

An Analysis of Butterfly Diversity at St. Mary's College Thrissur

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ABSTRACT:

Butterflies are sensitive species having very important role in ecosystem as pollinators and ecological indicators. They are vital for estimating quality and sustainability of the ecosystem. In the present study Butterfly diversity at St Mary's College, Thrissur, Kerala was investigated for the period from January 2016 to December 2019.

The results indicates that the campus has diverse butterfly fauna. 46 species of butterflies belonging to five families were recorded. Nymphalidae was dominant group with 19 species followed by Lycaenidae 7, Papilionidae with 9 species, Hesperidae with 5 and Pieridae with 6 species. On analysing the abundance status, it was found that 9 species were very common, 25 species were common, 7 were rare, 5 Very rare.

INTRODUCTION:

Nearly all animals have a relation to the environment, Schneck (1993). One of the most significant groups of insects that serve as both gardeners in nature and indicators of biodiversity are butterflies, Nair & Bandyopadhyay (2014). Butterflies are important for estimating quality and sustainability of the ecosystem. The importance of biological diversity as a key indicator of both global and local environmental change is now more widely acknowledged (Saha, *et al.*, 2015).

Human domination is inevitable but it has immensely altered earth's ecosystem (Vitousek *et al.*, 1997). Relationship between habitat loss and the probability of population extinction needs to be well understood for effective conservation efforts (Fahrig, 2001). A major factor for species decline especially the butterflies, is habitation destruction brought about by Pollution, land conversion and fragmentation (Collinge, 1996). Insects are extremely susceptible to pesticide use and pollution as it alter the population structure. The population of the species declines by unmanaged pesticide use and this too causes loss of biodiversity either directly or indirectly.

Butterflies and the stages of their life depend on particular host plants for nourishment. A garden encompassing these types of host plants and sufficient amount of nectar plants as their vital component would attract butterfly species. Therefore, the fundamental drive of establishing a butterfly gardens is to create an habitation that is most wanted for the butterflies which would otherwise be not welcoming them due to human interference.

In this modern era, the idea of butterfly gardening in urban areas and human-altered biotopes (Angold *et al.*, 2006) has become extremely important, and popularizing environmental conservation might be easily achieved by instilling ideas of habitat preservation in the next generation. Therefore, ex situ butterfly conservation could be accomplished by establishing a butterfly garden by planting suitable host plants (Lamb & Allen, 2002, Levy and Connor (2004). In the present study the butterfly diversity at St.Mary's College, Thrissur was investigated. The Butterfly garden of the institution has abundant host plants and nectar plant diversity. There is a range of even the rare plants. Hence an analysis of Butterflies of the institution was done.

METHODOLOGY:

By making direct observations, chance walks, and opportunistic observations in the morning and the evening, when butterflies are most active, the butterflies on and near the college campus were catalogued. The diversity study was carried out over three years in all three seasons, from January 2016 to December 2019. Throughout the course of the study, every butterfly was watched and noted. With the use of the literature that is currently accessible, species identification was validated. Butterflies were divided into four groups depending on their abundance: VC (very common), C (common), R (rare) and VR (extremely rare).

RESULT AND DISCUSSION:

The present study indicates that the campus has diverse butterfly fauna. During the study period 46 species of butterflies belonging to five families were recorded. Among the five families Nymphalidae was found to be most dominant group with 19 species followed by Lycaenidae 7. Papilionidae was represented with 9 species, Hesperidae with 5 and Pieridae with 6 species. 9 species were very common, 25 species were common, 7 were rare, 5 Very rare.

The current analysis indicates that there are many different butterfly species present on campus. The most prevalent family was Nymphalidae, similar findings were seen in numerous past investigations (Elanchezhyan (2016), Daniel *et al.*, 2018). According to past research, the diversity and existence of butterflies are supported by the vegetation's composition (Sanjaya *et al.*, 2016).

Butterflies establish countless connections with abiotic and biotic variables in order to survive and expand. A pollinator is required for the reproduction of about 90% of plants, and as bee populations decline, the butterfly's role is increasingly important for all living things. The presence of host and larval plant species, occurrence impacts distribution of butterflies. With over 200 butterfly host and nectar plants, St. Mary's College's butterfly garden serves as a habitat for this web of life.

