypothesis (Tucker 1995) if not based upon evidence from specific records. Many recent works that document regional geographic distributions of reptiles and amphibians (e.g., Phillips et al. 1999) take the empirical approach used in the present paper.

The scant previous herpetological research in west central Venezuela is evident from the absence of specimens from this region in most museum collections. Over the years however, I have had the opportunity to examine the herpetological collection at the Museo de Ciencias Naturales (MCNG), Guanare, Estado Portuguesa, Venezuela. This museum is on the campus of the Universidad Nacional Experimental de los Llanos Occidentales Ezequiel Zamora (UNELLEZ; coordinates 9°03'50"N, 69°48'30"W), which is a few kilometers from the west/northwestern edge of Guanare, the capital of the state of Portuguesa. It has a modest and well-curated herpetological collection containing specimens that have been collected primarily in the state of Portuguesa and secondarily in adjacent states since 1979. It also has specimens collected on various expeditions to other areas in Venezuela and type specimens from recently described species (e.g., Markezich and Taphorn 1994). All of the specimens reported upon in this paper are housed in this collection.

In this paper, subspecific names are used only if there has been a recent comprehensive variational study of the species (e.g., *Chironius carinatus* by Dixon et al. 1993), and taxa of uncertain affinity, several of which are currently under investigation by the author and others, have been omitted. Only one specimen of a conspecific series is listed from one locality, and separate localities within a state are reported if they represent significantly different geographic, physiographic, and/or ecological areas. Geographic coordinates have not been inferred from locality data, and are given only where directly recorded. Distances via roads are designated as such in this paper, and other distances between two points are linear. For brevity, I have used the abbreviation "Edo." for the phrase "the state of" in many cases. For ease of reference, the following information and coordinates are for two localities near Guanare that frequently appear in the list of species but may be difficult to locate on some maps: La Colonia (9°03'19"N, 69°48'58"W), 3 km westnorthwest of northwestern edge of Guanare; Mesa de Cavacas (cited as "Mesa Cavaca" on some maps; 9°04'22"N, 69°48'42"W), 7 km north of northwestern edge of Guanare on the road to Biscucuy. I have also refrained from comments pertaining to variation and taxonomy of the specimens reported upon in this paper, except in one case, and have examined all of the listed specimens.

Anomalepidae

Liotyphlops albirostris. PORTUGUESA: Municipio Guanare: Guanare. 31 May 1979. No collector listed in catalogue. Verified by J. R. Dixon. MCNG 836. First record from Portuguesa, ca. 170 km ENE of nearest record from Mérida, Edo. Mérida, where the only other specimens in west central Venezuela are known (Dixon and Kofron 1983).

Boidae

Boa constrictor. BARINAS: Municipio Bolivar: Rancho Luna, Barinitas. 30 June 1981. D. Gonzalez. MCNG 540; PORTUGUESA: Municipio San Genaro de Boconoito: San Nicolás. 13 November 1983. B. Busto and C. Ramo. MCNG 716. All specimens verified by T. Horger. First record from Barinas and range extension of 80 km S of nearest record from Aparición in Portuguesa (Roze 1966).

Corallus ruschenbergerii. PORTUGUESA: Municipio Guanare: La Colonia. 20 July 1983. S. Reid. Verified by D.C. Taphorn. MCNG 732. First record from Portuguesa, ca. 160 km WNW of record from Edo. Barinas (Henderson 1997).

Epicrates cenchria. BARINAS: Municipio Rojas: Hato San Pancracio, Santa Rosa. 28 May 1981. B. Busto and C. Ramo. MCNG 495; PORTUGUESA: Municipio Papelón: 20–40 km (road) SE Guanare on Guanare-Guanarito Rd. 8 July 1993, 2100–2300 h. A. L. Markezich and O. J. León. MCNG 1480. All specimens verified by T. Horger. First records from Barinas and Portuguesa, extending range ca. 200 km E of the first records from west central Venezuela in Edo. Mérida (La Marca and Soriano 1995; Roze 1966).

Colubridae

Atractus univittatus. PORTUGUESA: Municipio Guanare: La Colonia. 11 December 1990. D. C. Taphorn. MCNG 1239; Municipio Guanare: 12 km (road) S Rio Guanare bridge on Guanare-Biscucuy Rd. 7 July 1993. A. L. Markezich and O. J. León. MCNG 1479. Both specimens verified by J. R. Dixon. First records from western Venezuela. This species was previously known only from the holotype from the Caracas region and one specimen from Estado Miranda, ca. 400 km NW of the records reported here. The two MCNG specimens recorded above and two others in MCNG from the same area in Portuguesa match the original description of Jan (1862) and that given by Roze (1966) in most details of scalation and color pattern of this species. However, there is an inconsistency in reported infralabial number in the literature. The figured type specimen of Jan (1862, 11th Livr., PL. II) and the specimens from Portuguesa have seven infralabials while Roze (1966) and other general references have cited six for this species apparently

based upon the specimen from Edo. Miranda that he examined. Thus the species should be considered to have 6–7 infralabials, a common range of variation in this character in colubrids. The temporal number of 2+2 figured and cited by Jan (1862) for the holotype was also a variant, as the specimen examined by Roze (1966) and the series examined here from Portuguesa have 1+2 temporals. Thus, this species should be considered to have 1+2 or 2+2 temporals.

