

The advertisement call of *Pristimantis erythropleura* (Boulenger, 1896) (Craugastoridae) from a population in the central Andes of Colombia

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Pristimantis erythropleura is a frog distributed between 980 and 2600 m a.s.l. in the Western and Central Andes of Colombia (Lynch, 1992; Ruiz-Carranza et al., 1996; Acosta-Galvis, 2000). Individuals of this species are nocturnal and usually found on shrubs, trunks, and pastures between 10 and 200 cm above ground; they are especially abundant in disturbed forested habitats (Rincón-Franco & Castro-Herrera, 1998; Lynch, 1996; Montes et al., 2004; Duarte-Marín et al., 2018). Although some aspects of the natural history of *P. erythropleura* are known or inferred according to its phylogenetic relationships (e.g. reproduction with direct development), we lack a quantitative description of the auditory signals they use in social interactions. Herein, we describe the advertisement call of this species.

We recorded two calling individuals of *P. erythropleura* at 19 March and 04 April 2017 in the Natural Reserve “La Patasola” (4° 40′58.8″ N, 75° 32′60″ W; elevation 2300 m a.s.l.) municipality of Salento, department of Quindío, Central Andes of Colombia. The advertisement calls were digitalised using a Sennheiser ME62 / K6 unidirectional microphone connected to a Zoom H4n Handy Recorder. The body size (snout-vent length, SVL) and temperature of the frog was obtained with a digital caliper and an infrared thermometer, respectively; the individuals were not collected. We digitised recordings with a 16-bit resolution and a sampling frequency of 44.1 kHz. Oscillograms and spectrograms were analyzed with a 256-point Fourier Transformation window and the Blackman algorithm. For the call analysis, we use the software RAVEN Pro 1.4 (Bioacoustics Research Program, 2011), and for the call description we followed the terminology described in Köhler et al., (2017). Our unit for the descriptive analysis was the individual recorded. Digital copies of the calls (in WAV format) were deposited at the Colección de Sonidos Ambientales of the Instituto Alexander von Humboldt, Villa de Leyva, Boyacá, Colombia.

Males were calling in a pasture adjacent to a secondary forest, on the upper side of fern leaves (*Pteridium aquilinum*) at 15 to 30 cm above ground. The mean air temperature was 18.3 ± 1.83 (17.0-19.6) °C and relative humidity was 78.5 ± 2.1 (77 – 80) %; these measurements were taken from the two individuals independently. The advertisement call of *P. erythropleura* consisted of a note comprising 9-10 pulses (Fig. 1); the whole note lasted 47.1 ± 0.2 (47.0-47.2) ms, at a mean pulse duration of 3.2 ± 0.3 (3.0-3.5) ms, and the mean

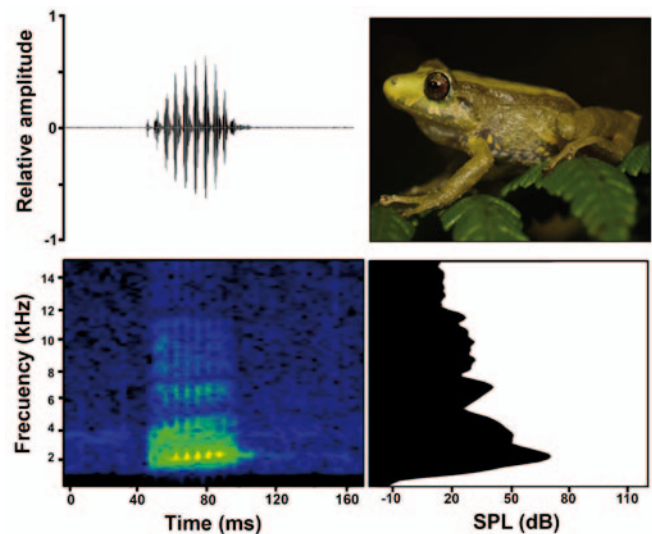


Figure 1. The advertisement call of a male *P. erythropleura* (top right): oscillogram (relative amplitude), spectrogram (frequency) and power spectrum (SPL- sound pressure level). The call consists of nine pulses and corresponds to male 1 (see Table 1).

interpulse duration of 1.9 ± 0.3 (1.7-2.2) ms. The dominant frequency of the call was 2067 Hz. There were two harmonic bands with dominant frequencies of 3402 ± 860 (3273 - 3445) Hz and 6416 ± 865 (6373 - 6546) Hz.

Our recording is only the second description of an advertisement call for the *P. ridens* group, which includes a total of 33 species (sensu Padial et al., 2014). The only other species of this group for which the advertisement call has been described is *P. caryophyllaceus* (Barbour, 1968), which has a similar advertisement call consisting of a single pulsed note with a duration of 40-50 ms (Batista et al., 2014). The dominant frequency in *P. erythropleura* is lower than in *P. caryophyllaceus* (2566 - 3010) Hz and may reflect their differences in body size. More call descriptions are needed to establish the patterns of call structure within *P. ridens* species group.

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Table 1. Advertisement call features for each individual *P. erythropleura* recorded at municipality of Salento, Central Andes of Colombia. Values are reported as mean \pm standard deviation and range. IAvH-CSA Codes assigned at the Colección de Sonidos Ambientales of the Instituto Alexander von Humboldt, Villa de Leyva, Boyacá, Colombia, are shown. Individuals were not collected.

Individual	Voucher	Number of calls recorded	Snoutvent length (mm)	Body temp (°C)	Pulse duration (ms)	Interpulse duration (ms)	Number of pulses/call	Dominant frequency (Hz)	Dominant frequency of harmonics (Hz)	
									First	Second
1	IAvH-CSA 18275	5	24.9	14.9	3.0 \pm 1.0 (1-4)	2.2 \pm 0.2 (1-3)	9.1 \pm 0.2 (9-10)	2067.0	3273.0 \pm 55.0 (3210-3305)	6373.0 \pm 230.0 (6105-6404)
2	IAvH-CSA 18276	4	26.1	11.6	3.5 \pm 0.8 (3-5)	1.7 \pm 0.1 (1-3)	9.4 \pm 0.3 (9-10)	2067.0	3445.0 \pm 110.1 (3237-3510)	6546.0 \pm 99.3.0 (6508-6612)

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