



Further notes on the taxonomy of four species of *Physalaemus* (Anura, Leiuperidae) from the Atlantic Forest of Southeastern Brazil

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Abstract

We analyzed the advertisement calls of four species of *Physalaemus* (*P. olfersii*, *P. moreirae*, *P. bokermanni*, and *P. jordanensis*) from the Brazilian Atlantic Forest. The tadpole of *P. olfersii* is described for the first time. Calls of all species are composed by just one kind of note. Those of *P. olfersii* are long (4035 ms), pseudo-pulsed, with dominant frequency around 2375 Hz; 7–10 sidebands are well distinguishable. The calls of *P. moreirae* are pulsed, with duration about 604 ms, mean dominant frequency around 1369 Hz and 3–5 sidebands. *Physalaemus bokermanni* has a call structurally different from the other species by the absence of sidebands or harmonics, larger inter-pulse breaks (around 34–42 ms) and a wider frequency range (around 3700 Hz). Calls of *P. jordanensis* are pulsed and have 7–8 harmonics, last about 1068 ms and dominant frequency around 2742 Hz. *Physalaemus olfersii* tadpoles show typical features of other *Physalaemus* larvae, measuring about 19 mm in total length. Our data on call of *P. olfersii* suggest that a broader taxonomic survey would be worthwhile by revealing that different species are included under this name. Calls of *P. moreirae* and *P. bokermanni*, in general, are in agreement with those previously described from other sites, but complementary features are given. Those of *Physalaemus jordanensis* show some differences in relation to the calls from the type locality, but additional data are still necessary for a taxonomic conclusion.

Key words: *Physalaemus bokermanni*; *Physalaemus jordanensis*; *Physalaemus moreirae*; *Physalaemus olfersii*; vocalization, tadpole

Introduction

As presently defined, the genus *Physalaemus* Fitzinger, 1826 comprises 43 species widely distributed throughout South America eastern to Andes (Nascimento *et al.* 2005; Cruz *et al.* 2008; Frost 2008). Recently, Nascimento *et al.* (2005) divided this genus in seven phenetic groups: *P. cuvieri*, *P. signifer*, *P. albifrons*, *P. deimaticus*, *P. gracilis*, *P. henselii*, *P. olfersii*.

The *Physalaemus olfersii* group is composed by five species distributed along the Brazilian coastal states of Bahia to Santa Catarina and inland Minas Gerais (Nascimento *et al.* 2005; Cruz *et al.* 2008). *Physalaemus olfersii* (Lichtenstein and Martens, 1856) was described from Brazil without a precise specification on the type locality (Frost 2008). It is a forest dweller found amidst the leaf litter (Giaretta *et al.* 1999; Heyer *et al.* 1990; Bertoluci & Rodrigues 2002; Giaretta & Facure 2008). Based on samples from the Coastal Range of the state of São Paulo, Bokermann (1966) described its call and Heyer *et al.* (1990) presented data on adult morphology and call. Weber *et al.* (2005a) illustrated the advertisement call of a population from Rio de Janeiro. Morphological variations were already found between different populations (Feio *et al.* 1999), and probably this name comprises a complex of species (Cruz *et al.* 2008).