Investigation of Throat Colour Polymorphism in Relation to Sex and Body Size of the Litter Skink, *Lankascincus fallax*

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Colour polymorphism is a pervasive phenomenon in both animal and plant kingdoms. Understanding the evolution and maintenance of polymorphism is of interest to evolutionary biologists. Among the lizards of Sri Lanka, the skink Lankaskincusfallax shows throat colour polymorphism where its relationship to sex and body size is unknown. Hence, this study was carried out to examine the relationship of throat colour-morphs to sex and body size in this species. Live skinks were sampled from two locations in Sri Lanka for a period of four months.Sex and the throat colour were determined visually and the snout-vent length (SVL) was measured in the field. Tail tips of selected individuals from the two locations were taken and a fragment of the 12S rRNA gene was sequenced in representative individuals having the different throat colours. Pairwise genetic distance of the three colour-morphs ranged between 0.4-0.5%, confirming that the three colour-morphs were the same species. Three colour-morphs (red, black and white) were observed in males in both locations, while only the white morph was observed in females, suggesting that the colour polymorphism was confined to males. There was a significant association between throat colours and sex and a significant difference between mean SVL of colour (red, black) throated (39.35 mm) and non-coloured throated males (30.31 mm). Thus, our study suggests that the throat colour in these skinks is highly associated with sex and the body size (SVL) in males. Future studies are necessary to understand the underlying drivers for the presence and maintenance of these different throat colours.

Keywords: Sexual dimorphism, DNA-barcoding, scincidae, endemic species, conservation