



# Color Change in an Upland Treefrog (*Polypedates braueri*) from Mizoram, India

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Physiological color change, which is common among amphibians (King et al. 1994; Garcia and Sih 2003), is regulated by neuromuscular or neuroendocrine signals and thus is rapid and reversible (Sumner 1940; Fujii 2000).

During ongoing herpetofaunal surveys throughout Mizoram, we conducted a field survey in the Sailam Community Reserve Forest, near Sailam Village, Aizawl District, Mizoram. At ca. 1800 h on 23 March 2022, we encountered an adult and a subadult *Polypedates braueri* emerging from vegetation near a seasonal lake in the Community Reserve Forest (23°20'58.92"N, 92°47'53.16"E; elev. 1,370 m asl). Frogs were identified based on the description by Vogt (1911) and genetic data in Kuraishi et al. (2011).

When initially encountered, the adult was grayish brown but began changing to a dark yellowish brown after being disturbed. The next day, the nocturnal coloration changed again to light yellowish brown and finally to pale yellowish brown (Fig. 1). The frog was collected and deposited in the Departmental Museum of Zoology (MZMU), Mizoram University (MZMU1998). We extracted genomic DNA from the liver tissue using QIAamp DNA Mini Kit (Cat No. ID: 51306) following the manufacturer’s protocols. The partial 16S mitochondrial rRNA was amplified using the primers: forward (L02510 - CGC CTG TTT ATC AAA AAC AT) (Palumbi 1996) and reverse (H03063 - CTC CGG

TTT GAA CTC AGA TC) (Rassmann 1997). We used Sanger sequencing to generate the nucleotide data (Barcode Bioscience, Bangalore, India). The generated sequence was submitted to GenBank (accession number ON603921). We believe this is the first report describing color change in *P. braueri*.

Color plasticity has been described in several rhacophorids (Lillywhite et al. 1998; Kuramoto and Joshy 2003; Rowley et al. 2011; Poyarkov et al. 2018; Deepak et al. 2019; Pandey et al. 2021), with the responses attributed to stress, reproductive activity, diel period, microhabitat (i.e., background matching), and disturbances by observers (Bennet et al. 1998; Molur and Molur 2010; Marcus 2017; Poyarkov et al. 2018; Deepak et al. 2019). Lillywhite et al. (1998) also reported color change in a *Polypedates maculatus*, a congener of *P. braueri* that was light in color (light gray, tan, or yellow) when placed in sunlight and changed to a darker color in shaded areas.

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**Fig. 1.** Color changes in an Upland Treefrog (*Polypedates braueri*) from Sailam Village, Mizoram, India: Grayish brown at the time of the initial evening encounter (A), dark yellowish brown after being disturbed by observers (B), and light yellowish brown (C) and pale yellowish brown (D) the next day. Photographs by Vanlal Siammawii.

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