

(15)

Distribution of butterfly fauna in home gardens of Knuckles region

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Abstract

Sri Lanka consists of a rich diversity of butterflies compared to other Asian countries but information on taxa remains very limited. The present study on butterflies at the Knuckles region was carried out to fill this information gap and also to attempt to identify the reasons for their decline in the study area. A survey of butterflies was carried out from January to March 2012 in several home gardens in 3 different locations of the Northern flank of the Knuckles range namely Mahalaketuwa, Attanwela and Bellanella. A linear transect of 1 km each was selected at each site for sampling and each transect was trekked for 1.5 hrs to sample butterflies using the standard 'Pollard Walk' methodology. The Shannon index (H') was used to compare the diversity of butterfly species within sites. The feeding plants of the adult butterflies were also recorded.

A total of 52 species of butterflies belonging to eight families which represents more than 1/5 of the total butterflies of Sri Lanka were recorded during the present study. This includes five endemic species. Two endangered species (*Pachliopta jophon* and *Lethe daretis*) were also recorded. Among the three sites the highest diversity of butterflies was observed in Mahalaketuwa (H' -3.87) with 44 species, while the lowest diversity was in Attanwela (H' -3.68) with 38 species. Bellanella had 43 species. Nymphalidae was the most species rich family in all three sites where as Papilionidae formed the most abundant family. The Common jezebel (*Delias eucharis*), Chocolate soldier (*Junonia iphita*) and Blue mormon (*Papilio polym nestor*) were the most abundant butterfly species in Attanwela, Mahalaketuwa and Bellanella, respectively. It is noteworthy that all the five endemic species was recorded only in Bellanella. A total of 22 plant species belonging to 10 plant families were used by adult butterflies for feeding. Introduced plant species such as *Lantana camara* and *Austroeupatorium inulifolium* were heavily utilized probably due to nectar being present in their flowers during the study period. The variation in abundance of certain rare butterfly species among the three sites may be due to the use of agro-chemicals on flowering plants which destroys both the butterflies and the larvae that feed on them. It was observed that the presence of feeding plants are an essential factor that influenced the occurrence of adult butterflies and therefore the conservation of feeding plants is essential for their protection. This study has shown that the home gardens in the Knuckles range hold rich and unique butterfly assemblages. The use of agro-chemicals in the home gardens may result in population reductions and also probably local extinction of many of these valuable butterfly species.

Keywords: Butterflies, diversity, Knuckles, endemics, agrochemicals