that of the other ducks in the flock. After two hours, all the ducks flew away.

Unfortunately, I do not know the fate of the duck in this observation. Nonetheless, it is interesting that the duck was able to consume the newt, and that it did not exhibit symptoms of poisoning for at least two hours. Birds, including *A. platyrhynchos*, are reported to be highly susceptible to the toxin of *T. granulosa* (Storm 1948. Herpetology of Benton Co., Oregon. Ph.D. Thesis, Oregon State Univ., Corvallis. 280 pp.; Brodie 1968. Copeia 1968:307–313; Mobley and Stidham 2000. Wilson Bull. 112:563–564). Indeed, the only existing account of duck predation on *T. granulosa* relates an observation of a female *A. platyrhynchos* found dead with an adult male *T. granulosa* in its crop (Storm, *op. cit.*). Existing data suggest that, were the duck affected by the newt's poison, 15 min. is a sufficient interval in which to exhibit symptoms, particularly given the rapid metabolic rate of ducks and the relatively short time required to induce symptoms in much larger animals (Brodie, *op. cit.*; Bradley and Klika 1981. J. Am. Med. Assoc. 246:247; Rombough 2008. Herpetol. Rev. 39:336). Although regional variation in newt toxicity has been documented (Brodie and Brodie 1990. Evolution 44:651–659; Brodie and Brodie 1991. Evolution 45:221–224), the reported susceptibility of birds suggests that the *A. platyrhynchos* would be expected to show some symptoms of poisoning, even at relatively low levels of toxicity. Why this one did not is puzzling. It is also puzzling that the newt's noxious skin secretions did not repel the duck. It may be that dipping the *T. granulosa* in the water was the duck's attempt to rinse off these skin secretions, though this is speculation on my part.

This observation adds to a growing body of literature that suggests amphibians might be seasonally important food sources for ducks, particularly during periods of high protein need (Wells 2007. Ecology and Behavior of Amphibians. University of Chicago Press, Chicago, Illinois. 1400 pp.; Rombough and Bradley 2010. Herpetol. Rev. 41:203), an aspect of the birds' life history that might have been overlooked because of the timing and location of many previous studies of *A. platyrhynchos* diet.

I thank Michael O'Loughlin for reviewing this note.

CHRIS ROMBOUGH, Rombough Biological, P.O. Box 365, Aurora, Oregon 97002, USA; e-mail: rambo2718@yahoo.com.

ANURA — FROGS

***ADENOMERA HYLAEDACTYLA* (Napo Tropical Bullfrog). PREDATION.** There are many published accounts of Giant Fishing Spiders (*Ancylometes rufus*) and other ctenid spiders consuming frogs (Prado and Borgo 2003. Herpetol. Rev. 34:238–239; Toledo 2005. Herpetol. Rev. 36:395–400; Melo-Sampaio et al. 2012. Herpetol. Rev. 43:636–637). At 2311 h on 5 August 2011 an adult *Adenomera hylaedactyla* was found being preyed upon by an *Ancylometes rufus* in leaf litter (Fig. 1). Five minutes later, another spider (*Ctenus* sp.) was observed preying upon a juvenile *A. hylaedactyla* (Fig. 2). Both predation events occurred in a small forest fragment in Rio Branco, Acre, Brazil (9.911880°S, 67.767382°W, WGS 84; 173 m elev.). At the time of the observation, the spiders were immobilizing the frogs by biting on either side of the body with their chelicerae and injecting venom into the lateral portion near the groin. Our observations lasted 30 minutes using white headlamps. We did not observe any resistance or fight behavior by the frogs, possibly due to the quick effect of the spiders' toxins.

FIG. 1. *Ancylometes rufus* preying on an adult *Adenomera hylaedactyla*.

FIG. 2. *Ctenus* sp. preying on a juvenile *Adenomera hylaedactyla*.

PAULO ROBERTO MELO-SAMPAIO, Departamento de Vertebrados, Museu Nacional, Quinta da Boa Vista – São Cristóvão – CEP: 20140-040, Rio de Janeiro, Rio de Janeiro, Brazil (e-mail: prmelosampaio@gmail.com); **LORENA CORINA BEZERRA DE LIMA**, Laboratório de Ecologia e Evolução, Instituto Butantan, Av. Dr. Vital Brazil, 1500 – Butantã – CEP: 05503-900 São Paulo, São Paulo, Brazil (e-mail: lorenacorinabezerradelima@gmail.com); **JÚNIOR MARCOS LIMA MACIEL**, (e-mail: junior.maciel@gmail.com); **CAMILA MONTEIRO BRAGA DE OLIVEIRA**, (e-mail: camila.mbo@gmail.com); **RAELLEN DA SILVA MOURA**, União Educacional do Norte, BR 364 Km 02 – Alameda Hungria, 200 – Jardim Europa II – CEP: 69.915-497, Rio Branco, Acre, Brazil (e-mail: raellensilva@gmail.com).

