

Additional distribution records of butterflies (Lepidoptera: Rhopalocera) with seven species new to Nepal

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Abstract. *Sajan KC, Sapkota A. 2022. Additional distribution records of butterflies (Lepidoptera: Rhopalocera) with seven species new to Nepal. Biodiversitas 23: 2711-2743.* New distribution records of some butterflies of Nepal are given in terms of geographical area, season and elevation based on our observations since early 2017 to late 2021. Seven new species: *Hasora taminatus* (Hübner, 1818), *Hasora vitta* (Butler, 1870), *Celaenorrhinus pyrrha* de Nicéville, 1889, *Seseria sambara* (Moore, [1866]), *Coladenia agni* (de Nicéville, [1884]), *Erionota thrax* (Linnaeus, 1767) and *Tarucus balkanicus* (Freyer, 1844), one new subspecies: *Pelopidas conjuncta narooa* (Moore, 1878) are added to the known butterfly fauna of Nepal along with two other species which need further confirmation: *Rohana tonkiniana* Fruhstorfer, 1906 and *Neptis capnodes* Fruhstorfer, 1908. Six species: *Gerosia sinica* (C. & R. Felder, 1862), *Aeromachus kali* (de Nicéville, 1885), *Aeromachus pygmaeus* (Fabricius, 1775), *Niphanda cymbia* de Nicéville, [1884], *Tarucus nara* (Kollar, 1848) and *Discophora timora* Westwood, [1850] have been reported for the second time in Nepal. This paper provides an updated distribution record of close to 200 species of butterflies in Nepal while discussing the possible causes of change in their distribution.

Keywords: biodiversity, climate change, insects, new records

INTRODUCTION

Nepal is ensconced between China in the north and India in all three other sides. It covers most of the central Himalayas but also enjoys the fauna of eastern Himalayas in its eastern range and that of western Himalayas in its western range. The geography of the country can be divided into three major zones: the southern plains also known as Terai, the middle hilly region, and the upper mountain region that houses rocky terrains and some of the tallest mountain peaks in the world including the Mount Everest (8848.86 masl). Since the country is geographically diverse, the floral diversity is abundant and consequently the faunal diversity as well, especially that of the insects. Butterflies of Nepal has been a subject of interest to the early researchers such as Gen. Th. Hardwick since 1826 whose collection unraveled some species new to science. Following this, Maj. Gen. Ramsey, during his study from 1852-1867 in Nepal, discovered around 11 new species and subspecies which were largely described by Moore (Smith 1989). Maj. W.G.H. Gough compiled 150 species of butterflies from Nepal in Gough (1935). Later, Lt. Col. F.M. Bailey (1951) came up with a list of 365 species. Several Japanese and German expedition took place between the 50s to the 70s bringing new species to light (Smith 1989). Fujikoa (1970) reported 286 species of butterflies from Nepal describing 4 new species and 6 new subspecies from Kathmandu (the capital) and East Nepal from his expedition in 1963. Following this, Smith (1978) indexed 567 species bringing the species number to 643 in Smith (1994). Thapa (1998) listed 656 species of butterflies in Nepal. Concluding his findings, six hundred and sixty

species of butterflies in 263 genera were reported from Nepal by Smith (2010). However, after addition of new discoveries and removal of several invalid taxa and doubtful records, Van der Poel and Smetacek (2021, pers. comm.) report that the number of butterfly species documented from Nepal is around 680.

Smith (1993, 2006, 2011) mapped the distribution of butterflies in Nepal into four divisions W, C, E and K: W represents the western part, the area encompassing the Karnali watershed, C represents the central part, the area encompassing the Gandaki watershed, E represents East, area encompassing the Koshi and Mechi watersheds, and K represents Kathmandu valley, or the area encompassing the Bagmati watershed. Van der Poel and Smetacek (2021, pers. comm.) introduced a new distribution system (Figure 1) where they divided the map of Nepal into ten butterfly zones instead of four, mainly to increase the accuracy of data and to flesh out records from unique ecological zones, or from areas which have been studied more than others (Van der Poel and Smetacek 2021, pers. com.).

According to Van der Poel and Smetacek (2021, pers. comm.), the butterfly zones of Nepal are divided as follows: (i) **Tw-** western Terai: Districts from Kanchanpur to Nawalpur; (ii) **Te-** eastern Terai: Districts from Chitwan to Jhapa, Madhesh Province + other Terai Districts; (iii) **W-** West: Mahakali + Seti river basins (mostly Sudurpashchim Province); (iv) **Ka-** Karnali: Karnali river basin, Karnali Province + some Districts of Lumbini Province; (v) **Ga-** Gandaki: mostly Kali Gandaki basin and Gandaki Province; (vi) **M-** Mustang and Manang Districts (mostly trans-Himalayan); (vii) **P-** Pokhara: Kaski District; (viii) **KV-** Kathmandu Valley: Kathmandu, Lalitpur and

Bhaktapur Districts of Bagmati Province; (ix) **Ba**-Bagmati: Bagmati Province except KV; (x) **E**- East: eastern part of Koshi basin (mostly Koshi Province).

This research aims to expand the knowledge of butterflies of Nepal in reference to the past literature. It also serves as supplementary data to the distribution data of butterflies presented in Van der Poel and Smetacek (2021, pers. comm.) and follows their division of butterfly zones in Nepal. In addition to this, it also aims to highlight the pattern of change in distribution of butterflies over decades that could ultimately help in understanding the effect of climate change and other anthropological factors in insect fauna.

MATERIALS AND METHODS

The observations are based on opportunistic surveys and chance observations we have made over the past five years (early 2017 to December 2021) throughout different districts of Nepal (Figure 2). We have used Sony DSCHX90V camera and Canon 7D MarkII coupled with 100mm f/2.8L Macro IS USM lens to take photographs, both of which come with built-in GPS. The elevations were recorded by the built-in altimeters in the cameras themselves, and could vary a few units (+5 meters) from the ones measured by dedicated altimeters. Dissection of cryptic species was performed using Stereo-microscopes Olympus SZ2-ILST and Leica MZ9.5. The genitalia were soaked in 10% KOH and were either kept as such overnight or heated on an electric heater for about ten minutes. However, in certain instances, KOH, or any other alternative alkali was not available in the labs of Nepal and the soft tissues had to be dissolved in mere boiling water. Photographs of the genitalia were taken using Axiocam 105 camera attached to a Zeiss Discovery V20 stereoscope. Stacking was done by using CombineZP while multiple images were taken using Zeiss “Zen” software. In cases when such complex setup was not available, iPhone 6s smartphone was used to take photographs. GIS maps were made using ArcMap 10.4 software.

Identification was done using Basu et al. (2019), Evans (1927, 1932, 1949, 1957), Huang (2003, 2011, 2021), Kehimkar (2016), Smetacek (2011, 2016), Yago and Nakanishi (2003), Yutaka Inayoshi (online resource), Zhang et al. (2010).

The following references have been used for the data comparison to check new records: Bailey (1951), Joshi and Manandhar (2001), KC (2020, 2021), KC and Sapkota (2020), Khanal (2006, 2008), Khanal et al. (2012), Neupane and Miya (2021), Pandey et al. (2017), Panthee et al. (2019), Sapkota et al. (2020), Sapkota et al. (2021), Smith (1989, 1994, 1997, 2006, 2010, 2011a, 2011b, 2011c), Smith et al. (2016), Tamang and Limbu (2021), Tamang et al. (2019), Thapa (1998), Van der Poel (2020), Van der Poel et al. (2020), Van der Poel and Smetacek

(2021, pers. comm.), and the private database of Tiger Mountain Pokhara Lodge (TMPL) (Cotton M 2021, pers. com.). Records of erroneous photographic evidences, or doubtful records without photographic or any other evidences in any of the above literature have been omitted. English common names from Smith (2011) and Varshney and Smetacek (2015) have been followed.

This paper highlights the species of butterflies never before recorded from Nepal or from certain butterfly zones, elevations or months of the year. While we have photographic evidence of all the taxa included herein, only the important photographs, or the peer-reviewed photographs of the complicated/cryptic species have been included (Figure 1-25) and those of the obvious ones have been omitted.

RESULTS AND DISCUSSION

Table 1 shows the butterflies (Lepidoptera: Rhopalocera) distribution of Nepal.

First records for Nepal

Species

***Hasora taminatus* (Hübner, 1818) *bhavara* Fruhstorfer, 1911: White-banded Awl**

Only two individuals were seen. One in August, 2019 (Figure 3.A) and one in September, 2020 flying among flowers in same location in Bhorletar, Lamjung. These are skittish animals as other species of *Hasora*. *Hasora chromus* (Cramer, [1780]), a similar species found across Nepal, has a bluish white uniform and thin Un (under) HW (hindwing) band with diffused outer edge while *H. taminatus* has a wide white band on UnHW with sharp edges (Evans 1949; Smetacek 2016).

It has been recorded in India from Himachal Pradesh to N.E. India (Varshney and Smetacek 2015), and was expected to fly in Nepal.

***Hasora vitta* (Butler, 1870) *indica* Evans, 1932: Plain-banded Awl**

Only one individual was seen of this insect in Bhedetar, Dhankuta district in far east of Nepal on 11 August, 2021 (Figure 3.B). It briefly appeared toward dusk and settled on a *Lantana* flower and kept moving from flower to flower for a while before flying away.

This species resembles the previous species, but differs from it due to the presence of an apical spot in sp. 6 of FW, and the wide UnHW band has more outwardly diffused edges as in *Bibasis sena* (Moore, [1866]) (Evans 1949).

In India, it is distributed from Sikkim to N.E. India and Goa to Kerala (Varshney and Smetacek 2015), thus it was expected to be found in east Nepal.

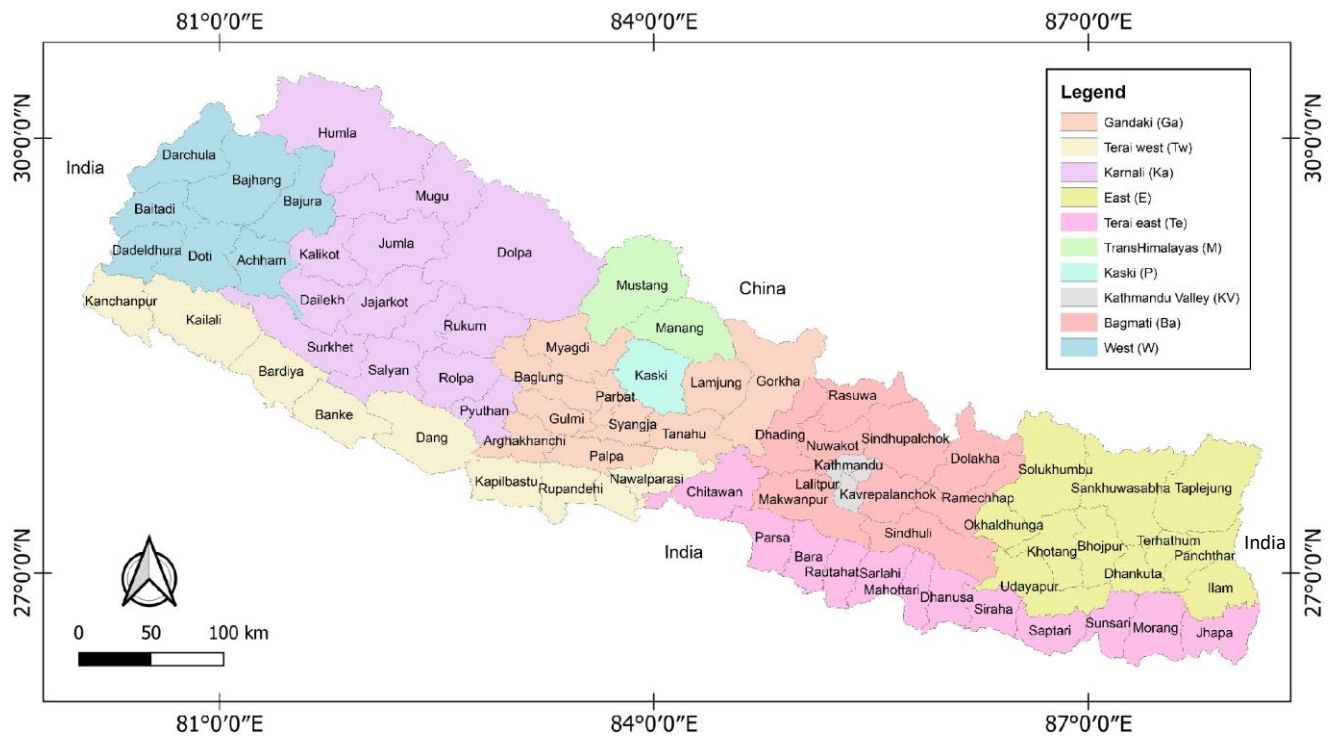


Figure 1. Butterfly zones of Nepal (Van der Poel and Smetacek 2021, pers. comm.)

