

A taxonomic study of Whitehead's torrent frog, *Meristogenys whiteheadi*, with descriptions of two new species (Amphibia: Ranidae)

Abstract

The genus *Meristogenys* (Anura: Ranidae), endemic to Borneo, presents serious taxonomic problems despite being one of the commonest frogs in the mountainous regions of this island. We investigated molecular and morphological variations in *Meristogenys whiteheadi* (Boulenger, 1887) using larval and adult specimens from Sabah and Sarawak (Malaysia). We found three allopatric lineages in this species. We regard each of these as a distinct species because they are separated by a large genetic distance, and do not form any monophyletic group. Their morphological characters indicate that the distributional range of *M. whiteheadi* s.s. is divided into two disjunct areas: Mt Kinabalu (northern Sabah) and northern Sarawak. The two other lineages occupy ranges between those of *M. whiteheadi*, and represent undescribed cryptic species. One of these, *Meristogenys stigmachilus* sp. nov., collected from the northern part of the Crocker Range, is distinguished from *M. whiteheadi* by black spots on the upper lip and dark dots scattered on the back. A second undescribed species, *Meristogenys stenocephalus* sp. nov., was collected mainly from the southern part of the Crocker Range, and is characterized by the large body size of males and a relatively narrow head. *Meristogenys stenocephalus* sp. nov. also differs from *M. stigmachilus* sp. nov. and *M. whiteheadi* in larval morphology, but larvae of the latter two cannot be differentiated morphologically. We discuss relative tibia length, a diagnostic specific characteristic in the genus *Meristogenys*, and the relationships between body size and sexual size dimorphism in this genus. (C) 2011 The Linnean Society of London, *Zoological Journal of the Linnean Society*, 2011, 161, 157-183.