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Address for Correspondence
Butterfly Research Centre, Bhimtal, Uttarakhand 263 136, India. Phone: +91 8938896403.
Email: butterflyresearchcentre@gmail.com

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Cover Photo of *Spialia zebra* by Mukesh Panwar

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A COMPREHENSIVE CHECKLIST OF BUTTERFLIES SEEN IN CORBETT TIGER RESERVE, UTTARAKHAND, INDIA

RAJESH CHAUDHARY[1], SANJAY CHHIMWAL[2] & VINESH KUMAR[1]

[1]Department of Biomedical Science, Acharya Narendra Dev College, Govindpuri, Kalkaji, New Delhi-19, India

[*] *rajeshchaudhary@andc.du.ac.in*

[2]The Pugmark Safari and Tours, Dhikuli village, Ramnagar, Nainital, Uttarakhand-244715, India

Reviewer: Peter Smetacek

Abstract

Corbett Tiger Reserve (CTR) conserves a wealth of flora and fauna and is a known destination for ecotourism in Northern India. Besides mammals and birds, for which CTR is known to many, frequent visits to CTR and its vicinity for watching butterflies are also on the rise in recent times. In this respect, an account of species of butterflies in the CTR and its vicinity would be useful not only for butterfly ecotourism but also for conservational, educational and scientific purposes. By virtue of photographic documentation of species of butterflies in CTR for over a decade, we provide here a list of butterflies seen in various tourist zones of CTR and its immediate vicinity. We recorded 94 genera and 130 species belonging to six families. On the basis of our records and work by others in CTR, a comprehensive checklist of 143 species of butterflies has been compiled.

Introduction

Corbett Tiger Reserve (CTR) is one of the key biodiversity areas in the foothills of Himalaya in Northern India. Established as a wildlife sanctuary with a total area of few hundred square kilometres in 1934, it was upgraded to a National Park in 1936 (Khanna *et al*., 2008). Presently, the CTR has a well-protected expanse of 1288.31 km² **(**NTCA, 2009). The spread of CTR encompasses a variety of habitats that support diverse flora and fauna (Pant, 1986, Editor-Director, 2008, Khan *et al*., 2008). Besides conserving wilderness, the location and approachability of CTR; and plentiful wildlife attracts lakhs of tourists every year (Badola *et al*., 2010; Gusain, 2015). The recreational value of CTR generates livelihood for the local community (Badola *et al*. 2010; Kumar *et al*., 2019).

Today, butterfly watching is one of the favourite recreational activities for many, and the trend is gradually on the rise. This makes butterflies important from the perspective of ecotourism; defined here as "low impact nature tourism which contributes to the maintenance of species and habitats either directly through a contribution to conservation and/or indirectly by providing revenue to the local community sufficient for local people to value, and therefore protect, their wildlife heritage area as a source of income" (Fennel, 2015; Kurnianto *et al*., 2016; Singh *et al*., 2016). The diverse and pristine habitat of CTR is expected to be rich in the diversity of butterflies. However, literature on butterfly diversity in and around CTR is sparse. Only two reports provide an account of species of butterflies found in CTR (Kumar, 2008; Arya *et al*., 2020). The number of species of butterflies mentioned in these reports are 36 (Kumar, 2008), and 56 (Arya *et al*., 2020). The present communication reports 130 species of butterflies based on the observations made

during the last 13 years in CTR and its immediate vicinity. Based on the data from present and previous studies, a checklist of species of butterflies that can be sighted in this area has also been compiled.

Material and Methods:

Sites Surveyed

Various sites surveyed and their approximate geographical coordinates are given in Table 1. The sites belonged to two groups 1) sites located inside the administrative boundary of CTR i.e. tourist zones including Jhirna, Bijrani, Dhikala, Durgadevi and Halduparao; and 2) villages and resorts along the boundary of CTR i.e. Dhela, Resorts near Amdanda, Dhikuli, Garjiya, Mohaan and Rahtuaadhab.

