



Interspecific Amplexus between an Asian Black-Spined Toad, *Duttaphrynus melanostictus* (Bufonidae), and a Giant Treefrog, *Zhangixalus smaragdinus* (Rhacophoridae), in Meghalaya, Northeast India

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The distribution of the Asian Black-spined Toad (*Duttaphrynus melanostictus*) extends from southern China (including Hainan) and Taiwan through southern and southeastern Asia at elevations to 2,000 m in some places; introduced populations are established in Madagascar, Bali, Sulawesi, Ambon, Sumbawa, Manokwari and New Guinea (Frost 2022). The Giant Treefrog (*Zhangixalus smaragdinus*) ranges from northeastern India (Assam, Arunachal Pradesh, Nagaland, Mizoram, Manipur, Meghalaya, West Bengal), Nepal, southeastern Tibet, and China possibly into northern Bangladesh and northern Myanmar (Frost 2022). In areas where the two species are sympatric they almost always co-occur around bodies of water.

At 0930 h on 27 February 2022, during an ichthyological survey, we observed a male *D. melanostictus* (SVL 90.80 mm) in axillary amplexus with an adult female *Z. smaragdinus* (SVL 120.5 mm) (Fig. 1). The pair was found on a rock beside a pool in a stream near Pomshutia Village of Pynursla Block, East Khasi Hills, Meghalaya, India (25.23231 N; 91.95901 E; elev. 723 m asl). Air temperature and humidity were recorded as 23 °C and 89%, respectively. The amplexed pair was left undisturbed.

Multiple methods of communication and species recognition among amphibians include visual, chemical, and acoustic signals (Belanger and Corkum 2009). However, male anurans often fail to distinguish between males and receptive or spent females due to noisy environments and other co-occurring anuran species (e.g., Duellman and Trueb 1994; Shahrudin 2016). Interspecific amplexus between toads in the genus *Duttaphrynus* and other anuran species has been extensively documented (Ribeiro et al. 2014; Bell and Scheinberg 2016; Reilly et al. 2016; Sajjan et al. 2017;

Asad et al. 2018; Messenger and Spijker 2018; Jithin et al. 2021; Sengupta 2021). A male *D. melanostictus* has even been observed grasping a Leopard Gecko (*Eublepharis macularius*) (Jablonski et al. 2021).

Amplexus with non-conspecifics can cost males energy, time, and potential opportunities to mate successfully, potentially resulting in negative demographic consequences (Marco and Lizana 2002; Pearl et. al 2005). The use of specialized release calls, characteristic body vibrations, or inflation to evade unproductive attempts at amplexus have been reported in many species of anurans (e.g., Bowcock et al. 2008; Mollov et al. 2010). Why such signals appear to be futile in many instances, particularly in *D. melanostictus*, will require further studies.

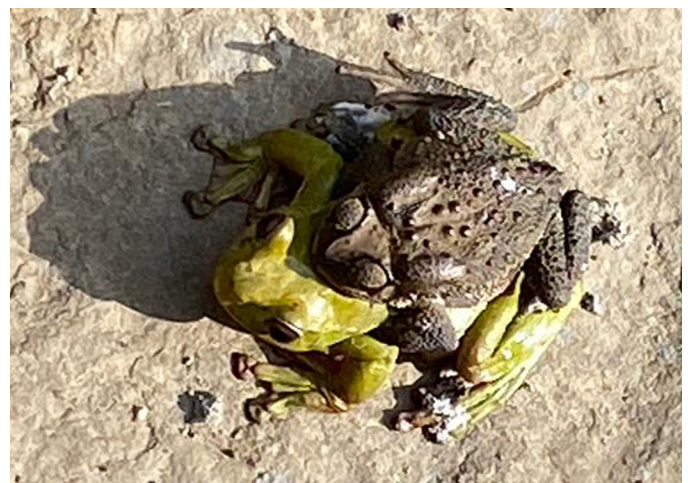


Figure 1. Interspecific amplexus between a male Asian Black-spined Toad (*Duttaphrynus melanostictus*) and a female Giant Treefrog (*Zhangixalus smaragdinus*) in Meghalaya, India. Photograph by Bashida Masaar.

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