

## Butterfly Biodiversity of Ismail Yusuf Campus

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### Abstract

The study area harbors some of the endemic species and protected species, the habitat need conservation to protect the butterfly fauna of this region. Further long term research and monitoring on the diversity of butterflies with special reference to ecological aspects are fundamentally important for the conservation of the species. A total of 73 species under five different families were recorded in various regions of the college campus. During the course of study, 73 species of butterflies belonging to five families were recorded in Ismail Yusuf Campus. Out of 73 species, 8 belong to Papilionidae, 13 to Pieridae, 26 to Nymphalidae, 18 to Lycaenidae and 8 to Hesperidae. This is the first effort in exploring the butterfly wealth of Ismail Yusuf College campus.

**KEYWORDS-** Butterflies, Hotspot.

### Introduction

Butterflies are one of the best studied groups of the Lepidoptera having scaled wings. They are bio messengers of nature as well as pollinating flowers. They are regarded as rapid Bioindicators of habitat quality because of their sensitivity. Their sheer numbers supply a vast food source for predators, and they are significant plant pollinators. Butterflies have been studied extensively and documented worldwide of which 1500 species occur only in India. The Butterfly diversity has been studied at 54 acres campus of Ismail Yusuf College, which falls in ranges of Western Ghats. The entire campus is a kind of dry deciduous habitats with undulating terrain.

Even when it's scorching in Mumbai, a cool breeze runs through the classrooms of the Ismail Yusuf College in Jogeshwari East. The Campus was set up in 1924, making it the fourth oldest college in the Mumbai city. It's

a bird spotter's and butterfly lover's paradise and looks its best during the monsoon. The campus relieves tired mind from polluted and crowded city life. The campus enjoys the beautiful nature with innumerable banyan, palm, rain trees, and other trees. Rippling brooks and glittering ponds add the beauty in the rainy season. Over 50 species of flora have been identified, including the timber, yielding sheesham, behada, ornamental kesri and medicinal amrutvel.

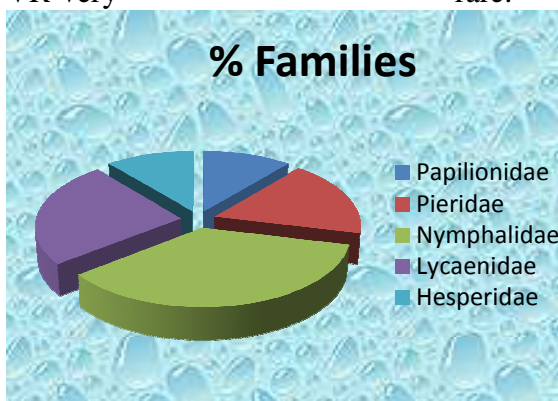
Butterflies of Mumbai have been documented by Aitkin and Comber (1903 aadb), Bell (1909 to 1927) and Best (1951), de Niceville (1890) and Wynter Blyth (1957) reported many species from Mumbai. Kurve and Patwardhan (2005) reported 129 species from SGNP and 51 species from adjoining Thane city.

### Materials and Methods

The research work was selectively divided into three parts.

- 1) Equalization of species diversity of butterflies in the study area.
- 2) Localization of the anthropogenic degradation factors causing affects on the life of the butterflies.
- 3) Antagonistic activities for protected species of study area.

The study was done thrice a week from different parts of the Ismail Yusuf Campus during December 2014 to December 2016. The observation time was from 07.00 hrs in the morning to 2.30 noons. The butterflies were observed along the paths inside the forest and along the water streams. They were observed on both sides of the paths. In case of uncertain identity photographs were taken and then identified. The classification follows Evans (1932), Kehimkar (2008), Kunte (2000), and Wynter Blyth (1957). Their status was decided on visual observations as C-common, VC- very common, NC-not common, R-rare, VR-very rare.



### Result and Discussion

During the course of study, 73 species of butterflies belonging to five families were recorded in Ismail Yusuf Campus. Out of 73 species, 8 belong to Papilionidae, 13 to Pieridae, 26 to Nymphalidae, 18 to Lycaenidae and 8 to Hesperidae (table 1). Species belonging to the family Nymphalidae were the most dominant (35.61%) followed by Lycaenidae (24.65%), Pieridae (17.18%),

Hesperidae (10.95%) and Papilionidae (10.95%). The status recording was as follows: VC - very common (75–100 sightings), C - common (50–75 sightings), NR - not rare (25–50 sightings), R - rare (5–25 sightings) and VR - very rare (1–5 sightings) shown figure 1. Among the 73 species 19 were found very common, 28 species common, 14 species not common and 08 species were found rare. The study area is dominated by Nymphalidae. Nymphalidae showed the maximum species richness, comprising of 26 species. Among these 26 recorded species plain tiger, striped tiger, blue tiger, lemon pancy and grey pancy found in high frequencies in the campus.