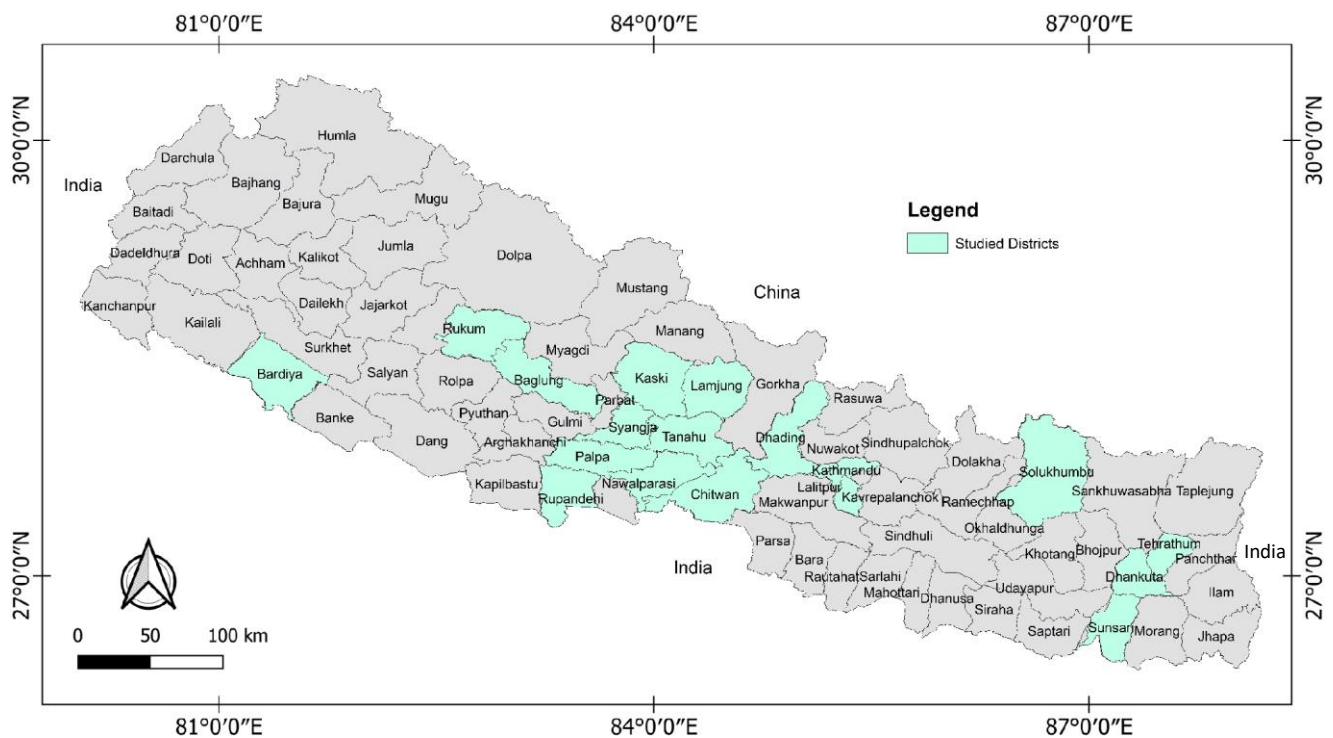


Figure 2. Study area in Nepal

Table 1. List of new distribution records of butterflies in Nepal

*First record for Nepal. **Second record for Nepal

The new distribution aspects of the records are given in **bold**. New **region**, **elevation**, or **month** of the year. Please note that there are several places we briefly visited, i.e. only for few days. In such cases, total number of individuals seen in those particular days are given, e.g.; 1 in 2 days. While in some places where we have been for an extended time period, such as our hometowns, universities we studied in, more complete data are given. Months are given in numbers, example 1 for January and 12 for December.

Scientific name	Common name	Previous distribution record	Recorded locations	Previous recorded elevations	Recorded elevations	Prv. recorded months	Recorded months	No. of individuals seen/identified	Habitat
Family: HesperIIDae									
Subfamily: Coeliadinae									
<i>Burara amara amara</i> (Moore, [1866])	Small Green Awlet	Ga, P, E	Lamjung (Ga); Chitwan (Te)	240-1,130m	500-520m; 527m	4-6, 8	8, 9; 10	1 in Aug, 3 in Sept; 1 in 1 day	Moist shade
<i>Burara jaina jaina</i> (Moore, [1866]) (Figure 15.F)	Orange Awlet	P, Ga	Pokhara (P); Dhankuta (E)	850-1,100m	800-889m ; 732m	4, 5, 7	5, 6, 8; 8	3 in May, 1 in Jun, 1 in Aug;	Flowers, moist shade
<i>Burara oedipodea belesis</i> (Mabille, 1876) (Figure 15.E)	Branded Orange Awlet	Tw, P, E	Lamjung (Ga); Dhankuta (E); Chitwan (Te); Pokhara (P)	150-1100m	519m; 618m; 390-640m; 869m	1, 2, 9, 10	8; 3; 3, 10; 4	1 in 2 years; 3-4 in 3 days; 2 in 1 day each month; 1 in several months	Flower, moist shade
<i>Burara vasutana</i> (Moore, [1866]) (Figure 15.D)	Green Awlet	Ga, P, KV	Dhankuta (E); Chitwan (Te)	1,010-1,520m	640-740m; 300m	6, 8-10	8; 11	Several; 1 in 1 day	Moist rock, shade, dung
<i>Choaspes benjaminii japonica</i> (Murray, 1875) (Figure 15.C)	Japanese Awlking	P, KV, E	Chitwan (Te); Dhankuta (E)	910-1,890m	390-640m; 615-625m	4, 10	3; 3	3-4 in 2 days; 5-6 in 3 days	Moist rocks
<i>Choaspes furcatus furcatus</i> Evans, 1932 (Figure 15.A, 13B)	Hooked Awlking	KV, E	Chitwan (Te)	910-2,350m	393m	6, 8	3	1 in 2 days	Moist rock
<i>Hasora badra badra</i> (Moore, [1858])	Common Awl	Ga, P, Ba, E,	Pokhara (P)	210-1,100m	800-890m	1, 3, 4, 6, 9, 10	3, 4, 5, 7, 8 , 9, 10	Several in Pokhara in these months as the host plant here is abundant	Flower, under leaves
<i>Hasora taminatus bhavara</i> Fruhstorfer, 1911 *	White-banded Awl	-	Lamjung (Ga)	-	512m	-	8, 9	1 in each month in 2 different years	Rural trail, <i>Lantana</i> flower
<i>Hasora vittata indica</i> Evans, 1932 *	Plain-banded Awl	-	Dhankuta (E)	-	619m	-	8	1 in 4 days	<i>Lantana</i> flower
Subfamily: Eudaminae									
<i>Lobocla liliana liliana</i> (Atkinson, 1871) (Figure 16.C)	Marbled Flat	KV, B	Rukum (east) (Ka)	1,430-2,200m	1,817- 2,328m	5, 6, 8	7	4-5 in 3 days	Treetops, rocks, fern leaves

Subfamily: Pyrginae

<i>Celaenorrhinus dhanada dhanada</i> (Moore, [1866])	Himalayan Yellow-banded Flat	Tw, P, KV, E	Palpa (Ga); Pokhara (P)	850-1,620m	1,400m; 790-870m	5, 6, 8-11	10; 4-11	1 in 1 day; Several	Under leaves, bird droppings
<i>Celaenorrhinus nigricans nigricans</i> (de Nicéville, 1885)	Small-banded Flat	P, Ga	Pokhara (P)	850-2010m	850-900m	3-9, 11	3-11, incl. 8	Several	Shady forest, underside of leaves, bird droppings
<i>Celaenorrhinus putra putra</i> (Moore, [1866]) (Figure 16.D)	Bengal Spotted Flat	W, Ga, E	Baglung (Ga)	460-2,040m	1,600m	3, 5-10	4	1 in 3 days	Shady leaf
<i>Celaenorrhinus pyrha de Nicéville, 1889 *</i> (Figure 4.)	Double Spotted Flat	-	Dhankuta (E)	-	1,372m	-	8	1 in 6 days	Lantana flowers
<i>Chamunda chamunda</i> (Moore, [1866]) (Figure 16.E)	Olive Flat	E: Illam	Dhankuta (E)	610-1,070m	1,179m	5	8	6-7 in 2 days	Unknown tree flowers at dusk
<i>Coladenia agni agni</i> (de Nicéville, [1884]) (Figure 6.)	Brown Pied Flat	-	Lalitpur (KV)	-	1,574m	-	10	1 in 6 days	Found dead on street
<i>Gerosis bhagava bhagava</i> (Moore, [1866])	Common yellow-Breasted Flat	Te, Ba	Nawalpur (Tw)	120-580m	140m	3-10	10	1 in 1 day	Moist ground inside forest
<i>Gerosis phisara phisara</i> (Moore, 1884) (Figure 16.B)	Dusky yellow-Breasted Flat	Terai, P, KV, Ko, E	Lamjung (Ga); Baglung (Ga)	240-1,500m	515-550m; 1000m	3-11	3, 4, 10; 5	1 in each month; 1 in 6 months	Forest streams
<i>Gerosis sinica narada</i> (Moore, 1884) (Figure 12.C)	White yellow-Breasted Flat	P	Dhankuta (E)	810-1,070m	710m-720m	11, 12	8, 11	1 in 4 days, 2 in 2 days	Under leaves, flowers
<i>Seseria sambara sambara</i> (Moore, [1866]) * (Figure 5.)	Sikkim White Flat	-	Sunsari (Te)	-	120-140m	-	8	Several	Moist ground inside forest
<i>Tagiades gana athos</i> Plötz, 1884	Suffused Snow Flat	Te, Ga, P, Ba, E	Lamjung (Ga)	170-950m	510-550m	2-5, 9-12	3-12, including 6-8	Quite a few in all months	Shady trails, Forest streams, river sides
<i>Tagiades japetus ravi</i> (Moore, [1866]) (Figure 16.A)	Common Snow Flat	Te	Sunsari (Te)	110-250m	110-150m	3	11	3 in 4 days	Flowers, underside of leaves
<i>Tagiades menaka menaka</i> (Moore, [1866])	Spotted Snow Flat	W, Ga, P, KV, Ba, E	Lamjung (Ga); Dhankuta (E)	240-1,830m	450-550m; 640m	4-11	3-11; 3	Several; 3-4 in 3 days	Shady trails, Forest streams
<i>Tagiades parra gala</i> Evans, 1949	Large Snow Flat	Te, Ga, P, Ba, E;	Nawalpur (Tw); Rupandehi (Tw)	200-1,100m	150m; 200-203m	3-12	8; 9	1 in 1 day; 2 in 1 day	Shady leaves, under leaves, bird droppings

