

# Bugs R All

## A preliminary study on time-specific assemblage of butterflies in an undisturbed site at Serampore, Hooghly, West Bengal

Few studies have examined the variety and richness of butterflies in northern and southern West Bengal (Mukherjee et al. 2015). On the campus of Ramakrishna Mission Vivekananda Centenary College (RKMVCC), a visual encounter approach was done to document the temporal variety of butterfly fauna.

The study site was Jolkol (12, William Carey Sarani, Maniktala, Serampore (22.7495 & 88.3542) and belongs to the suburban area of Hooghly District of West Bengal, India. The Hooghly River bank is not far from this location. The area has naturally grown bushy shrubs, herbs, climbers, small grasses, and large trees.

The study area consisted of different types of shrubs, herbs, trees, and grasses. The area is mostly covered by several native and non-native/invasive herbs, shrubs,

fruit plants, and trees: *Ficus* sp., *Cassia fistula*, *Citrus lemon*, *Calotropis* sp., *Lantana camara*, *Mangifera indica*, *Areca catechu*, *Euphorbia hirta*, *Abutilon indicum*, *Cicer arietinum*, *Chrysopogon* sp., *Oxalis corniculata*, *Ricinus communis* and various types of grasses which provide habitat, resources, and breeding sites for butterfly species (Mandal & Jana 2012).

From March 2022 to June 2022, the current study was conducted during various

daytime hours. Using the modified Pollard walk technique, observed butterfly species were tallied along transects (Pollard 1977). Four hours each day were devoted to doing the general observation. The XL Miner Analysis Tool is utilized for the data analysis together with the  $\chi^2$  test (Sheskin 2000).

During the examination, 47 distinct species of butterflies (Table 1) were seen in the study region (Kehimkar 2016). The observed time was divided



Map of the study area Jolkol or 12, William Carey Sarani, Maniktala, Serampore, West Bengal, India.

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**Table 1. Observed butterfly species in the study area Jolkol, Serampore.**

	Common name	Scientific name	Family
1	Common Mormon	<i>Papilio polytes</i>	Papilionidae
2	Tailed Jay	<i>Graphium agamemnon</i>	Papilionidae
3	Lime butterfly	<i>Papilio demoleus</i>	Papilionidae
4	Common Jay	<i>Graphium doston</i>	Papilionidae
5	Common Mime	<i>Papilio clytia</i>	Papilionidae
6	Common Crow	<i>Euploea core</i>	Nymphalidae
7	Plain Tiger	<i>Danaus chrysippus</i>	Nymphalidae
8	Blue Tiger	<i>Tirumala limniace</i>	Nymphalidae
9	Striped Tiger	<i>Danaus genutia</i>	Nymphalidae
10	Common Four Ring	<i>Ypthima huebneri</i>	Nymphalidae
11	Angled Castor	<i>Ariadne ariadne</i>	Nymphalidae
12	Tawny Castor	<i>Ariadne terpscore</i>	Nymphalidae
13	Common castor	<i>Ariadne merione</i>	Nymphalidae
14	Peacock Pansy	<i>Junonia almana</i>	Nymphalidae
15	Lemon Pansy	<i>Junonia lemonias</i>	Nymphalidae
16	Gray Pansy	<i>Junonia atlites</i>	Nymphalidae
17	Great Eggfly	<i>Hypolimnas bolina</i>	Nymphalidae
18	Dark-brand Bush Brown	<i>Mycalesis mineus</i>	Nymphalidae
19	Common Bushbrown	<i>Mycalesis perseus</i>	Nymphalidae
20	Chestnut-streaked Sailer	<i>Neptis jumbah</i>	Nymphalidae
21	Common Sailer	<i>Neptis hylas</i>	Nymphalidae
22	Common Palmfly	<i>Elymnias hypermnestra</i>	Nymphalidae
23	Common Grass Yellow	<i>Eurema hecabe</i>	Pieridae
24	Lemon Emigrant	<i>Catopsilia pomona</i>	Pieridae
25	Mottled Emigrant	<i>Catopsilia pyranthe</i>	Pieridae
26	Common Albatross	<i>Appias albina</i>	Pieridae
27	Striped Albatross	<i>Appias libythea</i>	Pieridae
28	Eastern Striped Albatross	<i>Appias olferna</i>	Pieridae
29	Indian Jezebel	<i>Delias eucharis</i>	Pieridae
30	Common Gull	<i>Cepora nerissa</i>	Pieridae
31	Psyche	<i>Leptosia nina</i>	Pieridae
32	Common Pierrot	<i>Castalius rosimon</i>	Lycaenidae
33	Rounded Pierrot	<i>Tarucus extricatus</i>	Lycaenidae
34	Common Silverline	<i>Spindasis vulcanus</i>	Lycaenidae
35	Quaker	<i>Neopithecops zalmora</i>	Lycaenidae
36	Gram Blue	<i>Euchrysops cnejus</i>	Lycaenidae
37	Pale Grass Blue	<i>Pseudozoeeria maha</i>	Lycaenidae