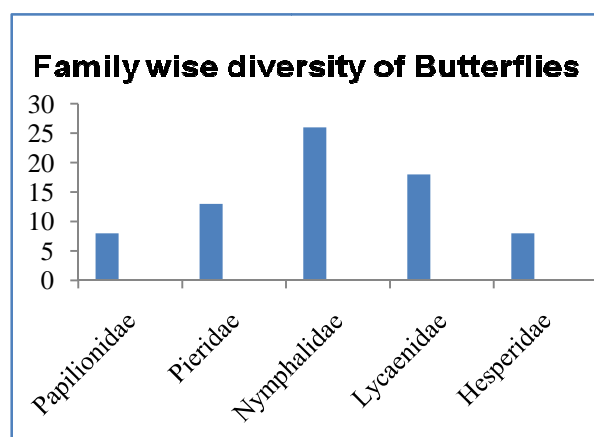


Figure 1: Diversity observed in butterflies in the Jogeshwari's Ismail Yusuf College campus.

Species composition of butterflies of Ismail Yusuf Campus is indicated in Table 2 and figure 2. Mud puddling is usually observed in males. Five families of plants are used by butterflies as nectar food plants, as recorded from the study area: four plants of the family, two plants of each family Caesalpiniaceae, and Fabaceae, while only one plant of each family Amaranthaceae, Malvaceae, Rubiaceae and Thymeleaceae. (Table 2) Visits of butterflies were more frequent to

flowers of herbs and shrubs rather than to flowers of trees.

**Table1: Species composition of Butterflies recorded from Ismail Yusuf College, Mumbai.**

Sr.No.	Families	No. Of Butterflies	% Families	VC	C	NC	R	VR
1	Papilionidae	08	10.95	02	02	01	02	01
2	Pieridae	13	17.80	08	03	01	01	00
3	Nymphalidae	26	35.61	08	10	04	02	02
4	Lycaenidae	18	24.65	01	08	05	03	01
5	Hesperiidae	08	10.95	00	05	03	00	00
	Total	73		19	28	14	08	04

**Figure 2: Diversified Butterflies recorded from Ismail Yusuf College, Mumbai.**



**Table2: Details of Species composition of Butterflies and its status**

<u>Details of Butterflies Species Status</u>		
<b><u>I FAMILY- PAPILIONIDAE</u></b>		
<b>A Subfamily- Papilioninae</b>		
1	Common Jay Graphium doson (C. and R. Felder, 1864)	C
2	Tailed Jay Graphium agamemnon (Linnaeus, 1758)	VC
3	Common Mormon Papilio polytes (Linnaeus, 1758)	VC
4	Common Rose Pachliopta aristolochiae (Fabricius, 1775)	VR
5	Common Mime Papilio clytia (Linnaeus, 1758)	R
6	Lime Butterfly Papilio demoleus (Linnaeus, 1758)	NC
7	Blue Mormon Papilio polymnestor (Cramer, 1775)	R
<b><u>II FAMILY- PIERIDAE</u></b>		
<b>A Subfamily- Coliadinae</b>		
1	Common Grass Yellow Eurema hecabe (Linnaeus, 1758)	VC
2	Small Grass Yellow Eurema brigitta (Cramer, 1775)	VC
3	One Spot Grass Yellow Eurema andersoni (Moore, 1886)	VC
4	Three Spot Grass Yellow Eurema blanda (Boisduval, 1836)	VC
5	Spotless Grass Yellow Eurema laeta (Boisduval, 1836)	VC
6	Common Emigrant Catopsilia pomona (Fabricius, 1775)	VC
<b>B Subfamily- Pierinae</b>		
1	Common Jezebel Delias eucharis (Drury, 1770)	NC
2	Psyche Leptosianina (Fabricius, 1775)	C
3	Common Gull Ceporinerissa (Fabricius, 1775)	C
4	Western Stripped Albatross Appias libythea	R
5	Yellow Orange Tip Ixias pyrene (Linnaeus, 1758)	VC
6	Great Orange Tip Hebomoia glaucippe (Linnaeus, 1758)	C
7	Common Wanderer Pareronia hippia (Cramer, 1775)	VC
<b><u>III FAMILY- NYMPHALIDAE</u></b>		
<b>A Subfamily- Danainae</b>		
1	Plain Tiger Danaus chrysippus (Linnaeus, 1758)	C
2	Striped Tiger Danaus genutia (Cramer, 1775)	C
3	Blue Tiger Tirumalalimniace (Cramer, 1775)	VC

