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The phylogenetic relationships of three new species of the *Cyrtodactylus pulchellus* complex (Squamata: Gekkonidae) from poorly explored regions in northeastern Peninsular Malaysia

L. LEE GRISMER[1], PERRY L. WOOD, JR.[2], SHAHRUL ANUAR[3,4], EVAN S. H. QUAH[3], MOHD ABDUL MUIN[3], MAKETAB MOHAMED[5], CHAN KIN ONN[6], ALEXANDRA X. SUMARLI[1], ARIEL I. LOREDO[1] & HEATHER M. HEINZ[7]

[1]*Department of Biology, La Sierra University, 4500 Riverwalk Parkway, Riverside, California 92515 USA. E-mail: lgrismer@lasierra.edu*
[2]*Department of Biology, Brigham Young University, 150 East Bulldog Boulevard, Provo, Utah 84602 USA. E-mail: pwood@byu.edu*
[3]*School of Biological Sciences, Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Penang, Malaysia. E-mail: shahrulanuar@gmail.com*
[4]*Center for Marine and Coastal Studies, Universiti Sains Malaysia, 11800 Minden, Pulau Pinang, Malaysia.*
[5]*Centre for Drug Research, Universiti Sains Malaysia, 11800 Minden, Pulau Pinang, Penang, Malaysia. E-mail: mamuin@gmail.com*
[5]*Malaysian Nature Society, JKR 641, Jalan Kelantan, Bukit Persekutuan, 50480, Kuala Lumpur, Malaysia. E-mail: maketab_mohamed@yahoo.com*
[6]*Biodiversity Institute and Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, Kansas 66045, USA. E-mail; chan@ku.edu*
[7]*Department of Biology, San Diego State University, San Diego, California, 92182 USA. E-mail: hheinz@rohan.sdsu.edu*

Abstract

An integrative taxonomic analysis of three newly discovered populations of the gekkonid genus *Cyrtodactylus* Gray from Merapoh, Pahang; Gunung Stong, Kelantan; and Gunung Tebu, Terengganu indicate they are part of the *C. pulchellus* complex and each is a new species and thusly named *Cyrtodactylus sharkari* **sp. nov.**, *C. jelawangensis* **sp. nov.**, and *C. timur* **sp. nov.**, respectively. Each species bears a unique suite of morphological and color pattern characters separating them from each other and all other nominal species in the *C. pulchellus* complex. Their phylogenetic relationships to each other and other species in the *C. pulchellus* complex were unexpected in that they are not in accordance with the general distribution of the species in this complex, underscoring the intricate historical biogeography of the Thai-Malay Peninsula. These descriptions highlight our current lack of knowledge concerning the herpetological diversity and distribution of species in northeastern Peninsular Malaysia.

Key words: Conservation, Integrative taxonomy, Molecular systematics, Southeast Asia, Sundaland, Conservation

Introduction

Recent taxonomic revisions (Grismer & Norhayati 2008; Grismer *et al.* 2012; Sumontha *et al.* 2012) of the Banded Bent-toed Gecko *Cyrtodactylus pulchellus sensu lato* demonstrated that this taxon was a complex of 10 morphologically and molecularly diagnosable species and that each occupied a specific biogeographic region (i.e., an upland area, an island, a cismontane lowland, etc.). Collectively, the species of this complex range from the Isthmus of Kra in southern Thailand southward through the Thai-Malay Peninsula to southern Peninsular Malaysia (Grismer & Norhayati 2008; Grismer *et al.* 2012; Sumontha *et al.* 2012) but have never been found east of the Banjaran Titiwangsa—the main mountain range separating the western one-third of Peninsular Malaysia from the eastern two-thirds. As such, this area represented a potentially significant sampling gap in the integrative analysis of Grismer *et al.* (2012).

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