



## A new species of *Leptobrachium* from Myanmar (Anura: Megophryidae)

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### Abstract

The faunal composition of the Myanmar populations of frogs in the genus *Leptobrachium* has been confused historically. The secretive nature of these frogs in combination with few systematic surveys throughout Myanmar has meant that sampling is sparse, not allowing for robust examination of morphological variation. Recent survey efforts in conjunction with historical collections have yielded for the first time a chance to evaluate the diversity of the genus *Leptobrachium* within Myanmar. While three allopatric populations of *Leptobrachium* species were discovered and all are distinguishable based on morphological differences, genetic analyses support that only one is distinct. A new species with a red and black bi-colored iris with a blue scleral arc is described herein. In addition to the new species, a new country record is also reported.

**Key words:** Asia, Megophryidae, Myanmar, Burma

### Introduction

The genus *Leptobrachium* is currently comprised of 32 species that are distributed throughout mainland and insular Asia. Systematic bioinventories within Asia, in combination with molecular data, have revealed unrecognized diversity, with over half of the species described within the past 20 years. Although the taxonomy of Asian frogs is currently in a state of flux (Bickford *et al.*, 2007; Chen *et al.*, 2005), frogs of the genus *Leptobrachium* have recently been included in several phylogenetic and phylogeographic treatments (Brown *et al.*, 2009; Frost *et al.*, 2006; Matsui *et al.*, 2010; Rao & Wilkinson, 2008; Zhang *et al.*, 2009; Zheng *et al.*, 2008). At the generic level, recent changes include the synonymy of *Vibrissaphora* into *Leptobrachium* (Rao & Wilkinson, 2008), a conclusion supported in Matsui *et al.* (2010a), Zheng *et al.* (2008), and Zhang *et al.* (2009). All of these studies recovered a monophyletic clade consisting of all species formerly referred to *Vibrissaphora*, as well as *Leptobrachium chapaense*. At the species-level, analyses have also revealed the presence of unknown lineages throughout Asia (Brown *et al.*, 2009; Hamidy *et al.*, 2012; Matsui *et al.*, 2010).

Historically, much of the confusion regarding species boundaries within the genus *Leptobrachium* arises from the use of one highly distinctive character, the presence of complex eye coloration. Eye coloration features have been a major field-identification character for workers; however, these colors fade in preservative thus complicating accurate description. Until relatively recently, *L. hasseltii* was the only described species with a red and black bicolor iris, and historically mainland Asian populations were assigned this name. Additional mainland Asian taxa with the distinctive red and black bicolored iris have more recently been delineated and described; these include *L. pullum*, *L. hendricksoni*, and *L. smithi*. *Leptobrachium pullum* was originally described as a variant of *L. hasseltii* (*L. hasseltii* var. *pullus*) from Vietnam by Smith (1921) before being elevated to a distinct species (Inger, 1983). *Leptobrachium hendricksoni*, was described from Yala, Thailand by Taylor (1962), and most recently, Matsui *et al.* (1999) described *L. smithi* from Thailand. Recent research has revealed the taxon *L. hasseltii* to be restricted to populations in Java and Bali Indonesia (Brown *et al.*, 2009; Iskandar, 1998; Matsui *et al.*, 1999), thus leaving the taxonomy of bicolored black and red eyed “*L. hasseltii*” outside of Indonesia in flux. To further complicate the story, Brown *et al.* (2009) demonstrated that true *L. hasseltii* from Java actually have black eyes with a blue sclera, and likewise Stuart *et al.* (2011) showed that *L. pullum* possess black eyes with red sclera. Thus, the only described *Leptobrachium* species from mainland Asia with the distinctive red and black bicolored iris are *L. hendricksoni*,