



The records of butterflies (Lepidoptera: Rhopalocera) from Piranmalai hills of eastern Ghats, south Tamil Nadu

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Abstract

Insects belonging to the vast order Lepidoptera: Rhopalocera include moths and butterflies. The second-largest order in the class of insects is called Lepidoptera. A few butterfly species were recognized as signs of disturbance in any location. The Eastern Ghats of Tamil Nadu are the location of the current study. According to the current study, there are currently 137 butterfly species in the state, broken down into 88 genera and 5 families. The research region has a wide variety of butterflies; thus, it should be very important for conservation.

Keywords: biodiversity, lepidoptera, butterfly, abundance

Introduction

India is primarily part of the Palaearctic Region and primarily the Oriental Region. With 1,641 species, or roughly 9.50% of all butterfly species worldwide, it possesses one of the most abundant and diversified butterfly faunas (Varshney 2006) [22]. Madhya Pradesh and Chhattisgarh, which make up Central India, are home to about 10.58% of the butterfly variety that has so far been identified in India (Chandra *et al.*, 2007) [6]. Many studies have been conducted on the butterfly fauna of central India, mostly by Forsayeth (1884) [12], Swinhoe (1886) [20], De Nicéville (1890) [10], Betham (1890, 1891) [2, 3], and Witt (1909) [23].

Later, significant contributions were made by Evans (1932) [11], Talbot (1939, 1947) [21], and Winter-Blyth (1957). Later, various workers in Madhya Pradesh and Chhattisgarh examined butterflies in some districts and conservation areas (Singh 1977; Gupta & Shukla 1987; Chaudhury 1995; Chandra *et al.*, 2000a, b & 2002; Singh & Chandra 2002; Siddiqui & Singh 2004; Chandra 2006) [19, 13, 9, 7, 5, 4].

A checklist of 174 species/subspecies from Central India was supplied by Chandra *et al.* (2007) [6], with 153 and 113 butterfly species coming from Madhya Pradesh and Chhattisgarh, respectively. Additionally, two additional butterflies were added to the checklist of butterflies found in Chhattisgarh (Sharma & Chandra, 2009) [17]. The present study was undertaken to thoroughly document the butterfly fauna from areas strictly under Piranmalai because the majority of the fauna in ventories relating to Eastern Ghats.

Materials and methodology

Study area

Piranmalai is a village located in Singampunari Taluk in Sivaganga district, Tamil Nadu, India. The nearest town is Singampunari located at 7 kilometers (4.3 mi) away.

Piranmalai is a fortified hill at an elevation of over 2,000 feet (610 m). This is a last outcrop of the Eastern Ghats, with a Bhairavar temple and five peedas in the rocks of the hill called the Pandava Therthams, is also sacred to the Muslims with a dargah of Waliullah Sheikh Abdullah Shaheb on its peak. The geographical coordinates 10.235859°N 78.437956°E. The state harbours several forest types such as dry- deciduous, moist- deciduous, grassland, bamboo patch and small semi-evergreen. Due to such varied forest types and significant altitudinal gradients the state bears a considerable part of the country's rich and unique biological diversity.

Methodology

The current study is based on field surveys carried out by the Zoological Survey of India in ten Piranmalai districts. Only representative samples from various regions of the state were gathered. Data was gathered between July 2021 and September 2022. In general, field work was done twice during the day, from 3am to 5:30pm and from morning 9am to noon (from 8am to 11 am and from 4:30 pm to 6:30 pm during summer months).

According to Evans (1932) [11], Talbot (1939 & 1947) [21], Winter-Blyth (1957), Kunte (2000), and Kehimkar, specimens were identified (2008). Photographs taken during the field work helped in the identification of specimens which could not be collected. Survey site co-ordinates were recorded using GPS (Garmin Oregon 550), and the map of the sites surveyed prepared using Quantum GIS version 1.7.1 (Fig. 1). This classification system was developed based on Ackery (1984) [1]. The distribution of newly recorded species from the state and information on the specimens analyzed, registration numbers, are given. The date and locations of encounter, as well as their distribution, are given in the case of species for which there is just photographic evidence. The National Zoological Collection

of the Zoological Survey of India in Kolkata now houses the identified specimens.

