

Conservation Status of United States Species, pp. 910–912. Univ. California Press, Berkeley). Herein I provide evidence of Lesser Siren predation by a Coyote (*Canis latrans*).

On 2 March 2012, I found a dead adult male Lesser Siren (277 mm SVL, 394 mm total length) in a shallow (<30 cm), seasonally-inundated pond on Horseshoe Lake State Fish and Wildlife Area HLSFWA), Alexander Co., Illinois, USA. Bite marks and scratches on the siren's head, body, and tail indicate it was killed by a mammal. I compared a complete set of canine-teeth punctures on the siren's body with skulls of carnivorous mammals that occur in southern Illinois. Upper and lower canines of Coyote skulls matched the puncture wounds in the siren.

Although Coyotes feed principally on terrestrial animals (Bekoff 1977. Mammalian Species 79:1–9), they have been observed in water capturing aquatic prey (Grimm 1940. J. Mammal. 21:458–459; Minckley 1965. J. Mammal. 47:137). Coyotes are common on HLSFWA (pers. obs.) and may be attracted to wetlands in late-winter and early spring by chorusing frogs. The Coyote did not eat the Siren. Copious mucous produced by Lesser Sirens (Reno et al. 1972. Copeia 1972:625–631) may be distasteful to Coyotes or may have facilitated the Siren's escape after receiving mortal injuries.

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#### ANURA — FROGS

**ELEUTHERODACTYLUS COOKI (Coquí Guajón). NESTING SITE.** *Eleutherodactylus cooki* is a threatened direct-developing frog endemic to southeastern Puerto Rico. *Eleutherodactylus cooki* is considered a habitat specialist that uses caves formed by large granodiorite boulders, crevices, and grottos in rocky streams for reproduction (Joglar 1998. Los Coquíes de Puerto Rico: Su Historia Natural y Conservación. Editorial de la Universidad de Puerto Rico, San Juan. 232 pp.). Males can attend up to four clutches with an average size of 17 eggs per clutch, which are laid on vertical surfaces or in crevices of these plutonic rocks (Burrowes 2000. Herpetologica 56:375–386). Herein we report two new *E. cooki* nesting sites that are not on the typical granodiorite substrate.

On 16 Nov 2012, we found an adult male (40.4 mm SVL; 4.93 g) guarding one egg clutch laid on the surface of a green bamboo trunk (Fig. 1A). The bamboo (*Bambusa vulgaris*) was ca. 2 m away from large granodiorite formations in a small stream in Patillas, Puerto Rico (18.050°N, 65.990°W). The egg clutch contained 16 gray embryos corresponding to developmental stage VI: legs are visible and the white yolk is greatly reduced (Burrowes 2000, *op. cit.*).

On 19 Nov 2012, we found an adult male guarding a double-clutched nest in a muddy substrate located below a large boulder (Fig. 1B). The nesting site was located ca. 1 m away from the stream bank, which is part of a designated U.S. Fish and Wildlife Service critical habitat (Unit 2: Montones in Las Piedras, Puerto Rico; 18.148°N, 65.917°W). We observed five recently hatched juveniles from one of the clutches, and 14 embryos in developmental stage V: pink coloration, frequent rapid movements (Burrowes 2000, *op. cit.*).

Both of these localities were characterized by a high abundance of calling *E. cooki* males. Thus, our observations suggest

