

## A preliminary observation on butterflies of Rajeeve Gandhi Smriti Van, Raipur, Chhattisgarh, India

Dubey Sheela<sup>1\*</sup> and Agarwal R.K<sup>2</sup>

<sup>1</sup> Dept. of Zoology, Arts & Commerce Girls College, Devendra Nagar, Raipur, Chhattisgarh, 492001.  
<sup>2</sup> Govt. College, Kherta Bazar, Durg, Chhattisgarh

\*Email: [sheela.dubey30@gmail.com](mailto:sheela.dubey30@gmail.com)

### ABSTRACT

Butterflies are abundant and diverse group of insects and receive reasonable amount of attention throughout world. In Indian region about 1504 species of butterflies are recorded. The present study was carried out with a view to survey the diversity of butterfly in Rajeeve Gandhi Smriti Van. Selected site is located 12k.m. away, in the south from Raipur city. It is an unique ex situ conservation site for butterflies, spreading over an area of . It was develop to improve public awareness towards the conservation of nature and environment. The butterfly's diversity of this garden was recorded from the month of September 2012 to August 2013. A total of 47 species were recorded. The highest number of butterflies were belonging to family Nymphalidae (17) followed by Lycaenidae (11), Pieridae (7), Hesperidae (7) and Papilionidae (5). Butterfly occupies a vital position in ecosystem and their presence and diversity is considered as a good indicator of the health of any Biotope. The diversity of the butterflies, in this smriti van will be increased by the suitable measures for the conservation of larval and nectar host plants.

**Keywords :** Butterflies, Biodiversity, Rajiv Gandhi Smariti Van, Papilionidae

### INTRODUCTION

**B**utterflies are the most beautiful and colourful insects admired even by those who have only vaguest and most generalized understanding of science. Their splendid colour and graceful flight pattern have always been a source of fascination, although most people know little about their habits. These insects have mutual relationship with the plants, benefiting the plants through pollination and get nectar in return. Many species of butterflies are specific to particular plants or group of plants for their life-cycle. Butterflies are considered as a good indicator of terrestrial biotope (Kunte, 2000).

More than 17000 species of butterflies are found all over the world. India hosts about 1,504 species (Tiple, 2011). D'Abreu (1931) has reported 177 species from the erstwhile Central Provinces

(Vidarbha, Madhya Pradesh and Chhattisgarh). Butterfly species diversity from central India was reported for the first time by Forsayeth (1884), followed by Swinhoe (1886), De Niceville (1890), Betham (1890-1892) and Witt (1909). After that Evan (1932), Talbot (1939-1946), and Wynter-Blyth (1957) included several new species from Madhya Pradesh and Chhattisgarh in their books.

In recent years Several workers have studied butterflies from different districts and conservation areas of Madhya Pradesh and Chhattisgarh (Singh 1977, Gupta 1987, Chaudhary 1995, Chandra *et al.* 2000a, 2000b, Siddiqui & Singh, 2004, Chandra 2006, Sharma, & Chandra, 2009). Chandra *et al.* (2007) published a checklist of 174 species of which 153 were from Madhya Pradesh and 113 butterflies were from Chhattisgarh. Tiple and Ghorpade (2012) published a check list of 104 butterflies from Achanakmar and Amarkantak Biosphere Reserve, located in Chhattisgarh and Madhya Pradesh. So far, no work has been done to document the butterflies of Raipur city area. This is the first report of butterflies from Raipur city area and its surrounding. This work will also provide a base line data. Furthermore, this work will help to develop ecotourism in this area.

#### How to cite this article:

Dubey Sheela and Agarwal R.K (2016). A preliminary observation on butterflies of Rajeeve Gandhi Smriti Van, Raipur, Chhattisgarh, India. *Biolife*, 4(1), pp 74-78.