Various plants like Aristolochiae, Cassia, Citrus, Asclepcia, ornamental palms, *Sesbania*, *Polyalthia*, *Nerium*, *Saracaasoka*, *Ricinus communis*, *Pongamia*, *Calotropis*, *Cinnamomum*,

Crotalaria retusa, *Aegle marmelos*, *Michelia champaca*, *Crateva*, *Albizia*, *Bambusa*, *Flacourtia*, *Hygrophila* and many others invite butterflies providing them safe food and shelter amidst the city skyscrapers. The presence of sufficient nectar plants correlates the occurrence of butterflies which have made the campus their home. The Butterfly garden promotes, propagates and protects native species of butterflies.

According to Sarma *et al.*, 2012, an academic institution campus with a rich plant diversity provides opportunity for species conservation. Increasing numbers of host and nectar plant species in the private gardens increases butterfly diversity (Pendl *et al.*, 2022, Nepali *et al.*, 2018). The urbanized habitat of the neighbourhoods also attract the butterflies to the campus to find suitable niches. In order to encourage biodiversity conservation, butterfly gardening is a conservation initiative that can be successful. Every home, place of business and industrial facility maintaining a butterfly garden would be a significant step toward improving the ecosystem's sustainability. This would offer tiny habitat units to support local butterfly populations.

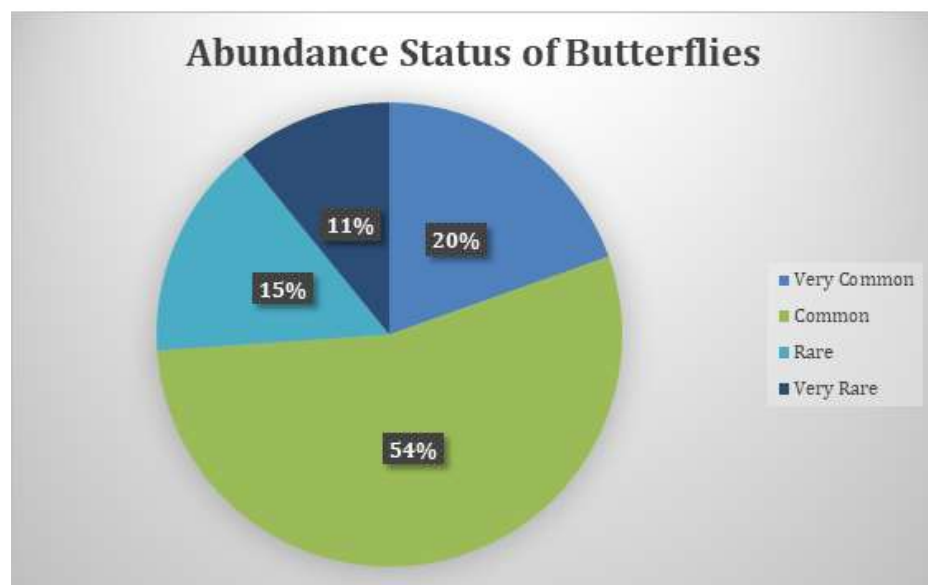
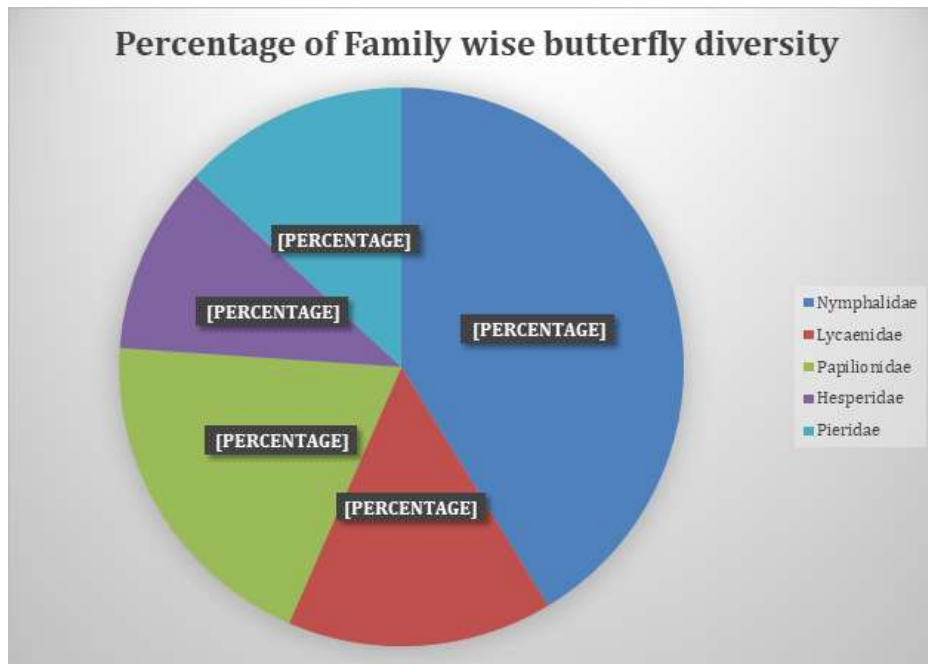
CONCLUSION:

Butterflies play a very important role in the food chain of many different creatures. The present study indicated that the institution has rich butterfly diversity including rare butterflies. Urbanisation, and loss of natural environments have caused severe threat to the species. Therefore planting of host and nectar plants are ideal for restoring habitat and conserving butterfly.