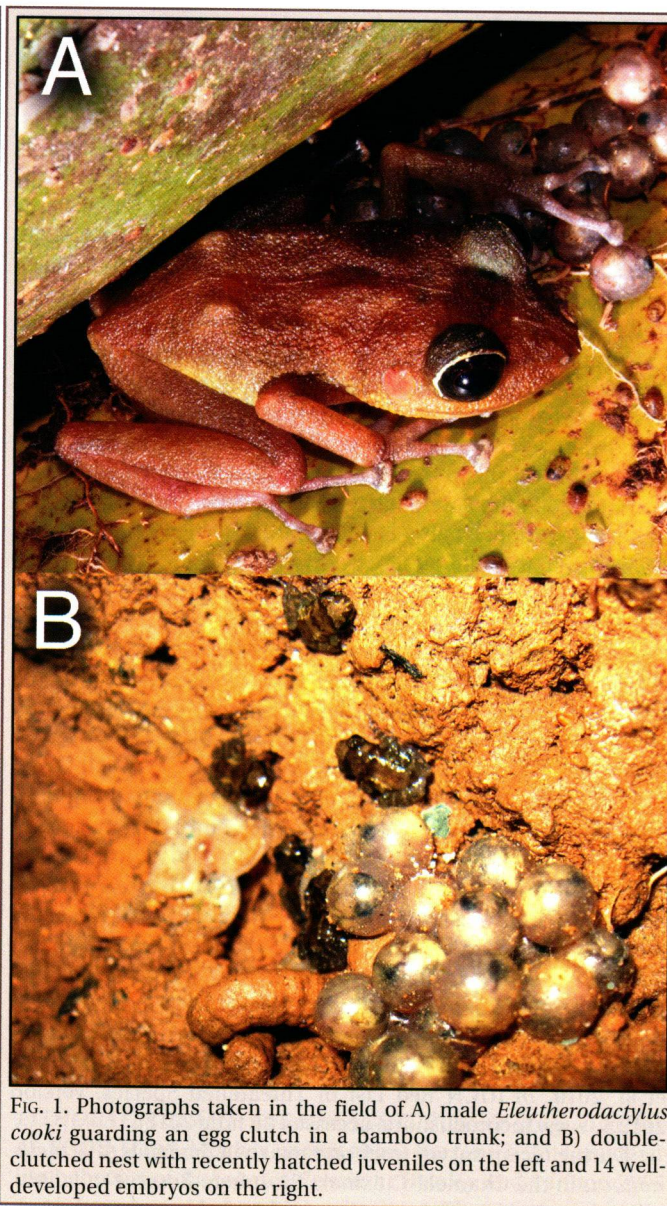


FIG. 1. Photographs taken in the field of A) male *Eleutherodactylus cooki* guarding an egg clutch in a bamboo trunk; and B) double-clutched nest with recently hatched juveniles on the left and 14 well-developed embryos on the right.

that when nesting sites on granodiorite surfaces are limited, *E. cooki* can select other substrates to lay and attend egg clutches.

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**LEPTODACTYLUS BUFONIUS (Oven Frog). PREDATION.** Ants have been documented as predators of juvenile anuran (Clerke and Williamson 1992. Austr. Zool. 28:64–67), and eggs (Dayton and Jung 1999. Herpetol. Rev. 30:164; Schalk 2012. Herpetol. Rev. 43[4]:635). The following observation documents the predation of tadpoles of *L. bufonius* by ants.

On 19 March 2012 at 2100 h, we came upon a pond that had recently dried (< 24 h) in the Yande Yari guard post (18.69181°S, 62.30192°W; WGS 84), Kaa-Iya National Park, Cordillera Province, Santa Cruz Department, Bolivia. On the still-moist mud we observed a total of 28 *Leptodactylus bufonius* tadpoles that were



being attacked by black ants (ca. 10 mm in length; Formicidae). The tadpoles were still alive; as they were attacked they would flick their tails from side to side in an attempt to free themselves from the jaws of the ants. We observed the ants for ca. 20 minutes, during which time two tadpoles were carried off by several ants.

The presence of breeding ponds across the Chacoan landscape is extremely dynamic; ponds can dry down and refill completely multiple times within a rainy season (pers. obs.). Many anurans of the Gran Chaco possess physiological or behavioral adaptations to cope with the xeric conditions of region (Schalk 2012. *Herpetol. Rev.* 123–124, and references therein). With this observation, it appears that tadpoles of *L. bufonius* can persist outside of the water, at least for short periods of time, but it also exposes them to terrestrial predators they would not otherwise encounter.

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**LEPTODACTYLUS MELANONOTUS (Sabinal Frog). ENDO-PARASITISM.** *Leptodactylus melanonotus* is a small frog ranging from NW Mexico to Central America and Ecuador, in arid and wet mountain woodlands. The species is nocturnal, semi-aquatic, insectivorous, oviparous, and can persist in anthropogenically disrupted areas; it is indeed an indicator of impacted areas (Ramírez-Bautista and García 2002. In Noguera et al. [eds.], *Historia Natural de Chamela*, pp. 251–264. Universidad Nacional Autónoma de México). According to IUCN – the World Conservation Union, *Leptodactylus melanonotus* is listed in the category of Least Concern with populations considered as “stable” (Solís et al. 2010. In IUCN Red List of Threatened Species. Version 2012.1, www.iucnredlist.org, accessed 28 June 2012).

