

## RELATIONSHIP BETWEEN SEXUAL MATURITY AND THROAT COLOUR INTENSITY IN THE MALE LITTER SKINK, *Lankascincus fallax*

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Colour polymorphism is a widespread phenomenon in the animal kingdom, and elucidating the mechanisms that generate and sustain this phenotypic diversity remains a central goal in evolutionary biology. *Lankascincus fallax*, an endemic skink to Sri Lanka, exhibits three distinct throat colour morphs (red with white spots, black with white spots and white). The brighter throat colours occur exclusively in larger males. In this study, the relationship between sexual maturity (*i.e.* testicular maturity) and throat colour intensity in male *L. fallax* was examined. Testicular maturity was determined through histological examination of testes in 19 preserved *L. fallax* specimens. Throat colour intensity was quantified by extracting intensities of Red, Green and Blue (RGB) colour channels from standardised digital photographs of the throat in live skinks (Black = 9, Red = 2, White = 24), using ImageJ software. Results showed that individuals with mature testes had a significantly larger mean snout-vent length (SVL: 39.75 mm, range 35.24 – 43.97 mm) compared to those with immature testes (mean SVL: 28.39 mm, range 26.94 – 29.48 mm;  $t = 7.162$ ,  $p < 0.001$ ), indicating a strong relationship between body size and testicular maturity. In red and white throated individuals, there was a positive correlation of red intensity with SVL and a negative correlation with blue and green intensities, suggesting that red colouration becomes more pronounced as red throated individuals grow. In black and white throated individuals, there was a positive correlation of blue intensity with SVL and a negative correlation with red intensity suggesting that blue colouration becomes more pronounced as black throated individuals grow. These patterns indicate that throat colour intensity increases with the body size (*i.e.* SVL) in *L. fallax* males. Taken together, these findings suggest that bright throat colours of male *L. fallax* serve as a reliable indicator of sexual maturity.

**Keywords:** Colour polymorphism, RGB colours, Snout-Vent length, Testicular histology