<i>Mooreana trichoneura pralaya</i> (Moore, [1866]) (Figure 16.F)	Yellow Flat	Pokhara (P)	Pokhara (P)	880-1490m	945m	6	10	1 in several months	Open trail, under leaves
Subfamily: Hesperinae									
<i>Aeromachus dubius impha</i> Evans, 1943 (Figure 17.F)	Dingy Scrub Hopper	Te, Ga, P	Chitwan (Te); Pokhara (P)	180-850m	150m; 750-900m	3, 5, 8, 10	7; 3-4, 6	1 in 1 day; Several	Wetland, flowers, open country
<i>Aeromachus jhora jhora</i> (de Nicéville, 1885) (Figure 17.E)	Grey Scrub Hopper	KV	Pokhara (P); Lamjung (Ga)	1,680-2,130m	750-900m; 450-550m	6,7	3-4, 9-10; 3-4, 8-10	Several and apparently the most common of <i>Aeromachus</i>	Open trails, open country, grassland, water
<i>Aeromachus kali</i> (de Nicéville, 1885) ** (Figure 12.A)	Blue-spotted Scrub Hopper	P	Dhankuta (E)	1,250m	580-1,400m	5	8, 11	1 in 6 days; 1 in 2 days	Moist trail (often keeps coming back upon disturbance)
<i>Aeromachus pygmaeus</i> (Fabricius, 1775) ** (Figure 12.B)	Pygmy Scrub Hopper	P	Lamjung (Ga); Pokhara (P)	1,160m	500m; 840-850m	9	9; 4, 10	1 in several months; 1 in Apr, several in Oct	Goatweed flowers, open country
<i>Ancistroides nigrita diocles</i> (Moore, [1866])	Chocolate Demon	Te, Ba, E	Chitwan (Te); Sunsari (E)	200-910m	150m; 130-630m	4-6, 8-11	7; 11	1 in 1 day; 2 in 4 days	Bush, forest stream, garden
<i>Astictopterus jama olivascens</i> Moore, 1878 (Figure 18.E)	Forest Hopper	Terai, Ga, Ba	Tanahun (Ga)	180-460m	838m	3-6, 8	5	1 in 1 day	Briefly settled on a leaf inside forest
<i>Baoris farri farri</i> (Moore, 1878)	Paintbrush Swift	Ga, P, Ko, E	Lamjung (Ga)	240-1,100m	450-550m	2, 4, 7, 9-12	3-4, 8-11	3-4 in each month	Forest stream, forest trail
<i>Baoris pagana</i> (de Nicéville, 1887)	Figure-of-eight Swift	P, E	Baglung (Ga)	850-1,490m	1,584m	3, 4, 7-12	4	1 in 1 day	Shade
<i>Borbo cinnara cinnara</i> (Wallace, 1866)	Rice Swift	Tw, W, Ga, P, KV, Ba, E	Lamjung (Ga)	180-1,920m	600m	3-5, 7-12	6	2-3 in Jun	Rice field
<i>Caltoris cahira austeni</i> (Moore, [1884])	Colon Swift	Te, Ga, P, KV, E	Pokhara (P)	240-1,680	850-900m	3-4, 6-12	2-3, 5-7	4-5 in each month	Forest trails, flowers, forests
<i>Caltoris kumara moorei</i> (Evans, 1926)	Blank Swift	Tw, P, Ba	Lamjung (Ga); Pokhara (P)	210-1,490m	480-500m; 850-870m	3-5, 8, 10	3, 4, 9; 4, 7	4-5 in each month; 1-2 in each month	Forest trails, flowers, forests
<i>Caltoris plebeia</i> (de Nicéville, 1887)	Tufted Swift	Ba: Makwanpur	Rupandehi (Tw)	300-430m	258m	3, 4, 8, 9	9	1 in 1 day	Forest
<i>Caltoris sirius sirius</i> (Evans, 1926) (Figure 14.)	Sirius Swift	E: Sankhuwasabha	Dhankuta (E)	910m	1,290-1,310m	8	8, 9	1 in each month within 6 days	Forest
<i>Caltoris tulsi tulsi</i> (de Nicéville, [1884])	Purple Swift	P, KV, E	Chitwan (Te)	640-2,100m	394m	3-5, 7-12	3	2 in 2 days	Moist rock
<i>Cupitha purreea</i> (Moore, 1877) (Figure 18.F)	Wax Dart	Terai, Ba, E	Chitwan (Te)	180-520m	350-450m	3-6, 8, 11	3, 9, 10, 11	1 in Sept in 1 day, 4-5 in other months in 2 days	Forest streams, forest trails
<i>Erionota thrax</i> (Linnaeus, 1767) * (Figure 7.B)	Common Palm Red-eye	-	Dhankuta (E)	-	1,278m	-	8	2 in 6 days	Banana clump at dusk

<i>Halpe arcuata</i> Evans, 1937	Overlapped Ace	Lamjung (Ga)	Lamjung (Ga)	460m	520m	4, 5	4, 5, 11	Several in Apr, May, 1 in Nov	Forest stream
<i>Halpe porus</i> (Mabille, [1877]) (Figure 17.B)	Moore's Ace	Te: Jhapa, Ba: Makawanpur	Sunsari (Te)	210m	144m, 120m	9	8, 11	1 in 9 days, 1 in 4 days	Moist ground inside forest
<i>Halpe zema zema</i> (Hewitson, 1877) (Figure 17.A)	Banded Ace	E	Dhankuta (E)	210-640m	740m	3-5, 10	8	At least 7 in 4 days	Moist wall
<i>Matapa cresta</i> Evans, 1949 (Figure 18.A)	Fringed Red-eye	Te, KV, E	Dhankuta (E)	300-1,480m	615m	4, 10, 11	3	2 in 3 days	Moist rock
<i>Matapa druna</i> (Moore, [1866]) (Figure 18.B)	Grey-brand Red-eye	Te, Ga, P, E	Pokhara (P); Chitwan (Te); Dhankuta (E)	210-450m	832m; 343m; 640m	4, 6	5; 10; 8	2 in 2 days; 2-3 in 1 day; 1 in 4 days	Shady leaves, dung
<i>Matapa purpurascens</i> Elwes & Edwards, 1897 (Figure 18.C)	Purple Red-eye	P, KV	Kathmandu (KV); Pokhara (P)	880-1,520m	1,450m; 850m	3, 6	9, 10	1 in 1 day; 1 in Sept	Moist shade
<i>Matapa sasivarna</i> (Moore, [1866]) (Figure 18.D)	Black-veined Red-eye	P, KV, Ba	Pokhara (P); Lamjung (Ga); Palpa (Ga); Nawalpur (Tw)	210-1,490m	850; 520m; 429m; 180m	2, 4, 6	9, 10; 9; 9; 9	1 in Pokhara in each given month; 1 in each other locations	Moist shade
<i>Oriens gola pseudolus</i> (Mabille, 1883)	Common Dartlet	Te, P, KV, E	Chitwan (Te)	460-1,300m	160m	3-11	6	2-3 in 2 days	Forest
<i>Oriens goloides</i> (Moore, [1881])	Ceylon Dartlet	Te, P, KV, Ba, E	Pokhara (P); Dhankuta (E); Lamjung (Ga)	200-1,300m	800-890m; 1,350-1,400m; 460-530m	3, 4, 7-11	3-11, incl. 5, 6; 8; 4-5 2-5, 8-10	5-6 in Jun; Several in 9 days; 1 in each month	Forest, open country, wild flowers
<i>Parnara apostata debdasi</i> Chiba & Eliot, 1991	Sumatran Swift	Terai, Ga, P, KV	Lamjung (Ga)	170-1,770	500-540m	4, 8-10		2-3 in each month, more in spring months	Flowers, open country
<i>Parnara bada bada</i> (Moore, 1878)	Ceylon Swift	Te, Ga, P, KV, Ba	Lamjung (Ga); Dhankuta (E)	120-2,070	450-550m; 1350m	4, 8-11	1-12; 8	Several. Commonest of all <i>Parnara</i>	Flowers, open country
<i>Pelopidas conjuncta narooa</i> (Moore, 1878) * (Figure 9.A)	Conjoined Swift	-	Chitwan (Te)	-	150m	-	9	1 in 5 days	Forest clearing
<i>Pelopidas mathias mathias</i> (Fabricius, 1798)	Small-branded Swift	Terai, W, Ga, P, Ba, E	Lamjung (Ga)	120-1,520m	450-550m	1, 3-8, 10-12	3-12, including 9	Several	Flowers, open country, riverside
<i>Pelopidas sinensis</i> (Mabille, 1877) (Figure 9.B)	Large Branded Swift	All	Pokhara (P)	120-2,950	750-1,000m	2-4, 6-11	2-5, 10	1-2 in each month	Riverside on rocks, sometimes flowers
<i>Pithauria murdava</i> (Moore, [1866])	Dark Straw Ace	P, E	Pokhara (P); Dhankuta (E)	850-910m	851m; 640-740m	6, 8, 9	4, 9; 8	1 in each given month; 2 in 4 days	Leaves, rocks, moist ground
<i>Pithauria stramineipennis</i> Wood-Mason & de Nicéville, [1887]	Light Straw Ace	Te, Ga, P, E	Lamjung (Ga); Pokhara (P)	240-640m	450-520m; 800m	5, 7-9	3-7, 11; 2, 3, 4	4-5 in each month; 1 in each month	Open trail, forest stream, riverside
<i>Polytrems lubricans lubricans</i> (Herrich-Schäffer, 1869)	Contiguous Swift	Terai, Ba, E	Chitwan (Terai); Sunsari (Terai)	120-910m	150m; 120m	1, 3-5, 9-11	2; 8	1 in 1 day; 1 in 9 days	Forest trail, flowers