Methods of Survey

Inside the boundary of CTR, butterflies among bushes along vehicle tracks were observed from safari vehicles, whereas those in the compounds of Forest Rest Houses were approached on foot. Butterflies in the villages and resorts were approached on foot. The species data presented here is a result of observations spanning last 13 years and includes butterflies sighted during chance encounters and surveys at sites mentioned in Table 1. Visits covered all the seasons i.e. spring, summer, monsoon, post-monsoon and winter. Of all the sites mentioned in Table 1, S3, S5, S6 and S8 were visited at all seasons. Also, multiple visits were made to each site.

Identification of butterflies:

Images of butterflies were taken using digital cameras and identification was done as suggested by Kehimkar (2016), Smetacek (2016), and Sondhi (2018). Arrangement of various species and genera is primarily based on Varshney & Smetacek (2015).

Results and Discussions

Based on long term observation at the sites within CTR and its immediate vicinity (Table 1), we hereby report sighting of butterflies belonging to 6 families, 94 genera and 130 species (Papilionidae: 9 species; Hesperiidae: 14 species; Pieridae: 14 species; Riodinidae: 2 species, Lycaenidae: 44 species and Nymphalidae: 47 species; Table 2 and Figure 1). Previous studies performed in similar locations reported only 36 (Kumar, 2008), and 56 species of butterflies (Arya *et al*., 2020) respectively; and this could be due to the longer study period of this study. We, however, could not sight about 13 species of butterflies (Table 3) which have been reported by previous workers (Kumar, 2008, Arya *et al*., 2020). Since identification of species in the present study was solely done on the basis of photographs of butterflies taken in the field, a few butterflies could be identified only up to the level of their genus. The same reason is applicable for non-reporting of a few Hesperids sighted during the study as to confirm their identity, examination of male genitalia by dissection is required. In case of genus *Tarucus*- the superficial markings are extremely variable and tend to overlap, so the species in this genus are best distinguished by an examination of male genitalia and androconia. Females of *Tarucus* are best separated by breeding or if they are found paired with known males (Wynter- Blyth, 1957).

All the species sighted inside CTR in the present study were also sighted at sites located outside CTR (Table 1). However, the population of butterflies were found to be significantly higher inside CTR, which is most likely due to an undisturbed habitat in the protected forest area (CTR).

Based on the total number of butterfly species observed in the present study and those observed by other workers (but not sighted in present study), a comprehensive checklist of butterflies found in CTR and its immediate vicinity has been prepared (Table 2). The state of Uttarakhand is known to have about 500 species (60 species not recorded for many decades) of butterflies; which is nearly 35 percent of the total butterfly species known from India (Sondhi & Kunte, 2018, Varshney & Smetacek, 2015). The list of butterflies

provided here is however incomplete and some species may still be added in due course.

Acknowledgements

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Table 1: Location of various sites, in tourist zones of CTR and its vicinity (with their geographical coordinates and habitat types) included in the study. *https://earth.google.com/

