



# DOCUMENTING DIVERSITY OF THE LEPIDOPTERANS IN HOLY GHOST CHURCH

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## ABSTRACT

Maintaining green spaces with plant diversity is a good option for the conservation of species in human dominated landscape. A pilot study to document the diversity of the butterflies was undertaken in one of the oldest church campuses, the Holy Ghost church in Urban Bengaluru in the state of Karnataka, India. During the study 23 Species of the butterflies belonging to 6 different families, viz., Pieridae (3 Species), Lycaenidae (3 Species), Nymphalidae (9 Species), Papilionidae (6 Species), Saturniidae (1 Species), Riodinidae (1 Species) were recorded. No published documentary evidences are available on the butterfly diversity from the campus. Observation on the most abundant species and the most active species was also made.

## INTRODUCTION

Butterflies are vital pollinators, essential components of the food chain, and serve as important indicators of ecological health and environmental changes (Remadevi *et al.*, 2021). They are highly diverse, with over 1500 species reported from the Indian subcontinent alone (Harisha, 2015). In Bengaluru, the capital city of the state of Karnataka, butterfly diversity is noteworthy, with around 140 species reported in the city (Yates, 1933). [11] Despite the challenges posed by rapid urbanization, habitat fragmentation, and pollution, the city's green spaces, parks, and gardens continue to support a diverse assemblage of butterfly species (Remadevi *et al.*, 2021). This highlights the resilience of butterflies and underscores the importance of maintaining urban green spaces for biodiversity conservation.

## OBJECTIVE

The present study aims to conduct a survey of butterfly diversity in a specific location within Bengaluru, the Holy Ghost Church. By documenting the butterfly species composition and diversity in this area, an attempt was made to contribute valuable information to the growing body of knowledge on urban butterfly's diversity in Bengaluru.

## RESULTS

A total of twenty two species belonging to the six different families viz., Pieridae, Lycaenidae, Nymphalidae, Papilionidae, Saturniidae, Riodinidae were observed. Polymorphism in *Papilio polytes* was observed, where the *Romulus* form of common mormon female was observed.

FAMILY	COMMON NAME	SCIENTIFIC NAME
Pieridae	Common Grass Yellow	<i>Eurema hecabe</i>
	Common Jezebel	<i>Delias eucharis</i>
	Common Emigrant	<i>Catopsilia pomona</i>
Lycaenidae	Bright Babul Blue	<i>Azanius ubaldus</i>
	Common Cerulean	<i>Jamides celeno</i>
	Plain Cupid	<i>Luthrodes pandava</i>
Saturniidae	Great Egg Butterfly	<i>Actias selene</i>
Riodinidae	Red Pierrot	<i>Sarota gyas</i>