Chironius carinatus spixi. PORTUGUESA: Municipio Guanare: UNELLEZ campus. 21 November 1990, 0900 h. A. L. Markezich. MCNG 1251; Municipio San Genaro de Boconoito: San Nicolás. 16 August 1981. G. Rios. MCNG 538; Municipio undetermined: carretera Guanare-Guanarito. 19 October 1980. B. Busto and C. Ramo. MCNG 105. All specimens verified by T. Horger. Dixon et al. (1993) reported several specimens from the northern part of this state near Acarigua, and another was recently reported from Biscucuy in the northwestern piedmont of the state (Esqueda and La Marca 1999). The specimens reported here extend the range 75 km from these records and document the existence of this species in central and southwestern Portuguesa.

Dipsas variegata. PORTUGUESA: Municipio Monseñor José Vicente de Unda: Chabasquen, Cerro Mollejon. 30 September 1983. B. Busto and C. Ramo. Verified by P. Pacheco. MCNG 787. First record from western Venezuela, ca. 350 km WSW of nearest known records from Distrito Federal (Roze 1966).

Erythrolamprus bizonus. BARINAS: Municipio Antonio Jose de Sucre: Socopo. 22 March 1981. M. Soto. Verified by P. Pacheco. MCNG 943; PORTUGUESA: Municipio Guanare: UNELLEZ, Mesa de Cavacas. 6 August 1984. B. Busto and C. Ramo. Verified by P. Pacheco. MCNG 866; Municipio Guanare: Guanare, Jardin "Centro de Bellas Artes." 29 October 1986. R. Zapata. Verified by P. Pacheco. MCNG 942; TRUJILLO: Municipio Boconó: 28 km (road) SW Campo Elías on road to Boconó, 9°18'16"N, 70°10'03"W, 1580 m elev. 27 May 1998, 1100 h. A. L. Markezich and O. J. León. Verified by T. Horger. MCNG 1601. First records from Barinas and Portuguesa, filling the middle of a previous range gap of ca. 500 km from north central Venezuela to Edo.Táchira in southwestern Venezuela (Roze 1966).

Helicops angulatus. PORTUGUESA: Municipio Papelón: 40 km (road) SE Guanare on Guanare-Guanarito Rd. 10 July 1993, 1030 h. A. L. Markezich and O. J. León. MCNG 1498. First record of this locally common species from Portuguesa and only record of this species in western Venezuela other than those cited by Roze (1966) from Edo. Zulia, ca. 300 km west. The nearest llanos record is from Edo. Apure, ca. 230 km SE of the Portuguesa locality reported here (Staton and Dixon 1977).

Helicops pastazae. BARINAS: Municipio Ezequiel Zamora: upper reaches of Rio Caparo. 13 February 1983. B. Busto and C. Ramo. Verified by D. A. Rossman. MCNG 737. New record from Barinas. Markezich and Rossman (1992) incorrectly reported the locality of this specimen as being in Edo. Portuguesa due to an error in the MCNG catalogue. The locality in Barinas is ca. 130 km NE of the only other known record of this species in west central Venezuela cited by these authors from Edo. Táchira.

Imantodes cenchoa. PORTUGUESA: Municipio Papelón: 24 km (road) SE Guanare on Guanare-Guanarito Rd. 9 July 1993, 2350 h. A. L. Markezich and O. J. León. Verified by P. Pacheco. MCNG 1489. Second record from west central Venezuela, ca. 200 km ENE of nearest record from Edo. Mérida (Esqueda and La Marca 1999).

Leptodeira annulata ashmeadi. BARINAS: Municipio Barinas: Barinas. 29 January 1980. E. La Marca and G. Carrillo. MCNG 437; Municipio Rojas: Hato San Pancracio, Sta. Rosa. 31 December 1982. B. Busto and C. Ramo. MCNG 547; PORTUGUESA: Municipio Guanare: La Colonia. 13 July 1993. D. C. Taphorn. MCNG 1503; Municipio Guanarito: Palmar de Morrones, Guanarito. 30 September 1981. Busto and C. Ramo. MCNG 427; Municipio San Genaro de Boconoito: represa de Tucupido. 12 May 1989. M. Guttiererez. MCNG 1083; Municipio San Rafael de Onoto: San Rafael de Onoto. 12 May 1984. MCNG 1255; Municipio undetermined: 20–40 km (road) SE Guanare on Guanare-Guanarito Rd. 8 July 1993, 2200 h. A. L. Markezich and O. J. León. MCNG 1483. All specimens verified by P. Pacheco. First records of this common species from Barinas and Portuguesa, with most distant Portuguesa and Barinas records ca. 250 km ENE and 180 km E, respectively, of nearest record from Edo. Mérida (Duellman 1958; Roze 1966).

Leptophis ahaetulla. PORTUGUESA: Municipio Guanare: Guanare, carrera 6 frente a Malariologia. 8 May 1987, 0900 h. J. V. Paez. MCNG 990; Municipio Monseñor José Vicente de Unda: Chabasquen. 5 November 1983. B. Busto and C. Ramo. MCNG 729. Both specimens verified by P. Pacheco. First records from Portuguesa, ca. 180 km SSW of nearest record from Edo. Yaracuy (Roze 1966).

