

## PRELIMINARY STUDY ON BUTTERFLIES OF SUNABEDA WILDLIFE SANCTUARY: A CHECKLIST WITH THREE NEW RECORDS FOR ORISSA, INDIA

SUNIT K. DAS\* AND H.K. SAHU

*P.G. Department of Zoology, North Orissa University, Takatpur, Baripada-757003 ( Orissa).*

### Introduction

Butterflies have always fascinated human kind. Among insects, they are certainly the most popular, best known and most studied insects (Kehimkar, 2008). These are beneficial as pollinators, indicators of environmental quality and are appreciated for their aesthetic value (Boonvanno *et al.*, 2000). India hosts 1,501 species of butterflies (Goankar, 1996). In Orissa, previous studies on butterflies was undertaken by Taylor and De Niceville (1988), Mandal and Nandi (1984), Mandal and Maulik (1991) and Sahu *et al.* (2006). 50 species of butterflies were recorded from Similipal Biosphere Reserve (Sethy and Jena, 2009). The present study was conducted to get proper database of butterflies from Sunabeda Wild life sanctuary area.

### Study Area

The Sunabeda Wildlife Sanctuary located between longitude 82°20'00"E and 82°34'42"E and latitude 20°24'N and 24°44'N, in Nuapada District of Orissa, It is largely a grass covered plateau adjoining Udanti and Sitandi Sanctuaries of Chhatisgarh state. Because of the uniqueness of its flora, fauna, forests, landscapes and tribes, Sunabeda was declared as Sanctuary on 10<sup>th</sup> May, 1988 with total geographical area of 591.75 km<sup>2</sup>. The vegetation mainly dry mixed deciduous, mostly of teak, sal, paisal, bamboo and boswellia forests. In the Sanctuary, the Maraguda Valley, Jumalgarh Fort with traces of ancient civilization and river Jonk are adding to rich cultural heritage of Orissa. This sanctuary, being the source of origin and catchment of Jonk, Sunder and Indra rivers, plays an important role in socio-economic development of the locality. This sanctuary also works as a migration link for rare wild buffaloes between the states of Orissa and Chhattisgarh.

### Methodology

A winter/spring survey of butterflies in different locations was carried out from January 2009 to September 2009. Butterflies are enumerated using standard transect counting method (Arun and Azeez, 2003). Transects were randomly selected and individuals from both side of the transects were listed. The visual

encounter survey was also applied and collection of some species with the help of butterfly net was also performed. Transects were monitored between 0630 to 1130hrs. The Butterflies are identified with the help of Evans (1932), Haribal (1992), Kunte (2000) and Kehimkar (2008). Based on their occurrence the butterflies were categorised like, common (VC) (number was more than equal to 6 per sampling in the transects), 3-5 is uncommon (C) and below 3 is rare (R).

### Observation

In the present study, 62 species belonging to 43 genera representing five families of the order Lepidoptera were recorded from the study area (Table 1). Family Nymphalidae was dominant with 20 genera with 28 species followed by Papilionidae (11), Pieridae (9), Lycaenidae (9) and Hesperidae represented by five species. Analysis of encounter rates revealed the fact that common Indian crow, common tiger, common grass yellow, common rose, pea blue, tawny coster, common evening brown were widespread species, where 18 species were listed as very common, 31 species as common and 13 species as rare inside the sanctuary. During the study period three species of butterflies including Banded tree brown, Fluffy tit and Common tit were observed from the sanctuary first time.

### Conclusion

Present study revealed that Sunabeda Wildlife Sanctuary is a good habitat for butterflies but it needs proper protection. Forest fire is a big problem inside the area because the forest type and the climate of the sanctuary support this type of incident, for which the habitat of butterflies decreases rapidly. Deforestation is another problem. Besides fire and deforestation, other disturbances and pollution due to vehicles of tourist and villagers were high in these areas. Hence measures should be taken to minimize the incident of forest fire and biotic interference. Public awareness is required to conserve these amazing insects and their habitat inside the Sunabeda Wildlife Sanctuary. In the light of this study, it is recommended that more intensive study on butterflies are needed including all basic environmental parameters required for their survival and conservation.

\*P.G. Department of Wildlife and Conservation Biology.

