A Survey of The Butterfly Diversity In Kannur District, Kerala

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Abstract- *A butterfly survey is carried in Kannur district, Kerala to examine the diversity, habitat preference and evenness of butterflies across 3 transects namely, Garden area, Herbs and shrubs and Beach region. The survey was carried out from September 2018 to November 2018 to suitably access the butterfly diversity of the region. A total number of 39 species of butterflies from 6 different families were recorded. The November month holds more diversity of species than in September and October. The family Nymphalidae were dominant followed by Papilionidae, Pieridae, Lycaenidae and least in Hesperiidae and Satturnidae.So, the present study was carried out the number of species observed in Garden habitat was consistently greater than Herbs and shrubs and Beach region.*

Keywords-Butterflies, Kannur, Kerala

I. INTRODUCTION

India comprises more than half of earth diversity of species (James et al., 2015). The butterfly fauna of the southern part of the Indian peninsula is very rich and diverse compared to other parts of the peninsula due to the availability of diverse habitat (Gaonkar.1996). India, with its diversified ecosystems ranging from the snow clad temperate forests in the Himalayas to the tropical wet evergreen forests of the Western Ghats, has a rich butterfly abundance.Many of the butterfly species are strictly seasonal and prefer only a particular set of habitats and they are good indicators in terms of anthropogenic disturbance and habitat quality (Kocher et al.,2000). The main causes for the decline of butterfly populations are deforestations, habitat destruction for urbanization, industrialization.

Butterflies are a useful bio-indicator because they can be readily surveyed, and -they react rapidly to environmental changes due to their short generation time, high mobility, and specific habitat preference (Clark et al., 2007). These are also well known both taxonomically and ecologically (Honda and Kato 2005; Kim et al,. 2011).

Due to their high sensitivity to environmental changes, abundance and advanced taxonomy, butterflies are identified as ideal indicator taxa of habitat disturbance (Kocher and Williams, 2000; Bone brake et.al., 2010).

It is found that any minor changes in their natural habitat due to anthropogenic factors can lead to their migration or local population extinction (Blair, 1999). Insects are one of the good indicators of environmental quality of an ecosystem. They have specific habitat requirements depending upon their feeding and reproduction requirements. Thus, the conservation value of a habitat could be assessed by the presence of various species of butterflies in an area.

The present study was aimed to examine the diversity, habitat preference and eveness of butterflies across 3 different habitats, namely Garden area, Herbs and Shrubs and Beach region, located in Kannur district

II. MATERIALS AND METHODS

STUDY AREA

Kannur is one of the districts along the west coast in the state of Kerala, India. It is bounded by Kasargod district to the north, Kozhikode district to the south and Wayanad district to the southeast. Three transects Home garden, Beach region and Hernbs and shruba were taken for the study.

FIELD DATA COLLECTION

The survey was carried out from September 2018 to November 2018 to suitably access the butterfly diversity of the region. Most of the observations were recorded in the morning 8 am to 12 pm and 4.30 pm to 6 pm. Based on the frequency of the sighting, butterfly specimens were divided into two categories, they were (a) Common (b) Rare.Each transects were observed monthly twice in appropriate weather conditions and the species were identified. Observations were made by direct visual method and Cameras used were, Oppo 6.0 mega pixels. Flash was mostly kept off to capture natural colors. Butterflies were photographed from different angles as often as possible to obtain sufficient photographs to enable positive identification of species.The scientific name, common name, family, and relative abundance of the butterflies is

noted. Butterflies were identified with the help of a guide (Aiswaryaet al., 2014).

III. RESULT AND DISCUSSSION

A total of 39 butterflies of 6 different families are observed. The family Nymphalidae has the highest number of species while Hesperiidae and Satturnidaehas the least number of species. A total of 24 species were observed in the garden transect, 9 species from Herbs and shrubs and 6species from Beach region.The monthly variation in species diversity were recorded. The present study is the month of November with species followed by September with species and October with species.

The present study was aimed to examine the diversity, habitat preference and evenness of butterflies across 3 different habitats namely, Garden area, Herbs and Shrubs and Beach region located at Kannur District.

The butterfly count is decreased in urbanized area due to the loss of host plants, chemicals etc.The family Nymphalidae showed that maximum species richness. Maximum butterfly species observed in the month of November and least in February. The number of butterfly species observed in Garden habitat was constitutively greater than Agrifield, pond, grassland and trees and shrubs (LekshmiPriyaet.al. 2017).We have got the similar result, Nymphalidae shows more number of butterflies. The November month holds more butterfly than September and October.

During the present study, the number of butterflies were peaked during November. The species abundance was less during October. Abundance of butterfly species is due to favourable tropical climatic conditions, availability of host plants, food and vegetation. The present study reveals that the study areas provide favourable ecological conditions and habitat for butterflies. It might be due to the presence of sufficient host plants and favourable climatic conditions for the development and growth of butterflies. The present study reveals that reducing the usage of pesticides and genetically modified plants can increase the butterfly count.

