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 *Bufo*nae 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 prey (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...