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ASSESSMENT OF AMPHIBIAN POLYMORPHISM WITHIN THE HORTON PLAINS NATIONAL PARK

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ABSTRACT

Amphibian body coloration and pigment patterns play a vital role in their survival in the environment. Anuran polymorphism were studied in and around the three lentic water bodies of the Horton Plains National Park (HPNP) from January 2017 to November 2017 on three consecutive days per month. A total number of 511 amphibians, belonging to 3 families and 7 species were recorded during the study. All polymorphic amphibians examined during the study were categorized under either color polymorphism or pattern polymorphism. Pattern polymorphism consisted of body shape variations or presence or absence of the dorsal spots or stripes. Color polymorphism were recorded only in *Taruga eques* and in this species six dorsal colors were recorded within the HPNP. The most prevalent dorsal coloration of *Taruga eques* was Greenish (93.08%). Percentages of Purple colored (0.58%) and Cream colored (0.29%) *Taruga eques* were very low. Yellow, Dark brown and Dark orange dorsal colorations accounted for 02.01%, 02.31% and 01.73% respectively. Five different pattern polymorphism were recorded in *Taruga eques.* Distinct hour glass pattern was the highest prevalent pattern polymorphism of *Taruga eques* species (77.52%). Moreover this includes, Aberrant hour glass pattern (09.80%), Without hour glass pattern / the absence of the hour glass pattern (10.95%), Yellow line encircled hour glass pattern (01.73%) and Dorsal spots (02.59%).Three different dorsal patterns were recorded in *Fejervarya greenii*. The highest frequency of pattern polymorphism in *Fejervarya greenii* was Distinct vertebral line (82.23%). However, Deformed vertebral line and Without vertebral line pattern polymorphism in *Fejervarya greenii* were 13.33% and 04.44% respectively. The present study indicated that endemic *Taruga eques* possess diverse color and pattern polymorphism as other tree frogs in the world. Most of the recorded polymorphism in the present study were not previously recorded in *Taruga eques* and *Fejervarya greenii*. Presence of dorsal pigment patterns may be a selective advantage for amphibians, specifically for tree frogs and may disrupt the expression of bright dorsal coloration for visually oriented predators. However, further field studies are warranted to understand the selective advantages of polymorphism in amphibians.

Keywords: Polymorphism, *Taruga eques*, Fejervarya greenii, Horton Plains National Park