



A new tree frog in the genus *Polypedates* (Anura: Rhacophoridae) from southern Thailand

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Abstract

We describe a new species of Southeast Asian rhacophorid frog belonging to the *Polypedates leucomystax* species complex from Songkhla Province, southern Thailand. *Polypedates discantus* sp. nov. is distinguished from its congeners by the combination of having the skin of the head not co-ossified with the skull; absent or indistinct white dots on the back of the thigh; paired-vocal sac openings; and a round tubercle on the tibiotarsal articulation. The new species is also distinguished from *P. leucomystax* and *P. megacephalus* in univariate and multivariate analyses of quantitative morphometric characters, and has uncorrected pairwise distances of 6.61–7.16% from its closest relative, *P. leucomystax*, in the mitochondrial 16S rRNA gene. The new species has four distinct male advertisement call types, consisting of one-note, two-note, three-note and staccato calls. The new species occurs syntopically with *P. leucomystax* at the type locality.

Key words: Rhacophoridae; *Polypedates*; advertisement call; morphology; species complex; Thailand

Introduction

Many geographically widespread species of frogs in Southeast Asia have been shown to consist of complexes of cryptic species (Bain *et al.* 2003; Stuart *et al.* 2006; Inger *et al.* 2009; Dever *et al.* 2012), including *Polypedates leucomystax* (Matsui *et al.* 1986; Narins *et al.* 1998; Brown *et al.* 2010; Kuraishi *et al.* 2011; Kuraishi *et al.* 2013). The common tree frog, *Polypedates leucomystax*, is an Asian rhacophorid frog, which is commonly found in non-forested and forested areas and has a wide geographic distribution throughout Southeast Asia, southern China and India (Liu 1950; Taylor 1962; Inger 1966; Dutta 1997; Brown *et al.* 2010). The *P. leucomystax* complex consists of *P. braueri*, *P. leucomystax*, *P. macrotis*, *P. megacephalus* and *P. mutus* (Matsui *et al.* 1986; Kuraishi *et al.* 2011; Kuraishi *et al.* 2013). *Polypedates macrotis* and *P. colletti* are easily distinguished from *P. leucomystax* based on external morphology and molecular data (Inger 1966; Kuraishi *et al.* 2013). The Taiwanese population of the *P. leucomystax* complex was formerly considered to be *P. megacephalus* (Matsui *et al.* 1986), but was recently re-assigned to *P. braueri* on the basis of morphology, advertisement calls, and molecular data (Kuraishi *et al.* 2011; Kuraishi *et al.* 2013). Four species of the genus *Polypedates* have been reported from Thailand: *P. leucomystax*, *P. mutus*, *P. macrotis* and *P. colletti* (Taylor 1962; Heyer 1971; Chan-ard 2003; Frost 2013). Molecular phylogenetic analysis of the *P. leucomystax* complex has shown that *P. megacephalus* occurs in Thailand north of the Isthmus of Kra, whereas *P. leucomystax* occurs south of the Isthmus of Kra (Kuraishi *et al.* 2013). Our fieldwork in southern Thailand revealed an additional species that can be distinguished from other members of the *P. leucomystax* complex in the vicinity of Thailand, including the syntopic *P. leucomystax*, on the basis of morphological, morphometric, molecular and bioacoustic differences. Herein, we describe that species as new.