

Diversity of Moths in two Different Habitat Types of the Wet Zone of Sri Lanka**Gunathunga P.*, Pallewatta N., Dangalle C.***Department of Zoology and Environment Sciences, University of Colombo, Colombo 03,
Sri Lanka***panchalie.gunathunga@gmail.com***Abstract**

Moths (Insecta: Lepidoptera) of Sri Lanka have not been well studied despite the country being a global biodiversity hotspot. It is known that the moth communities are declining worldwide due to threats such as loss and fragmentation of habitats, urbanisation, light pollution, invasive species, and climate change. Thus, tropical moth assemblages that contribute towards ecosystem functions including pollination should be studied and conserved. The present study was carried out in Indikadamukalana Forest Reserve (IMFR) and in Wattala, an urban habitat, both in Western Province to investigate the moth species diversity, richness, relative abundance and habitat parameters that can affect moth assemblages. Moth diversity was investigated over a 7-month period from February to October 2018. Transect line count method was used to sample diurnal moths and light traps with white reflective sheets were used to study nocturnal moths. Aerial nets and fruit baited traps were also used. A total of 160 species belonging to 20 families which represent 8.37% of the 1,911 moth species recorded from Sri Lanka were recorded from both habitats with IMFR recording 138 species belonging to 19 families and urban habitat recording 26 species belonging to 12 families. The species richness and abundance of moths were highest at IMFR. Least species richness and abundance of moths were recorded from the urban habitat. Family Crambidae was the most specious and dominant group throughout the study period followed by family Erebididae which could be due to habitat strata occupied by the moth groups whereas Families Pterophoridae and Tortricidae were recorded with the least number of individuals at IMFR and urban habitats respectively. At IMFR highest abundance of moths were recorded in May while in the urban habitat it was August. The climate parameters between the two habitats did not depict a significant difference but relative humidity was observed to have the highest impact on the changes in abundance of moths with ambient temperature having the least. This study has provided a baseline for future studies into moths of lowland wet zone forests and has highlighted the importance of natural forests in the maintenance of moths in the country. The diversity observed between the habitats were mainly due to anthropogenic activities and could be most probably due to the presence of host plants, evolutionary adaptations and weather parameters. The study recommends, establishing a scientific database on moth diversity, host plants and other factors of the moth life cycle.

Keywords: Moths, Wet zone, Sri Lanka