Sites	Location of the sites	Habitat types	Geographical coordinates*
S1	Jhirna (Tourist Zone inside CTR)	Scrub, grassland, mixed forest, ravines.	29° 26′ 12″ N, 78° 54′ 2″ E Altitude: 325 m. aprox.
S2	Dhela (village)	Agriculture landscape, fringes of mixed forest.	29° 25′ 17″ N, 78° 59′ 57″ E Altitude: 330 m. aprox.
S3	Amdanda (Resorts)	Mixed forest.	29° 24′ 47″ N, 79° 07′ 44″ E Altitude: 415 m. aprox.
S4	Bijrani (Tourist Zone inside CTR)	Sal forest, mixed Sal forest, grasslands, scrub and ravines.	29° 26′ 20″N, 79° 04′ 39″ E Altitude: 410-450 m. aprox.
S5	Dhikuli (Village)	Fringes of mixed Sal forest, human habitation, orchards, streams.	29° 28′ 09″ N, 79° 8′ 51″ E Altitude: 425 m. aprox.
S6	Garjiya (Village)	Scrub, fringes of mixed forest, streams.	29° 29′ 39″ N, 79° 08′ 25″ E Altitude: 450 m. aprox
S7	Dhikala (Tourist Zone inside CTR)	Sal forest, open-mixed forest, forest fringes, scrub, grasslands, river bed and streams.	29° 35′ 06″ N, 78° 51′ 46″ E Altitude: 375- 650 m. aprox.
S8	Mohaan (Near village)	Human habitation, forest fringes, streams.	29° 32′ 52″ N, 79° 06′ 25″ E Altitude: 550 m. aprox.
S9	Durgadevi (Tourist Zone inside CTR)	Mixed forest, river bed, scrub, rivers.	29° 36′ 15″ N, 7° 59′ 42″ E Altitude: 475-575 m. aprox.
S10	Rathudhab (Near Village)	Agriculture fields, human habitation, river bed, scrub fringes of forest.	29° 40′ 04″ N, 78° 51′ 13″ E Altitude: 700 m. aprox
S11	Halduparao (Tourist Zone inside CTR)	Mixed forest, scrub, river bed.	29° 39′ 04″ N, 78° 44′ 14″ E Altitude: 400 m. aprox

Table 2: Comprehensive checklist of butterflies sighted in Corbett Tiger Reserve (CTR) and its immediate vicinity.

Species Record	Remarks
Papilionidae	
Pachliopta aristolochiae (Fabricius, 1775), Common Rose	Occasionally sighted from March to November in forested areas and nearby.
Papilio clytia (Linnaeus, 1758), Common Mime	Sighted at forest edges and mud pudding in ravines.
Papilio polytes (Linnaeus, 1758), Common Mormon	More common near human habitations than forested areas.
Papilio demoleus (Linnaeus, 1758), Lime Butterfly	More common near human habitations than forested areas.
Papilio protenor (Cramer, 1775), Spangle	Rare
Graphium nomius (Esper, 1799), Spot Swordtail	----
Graphium sarpedon (Linnaeus, 1758), Common Bluebottle	----
Graphium doson (C. & R. Felder, 1864), Common Jay	----
Graphium agamemnon (Linnaeus, 1758), Tailed Jay	Rare
Hesperiidae	
Badamia exclamationis (Fabricius, 1775), Brown Awl	Uncommon; could be sighted only on few occasions.
Bibasis sena (Moore, 1866), Orange-tailed Awl	Rare
Burara oedipodea (Swainson, 1820), Branded Orange Awlet	Uncommon, could be sighted only on few occasions.
Hasora chromus (Cramer, 1780), Common Banded Awl	Uncommon, could be sighted only on few occasions.
Tagiades menaka (Moore, 1866), Spotted Snow Flat	Rare
Pseudocoladenia dan (Fabricius, 1787), Fulvous Pied Flat	Rare
Caprona sp. (Wallengren , 1857), Angle	Rare
Sarangesa purendra (Moore, 1882), Spotted Small Flat	Rare
Sarangesa dasahara (Moore, 1866), Common Small Flat	Common at the fringes of forest during rainy season
Spialia galba (Fabricius, 1793), Indian Grizzled Skipper	Uncommon, could be sighted only on few occasions
Notocrypta curvifascia (C. & R. Felder, 1862), Restricted Demon	Rare
Udaspes folus (Cramer 1775), Grass Demon	