<i>Potanthus nesta nesta</i> (Evans, 1934)	Sikkim Dart	Ga, P, KV, Ba	Dhankuta (E)	210-1,680m	640m	3, 4, 6, 8	3	1 in 3 days	Riverside
<i>Potanthus pallidus</i> (Evans, 1932)	Pale Dart	Terai, Ba	Lamjung (Ga)	120-430m	500-520m	2-5, 9-11	4	2-3 in several months	Open trail
<i>Sebastonyma dolopia</i> (Hewitson, 1868)	Tufted Ace	P, E	Baglung (Ga); Pokhara (P)	300-1,490m	1,000m; 850m	5, 8, 9	5; 4, 5, 9	2-3 in 1 month; 1 in Apr	Moist rocks, flowers
<i>Telicota bambusae</i> (Moore, 1878)	Dark Palm Dart	Te, P, KV, Ba, E, Ga	Lamjung (Ga)	210-1,580m	450-550m	2-3, 6-12	2-4, 7-11	Several	Flowers, open country, forest stream
<i>Telicota ohara jix</i> Evans, 1949	Plotz Palm Dart	Te, P, Ba	Lamjung (Ga)	120-1,490m	510-520m	2-4, 8, 10, 11	4, 9, 11	1 in Apr, 3-4 in each Sept, Nov	Forest stream, flowers
<i>Thoressa gupta gupta</i> (de Nicéville, 1886) (Figure 17.C)	Olive Ace	M, P, KV	Pokhara (P)	1,220-2,380m	863-906m	5-8	6	2 in 2 days	Moist trail
<i>Zenonoida discreta discreta</i> (Elwes & Edwards, 1897)	Himalayan Swift	Te, P	Lamjung (Ga); Pokhara (P)	410-1,490m	510m; 850-1,000m	10	11; 4-5, 9, 10, 11	1 in several months; 2-3 in each given month	Forest stream, forest
Family: Papilionidae									
Subfamily: Papilioninae									
<i>Byasa dasarada ravana</i> (Moore, [1858]) (Figure 23.F)	Great Windmill	W, Ga, M, P, KV, Ba, E	Rukum (east) (Ka)	1,460-3,050m	1,913m	3-7, 9, 11	7	1 in 4 days	Cornfield during light rain
<i>Graphium agamemnon agamemnon</i> (Linnaeus, 1758)	Tailed Jay	Terai, Ga, P, KV, Ba, E	Lamjung (Ga)	120-1,800m	450-550m	3-12	2-12	Several	Flowers, open country, forest streams, moist ground
<i>Graphium doson axionides</i> (Page & Treadaway, 2014)	Common Jay	Terai, P, Ba, E, Ga	Sunsari (E)	180-1,100m	120-150m	3-9	8, 11	Several	Flowers, False Ashoka trees
<i>Papilio agestor agestor</i> Gray, 1831 (Figure 23.E)	Tawny Mime	W, Te, Ga, P, KV, E	Pokhara (P)	1,040-2,740m	826m	3-5	3, 4	3 in 1 day, 2 in 2 days	Riverside
<i>Papilio arcturus arcturus</i> Westwood, 1842 (Figure 23.D)	Blue Peacock	W, Ga, M, P, KV, E	Pokhara (P)	1,130-2,740m	826m	3-9	3-4	More than 10 in both months	Riverside
<i>Papilio bianor ganasa</i> Doubleday, 1842 (Figure 23.C)	Common Peacock	All except M and Ba	Lamjung (Ga)	610-2,380m	500-520m	3-11	4	3-4 in several months	Flowers, riverside
<i>Papilio epycides epycides</i> Hewitson, 1862	Lesser Mime	W, P, KV, E	Lamjung (Ga)	1,040-2,750m	450-455m	3-5	3, 4	2 in Mar, 1 in Apr	Riverside
<i>Papilio memnon agenor</i> Linnaeus, 1758	Great Mormon	Te, Ga, P, Ba, E	Pokhara (P)	120-1,980m	855m	3-11	2-11	2-3 in Feb	Forest stream, flowers
<i>Papilio protenor euprotenor</i> Fruhstorfer, 1908	Spangle	All except Te and M	Lamjung (Ga)	790-2,250m	450-500m	2-10	3, 6	2-3 in each month	Forest streams
<i>Troides aeacus aeacus</i> (C. & R. Felder, 1860)	Golden Birdwing	Te, W, Ga, P, KV, Ba, E	Rukum (east) (Ka)	340-2,750m	2,100m	3-8	7	7-8 in 4 days	Often in flight

Family: Pieridae										
Subfamily: Pierinae										
<i>Appias indra indra</i> (Moore, [1858]) (Figure 23.B)	Plain Puffin	KV, Ba, E	Chitwan (Te)	270-1,980m	150-650m	3-5	2, 3, 9, 10, 11	Several	Open land, riversides	
<i>Appias olferna</i> Swinhoe, 1890	Striped Albatross	Te, E	Sunsari (E)	140-700m	365m	5-7, 9, 10, 12	8	Several	Host plants in early morning	
<i>Prioneris thestylis thestylis</i> (Doubleday, 1842)	Spotted Sawtooth	Terai, Ga, P, E	Lamjung (Ga)	490-1,980m	450-535m	2-12	3-6	3-4 in Mar, 1 in Jun	Moist soil, riverside	
Subfamily: Coliadinae										
<i>Dercas verhuelli doubledayi</i> Moore, 1905 (Figure 23.A)	Tailed Sulphur	Te, E	Dhankuta (E)	730-1,100m	640-650m	3-7	3	4 in 3 days	Flowers	
Family: Lycaenidae										
Subfamily: Miletinae										
<i>Allotinus drumila drumila</i> (Moore, [1866]) (Figure 22.B)	Great Darkie	E	Dhankuta (E)	640-910m	1,435-1,464m	3, 6	8	Several in 11 days	Near bamboos, one near a fall	
<i>Spalgis epius epius</i> (Westwood, [1851])	Apefly	Terai, P, KV, E	Lamjung (Ga); Sunsari (E)	150-1,370m	610m; 130-150m	4, 6-12	6; 11	1 in several months; 4 in 4 days	Under a tree, garden	
<i>Taraka hamada mendesia</i> Fruhstorfer, 1918 (Figure 22.A)	Forest Pierrot	P, KV, E, Ga	Pokhara (P); Dhankuta (E); Baglung (Ga); Lamjung (Ga)	300-1,490m	825-850m; 600m-1,767m ; 1,600m ; 490-510m	5, 6, 9-12	1-12 ; 3, 8 ; 6; 3	1 in Jan, 1 in Mar, not uncommon in other months; 1 in 3 days in Mar, several in Aug; 10-11 in 4 days; 3-4 in several months.	Near bamboos	
Subfamily: Aphnaeinae										
<i>Spindasis elima uniformis</i> (Moore, 1882) (Figure 22.C)	Scarce Shot Silverline	Terai, Ba, E	Sunasri (Te); Chitwan (Te)	140-790m	160-170m; 275m	3-7, 10	8 ; 9	2 in 9 days; 1 in 1 day	Inside forest moist ground, forest stream	
<i>Spindasis nipalicus</i> (Moore, 1884) (Figure 22.D)	Silver-Grey Silverline	W, P, KV	Baglung (Ga)	1,010-2,040m	1,866m	4-6, 9, 10	6	1 in 4 days	Moist ground on open trail	
Subfamily: Lycaeninae										
<i>Heliophorus brahma brahma</i> (Moore, [1858])	Golden Sapphire	W, P, KV, E	Baglung (Ga)	1,150-2,010m	1,550-1,650m	1, 3-7, 9-11	4, 6	Several	Flowers, moist ground	
<i>Heliophorus ila pseudonexus</i> Eliot, 1963 (Figure 19.D)	Restricted Purple Sapphire	P, KV, Ba	Pokhara (P)	460-1,650m	857m	3, 4, 7, 8	5	5-6 in a month	Forest trail	
<i>Heliophorus indicus</i> (Fruhstorfer, 1908) (Figure 19.C)	Indian Purple Sapphire	P, KV, E	Pokhara (P); Baglung (Ga); Chitwan (Te); Lamjung (Ga)	790-1,710m	800-900m; 1,600m; 650m ; 455-540m	2-5, 7, 8, 10	1-12 ; 6 ; 11 ; 3-4, 8-10 incl. 9	Several throughout the year; 1 in 3 days; 1 in 2 day; Several	Open trail, flowers, forest	

<i>Lycaena panava</i> (Westwood, 1852)	White-bordered Copper	W, Ka, M	Rukum (east) (Ka)	1,740-3,200m	1,800-2,100m	3-10	2	Several	Flowers
<i>Lycaena phlaeas baralacha</i> (Moore, 1884)	Common Copper	Tw, W, Ka, Ga, M, P, Ba	Rukum (east) (Ka)	1,370-4,330m	1,800-2,000m	3-10	2	Several	Flowers
Subfamily: Theclinae									
<i>Arhopala abseus indicus</i> Riley, 1923	Aberrant Bushblue	Te, Ba, E	Chitwan (Te)	180-460m	150m	3-6, 8	9	1 in 5 days	Forest clearing by a bush
<i>Arhopala amantes apella</i> (Swinhoe, 1886)	Large Oakblue	Te, Ga, P, KV, Ba, E	Nawalpur (Tw); Chitwan (Te)	210-1,900m	160m; 180m	1-7, 10-12	8, 9; 7	1 in 1 day	Moist rock, forest
<i>Arhopala bazalus teesta</i> (de Nicéville, 1886) (Figure 21.C)	Powdered Oakblue	P, KV, E	Rukum (east) (Ka)	820-1,890m	1,870m	5-7, 9, 11, 12	7	2 in 3 days	Tree leaves
<i>Arhopala centaurus pirithous</i> (Moore, [1884])	Centaur Oakblue	All except M and KV	Lamjung (Ga)	180-1,830m	450-550m	2-12	1-12	1 in Jan, several after spring	Flowers, forest streams, forests, trails
<i>Arhopala dodonaea</i> (Moore, [1858]) (Figure 21.A)	Pale Himalayan Oakblue	Tw, W, Ka, KV, Ba	Rukum (east) (Ka)	1,520-2,160m	2,113m	4-8	2	4-5 in 4 days	Forest stream
<i>Arhopala eumolpus</i> (Cramer, [1780])	Green Oakblue	Te, P, KV, Ba, E, Ga	Lamjung (Ga); Dhankuta (E)	210-1,900m	550m; 1,324m	1-7, 10-12	4; 8	3-4 in single day in several months; 1 in 6 days	Moist rocks, riverside, tree leaves, forest streams
96 <i>Arhopala ganesa ganesa</i> (Moore, [1858]) (Figure 21.B)	Tailless Bushblue	Tw, W, P, KV, Ba	Rukum (east) (Ka)	1,250-2,130m	2,113m	3-8, 11	2	1 in 4 days	Forest stream
97 <i>Arhopala khamti</i> Doherty, 1891	Doherty's Dull Oakblue	P	Pokhara (P)	640-850m	1,095m	5, 8	5	1 in 1 day	Tree leaves
98 <i>Arhopala oenea</i> (Hewitson, [1869])	Hewitson's Dull Oakblue	Ga, P, KV	Lamjung (Ga)	650-1,580m	481-540m	1-3, 5-12	1-4, 10	Not uncommon	Open trails, forest trails
<i>Arhopala rama rama</i> (Kollar, [1844])	Dark Himalayan Oakblue	Te, W, Ga, P, KV, E	Rukum (east) (Ka)	200-2,590m	1,860-2,100m	1-12	2, 7	7-8 in 4 days	Tree leaves, moist ground occasionally, forest streams
<i>Arhopala singla</i> (de Nicéville, 1885)	Yellow-disc Oakblue	W, P, KV	Baglung (Ga)	790-2,040m	1,604m	1, 2, 4-6, 8, 10-12	4	1 in 4 days	Tree flower
<i>Cheritra freja evansi</i> Cowan, 1965 (Figure 21.E)	Common Imperial	E: Illam	Sunsari (Te)	210-240m	130-160m	4, 6, 7, 10	8	3 in 9 days	Forest trail
<i>Chrysozephyrus syla</i> Kollar, 1848 (Figure 21.D)	Silver Hairstreak	W, Ka, KV	Rukum (east) (Ka)	1,980-3,660m	1,752-1,870m	6, 8, 9	7	10-11 in 4 days	Flowers
<i>Horaga onyx onyx</i> (Moore, [1858])	Common Onyx	Terai, P, KV, Ba, E	Lamjung (Ga); Sunsari (Te)	180-1,490m	500m; 135m	2-11	3; 8	2 in several months; 1 in 9 days	Under trees, Forests
<i>Mahathala ameria ameria</i> (Hewitson, 1862)	Falcate Oakblue	Te, Ba	Nawalpur (Tw)	140-550m	150m	3-5, 8	6	1 in 1 day	Forest