DOI: <https://dx.doi.org/10.5281/zenodo.7309997>

Received: 5 January 2016;

Accepted: 21 February 2016;

Available online : 3 March 2016

Table-1. List of Butterflies Recorded from Rajiv Gandhi Smariti Van

S.No.	Common Name	Scientific Name	Status
<b>(A) FAMILY – PAPILIONADAE</b>			
* <b>SUBFAMILY – PAPILIONINE</b>			
1.	Common Jay	<i>Graphium doson</i> (C & Felder)	C
2.	Tailed Jay	<i>Graphium Agamemnon</i> (Linnaeus)	C
3.	Common Mormon	<i>Papilio polytes</i> (Linnaeus)	C
4.	Blue Mormon	<i>Papilio polynnestor</i> (Cramer)	C
5.	Lime Butterfly	<i>Papilio demoleus</i> (Linnaeus)	C
<b>(B) FAMILY – PIERIDAE</b>			
• <b>SUBFAMILY – COLIADINAE</b>			
1.	Common Emigrant	<i>Catopsilia promona</i> (Fabricius)	C
2.	Mottled Emigrant	<i>Catopsilia pyranthe</i> (Linnaeus)	C
3.	Common Grass Yellow	<i>Eurema hecabe</i> (Linnaeus)	C
4.	Small Grass Yellow	<i>Eurema brigitta</i> (Cramer)	C
5.	Spotless Grass Yellow	<i>Eurema leata</i> (Boisduval)	UNC
• <b>SUBFAMILY – PIERINAE</b>			
6.	Common Wanderer	<i>Pareronia Valeria</i> (Cramer)	C
7.	Common Gull	<i>Cepora nerissa</i> (Fabricius)	C
<b>(C) FAMILY – LYCAENIDAE</b>			
• <b>SUBFAMILY – THECLINAE</b>			
1.	Common Silverline	<i>Spindasis vulcanus</i> (Fabricius)	R
• <b>SUBFAMILY – POLYOMMATINAE</b>			
2.	Common Pierrot	<i>Castalius rosimon</i> (Fabricius)	C
3.	Rounded Pierrot	<i>Tarucus nara</i> (Kollar)	UNC
4.	Zebra Blue	<i>Leptotes plinius</i> (Fabricius)	C
5.	Forget me not	<i>Catochrysops Strabo</i> ((Fabricius)	C
6.	Dark Glass Blue	<i>Zizeeria karsandra</i> (Moore)	C
7.	Pale Grass Blue	<i>Pseudozizeeria maha</i> (Kollar)	C
8.	Grass Jewel	<i>Freyeria trochylus</i> (Freyer)	UNC
9.	Lesser Grass Blue	<i>Zizina otis</i> (Fabricius)	C
10.	Tiny Gross Blue	<i>Zizula hylax</i> (Fabricius)	C
11.	Common Line Blue	<i>Prosotas nora</i> (C. & R. Felder)	C
<b>(D) FAMILY – NYMPHALIDAE</b>			
• <b>SUBFAMILY – DANAINAE</b>			
1.	Blue Tiger	<i>Tirumala limniace</i> (Cramer)	C
2.	Striped Tiger	<i>Danaus genutia</i> (Cramer)	C
3.	Plain Tiger	<i>Danaus chrysippus</i> (Linnaeus)	C
4.	Common Crow	<i>Euploea core</i> (Cramer)	C
• <b>SUBFAMILY – SATYRINAE</b>			
5.	Common Evening Brown	<i>Melanitis leda</i> (Linnaeus)	C
6.	Common Bush Brown	<i>Mycalesis perseus</i> (Fabricius)	C
• <b>SUBFAMILY – ACRAENAE (Heliconiinae)</b>			
7.	Tawny Coster	<i>Acraea violae</i> (Fabricius)	C
• <b>SUBFAMILY – LIMENITINAE</b>			
8.	Commander	<i>Moduza procris</i> (Cramer)	C
9.	Common Sailer	<i>Neptis hylas</i> (Linnaeus)	C
10.	Common Baron	<i>Euthalia aconthea</i> (Cramer)	C
• <b>SUBFAMILY – NYMPHALINAE</b>			
11.	Grey Pansy	<i>Junonia atlites</i> (Linnaeus)	C
12.	Peacock Pansy	<i>Junonia almana</i> (Linnaeus)	C
13.	Lemon Pansy	<i>Junonia lemonias</i> (Linnaeus)	C
14.	Chocolale Pansy	<i>Junonia iphita</i> (Cramer)	C
15.	Great Eggfly	<i>Hypolimnas bolina</i> (Linnaeus)	UNC
16.	Danaid Eggfly	<i>Hypolimnas misippus</i> (Linnaeus)	UNC