Hyarotis adrastus (Stoll 1780), Tree Flitter	Rare
Erionota torus (Evans, 1941), Banana Skipper	Rare
Matapa aria (Moore, 1866), Common Redeye	Uncommon, could be sighted only at few occasions
Potanthus sp.(Scudder, 1872*)*	Identification up to species level requires examination of male genitalia.
Pieridae	
Catopsilia pomona (Fabricius, 1775), Common Emigrant	Very common during rainy season.
Catopsilia pyranthe (Linnaeus, 1758), Mottled Emigrant	Very common during rainy season.
Eurema brigitta (Stoll, 1780), Small Grass Yellow	Common during rainy season in open areas.
Eurema hecabe (Linnaeus, 1758), Common Grass Yellow	Common during rainy season in open areas.
Eurema laeta (Boisduval, 1836), Spotless Grass Yellow	Common during rainy season in open areas.
Colias fieldii (Ménétriés, 1855), Dark Clouded Yellow	Sighted occasionally during in late winters to spring.
Leptosia nina (Fabricius, 1793), Psyche	Common during rainy season in forested areas.
Pieris brassicae (Linnaeus, 1758), Large Cabbage White	Common near human habitations and farms in winters.
Pieris canidia (Linnaeus, 1768), Indian Cabbage White	Common near human habitations and farms in winters.
Pontia daplidice (Linnaeus, 1758), Bath White	Rare
Belenois aurota (Fabricius, 1793), Pioneer	Seen from March to November.
Cepora nerissa (Fabricius, 1775), Common Gull	Seen from March to November.
Delias eucharis (Drury, 1773), Common Jezabel	Common during rainy season in open areas.
Pareronia hippia (Fabricius, 1787), Indian Wanderer	Sighted in forested areas and fringes.
Riodinidae	
Zemeros flegyas (Cramer, 1780), Punchinello	Sighted in forested areas and fringes.
Abisara bifasciata (Moore, 1877), Double Banded Plum Judy	Sighted in forested areas and fringes.
Lycaenidae	
Curetis acuta (Moore, 1877), Angled Sunbeam	Sighted in open sunny areas and fringes of forest.
Poritia hewitsoni (Moore, 1866), Common Gem	Rare species sighted in forested areas.
Spalgis epius (Westwood, 1851), Apefly	Rare
Heliophorus sena (Kollar, 1844), Sorrel Sapphire	Could be sighted at sites S7,S9, S10 S11
Spindasis vulcanus (Fabricius, 1775), Common Silverline	Sighted on hedges in resorts and villages in rainy season.

Arhopala amantes (Hewitson, 1862), Large Oakblue	Common during spring season, resting on fallen leaves in forested areas.
Arhopala atrax (Hewitson, 1862), Indian Oakblue	Abundant in forested areas, resting on dry fallen leaves.
Flos adriana (de Nicéville, 1884), Variegated Plushblue	Occasionally seen in forested areas.
Flos asoka (de Nicéville, 1884), Spangled Plushblue	Occasionally seen in forested areas.
Loxura atymnus (Stoll, 1780), Yamfly	Sighted in rainy season but not very commonly.
Horaga onyx (Moore, 1858), Common Onyx	Rare could be sighted only on two occasions.
Tajuria cippus (Fabricius, 1798), Peacock Royal	Rare could be sighted only on two occasions
Chliaria othona (Hewitson, 1865), Orchid Tit	Very rare and could be sighted only once.
Rapala iarbus (Fabricius, 1787), Common Red Flash	-----
Rapala pheretima (Hewitson, 1863), Copper Flash	Rare
Rapala manea (Hewitson, 1863), Slate Flash	Seen at fringes of forests. It is more common than Indigo Flash
Rapala varuna (Horsfield, 1829), Indigo Flash	Seen at fringes of forests
Anthene emolus (Godart, 1824), Common Ciliate Blue	Could be sighted only on 3-4 occasions
Prosotas dubiosa (Semper, 1879), Tailless Lineblue	----
Prosotas nora (C. Felder, 1860), Common Lineblue	Common in forested areas.
Jamides bochus (Stoll, 1782) Dark Cerulean	----
Jamides celeno (Cramer, 1775), Common Cerulean	Sighted in rainy season.
Catochrysops strabo (Fabricius, 1793), Forget-me-not	Common in rainy season in open areas.
Lampides boeticus (Linnaeus, 1767), Pea Blue	Common near human habitations.
Leptotes plinius (Fabricius, 1793), Zebra Blue	-----
Castalius rosimon (Fabricius, 1775), Common Pierrot	Sighted at the fringes of forest, it is not common species.
Tarucus balkanicus (Freyer, 1844), Black-Spotted Pierrot	The two species as mentioned here, and a third *T. callinara* requires further confirmation by examining male genitalia.
Tarucus nara (Kollar, 1848), Striped Pierrot	
Talicada nyseus (Guérin-Méneville, 1843), Red Pierrot	Sighted near human habitations close to its host plant.
Zizeeria karsandra (Moore, 1865), Dark Grass Blue	Very common during rainy season in open areas.
Pseudozizeeria maha (Kollar, 1844), Pale Grass Blue	Very common during rainy season in open areas.

