



## The taxonomic status of *Melanophryniscus orejasmirandai* Prigioni & Langone, 1987 "1986" (Anura: Bufonidae)

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### Abstract

*Melanophryniscus orejasmirandai* is a species of toad known only from two localities in southern Uruguay. This toad is the southernmost suggested taxon of the *M. tumifrons* group, whose species are characterized by a glandular frontal swelling on the snout. The study of the type series of *M. orejasmirandai* and of *M. pachyrhynus*, along with observations made on many specimens of both species suggested a close relationship between them. The analysis of the variation of snout-vent length, coloration pattern, relative size of the frontal swelling, and presence/absence of the metatarsal gland showed that characters previously used to separate both species resulted of no diagnostic value. Further comparison of the external morphology, osteological characters, and partial sequences of the *cytochrome b* gene indicated that *M. orejasmirandai* is a junior synonym of *M. pachyrhynus*. *Melanophryniscus pachyrhynus* is characterized by a reticulated orange ventral pattern which is shared only with *M. peritus*, from which it differs by its smaller size. The ornamentation of the nasal bones underlying the frontal swelling in *M. pachyrhynus* seems to be characteristic of the *M. tumifrons* group. An updated distribution map of *M. pachyrhynus* and some new localities are also provided.

**Key words:** geographic distribution, *Melanophryniscus orejasmirandai*, *Melanophryniscus pachyrhynus*, osteology, taxonomy

### Introduction

The bufonid genus *Melanophryniscus* is a putatively monophyletic group of small Neotropical toads (Graybeal & Cannatella 1995; Larson *et al.* 2003; Daly *et al.* 2008) that was recovered as the sister taxon of all remaining Bufonidae in several phylogenetic analyses (*e.g.* Darst & Cannatella 2004; Frost *et al.* 2006; Pramuk *et al.* 2010; Van Bocxlaer *et al.* 2010). It has been the subject of many taxonomic studies since its formal description by the dawn of the 1960s and as a result the number of species rose from 3 to the 26 that are currently recognized.

All species of *Melanophryniscus* known to date exhibit conspicuous coloration, with varying amounts of yellow, orange, and red tones, mostly in the ventral region. These aposematic colorful patterns are associated with the presence of toxic lipophylic alkaloids, acquired by the consumption of arthropod preys (Daly *et al.* 2008). Coloration patterns have often been used alone to differentiate species and subspecies of *Melanophryniscus* (Gallardo 1961; Laurent 1973; Céspedes & Alvarez 2000 "1999"; Prigioni & Langone 2000; Céspedes & Motte 2007). However, the intraspecific variability of the external coloration within and between populations observed in recent studies questioned its use for species diagnosis in this genus (Vaira 2002; Cairo & di Tada 2005).

Most species of *Melanophryniscus* are assigned to three or four phenetic groups that were weakly defined