**Table1**  
**Checklist of Butterflies of Sunabeda Wildlife Sanctuary, Orissa**

Sl.No.	Common English Name	Family/Scientific Name	Status
<b>I</b>			
<b>PAPILIONIDAE</b>			
1	Lime butterfly	<i>Papilio demoleus</i> (Linnaeus)	VC
2	Blue mormone	<i>Papilio polymnestor</i> (Cramer)	C
3	Common mormon	<i>Papilio polytes</i> (Linnaeus)	C
4	Common rose	<i>Atrophaneura aristolochiae</i> (Fabricius)	VC
5	Crimson rose	<i>Atrophaneura hector</i> (Linnaeus)	C
6	Common banded peacock	<i>Papilio crino</i> (Fabricius)	C
7	Five-bar swordtail	<i>Graphium antiphates</i> (Cramer)	R
8	Glassy bluebottle	<i>Graphium cloanthus</i> (Westwood)	R
9	Spot swordtail	<i>Graphium nomius</i> (Esper)	C
10	Common jay	<i>Graphium doson</i> (C. & R. Felder)	VC
11	Tailed jay	<i>Graphium Agamemnon</i> (Linnaeus)	C
<b>II Fami</b>			
<b>PIERIDAE</b>			
12	Small grass yellow	<i>Eurema brigitta</i> (Cramer)	C
13	Spotless grass yellow	<i>Eurema laeta</i> (Boisduval)	C
14	Three spot grass yellow	<i>Eurema blanda</i> (Boisduval)	C
15	Common emigrant	<i>Catopsilia Pomona</i> (Fabricius)	C
16	Mottled emigrant	<i>Catopsilia pyranthe</i> (Linnaeus)	C
17	Common wanderer	<i>Pareronia valeria</i> (Cramer)	VC
18	Common gull	<i>Capora nerissa</i> (Fabricius)	C
19	Common jezebel	<i>Delius eucharis</i> (Drury)	VC
20	Striped albatross	<i>Appias libythea</i> (Fabricius)	R
<b>III</b>			
<b>NYMPHALIDAE</b>			
21	Gaudy baron	<i>Euthalia lubentina</i> (Cramer)	R
22	Common duffer	<i>Discophora sondaica</i> Boisduval	C
23	Common evening brown	<i>Melanitis leba</i> (Linnaeus)	C
24	Common bush brown	<i>Mycalesis perseus</i> (Fabricius)	VC
25	*Banded tree brown	<i>Lethe confuse</i> (Aurivillius)	R
26	Common palmfly	<i>Elymnias hypermenstra</i> (Linnaeus)	C
27	Tawny coster	<i>Acraea violae</i> (Fabricius)	VC
28	Common sailer	<i>Neptis hylas</i> (Linnaeus)	R
29	Common map	<i>Cyrestis thyodamas</i> (Boisduval)	C
30	Common leopard	<i>Phalanta phalantha</i> (Drury)	R
31	Commander	<i>Moduza procris</i> (Cramer)	R
32	Grey count	<i>Tanaecia lepidea</i> (Butler)	R
33	Chocolate pansy	<i>Junonia iphita</i> (Cramer)	VC
34	Lemon pansy	<i>Junonia lemonis</i> (Linnaeus)	C
35	Peacock pansy	<i>Junonia almana</i> (Linnaeus)	C
36	Grey pansy	<i>Junonia atlites</i> (Linnaeus)	VC
37	Blue pansy	<i>Junonia orithiya</i> (Linnaeus)	C
38	Common threering	<i>Ypthima asterope</i> (Klug)	C
39	Common fourring	<i>Ypthima huebneri</i> Kirby	C
40	Common fivering	<i>Ypthima baldus</i> (Fabricius)	C
41	Great eggfly	<i>Hypolimnas bolina</i> Linnaeus	C
42	Danaid eggfly	<i>Hypolimnas misippus</i> (Linnaeus)	VC
43	Common castor	<i>Ariadne merione</i> (Cramer)	VC
44	Glassy tiger	<i>Parantica aglea</i> (Stoll)	C
45	Plain tiger	<i>Danaus chrysippus</i> (Linnaeus)	VC
46	Common tiger	<i>Danaus genutia</i> (Cramer)	VC
47	Common crow	<i>Euploea core</i> (Cramer)	VC
48	Baronet	<i>Euthalia nais</i> (Forster)	R
<b>IV Fami</b>			
<b>LYCAENIDAE</b>			
49	*Common tit	<i>Hypolycaena erylus</i> (Godart)	R
50	*Fluffy tit	<i>Zeltus amasa</i> (Hewitson)	R
51	Common pierrot	<i>Castalius rosimon</i> (Fabricius)	VC
52	Common silverline	<i>Spindasis vulcanus</i> (Fabricius)	C