Zizina otis (Fabricius, 1787), Lesser Grass Blue	Sighted during rainy season in open areas but less commonly than Dark and Pale Grass blues.
Zizula hylax (Fabricius, 1775), Tiny Grass Blue	Sighted during rainy season in open areas but less common than Dark and Pale Grass Blues.
Everes argiades (Pallas, 1771), Tailed Cupid	Rare
Everes hugelii (Gistel, 1857), Dusky Blue Cupid	Rare
Everes lacturnus (Godart, 1824), Indian Cupid	Rare
Neopithecops zalmora (Butler, 1870), Quaker	Common among bushes along forest fringes. More common in forested areas than around human habitations.
Megisba malaya (Horsfield, 1828), Malayan	Sighted in rainy season.
Acytolepis puspa (Horsfield, 1828), Common Hedge Blue	Sighted in rainy season
Euchrysops cnejus (Fabricius, 1798), Gram Blue	Common around human habitations.
Freyeria putli (Kollar, 1844), Lesser Grass Jewel	Common in scrubs.
Freyeria trochylus (Freyer, 1845), Grass Jewel	Not common as Lesser as Grass Jewel.
Chilades pandava (Horsfield, 1829), Plains Cupid	---
Chilades lajus (Stoll, 1780), Lime Blue	Not common at any of the sites included in the study.
Nymphalidae	
Danaus chrysippus (Linnaeus, 1758), Plain Tiger	Commonly sighted from March to November.
Danaus genutia (Cramer, 1779), Common Tiger	Sightings frequent during March to November.
Parantica aglea (Stoll, 1782), Glassy Tiger	Not common outside the rainy season.
Parantica sita (Kollar, 1844), Chestnut Tiger	Not common, could be sighted in open forested areas.
Tirumala limniace (Cramer, 1775), Blue Tiger	Not common outside the rainy season.
Tirumala septentrionis (Butler, 1874), Dark Blue Tiger	Not as common as Blue Tiger.
Euploea core (Cramer, 1780), Common Crow	Seen during most part of the year. Fairly common in rainy season.
Euploea mulciber (Cramer, 1777), Striped Blue Crow	Not as common as Common Crow
Polyura athamas (Drury 1773), Common Nawab	---
Elymnias hypermnestra (Linnaeus, 1763), Common Palmfly	Sighted from March to November, but it is not a common species.
Melanitis leda (Linnaeus, 1758), Common Evening Brown	Common in forested areas.
Lethe europa (Fabricius, 1775), Bamboo Treebrown	Rare
Lethe rohria (Fabricius, 1787), Common Treebrown	Sighted in forested areas but uncommonly.

