Zootaxa 2997: 67–68 (2011)
www.mapress.com/zootaxa/

Correspondence

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Advertisement call of *Dendropsophus oliveirai* (Anura, Hylidae)

DIEGO JOSÉ SANTANA[1,3], DANIEL OLIVEIRA MESQUITA[1], ADRIAN ANTONIO GARDA[2]

[1]*Universidade Federal da Paraíba, Departamento de Sistemática e Ecologia, Centro de Ciências Exatas e da Natureza, João Pessoa, PB, Brasil*

[2]*Universidade Federal do Rio Grande do Norte, Departamento de Botânica, Ecologia e Zoologia, Campus Universitário – Lagoa Nova, Natal, RN, Brasil.*

[3]*Corresponding author. E-mail: santana_herpeto@yahoo.com.br*

The *Dendropsophus decipiens* clade is part of the *Dendropsophus microcephalus* group *sensu* Faivovich *et al.* (2005). As far as known, the clade is currently composed of four related species (*D. decipiens*, *D. berthalutzae*, *D. haddadi*, and *D. oliveirai*) distributed in eastern Brazil, all of which deposit eggs on leaves overhanging water bodies (Faivovich *et al.* 2005). *Dendropsophus oliveirai* is a typical species of open areas in the Caatinga and Atlantic Forest of northeastern Brazil (Bastos and Skuk, 2004; Santana *et al.* 2008).

The advertisement call is a species-specific trait and thus a valuable character used in anuran taxonomy. However, within the *D. decipiens* clade only the advertisement call of *D. decipiens* is known (Abrunhosa *et al.* 2001). Herein, we describe the advertisement call of a second species of this clade, *D. oliveirai*.

One male of *D. oliveirai*, deposited in Coleção Herpetológica da Universidade Fedral da Paraíba (CHUFPB 000487) was recorded at Reserva Biológica (Rebio) Guaribas, municipality of Mamanguape, state of Paraíba on Jun 4th 2011, and another male (not collected) was recorded at Escola Agrícola Jundiaí (EAJ), municipality of Macaíba, state of Rio Grande do Norte, Brazil (this male was visualized, but escaped). Both frogs were recorded with an Olympus LS-10 linear PCM digital recorder and an ATR55 Telemike™ directional microphone. Digital recordings were sampled at 44 kHz and 16 bit resolution and saved in uncompressed wave format. We analyzed calls with Raven Pro 1.3 for Windows (Cornell Lab of Ornithology) and constructed audio spectrograms with the following parameters: FFT window width = 256, Frame = 100, Overlap = 75, and flat top filter. Terminology in call descriptions follows Duellman and Trueb (1994).

In Rebio Guaribas, a few males were calling on a forest edge pond amidst the marginal vegetation, usually hidden between leafs. The call (Figure 1) was recorded at an air temperature of 24.2°C and consists of a multipulsed note. Numerical parameters are as follows (range followed by mean ± standard deviation in parentheses; 7 calls analyzed): note duration 0.062–0.074 s (0.065 ± 0.005 s); dominant frequency 5857–6869 Hz (6144 ± 417 Hz); pulses per note 10–11 (10.17 ± 0.41); pulse rate 148.65–161.29 pulses per second (156.66 ± 4.61; n = 21); and pulse duration of 0.004–0.007 s (0.006 ± 0.001). In EAJ (air temperature = 23.4ºC), several males were calling in a temporary pond and also in a floodplain adjacent to the Jundiaí River. These males were also calling hidden amidst the vegetation, although their calls were sometimes emitted in series consisting of 1 to 5 calls (3.36 ± 0.93, n = 13 series). The call (21 calls analyzed) also consists of a multipulsed note. Note duration 0.085–0.155 s (0.110 ± 0.018 s); dominant frequency 5685–6201 Hz (6038 ± 118 Hz); number of pulses per note 5–14 pulses (8.95 ± 2.56), pulse rate 55.55–130.84 pulses per second (80.96 ± 17.66; n = 21), and pulse duration varied from 0.004–0.0012 (0.008 ± 0.002).

Calls from Macaíba are a bit longer but emitted at a lower rate than those recorded in Rebio Guaribas. In Macaíba, there were several males calling (more than fourty), while in Rebio Guaribas, only a few individuals were seen (two or three).

Calls of *D. decipiens* have a longer note duration (0.67–1.60 s), and a lower dominant frequency (4770–5230 Hz) (Abrunhosa *et al.* 2001). Another difference observed is the structure of the call. *Dendropsopus decipiens* has the call composed of several multipulsed notes, which are formed by pulses (Abrunhosa *et al.* 2001). In contrast, the call of *D. oliveirai* is composed of one multipulsed note formed by several pulses. Both calls do not show frequency modulation. These differences are in agreement with species-specific differences in anurans and indicate that the analysis of vocalizations can help clarify the partly complex taxonomy of species within the *D. microcephalus* group. With regard to the *D. decipiens* clade, the calls of *D. berthalutzae* and *D. haddadi* still await descriptions, and are fundamental before appropriate comparisons can be conducted.