During recent survey work on metazoan parasites of *L. melanonotus* in the Chamela-Cuixmala Biosphere Reserve in Jalisco, west-central Mexico, 20 specimens of *L. melanonotus* were examined for parasitic mites. One frog (prevalence 5%) was parasitized with 10 chiggers *Hannemania hylae* (Leeuwenhoeikiidae) from Chamela Creek (19.52738°N, 105.06994°W). Chiggers were found on the ventral skin, into the subdermal layer of the trunk and thighs of the host. Frogs were collected under permit FAUT-0250 issued to Gerardo Suzán and will be deposited at Colección Herpetológica, Estación de Biología Chamela. Voucher chigger specimens are housed at the Colección Nacional de Ácaros, Universidad Nacional Autónoma de México, Instituto de Biología, México, D.F., with accession numbers CNAC 007098–007102.

This is the first record of *Hannemania hylae* on *Leptodactylus melanonotus*. This chigger ranges from the southwestern USA to Argentina. It has previously been reported to parasitize *Hyla arenicolor*, *Pseudacris cadaverina*, and *Eleutherodactylus guttifer* from several localities in the USA (Jung et al. 2001. *Herpetol. Rev.* 32:33–34; Loomis and Welbourn 1969. *Bull. South. California Acad. Sci.* 68:160–168). Also, it has been reported from *Pseudacris cadaverina*, *Lithobates berlandieri*, *Eleutherodactylus* sp., *Eleutherodactylus longipes*, *Lithobates* sp., *Scaphiopus couchii*, and *Incilius mazatlanensis* from Mexico (Espino del Castillo et al. 2011. *Int. J. Acarol.* 37:427–440; Goldberg et al. 2002. *Herpetol.*

*Rev.* 33:301–302; Hoffmann 1969. *Rev. Latinoam. Microbiol. Parasitol.* 11:209–216; Hoffmann and López-Campos 2000. *Biodiversidad de los Ácaros en México*. CONABIO, UNAM, México. 230 pp.; Loomis and Welbourn 1969, *op. cit.*); and also known to infest *Hypsiboas curupi* from Argentina (Alzuet and Mauri 1985 [1987]. *Rev. Soc. Entomol. Argentina* 44:111–116).

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**LEPTODACTYLUS SAVAGEI (Savage's Thin-toed Frog). PREY.** *Leptodactylus savagei* is a large species distributed in primary and secondary forests, forest edges, and deforested areas from Honduras, Nicaragua, Costa Rica, Panama, and scattered localities in both the Caribbean and Magdalena Valley regions of Colombia, from sea level to 1385 m (Heyer 2005. *Arq. Zool.* 37:269–348; Heyer et al. 2010. *Cat. Amer. Amphib. Reptiles* 867:1–19). This species is known to feed on diverse prey types from arthropods to small vertebrates (Savage 2002. *The Amphibians and Reptiles of Costa Rica: A Herpetofauna between Two Continents, between Two Seas*. Univ. Chicago Press, Chicago, Illinois. xx + 934 pp). Among vertebrate prey items, *L. savagei* is known to feed on adults of both *Hypsiboas rosenbergi* and *Engystomops pustulosus* (Kluge 1981. *Misc. Publ. Mus. Zool., Univ. Michigan* 160:1–170; Ryan et al. 1981. *Behav. Ecol. Sociobiol.* 8:273–278). In Colombia, *L. savagei* and *E. pustulosus* occur sympatrically in the Middle Valley of the Magdalena River. Based on a stomach content analysis, herein we report the predation of *L. savagei* on *E. pustulosus* at an open area in the Reserva Rio Manso (5.666°N, 74.7745°W, WGS84; ca. 220 m elev.), municipality of Norcasia, department of Caldas.

On 12 May 2010 at 1924 h, GGD collected an adult male *L. savagei* (SVL 58.7 cm; MHN-UC 460) on the border of a small pond about 1 m diameter, with a chorus of *E. pustulosus*. The stomach of the *L. savagei* contained two *E. pustulosus*, a mature female (26.8 mm SVL; MHN-UC 461) and other individual (24.7 mm SVL; not sexed due its state of decomposition). To our knowledge, this is the first record in Colombia of *L. savagei* feeding on *E. pustulosus* and the second report through its distribution range. The specimens are housed on Museo de Historia Natural of the Universidad de Caldas (MHN-UC), Manizales, Colombia.

We suggest that predation of *E. pustulosus* by *L. savagei* could be an opportunistic event or by convenience, because anurans that predate other anurans are not predators specialized on anurans, but feed on them with regularity (Toldo et al. 2007. *J. Zool.* 271:170–177). Because *L. savagei* often breeds near sites of activity of *E. pustulosus* (Ryan et al. 1981, *op. cit.*), the syntopic occurrence of these two species during reproductive aggregations can promote the predation of the latter species by an opportunistic predator like *L. savagei*.

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