

A preliminary survey of butterflies in Pachamalai Hills, Tamil Nadu, India

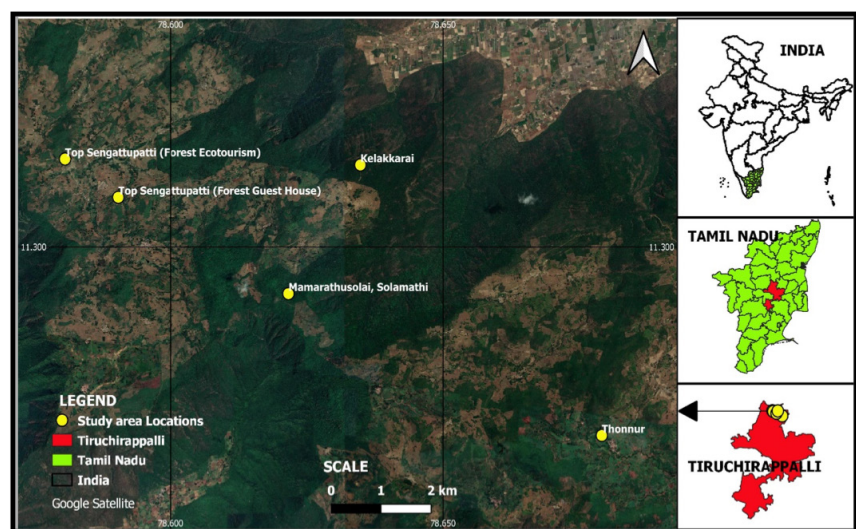
A preliminary butterfly study was carried out in Pachamalai Hills of Tiruchirappalli District on 18 & 19 September 2021. Pachamalai Hills in the Eastern Ghats stretch across Salem and Tiruchirappalli districts of Tamil Nadu, India. The mountains are mostly covered with dry evergreen, semi-evergreen, and southern tropical dry mixed deciduous forests. Pachamalai Hill comprises of 59.5 percent forest area and 40.5 percent cultivation land with human settlement. Tapioca, rice, and other minor millets form the staple food of the people who inhabit this mountain. The Pachamalai is rich in the biodiversity of plants, birds, butterflies, and other insects. The present study was done at five sampling sites: Top Sengattupatti (Forest ecotourism), Top Sengattupatti (Forest guest house), Kelakkarai, Mamarathusolai, and Solamathi.

Butterflies were observed opportunistically and counted throughout the day. During the study time, the temperature varied between 25–29°C. All sighted species were photographed in the wild with Nikon B600 and Nikon D3400. The species of butterflies were identified with the help of the field guide by Kehimkar (2016). No specimen was collected during the study.

We recorded 1,345 individuals representing 103 species (Table 1) of butterflies belonging to six families.

Nymphalidae family dominated others with 32 species and 608 individuals followed by Lycaenidae with 26 species and 235 individuals, Pieridae with 20 species and 251 individuals, Hesperidae with 15 species and 94 individuals, Papilionidae with nine species and 228 individuals and Riodinidae was represented by one species and 29 individuals.

The biodiversity indices were computed as described by Magurran (2004) and Kyerematen et al. (2014) (Table 2).



Location of the study area of Pachamalai Hills from Tiruchirappalli District.

Bugs & ALL

Newsletter of the
Invertebrate Conservation & Information Network of South Asia (ICINSA)



Orange Awlet. © R. Santhosini.



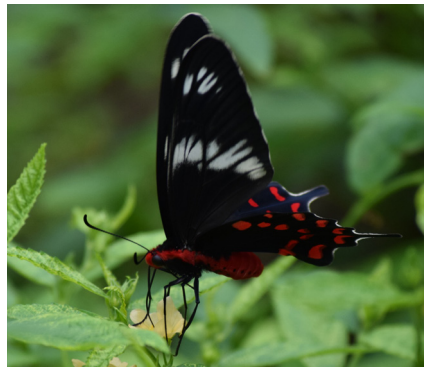
Common Small Flat.



Indian Skipper.



Tailed Jay.



Crimson Rose.



Southern Birdwing.



Lime Butterfly.



Mottled Emigrant.



Crimson Tip.



Plain Orange Tip.



Common Jezebel.



Double-banded Judy.

Bugs & All

Newsletter of the
Invertebrate Conservation & Information Network of South Asia (ICINSA)



Common Silverline.



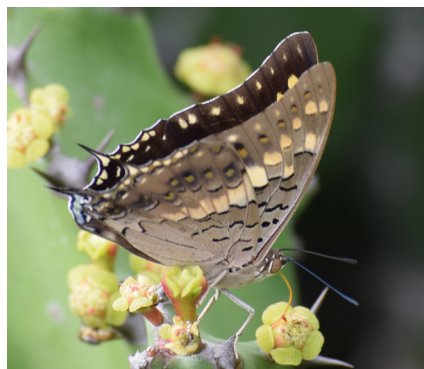
Yamfly.