Liophis lineatus. PORTUGUESA: Municipio Guanare: La Colonia. 19 December 1990. D.C. Taphorn and L. M. Page. MCNG 1250; Municipio Guanarito: N of Guanarito, 5.3 km (road) E of Guanare-Guanarito Rd. on road to La Trinidad, 8°43'33"N, 69°11'44"W, 50 m elev. 1 May 1998. A. L. Markezich and O. J. León. Verified by T. Horger. MCNG 1609. Known from Acarigua in northern Portuguesa (Roze 1966), these specimens extend the range 80 km SW and 100 km S in this state. Records from Portuguesa are apparently rare, as Michaud and Dixon (1987) did not include specimens from this state in their recent comprehensive revision of this species.

Liophis melanotus melanotus. PORTUGUESA: Municipio Sucre: 4 km (road) N Las Guafas, 21 November 1990, 1500 h. A. L. Markezich and O. J. León. MCNG 1608; Municipio Guanare: Guanare. 17 November 1983. B. Busto and C. Ramo. All specimens verified by T. Horger. Localities are 75 km SW and SSW of documented specimens from the Acarigua area of northern Portuguesa (Dixon and Michaud 1992).

Mastigodryas bifossatus. BARINAS: Municipio Rojas: Hato San Pancracio, Santa Rosa. 31 December 1982. B. Busto and C. Ramo. MCNG 545; PORTUGUESA: Municipio Guanare: 15 km E Guanare, Finca Robalito. 29 November 1990. C. Lileystron. Verified by P. Pacheco. MCNG 467; Municipio Guanare: La Colonia. 29 July 1991. D. C. Taphorn. MCNG 1388. All specimens verified by P. Pacheco. First records from west central Venezuela, representing the westernmost records in Venezuela, ca. 250 km WSW and W of nearest records from Edo. Guárico (Roze 1966).

Ninia atrata. PORTUGUESA: Municipio Guanare: UNELLEZ campus, Mesa de Cavacas. February 21, 1984. A. Garcia. Verified by

P. Pacheco; MCNG 740. First record from Portuguesa, filling the middle of a significant range gap of ca. 500 km from north central Venezuela to Edo. Táchira in southwestern Venezuela (Roze 1966).

Oxyrhopus petola. PORTUGUESA: Municipio Guanare: La Colonia. 23 October 1983. MCNG 767; Municipio Monseñor José Vicente de Unda: Chabasquen, Cerro Mollejon. 20 May 1983. B. Busto and C. Ramo. MCNG 765; Municipio Papelón: 27 km (road) SE Guanare on Guanare-Guanarito Rd. 9 July 1993, 2300 h. A. L. Markezich and O. J. León. MCNG 1486. All specimens verified by P. Pacheco. First records from Portuguesa extending range ca. 200–225 km NE and E of first record from west central Venezuela in Edo. Mérida (Esqueda and La Marca 1999; Roze 1966).

Pseudoboa neuwiedii. PORTUGUESA: Municipio Guanare: UNELLEZ campus, pabellon "E." 11 February 1991. O. J. León. MCNG 1328; Municipio Papelón: 22 km (road) SE Guanare on Guanare-Guanarito Rd. 13 July 1993, 2130 h. A. L. Markezich and O. J. León. MCNG 1504. All specimens verified by T. Horger. First records from Edo. Portuguesa, ca. 150 km SW of nearest record from Edo. Yaracuy (Roze 1966).

Sibon nebulata. BARINAS: Municipio Rojas: Hato San Pancracio, Sta. Rosa. 17 August 1980. B. Bockma and C. Ramo. MCNG 67; PORTUGUESA: Municipio Monseñor José Vicente de Unda: Cerro Mollejon, Chabasquen. 25 March 1983. B. Busto and C. Ramo. MCNG 784; Municipio Papelón: 26 km (road) SE Guanare on Guanare-Guanarito Rd. 10 July 1993, 2030 h. A. L. Markezich and O. J. León. MCNG 1496. All specimens verified by P. Pacheco. Roze (1966) reported the nearest record from Agua Blanca near the northernmost tip of Portuguesa. The specimens represent a new state record from Barinas, ca. 150 km S of Agua Blanca, and range extensions in Portuguesa of 80 km WSW and 90 km SSW of Agua Blanca.

Spilotes pullatus. BARINAS: Municipio Rojas: Hato San Pancracia, Sta. Rosa. 31 May 1981. B. Busto and C. Ramo. MCNG 546; PORTUGUESA: Municipio Guanare: La Colonia. 27 April 1980. B. Busto and C. Ramo. MCNG 775; Municipio Ospino: 7.8 km (road) N Estación, 9°25'01"N, 69°32'55"W, 960 m elevation. 26 May 1998. A. L. Markezich. MCNG 2004; Municipio undetermined: carretera Guanare-Guanarito. 3 September 1980. B. Bockma and C. Ramo. MCNG 89. All specimens verified by T. Horger. First record from these states, ca. 120–180 km E of nearest records from Edos. Mérida and Trujillo (Roze 1966; La Marca and Soriano 2000).

Tantilla melanocephala. PORTUGUESA: Municipio Guanare: UNELLEZ campus, Mesa de Cavacas. 16 June 1981. C. Briceno. Verified by P. Pacheco. MCNG 831; Municipio Sucre: 22 km (road) N Mesa de Cavacas. 23 July 1991, 2200 h. A. L. Markezich and O. J. León. Verified by T. Horger. MCNG 1603. This is only the second report of this species in west central Venezuela, ca. 170 km ENE of nearest record from Edo. Mérida (Wilson and Mena 1980).

