



The advertisement call of the Narrow-mouthed frog *Chiasmocleis avilapiresae* Peloso & Sturaro, 2008 (Amphibia, Anura, Microhylidae)

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Chiasmocleis currently comprises 25 species distributed from Panama through most of northern and central South America east of the Andes (Frost 2010). Santana *et al.* (2009) summarized available literature data on the advertisement call of the 12 species of *Chiasmocleis* with calls described and observed inter and intraspecific variation in the calls then available.

Chiasmocleis avilapiresae was recently described and is known from several localities in northern Brazil, south of Rio Amazonas (=Amazon river) in the states of Amazonas, Rondônia, Mato Grosso and Pará (Peloso & Sturaro 2008). During field work in the state of Pará, Brazil the senior author recorded the previously unknown advertisement call of *C. avilapiresae*, which we describe here. The call of a single male *C. avilapiresae* was recorded on March 22, 2010 at Reserva Extrativista Riozinho do Anfrísio, municipality of Altamira, Pará, Brazil (54°39'18.28"W, 4°45'33.98"S). The recording was made with a COBY CX-R190 digital recording with an internal microphone at a 16 kHz sampling rate. A digital copy of the recording file (wav format) is deposited in the Coleção de Vocalizações de Anuros do Laboratório de Herpetologia, Departamento de Zoologia, I.B., UNESP, Rio Claro, SP, Brazil. Two specimens were collected and deposited in the herpetological collection of Museu Paraense Emílio Goeldi, Belém, Pará, Brazil (MPEG 29185, call voucher; and MPEG 29186). Several (at least eight) individuals of *C. avilapiresae* were calling on the edge of a temporary pond inside a primary "Terra Firme" forest. Specimens called under wet leaf litter around 50 cm from the pond's edge. The pond had clear water and lots of surrounding vegetation, including small shrubs and trees. The recording was analyzed in the softwares Raven Pro 1.3, for Windows (Cornell Lab of Ornithology), configured at 16 bits of resolution, 256 Fast Fourier Transformation windows, and in the software Adobe Audition 3.0, for Windows (Adobe Systems, Inc.), with the same configuration as that for Raven. Call terminology follows Toledo and Haddad (2005). Spectral parameters were analyzed without applying any filtering, while temporal parameters were analyzed after we applied a filter to completely cut off frequencies higher than 4.0 kHz and lower than 2.5 kHz. This procedure was necessary, due to high level of background noise in those frequency ranges, to aid in the visualization and analyses of temporal parameters. The filters do not alter temporal parameters of the dominant harmonic, which was used for the description of such parameters.

The call (Fig. 1) is composed by a repetitive series of multipulsed notes (mean 15.9 ± 1.5 pulses per note, 7–18, $n = 128$) emitted at rate of 295.4 notes/minute. Mean note duration was 98.0 ± 9.8 ms (43.0–117.0, $n = 128$) and mean interval between notes was 111.1 ± 0.1 ms (10.0–573.0, $n = 127$). Mean dominant frequency was 3368.2 ± 73.2 Hz (2937.5–3500.0, $n = 128$). Interval between calls is rather irregular (range 10.0–573.0 ms). Pulse duration and intervals between pulses could not be measured with accuracy because the recording is not clear enough for such measurements. A harmonic is observed in the frequency range (1000–2500 Hz; Fig. 1A), but exact values of frequency for these lower harmonics could not be determined because we could not be certain what was the influence of the background on the harmonic (Fig. 1A). No harmonics with frequencies higher than the dominant frequency (> 3600 Hz) could be seen.

Despite the high level of background noise in the recording, the dominant frequency pertaining to the call of *C. avilapiresae* can be easily distinguished from the noise in the spectrogram and in power spectrum analysis (not shown here).

