



<http://dx.doi.org/10.11646/zootaxa.3616.1.5>

<http://zoobank.org/urn:lsid:zoobank.org:pub:659E6372-9311-4E50-9B04-9D2729E5C111>

A new species of the genus *Gracixalus* (Amphibia: Anura: Rhacophoridae) from Southern Guangxi, China

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Abstract

A new species of the genus *Gracixalus* is described from Nonggang National Nature Reserve, based on eleven specimens from evergreen karst forests in Sino-Vietnamese border region of southern China. The new species, *Gracixalus nonggangensis* **sp. nov.**, is medium sized species of *Gracixalus* that can be distinguished from its congeners by a combination of the following characters: SVL ranging from 29.9–35.3 mm in males and 33.6–38.0 mm in females; vomerine teeth absent; distinct tympanum as wide as the disc of finger III; the lower part of the tympanum with many small tubercles; tibiotarsal articulation reaching the tip of the snout; dorsum smooth yellowish-olive in life with a wide, dark-green irregular mark; throat, chest and belly white with light grey-blue tint and brown marbling; broad, dark olive, transverse stripes on limbs; finger webbing absent, toes one-third webbed; male with internal subgular vocal sac. Based on a 16S ribosomal RNA mitochondrial gene fragment, *G. nonggangensis* **sp. nov.** forms a monophyletic group embedded within the genus *Gracixalus*.

Key words: *Gracixalus nonggangensis* **sp. nov.**, *Rhacophoridae*, Sino-Vietnam border area, Southern China

Introduction

The Sino-Vietnamese border area of southern Guangxi, China, lies in a subtropical region characterized by a warm climate, high rainfall and a complex topography. The region has a typical karst landscape with evergreen forest. Although amphibian surveys have been carried out in this area, the diversity of the amphibian fauna is imperfectly known. Many new records of amphibians for China or Guangxi have been reported from this area in the last decade (Mo *et al.* 2004, 2007, 2008a, 2008b; Fei *et al.* 2009).

From 2008 to 2011, herpetological surveys near the Vietnamese border in Nonggang National Nature Reserve, Guangxi, China, were undertaken (Fig.1). During these surveys, eleven specimens of a yellowish-olive treefrog were collected from karst evergreen forests. Morphologically, these specimens most closely resemble *Gracixalus quyeti* (Nguyen *et al.* 2008), but differ morphologically from *G. quyeti* and all other rhacophorids from China and adjoining countries. We assign these specimens to the genus *Gracixalus* based on the following morphological characters: nostrils oval, lacking a lateral dermal flap; pupil oval, horizontal; vomerine ridge absent; tongue oval, emarginate; arms short, slender; digits slender, terminating in wide, well-differentiated, grooved disks; fingers without a lateral dermal fringe, webbing absent; subarticular tubercles rounded, single; three palmar tubercles; supernumerary tubercles present; thigh and shank slender; webbing on toes present; dermal fringe along toe 5 absent; inner metatarsal tubercle distinct, oval; outer metatarsal tubercle absent; dorsolateral dermal fold absent; macroglands (parotid, maxillary, chest, axillary, shoulder and humeral gland) absent; vocal sacs present and nuptial pads absent in mature males. Following Frost (2011) and Rowley *et al.* (2011), the genus *Gracixalus* consisted of at least 10 species, of which three species (*Gracixalus gracilipes*, *G. quyeti*, and *G. quangi*) were similar to this species. In order to determine the generic placement of this species, and conduct a preliminary assessment of the molecular relationships among species within the genus *Gracixalus*, all *Gracixalus* species but *G. medogensis* were used to reconstruct phylogenetic relationships. Based upon both morphological and molecular data, the specimens are distinct from all other congeners hitherto known from China (Fei *et al.* 2009) and nearby countries, including Vietnam, Thailand, Laos, India, and Burma. We describe these specimens below as a new species.