4	Glassy Tiger Paranticaaglea (Stoll, 1790)	NC
5	Common Crow Euploea core (Cramer, 1775)	VC
<b>B Subfamily-Charaxinae</b>		
1	Black Rajah Charaxes solon (Fabricius, 1775)	VR
<b>C Subfamily- Satyrinae</b>		
1	Evening Brown Melanitisleda (Cramer, 1775)	C
2	Common Three Ring Ypthimaasterope (Klug)	C
3	Common Four Ring Ypthimahuebneri (Kirby, 1871)	C
4	Common Five Ring Ypthimabaldus (Fabricius, 1775)	C
5	Common BushbrownMycalesisperseus (Fabricius, 1798)	C
<b>D Subfamily-Helicominae</b>		
1	Tawny Coaster Acraeaviolae (Fabricius)	NC
2	Common Leopard Phalantaphalantha (Drury, 1770)	NC
<b>E Subfamily-Limenitinae</b>		
1	Commander Moduzaprocris (Cramer, 1777)	R
2	Common SailerNeptishylas (Moore, 1872)	C
3	Common Baron Euthaliaaconthea (Cramer, 1874)	C
4	Baronet symphaedranais (Forster)	VR
<b>F Subfamily-Biblidinae</b>		
1	Common Castor Ariadne merione (Cramer, 1771)	C
<b>G Subfamily-Nymphalinae</b>		
1	Peacock PancyJunoniaalmana (Linnaeus)	VC
2	Lemon PancyJunonialemonias (Linnaeus)	VC
3	GreayPancyJunoniaatlites (Linnaeus)	VC
4	Yellow PancyJunoniahierta (Linnaeus)	R
5	Chocolate PancyJunoniaiphita (Cramer, 1771)	VC
6	DanaidEggflyHypolimnasmisippus (Linnaeus)	VC
7	Great EggflyHypolimnasbolina (Linnaeus)	VC
8	Blue OakleafKallimahorsfieldi (Kollar)	NC
<b>IV FAMILY- LYCAENIDAE</b>		
<b>A Subfamily-Miletinae</b>		
1	ApeflySpalgisepius (Westwood)	NC
<b>B Subfamily-Curetinae</b>		

2	Indian Sunbeam Curetisthetis (Drury)	R
<b>C Subfamily-Polyomantinae</b>		
1	Common Pierrot Castalius rosion (Fabricius)	VC
2	Angled Pierrot Caletadecidia (Hewitson)	NC
3	Common Hedge Blue Acytolepis puspa (Horsfield)	C
4	Indian Cupid Everes lacturnus (Godart)	NC
5	Plains Cupid Chilades pandava (Horsfield)	C
6	Gram Blue Euchrysops snejus (Fabricius)	C
7	Common Cerulean Jamides celeno (Cramer)	VC
8	Grass Jewel Freyeria trochylus (Freyer)	VR
9	Pea Blue Lampides boeticus (Linnaeus)	C
10	Forget Me Not Catochrysops Strabo (Fabricius)	C
11	Lime Blue Chilades lajus (Stoll)	NC
12	Zebra Blue Leptotes plinius (Fabricius)	NC
13	Hedge Blue Acytolepis puspa (Horsfield)	C
14	Small Cupid Chilades parrhassius	R
15	Red Pierrot Talicadanyseus (Guerin-Meneville)	C
<b>D Subfamily-Riodininae</b>		
1	Plum Judy Abisara echerius (Stoll)	R
<b>V FAMILY- HESPERIIDAE</b>		
<b>A Subfamily-Pyrginae</b>		
1	Common Small Flat Sarangesa dasahara (Moore)	NC
2	Indian Skipper Spialia galba (Fabricius)	NC
3	Tricolored Pied Flat Coladenia indrani (Moore)	NC
<b>B Subfamily-Hesperiinae</b>		
1	Rice Swift Borbocinnara (Wallace)	C
2	Chestnut Bob Lambrix salsala (Moore)	C
3	Common Banded Demon Notocrypta paralysos (Wood-Mason and Niceville)	C
4	Grass Demon Udaspes folus (Cramer)	C
5	Conjoined Swifts Pelopidas conjuncta (Herrich-Schaffer)	VC

### Conclusion

The study of butterfly diversity of Ismail Yusuf College campus aimed towards contributing the plans of

sustainable restoration of the species in our campus. Planting more of nectar, host plants can add a bloom to their conservation and diversity, thus

besides a real joy one can take part in conservation of sustainable management.

This is the first effort in exploring the butterfly wealth of Ismail Yusuf College campus. The present list of butterfly's species is not conclusive and exhaustive and future exploration will be continued to update this checklist. Butterfly diversity varies with season, temperature and humidity. Excellent variations are observed during monsoon and post monsoon period. The study area is highly deprived and extremely away from the mainstream. In addition to the problems of adverse geographical and climatic conditions; a number of anthropogenic environmental problems have been increased. Natural ecosystem of study area is severely affected due to hunting, trapping of species, road construction, and encroachment, causing natural problems such as habitat loss, falling of trees due to natural calamities and unavailability of food and many more.

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