...Table-1. List of Butterflies Recorded from Rajiv Gandhi Smariti Van

S.No.	Common Name	Scientific Name	Status
• SUBFAMILY – BIBLIDINAE			
17.	Common Castor	<i>Ariadne merione</i> (Cramer)	C
(E) FAMILY – HESPERIIDAE			
• SUBFAMILY – COELIADINAE			
1.	Common Banded Awl	<i>Hasora chromus</i> (Cramer)	R
• SUBFAMILY – PYRGINAE			
2.	Indian Skipper	<i>Spialia galba</i> (Fabricius)	UNC
• SUBFAMILY – HESPERIINAE			
3.	Dark Palm Dart	<i>Telicota ancilla</i> (Herich schaffer)	UNC
4.	Pale Palm Dart	<i>Telicota colon</i> (Fabricius)	UNC
5.	Bevans Swift	<i>Pseudoborbo bevani</i> (Moore)	C
6.	Indian Palm Bob	<i>Suastus gremius</i> (Fabricius)	R
7.	Rice Swift	<i>Barbo cinnara</i> (Wallace)	C

Abbreviations:

C = common, UNC = Uncommon, R = Rare

## Material and Methods

### Study Site:

Rajeev Gandhi Smiriti Van is situated 12 Km from Raipur city in south at Latitude 21°13'8.4" N and Longitude 81°41'51.925" E. It is a unique *ex-situ* conservation site spreading over an area of 5.6ha. It was developed to improve the public awareness towards the conservation of nature and to explain such things as dynamics of tree, nature and environment.

More than 10,000 trees have been planted in the area by the people in memory of their relatives. 2.8ha. of land area has been developed by the Chhattisgarh Energy Development Agency (CREDA) as an Energy Park. All the remaining area is under supervision of forest development authority.

The park serves as a knowledge park for visitors. There are different sectors, where different types of plants are grown like medicinal plants, nawgrah plant region, hilly region called the dashmula parvat, nakshtrara region with 27 types of plants and garden etc. Outer boundary of the park has thick bamboo patches. One artificial water stream has been created inside the park. All these, together, make the area a suitable environment for butterfly's survival.

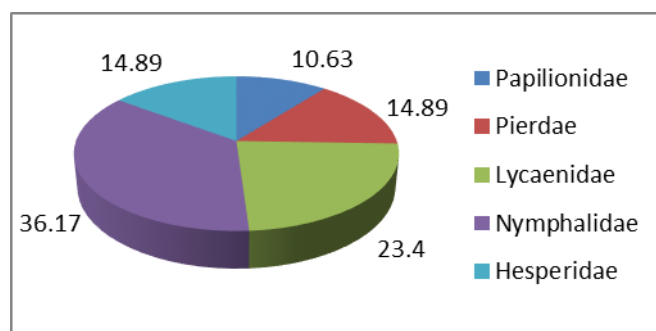
### Methodology:

The objective of present study was to conduct preliminary survey of the butterfly species present in this park for one year from September 2012 to August 2013. Field work was conducted from 9.00 am to 4.00 pm, once in every week. Photographs of butterflies were taken for identification, which was done with the help of internet and available literature (Evans 1932, Talbot 1939 & 1947 Winter Blyth 1957, Kunte 2000 and Kehimkar 2008).

