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PRELIMINARY STUDY ON DIVERSITY OF LEPIDOPTERANS IN TWO DISTINCT HABITATS IN THE DUNUMADALAWA FOREST RESERVE, KANDY, SRI LANKA

C.D. Kodithuwakkuarachchi[1*], K.C. Weerakoon[1] and T.R.K. Hettiarachchi[2]

[1]Department of Zoology, The Open University of Sri Lanka, Polgolla, Sri Lanka.
[2]Department of Zoology, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka.
[*]chathudulanjali24@gmail.com

The present study investigated the diversity of lepidopterans (Class Insecta, Order Lepidoptera) at Dunumadalawa Forest Reserve, Kandy, a sub-montane forest in the wet zone of Sri Lanka. Sampling was done in two selected habitat types: a mixed forest habitat above the Rosnith Lake and a habitat dominated by the invasive Yakadamaran trees (*Myroxylon balsamum*). The study was conducted for one year, from February 2019 to March 2020. In each habitat, butterfly and moth species and their abundance were recorded while walking along a 50 m line transect extending 5 m on either side of the mid-line and a maximum of one hour at each transect. Five such transects were sampled from each habitat. Field identification of butterflies and moths was done using standard guides, and photographs were taken to document the species encountered. A total of 31 species, including six endemics belonging to 15 families, were recorded from the mixed forest, whereas 21 species with two endemics belonging to eight families were recorded from the habitat with Yakadamaran trees. The butterfly family Pieridae was dominant in the mixed forest habitat above the Rosnith Lake, while the moth family Erebidae dominated the Yakadamaran forest habitat throughout the study period. The Shannon diversity index (H′) of lepidopterans in the mixed forest habitat above the Rosnith Lake and in the Yakadamaran forest habitat were 2.53 and 1.33, respectively. Species evenness (E) was 0.77 in the mixed forest above the Rosnith Lake habitat and 0.44 in the Yakadamaran forest habitat. According to the Shannon diversity index, the mixed forest above the Rosnith Lake habitat had a higher diversity of butterflies and moths compared to the Yakadamaran forest habitat. Moreover, the lepidopteran species are more evenly distributed in mixed forest habitats compared to the Yakadamaran forest habitat. According to the study, habitat homogeneity and associated conditions directly influence the lepidopteran diversity.

Keywords: Diversity index, Habitat homogeneity, Lepidopteron, Species Evenness, Transect