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A survey on species diversity, distribution and abundance of Lampyrids (Coleoptera; Lampyridae) in selected habitats of the Badulla District (Uva Province), Sri Lanka

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Lampyrids are a charismatic group of insects and proper studies have not been conducted regionally other than in the Southern Province of Sri Lanka. Hence, the present study surveyed the species diversity and distribution of lampyrids from January to December 2011 of selected habitats in the Badulla District, Uva Province, Sri Lanka. Four different habitats were selected within the district such as terrestrial grasslands, fresh water associated habitats, tea cultivations and paddy cultivations. A 100 m² area was selected in each habitat. Adult fireflies were collected using the hand net once a month from 1800 – 2200 hours of each sampling day. Abundance, diversity and evenness were estimated using the relevant ecological indices. Nine lampyrid species namely *Asymmetricata humeralis*, *Curtos costipennis*, *Diaphenes lutescens*, *Diaphenes vitrifera*, *Lamprigera tenebrosa* and 4 *Luciola* species such as *L. cingulata*, *L. melaspis*, Near (*L. terminalis*) and *L. praeusta* were identified belonging to 5 genera. Of these, Near (*L. terminalis*) and *L. melaspis* were the dominant species in the region and *C. costipennis* and *D. lutescens* were the less abundant species of lampyrids. *A. humeralis* and *D. vitrifera* showed the highest abundance in terrestrial grasslands, while *L. cingulata* was the most abundant lampyrid species in the habitat associated with fresh water. When *L. tenebrosa* represented the highest abundance in paddy cultivations, the other five species had distributed more or less similarly all over the habitats. The highest Shannon Weiner species diversity index (2.107) and evenness (0.959) was in paddy cultivations of the region indicating the possible ecological role of Lampyrids as natural pest control agents in agricultural ecosystems. The lowest diversity (1.728) and evenness (0.831) were recorded in habitats associated with fresh water.

Information in this study will be helpful in assisting future researchers and would provide beneficial insights of lampyrids in Sri Lanka with regard to their ecological and conservational significance.