Monkey Puzzle.



Plain Tiger.



Black Rajah.



Gladeye Bushbrown.



Blue Pansy.



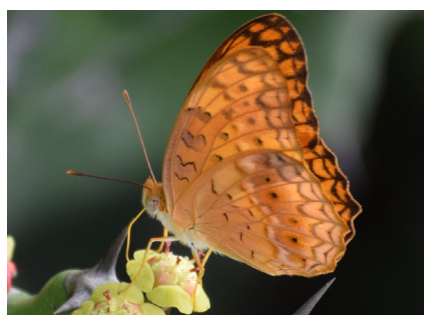
Angled Castor.



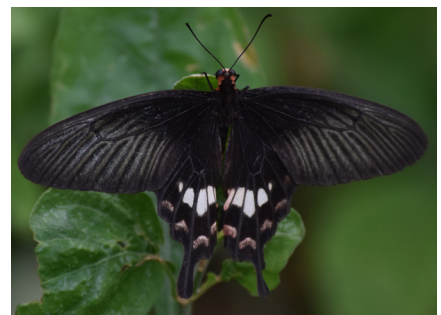
Lemon Pansy.



Striped Tiger.



Common Leopard.



Common Rose.

Photos © T. Siva.

Table 1. List of Butterflies in Pachamalai Hills in Tiruchirappalli District.

	Family	Common Name	Scientific Name	Day 1	Day 2
1	Hesperiidae (Skippers)	Orange Awlet	<i>Burara jaina</i>	1	0
2		Common Banded Awl	<i>Hasora chromus</i>	2	1
3		Common Snow Flat	<i>Tagiades japetus</i>	4	2
4		Fulvous Pied Flat	<i>Pseudocoladenia dan</i>	2	0
5		Common Small Flat	<i>Sarangesa dasahara</i>	8	4
6		Malabar Spotted Flat	<i>Celaenorrhinus ambareesa</i>	0	1
7		Common Spotted Flat	<i>Celanorrhinus leucocera</i>	17	14
8		Indian Skipper	<i>Spialia galpa</i>	3	2
9		Bush Hopper	<i>Ampittia dioscorides</i>	4	1
10		Chestnut Bob	<i>Lambrix salsala</i>	3	2
11		Straight Swift	<i>Parnara guttata</i>	3	1
12		Rice Swift	<i>Borbo cinnara</i>	4	1
13		Small Branded Swift	<i>Pelopidas mathias</i>	7	4
14		Dark Palm Dart	<i>Telicota aneilla bambusae</i>	2	0
15		Kanara Swift	<i>Caltoris canaraica</i>	0	1
16	Papilionidae (Swallowtails)	Common Jay	<i>Graphium doson</i>	11	7
17		Tailed Jay	<i>Graphium agamemnon</i>	3	4
18		Common Rose	<i>Pachliopta aristolochiae</i>	27	22
19		Crimson Rose	<i>Pachliopta hector</i>	13	9
20		Southern Birdwing	<i>Troides minos</i>	19	21
21		Common Mormon	<i>Papilio polytes</i>	16	18
22		Blue Mormon	<i>Papilio polymnestor</i>	13	16
23		Lime Butterfly	<i>Papilio demoleus</i>	7	3
24		Common Banded Peacock	<i>Papilio crino</i>	12	7
25	Pieridae (Whites & Yellows)	Three-spot Grass Yellow	<i>Eurema blanda</i>	7	9
26		Small Grass Yellow	<i>Eurema brigitta</i>	5	7
27		Common Grass Yellow	<i>Eurema hecabe</i>	8	11
28		Common Emigrant	<i>Catopsilia pomona</i>	18	21
29		Mottled Emigrant	<i>Catopsilia pyranthe</i>	12	14
30		Crimson Tip	<i>Colotis danae</i>	7	3
31		Small Orange Tip	<i>Colotis etrida</i>	2	1
32		Plain Orange Tip	<i>Colotis aurora</i>	11	6
33		Small Salmon Arab	<i>Colotis amata</i>	5	2
34		Large Salmon Arab	<i>Colotis fausta</i>	2	0
35		White Orange Tip	<i>Ixias marianne</i>	1	2
36		Great Orange Tip	<i>Hebomoia glaucippe</i>	7	9