## Results and Discussion

During the present survey in total 47 species of butterflies, belonging to 35 genera and 5 families were recorded. The highest number of the butterflies were recorded from the family Nymphalidae (17) followed by Lycaenidae (11.), Pieridae (7) Hesperidae (7), and Papilionidae (5). Total 14 subfamilies were recorded. Status of the species has been given as common (more than 15 sighting), less common (15 to 4 sighting) and rare (1 to 3 sighting).

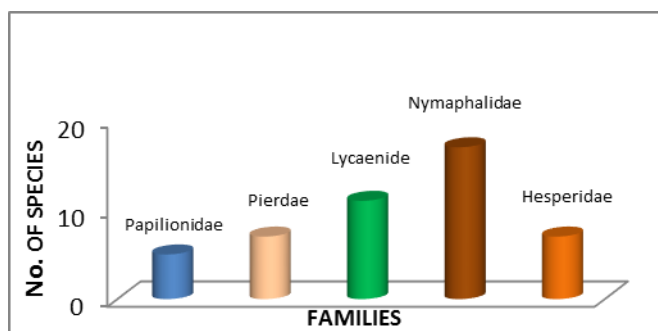
Figure – 1: Percentage abundance of families



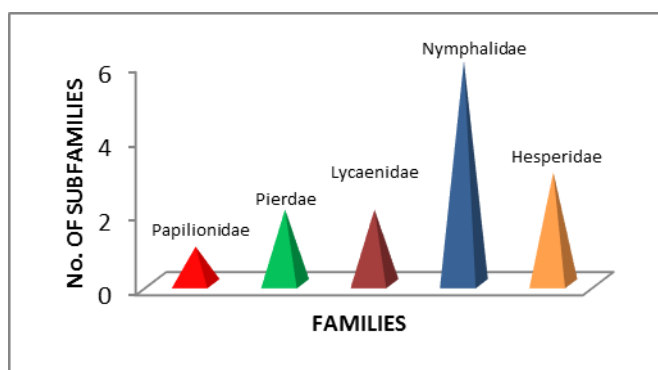
Butterflies occupy a vital position in ecosystem and their presence and diversity is considered as a good indicator of the health of any Biotope. The diversity of the butterflies, in the area, will be increased by the suitable measures for the conservation of larval and nectar host plant and to prevent destruction of natural biotope.

This work is the first attempt to explore and document the butterflies of this region. This work will also provide a basic knowledge to persons willing to work on this region. Furthermore this work will also be helpful to develop ecotourism in this area.

**Figure – 2: No. of species in different families**



**Figure 3: No. of subfamilies in different families.**



## Acknowledgement

We are thankful to the authorities of Rajeev Gandhi Smriti Van for permitting to carry out the work in the Smriti Van.

## Conflict of Interests:

Authors declare that there is no conflict of interests regarding the publication of this paper.

## References

- Ackery, P.R. 1984. Systematic and faunistic studies on butterflies. pp. 9-21. In: Vane Wright, R.I. and P.R. Ackery (eds.), The biology of butterflies. Symposium of the Royal Entomological Society of London, No. 11. Academic Press.
- Betam, J.A. 1890. The Butterflies of Central Provinces. *J. Bombay nat. Hist. Soc.* 5: 19-28.
- Betam, J.A. 1891. The Butterflies of Central Provinces. *J. Bombay nat. Hist. Soc.* 6: 175-183.
- Capinera, J.L. 2008. Butterflies and moths. *Encyclopedia of Entomology*, Springer, Oxford, UK, 2nd ed, 626-672. Online: <<http://books.google.com/?id=i9ITMiihVQC&printsee=frontcover#v=onepage&q=Butterflies%20a>