Elapidae

Micrurus isozonus. PORTUGUESA: Municipio Guanare: UNELLEZ campus. 28 November 1983. B. Busto and C. Ramo. Verified by D.C. Taphorn. MCNG 725; Municipio Ospino: Esparanza, 10.6 km (road) N of intersection with road to Estación, 9°27'27"N, 69°30'49"W, 780 m elev. 10 May 1998, 0900 h. Verified by T. Horger. A. L. Markezich and O. J. León. MCNG 1610. These specimens extend the range of this species in Portuguesa ca. 65 km SSW of nearest known record from Aparición (Roze 1966).

Micrurus mipartitus. PORTUGUESA: Municipio Monseñor José Vicente de Unda: Chabasquen, Cerro Mollejon. 30 November1983. B. Busto and C. Ramo. Verified by P. Pacheco. MCNG 776; Municipio Sucre: Biscucuy. 1989. A. Mejias. Verified by T. Horger. MCNG 1344. First records from Portuguesa filling a range gap of ca. 300 km between previous records from Edo. Yaracuy and Edo. Mérida (Roze 1966, 1996).

Leptotyphlopidae

Leptotyphlops albifrons. LARA: Municipio Iribarren: Barquisimeto. 31 March 1979. B. Bockma. MCNG 834; PORTUGUESA: Municipio Guanare: Guanare. 31 May 1979. No collector listed in catalogue. MCNG 833. Both specimens verified by J. R. Dixon. First record from west central Venezuela, ca. 250 km SSW of nearest record from Edo. Falcón (Roze 1966).

Leptotyphlops macroplepis. PORTUGUESA: Municipio Guanare: Mesa de Cavacas. 9 September 1990. J. L. Atuve. Verified by J. R. Dixon. MCNG 1124. This specimen extends the range of this species in Portuguesa 65 km SSW of the nearest record from Aparición in this state (Roze 1966).

Typhlopidae

Typhlops reticulatus. BARINAS: Municipio Antonio Jose de Sucre: Socopo. 22 March 1981. E. La Marca. MCNG 943. Verified by P. Pacheco; PORTUGUESA: Municipio Papelón: 5 km (road) SE Papelón, Finca Palma Sola, 8°42'18"N, 69°13'02"W, 70 m elev. 28 April 1998. O. Castillo. Verified by T.H. Horger. MCNG 1604. First record from Barinas and a range extension of 80 km S of a recently reported specimen from Acarigua in Portuguesa (Rivas et al. 2001). This species has seldom been recorded from Venezuela, and these specimens represent the second and third ones from the upper llanos of western Venezuela (Dixon and Hendricks 1979).

Viperidae

Bothrops venezuelensis. PORTUGUESA: Municipio Monseñor José Vicente de Unda: Chabasquen, Cerro Mollejon. 29 February 1984. B. Busto and C. Ramo. Verified by P. Pacheco. MCNG 874. First record from Portuguesa. Campbell and Lamar (1989) pointed out conflicts in the literature with respect to the geographic distribution of this species and listed several states in Venezuela from which it is reliably known including Lara, adjacent to Portuguesa, without mentioning specific localities. A specific record from Lara was recently reported (Esqueda and La Marca 1999) from a locality ca. 30 km NE of the specimen from Portuguesa recorded here.

Crotalus durissus. PORTUGUESA: Municipio Guanarito: Palmar de Morrones. 31 January 1983. B. Busto and C. Ramo. Verified by P. Pacheco. MCNG 735. First record from Portuguesa ca. 150 km SW of nearest record from Edo. Trujillo (Roze 1966).

Gekkonidae

Gonatodes vittatus. PORTUGUESA: Municipio Monseñor José Vicente de Unda: Paraiso de Chabasquen, 9°25'56"N, 69°56'48"W, elevation 590 m. 22 April 1998, 1530 h. A. L. Markezich. Verified by T. Horger. MCNG 1605. First record from Portuguesa, ca. 125 km

NE of records from Edo. Mérida (Rivero-Blanco 1979).

Hemidactylus palaichthus. BARINAS: Municipio Bolivar: Barinitas, 8°45'21"N, 70°24'48"W, 440 m. 18 May 1998, 1030–1200 h. A. L. Markezich and O. J. León. Verified by T. Horger. MCNG 1613; PORTUGUESA: Municipio Guanare: Barrio La Arenosa, Guanare. 19 June 1981. H. Cuevas. Verified by A. Bauer and T. Russell. MCNG 417; Municipio Guanarito: Palmar de Morrones. 21 November 1983. B. Busto and C. Ramo. Verified by A. Bauer and T. Russell. MCNG 676. First records from west central Venezuela, ca. 150 km WNW and 130 km NNW of nearest records from near Bruzual, Edo. Apure (Staton and Dixon 1977).

Phyllodactylus ventralis. PORTUGUESA: Municipio Guanare: La Colonia, 9°03'19"N, 69°48'58"W. 2 November 1987. D.C. Taphorn. MCNG 1127; Municipio Guanare: Guanare. 19 July 1983. B. Busto and C. Ramo. MCNG 674; Municipio San Genaro de Boconoito: represa del Rio Boconó. 22 November 1982. B. Busto and C. Ramo. MCNG 401. All specimens verified by P. Pacheco. These specimens extend the range 50–80 km SW of nearest records from the Acarigua and Aparición areas of northern Portuguesa (Dixon and Huey 1970).

