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The advertisement call of the toad *Rhinella humboldti* (Bufonidae)

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Despite important advances in understanding phylogenetic relationships among anurans (Frost *et al*. 2006; Pyron & Wiens, 2011), many uncertainties persist regarding phylogenetic affinities and taxonomic limits. The male advertisement call offers numerous opportunities to find diagnostic characters and is therefore useful for anuran species delimitation (Gerhardt & Huber, 2002; Grant *et al*. 2006). Thirteen species are recognized within the *Rhinella granulosa* group (Narvaes & Rodrigues, 2009; Sanabria *et al*. 2010) although it is possible that *R. dorbignyi* and *R. fernandezae* being conspecifics (Guerra *et al*. 2011, page 36). The advertisement call has been described for nine species of the *granulosa* group: *Rhinella granulosa*, *R. bergi*, *R. major*, *R. azarai*, *R. fernandezae*, *R. dorbignyi*, *R. merianae*, *R. centralis* and *R. pygmaea* (Köhler *et al*. 1997; Guerra *et al*. 2011; São-Pedro *et al*. 2011; Ribeiro de Carvalho *et al*. 2013). Some information regarding call features are available for *R. humboldti* from populations of Guyana (Lescure & Marty, 2000); however, there are no associated data of male body size, sample size, and call traits such as pulse number per notes, note duration, etc. Here we provide a formal description of the advertisement call of *R. humboldti* using call recordings obtained in a population in Colombia, South America.

Individuals were identified as *R. humboldti* based on geographical distribution, range of body size, subnasal crest extending beyond posterior margen of rostril, relatively large parotoid glands, snout rounded, and the absence of longitudinal dorsal stripe (Narvaes & Rodrigues, 2009). We recorded advertisement calls of six males during the night of May 27th 2012 on the Reserve of Wisirare, municipality of Orocué, departamento de Casanare, Colombia (4º 54' 40" N; 71º 26' 12" W; 126 m elevation). Recordings were made on calling males found around a temporary pond located in an open area mostly covered by grass. We positioned a unidirectional microphone (Sennheiser ME66/K6) connected to a digital recorder (Marantz PMD661) at 50–80 cm in front of a calling male. Later, we measured its body size (snout–vent length) with a digital caliper. We estimated temporal and spectral parameters of the advertisement calls using the software RAVEN Pro 1.4 (Bioacoustics Research Program, 2011). Recordings were digitized at 16 bits resolution and 44.1 kHz sampling rate. Oscillograms and spectrograms were analyzed with a Fast Fourier Transformation window of 256 points and Blackman algorithm.

The following description is based on 18 calls recorded from 6 males with a mean body size of 48.7 mm. The advertisement call of *Rhinella humboldti* (Fig. 1) consists of a long trill with variable duration (2.192 s ± 1.867, range 1.52–4.76). Mean number of notes per call is 100.3 ± 27.1 (49–145). The duration of notes is 0.022 s ± 0.001 (0.021–0.023), with an internote duration of 0.009 s ± 0.001 (0.008–0.011). Four pulses per note are consistent for all calls, and the mean pulse duration was 0.004 s ± 0.000 (0.003–0.004). Interpulse duration is constant through the calls (0.002 s). Peak frequency was 3153.4 Hz ± 167.3 (3445.3–2928.5). Details of advertisement call features per male are available at Dryad Digital Repository: *http://dx.doi.org/10.5061/dryad.q0464*

The advertisement call of *Rhinella humboldti* resembles the structure of the call in other species of the *granulosa* group (Guerra *et al*. 2011; São-Pedro *et al*. 2011). Nevertheless, despite apparent similarities, there are clear interspecific differences in temporal call feature such as number of pulses per note, and note and call duration (Guerra *et al*. 2011). For instance, the call of *R. humboldti* has four pulses per note while the call of *R. pygmaea*, *R. azari*, *R. dorbignyi*, and *R. fernandezae* consist of three pulses per note, the call of *R. bergi* consist of two pulses per note, and the call of *R. major* consists of 6–8 pulses per note (see Guerra *et al*. 2001; Ribeiro de Carvalho *et al.* 2013). Temperature can influence call features that are controlled by the neuromuscular system in ectotherms organisms such as anurans (Gerhardt & Huber, 2002). We do not have temperature records; however, important specific call attributes such as pulse number per note are not expected to vary with temperature (Guerra *et al.* 2011). Furthermore, variations in call features due to variation in

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