Mycalesis sp. (Huebner, 1818), Bushbrown	Identification up to species level requires examination of captured specimens.
Ypthima baldus (Fabricius, 1775), Common Five-ring	Common in rainy season and early winters.
Ypthima huebneri (Kirby, 1871), Common Four-ring	Common in rainy season and early winters.
Neptis hylas (Linnaeus, 1758), Common Sailer	---
Neptis sappho (Pallas, 1771), Pallas' Sailer	Common in open forested areas.
Pantoporia sp. (Huebner, 1819), Lascar	Identification up to species level requires examination of captured specimens.
Athyma nefte (Cramer, 1780), Colour Sergeant	Sighted; is rare
Athyma perius (Linnaeus, 1758), Common Sergeant	Sighted; is rare
Athyma selenophora (Kollar, 1844), Staff Sergeant	Sighted; is rare
Moduza procris (Cramer, 1777), Commander	Sighting is fairly common in rainy season in forested areas and fringes.
Euthalia aconthea (Cramer, 1777), Common Baron	Sighting is uncommon.
Euthalia lubentina (Cramer, 1777), Gaudy Baron	Sighting is rare.
Symphaedra nais (Forster, 1771), Baronet	Common in rainy season in forested areas and fringes.
Argynnis hyperbius (Linnaeus, 1763), Indian Fritillary	Frequent sightings from early winters to spring.
Phalanta phalantha (Drury, 1773), Common Leopard	Common in rainy season in forested areas and fringes.
Cupha erymanthis (Drury, 1773), Rustic	---
Vagrans egista (Cramer, 1780), Vagrant	---
Ariadne merione (Cramer, 1777), Common Castor	Common near human habitations, close to its host plant *Ricinus* sp.
Euripus consimilis (Westwood, 1851), Painted Courtesan	Sighting is extremely rare.
Cyrestis thyodamas (Doyère, 1840), Common Map	---
Symbrenthia lilaea (Hewitson, 1864), Common Jester	Fairly common during rainy season in thinly forested areas, forest and villages.
Aglais caschmirensis (Kollar, 1844), Indian Tortoiseshell	Frequent sightings from early winters to spring.
Kaniska canace (Linnaeus, 1763), Blue Admiral	---
Vanessa cardui (Linnaeus, 1758), Painted Lady	Occasionally seen most part of the year.
Vanessa indica (Herbst, 1794), Indian Red Admiral	Occasionally sighted most part of the year. Lays eggs on *Urtica* sp.
Junonia almana (Linnaeus, 1758), Peacock Pansy	Common during rainy season.
Junonia atlites (Linnaeus, 1763), Grey Pansy	---
Junonia hierta (Fabricius, 1798), Yellow Pansy	---
Junonia iphita (Cramer, 1779), Chocolate Pansy	Common in forested areas and nearby.
Junonia lemonias (Linnaeus, 1758), Lemon Pansy	---
Junonia orithya (Linnaeus, 1758), Blue Pansy	---

Hypolimnas bolina (Linnaeus, 1758), Great Eggfly	--
Kallima inachus (Doyère, 1840), Orange Oakleaf	Occasionally sighted at the fringes of forest.
Acraea terpsicore (Linnaeus, 1758), Tawny Coster	---
Acraea issoria (Hübner, 1819), Yellow Coster	Sighted once at site S9.
Libythea myrrha (Godart, 1819), Club Beak	Occasionally sighted in forested areas.

Table 3: List of species of butterflies that were reported by Arya *et al*., 2020, Kumar, 2008 but could not be recorded in the present study.

Species Reported by Other Workers
1. *Parnara guttatus* (Bremer & Grey, 1852), Straight Swift
2. *Eurema andersoni* (Moore, 1886), One-spot Grass Yellow
3. *Eurema blanda* (Boisduval, 1836), Three-spot Grass Yellow
4. *Colias erate* (Esper, 1805), Pale Clouded Yellow
5. *Polyura agraria* (Swinhoe, 1887), Anomalous Nawab
6. *Neptis sankara* (Kollar, 1844), Broad-banded Sailer
7. *Athyma zeroca* (Moore, 1872), Small Staff Sergeant
8. *Hestinalis nama* (Doubleday, 1844), Circe
9. *Borbo bevani* (Moore, 1878), Bevan's Swift
10. *Tarucus indica* (Evans, 1932), Transparent Pierrot
11. *Mycalesis perseus* (Fabricius, 1775), Common Bushbrown
12. *Ypthima sakra* (Moore, 1858), Himalayan Five-ring
13. *Libythea lepita* (Moore, 1858), Common Beak