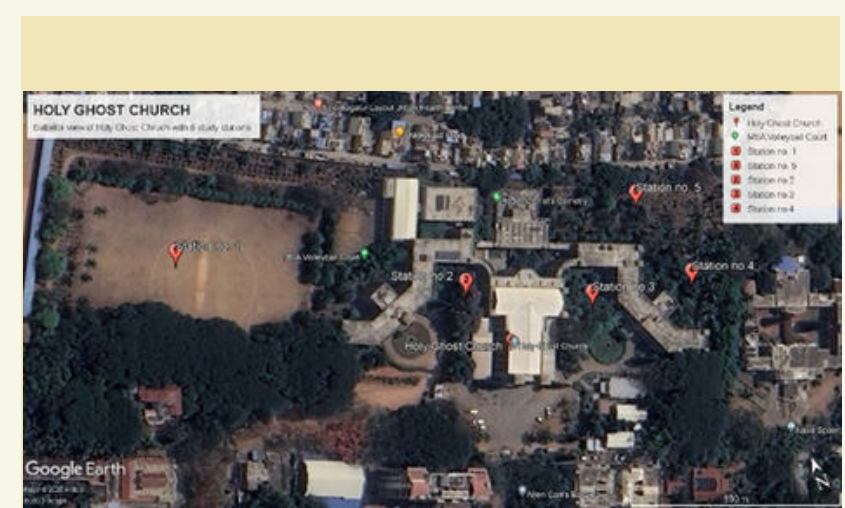
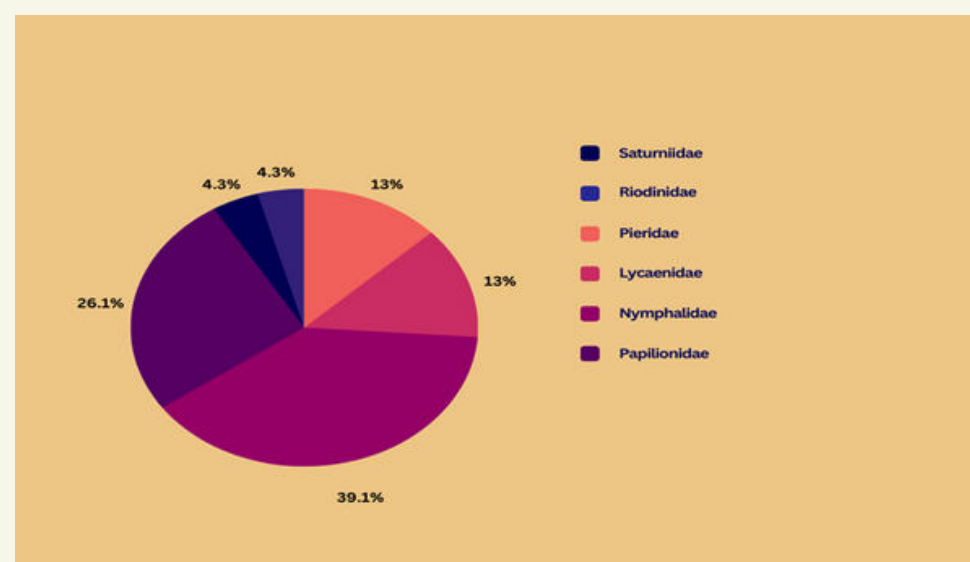
FAMILY	COMMON NAME	SCIENTIFIC NAME
Nymphalidae	Common Crow	<i>Euploea core</i>
	Common Palm Fly	<i>Elymnias hypermnestra</i>
	Plain Tiger	<i>Danaus chrysippus</i>
	Plain Leopard	<i>Phalanta phalantha</i>
	Chocolate Pansy	<i>Junonia iphita</i>
	Lemon Pansy	<i>Junonia lemonias</i>
	Common Four Ring	<i>Ypthima huebneri</i>
	Common Castor	<i>Ariadne merione</i>
	Common Baron	<i>Euthalia aconthea</i>
Papilionidae	Blue Mormon	<i>Papilio polymnestor</i>
	Common Mormon	<i>Papilio polytes</i>
	Crimson Rose	<i>Atrophaneura hector</i>
	Common Jay	<i>Graphium doson</i>
	Tailed Jay	<i>Graphium agamemnon</i>
Common blue bottle	<i>Graphium sarpedon</i>	

## METHODOLOGY

The present study conducted in the month of October, 2023, the campus of the Holy Ghost Church was divided into five different stations for noting the diversity of the lepidopterans. Species observed were photographed using DSLR camera, iPhone 12, Samsung Galaxy M31s mobile phone and Adcom Macro lens Attachment (12X-24X).

## ANALYSIS

Among which 39.1% of the species belong the family of Nymphalidae. Two species *Graphium doson* and *Graphium agamemnon* were found to be the most active, while *Actias selene* and *Junonia iphita* were highest in count. The butterflies were found to be more active during the day time.



Satellite view of Holy Ghost Church with 5 different stations (indicated in red labels) selected.

## CONCLUSION

Observation Shows that Holy Ghost Church which is a small area holding an undisturbed diversity of flora and fauna between a urban residential area contains good diversity of butterflies. Further studies on bio-ecology and population dynamics needs to be explored. Studies on endemism of species need to be done. Further studies on impact of pollution on diversity of butterfly need to done.

### References:

Harisha M N. (2015). A preliminary survey on diversity of butterflies around the Kundavada Lake, Devanagari district, Karnataka, India. Life Sciences Leaflets: 0976- 1098.

R Alexander., K Avinash, S Phalke., M Manidip., and M Jayashankar. (2016). Rapid assessment of butterfly diversity in an ecotone adjoining Bannerghatta National Park, Bengaluru. Bugs R All, 22: 28-29.

Remadevi O K., Roshan D., Puranik S., Sooraj R., Shet C., Naik D and Kumar V. (2021). Urban green spaces of Bengaluru city, Karnataka, India: butterfly species assemblage and seasonal patterns in different. Ann. Entomol., 39(2): 85-98.

Yates J A. (1933). The Butterflies of Bangalore and Neighbourhood.