***ATELOPUS CARRIKERI* (Guajira Stubfoot Toad) and *ATELOPUS LAETISSIMUS* (Santa Marta Harlequin Frog). INTERSPECIFIC AMPLEXUS.** Amphibian reproduction is linked to the communication strategies and the acoustic, visual, and chemical signals produced by breeding pairs (Bowcock et al. 2008. Anim. Behav. 75:1571–1579; Wells 2010. The Ecology and Behavior of Amphibians. University of Chicago Press, Chicago, Illinois. 1400 pp.). However, signals do not always guarantee intraspecific mating (Wells 2010, *op. cit.*). Here, we report the first observation of interspecific amplexus between *Atelopus carrikeri* and *A. laetissimus*, two amphibian species endemic to the Sierra Nevada de Santa Marta, Colombia (SNSM). The SNSM is an isolated mountain range located on the northeastern Caribbean coast of Colombia. The SNSM National Park boasts extremely high levels of biodiversity and endemism and was recently ranked the world's most irreplaceable protected site (Le Saout et al. 2013. Science 342:803–805).

Atelopus carrikeri inhabits paramo ecosystems at high elevations between 2900 and 4800 m elev. (Rueda-Solano 2012. Herpetotropicos 8:61–66; Rueda-Solano et al. 2016. J. Therm. Biol. 58:91–98), whereas *A. laetissimus* inhabits cloud forests and is usually found at lower elevations of 1500–2800 m elev. (Ruiz-Carranza et al. 1994. Revista Acad. Colomb. Ci. Exact. 19:153–163). The species are listed as Critically Endangered and Endangered, respectively (http://dx.doi.org/10.2305/IUCN.UK.2010-2.RLTS.T54496A11143667.en; http://dx.doi.org/10.2305/IUCN.UK.2014-3.RLTS.T54519A3015811.en; 27 April 2017).

We recorded interspecific amplexus between a male *A. carrikeri* and female *A. laetissimus* (Fig. 1) at 2130 h on 20 June 2016, in cloud forest at a location locally known as the Pascual stream, in San Pedro de la Sierra, in the Cebolletas mountain range on the western slope of the SNSM, Cienaga, Colombia (10.91944°N, 73.93056°W, WGS 84; 2000 m elev.). During our two-day field expedition, we recorded a reproductive event of *A. laetissimus,* with more than 20 observations of intraspecific *A. laetissimus* amplexus (Fig. 2). We easily recognized the male *A. carrikeri* due to its smooth skin with bright coloring and big size with sturdy limbs, and darkened iris; which is very different than male *A. laetissimus*.

We are uncertain how this amplexus occurred since they are usually allopatric, utilizing different ecosystems in the SNSM. However, a plausible hypothesis is that the Pascual stream begins in the paramo and crosses a large part of the Cebolletas mountain range until it reaches the Sevilla river. This path creates zones of contact between the paramo and forested ecosystems, which would allow for *A. carrikeri* individuals to disperse into the distributional limits of *A. laetissimus*. This potential corridor may allow for the occurrences of interspecific amplexus between these two *Atelopus* species. The result of this amplexus may be the hybridization or introgression of genes between the two species, similar to reported hybridizations between *Rhinella atacamensis* and *R. arunco* (Correa et al. 2012. J. Herpetol. 46:568–577). However, we are not certain hybridization will happen. Our new finding of the amplexus between interspecific Bufonids accompanies other similar records within the family (Haddad et al. 1990. Rev. Bras. Biol. 50:739–744; Machado and Bernarde 2011. Herpetol. Notes 4:167–169; Correa et al. 2012, *op. cit.*; Flores-Hernández and Martínez-Coronel 2014. Acta Zool. Mex. 30:395–398; Sodré et al. 2014. Herpetol. Notes. 7:287–288; Costa-Campos et al. 2016. Acta Zool. Mex. 32:385–386). Nonetheless, this finding could have important conservation implications for *Atelopus* populations in the SNSM.

FIG. 1. Interspecific amplexus between a male *Atelopus carrikeri* (top) and a female *Atelopus laetissimus* (bottom) from Pascual stream, 2200 m cloud forest, during the reproductive season in June 2016, in the Sierra Nevada de Santa Marta, Colombia.