Iguanidae

Iguana iguana. PORTUGUESA: Municipio Guanarito: Guanarito. 6 July 1980. B. Bockma and C. Ramos. MCNG 48; Municipio Guanare: Guanare, Barrio Colombia, 26 June 1983. Y. Hernandes. MCNG 442. All specimens verified by P. Pacheco. While it is generally recognized that this species occurs in much of Venezuela, documented records are scarce (Avila-Peres 1995). This is apparently the first record of it from west central Venezuela, 130 km NNW of records near Bruzual, Edo. Apure (Staton and Dixon 1977).

Polychrotidae

Anolis auratus. PORTUGUESA: Municipio Guanare: Guanare, Urb. Hato Modelo. 17 March 1980. B. Bockma and C. Ramo. MCNG 22; Municipio Guanare: UNELLEZ, Mesa de Cavacas. 6 September 1983. B. Bockma and C. Ramo MCNG 853. All specimens verified by E. E. Williams. First records from Portuguesa, 80 km S of nearest record from Edo. Barinas (Avila-Peres 1995; Donoso-Barros 1968).

Anolis nitens nitens. PORTUGUESA: Municipio Guanare: Mesa de Cavacas. 22 April 1980. MCNG 802; Municipio San Genaro de Boconoito: Rio Tucupido, arriba represa. 8 April 1983. MCNG 800. Both specimens collected by B. Busto and C. Ramo and verified by E. E. Williams. First records from Portuguesa, ca. 200 km SW of nearest records from Edo. Yaracuy (Vanzolini and Williams 1970).

Polychrus marmoratus. PORTUGUESA: Municipio Guanare: UNELLEZ campus. 20 June 1991. M. Gonzalez. Verified by P. Pacheco. MCNG 1357. First record from west central Venezuela, ca. 250 km SE of nearest record from Edo. Carabobo (Avila-Peres 1995).

Tropiduridae

Tropidurus hispidus. BARINAS: Municipio Rojas: Hato San Pancracia, Sta. Rosa. 27 November 1983. B. Busto and C. Ramo. MCNG 651; PORTUGUESA: Municipio Guanare: Fundo Sabana Grande, Tucupido. 26 June 1983. B. Busto and C. Ramo. MCNG 649; Municipio Guanare: Guanare. 15 May 1982. C. A. Rodriguez. MCNG 647; Municipio Guanarito: El Palmar de Morrones, Guanarito. 21 November 1983. MCNG 657. All specimens verified by P. Pacheco. First records from Portuguesa. The Portuguesa records are 80 km NNE and the Barinas records 80 km E of nearest record from Barinas in Edo. Barinas (Avila-Peres 1995; Donoso-Barros 1968).

Teiidae

Ameiva ameiva. PORTUGUESA: Municipio Guanare: Fundo Sabana Grande, Tucupido. 26 June 1983. MCNG 620; Municipio Guanare: La Colonia. 17 June 1984. MCNG 793; Municipio Guanarito: Guanarito. 21 November 1983. MCNG 588. All specimens collected by B. Busto and C. Ramo and verified by P. Pacheco. First records from Portuguesa, ca. 80 km NNE of nearest record from Barinas in Edo. Barinas (Avila-Peres 1995; Donoso-Barros 1968).

Cnemidophorus gramivagus. BARINAS: Municipio Sosa: Puerto de Nutrias, just E of lower portion of Rio Apure bridge. 22 June 1996, 1800–1900 h. A. L. Markezich and O. J. León. Verified by C. J. Cole. MCNG 1606; PORTUGUESA: Municipio Guanare: Urb. Fundaguanare, Guanare. 23 April 1981. C. Briceno. Verified by T. Horger. MCNG 328; Municipio Guanarito: 9.7 km (road) SW Guanarito. 21 June 1996, 1800–1900 h. A. L. Markezich and O. J. León. Verified by C. J. Cole. MCNG 1607. First records from Barinas and Portuguesa and previously known only from Edo. Apure in Venezuela. These specimens extend the range ca. 150 km NNW of nearest Apure record (McCrystal and Dixon 1987).

Tupinambis teguixin. PORTUGUESA: Municipio Guanare: La Colonia. 17 June 1984. B. Busto and C. Ramo. Verified by P. Pacheco. MCNG 796. First record of this species from Portuguesa, ca. 130 km NNW of nearest record from Edo. Barinas (Donoso-Barros 1968).

Gymnophthalmidae

Bachia heteropa lineata. PORTUGUESA: Municipio San Genaro de Boconoito: Rio Tucupido, arriba represa. 2 February 1983. B. Busto and C. Ramo. Verified by J. R. Dixon. MCNG 750. First record from Portuguesa, extending the range (distance undetermined) N of record from western Edo. Barinas (Dixon 1973).

Gymnophthalmus speciosus. PORTUGUESA: Municipio Guanare: La Colonia. 19 December 1990. A. L. Markezich and D. C. Taphorn. Verified by C. J. Cole. MCNG 1249; UNELLEZ campus. 18 March 1985. R. Thourex. Verified by P. Pacheco. MCNG 1316. Specimens extend range 90 km S of nearest record from the Acarigua area of Portuguesa (Cole et al. 1990).

