Rapid assessment of butterfly diversity in a ecotone adjoining Bannerghatta National Park, Bengaluru

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Introduction

The tropical regions, being the evolutionary origins of butterfly diversity, show high abundance and species diversity compared to temperate regions exhibit relatively stable population dynamics, longer-lived adult stages, and more continuous age-specific reproduction compared to temperate zone species and also due to complex species interactions like mimicry, parasitism and predation that significantly influence the ecological and evolutionary processes in tropical butterflies than in temperate ones (Bonebrake *et al*., 2010). Butterflies are an important component of the food chain (Aneesh *et al*., 2013), and are considered ideal subjects for ecological studies of landscapes and also act as indicators (Thomas and Malorie 1985, Kremen 1992, Kocher and Williams 2000). Plant diversity (shrubs and herbs) can be circuitously estimated depending on the species of butterflies available on the given area as caterpillars are purely depended on the host plant for their nutrition, some caterpillar are strictly plant species specific (Aneesh *et al.,* 2013).

In the present paper a preliminary field survey was undertaken to record the butterflies of Taralu estate and adjoining areas is reported.

Materials and Methods

Taralu estate (10°17'-10°19' N; 76°39'-76°44' E), a small settlement in Bengaluru South Taluk, Bengaluru Urban district has been selected as study area on the basis of following reasons viz., lack of literature on the butterfly fauna, proximity to the Bannerghatta National park and rich floral with mixed micro-habitat regimes. Field surveys were undertaken following earlier protocols (Kunte et al., 2012). Weekly field diurnal surveys were undertaken in the study area during April and May, 2014 by transect walks mostly during the early hours of the day. Individual species were photographed using Canon Powershot SX40. A sweep net was carried to collect species whose identity needed confirmation. Butterflies captured were released as soon as identification was confirmed. Online information websites were referenced for identification and confirmation of the species to reaffirm the species identification (http://www.ifoundbutterflies.org)/#!/tx/8-Nymphalidae-dp1.

Results and Discussion

Butterflies are charismatic and easy to find and measure in any ecosystem, the findings of the present survey report 16 species of butterflies belonging four families viz., Papilionidae (1), Pieridae (6), Lycaenidae (3) and Nymphalidae (6) (Plate 1), the highest in family Nymphalidae (Figure 1). Complex biodiversity within intricate food webs confers stability and equilibrium to the overall ecosystem. Lepidoptera are the primary defoliating herbivores in forest ecosystems converting plant biomass into animal biomass, and making it available to higher trophic levels in the food chain (Stamp and Casey 1993). Both adults and caterpillars represent the primary trophic level serving as food for herpetofauna and avifauna of the area. Thus, considering their aesthetic and ecological values attention to maintaining the butterfly species' habitat requirements is necessary to ensure that they are not impacted by anthropogenic pressures. The present list is from a short pilot survey during summer months, and is not a complete list.

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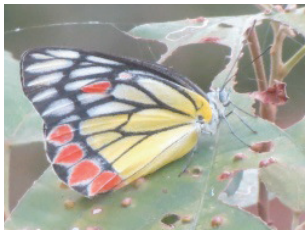
Plate 1. List of species recorded in and around Taralu

Pieridae (Whites and Yellows)

Common grass yellow
Eurema hecabe

Crimson Tip
Colotis danae - Male

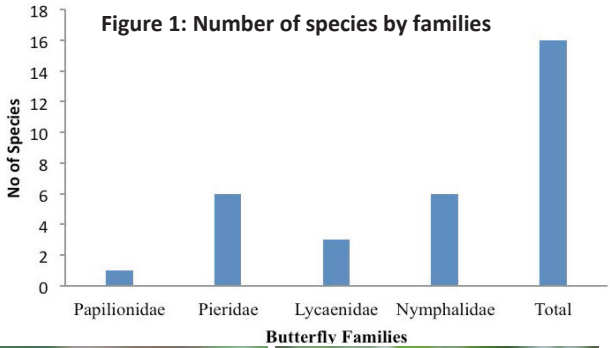
Plain Orange Tip
Colotis aurora



Common Jezebel
Delias eucharis

Common Gull
Ceporanerissa (Wet SF)

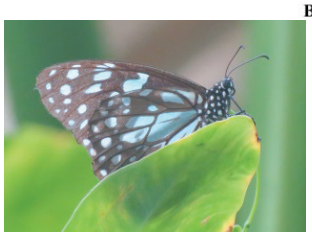
Mottled Emigrant
Catopsila pyranthe



Nymphalidae (Brush Footed)

Lemon Pansy
Junonia lemonias

Common evening brown
Melanitis leda (Wet SF)



Blue Tiger
Tirumala liminace - Female

Double Branded Crow
Euploea sylvester

Baronet
(*Symphaedra nais)*

Common Four-ring
Ypthima huebneri (Wet SF)

Common Four-ring
Ypthima huebneri (Dry SF)

Papilionidae (Swallowtails)

Crimson Rose
Pachlipota hector

Lycaenidae (Blues)

Gram Blue
Euchrysops cnejus - Female

Dark Grass blue
Zizeeria karsandra - Female

Common Cerulean
Jamides celeno