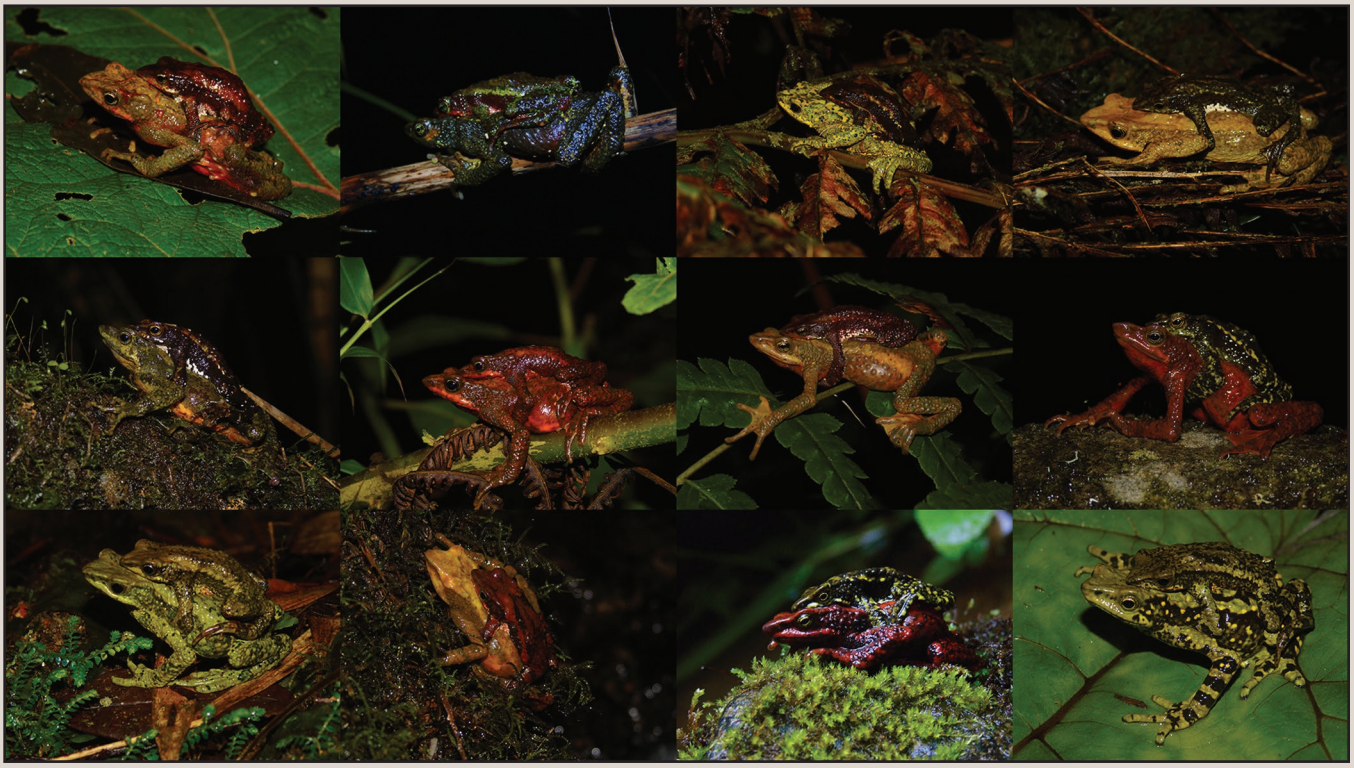

FIG. 2. Multiple intraspecific amplexus between conspecific *Atelopus laetissimus* encountered in the Pascual stream, in San Pedro de la Sierra, during 20–21 June 2016, in the Sierra Nevada de Santa Marta, Colombia.

JOSÉ LUIS PÉREZ GONZÁLEZ, Grupo de Investigación en Ecología Aplicada, Facultad de Ciencias Básicas, University del Magdalena, Santa Marta, Colombia (e-mail: joseluisperezgonzalez2407@gmail.com); **NICOLETTE ROACH**, Department of Wildlife, Fisheries and Ecological Sciences, Texas A&M University, College Station, Texas 77843, USA; Global Wildlife Conservation, PO Box 129, Austin, Texas 78767, USA (e-mail: nroach@tamu.edu); **LUIS ALBERTO RUEDA SOLANO,** Grupo de Investigación en Ecología Aplicada, Facultad de Ciencias Básicas, University of Magdalena, Santa Marta, Colombia; Grupo Biomics, Facultad de Ciencias, University de los Andes, Bogotá, Colombia (e-mail: biologoluisrueda@gmail.com).