Amphisbaenidae

Amphisbaena alba. BARINAS: Municipio Ezequiel Zamora: Pedraza. 25 April 1981. E. La Marca. MCNG 860; LARA: Municipio Urdaneta: 12 km (road) W Santa Inés. 27 November 1990. A. L. Markezich. MCNG 1128; PORTUGUESA: Municipio Guanare: Colonia. 21 November 1990. A. L. Markezich. MCNG 1115; Municipio Sucre: Biscucuy. 20 August 1983. B. Busto and C. Ramo. MCNG 553. All specimens verified by P. Pacheco and D. C. Taphorn. First records from these three states in west central Venezuela representing distances of ca. 225 km SSW, 150 km NE, and 80 km SE of nearest record from Edo. Trujillo in this region

(Donoso-Barros 1968; Esqueda and La Marca 1999; Gans 1962). *Amphisbaena fulginosa*. PORTUGUESA: Municipio Sucre: 4 km (road) N Las Guafas on Guanare-Biscucuy Rd. 21 November 1990, 1500 h. A. L. Markezich and O. J. León. Verified by D. C. Taphorn. MCNG 1116. First record of this species in west central Venezuela, ca. 250 km SE of nearest records from Edo. Falcón (Donoso-Barros 1968; Vanzolini 1951).

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Herpetological Review, 2002, 33(1), 75.

Noteworthy Records for Introduced Reptiles and Amphibians from Florida, USA

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Florida is well known for its non–native herpetofauna (King and Krakauer 1966; Wilson and Porras 1983). The substantial trade in exotic plants and animals and the humid subtropical environment in Florida have been instrumental in perpetuating populations of exotics.

From May 2000 through March 2001, we surveyed areas in Florida where introduced species have been reported and other areas that contained suitable habitat. We utilized a variety of diurnal capture methods including blowguns with corks, fishing rods with barbless hooks (Krysko 2000) and nooses (Strong et al. 1993). In nocturnal situations we searched areas around houses and buildings. Representative voucher specimens were deposited in the Florida Museum of Natural History (FLMNH), Gainesville, Florida. Additionally three new county records were kindly provided by the California Academy of Science (CAS). All of the following records were collected by the authors unless otherwise noted.

Anura

Osteopilus septentrionalis (Cuban Treefrog). HERNANDO Co: Brooksville, North Avenue. 21 June 1995. CAS 199808–10. Collected by P. G. Frank. First county record.

Testudines

Trachemys scripta elegans (Red-eared Slider). VOLUSIA Co: South Daytona, Reed Canal Park. 25 November 2000. UF 122517. These turtles are the most commonly observed species in area ponds and canals, and additional specimens of adults and juveniles were collected 17 March 2001 (UF 122784–6) and 24 June 2001 (UF 124767–8).

Lacertilia

Anolis cybotes (Largehead Anole). MIAMI-DADE Co: Key Biscayne, near the grounds of the old Crandon Park Zoo. 17 December 2000. UF 121416 and 121450. Previously only known from a limited area in northeastern Miami-Dade County (Ober 1973; Wilson and Porras 1983).

Anolis sagrei (Brown Anole). LEE Co: Gasparilla Island (26°42'371"N, 82°16'360"W). 21 December 2000. UF 121462–63. First record from Gasparilla Island. These lizards are common on Gasparilla Island and have likely been established there for some time. GILCHRIST Co: Fanning Springs, Rt. 19, across from entrance to Fanning Springs State Recreation Area. 3 March 2001. UF 122516. New county record. LEVY Co: Chiefland, 1285 Highway 19. 3 March 2001. UF 122515. New county record. MARTIN Co: Lake Okeechobee, jct. CR 71 and US 441. 2 March 2001. UF 122463. New county record. Found in Australian pine tree (*Casuarina equisetifolia*) stand. This record fills a gap in distributional records between St. Lucie and Palm Beach counties. *Anolis sagrei* has now been collected in all 12 Atlantic coastal counties. TAYLOR Co: Econfina River State Park (30°03'31.9"N, 83°54'23.8"W). 20 April 2000. CAS 214327. Collected by R. Lawson, P. G. Frank, N. Frank, and J. Frank. New county record.

Hemidactylus garnotii (Indo-pacific Gecko). CHARLOTTE Co: Gasparilla Island (26°47'677"N, 82°16'706"W). 21 December 2000. UF 121506. New county record. Found under bark of *Casuarina equisetifolia.*

Hemidactylus mabouia (Tropical Gecko). LEE Co: Gasparilla Island (26°42'371"N, 82°16'360"W). 21 December 2000. UF 121464 and 121468–502. New county record. Found in debris and under the bark of *Casuarina equisetifolia.*

Hemidactylus turcicus (Mediterranean Gecko). CITRUS Co: Inverness, Withlacoochee Walking Trail (28°50'16.9"N, 82°19'47.3"W). 2 October 1999. CAS 210987. Collected by R. Lawson, P. G. Frank. New county record.

Iguana iguana (Green Iguana). BROWARD Co: Davie, SW 76 Avenue, 0.4 mi S Griffin Road. 25 March 2001. UF 123126. Davie, Taft Street, 100 yards W of NW 85th Way. UF 123127. 25 March 2001. Both collected by S. B. Thompson. New county record.

Leiocephalus schreibersi (Red–sided Curlytail Lizard). BROWARD Co: Hollywood, 5920 Thomas Street. 16 December 2000. UF 121397–99. New county record.

Serpentes

Ramphotyphlops braminus (Brahminy Blind Snake). ALACHUA Co: Gainesville, 1700 SW 23rd Drive. 17 March 1998. (UF 111650). Collected by Calvin Teele. New county record. Collected from under debris at USDA Laboratory.