1. *Pachliopta aristolochiae* **2.** *Papilio clytia* **3.** *Papilio polytes* **4.** *Papilio demoleus* **5.** *Papilio protenor* **6.** *Graphium nomius*

7. *Graphium sarpedon* **8.** *Graphium doson* **9.** *Graphium agamemnon*

10. *Badamia exclamationis* **11.** *Bibasis sena* **12.** *Burara oedipodea* **13.** *Hasora chromus* **14.** *Tagiades menaka* **15.** *Pseudocoladenia dan* **16.** *Caprona* sp. **17-18.** *Sarangesa dasahara* **19.** *Spialia galba* **20.** *Notocrypta curvifascia* **21.** *Udaspes folus* **22.** *Hyarotis adrastus*

23. *Erionota torus* **24.** *Matapa aria* **25.** *Potanthus* sp.

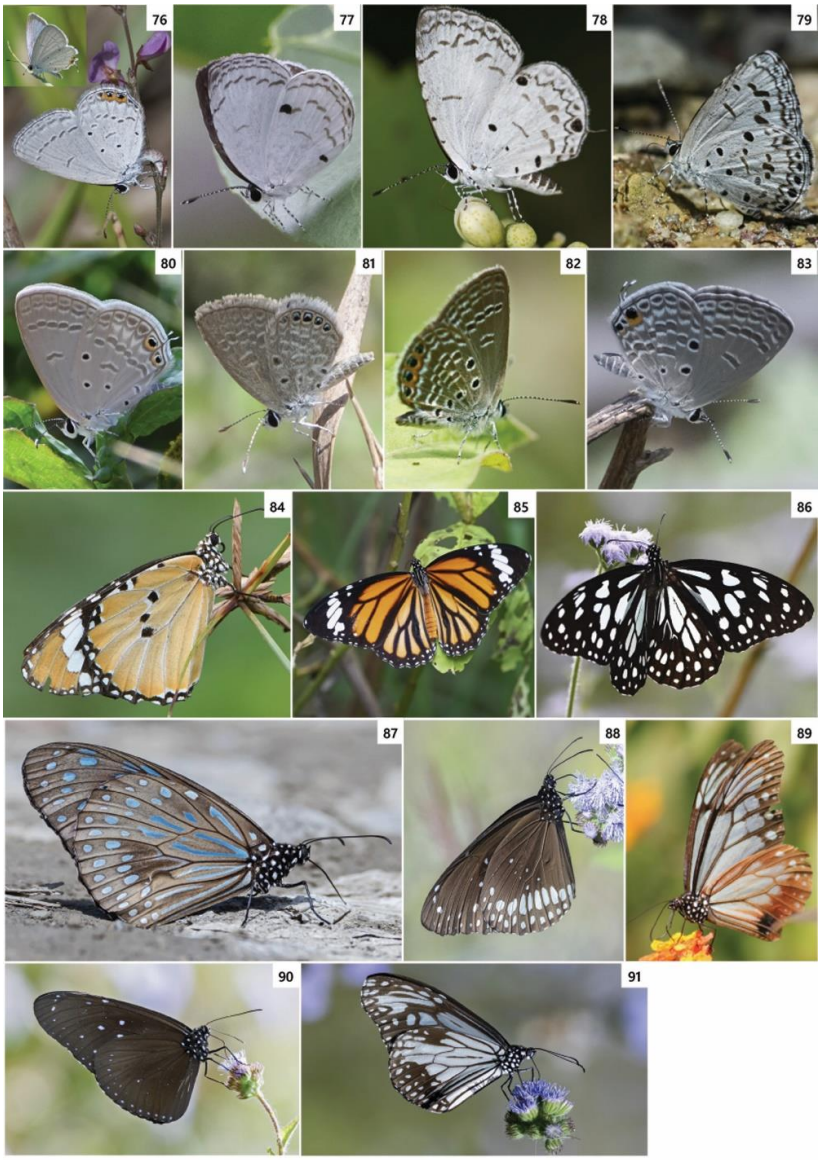
26. *Catopsilia pomona* **27.** *Catopsilia pyranthe* **28.** *Eurema brigitta* **29.** *Eurema hecabe* **30.** *Eurema laeta* **31.** *Colias fieldii*