A comparison of the call of *C. avilapiresae* with those of other species is beyond our objectives and one should refer to Santana *et al.* (2009) for such comparisons. However, one single case must be pointed. Call parameters of *C. avilapiresae* are much similar to that of the *C. shudikarensis* population from French Guiana – call rate 360 notes/min; dominant frequency 3380–3750 Hz; note duration 98 ms (Lescure & Marty 2000); but distinct from the call of the *C. shudikarensis* population from Manaus, Brazil – “frequency range” 5890–7510 Hz; note duration 10–60 ms; interval between notes 10–30 ms (Zimmerman & Bogart 1988). *C. avilapiresae* and *C. shudikarensis* are rather similar in external morphology (and may be closely related). However, some morphological features (Peloso & Sturaro 2008; P.L.V.Peloso unpublished data) still support the maintenance of both species as valid entities. Further studies (in progress) are needed to address the differences in the call parameters of the two *C. shudikarensis* populations.

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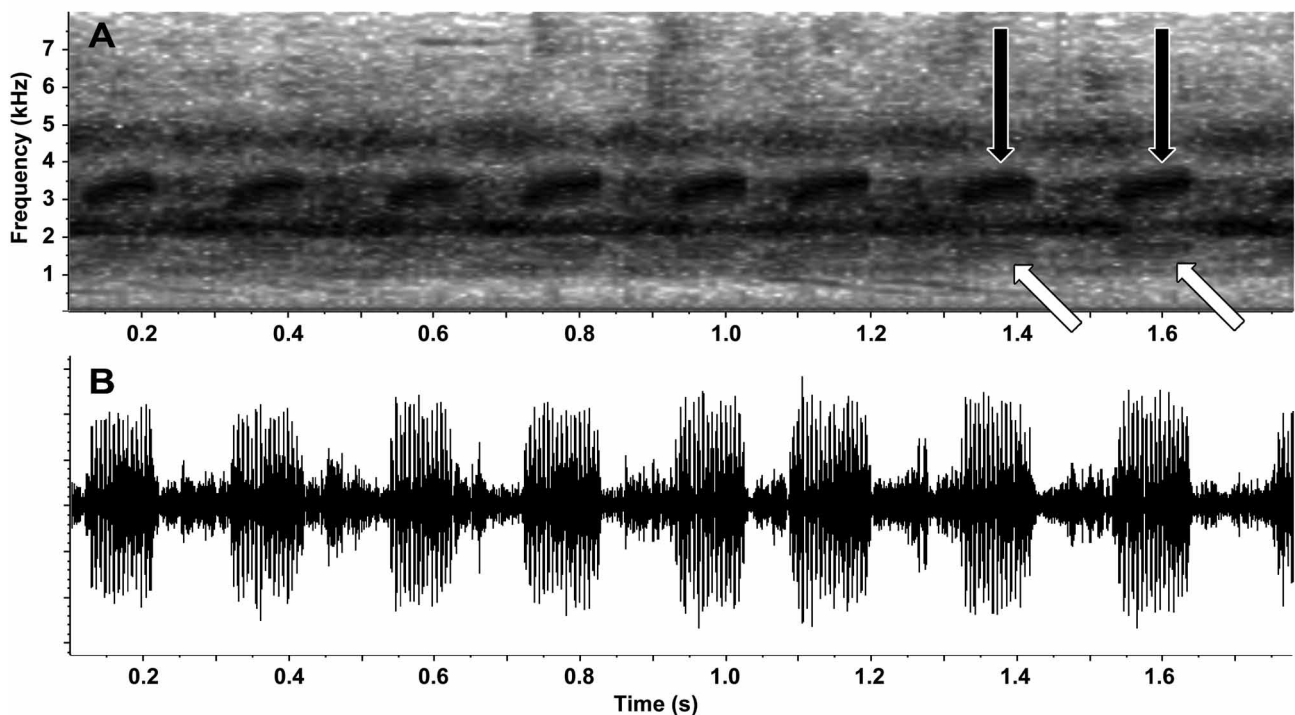


FIGURE 1. Advertisement call of *Chiasmocleis avilapiresae*. (A) Spectrogram. Black arrows point to each multipulsed note, and white arrows point to the lower frequency harmonics. Note the high level of background noise; no filtering was applied to the spectrogram. (B) Waveform. Both figures represent the same section of the recording, but on the waveform frequencies over 4 kHz and below 2.5 kHz were filtered to a better visualization of the temporal call parameters in the waveform, see text for details.

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