- nd%20 Moths%20(Lepidoptera)> (Accessed: 2/4/2012).
- Chaudhury, M. 1995. *Insecta: Lepidoptera, Fauna of Conservation Area: Fauna of Idravati Tiger Reserve*. Zoological Survey of India, 6: 45-52.
- Chandra, K., Singh, R.K and Khosla, M.L 2000a. On a collection of butterflies (Lepidoptera: Rhopalocera) From Sidhi district, Madhya Pradesh India. *Rec. Zool. Surv. India*, 98(4):11-23.
- Chandra, K., Singh, R.K and Khosla, M.L 2000b. On a collection of butterflies fauna from Pachmarhi Biosphere Reserve. Pp.72-77. Proceeding of National Seminar on Biodiversity Conservation & Management with special Reference on Biosphere Reserve, EPCO, Bhopal, India.
- Chandra, K., Chaudhary, L.K., Singh, R.K. & Koshta, M.L. 2002. Butterflies of Pench Tiger Reserve, Madhya Pradesh. *Zoos' Print Journal*, 17(10): 908-909.
- Chandra, K 2006. The butterflies (Lepidoptera: Rhopalocera) of Kangerghati National Park (Chhattisgarh). *Advancement in Indian Entomology: Productivity and Health*, 11: 83-88.
- Chandra, k., Sharma, R.M., Singh, A and Singh, R.K. (2007). A checklist of butterflies of Madhyapradesh and Chhattisgarh states, India. *Zoos, Prints journal* 22(8): 2790-2798.
- de Niceville, L. 1890. The Butterflies of India Burma and Cylon 3:503pp.
- Evans, W.H. (1932). The identification of Indian butterflies (2<sup>nd</sup> ed.). *Bombay Natural History Society, Bombay*. 454pp.
- Forsayeth, R.W. 1884 Life history of sixty species of Lepidoptera observed in Mhow, Central India. *Transaction of Entomological Society of London*, 3: 377-419.
- Gupta, I.J. and Shukla, J.P.N. 1987. Butterflies from Bastar district (Madhya Pradesh, India). *Rec. Zool. Surv. India*, 106: 1- 74.
- Kunte, K. 2000. India-Lifescape: *Butterflies of Peninsular India*. University Press, Hyderabad, 254pp.
- Kehimkar, I 2008. The book of Indian butterflies. *Bombay Natural History Society, Mumbai* 497pp.
- Mallet, J. 2007 Taxonomy of Lepidoptera: the scale of the problem. *The Lepidoptera Taxome Project, University*
- Sharma, R.M. & Chandra, K. 2009. First report of the Occurrence of some rare butterflies (Lepidoptera : Rhopalocera) from Chhattisgarh, Central India. *Rec. zool. Surv. India*. 109(3): 33-36.
- Siddique, A. and Singh, S.P. 2004. A check list of butterflies diversity of Panna Forest(M.P). *Natural Journal Of Life Sciences*, 1(2):403-406.

20. Swinhoe, C. 1886. On the Lepidoptera of Mhow. *Proceeding of Zoological Society of London*, 421-465.
21. Singh, R.K. 1977. On a collection of butterflies (insect) from Baster district, Madhya Pradesh, India. *Newsletter Zoological survey of India*, 3(5):323-326.
22. Talbot, G. 1939. The fauna of British India including Ceylon and Burma. *Today and Tomorrow Publ., New Delhi*. 559 pp
23. Tiple, A.D., Ghorpade, K. 2012. Butterflies (Lepidoptera-Rhopalocera) of the Achanakmar-Amarkantak Biosphere Reserve, in Chhattisgarh and Madhya Pradesh with a synopsis of the recorded butterfly fauna of the eastern Central Highlands in India. *Colemania*, number 26, pp 1-38 (2014).
24. Talbot, G. 1947. The fauna of British India including Ceylon and Burma. *Taylor and Francis, Red Lion Court, Fleecks Street, London*. 506 pp.
25. Witt, D.O. 1909 The Butterflies (Rhaopalocera) of the Nimar district, Central Provinces. *J. Bombay nat. Hist. Soc.*, 19(3): 564-571.
26. Winter Blyth, M.A. 1957. Butterlies of the Indian region. *Bombay Natural History Society, Bombay*