



## A new species of *Fejervarya* (Anura: Dicroglossidae) from Bangladesh

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### Abstract

A new cryptic species of the genus *Fejervarya* is described from the Chittagong district of Bangladesh. *Fejervarya asmatis* sp. nov. is compared with its morphologically similar and geographically proximate congeners. The species can be readily diagnosed by having the following combination of characters: SVL 29.1–33.4 mm; butterfly shaped vocal marking present in male; forearm length 70% of hand length; relative length of fingers, shortest to longest:  $2 < 4 < 1 < 3$ ; nostril much closer to snout tip than eye, nostril–snout length 57% of distance from front of eyes to nostril; nostril–snout length 0.67% of internarial distance; MBE 18% of HL.

**Key words:** Amphibia, Anura, Bangladesh, *Fejervarya asmatis* sp. nov., advertisement call, morphometry

### Introduction

The genus *Fejervarya* consists of 32 recognized species of small to medium sized frogs distributed widely over South and Southeast Asia (Frost, 2010). However, the wide distribution and limited morphological differences among the species of this genus have created some confusion and difficulty, an often various species of this genus have been collectively identified as belong to the *Fejervarya limnocharis* complex (Islam *et al.*, 2008). Molecular phylogenetic studies demonstrated that *F. limnocharis* is restricted to Indonesia, Malaysia, Laos and Vietnam (Toda *et al.*, 1998; Biju, 2001; Veith *et al.*, 2001; Djong *et al.*, 2007a). Dutta and Singh (1996) reported that the *Fejervarya limnocharis* species group represents a complex consisting of 13 nominal species distributed in South Asia. All *Fejervarya* specimens so far studied from India and Bangladesh are distinct from *F. limnocharis* and it can be concluded that the range of the *F. limnocharis* is confined to southeastern Asia (Matsui *et al.*, 2007). Biochemical and molecular phylogenetic analyses clearly illustrate the presence of several cryptic species in the genus *Fejervarya* in South Asian region (Toda *et al.*, 1998; Kurabayashi *et al.*, 2005; Djong *et al.*, 2007a). Recently four cryptic species were described by Kuramoto *et al.* (2007) from the Western Ghats of India.

In contrast to India and Sri Lanka, few field studies have documented the composition of anuran communities of Bangladesh (Molur, 2008). In British India (Indian subcontinent), some studies were carried out by European researchers. Still only one species has been discovered from Bangladesh, which was described by Theobald (1868) as *Fejervarya frithii* from Jessore of Bangladesh. But it is now treated as invalid (Frost, 2010; Matsui *et al.*, 2007). After that, Asmat *et al.* (2003) suggested the occurrence of *F. limnocharis* in Bangladesh based on a primary survey, whereas Rasel *et al.* (2007) denied the presence of *F. limnocharis* and instead reported four species of *Fejervarya* from Bangladesh: *F. nepalensis*, *F. pierrie*, *F. syhadrensis*, and *F. teraiensis*. Islam *et al.* (2008) studied mitochondrial DNA sequences of the *F. limnocharis* complex in Bangladesh, and showed that their samples could be divided into three forms: a mangrove form, a large form, and a third, smaller form. Since these authors also observed reproductive isolation based on crossing experiments among the species of *Fejervarya* of Bangladesh and other Asian countries, they reasonably argued that they are different species. However, due to the lack of comprehensive morphological data, it is at present not possible to assess which of their three forms may correspond to the four species (*F. nepalensis*, *F. pierrie*, *F. syhadrensis*, and *F. teraiensis*) recorded by Rasel *et al.* (2007).