



Mosquitoes (*Uranotaenia* sp.) Biting an Indian Golden-backed Frog (*Indosylvirana indica*)

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The Indian Golden-backed Frog (*Indosylvirana indica*) is a ranid found in the rainforests of the Western Ghats of Karnataka and Kerala in India (Biju et al. 2014). These frogs occur in high densities around seasonal and perennial streams in primary forests in the vicinity of the Agumbe Rainforest Research Station, Agumbe, Karnataka (pers. obs.; Purushotham and Tapley 2011). During the breeding season, males call from shallow water (pers. obs.) and females lay eggs in the shallow periphery of streams (Biju et al. 2014).

At about 2130 h on 5 February 2020, we observed a group of three male *I. indica* calling from a shallow section of a

stream running through primary forest in Agumbe, Karnataka (13°31'6.19"N, 75°5'28.65"W; WGS 84; elev. 556 m asl). Approximately eight mosquitoes were flying around the frogs and three mosquitoes appeared to be biting the dorsum of one (Fig. 1). Shortly afterwards, we observed another individual diving under the water in an apparent attempt to avoid the mosquitoes. The mosquitoes were identified as *Uranotaenia* sp.

Multiple species of *Uranotaenia* have been recorded from the Western Ghats (Munirathinam et al. 2014; Munirathinam et al. 2015) including species described as recently as two years ago (Natarajan et al. 2018). Mosquitoes in the genus



Fig. 1. Indian Golden-backed Frog (*Indosylvirana indica*) with mosquitoes (*Uranotaenia* sp.) on its dorsum. Photograph by Yatin Kalki.

Uranotaenia in other parts of the world are known to feed on frogs and some have even been identified as anuran specialists (Borkent and Belton 2006; Sorokin and Steigerwald 2017; Toma et al. 2019). Camp et al. (2018) noted that *Uranotaenia unguiculata* uses the calls of male frogs as cues to locate their prey, and de Silva et al. (2020) described a mosquito community that exhibited host-partitioning (i.e., each mosquito species will have one or more unique host anuran species). Further research is warranted on the relationships between mosquitoes and their anuran prey in the Western Ghats of India.

Acknowledgements

We thank the Madras Crocodile Bank Trust and Centre for Herpetology for supporting research at the Agumbe Rainforest Research Station. We also thank Anton Sorokin, Ellie Field, Amanda Tokash-Peters, and Kristin Sloyer for confirming the identity of the mosquitoes.

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