STUDIES ON BUTTERFLY SPECIES DIVERSITY OF RAAJKAMAL BUTTERFLY GARDEN AT CUTM, BHUBANESWAR CAMPUS, ODISHA, INDIA

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ABSTRACT

Butterflies, with unsurpassable beauty, play a vital role in thebiodiversity mainly being the pollinators for the plants. A study based on butterfly diversity was conducted at the "Raaj Kamal Butterfly Garden", CUTM, Bhubaneshwar campus during the period of December, 2019 to March, 2020 from 8:30 AM to 5 PM. This survey is a step ahead towards the development of geographical studies, larval interactions and relationships of the butterflies and other insects with the plants and animals directly or indirectly. As from previous studies, about 50 species of butterflies are found to be present in the pre-described place.From which the recent survey in this region has been capable to identify 13 species of them during the above said period of time. And for the time being other species are conserved for the future reference. Most of the species were observed around belong to the family: Pieridae and Nymphalidae.

KEYWORD: Raajkamal butterfly garden, Butterfly species, Habitat, Ecosystem, CUTM

INTRODUCTION

Butterflies are very sensitive towards environmental fluctuations and climatic changes, for which they can be treated as the model organisms being the bioindicators for the information regarding natural state of certain regions, degradation and contamination also (Brown 1992). Now-a-days the global warming and other environmental pollution greatly affect the lifestyles of butterflies (Settle et al. 2009). For a better tomorrow, the study regarding them can be proved as a useful step towards their development. As reported, Central India is the mothers of butterflies with 72% of total are found here (report by Dorset-based charity). For geographic distribution purposes, the study of butterfly diversity will result to an unwracked ecosystem in future.

Butterflies belong to the "Flagship Taxa" in bio-diversity studies. This study reveals various types of butterflies and also their way of interaction with the plants. From the view of butterfly history DE RhePhilipe (1931) was found to be the first person, who worked on the butterfly diversity with 246 species from Himalayas and Shimla region also 1438 species of different oriental regions. The "Butterfly Effect", a phenomena in Chaos Theory is often used to explain the inherent complexity of weather system, even by Environmental Management and Policy Research Institute (EMPRI), butterflies are rewarded as best bioindicators.

STUDY SITE:

The recent study was conducted on the premises of Centurion University of Technology and Management, The Raaj Kamal Butterfly Garden, BBSR, Odisha, India.

METHODOLOGY

The study conducted during the month of December, 2019 to March, 2020 and the time interval of 8:30am to 5:00 pm, by observing the butterfly inside the garden just by walking randomly at different part of study area and by direct visual method. Each butterflies are observed with their fascinating flowers and the process by which they help pollinating and how many time they spend on each flower were also observed and also catched by snaps without and filters or effects by Nikon D 5300 with 18-55 mm VR zoom for perfect colouration of butterfly. As the butterflies are the crucial events for the study, hence it was carefully conducted, such that no other animals including them will be harmed. Butterflies were identified by following data available on Indian Foundation of Butterflies (IFB).

RESULTS AND DISCUSSION

The species of butterflies collected from the described region were arranged by their families. The study is also capable of describing the common names and scientific names of the butterflies, in addition to that also the habitat and relative abundance of all the 13 species observed during the interval of time. It was spectacular form the study that the family named Nymphalidae and Pieridae are more in numbers. It is also an evident that the observation found the butterfly named *Matapa aria* (red eye butterfly) of the family "Hesperiidae" is the rare one. And the study will not forget to report that most of them were found on the scrubby habitats and grassy lands also a few collecting nectors from mango trees.

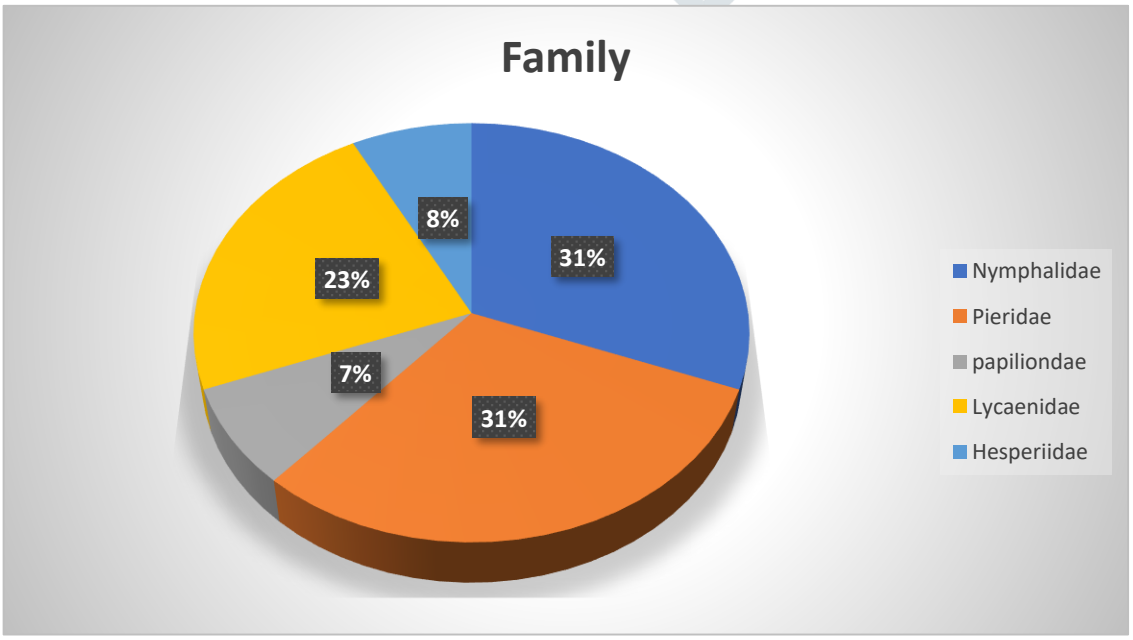
Butterfly diversity varies with season. They are visualized in a large number during the specific months of the years. Other months are the bearer of less number of butterflies, some are also having rare. The study conducted during the pre-described time interval is the phase of less number of butterflies as it is the time of post monsoon season.

