



## Two new species of shrub frogs (Rhacophoridae: *Philautus*) from the lowlands of Sri Lanka

MADHAVA MEEGASKUMBURA<sup>1,2,3</sup>, KELUM MANAMENDRA-ARACHCHI<sup>2</sup> & ROHAN PETHIYAGODA<sup>2</sup>

<sup>1</sup> Museum of Comparative Zoology, Harvard University, 26 Oxford Street, Cambridge MA 02138, USA

<sup>2</sup> Wildlife Heritage Trust (WHT), P.O. Box 66, Mt Lavinia, Sri Lanka

<sup>3</sup> Corresponding author. E-mail: mmeegask@oeb.harvard.edu

### Abstract

Two new species of Sri Lankan frogs of the genus *Philautus* are described. Species diagnoses are based on morphology, morphometrics and mitochondrial DNA sequence data. *Philautus tanu* sp. nov. inhabits shrubs in open areas of the lowland wet zone, while *P. singu* sp. nov. is found on shrubs in the understory of lowland and mid-elevation rainforests. These descriptions bring the total number of valid Sri Lankan *Philautus* to 65 species, of which 46 are extant.

**Key words:** Rhacophorinae, taxonomy, molecular systematics, new species, conservation

### Introduction

Following the discovery in Sri Lanka of a large radiation of Oriental tree-frogs of the genus *Philautus* (Meegaskumbura *et al.* 2002), 37 new species have up to now been described as part of an on-going effort to document this fauna (Manamendra-Arachchi & Pethiyagoda 2005; Meegaskumbura & Manamedra-Arachchi 2005; Meegaskumbura *et al.* 2007). The review and description of 27 new species by Manamendra-Arachchi and Pethiyagoda (2005) though informed by a phylogeny, was based purely on morphology (given the unavailability of molecular data for historical type material). However, Meegaskumbura & Manamendra-Arachchi (2005) described eight additional new species using the General Lineage concept (de Quieroz, 1998), according to which species are regarded as independent evolutionary lineages based on multiple criteria, such as genetic divergence, morphology, ecology and vocalization. Meegaskumbura *et al.* (2007) added two new but extinct species discovered in historical museum collections, again adopting a purely morphological approach. The island's inventory of *Philautus* now stands at 63 species, of which 44 are extant. Surveys in Sri Lanka since the early 1990s have shown that 19 of these, known today only from museum specimens collected in the 19th and early 20th centuries, have since disappeared (Manamendra-Arachchi & Pethiyagoda 2005; Meegaskumbura *et al.* 2007).

Here we continue to document the new species discovered in Sri Lanka as a result of exploratory work, based on morphological, morphometric and molecular data, in the context of the General Lineage concept of species.

### Materials and methods

Field sampling and anatomical measurements were made as described in Manamendra-Arachchi & Pethiyagoda (2005), except as mentioned below.