



**Description of the advertisement call of *Phasmahyla spectabilis*
Cruz, Feio & Nascimento, 2008 (Anura: Phyllomedusinae)
with comments on its distribution and reproduction**

IURI RIBEIRO DIAS¹, DENNIS RÖDDER^{2,3,4}, FRANK WEINSHEIMER⁴, AXEL KWET⁵ & MIRCO SOLÉ³

¹Postgraduate Program in Zoology, Universidade Estadual de Santa Cruz, Rodovia Ilhéus-Itabuna, km 16, 45662-900 Ilhéus, Bahia, Brazil. E-mail: iurirdias@hotmail.com

²Biogeography Department, Trier University, Am Wissenschaftspark 25-27, 54296 Trier, Germany.
E-mail: d.roedder.zfmk@uni-bonn.de

³Department of Biological Sciences, Universidade Estadual de Santa Cruz, Rodovia Ilhéus-Itabuna, km 16, 45662-900 Ilhéus, Bahia, Brazil. E-mail: d.roedder.zfmk@uni-bonn.de, mksole@uesc.br

⁴Herpetology Department, Zoologisches Forschungsmuseum Alexander Koenig, Adenauer Allee 160, 53113 Bonn, Germany.
E-mail: fwheimer@uni-bonn.de, d.roedder.zfmk@uni-bonn.de

⁵Department of Zoology, Staatliches Museum für Naturkunde Stuttgart, Rosenstein 1, 70191 Stuttgart, Germany.
E-mail: kwet.smns@naturkundemuseum-bw.de

In this study we describe for the first time the advertisement call of *Phasmahyla spectabilis* (Fig. 1) and provide new data on the geographical distribution and reproduction of the frog. Species belonging to the genus *Phasmahyla* Cruz (1990) are found in mountain streams in the Atlantic Rainforest from the states of Paraná northwards to Bahia (Cruz *et al.* 2008a), wherein seven species are currently recognized: *P. guttata* (Lutz), *P. cochranae* (Bokermann), *P. jandaia* (Bokermann & Sazima), *P. exilis* (Cruz), *P. spectabilis* Cruz, Feio & Nascimento, *P. timbo* Cruz, Napoli & Fonseca and *P. cruzi* Carvalho-e-Silva, Silva & Carvalho-e-Silva. Main characteristics of the genus are the absence of an external vocal sac, cream iris and tadpoles with an oral disc modified into a short funnel-shaped structure (Cruz 1990) (Fig. 1D). All members of the genus show highly specialized reproductive strategies by laying their eggs outside the water in nests built up with enrolled leaves (Cruz 1990). Subsequently, hatching tadpoles drop into lotic water, where they feed until they complete their metamorphosis (mode 25 sensu Haddad & Prado 2005). *Phasmahyla spectabilis* has already been included in the red list category “data deficient” (Angulo 2009).

The advertisement calls of two males of *Phasmahyla spectabilis* were recorded at the RPPN Serra Bonita, Municipality of Camacan, State of Bahia, Brazil (15°25'5.57" S, 39°32'45.82" W) using an unidirectional Sennheiser ME45 microphone with a K6 power module and a Marantz PMD 660 digital audio recorder (first male) or a Tascam DR1 digital recorder using the same microphone (second male) at a distance of approximately 1 m. The first specimen of *P. spectabilis* with a snout-vent length (SVL) of 38.7 mm was encountered May 2nd 2009 calling at night (21:00 h) from herbaceous vegetation on the border of a stream at 1.5 m height at an air temperature of 22.4°C (measured using a digital thermo-hygrometer with a precision of 0.5 °C). The second male (SVL = 34.8 mm) was found January 29th 2010 on the same kind of vegetation at 1 m height and at an air temperature of 23.2°C. Voucher specimens were deposited at the zoological collection of Universidade Estadual de Santa Cruz (first male: MZUESC 8150, second male: MZUESC 8294).

Calls were emitted sporadically, in total 30 advertisement calls were recorded. Temporal (duration of note, pulse and interval between pulses) and spectral characteristics (dominant frequency range) of calls were analyzed using the software Raven Pro 1.3 at 48 kHz and 16 bits resolution. Audiospectrograms were created using a Fast Fourier Transformation of 256 points, 50% overlap for an entire call and Window Hamming. For all other configurations the “default” settings of Raven were used. Terminology follows Duellman & Trueb (1994).

Each call was composed of a single note consisting of two (13.4%), three (60%) or four pulses (26.6%), repeated in series of 2–4 notes emitted in irregular intervals. Occasionally only one note was recorded. The note duration was 0.039 ± 0.009 s (0.021–0.057s, n = 30) with a dominant frequency band of 1849 ± 79.05 Hz (1687–1907 Hz, n = 30), being not noticeably frequency modulated (Table 1, Fig. 2). Frequency amplitude varied from 1121 to 2472 Hz (n = 30). Mean pulse duration was 0.0063 ± 0.0026s (0.002–0.014s, n = 94) emitted at an interval of 0.092 ± 0.0019s (0.002–0.013s, n = 64). In most of the analyzed calls duration of the pulses within the note increased, being the first pulse the shortest one and the last the longest (n = 24) (Fig. 2). The other calls had the same duration of pulses (differences less than 1s (n = 3)) or the pulses which lasted longest were found in the middle of the call (n = 3).