<i>Pratapa deva lila</i> Moore, [1884]	White Tufted Royal	W, Ga, P, KV, E	Baglung (Ga)	850-2,410m	1,000m	3-8, 10-11	2	1 in 1 month	Riverside
<i>Rapala pheretima petosiris</i> (Hewitson, [1863])	Copper Flash	Te, Ga, P, KV, Ba, E	Chitwan (Te)	180-1,580m	150m	1-12	5, 9	Several	Forest clearing
<i>Rapala scintilla scintilla</i> (de Nicéville, 1890) (Figure 20.)	Scarce Slate Flash	Te, Ga, KV, Ba, E	Pokhara (P)	180-1,830m	895m	1, 2, 4, 5, 7, 11, 12	10	1 in several months verified from upperwing, probably more as it resembles <i>R. manea</i> from underside	Hilltop
<i>Rapala tara</i> de Nicéville, [1889]	Assam Flash	W, P, KV, E	Pokhara (P)	850-1,650m	857m	3-5, 7-11	6	1 in several months	Open country
<i>Rapala varuna orseis</i> (Hewitson, [1863])	Indigo Flash	Terai, Ga, P, KV, Ba, E	Lamjung (Ga); Chitwan (Te)	90-1,550m	500-520m; 150m	2-8, 10-12	3-4; 9	3-4 in each month; 7-8 in 5 days	Flowers, open country, forest clearing
<i>Sinthusia chandrana chandrana</i> (Moore, 1882)	Broad Spark	Tw, Ga, P, KV, Ba, E	Lamjung (Ga)	640-1,650m	450-550m	2-9	2-4, 6- 10	Several	Open trails, esp. near <i>Rubus paniculatus</i> and on <i>Eupatorium</i> leaves
<i>Tajuria diaeus diaeus</i> (Hewitson, [1865])	Straightline Royal	KV, Ba	Lalitpur (KV)	1,520-2,590m	1,867m	5, 7	10	1 in 4 days	Forest trail
<i>Tajuria illurgis</i> Hewitson, 1869 (Figure 21.F)	White Royal	KV, B	Rukum (east) (Ka)	1,430-2,200m	1,750-1,860m	4-6	7	2 in 4 days	Flowers, treetops
<i>Tajuria maculata</i> Hewitson, [1865])	Spotted Royal	Te, Ga, P, KV, E	Pokhara (P)	240-1,680m	900m	3, 5, 7-10	4	1 in whole month	Floating on a water puddle, rescued and photographed
Subfamily: Polyommatae									
<i>Anthene emolus emolus</i> (Godart, [1824])	Ciliate Blue	Terai, Ga, P, KV, Ba, E	Pokhara (P)	120-1,370m	820-950m	1, 3-12	2-12	One aberrant in Feb, several in other months	Forest trail, open country, moist ground
<i>Anthene lycaenina lycambes</i> (Hewitson, [1878])	Pointed Ciliate Blue	Te, Ba, E	Dhankuta (E); Sunsari (Te)	120-910	714- 1,157m ; 141m	4, 7, 9, 10	8; 8, 11	2 in 3 days, 1 in 6 days; 2 in 9 days in Aug and 2 in 4 days in Nov	Open trail
<i>Celastrina argiolus iynteanana</i> (de Nicéville, [1884])	Hill Hedge-blue	Ga, M, P, KV, Ba, E	Chitwan (Te)	610-3,800m	426-600m	1, 2, 4-12	3	4 in 1 day	Riverside
<i>Celastrina lavendularis limbatus</i> (Moore, 1879)	Plain Hedge-blue	Ga, P, M, KV	Pokhara (P)	850-2,470m	836-870m	5-7	3, 4, 5, 6	1 in Mar, 4 in Apr, quite a few in others	Riverside, forest stream, moist ground
<i>Celatoxia marginata marginata</i> (de Nicéville, [1884])	Margined Hedge-blue	All except Tw and Ka	Rukum (east) (Ka)	210-2,680m	1,867m	2-12	7	1 in 4 days	Flowers

<i>Cupido hugelii dipora</i> (Moore, 1865)	Dusky-blue Cupid	W, Ka, P, KV	Baglung (Ga)	1,400-3,050m	1,800-2,000m	3, 5-9	6	4 in 2 days	Open trail
<i>Euchrysops cnejus cnejus</i> (Fabricius, 1798)	Gram Blue	All except Ka and M	Rukum (east) (Ka)	100-1,580m	1,561m	1-12	2	1 in 4 days	Open trail
<i>Jamides bochus bochus</i> (Stoll, [1782])	Dark Cerulean	Terai, Ga, P, KV, Ba, E	Rukum (east) (Ka)	100-2,650m	1,860-1,900m	1-12	7	2 in 4 days	Moist ground
<i>Leptotes plinius plinius</i> (Fabricius, 1793)	Zebra Blue	Terai, P, KV, E	Baglung (Ga); Rukum (east) (Ka)	180-2,620m	1,000m; 1,896m	1-12	7; 7	1 in 4 days	Flowers, dung, moist ground
<i>Luthrodes pandava pandava</i> (Horsfield, [1829])	Plains Cupid	All except Ga and M	Pokhara (P)	120-2,410m	818m	1, 3, 5, 6, 8-12	6, 7, 10	2 in Jun, 2 in Jul, 1 in Oct	Open country
<i>Neopithecops zalmora zalmora</i> (Butler, [1870])	Common Quaker	Terai, E	Sunsari (E)	150-460m	130-150m	2, 5, 7, 10-12	8	Several	Forest trail
<i>Niphanda cymbia cymbia</i> de Nicéville, [1884] **	Pointed Pierrot	Te: Sunsari	Dhankuta (E)	490m	677m	3	8	1 in 4 days	Open country
<i>Petrelaea dana dana</i> (de Nicéville, [1884])	Dingy Lineblue	Terai, Ga, KV, Ba, E	Sunsari (Te)	180-1,770m	130-160m	2, 3, 6-8, 10	8	Several	Forest trail
<i>Pithecops corvus correctus</i> Cowan, 1966	Forest Quaker	Te, Ba, E	Nawalpur (Tw); Dhankuta (E)	210-700m	150m; 1,350-1,400m	3, 4, 9-11	10; 8	1 in 1 day; Several	Forest, forest trail
<i>Prosotas nora nora</i> (C. Felder, 1860) (Figure 22.E)	Common Lineblue	All except Ka and M	Rukum (east) (Ka)	100-1,830m	1,741m	1-12	7	1 in 4 days	Moist ground
<i>Prosotas pia marginata</i> Tite, 1963 (Figure 22.F)	Margined Lineblue	Ka, P, KV, E	Lamjung (Ga)	240-1,620m	450-550m	6, 9-11	1-12	Several	Moist sand
<i>Tarucus balkanica nigra</i> * Bethune-Baker, [1918] (Figure 8.)	Black-spotted Pierrot	-	Sunsari (Te)	-	70-80m	-	8	Several	Riverside and around <i>Zizyphus</i> plants (larval host plant)
<i>Tarucus nara</i> (Kollar, 1848)** (Figure 13.)	Striped Pierrot	Te: Morang	Baglung (Ga)	150m	2,100m	6	4	1 in 2 days	Early morning on a grass blade
<i>Zizeeria karsandra</i> (Moore, 1865)	Dark Grass Blue	All except Ka and M	Rukum (east) (Ka)	100-1,580m	1,882m	1-12	2	1 in 4 days	Agriculture field
<i>Zizina otis otis</i> (Fabricius, 1787)	Lesser Grass Blue	All except Ka	Rukum (east) (Ka)	100-2,560m	2,315m	1-12	7	1 in 4 days	Open country, grassland
Family: Riodinidae									
Subfamily: Riodininae									
<i>Abisara chela chela</i> de Nicéville, 1886	Spot Judy	Ga, P	Lamjung (Ga); Chitwan (Te); Pokhara (P); Dhankuta (E)	450-1,840m	450-520m; 390 and 680m; 850-1,100m; 1,420m	11, 12	2-4; 3; 2, 3, 4, 5; 8-9	1 in each month; 2 in 1 day in March; Quite a few every stated month; 2 in 6 days	Riversides, open trail
<i>Abisara fylla</i> (Westwood, [1851])	Dark Judy	All except Ka	Pokhara (P)	550-2,160m	850-890m	1-11	12	Several	Forest, forest trail

<i>Dodona egeon egeon</i> (Westwood, [1851])	Orange Punch	Ga, P, KV, Ba, E	Lamjung (Ga)	790-2,160m	520m	1-12	3	1 in several months	Forest stream
<i>Dodona eugenus</i> Bates, [1868]	Tailed Punch	W, Ga, M, P, KV, E	Rukum (east) (Ka)	1,460-2,160m	1,867- 2,425m	2-12	7	4-5 in 4 days	Forest trail
<i>Dodona ouida ouida</i> Moore, [1866]	Mixed Punch	All except Terai and Ka	Rukum (east) (Ka)	1,100-2,700m	1,869m	1-12	7	1 in 4 days	Flowers
Family: Nymphalidae									
Subfamily: Libytheinae									
<i>Libythea myrrha sanguinalis</i> Fruhstorfer, 1898	Club Beak	All except Ka and M	Rukum (east) (Ka)	120-2,100m	1,870m	2-11	7	1 in 4 days	On a tree flower
Subfamily: Charaxinae									
<i>Charaxes bernardus hierax</i> C. & R. Felder, [1867]	Tawny Rajah	Te, P, KV, E, Ga	Rupandehi (Tw)	200-1,580m	170m	3-11	9	1 in 2 days	Bush, animal excreta, open country, carcass, riverside, tree saps
<i>Charaxes solon</i> (Fabricius, 1793)	Black Rajah	Tw, E	Dhankuta (E)	330-640m	569m	3, 9, 11	8	1 in 4 days	Open trail, excreta, riverside
<i>Polyura agraria</i> (Swinhoe, [1887])	Anomalous Nawab	Tw, W, E	Dhankuta (E)	180-1,190m	1,340m	4-6, 8-11	8	1 in 6 days	Tree sap
<i>Polyura arja</i> (C. & R. Felder, [1867]) (Figure 24.E, 22F)	Pallid Nawab	Te, E	Sunsari (Te); Dhankuta (E)	210-700m	580-640m; 640-685m	6, 9-11	3; 3, 8	5-6 in 1 day; 3-4 in 3 days, 2-3 in 4 days	Riverside, forest stream, open trail
<i>Polyura athamas</i> (Drury, [1773])	Common Nawab	All except Ka and M	Chitwan (Te)	200-1,710m	150m	3-12	9	1 in 5 days	Open country
Subfamily: Satyrinae									
<i>Heteropsis mamerta</i> (Moore, [1891]) (Figure 25.D)	Blind-eye Bushbrown	Terai, Ga, Ba, E	Chitwan (Terai)	120-910m	150m	3-5, 7-11	2	1 in 1 day	Dry forest
<i>Lethe distans</i> Butler, 1870 (Figure 25.E)	Scarce Red Forester	P, KV	Lamjung (Ga)	650-1,050m	500m	4, 5	4	1 in several months	Under bamboo clumps
<i>Lethe isana dinarbus</i> (Hewitson, 1863)	Common forester	W, Ka, Ga, M, P, KV, Ba	Pokhara (P)	1520-2,740m	885, 1,171 and 1,390m	3-10	3, 4, 10	3 in 885m, 1 in 1,171m and 1 in 1,390m	Shady trail, forest stream
<i>Lethe kansa kansa</i> (Moore, [1858])	Bamboo Forester	W, Ga, P, KV, E	Lamjung (Ga); Dhankuta (E)	760-2,740m	520m; 640-697m	2-7, 9-12	4; 3, 8	1 in several months; 4-5 in 3 days, 2 in 4 days	Shady trail
<i>Lethe mekara mekara</i> (Moore, [1858])	Straight Red Rorester	P, Ba, E	Lamjung (Ga); Chitwan (Te); Dhankuta (E); Pokhara (P)	210-490m	500-550m; 390 and 524m; 640m; 855 and 1062m	4-11	3-5, 8, 9; 3; 3; 5, 10	2-3 in each month; 2 in 1 day; 1 in 3 days; 1 in May and 2 in Oct	Shady rock, shady trail
<i>Lethe siderea siderea</i> Marshall, [1881] (Figure 25.F)	Scarce Woodbrown	KV, P	Lalitpur (KV)	1100-1,580m	1,800-2,200m	5, 6	10	2 in 4 days	Shady trail