IV. CONCLUSION

From this survey, it showed that that the number of species observed in Garden habitat was consistently greater than Herbs and shrubs and Beach region. This is probably due to the destruction of host plants, use of chemical pesticides, and human disturbances.

The decrease in natural habitat associated with the increased urban area negatively influenced species composition and changed butterfly communities. With the pressing needs of the growing human population in India, Loss of prime habitat is the major threats from human recreational activities, trampling, run-off from roads, litter deposition and weeds are common factors which affect butterfly populations. Biodiversity in urban area is decreased due to the increased areas such as residential area, industrial area, and commercial area associated with the decrease of natural environment. If the landscaping and maintenance of Gardens are carefully planned, the diversity of butterflies may increase providing a rich ground for butterfly conservation.
Therefore, improving biodiversity is important for comfortable human living in urban areas.From the above observation, I concluded that reducing the usage of pesticides and genetically modified plants can increase the butterfly natural greeneries are being clear- felled giving way to urbanization, pollution and overgrazing.

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Table 1. Family wise distribution of butterfly common name and relative abundance in Kannur district, Kerala.

BUTTERFLIES IDENTFIED FROM KANNUR DISTRICT				
SERIAL NO	**COMMON NAME**	**SCIENTIFIC NAME**	**FAMILY**	**RELATIVE ABUNDANCE**
1.	The common baron	*Euthaliaacanthea*	Nymphalidae	Common
2.	Common rose	*Pachiloptaaristochiae*	Papilionidae	Common
3.	Common blue bottle	*Graphiumsarpedon*	Papilionidae	Rare
4.	Common mime	*Papilioclytia*	Papilionidae	Common
5.	Three spot green yellow	*Euremablanda*	Pieridae	Common
6.	Malabar tree nymph	*Idea malabarica*	Nymphalidae	Common
7.	Common crow	*Euploea core*	Nymphalidae	Common
8.	Dark band bush brown	*Mycalesiamineus*	Nymphalidae	Common
9.	Rustic	*Cuphaerymanthis*	Nymphalidae	Rare
10.	Choclatepancy	*Junoniaiphita*	Nymphalidae	Common
11.	The Great egg fly	*Hypolimnasbolima*	Nymphalidae	Rare
12.	Lemon pancy	*Junonialemonias*	Nymphalidae	Common
13.	Dark Branded crow	*Euploea Sylvester*	Nymphalidae	Common
14.	Common grass	*Euremahecabe*	Pieridae	Rare
15.	Grey pansy	*Junoniaatlites*	Nymphalidae	Common
16.	Common Palm fly	*Elymniashypermenestra*	Nymphalidae	Common
17.	Striped tiger	*Danausgenutia*	Nymphalidae	Common
18.	Dark blue tiger	*Thirumalaseptentrionis*	Nymphalidae	Common
19.	The Indian cupid	*Evers Lacturnidae*	Lycanidae	Rare
20.	Blue mormone	*Papiliopolymnester*	Papilionidae	Rare
21.	Southern Bird Wing	*Troidesminos*	Papilionidae	Rare
22.	Giant moth	*Atlas moth*	Satturnidae	Rare
23.	The Tailed Jay	*Pachiloptahecter*	Papilionidae	Rare
24.	The Crimpson Rose	*Heptis soma*	Papilionidae	Rare
25.	Common leopard	*Phalanthaphalanta*	Nymphalidae	Rare
26.	The brown pansy	*Junoniahedonia*	Nymphalidae	Common
27.	Common evening brown	*Melanitisleda*	Nymphalidae	Rare

28.	Tailed jay	*Graphium Agamemnon*	Pieridae	Common
29.	Malabar raven	*Papiliodravidarum*	Papilionidae	Common
30.	Psyche	*Leptosianina*	Pieridae	Rare
31.	Common emigrant	*Catopsiliapomona*	Pieridae	Rare
32.	Grey pancy	*Orsotriaenamedus*	Nymphalidae	Common
33	Dark branded swift	*Pelopidas agna*	Hesperiidae	Rare
34.	Common grass yellow	Colotisetrida	Pieridae	Rare
35.	Tawny coaster	Acrareaviolae	Nymphalidae	Rare
36.	The white tipped line blue	Prosotasnoreia	Lycanidae	Common
37.	Black swallow tail	Rolf nauussbaumer	Papilionidae	Common
38.	Choclatepancy	Junoniaiphita	Nymphalidae	Common
39.	Paris peacock	Papilioparis	Papilionidae	Rare

Fig : 1 Family wise distribution of abundance of butterflies in Kannur district, Kerala.