



Two new species of *Hemiphyllodactylus* Bleeker (Squamata: Gekkonidae) from Thailand

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Abstract

We investigate the taxonomy of slender geckos (*Hemiphyllodactylus*) in Thailand by means of molecular phylogenetics and morphological study using specimens from three provinces; Chiang Mai, Kamphaeng Phet, and Chanthaburi. The results of phylogenetic analyses had shown that the genetic data of populations from 2 provinces were distinctly different from known species. In addition, some morphological characters of these two populations such as lamellar formula on fore- and hindfoot differed from the other species. The integrated taxonomy using molecular phylogenetics and morphological study revealed two new species, *Hemiphyllodactylus khlonglanensis* **sp. nov.** from western Thailand, and *Hemiphyllodactylus flaviventris* **sp. nov.** from eastern Thailand as described herein.

Key words: Slender gecko, *Hemiphyllodactylus khlonglanensis* **sp. nov.**, *Hemiphyllodactylus flaviventris* **sp. nov.**, taxonomy, phylogeny, ND2

Introduction

Slender geckos are small geckos with a wide distribution throughout South and Southeast Asia, and the Indo-Pacific islands. Morphological studies of this genus had recognized at least nine species. *Hemiphyllodactylus yunnanensis* (Boulenger) is a member of this genus that was regarded as ranging through China, Myanmar, Thailand, Laos, and Vietnam (Zug 2010). In Thailand, Taylor (1963) recorded and described the characters of *H. yunnanensis* for the first time in Loei Province. Later, other researchers reported this species in other localities such as northern and northeastern Thailand (Nabhitabhata *et al.* 2000; Chan-ard *et al.* 2015).

The recent molecular study using a 1,505 bp of mitochondrial ND2 (NADH dehydrogenase subunit 2) gene had reported that two specimens collected in Thailand (LSUHC 9503, LSUHC 9504) differed from *H. yunnanensis* and were recognized as a new species; *H. chiangmaiensis* Grismer, Wood & Cota. In addition, the taxonomic status of three *H. yunnanensis* subspecies in China were revised into species level (Grismer *et al.* 2013; Grismer *et al.* 2014). From these results, Grismer *et al.* (2013) concluded that integrated taxonomy had revealed greater diversity of *Hemiphyllodactylus* than the former study.

In this study, the slender geckos were collected from three provinces of Thailand: Chiang Mai, Kamphaeng Phet, and Chanthaburi (Fig. 1). Mitochondrial ND2 sequences and morphological characters were used to evaluate the relationship of these specimens. The molecular and morphological characters of populations in Kamphaeng Phet and Chanthaburi differed from known species in the genus *Hemiphyllodactylus*, and are described herein as new species.