	Family	Common Name	Scientific Name	Day 1	Day 2
37	Pieridae (Whites & Yellows)	Dark Wanderer	<i>Pareronia ceylanica</i>	5	7
38		Common Wanderer	<i>Pareronia hippia</i>	8	5
39		Common Albatross	<i>Appias albina</i>	2	3
40		Striped Albatross	<i>Appias libythea</i>	0	1
41		Common Gull	<i>Cepora nerissa</i>	3	4
42		Pioneer	<i>Belenois aurota</i>	2	1
43		Psyche	<i>Leptosia nina</i>	5	4
44		Common Jezebel	<i>Delias eucharis</i>	14	17
45	Riodinidae (Judies & Punches)	Double-banded Judy	<i>Abisara bifasciata</i>	13	16
46	Lycaenidae (Blues)	Common Silverline	<i>Spindasis vulcanus</i>	2	0
47		Common Lineblue	<i>Prosotas nora</i>	24	26
48		Tailless Lineblue	<i>Prosotas dubiosa indica</i>	27	22
49		Angled Pierrot	<i>Caleta decidia</i>	4	2
50		Banded Blue Pierrot	<i>Discolampa ethion</i>	6	4
51		Common Pierrot	<i>Castalius rosimon</i>	4	2
52		Black-spotted Pierrot	<i>Tarucus balkanicus nigra</i>	2	1
53		Dark Cerulean	<i>Jamides bochus</i>	1	0
54		Common Cerulean	<i>Jamides celeno</i>	4	3
55		Metallic Cerulean	<i>Jamides alecto</i>	0	1
56		Forget-me-not	<i>Catochrysops strabo</i>	2	4
57		Zebra Blue	<i>Leptotes plinius</i>	4	3
58		Dark Grass Blue	<i>Zizeeria karsandra</i>	3	1
59		Pale Grass Blue	<i>Pseudozizeeria maha</i>	6	4
60		Lesser Grass Blue	<i>Zizina otis</i>	4	0
61		Tiny Grass Blue	<i>Zizula hylax</i>	7	4
62		Gram Blue	<i>Euchrysops cnejus</i>	3	5
63		Grass Jewel	<i>Freyeria trochylus</i>	7	2
64		Small Cupid	<i>Chilades parrhassius</i>	2	0
65		Indian Cupid	<i>Everes lacturnus</i>	0	1
66		Plains Cupid	<i>Chilades pandava</i>	8	5
67		Lime Blue	<i>Chilades lajus</i>	4	7
68		Large Oakblue	<i>Arhopala amantes</i>	0	1
69		Small Grass Jewel	<i>Freyeria putli</i>	3	5
70	Yamfly	<i>Loxura atymnus</i>	2	2	
71	Monkey Puzzle	<i>Rathinda amor</i>	0	1	
72	Nymphalidae (Brush-footed)	Blue Tiger	<i>Tirumala limniace</i>	42	47
73		Dark Blue Tiger	<i>Tirumala septentrionis</i>	37	43
74		Glassy Tiger	<i>Parantica aglea</i>	11	9

	Family	Common Name	Scientific Name	Day 1	Day 2
75	Nymphalidae (Brush-footed)	Striped Tiger	<i>Danaus genutia</i>	29	32
76		Plain Tiger	<i>Danaus chrysippus</i>	31	26
77		Double-branded Crow	<i>Euploea sylvester coreta</i>	9	7
78		Common Crow	<i>Euploea core</i>	18	16
79		Common Nawab	<i>Polyura athamas</i>	1	0
80		Anomalous Nawab	<i>Polyura agraria</i>	2	0
81		Black Rajah	<i>Charaxes solon</i>	1	0
82		Common Evening Brown	<i>Melanitis leda</i>	4	2
83		Gladeye Bushbrown	<i>Mycalesis patnia</i>	7	11
84		Common Bushbrown	<i>Mycalesis perseus</i>	1	3
85		Common Five-ring	<i>Ypthima baldus</i>	7	3
86		White Four-ring	<i>Ypthima ceylonica</i>	16	18
87		Common Four-ring	<i>Ypthima huebneri</i>	27	22
88		Tawny Coster	<i>Acraea violae</i>	17	13
89		Small Leopard	<i>Phalanta alcippe</i>	0	1
90		Common Leopard	<i>Phalanta phalantha</i>	3	1
91		Rustic	<i>Cupha erymanthis</i>	6	4
92		Common Sailer	<i>Neptis hylas</i>	5	6
93		Chestnut-streaked Sailer	<i>Neptis jumbah</i>	3	5
94		Common Lascar	<i>Pantoporia hordonia</i>	0	1
95		Angled Castor	<i>Ariadne ariadne</i>	3	4
96		Common Castor	<i>Ariadne merione</i>	5	6
97		Blue Pansy	<i>Junonia orithiya</i>	0	1
98		Chocolate Pansy	<i>Junonia iphita</i>	4	7
99		Grey Pansy	<i>Junonia atlites</i>	0	2
100		Lemon Pansy	<i>Junonia lemonias</i>	5	7
101		Great Eggfly	<i>Hypolimnas anomala</i>	2	1
102		Danaid Eggfly	<i>Hypolimnas misippus</i>	2	4
103	Lobed beak	<i>Libythea laius</i>	3	5	