Accepted by M. Vences: 26 Jul. 2011; published: 17 Aug. 2011

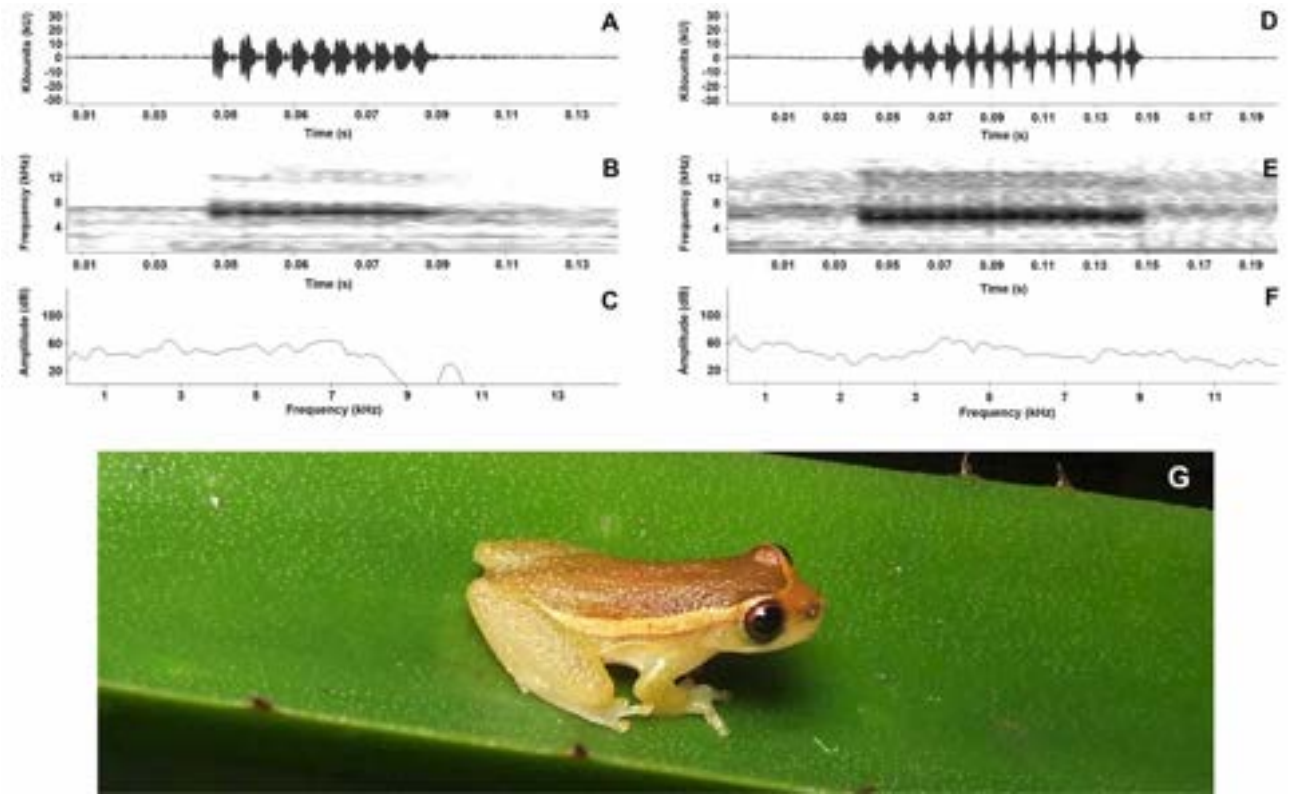

FIGURE 1. *Dendropsophus oliveirai*: (A) oscillogram, (B) audiospectrogram and (C) power spectrum of the advertisement call from Mamamguape (air temperature = 24.2ºC); (D) oscillogram, (E) audiospectrogram and (F) power spectrum of the advertisement call from Macaíba (air temperature = 23.4ºC); and (G) an adult male in life from Macaíba (unvouchered species) (photo by D. J. Santana).

We are grateful to Jörn Köhler and Miguel Vences for suggestions on the manuscript; Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA) issued collection permits 15363-1 IBAMA/SISBIO. DJS thank CAPES for his current PhD scholarships and DOM for a research Fellowship from CNPq.

References

Abrunhosa, P.A., Wogel, H. & Pombal Jr. J.P. (2001) Vocalização de quatro espécies de anuros do Estado do Rio de Janeiro, Sudeste do Brasil (Amphibia, Hylidae, Leptodactylidae). *Boletim do Museu Nacional, Nova Série, Zoologia*, 472, 1–12.

Duellman, W.E. & Trueb, L. (1986) *Biology of Amphibians*, The Johns Hopkins University Press, Baltimore, 670 pp.

Faivovich, J., Haddad. C.F.B., Garcia, P.C.A., Frost, D.R., Campbell, J.A. & Wheeler, W.C. (2005) Systematic review of the frog family Hylidae, with special reference to Hylinae: phylogenetic analysis and taxonomic revision. *Bulletin of the American Museum of Natural History*, 294, 1–240.

Bastos, R. & Skuk, G. (2004). *Dendropsophus oliveirai*. *In*: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.1. <www.iucnredlist.org>. Downloaded on 16 June 2011.

Santana, G.G., Vieira, W.L.S., Pereira-Filho, G.A., Delfim, F.R., Lima, Y.C.C. & Vieria, K.S. (2008) Herpetofauna em um fragmento de Floresta Atlântica no Estado da Paraíba, Região Nordeste do Brasil. *Biotemas*, 21, 75–84.