<i>Lethe sidonis</i> (Hewitson, 1863)	Common Woodbrown	All except Terai	Lalitpur (KV)	850-3,140m	1650m	5-11	12	1 in 1 day	Sunny roadside
<i>Lethe verma sintica</i> Fruhstorfer, 191	Straight-banded Treebrown	Te, W, M, P, KV, Ba, E	Baglung (Ga)	460-2,410m	1,600m, 2,100m	4-12	4, 6	3-4 in 1 day, 2 in 3 days	Shady trail
<i>Mycalesis adamsonii</i> Watson, 1897	Watson's Bushbrown	Ga, P, KV	Lamjung (Ga); Pokhara (P)	680-1,500m	500-550m ; 850-890m	3-10	3-4, 7-10; 2-11	Several	Forest shade
<i>Mycalesis anaxias aemate</i> Fruhstorfer, 1911	White-bar Bushbrown	Te, P, Ba, E	Rupandehi (Tw)	210-640m	330m	3-11	9	2 in 1 day	Forest
<i>Mycalesis francisca sanatana</i> Moore, [1858]	Lilacine Bushbrown	Tw, W, Ga, P, KV, Ba, E	Dhankuta (E)	700-2,130m	640m	1, 3-11	3	7-8 in 3 days	Riverside
<i>Mycalesis nicotia</i> Westwood, [1850] (Figure 25.B)	Bright-eye Bushbrown	Ga, KV, Ba	Dhankuta (E)	1,520-1,800m	1,300-1,350m	5, 9	8, 9	Several	Forest, tree saps
<i>Mycalesis suaveolens</i> Wood-Mason & de Nicéville, 1883 (Figure 25.C)	Wood-Mason's Bushbrown	Ga, P, KV, E	Rukum (east) (Ka)	1,220-2,320m	1,856- 2,455m	5-8, 11	7	7-8 in 4 days inside forest	Forest
<i>Rhaphicera moorei moorei</i> (Butler, 1867)	Small Tawny Wall	Ka, Ga, M, P, KV, Ba, E	Lalitpur (KV)	1580-3,600m	2730m	7-9	10	1 in 1 day	Flowers
<i>Ypthima hyagriva nepalica</i> Smith, 1983	Brown Argus	Ga, P, Ba, E;	Lamjung (Ga)	640-2,040m	500-510m	8-11	9	2 in 1 day among several months	Forest stream, open trail, dung
<i>Ypthima nikaia</i> Moore, [1875]	Moore's Fivering	Ga, M, P, KV, E	Rukum (east) (Ka)	800-3,000m	1,500-2,400m	4-10	7	Several	Shady trails, forests
Subfamily: Morphinae									
<i>Discophora timora timora</i> Westwood, [1850] ** (Figure 12.E, 10F)	Great Duffer	Te: Jhapa	Chitwan (Te)	200m	146m	2	9	1 in 2 days	Garden hotel near bamboo clumps
Subfamily: Limenitidinae									
<i>Abrota ganga ganga</i> Moore, 1857	Sergeant-Major	Ga, P, KV, E	Lamjung (Ga)	790-1,830m	530m	4-10	11	1 in several months	Forest stream
<i>Athyma jina jina</i> Moore, [1858]	Bhutan Sergeant	Ga, P, KV, E	Tanahun (Ga)	790-1,860m	490m	2-12	5	Several	Riversides
<i>Athyma orientalis</i> Elwes, 1888	Oriental Sergeant	Ga, M, P, KV	Lamjung (Ga)	800-2,500m	520-530m	4, 7-12	4	2 in April	Forest stream
<i>Athyma zeroa zeroa</i> Moore, 1872	Small Staff Sergeant	Tw, Ga, P, E	Chitwan (Te); Lamjung (Ga)	550-1,250m	410-640m ; 450-550m	2-12	11; 3-4, 7, 9, 11	2-3 in 1 day; 4-5 in each month	Riversides
<i>Auzakia danava danava</i> (Moore, [1858])	Commodore	W, Ga, P, KV	Chitwan (Te); Dhankuta (E); Lalitpur (KV)	880-1,860m	500-640m ; 640-650m ; 1500-1700m	4-9	10 ; 8 ; 10	3 in 2 days; 2 in 4 days; Several	Riversides, moist rock, dead crabs, open trail, forest trail
<i>Euthalia monina kesava</i> (Moore, 1859)	Powdered Baron	Te, Ba, E	Lamjung (Ga); Pokhara (P)	210-910m	480-500m; 885m	3-11	7-8; 10	2-3 in each month; 1 female in several months	Forest, forest streams
<i>Euthalia nara nara</i> (Moore, 1859) (Figure 24.C)	Bronze Duke	KV, Ba, E	Rukum (east) (Ka); Tehrathum (E)	850-1,920m	2,000m ; 2,283m	6-9	7; 8	1 in 3 days; 2 in 1 day	Treetop, tree sap

<i>Euthalia patala patala</i> (Kollar, [1844]) (Figure 24.D)	Grand Duchess	P, KV, E	Baglung (Ga)	980-1,920m	1,879m	5-10	6	1 in 3 days	Below a tree in open trail
<i>Lasippa viraja viraja</i> (Moore, 1872)	Yellowjack Sailer	Te, P, Ko	Lamjung (Ga)	180-1,100m	550m	3, 4, 6, 7, 8, 10, 11	4-5	5-6 in one month	Forest, forest stream
<i>Neptis ananta ochracea</i> Evans, 1924	Yellow Sailer	Ga, M, P, KV, Ba, E	Lamjung (Ga)	790-2,930m	530-550m	4-11	4	2 in 1 month	Forest stream
<i>Neptis capnodes pandoces</i> Eliot, 1969 * (Figure 11.A, 9B)	Eliot's Sailer	-	Pokhara (P)	-	855-940m	-	4, 5	1 in each month	Forest
<i>Neptis magadha khasiana</i> Moore, 1872	Spotted Sailer	Te, Ga, P, Ba, E	Lamjung (Ga)	200-1,100m	510-550m	2-4, 7, 9-11	3, 4, 8-10	2-3 in each month	Open trail, forest stream
<i>Neptis miah miah</i> Moore, [1858] (Figure 24.A)	Small Yellow Sailer	Te, Ga, KV, E	Chitwan (Te); Dhankuta (E); Tanahun (Ga)	240-760m	390-640m; 630-640m; 500-700m	4-11	3; 3, 8; 3	5-6 in 2 days; 4 in 3 days in Mar and several in Aug; 2 in 2 days	Riversides, open trails
<i>Neptis nata adipala</i> Moore, 1872	Clear Sailer	Terai, P, E	Lamjung (Ga)	150-980m	450-550m	2-8, 11	3-4, 8-10	3-4 in each month	Forest stream, riversides
<i>Neptis radha radha</i> Moore, [1858]	Great Yellow Sailer	Ga, P, KV	Pokhara (P)	790-2,230m	898m	3, 5-7, 9	10	1 in several months	Forest
<i>Neptis sankara amba</i> Moore, 1858	Broad Banded Sailer	Ga, P, KV, Ba, E	Lamjung (Ga)	790-1,910m	510-540m	3-10	4	2-3 in several months	Forest stream, open trail
<i>Neptis sappho astola</i> Moore, 1872	Pallas' Sailer	Te, Ga, M, P, KV, Ba, E	Pokhara (P)	150-2,010m	850-900m	3-12	2, 5-10	Several	Forest stream, open trail, riverside, flowers
<i>Pantoporia sandaka davidsoni</i> Eliot, 1969	Extra Lascar	Te, P, E	Lamjung (Ga)	170-640m	450-550m	2-4	1-12	Several	Forest stream, open trail, riverside, flowers
<i>Parasarpa dudu dudu</i> (Doubleday, [1848])	White Commodore	Ga, P, KV	Pokhara (P)	1,190-2,650m	920m	4, 5, 7-11	10	1 in several months	Forest stream
<i>Phaedyra columella ophiana</i> (Moore, 1872)	Short Banded Sailer	Terai, P, Ba, E	Lamjung (Ga)	120-910m	450-550m	2-12	1-12	2-3 each month	Forest stream, open trail, riversides, flowers
<i>Tanaecia julii appiades</i> (Ménétriés, 1857) Subfamily: Heliconiinae	Common Earl	Te, Ga, P, Ba, E	Dhankuta (E)	210-1,100m	720-1,350m	1-12	8	6-7 in 15 days	Forest
<i>Acraea violae</i> (Fabricius, 1793)	Tawny Coster	Terai, Ga, P, KV, Ba, E	Chitwan (Terai); Lamjung (Ga)	180-1,980m	150m; 460m	2-7	2, 5, 7; 9	Several; 1 in several months	Open trail, open country
<i>Argynnis childreni childreni</i> Gray, 1831	Large Silverstripe	Ga, M, P, KV, Ba, E	Pokhara (P)	980-3,510m	901m	4-11	5	Only 1 ever	Open trail
<i>Cethosia biblis tisamena</i> Fruhstorfer, 1912	Red Lacewing	All except Tw and W	Pokhara (P)	210-2,040m	850m	2-11	1-11	2-3 in Jan	Open country, forest stream