32. *Leptosia nina* **33.** *Pieris brassicae* **34.** *Pieris canidia* **35.** *Pontia daplidice* **36.** *Cepora nerissa* **37.** *Belenois aurota*

38. *Delias eucharis* **39.** *Pareronia hippia* **40.** *Abisara bifasciata* **41.** *Zemeros flegyas* **42.** *Curetis acuta* **43.** *Poritia hewitsoni* **44.** *Spalgis epius* **45.** *Heliophorus sena* **46.** *Spindasis vulcanus* **47.** *Arhopala amantes* **48.** *Arhopala atrax* **49.** *Flos adriana*

50. *Flos asoka* **51.** *Loxura atymnus* **52.** *Horaga onyx* **53.** *Tajuria cippus* **54.** *Chliaria othona* **55.** *Rapala iarbus* **56.** *Rapala manea* **57.** *Rapala varuna* **58.** *Anthene emolus* **59.** *Prosotas dubiosa* **60.** *Prosotas nora* **61.** *Jamides bochus*

62. *Jamides celeno* **63.** *Catochrysops strabo* **64.** *Lampides boeticus* **65.** *Leptotes plinius* **66.** *Castalius rosimon* **67.** *Tarucus balkanicus* **68.** *Tarucus nara* **69.** *Zizeeria karsandra* **70.** *Pseudozizeeria maha* **71.** *Talicada nyseus* **72.** *Zizina otis* **73.** *Zizula hylax* **74.** *Everes argiades* **75.** *Everes hugelii*



76. *Everes lacturnus* **77.** *Neopithecops zalmora* **78.** *Megisba Malaya* **79.** *Acytolepis puspa* **80.** *Euchrysops cnejus* **81.** *Freyeria putli* **82.** *Freyeria trochylus* **83.** *Chilades pandava* **84.** *Danaus chrysippus* **85.** *Danaus genutia* **86.** *Tirumala limniace* **87.** *Tirumala septentrionis* **88.** *Euploea core* **89.** *Parantica sita* **90.** *Euploea mulciber* **91**. *Parantica aglea*

92. *Polyura athamas* **93.** *Elymnias hypermnestra* **94.** *Melanitis leda* **95.** *Lethe europa* **96.** *Lethe rohria* **97.** *Mycalesis* sp. **98.** *Ypthima baldus* **99.** *Ypthima huebneri* **100.** *Neptis hylas* **101.** *Neptis Sappho* **102.** *Pantoporia* sp. **103.** *Athyma nefte* **104.** *Athyma selenophora* **105.** *Athyma perius* **106.** *Euthalia aconthea* **107.** *Symphaedra nais* **108.** *Euthalia lubentina*

109. *Moduza procris* **101.** *Argynnis hyperbius* **111.** *Phalanta phalantha* **112.** *Cupha erymanthis* **113.** *Vagrans egista* **114.** *Ariadne merione* **115.** *Euripus consimilis* **116.** *Cyrestis thyodamas* **117.** *Symbrenthia lilaea* **118.** *Aglais caschmirensis* **119.** *Kaniska canace* **120.** *Vanessa cardui*

121. *Vanessa indica* **122.** *Junonia almana* **123.** *Junonia atlites* **124.** *Junonia hierta*

125. *Junonia iphita* **126.** *Junonia lemonias* **127.** *Junonia orithya* **128.** *Hypolimnas bolina*

129. *Kallima inachus* **130.** *Acraea terpsicore* **131.** *Acraea issoria* **132.** *Libythea myrrha*

133. *Rapala pheretima*