Acknowledgments.—We thank R. Lawson (CAS) for permission to use their records; J. N. Decker, R. H. Robins, A. Soleymani, S. B. Thompson, A. M. Roth, and C. Teele for help obtaining specimens in the field; C. M. Miskis and S. H. and T. B. Townsend for providing housing; M. A. Nickerson and S. A. "Picklebarrel" Johnson for helpful suggestions on this paper.

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BOOK REVIEWS

Herpetological Review, 2002, 33(1), 76–77.

Reptiles & Amphibians of the Smokies, by Stephen G. Tilley and James E. Huheey. 2001. Great Smoky Mountains Natural History Association, Gatlinburg, Tennessee. vii + 143 pp. Softcover. US $9.95. Available from Great Smoky Mountains Natural History Association, 115 Park Headquarters Road, Gatlinburg, Tennessee 37738, USA.

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The Great Smoky Mountains are an important center of herpetofaunal diversity, especially for amphibians. With more than 40 species of amphibians and 35 species of reptiles, Great Smoky Mountains National Park, the focus of this short, descriptive guide, is also the most visited national park in the United States. Through the years, the Great Smoky Mountains Natural History Association has produced a number of pocket-sized field guides (e.g., on birds and trees) which allow visitors to quickly identify the fauna and flora of the park. *Reptiles & Amphibians of the Smokies* is the latest in this series of guidebooks. The audience for which it is written is the casual visitor who has some interest in amphibians and reptiles, and may wish to identify animals observed during a visit to the park. It does not present detailed information on the natural history of the herpetofauna specifically pertaining to the park, such as contained in Huheey and Stupka's (1967) long outdated, but still very informative, book, and it does not purport to be a regional field guide.

The book is organized into basically two parts. The first part contains an introduction on how to use the book, sections on amphibian and reptile diversity within the park, notes on life histories and interesting facts about the biology of amphibians and reptiles, and several pages each on the ecological and geological settings of the Great Smokies and the need for the preservation of biodiversity. The style of writing and the information content is extremely basic, that is, for the non-biological public, and the authors have done a fine job of presenting information in a very readable and non-technical format. I found little to quibble with in this section, but there are a few inconsistencies.

The authors state that 12 anurans are found in the park on p. 21, but include 13 species accounts and use the figure 13 elsewhere in the book. Actually, both figures are correct in a sense. Whereas 13 species have been reported from the park, *Acris crepitans* probably never occurred within its boundaries despite its inclusion in previous checklists (e.g., Huheey and Stupka 1967). The authors use the spelling Pygmy in some places, but Pigmy (e.g., for the Pigmy Salamander) elsewhere. I would quibble with a few statements here and there, such as that Four-toed Salamanders are uncommon "even where they do occur;" actually, this species can be found in good numbers at certain times of the year and at specific localities. Such minor criticisms are few, however, and do not detract from the book's purpose to inform the general public.

The second part of the book (84 pp) is composed of species accounts: 30 salamanders, 13 frogs, 7 turtles (plus one miscellaneous "other turtles" account), 8 lizards (*Eumeces fasciatus* and *E. inexpectatus* are treated in a single account), and 23 snakes. Although the Green Salamander (*Aneides aeneus*) is known historically from the park, its status is discussed only in the introduction and not in a specific species account. One page is devoted to each account, and about half the page consists of a beautiful full-color photograph. Although not stated explicitly, the animals photographed did not necessarily originate from the park, as the authors used generic photos at least for the rare or recently discovered species. The remainder of the account consists of the briefest of descriptions, information on habitat and life history, and similar species. Space limitations preclude much detail, but the general information provided probably is enough for a casual park visitor.

After conducting intensive surveys in the Great Smokies during the last four years, I can find a number of statements in the species accounts with which I disagree. For example, Hellbenders have been found in Deep Creek and Oconaluftee River, despite the authors' assertion that there are no recent records outside of Little River; Eastern Painted Turtles no longer occur in Gum Swamp (no sightings in four years or more, despite intensive surveys); Northern Map Turtles occur at least to the vicinity of the Abrams Creek Ranger Station, not just near the mouth of Abrams Creek; the Mud Salamander in the park is clearly not the Midland Mud Salamander (*Pseudotriton montanus diastictus*). What really disturbs me, however, are the data presented for the first time without attribution: the first report of Stinkpots from the park (although there are no specimens or photographs of the actual turtle found); the data on current distribution of Seepage and Junaluska Salamanders; the sighting at Abrams Creek of *Rana sphenocephala* in 2000. This information was collected by U.S.G.S. survey crews, not the authors, and is contained in reports to the park. Although public information, it would have been nice to acknowledge the source, and the potential biases, of the data. As it stands, a reader is left with the impression that the information results solely from the authors' observations. New records or sightings of species thought extirpated from public lands should be properly reported in the published, including popular, literature only when accompanied by specimens or unequivocal photographs.

Despite these criticisms, the book fulfills the goals of the Great Smoky Mountains Natural History Association to provide the layman with a generally high-quality and technically accurate overview of the amphibians and reptiles of the Great Smoky Mountains National Park. The color plates, in particular, are certain to pique interest and appreciation of the diverse herpetofauna. The

price is reasonable. However, professional biologists should delve deeper into the origin of distributional and life history information relating to the amphibians and reptiles of the park, and verify the accuracy of records and observations. What really is needed for the Smokies, and indeed for all major national parks, is a field guide of the quality of Koch and Peterson's (1995) guide to the amphibians and reptiles of Yellowstone and Grand Tetons national parks.

