



A new montane species of *Philautus* (Amphibia: Anura: Rhacophoridae) from western Sarawak, Malaysia, Borneo

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Abstract

A new species of *Philautus* is described from western Sarawak. The new species was collected in lower montane forest in two national parks in Sarawak and recorded from another park. It differs from its congeners by a unique combination of morphological characters, including a long, acuminate snout, long legs, and comparatively extensive toe webbing. The advertisement call of the new species differs from all calls of other species that have been analyzed so far. Comparison of the mitochondrial 16S rRNA gene sequence corroborates its distinct specific status.

Key words: *Philautus kakipanjang* sp. n., Kubah National Park, Gunung Gading, Gunung Santubong, Gunung Serapi, taxonomy, bioacoustics, DNA barcoding

Introduction

The genus *Philautus* is represented on Borneo by 18 species (Dehling 2010, Frost 2013). Except for *Philautus petersi* (Boulenger) which has its terra typica restricta on Great Natuna (Bossuyt & Dubois 2001) and is also considered to occur in Peninsular Malaysia, Thailand and Borneo, all species of *Philautus* known from Borneo are endemic to the island. Many species of the genus are morphologically variable and therefore difficult to distinguish from others. The work on the taxonomy of this group of frogs is facilitated by integrative approaches incorporating analyses of the advertisement calls and molecular genetics. During field work in several national parks in western Sarawak, we collected a species of *Philautus* which is not assignable to any of the described species from the Sunda region. The species differs from its congeners in a unique combination of morphological characters and differs in advertisement call characteristics and in the mitochondrial 16S rRNA gene sequence from all species for which these are known. Therefore it is described herein as a new species.

Material and methods

Field work was conducted in Kubah National Park (Matang Range), Gunung Gading National Park, and Santubong National Park in September and October 2009. Frogs were encountered at night and photographed in the habitat prior to collection. Specimens were euthanized by submersion in chlorobutanol solution, fixed and initially stored in 10 % buffered formalin and transferred to 70 % ethanol approximately four weeks after collection.

We took the following measurements to the nearest 0.1 mm using digital callipers: Snout-vent length (SVL); tibiofibula length (TFL, measured with both knee and tibiotarsal articulation flexed); thigh length (THL, from vent to knee with thigh being held perpendicularly to median body plane and knee flexed); total hindlimb length (LEG, from vent to tip of fourth toe with leg fully extended and being held perpendicularly to median body plane); tarsus + foot length (TarL, from tibiotarsal articulation to tip of fourth toe); foot length (FOT, from proximal end of inner