Abbreviations used: KVNP- Kanger Valley National Park; GGNP-Guru Ghasidas National Park; BWS- Badalkhol

Wildlife Sanctuary; JDP- Jagdalpur Range; CAMPA- Compensatory Afforestation Management Planning and Authority.



2A. *Graphium doson*-UP

2B. *Graphium doson*-UN

Plate 1



3A. *Cyrestis thyodamas*



3B. *Rapalapheretime*



3C. *Prosotus dubiosaindic*

Plate 2

Table 1: District wise distribution of butterflies in Piranmalai village.

S. No.	Scientific Name	Common Name	Distribution in Piranmalai	WPA Status	Remark
V. Family HESPERIIDAE					
Subfamily Coeliadinae					
1	<i>Hasorachromus</i> (Cramer)	Common Banded Awl	Bastar, Koriya, Raipur		
2	<i>Badamia exclamationis</i> (Fabricius)	Brown Awl	Bilaspur, Koriya		
Subfamily Pyrginae					
3	<i>Celaenorrhinus leucocera</i> (Kollar)	Common Spotted Flat	Bastar		
4	<i>Celaenorrhinus ambareesa</i> (Moore)	Malabar Spotted Flat	Kabirdham		NRC
5	<i>Tagiades japetus</i> (Stoll)	Common Snow Flat	Bastar		NRC
6	<i>Coladenia indrani</i> (Moore)	Tricolored Pied Flat	Surguja		NRC
7	<i>Capronaransonmetti</i> (Felder)	Golden Angle	Bilaspur		
8	<i>Spialia galba</i> (Fabricius)	Indian Skipper	Bastar, Bilaspur, Kanker, Surguja		

Table 2

S.No	Scientific Name	Common Name	Distribution in Piranmalai	WPAStatus	Remark
39	<i>Jamidesalecto</i> (Felder)	Mettalic Cerulean	Bastar		
40	<i>Catochrysopsstrabo</i> (Fabricius)	Forget-Me-Not	Bastar, Bilaspur, Dantewara, Kabirdham, Korba		
41	<i>Catochrysopsnormus</i> (Felder)	SilverForget-Me-Not	Kabirdham		NRCI
42	<i>Lampides boeticus</i> (Linnaeus)	PeaBlue	Bastar, Bilaspur, Dantewara, Kanker, Bilaspur	Sch.II	
43	<i>Tarucusplinius</i> (Fabricius)	ZebraBlue	Bastar, Dantewara, Kabirdham		
44	<i>Tarucuscallinara</i> Butler	SpottedPierrot	Bastar, Dantewara	Sch.II	
45	<i>Tarucusetheophrastus</i> (Fabricius)	PointedPierrot	Bastar		
46	<i>Tarucusnara</i> (Kollar)	StripedPierrot	Bastar,Bilaspur,Raipur		
47	<i>Antheneemolus</i> (Godart)	CommonCilliateBlue	Korba		NRCI
48	<i>Freyeriatrochylus</i> (Freyer)	GrassJewel	Surguja,Kabirdham		NRC
49	<i>Caletacaleta</i> (Hewitson)	AngledPierrot	Bastar,Dantewara		
50	<i>Castalius rosimon</i> (Fabricius)	CommonPierrot	Bastar,Bilaspur,Dantewara,Kanker,Surguja		
51	<i>Zizeeriaakmysna</i> (Trimen)	DarkGrassBlue	Bastar,Dantewara,Kanker,Raipur,Surguja		
52	<i>Zizeeriaotis</i> (Fabricius)	LesserGrassBlue	Bastar,Dantewara,Kanker		
53	<i>Pseudozizeerimaha</i> (Kollar)	PaleGrassBlue	Dantewara		
54	<i>Zizulahlax</i> (Fabricius)	TinyGrassBlue	Bastar,Dantewara,Kanker,Jashpur		
55	<i>Pithecopscorvus</i> Fruhstorfer	ForestQuaker	Bastar		
56	<i>Euchrysopsnejus</i> (Fabricius)	GramBlue	Bastar,Dantewara,Kanker,Surguja	Sch.II	

