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A new species of *Polypedates* Tschudi (Amphibia, Anura, Rhacophoridae) from Sri Lanka

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Abstract

A new species of frog tentatively assigned to the genus *Polypedates* is described from the Gilimale forest reserve of the Sabaragamuwa province of Sri Lanka. This tree frog is characterized by unique osteological characteristics in the skull which distinguish it from all other congeners, such as the presence of a series of maxillary teeth progressively changing orientation from horizontal to vertical from posterior end to anterior; a laterally-curved spine in the quadratojugal bone; and bony co-ossification on the skull resulting in four dorsal spines which are externally seen as protrusions in the parietal area. Bioacoustic observations of *Polypedates ranwellai* sp. nov. revealed three distinct call types. High rates of deforestation and anthropogenic activities at the type locality threaten the survival of the species.

Key words: Amphibian, Gilimale, new species, *Polypedates*, *Polypedates ranwellai*, Rhacophoridae, Sri Lanka

Introduction

Sri Lanka is considered a biodiversity rich region in South Asia (Biju 2000; Meegaskumbura *et al.* 2002; Bossuyt *et al.* 2004). The amphibian fauna in the South Asian region is rich both in terms of species number and endemism (Biju 2000; Das 2001). Amphibians in South Asia include 15 genera belonging to the family Rhacophoridae (Delorm *et al.* 2005; Frost *et al.* 2006; Biju *et al.* 2008, 2010; Li *et al.* 2008; Meegaskumbura *et al.* 2011). Sri Lanka's inventory contains only 3 of these 15 genera, i.e., *Polypedates* Tschudi, *Pseudophilautus* Laurent and *Taruga* Meegaskumbura, Meegaskumbura, Bowatte, Manamendra-Arachchi, Pethiyagoda, Hanken & Schneider. *Polypedates* is represented by two species with one being endemic. *Pseudophilautus* is represented by 67 all of which are endemic to the island (Manamendra-Arachchi & Pethiyagoda 2005; Meegaskumbura & Manamendra-Arachchi 2005, 2011; Meegaskumbura *et al.* 2007, 2009), and *Taruga* is an endemic genus recently described by Meegaskumbura *et al.* (2011), represented by three species.

Although the three species of *Taruga* possess distinctive morphological characters, they were previously classified under the genus *Polypedates*, and were separated based on phylogenetic analysis (Meegaskumbura *et al.* 2011). Species belonging to the genus *Taruga* are distributed in the wet zone of Sri Lanka. Based on the annual average rainfall, four main climatic zones have been recognized in the island, dry zone (rainfall < 2,000 mm yr⁻¹), wet zone (> 2,500 mm yr⁻¹), intermediate zone (1500–2500 mm yr⁻¹), and an arid zone (< 1,000 mm yr⁻¹). *Polypedates cruciger* is endemic and is commonly found in the intermediate and wet zone. *Polypedates maculatus* is commonly found in the intermediate and dry zone. Both *Taruga* and *Polypedates* are foam nesters (Meegaskumbura *et al.* 2011). The genus *Pseudophilautus* is a direct developing group, showing a high morphological diversity. *Taruga* and *Pseudophilautus* are endemic to Sri Lanka.

Here we report the results of a study which commenced from the year 2005 where we discovered a distinctive new frog species from Sri Lanka. Although we place the new species tentatively in the genus *Polypedates* it must be emphasized that this is a species showing extreme morphological divergence, especially in the skull, from other representatives of this genus.