Table I. List of butterflies recorded from St. Mary's College Thrissur

S.No	Family	Scientific Name	Common Name	Status
1.	Nymphalidae	<i>Ariadne merione</i>	Common castor	R
2.	Nymphalidae	<i>Cupha erymanthis</i>	Rustic	C
3.	Nymphalidae	<i>Danaus chrysippus</i>	Plain Tiger	R
4.	Nymphalidae	<i>Euploea core</i>	Common Indian Crow	VC
5.	Nymphalidae	<i>Euthalia aconthea</i>	Common baron	C
6.	Nymphalidae	<i>Elymnias hypermnestra</i>	Common palmfly	C
7.	Nymphalidae	<i>Hypolimnas bolina</i>	Great Indian egg fly	VR
8.	Nymphalidae	<i>Hypolimnas misippus</i>	Danaid egg fly	C
9.	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	VC
10.	Nymphalidae	<i>Junonia lemonias</i>	Lemon pansy	R
11.	Nymphalidae	<i>Junonia iphita</i>	Chocolate Pansy	VC
12.	Nymphalidae	<i>Moduza procris</i>	Commander	C
13.	Nymphalidae	<i>Mycalesis perseus</i>	Common Bushbrown	VC

14.	Nymphalidae	<i>Neptis jumbah</i>	Common sailor	C
15.	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	VR
16.	Nymphalidae	<i>Tirumala limniace</i>	Blue Tiger	C
17.	Nymphalidae	<i>Parantica aglea</i>	Glassy tiger	VR
18.	Nymphalidae	<i>Ypthima baldus</i>	Common five ring	C
19.	Nymphalidae	<i>Ypthima huebneri</i>	Common Four-ring	C
20.	Lycaenidae	<i>Acytolepis puspa</i>	Common hedge blue	C
21.	Lycaenidae	<i>Castalius rosimon</i>	Common pierrot	R
22.	Lycaenidae	<i>Chilades lajus</i>	Lime blue	C
23.	Lycaenidae	<i>Jamides celeno</i>	Common cerulean	C
24.	Lycaenidae	<i>Loxura atymnus</i>	Yam fly	VR
25.	Lycaenidae	<i>Neopithecops zalmora</i>	Quaker	C
26.	Lycaenidae	<i>Talicauda nyseus</i>	Red pierrot	C
27.	Papilionidae	<i>Graphium agamemnon</i>	Tailed jay	C
28.	Papilionidae	<i>Graphium doson</i>	Common jay	C
29.	Papilionidae	<i>Pachilocta hector</i>	Crimson rose	VR
30.	Papilionidae	<i>Pachliopta aristolochiae</i>	Common rose	C
31.	Papilionidae	<i>Papilio clytia</i>	Common mime	VC
32.	Papilionidae	<i>Papilio polytes</i>	Common mormon	VC
33.	Papilionidae	<i>Papilio demoleus</i>	Lime Butterfly	C
34.	Papilionidae	<i>Troides minos</i>	Southern bird wing	C
35.	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	C
36.	Hesperiidae	<i>Borbo cinnara</i>	Rice Swift	R
37.	Hesperiidae	<i>Coladenia indrani</i>	Tricolour pied flat	R
38.	Hesperiidae	<i>Notocrypta paralysos</i>	Common Banded Demon	R
39.	Hesperiidae	<i>Sarangesa dasahara</i>	Common Small Flat	C
40.	Hesperiidae	<i>Udaspes folus</i>	Grass Demon	C
41.	Pieridae	<i>Catopsila pyranthe</i>	Mottled emigrant	C
42.	Pieridae	<i>Catopsila pomana</i>	Common emigrant	C
43.	Pieridae	<i>Delias eucharis</i>	Common jezebel	C
44.	Pieridae	<i>Eurema blanda</i>	Three spot yellow	VC
45.	Pieridae	<i>Eurema brigitta</i>	Small grass yellow	VC
46.	Pieridae	<i>Leptosia nina</i>	Psyche	VC



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