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Amphibians and Reptiles of Pennsylvania and the Northeast, by Arthur C. Hulse, C. J. McCoy, and Ellen J. Censky. 2001. Cornell University Press, Ithaca, New York. xi + 419 pp, Hardcover, US $39.95. ISBN 0-8014-3768-7.

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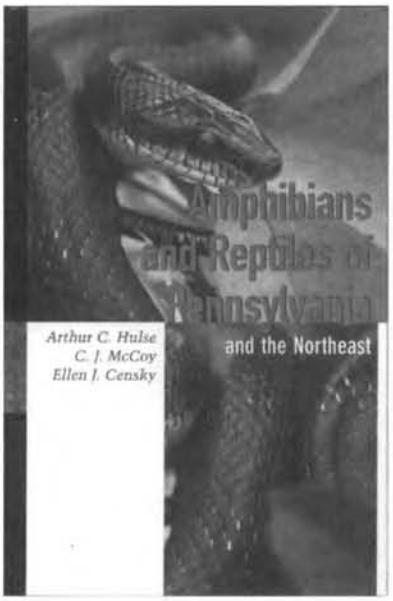

Amphibians and Reptiles of Pennsylvania and the Northeast is the first complete treatment of the amphibians and reptiles in the state. McCoy (1982) provided excellent maps, and a bibliography, but did not report on the ecology, natural history and conservation. The classic accounts by Surface (1906, 1907, 1908, 1913) did not include all the species and were limited to the knowledge of the day.

This book covers the 76 species found in Pennsylvania, plus nine additional species found in other northeastern states. A checklist of the species by state is not included. This would be a helpful tool. The one group not covered, or even mentioned, is the sea turtles. Sea turtles are covered in recent works on Connecticut (Klemens 1993), Maine (Hunter et al. 1999), and New York (Breisch et al. 1998).

Amphibians and Reptiles of Pennsylvania and the Northeast consists of an introduction, amphibian accounts, reptile accounts, and appendices. The Introduction includes good information on the landforms, climate, and vegetation of Pennsylvania. Information on the other northeastern states is general, and lacks the detail provided for Pennsylvania. There are numerous times when the authors mention a particular county in the state to highlight their description. Unfortunately, there is NO map of the state showing the names of the counties. This oversight makes it difficult to follow the information in the introduction and throughout the book. A map placed on the inside front cover would be a nice addition when this book is reprinted.

Species accounts include a Description, Confusing Species, Habitat and Habits, Reproduction, Remarks, and Distribution, along with a map, and are complete for most species. However, the section headings are in the same font and style as the text, making it difficult to quickly locate specific information.

I found the Distribution section troubling, in part because of the absence of a state map for reference. The range maps were a disappointment, as they cover the northeastern states only with a general indication of range, largely derived from the maps of Conant and Collins (1991). However, the maps for Pennsylvania show county lines and contain point locality data of several types. Unfortunately, the Pennsylvania map is so small it is hard to make out the symbols. I would have preferred a larger Pennsylvania map, as this is the main area of the book, with a smaller inset map depicting the northeast region.

Moreover, the maps for areas outside of Pennsylvania could have been rendered more accurate if the authors had consulted various state and regional works. For several species, the ranges depicted are much larger than known distributions (e.g., Eastern Spadefoot, Eastern Box Turtle, Red-bellied Snake, Timber Rattlesnake).

A highlight of many of the newer state works has been the inclusion of high quality photographs. One of the best is *The Amphibians and Reptiles of Missouri* (Johnson 2000), in which the photos are positioned with the species accounts. I realize that it is more expensive to place the photos throughout the book, rather than in one signature, but it makes for a more user-friendly book. There are many nice photos in this book, but unfortunately there are just as many that are too small. Two examples are photos 3 and 33, which if properly cropped would be more effective. Although I was pleased to see photographs of salamander larvae, those for tadpoles were missing.

The only species account that fell short of the mark was that for the gray treefrogs (*Hyla chrysoscelis* and *H. versicolor*), combined into a single account, despite different habitat requirements and behaviors (Oldfield and Moriarty 1994; Vogt 1981). *Hyla chrysoscelis* is restricted to the southern edge of Pennsylvania and not found in any of the New England states or New York (Breisch 1998; Hunter et al. 1999; Klemens 1993; Cline, *in press*; Taylor 1993), while *H. versicolor* is the dominant species in these areas. These species should have separate accounts as was done for *Ambystoma laterale* and *A. jeffersonianum*.

The Mensural and Reproductive Data tables should have been incorporated into the species accounts. The appendix seems to have been an academic exercise without a lot of practical application. The Glossary covers most of the technical and specialized terms and is well organized. The Literature Cited is extensive, and although not a complete bibliography to Pennsylvania herpetology, it comes close.

Amphibians and Reptiles of Pennsylvania and the Northeast does

a very good job on Pennsylvania, but not the northeast. All measurements and ecological observations pertain to Pennsylvania specimens. It seems as if the other northeastern states were an afterthought, quickly tacked on the original manuscript. I recommend this book for anyone interested in or working on Pennsylvania reptiles and amphibians. For those interested in other northeastern states check out Klemens (1993) for Connecticut, Rhode Island, and southern Massachusetts; Hunter et al. (1999) for Maine and adjacent New Hampshire; and Breisch (in prep.) for New York.

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