

(29)

**Identifying Polymorphism among Females of the Spiny-Backed Spider *Thelacantha brevispina*, an Endangered Spider Species in Sri Lanka**

**P. Shreeganes<sup>1\*</sup>, S. Goodacre<sup>2</sup>, G. Kanapathy<sup>1</sup>**

<sup>1</sup>*Department of Zoology, University of Jaffna, Sri Lanka*

<sup>2</sup>*School of Life sciences, University of Nottingham, United Kingdom*

*\*sprasha05@gmail.com*

**Abstract**

Polymorphism, a phenomenon which is important for speciation, can be found in wide range in species. Conspicuous colour and pattern polymorphisms are widely observed among spiders, including the spiny backed spiders (*Gasteracantha* spp., *Micrathena* spp. and *Thelacantha* spp.), which belong to the family Araneidae. These spiders are described as 'spiny backed' because of the presence of prominent spines on their abdomen. *Thelacantha brevispina* is often mistaken as crab spider. They are a scientifically less known spider species and have been categorised as an endangered species in Sri Lanka according to the Red List of 2012. The present study aims to characterise the polymorphism among these spiders in Northern Sri Lanka. The samples, the exuviae and dead female spiders were collected from the islands and mangroves in and around the Jaffna Peninsula. The museum specimens deposited in the zoology museum at the University of Jaffna were also used in the analysis. Two different pattern morphs were observed. Morph A has the round shaped white marking on the middle of the carapace and morph B has half-moon like white markings on the carapace. Length, width and distance between spines were measured for the statistical analysis using a venire scale (least count 0.1 mm). Morph A is relatively bigger than morph B with the average length of 11.8 mm and average width of 4.0 mm. Morph B has an average length of 6.7 mm and average width of 4.6 mm. The measured lengths and widths were significantly different ( $p < 0.05$ ) among the morphs in student *t*-test. The evolutionary basis for the size and colour differences between the two morphs is not known but could be due to environmental pressures in the wet land of mangrove area. It is also now known whether or not there is any reproductive isolation between the morphs which could even belong to separate subspecies. A comparison between DNA based analysis along with the morphological data might reveal this. Establishing the relationship between spiders with different morphs will be immensely helpful in designing conservation measures for these endangered spiders.

**Keywords:** Polymorphism, Spiders, Mangrove