***ATELOPUS SPUMARIUS* (Pebas Stubfoot Toad). BEHAVIOR.** Unlike the iconic Central American *Atelopus* species, little is known about the behavior of Amazonian *Atelopus* species. During field work in Amazonia I was able to observe and film, to my knowledge, previously undescribed behavior of *A. spumarius* sensu lato (Lötters et al. 2002. Salamandra 38:95–104) in three different individuals of two different populations, one on each side of the Amapari River near the village of Serra do Navio, Amapá, Brazil (A: at 1120 h on 6 April 2016 at 0.9426000°N, 51.9437667°W, 108 m elev.; B: at 1340 h on 7 April 2016 at 0.88876°N, 52.02463°W, 91 m elev.; C: at 1120 h on 9 April 2016 at 0.88916°N, 52.02416°W, 91 m elev., WGS84). The animals were completely undisturbed when filmed in their natural habitat from a minimum distance of ca. 4 m. The observed individuals were all adult males (A. SVL = 3.01 cm, 1.47 g; B. SVL = 2.77 cm, 1.57 g; C. SVL = 2.85 cm, 1.41 g) that were calling at the time of encounter or started calling during the encounter. All three individuals were roaming on a branch or a tree trunk (Fig. 1) and eventually, when sitting, shortly rubbed their venters on the wood in a shaky or swaying movement. The behavior was initiated by slightly lifting the posterior, followed by moving the venter to the left and right in a swaying manner (video footage of this behavior can be viewed at: https://tinyurl.com/hq7j4zs). In terms of duration it took ca. 4–5 s from beginning to termination of this distinct behavior. In all incidents it was displayed in close proximity to the used calling spot on the same branch or tree trunk. The behavior was observed before as well as after calling activities. Further, in the footage of the third observation one can clearly recognize liquid excretion during the behavior (for video footage see: https://tinyurl.com/y9ftpgv2). Since the same individual was filmed urinating some minutes prior to the excretion event (also visible in the footage), I have reason to assume a function other than bladder emptying, especially as the origin of the liquid cannot be stated with certainty. Further observations and examination of the secretion as well as the nature and texture of the skin in the involved area will help to understand whether the observed behavior could be a manner of territorial marking.

FIG. 1. Typical position of a male *Atelopus spumarius* sensu lato on a branch, in which the described behavior was observed.

FIG. 1. *Barycholos ternetzi* being preyed upon by an *Ancylometes concolor* in the municipality of João Pinheiro, Minas Gerais, Brazil.

DANIELA C. RÖSSLER, Trier University, Department of Biogeography, Am Universitätsring 15, 54296 Trier, Germany; e-mail: roesslerdaniela@aol.com.

***BARYCHOLOS TERNETZI* (Chimbo Frog). PREDATION.** *Barycholos* is a monotypic genus containing only *B. ternetzi* (Craugastoridae) and is endemic to the Cerrado biome (Valdujo et al. 2012. S. Am. J. Herpetol. 7:63–78). This species is commonly found in riverine forest litter and permanent streams with a rocky bed in the Cerrado and gallery forests (Bastos et al. 2003. Anfíbios da Floresta Nacional de Silvânia, Estado de Goiás. Stylo Gráfica e Editora. Goiânia, Goiás. 29 pp.; Araújo et al. 2007. Check List 3:153–155).

At 1910 h on 24 May 2016, we found an individual *Ancylometes concolor* feeding on an adult male *B. ternetzi* (total length = 1.5 cm; municipality of João Pinheiro, Minas Gerais, Brazil; 17.41121°S, 45.66604°W, WGS84; elev. 691). At the moment of the observation, the air temp. was 23°C and the water temp. 22°C. The predator was found with its prey already dead in the stream margin on stony substrate.

Spiders from the genus *Ancylometes* are normally found associated with water bodies and can easily paddle on the water surface, diving for prey and away from predators (Höfer and Brescovit 2000. Insect Syst. Evol. 31:323–360). Besides preying upon invertebrates, they also prey on small vertebrates such as fish (Gasnier et al. 2009. *In* Fonseca et al. [eds.], A Fauna de Artrópodes da Reserva Florestal Ducke: Estado Atual do Conhecimento Taxonômico e Biológico, pp. 223–230. Instituto Nacional de Pesquisas da Amazônia–INPA, Manaus) and anurans (Maffei et al. 2010. Herpetol. Notes 3:167–170; Bocchiglieri et al. 2010. Herpetol. Rev. 41:325; Moura and Azevedo 2011. Biota Neotr. 11:1–3). To our knowledge, this is the first report of predation on *B. ternetzi* by *A. concolor*. After the observation, the frog and spider were collected and deposited in the Museu de Zoologia João Moojen, at the Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil (voucher number MZUFV 17150).

We thank Antonio D. Brescovit for helping with the identification of the spider species, Katie Lempke for English review, Dendrus Projetos Ambientais e Florestais for financial support, and Sean Graham for editorial suggestions.