

Color pattern variation on two species of wild frogs in North East of Thailand

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ABSTRACT: Two species of frogs, the tree frog *Polypedates leucomystax* (Gravenhorst, 1829) (Rachoporidae) and the Asian Grass frog *Fejervarya limnocharis* (Gravenhorst, 1829) (Dicroglossidae) were surveyed from several localities to study its presence and pattern variability. *Polypedates leucomystax* shows high pattern variability that could make confusion on the assignation of the species. In *Fejervarya limnocharis*, the vertebral stripe shows high variations on size and color. Three localities were surveyed: Phu Wua Wildlife Sanctuary, Na Yung-Nam Som National park and the Campus of Udon Thani Rajabhat University. We present the results showing variation in the same locality and between localities. No previous information exists in both natural reserves studied, providing first data in the present study.

Keywords: *Polypedates leucomystax*, *Fejervarya limnocharis*, color pattern variability

Introduction

Polypedates leucomystax is a very adaptable opportunist and commensally, occurring from beach vegetation through all manner of human habitats (Brown et al., 2010; Kuraishi et al., 2012; Diesmos et al., 2014).

Fejervarya limnocharis (Gravenhorst, 1829) inhabits most open wet habitat types (Dijk et al., 2009). This is a group of frogs that are known to show substantial morphological and color variation over their distribution range. Frogs of the genus *Fejervarya* are known to frequently have mid-dorsal stripes, which are an interesting character for evolutionary biology studies. It has been

distinguished between three phenotypes (Mohanty and Dutta, 1999): a pattern showing no line at all, a pattern showing a fine line and a third pattern showing a wide stripe.

Materials and methods

Three localities were surveyed: Phu Wua Wildlife Sanctuary, Na Yung-Nam Som National park and the Campus of Udon Thani Rajabhat University. Frogs were randomly collected by hand and identified according literature, photographs of each individual were done in dorsal and lateral view, and measurements of each individual were also performed.

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Results

Species identification

We detected individuals of *Fejervarya limnocharis* in Phu Wua Wildlife Sanctuary and Na

Yung-Nam Som National park, this frog was not detected in the Campus of Udon Thani Rajabhat University. Related to the color patterns, we have found with absence of stripe (Figure 1a) and with stripe (Figure 1b, c) in a single population.

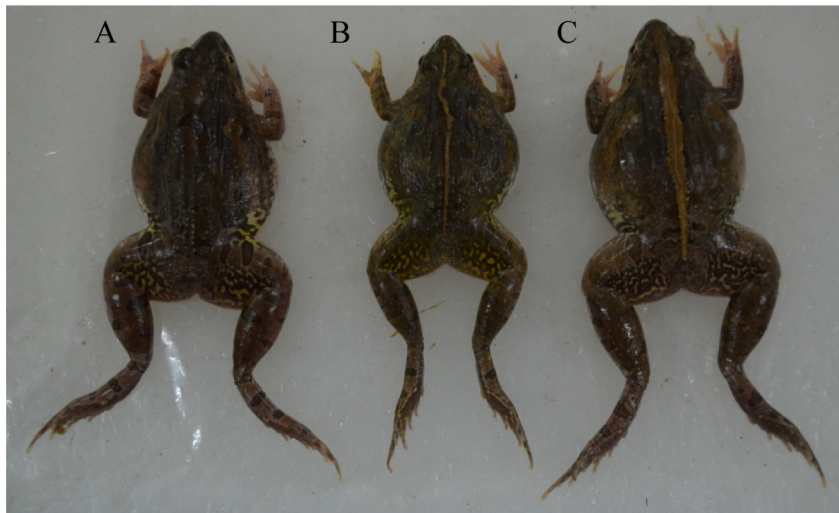


Figure 1 (a) *Fejervarya limnocharis* a pattern showing no line at all, (b) a pattern showing a fine line and (c) a third pattern showing a wide stripe.

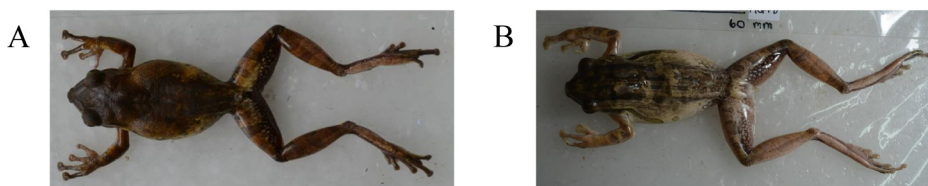


Figure 2 *Polypedates leucomystax* (a) dorsal view; (b) ventral view

Polypedates leucomystax was recorded in the three studied areas (Phu Wua Wildlife Sanctuary, Na Yung-Nam Som National park and Udon Thani Rajabhat University). In dorsal view we

observed individuals with four strip bands (Fig 2b), as well as individuals more uniform pattern (Fig 2a). On lateral view, also an high variation on the shape of the spot was observed (Fig 3a,b,c).

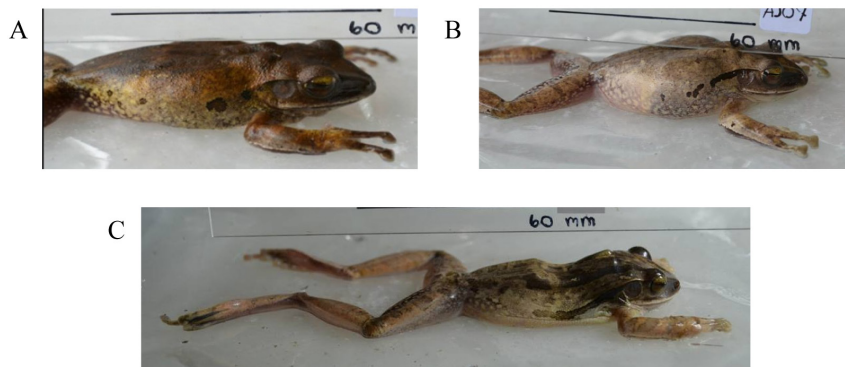


Figure 3 *Polypedates leucomystax* (a) (b) (c) dorsal view

Discussion and conclusion

We provide first report on frogs from Phu Wua Wildlife Sanctuary, Na Yung-Nam Som National park, where future studies are necessary to understand its biodiversity. According to literature we found considerable variations in color and patterns in both studied frog species in the same populations. This variation seems common in our studied populations and provides new data on the study of frogs in northeast Thailand.

Acknowledgements

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