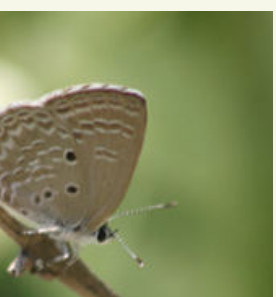
*Eurema hecabe*



*Catopsilia pomona*



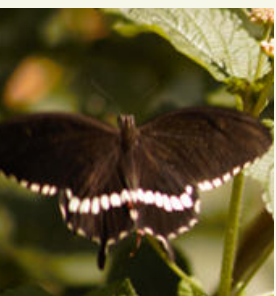
*Jamides celeno*



*Luthrodes pandava*



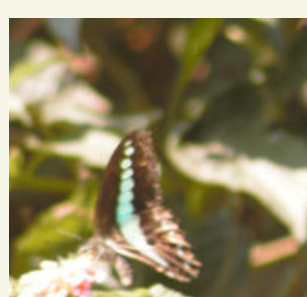
*Elymnias hypermnestra*



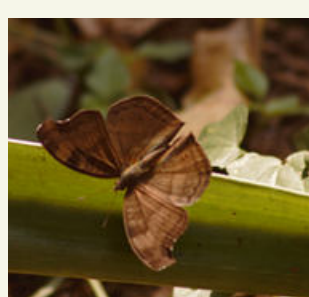
*Papilio polytes*



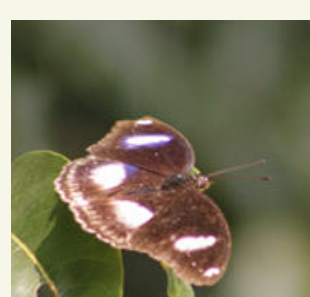
*Graphium doson*



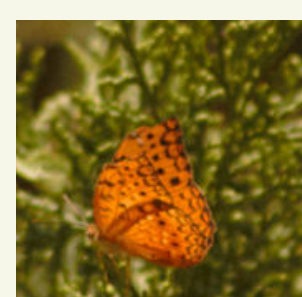
*Graphium sarpedon*



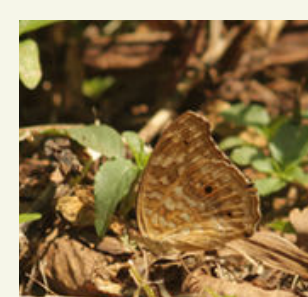
*Junonia iphita*



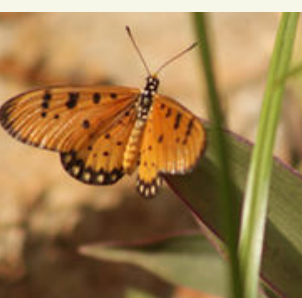
*Actias selene*



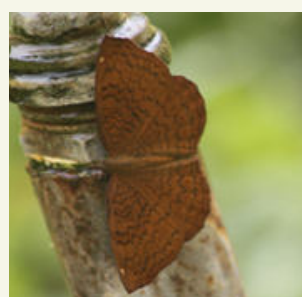
*Phalanta phalantha*



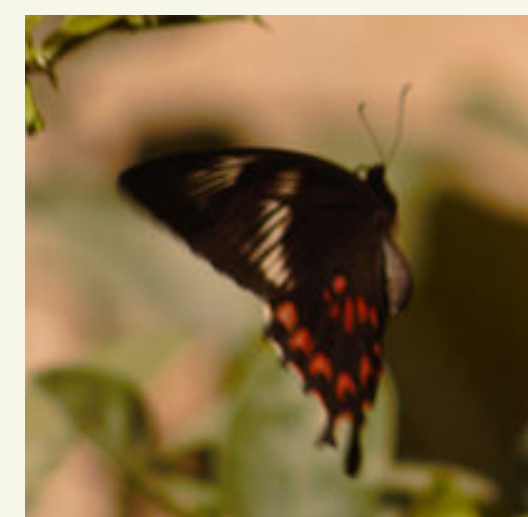
*Junonia lemonias*



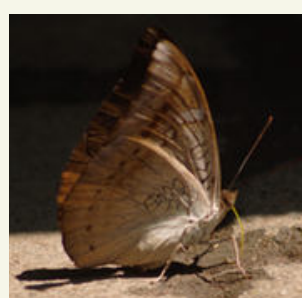
*Acraea terpsicore*



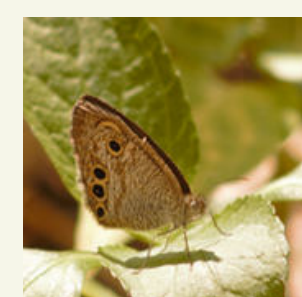
*Ariadne merione*



Common mormon female mimicking the crimson rose.



*Euthalia aconthea*



*Ypthima huebneri*