Malaysian Butterfly Lizard *Leiolepis triploida* (Reptilia, Squamata: Leiolepidae) in Clearwater Sanctuary, Perak: geographical range extension in Peninsular Malaysia

Hoi Sen Yong¹, Ken Yap², Daicus Belabut¹, Phaik Eem Lim¹,³ and C. K. Lee²

¹Institute of Biological Sciences, University of Malaya, 50603 Kuala Lumpur, Malaysia
²Clearwater Sanctuary, Lot 6019, Jalan Changkat Larang, 31000 Batu Gajah, Perak Darul Ridzuan, Malaysia
³Institute of Ocean and Earth Sciences, University of Malaya, 50603 Kuala Lumpur, Malaysia

(E-mail: yong@um.edu.my)

Received 22-09-2011; accepted 29-09-2011

Abstract The Malaysian Butterfly Lizard *Leiolepis triploida* is known from the inland areas of Perlis, Kedah and Seberang Perai (Penang) in the northwestern part of Peninsular Malaysia. The present finding of this butterfly lizard in Clearwater Sanctuary, Batu Gajah, Perak Darul Ridzuan has extended its known geographical range further south in Peninsular Malaysia. It remains to be established how far south it would spread, how widespread it is in Peninsular Malaysia, and whether it would displace the existing populations of the Common Butterfly Lizard *Leiolepis belliana*.

Keywords Triploid Butterfly Lizard – geographical range extension – parthenogenetic *Leiolepis* – Malaysia – tin mining area

INTRODUCTION

The lizard fauna of Peninsular Malaysia consists of some 128 species in eight families – Agamidae, 7 genera 28 species; Dibamidae, 1 genus 2 species; Eublepharidae, 1 genus 1 species; Gekkonidae, 9 genera 52 species; Lacertidae, 1 genus 1 species; Leiolepidae, 1 genus 2 species; Scincidae, 5 genera 38 species; and Varanidae, 1 genus 4 species [1].

There are two species belonging to the family Leiolepidae in Malaysia – *Leiolepis belliana* (Hardwicke & Gray) and *Leiolepis triploida* Peters [1]. They are commonly known as butterfly lizards. At present, the Common Butterfly Lizard *L. belliana* occurs on both the east and west coasts of Peninsular Malaysia – on the east coast from Tumpat, Kelantan south to Mersing, Johor; and on the west coast from Dinding, Perak south to Melaka as well as the offshore islands Langkawi, Kedah and Pulau Besar, Melaka [1]. On the other hand, the Malaysian Butterfly Lizard *L. triploida* is confined to the inland areas of Perlis, Kedah and Seberang Perai, Penang [1, 2].

We report here the finding of the Malaysian Butterfly Lizard *L. triploida* in Clearwater Sanctuary, Batu Gajah, Perak Darul Ridzuan, thus extending its known geographical range further south in Peninsular Malaysia.

MATERIALS AND METHODS

The observation was done on a sunny day in Clearwater Sanctuary, Batu Gajah, Perak Darul Ridzuan, Peninsular Malaysia, some 20 km from Ipoh (Fig. 1). This location is a former tin mining area, now a nature resort with a golf course. The lizard (Fig. 2) was photographed in the field and identified using existing literature [1, 3]. No specimen was collected from the site of its occurrence.

RESULTS AND DISCUSSION

The butterfly lizards (Leiolepidae) are represented by at least eight species, comprising four sexual and four asexual species [4]. The sexual species are: *Leiolepis belliana* (Hardwicke & Gray, 1827) – Common Butterfly Lizard, Bell’s Butterfly Lizard; *Leiolepis guttata* (Cuvier, 1829) – Giant Butterfly Lizard, Spotted Butterfly Lizard; *Leiolepis peguensis*

Butterfly lizards are characterized by the possession of forelimbs, eyelids and round pupils; with anterior portion of the tail relatively wide and dorsoventrally compressed; and the dorsal scales of the body, limbs and tail very small, smooth and granular [1]. Of the two species present in Peninsular Malaysia, *L. triploida* is easily distinguished from *L. belliana* by the colour pattern on the flanks – with thin, yellowish to cream coloured bars in *L. triploida*, but with broad vertical orange and black bars in *L. belliana* [1, 3]. Phylogenetic inference based on 700 base pairs of the mitochondrial ND2 region indicates *L. boehmei* as the maternal ancestor of *L. triploida* [4] – *L. boehmei* is restricted to southern Thailand [1].

**Figure 1.** Location of Batu Gajah, Perak Darul Ridzuan, Peninsular Malaysia.

**Figure 2.** The parthenogenetic Malaysian Butterfly Lizard *Leiolepis triploida* at Clearwater Sanctuary, Batu Gajah, Perak Darul Ridzuan, Peninsular Malaysia. (photo: H. S. Yong)
During a recent on-going survey (September 2011) of insect fauna at the Clearwater Sanctuary, a single specimen of *L. triploida* was encountered in the early afternoon on the ground near the periphery of the golf course. When approached, the lizard ran away rather quickly and vanished into the bush nearby. It was however captured in pictures (Fig. 2) before it dashed away and disappeared completely from view. Two burrows, separated some distance from each other, were present not far away along the path.

Adult *L. triploida* may reach a snout-vent length of 148 mm [1, 3]. It was first described and named in 1971 [5], with the type locality as ‘Malaysia-Thailand border of the Malay Peninsula’. Being parthenogenetic it is represented by females only; males do not exist in such asexual organisms. It inhabits disturbed, open areas with loose soil. It has been reported to be most common in agricultural areas throughout eastern Perlis and Kedah, especially in rubber plantations but also in oil palm plantations, paddy fields, orchards and abandoned mining areas [1]. Based on historical records for the occurrence of *L. belliana* in Kedah but is no longer present, it has been suggested that *L. triploida* has outcompeted and replaced *L. belliana* due to the conversion of forests into plantations [6].

Extension of georaphical range has also been recorded for the Tawny Coster *Acraea terpsicore* (Linnaeus, 1758), synonym *Acraea violae* (Fabricius, 1793), in Clearwater Sanctuary in 2000 (H. S. Yong, unpublished data). This nymphaid butterfly originated in India (and Sri Lanka) but spread through Myanmar and Thailand into Peninsular Malaysia. It is now established in Kuala Lumpur and other southern parts of Peninsular Malaysia.

Another instance of seemingly ‘extension of geographical range’, among others in Peninsular Malaysia, is the Forest Crested Lizard *Calotes emma* Gray, 1845. Earlier studies documented its occurrence in Peninsular Malaysia only in the northern states of Kedah and Perak [7], and “remains west of the Banjaran Titiwangsa” [1]. It has more recently been recorded in the east coast state of Kelantan [8].

The present finding of *L. triploida* in Perak has extended its known geographical range further south in Peninsular Malaysia. Studies are needed to determine how far south it has spread, how widespread it is, and whether it would displace the known populations of *L. belliana* on the west coast of Peninsular Malaysia.

**Acknowledgements** – This study received support from University of Malaya (Special Research Fund H-00000 5620009) and the Clearwater Sanctuary Golf Resort.

**REFERENCES**