Table 3

S.No.	Scientific Name	Common Name	Distribution in Piranmalai	WPA status	remark
70	<i>Junoniahierta</i> (Fabricius)	YellowPansy	Bastar, Bilaspur, Durg, Kabirdham, Korba, Koriya, Surguja		
71	<i>Junoniaorithya</i> (Linnaeus)	BluePansy	Bastar, Bilaspur, Dantewara, Jashpur,Kbirdham,Kanker, KoriyaSurguja,Raipur		
72	<i>Junonia lemonias</i> (Linnaeus)	LemonPansy	Bastar,Bilaspur,Dantewara,Kabirdham,Kanker,Koriya, Raipur		
73	<i>Kallima inachus</i> (Boisduval)	OrangeOakleaf	Bastar,Kabirdham		
74	<i>Hypolimnasholina</i> (Linnaeus)	GreatEggfly	Bastar,Bilaspur,Durg,Kabirdham,Koria,Raipur,Surguja		
75	<i>Hypolimnasmisippus</i> (Linnaeus)	DanaidEggfly	Bastar,Bilaspur,Dantewara,Jashpur,Raigarh,Surguja, Dantewara	Sch.I	
Subfamily Limenitidinae					
76	<i>Neptishylas</i> (Linnaeus)	CommonSailer	Bastar,Bilaspur,Dantewara,Kanker		
77	<i>Neptisjumbah</i> Moore	Chestnutstreaked Sailer	Bastar,Bilaspur	Sch.I	
78	<i>Phaedymacolumell</i> (Cramer)	ShortBandedSailer	Bilaspur,Koriya		
79	<i>Pantoporiahordonia</i> (Stoll)	CommonLascar	Bastar,Dantewara		
80	<i>Athymanefta</i> (Cramer)	ColourSergeant	Bastar,Jashpur,Koriya		
81	<i>Athymaranga</i> Moore	BlackveinSergeant	Bastar,Dantewara	Sch.II	
82	<i>Athyma selenophora</i> (Kollar)	StaffSergeant	Bastar,Bilaspur,Dantewara,Kabirdham,Jashpur		

Table 4

S.No.	Scientific Name	Common Name	Distribution in Piranmalai	WPA status	remark
112	<i>Catopsiliapyranthe</i> (Linnaeus)	Mottled Emigrant	Bastar, Bilaspur, Durg, Kabirdham, Kanker, Koria, Raigarh, Raipur, Surguja		
113	<i>Euremalaeta</i> (Boisduval)	Spotless Grass Yellow	Bastar, Bilaspur, Dantewara, Kanker		
114	<i>Euremabrigitta</i> (Cramer)	Small Grass Yellow	Bastar, Dantewara, Kanker		
115	<i>Euremahecebe</i> (Linnaeus)	Common Grass Yellow	Bastar, Dantewara, Durg, Raipur, Raigarh, Jashpur, Kabirdham, Kanker, Surguja		
Subfamily Pierinae					
116	<i>Pieriscanidia</i> (Linnaeus)	Indian Cabbage White	Bastar		
117	<i>Belenoisaurora</i> (Fabricius)	Pioneer	Bilaspur, Surguja		
118	<i>Ceporanerissa</i> (Fabricius)	Common Gull	Bastar, Dantewara, Kanker, Raipur, Sarguja	Sch. II	
119	<i>Deliasuecharis</i> (Drury)	Common Jezebel	Bastar, Dantewara, Koriya, Raigarh, Raipur, Surguja		
120	<i>Deliashyparete</i> (Linnaeus)	Painted Jezebel	Bastar, Dantewara		
121	<i>Appiasyncida</i> (Cramer)	Chocolate Albatross	Bastar, Dantewara		
122	<i>Leptosianina</i> (Fabricius)	Psyche	Bastar		
123	<i>Colotiseuecharis</i> (Fabricius)	Plain Orange Tip	Bastar		
124	<i>Colotisfausta</i> (Olivier)	Large Salmon Arab	Bastar		
125	<i>Pareroniahippia</i> (Fabricius)	Common Wanderer	Bastar, Dantewara, Kabirdham, Kanker, Jashpur, Raipur		
III. Family NYMPHALIDAE					
Subfamily Euploeinae					
126	<i>Euploeacore</i> (Cramer)	Common Indian Crow	Bastar, Bilaspur, Dantewara, Durg, Jashpur, Kabirdham, Raigarh, Raipur		