From the reports of other scientists namely Antrram (1924), 512 species, by Heppner (1998) 19328 species, by Evens (1932) 1438 species of butterflies were found out. According to Evens report, Andaman and Nicober Islands contain 217 species, South India (317 species), Chitral (166 species), West Himalayas (417 species), north western Himalayas(962 species) and Burma (788 species) were found from India.

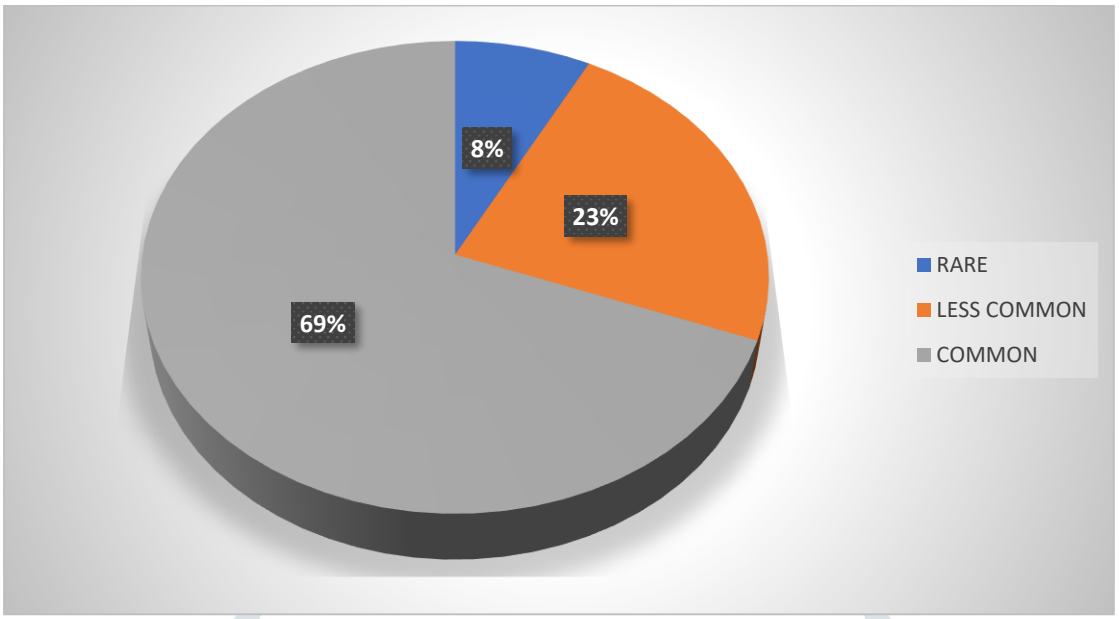
OBSERVATION TABLE

SL. No	Common Name	Scientific Name	Family	Habitat	Relative abundance
1	Tawny coster	*Acraea violae*	Nymphalidae	Grassy	Common
2	Stripe tiger	*Danaus genutia*	Nymphalidae	Scrubby and grassy	Common
3	Chocolate pansy	*Junonia iphita*	Nymphalidae	Grassy	Less common
4	Gray pansy	*Junonia atlites*	Nymphalidae	Grassy and scrubby	Common
5	Cabbage white	*Pieris rapae*	Pieridae	Scrubby	Common
6	Common grass yellow	*Eurema hecabe*	Pieridae	Grassy and scrubby	Common
7	Mottled emigrant	*Catopsilia pyranthe*	Pieridae	Tall trees	Common
8	Psych	*Leposianina*	Pieridae	Grassy	Common
9	Common pierrot	*Castalium rosimon*	Lycaenidae	Grassy	Common
10	Striped pierrot	*Tarucusnara*	Lycaenidae	Grassy	Common
11	Lesser grass blue	*Zizina Otis*	Lycaenidae	Grassy	Less common
12	Crimson rose	*Pachliopta hector*	Papiliondae	Tall trees	Less common
13	Red eye butterfly	*Matapa aria*	Hesperiidae	Grassy	Rare

Family-wise composition of butterfly species:



Status of butterfly species at Raajkamal butterfly garden



Acraea violae

Danaus genutia

Junonia iphita

Junonia atlites

Pieris rapae

Eurema hecabe

Catopsilia pyranthe

Leposi anina

Castalium rosimon

Zizina otis

Pachliopta hector

Matapa aria

CONCLUSION

The study of butterfly diversity at the Raaj Kamal Butterfly Garden is clearly showing the majority of butterflies from Pieridae and Nymphalidae families and rare from the Hesperiidae family. The study encompasses both the intrinsic and anthropocentric value associated with it. A number of butterflies are in their last phase due to lack of proper care, which can be recognised by this study, and they can be conserved from being extincted from the world. Moreover the study will help in taking essential and useful steps towards geographic and biological development of the environment.

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