<i>Cethosia cyane cyane</i> (Drury, [1773])	Leopard Lacewing	Te, Ga, P, E	Pokhara (P); Sunsari (Te)	240-1,490m	850-890m; 130m	2-12	1 -12; 8	2 in Jan; 5-6 in 9 days	Open country, forest stream, open trail
Subfamily: Nymphalinae									
<i>Doleschallia bisaltide indica</i> Moore, 1899	Autumn Leaf	Te, Ga, P, E	Pokhara (P); Baglung (Ga)	370-1,490m	850m; 744m	3-12	1, 10; 2	1 in each month	Open trail
<i>Junonia hierta hierta</i> (Fabricius, 1798)	Yellow Pansy	All except Ga and M	Baglung (Ga)	120-2,030m	870-890m	1-12	2	5-6 in 2 days	Dry cliffs, riversides
<i>Kaniska canace canace</i> (Linnaeus, 1763)	Blue Admiral	All except Ka	Rukum (east) (Ka)	150-2,590m	1,800-2,100m	1-12	2, 7	3-4 in each month	Rock on a river, open trail
<i>Symbrenthia brabira brabira</i> Moore, 1872 (Figure 24.B)	Himalayan Jester	W, KV	Chitwan (Te); Pokhara (P); Dhankuta (E)	1,430-1,680m	380m; 850m; 630m	3, 4	11; 1, 3, 4, 5; 3, 8	2-3 in 1 day; 6-7 in these four months; 1 in 3 days, 1 in 4 days	Forest, riversides, forest stream, near waterfall
<i>Symbrenthia niphanda niphanda</i> Moore, 1872	Blue-tail Jester	Ka, M, P, KV, Ba, E	Dhankuta (E)	790-2,650m	607m	2-11	3	1 in 3 days	Riverside, moist trail
Subfamily: Pseudergolinae									
<i>Pseudergolis wedah wedah</i> (Kollar, [1844])	Tabby	All except Te and Ka	Chitwan (Te); Lamjung (Ga)	640-2,280m	390-650m; 540m	3-12	10, 11, 3; 4, 8	Several; 1 in each month	Riversides, moist rocks, forest stream
Subfamily: Apaturinae									
<i>Dilipa morgiana</i> (Westwood, [1851])	Golden Emperor	W, KV	Lalitpur (KV)	1,430-2,350m	1,700m	3, 4, 6-9	10	1 in 4 days	Sunny trail
<i>Euripus consimilis consimilis</i> (Westwood, [1851])	Painted Courtesan	M, KV, Ba	Chitwan (Te)	190-1,950m	410m	3, 5, 6, 8-10	11	1 in 2 days	Forest stream, moist rocks
<i>Mimathyma ambica ambica</i> (Kollar, [1844])	Indian Purple Emperor	Ka, E	Dhankuta (E)	610-1220m	640m	5, 6, 8, 9	11	1 in 2 days	Riverside
<i>Rohana tonkiniana tonkiniana</i> Fruhstorfer, 1906 * (Figure 10.A, 8B)	Elusive Prince	-	Dhankuta (E)	-	730m	-	8	1 in 4 days	Moist shady wall near forest
Subfamily: Danainae									
<i>Danaus genutia genutia</i> (Cramer, [1779])	Common Tiger	All except Ka	Rukum (east) (Ka)	100-2,730m	1,900m	1-12	7	1 in 4 days	Open trail
<i>Euploea klugii kollari</i> C. & R. Felder, [1865]	King Crow	Te, P, Ba, E	Lamjung (Ga); Palpa (Ga); Sunsari (Te)	150-850m	514m; 1,425; 115m	2, 4-8, 10-11	7; 9; 8	1 in several months; 1 in 1 day; 1 in 9 days	Open trail, grassland
<i>Parantica melaneus plataniston</i> (Fruhstorfer, 1910)	Chocolate Tiger	Te, Ga, P, KV, Ba, E;	Palpa (Ga)	180-1,620m	1,425-1,435m	2-7, 10-12	9	5-6 in 1 day	Open grassland, wild flowers



Figure 3. A. *Hasora taminatus bhavara*, White-banded Awl, from Lamjung; B. *Hasora vitta indica*, Plain-banded Awl, from Dhankuta



Figure 4. *Celaenorrhinus pyrrha*, Double Spotted Flat, from Dhankuta; A. Upperside; B. Brief underside; C. Double pale spots beyond discal spots on sp. 1b zoomed

***Celaenorrhinus pyrrha* de Nicéville, 1889: Double-spotted Flat**

One individual was seen at Paripatle in Dhankuta district in far east of Nepal on 27 August, 2021 (Figure 4.). It appeared on a *Lantana* plant, sat on the underside of its leaf, and kept fluttering around its flowers before flying away.

This species resembles most other *Celaenorrhinus* spp., however eliminates most of them due to the presence of double pale spots beyond double discal spots in space 1b (Figure 4.C). Moreover, the Up (upper) FW spot in basal part of space 1b is very small or obsolete. The FW cilia is dark brown and HW cilia is checkered yellow. In addition, the UpHW and UnHW spots are bright yellow and well defined, the antenna club base is white while the shaft is checkered. The only other two species with double pale spots on UnFW sp. 1b are *C. ambareesa* (Moore, [1866]) and *C. consaguinea* Leech, 1891 which have cilia of both wings checkered (Evans 1949).

In India, it is found from Uttarakhand to N.E. India (Varshney and Smetacek 2015), thus it was always expected to fly in Nepal.

***Seseria sambara sambara* (Moore, [1866]): Sikkim White Flat**

Several individuals, more than 15 probably, were found inside a forest in Sunsari at low elevation between 14 August to 21 August, 2021. They were found mud puddling on shady ground, only to briefly fly and return shortly when disturbed.

This species closely resembles another species found in Nepal, *Seseria dohertyi* Watson, 1893, which is mostly found in the hills. However, it can be differentiated by the following points: (i) In WSF (wet season form), the white band on HW is narrower than that in *dohertyi*. So much so that the white region between the subbasal and discal spot on UpHW space 7 is narrower or equal to the size of a neighboring spot. (Seow TL 2021, pers. comm.). (ii) UpFW spot on space 1b is narrower and notched outwardly, and the connecting white bar to the dorsum is very faint in WSF (Evans 1949). (iii) The white area on UpHW is somewhat sullied in WSF which is clear in *dohertyi* (Evans 1949). (iv) The male genitalia are shown in Figure 5.C-5E. In India, it is found from Uttarakhand to N.E. India (Varshney and Smetacek 2015), thus it was always expected to be found in Nepal.

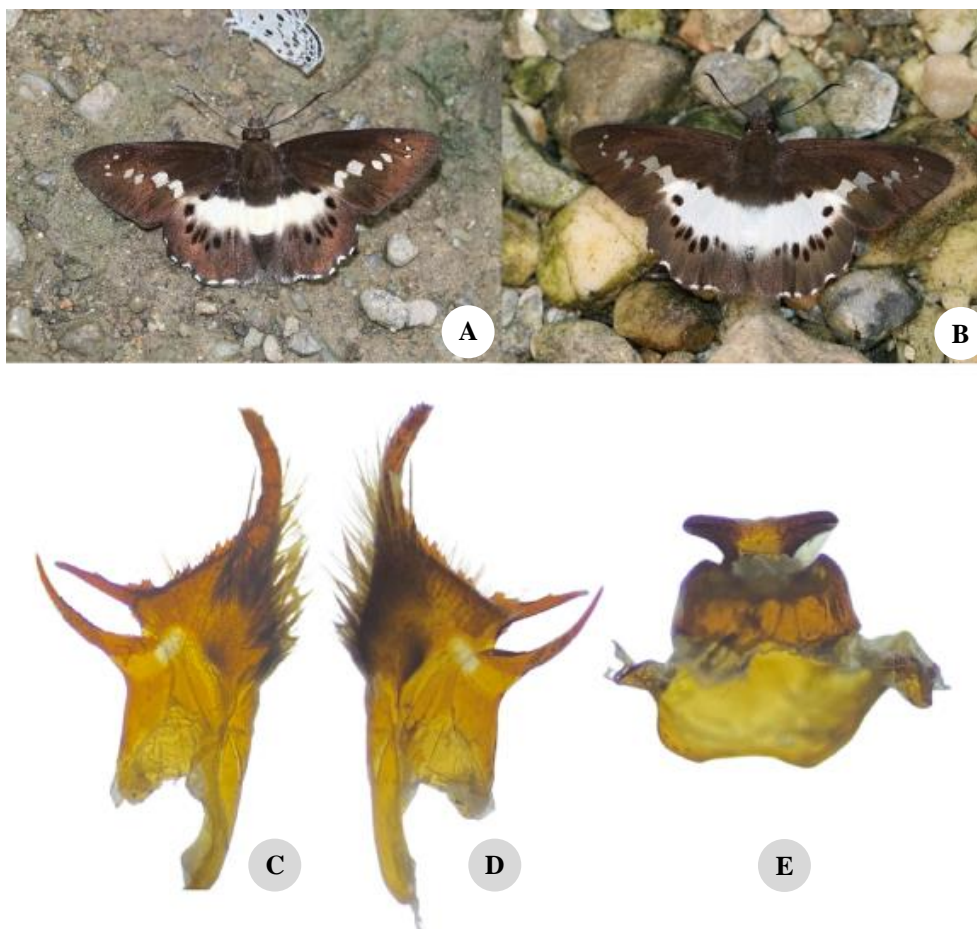


Figure 5. A. *Seseria sambara sambara*, Sikkim White Flat, from Sunsari, upperside; B. *Seseria dohertyi dohertyi*, Himalyan White Flat from Pokhara, upperside; C to D. *Seseria sambara sambara* valva side views; E. *Seseria sambara sambara* tegmen with valva removed, ventral view

***Coladenia agni agni* (de Nicéville, [1884]): Brown Pied Flat**

An individual was found dead on a forestside street of Godavari, Lalitpur on 8 October, 2021 at 1,574 masl (Figure 6.A). It was different from the related *C. agnioides* Elwes & Edwards, 1897 in having its antennae uniformly black (plain) which, in *C. agnioides*, is distinctly white below the club (Evans 1949). According to Huang (2021), the best way to differentiate *C. agni* from *C. agnioides* is by looking at its palpi. In *C. agni*, the palpi have grey scales suffused among pale yellow scales (Figure 6.D) while in *C. agnioides* the palpi are bright yellow. Moreover, the third segment of palpus in *C. agni* is yellowish which is mostly black in *C. agnioides* (Huang H 2021, pers. comm.).

In India, it ranges from Sikkim to N.E. India (Varshney and Smetacek 2015), so it is very likely to be found farther east of Lalitpur as well.

***Erionota thrax thrax* (Linnaeus, 1767): Common Palm Red-eye**

The record of this species from Nepal was kept tentative by Colin Smith in his 2016 updates as all the previous evidence from Nepal were those of *E. torus* Evans, 1941. *Erionota thrax* differs from the more common *E. torus* in having its FW termen straight and apex acute, while in *E. torus*, the FW termen is convex and the apex is rounded (Evans 1949).

At least two individuals were seen on 31 August, 2021 in Dhankuta at dusk flying around banana plants, the larval host plant. Proper photos were not taken because they were thought to be *E. torus* in the field. However, FW termen is well visible, clearly straight below the acute apex (Figure 7.B). The photographs were confirmed as those of *E. thrax* by Dr. TL Seow (Seow TL 2021, pres. com.). This is the first concrete evidence of the presence of this butterfly in Nepal.