Table 5

S. No.	Scientific Name	Common Name	Distribution in Chhattisgarh	WPA Status	Remark
A. Super Family PAPILIONOIDEA					
I. Family PAPILIONIDAE					
Subfamily Papilioninae					
127	<i>Papiliodemoleus</i> Linnaeus	Lime Butterfly	Bastar, Dantewara, Kanker, Koriya, Raigarh, Raipur, Surguja		
128	<i>Papiliocrino</i> Fabricius	Common Banded Peacock	Bastar, Kabirdham, Koriya		
129	<i>Papiliopolymnestor</i> Cramer	Blue Mormon	Bastar, Dantewara, Kabirdham, Surguja, Raipur		
130	<i>Papiliopolytes</i> Linnaeus	Common Mormon	Bastar, Dantewara, Durg, Kabirdham, Koriya, Surguja, Raipur		
131	<i>Papilioclytia</i> Linnaeus	Common Mime	Bastar, Bilaspur, Jashpur, Koriya	Sch.I	
132	<i>Graphiumnomius</i> (Esper)	Spot Swordtail	Bastar, Korba, Jashpur, Koriya		
133	<i>Graphiumagamemnon</i> (Linnaeus)	Tailed Jay	Bastar		
134	<i>Graphiumdoson</i> (Felder&Felder)	Common Jay	Bastar		NRCI
135	<i>Pachlioptaaristolochiae</i> (Fabricius)	Common Rose	Bastar, Kabirdham, Raipur		
136	<i>Pachlioptahector</i> (Linnaeus)	Crimson Rose	Bastar	Sch.I	
II. Family PIERIDAE					
Subfamily Coliadinae					
137	<i>Catopsiliapomona</i> (Fabricius)	Common Emigrant	Bastar, Bilaspur, Durg, Jashpur, Kanker, Kabirdham, Korba, Raigarh, Raipur, Surguja		

Results

22 species were added to the list of 115 butterflies that had previously been compiled from stories that had been published on the butterflies of Piranmalai as part of the current study. As a result, the state now has a total of 137 species of butterflies, which are divided into 88 genera and 5 families.

The Indian Wildlife (Protection) Act of 1972 (where applicable) and the revised district-wise distribution of 137 species in the Eastern Ghats, together with their status, are shown in Table 1. 11 species from the Lycaenidae family make up the new records, followed by 6 species from the Hesperidae, 4 species from the Nymphalidae, and 1 species from the Papilionidae. Furthermore, the survey found 13 butterfly species that had never before been found in Central India, resulting in considerable range extensions.

Discussion

The Central Indian landscape is home to a wide variety of animal species, primarily from the northern and southern regions of the nation.

The study shows that two species, *Catochrysops spanormus* (Felder) and *Rapalapheretima* (Hewitson), which were previously only known from north-east India, have significantly expanded their ranges southward to southern India. Eastern Ghats, India, is now included in the distribution of the current record. Nehru Park and Foot Hill are two disturbed research sites, respectively, as are Vannar Iruppu and Alaguchokkan, two moderately disturbed study sites, and Veerappan kovil and Dharga area, two undisturbed study sites (site VI). Because of its location and different types of forests, Piranmalai is predicted to have a diverse population of butterflies that may be more than twice as large as what is now known. Future investigation within the state is anticipated to result in the addition of numerous additional species to the list.

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