A total of 103 butterfly species belonging to six families were recorded. Among these, one species *Burara jainare* is a rare sighting in the Eastern Ghats from this area (Siva et al. 2021). In Tiruchirappalli District, studies on the butterfly diversity are very less and the scientific information and publications area very few. Siva & Neelananarayanan (2019)

reported 72 species of butterflies observed from the Nehru Memorial College campus. This study is the primary attempt to document the butterfly fauna from the region. Therefore, it is very difficult to say whether the diversity of butterflies in the area is increasing or decreasing. Hence, it is suggested that the area under the study should be continuously

Table 2. Family-wise diversity indices.

	Family	No. of species	Shannon-Weiner index(H')	Effective no. of species(H')	Simpson diversity index (D)	Margalef richness index	Pielou's evenness index
1	Hesperiidae	15	2.233	9.3	0.85	20.6	0.62
2	Papilionidae	9	2.059	7.8	0.86	41.9	0.87*
3	Pieridae	20	2.700	14.8	0.91	45.4	0.74
4	Riodinidae	1	0.000	0.00	0.00	8.6	0.00
5	Lycaenidae	26	2.678	14.5	0.90	43.0	0.55
6	Nymphalidae	32	2.856*	17.4*	0.92*	94.8*	0.54

Note: *higher values

monitored to observe any change in the occurrence of butterflies because the changes in the diversity can only be observed through continuous monitoring and comparing the data of every year.

References

Kehimkar, I. (2016). Butterflies of India. Bombay Natural History Society, Mumbai, 528pp.

Kyerematen, R., D. Acquah-Lampsey, E.H. Owusu, R.S. Anderson & Y. Ntiamao-Baidu (2014). Insect Diversity of the Muni-Pomadze Ramsar Site: An Important site for Biodiversity Conservation in Ghana. *Journal of Insects*. <http://dx.doi.org/10.1155/2014/985684>.

Magurran, A.E. (2004). *Measuring Biological Diversity*. Blackwell Publishing, Oxford, UK.

Siva, T. & P. Neelanarayanan (2019). Checklist of Butterflies of Nehru Memorial College and Puthanampatti Village, Tiruchirappalli District, Tamil Nadu. *Zoo's Print* 34(1): 21–29.

Siva, T., R. Santhosini, A.S. Thileepan & A. Muthusamy (2021). Rare sighting of Orange Awlet recorded in Pachamalai Hills of Eastern Ghats, India. *Bugs R All* #216, In: *Zoo's Print* 36(11): 34–36.

Acknowledgements: I would like to thank my nature enthusiast friends Mr. A.S. Thileepan, Mr. M. Ramachandran, Mrs. R. Uma Rajeshwari, Miss. R. Akshara, Mr. P. Ravikumar, Mr. S.S. Balavignesh, Mr. R. Umar Faruk, R. Kishore, S. Shobana, and Miss. K.S.P. Swarna Prabha & her family members for accompanying me during the bird and butterfly watching trips.

**R. Santhosini¹, T. Siva², K. Sharma³,
A. Muthusamy⁴ & N. Gopinath⁵**

¹ Junior Research Biologist, Division of Ornithology, Salim Ali Centre for Ornithology and Natural History, Anaikatti, Coimbatore, Tamil Nadu 641108, India.

^{2&4} Research Department of Zoology, Nehru Memorial College (Autonomous & Affiliated to Bharathidasan University), Puthanampatti, Tiruchirappalli District, Tamil Nadu 621007, India.

³ Junior Research Biologist, Division of Ecotoxicology, Salim Ali Centre for Ornithology and Natural History, Anaikatti, Coimbatore, Tamil Nadu 641108, India.

⁵ No. 17/39, North Madhulakolai Street, TT Road, Woraiyur, Tiruchirappalli, Tamil Nadu 620003, India
Emails: ¹santhosini97@gmail.com,

²sivanaturewild@gmail.com (corresponding author),

⁴muthusamy9514@gmail.com, ⁵hornbill.gn@gmail.com

Citation: Santhosini, R., T. Siva, K. Sharma, A. Muthusamy & N. Gopinath (2023). A preliminary survey of butterflies in Pachamalai Hills, Tamil Nadu, India. *Bugs R All* #258, In: *Zoo's Print* 38(2): 12–18.

Bugs R All is a newsletter of the Invertebrate Conservation and Information Network of South Asia (ICINSA)