Contd.....

PAPILIONIDAE			
53	Common lineblue	<i>Prosotas nora</i> (C.Felder)	C
54	Pea blue	<i>Lampides boeticus</i> (Linnaeus)	VC
55	Large oak blue	<i>Arhopoda amantes</i> (Hewitson)	C
56	Plum judy	<i>Abisara echerius</i> (Stoll)	VC
57	Forget-me-not	<i>Catochrysops Strabo</i> (Fabricius)	C
<b>V</b>	<b>Fam</b>	<b>HESPERIIDAE</b>	
58	Rice swift	<i>Borbo cinnare</i> (Wallace)	VC
59	Indian skipper	<i>Spialia galba</i> (Fabricius)	C
60	Common banded demon	<i>Notocrypta paralyos</i> (Wood-Mason & de Niceville)	C
61	Dark palm dart	<i>Telicota ancilla</i> (Herrich-Schaffer)	R
62	Common dartlet	<i>Oriens goloides</i> (Moore)	C

\* New Record, VC-Very Common, C- Common, R-Rare

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### SUMMARY

62 species belonging to 43 genera representing five families of the order Lepidoptera were recorded from Sunabeda Wildlife Sanctuary, Orissa. Family Nymphalidae was dominant with 20 genera having 28 species followed by Papilionidae (11), Pieridae (9), Lycaenidae (9) and Hesperidae, represented by five species. Analysis of encounter rates revealed the fact that common Indian crow, common tiger, common grass yellow, common rose, pea blue, tawny coster, common evening brown were widespread species, where 18 species were listed as very common, 31 species as common and 13 species as rare inside the sanctuary. During the study period, three species of butterflies including Banded tree brown, Fluffy tit and Common tit were observed from the sanctuary first time.

**Keywords:** Butterflies, Sunabeda Wildlife Sanctuary, New Records.

### सूनाबेड़ा वन्य प्राणी अभ्यारण्य की तितलियों का प्रारम्भिक अध्ययन-उड़ीसा में उनके तीन नए आलेखों सहित पड़ताल सूची सुनीत के दास व एच. के. साहु

#### सारांश

शल्क पक्षीगण के पांच वंशों का प्रतिनिधित्व करती 43 प्रजातियों की 62 जातियों को सूनाबेड़ा वन्य प्राणी अभ्यारण्य उड़ीसा से आलेखित किया गया है। इसमें निम्फैलिडी वंश का बाहुल्य है जिसकी 20 प्रजातियों की 28 जातियों की तितलियां यहां मिली है। इसके उपरान्त आते हैं पोपिलियोनिडी वंश (11) पियरिडी (9), लाहसिनिडी (9) हेस्पेरिआइडी जिसका पांच जातियां यहां मिली है। भेंट होने की दरों के विश्लेषण से यह तथ्य पता लगा कि सामान्य भारतीय कौवा, सामान्य व्याघ्र, सामान्य घासपीत, सामान्य गुलाबी, मटर जैसी नीली, टवनी कोस्टर, सामान्य संध्या भूरी तितलियां यहां भी दूर-दूर तक फैली जातियां हैं जिनमें से 18 जातियां आमतौर से मिलती सूची में आती है। इस अभ्यारण्य में 31 जातियां आम जातियां हैं। 13 दुर्लभ जातियां हैं। अध्ययन के दौरान तितलियों की तीन जातियां जिनके पट्टीदार वृक्ष भूरी, फलफी टिट और सामान्य टिट तितलियां सम्मिलित हैं। इस अभ्यारण्य में पहली बार ही देखने को मिली है।

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