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	Common name	Scientific name	Family
38	Dark Grass Blue	<i>Zizeeria karsandra</i>	Lycaenidae
39	Tiny Grass Blue	<i>Zizula hylax</i>	Lycaenidae
40	Monkey Puzzle	<i>Rathinda amor</i>	Lycaenidae
41	Apefly	<i>Spalgis epius</i>	Lycaenidae
42	Indian Sunbeam	<i>Curetis thetis</i>	Lycaenidae
43	Rice Swift	<i>Borbo cinnara</i>	Hesperiidae
44	Indian Grizzled skipper	<i>Spialia galba</i>	Hesperiidae
45	Chestnut Bob	<i>Iambrix salsala</i>	Hesperiidae
46	Oriental Palm Bob	<i>Suastus gremius</i>	Hesperiidae
47	Grass Demon	<i>Udaspes folus</i>	Hesperiidae

**Table 2. Common and exclusive butterfly species in the different time intervals.**

Total time: 0930–1500h				
	1st Interval (0930–1030 h)	2nd Interval (1100–1200 h)	3rd Interval (1230–1330 h)	4th Interval (1400–1500 h)
1	Quaker	Quaker	Quaker	Quaker
2	Common Silverline	Common Silverline	Common Silverline	Common Silverline
3	Common Pierrot	Common Pierrot	Common Pierrot	Common Pierrot
4	Common Four Ring	Common Four Ring	Common Four Ring	Common Four Ring
5	Pale Grass Blue	Pale Grass Blue	Pale Grass Blue	Pale Grass Blue
6	Tawny Coster	Tawny Coster	Tawny Coster	Tawny Coster
7	Common Mormon	Common Mormon	Common Mormon	Common Mormon
8	Common Grass Yellow	Common Grass Yellow	Common Grass Yellow	Common Grass Yellow
9	Common Jay	Common Jay	Common Jay	Common Jay
10	Tailed Jay	Tailed Jay	Tailed Jay	Tailed Jay
11	Plain Tiger	Plain Tiger	Plain Tiger	Plain Tiger
12	Dark Brand Bush Brown	Dark Brand Bush Brown	Dark Brand Bush Brown	-
13	Rounded Pierrot	Rounded Pierrot	Rounded Pierrot	-
14	Eastern Striped Albatross	Eastern Striped Albatross	Eastern Striped Albatross	-
15	Dark Grass Blue	Dark Grass Blue	Dark Grass Blue	-
16	Indian Rice Swift	Indian Rice Swift	Indian Rice Swift	-
17	Indian Jezebel	-	Indian Jezebel	Indian Jezebel
18	-	Tiny Grass Blue	Tiny Grass Blue	Tiny Grass Blue
19	-	Common Crow	Common Crow	Common Crow
20	-	Striped Tiger	Striped Tiger	Striped Tiger
21	-	Common Mime	Common Mime	Common Mime
22	-	Lime	Lime	Lime

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Total time: 0930–1500h				
	1st Interval (0930–1030 h)	2nd Interval (1100–1200 h)	3rd Interval (1230–1330 h)	4th Interval (1400–1500 h)
23	-	Lemon Emigrant	Lemon Emigrant	Lemon Emigrant
24	-	Common Sailer	Common Sailer	Common Sailer
25	-	Lemon Pansy	Lemon Pansy	Lemon Pansy
26	-	Oriental Palm Bob	Oriental Palm Bob	Oriental Palm Bob
27	Great Eggfly	Great Eggfly	-	-
28	-	Common Albatross	Common Albatross	-
29	-	Common Castor	Common Castor	-
30	-	Indian Grizzled Skipper	Indian Grizzled Skipper	-
31	-	Apefly	Apefly	-
32	-	Indian Sunbeam	Indian Sunbeam	-
33	-	Common Palmfly	Common Palmfly	-
34	-	Chestnut Bob	-	Chestnut Bob
35	-	-	Grass Demon	Grass Demon
36	-	-	Peacock Pansy	Peacock Pansy
37	-	-	Common Gull	Common Gull
38	-	-	Angled Castor	Angled Castor
39	-	-	Grey Pansy	Grey Pansy
40	Gram Blue	-	-	-
41	Psyche	-	-	-
42	-	Mottled Emigrant	-	-
43	-	Common Bushbrown	-	-
44	-	Chestnut-Streaked Sailor	-	-
45	-	-	Monkey puzzle	-
46	-	-	Blue Tiger	-

uniformly into four time slots—1st interval (0930–1030 h), 2nd interval (1100–1200 h), 3rd interval (1230–1430 h), and 4th interval (1400–1500 h).

In the case of the total study area species types were mostly encountered in the 3rd interval (33.33%) followed by the 2nd interval (26.04%), 4th interval (25.00%), and 1st interval (15.63%) ( $\chi^2 = 06.08$ ,  $df = 3$ ,  $p < 0.05$ ) and significantly higher.

All observed butterfly species were not encountered at a time. Twenty butterfly species were observed in the first interval, 36 species, 39 species, and 27 species were observed in the second, third, and fourth intervals, respectively. Among all of them, only 11 butterfly species were common in all four-time intervals—Quaker, Common Silverline, Common Pierrot, Pale Grass Blue, Common Four Ring, Tawny Coster, Common Mormon, Common Jay, Tailed Jay, Common Grass Yellow, and Plain Tiger

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(Table 2). The remaining ones were only found in their respective intervals. Of those observed, 47 species were not found all day time. Some species may occur over a prolonged period of time or at different time sessions of the day but the higher number of individuals of certain species indicated the maximum utilization of ecological resources in that area (Ray & Roy 2019).

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