In India, this butterfly is reported from Karnataka, Kerala, Sikkim to N.E. India (Varshney and Smetacek 2015). It is very likely that this butterfly is widespread in east Nepal

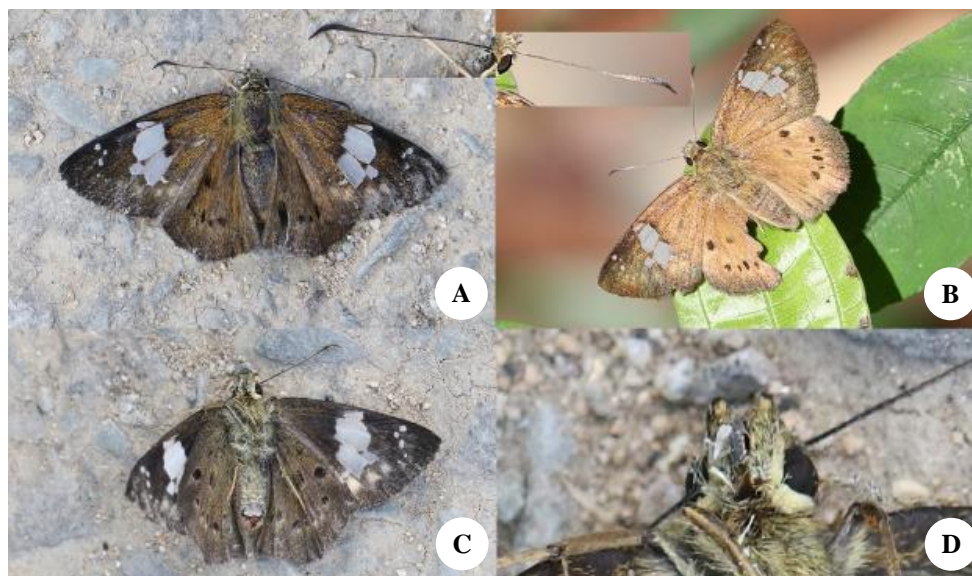


Figure 6. A. *Coladenia agni agni*, Brown Pied Flat, from Lalitpur; C. Ditto, underside; D. Ditto, palpi; B. *Coladenia agnioides*, Elwe's Pied Flat, from Pokhara



Figure 7. A. *Erionota torus*, Sikkim Palm Red-eye, from Lamjung, showing FW termen below v3 rounded; B. *Erionota thrax*, Common Palm Red-eye, showing FW termen below v3 perfectly straight

***Tarucus balkanicus* (Freyer, 1844) *nigra* Bethune-Baker, [1918]: Black-spotted Pierrot**

At least more than 20 of these were seen in Sunsari district at low elevation on a brief visit on 18 August, 2021. They were seen flying, mud-puddling or roosting around *Ziziphus* plants which is also their larval host plant.

This *Tarucus* closely resembles the other striped *Tarucus* from the underside, viz. *T. nara* (Kollar, 1848), and *T. indica* Evans, 1932 as all have UnFW and UnHW post discal black lines continuous, and not macular as in *T. callinara* Butler, 1886, *T. hazara* Evans, 1932 or *T. venosus* Moore, 1882.

However, UpW (upperwings) show marked difference from *T. nara* and *T. indica*. Some salient features are: (i) UnFW and UnHW postdiscal lines unbroken and in regular stripes, i.e. not macular. (ii) UpFW, male often has one or more black discal spots other than a prominent cell-end spot. *T. nara* and *T. indica* do not have other such discal black spots (Basu et al. 2019). (Figure 8.A, 8.B)

Moreover, dissection was performed to observe male genitalia for confirmation (Figure 8.C-8.E), which matched

well with the characters given by Basu et al. (2019). For now, there seems to be no way of telling this species apart from *T. nara* and *T. indica* based on the underside alone. However, if upperside photographs of male are available, we do not think male genitalia is necessary for identification, although Bhakare and Ogale (2018) suggest this.

In India, it is recorded from N.W. states up to 1,200 masl, and south to Maharashtra, Madhya Pradesh, Jharkhand to West Bengal (Gasse 2018) and thus was expected to be found in the plains of east Nepal.

Subspecies

***Pelopidas conjuncta* (Herrich-Schäffer, 1869) *narooa* (Moore, 1878): Conjoined Swift**

Subspecies *conjuncta* of this species was reported from Sankhuwasabha in the east at 1,220 masl in August (Smith, 1989). Subspecies *narooa* differs from ssp. *conjuncta* in that it has a purplish shade and has more complete spots on UnHW which are often obscure or missing in ssp. *conjuncta* (Evans 1949). An individual was seen in Chitwan at 150 m asl in September inside a forest clearing (Figure 9.A). Forewing

spots were distinctly yellowish and it had no brand above unlike in *P. sinensis* (Mabille, 1877) in which FW spots are whitish and male has a brand above (Evans 1949).

In India, this ssp. is recorded from Gujarat to Kerala and Jharkhand (Varshney and Smetacek 2015). It is probably found in other lowland areas in Terai of Nepal, and also farther north of Jharkhand in India.

Tentative species

***Rohana tonkiniana tonkiniana* Fruhstorfer, 1906:**

Elusive Prince

Only one individual of this elusive insect was seen at Bhedetar in Dhankuta on 11 August, 2021 (Figure 10.A,

10.B). The male individual was sipping on moisture from a moist shady wall near a forest.

It closely resembles *R. parisatis parisatis* (Westwood, [1851]), which is another elusive butterfly in Nepal found only in the east. However, in the field, male *R. tonkiniana* can be differentiated from male *R. parisatis* based on following: (i) Larger size. (ii) FW termen more or less straight and not broadly excavate (Pertin et al. 2020). (iii) The discal band on HW is at least three times as wide as that in *R. parisatis* with the purple submarginal band missing. Below, both wings are colored reddish-brown (Fruhstorfer 1906).

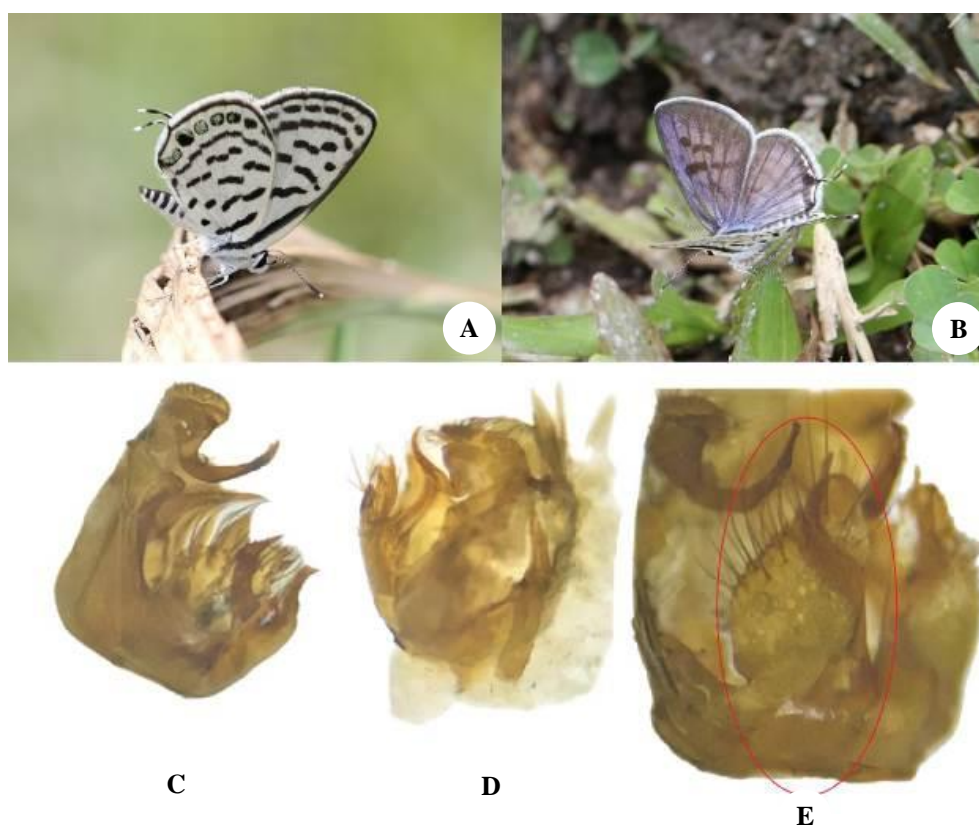


Figure 8. *Tarucus balkanicus nigra*, Black-spotted Pierrot, from Sunsari; A. Upperside; B. Underside; C. Male genitalia capsule; D. Ditto showing attached aedeagus on left side; E. Ditto, valva focused



Figure 9. A. *Pelopidas conjuncta narooa*, Conjoined Swift, from Chitwan; B. *Pelopidas sinensis*, Large Branded Swift, from Pokhara



Figure 10. A. *Rohana* cf. *tonkiniana tonkiniana*, Elusive Prince, from Dhankuta (with almost straight FW termen); B. Ditto, underside (notice wide FW and HW discal band, HW without purple submarginal band); C. *Rohana parisatis parisatis*, Black Prince, from Dhankuta (with excavated FW termen); D. Ditto, underside (notice narrow FW and HW discal band, HW with purple submarginal band)

However, it is still suggested to confirm this species by dissection of a male specimen (Smetacek P 2021, pers. com.). While my individual has all characters typical for *R. tonkiniana*, it has a very faint apical spot on upFW (Figure 10.A) which according to Fruhstorfer (1906) is missing in this taxon.

It was recently reported from Arunachal Pradesh and tentatively from Bhutan (Pertin et al. 2020), and there have been unconfirmed observations from as close as Sikkim (Ref. images from Indian Foundation for Butterflies, Saji et al. 2021). It could have a wider distribution but can easily be confused with *R. parisatis parisatis*.

***Neptis capnodes* Fruhstorfer, 1908 *pandoces* Eliot, 1969: Eliot's Sailer**

Neptis capnodes pandoces closely resembles *Neptis soma butleri* Eliot, 1969 in appearance. *Neptis soma butleri* can usually be easily distinguished from the other *Neptis* by the top 3 subapical spots on FW, which are distinctly curved inward. However, this character is also shared by *N. capnodes pandoces*. Another way to identify *N. soma butleri* is that the discal band on HW expands toward costa. Smetacek P 2021 (pers. com.) suggests that this feature is shared by both these taxa and is interchangeable, because the wet season form of *N. soma butleri* can also have uniform HW discal band just as in *N. capnodes pandoces*. This creates confusion in the identification of these two taxa.

However, I found my *N. capnodes pandoces* in the dry season (April, May) (Figure 11.A-11.B) when all the species of butterflies were still in DSF (dry season form) including *Neptis soma butleri* with typical wider bands.

Moreover, the individuals of *N. capnodes pandoces* I saw were more on the *N. nata adipala* Moore, 1872 side except that the post discal spots on space 1, 2 and 3 were very large and close to each other which is not the case for *N. nata adipala*. Alternatively, this could also have been a form of *N. soma butleri*.

This insect is reported from as close as Sikkim (Varshney and Smetacek 2015) and also from east Nepal (Gasse, 2018) but nonetheless, it has never been recorded with strong evidence from Nepal. Smith (2010, 2011a) recorded *N. tamur* which is now *N. capnodes pandoces*, but his specimens seem to be *N. clinia*. Nevertheless, this needs a study of the male genitalia for further confirmation.

Second records for Nepal

***Gerosis sinica* (C. & R. Felder, 1862) *narada* (Moore, 1884): White Yellow-breasted Flat**

An individual was seen at Bhedetar in Dhankuta on 12 August, 2021 (Figure 12.C). It was perched on the underside of a tree leaf only to change leaves upon disturbance and thus never settling close. Two more were seen in our November visit to the same place, on 13 and 14 November, 2021, on a flower and mud puddling on an open trail respectively. *Gerosis sinica narada* females can closely resemble that of *G. phisara phisara* (Moore, 1884), however, the most clear-cut difference is that female *phisara* still has mid abdominal bands well visible through white which is not quite visible in female *sinica*. (Ref. Image comparison from Yutaka, Inayoshi Y.).

It was recently recorded for the first time from Nepal by Van der Poel (2020) from central Nepal, Pokhara.

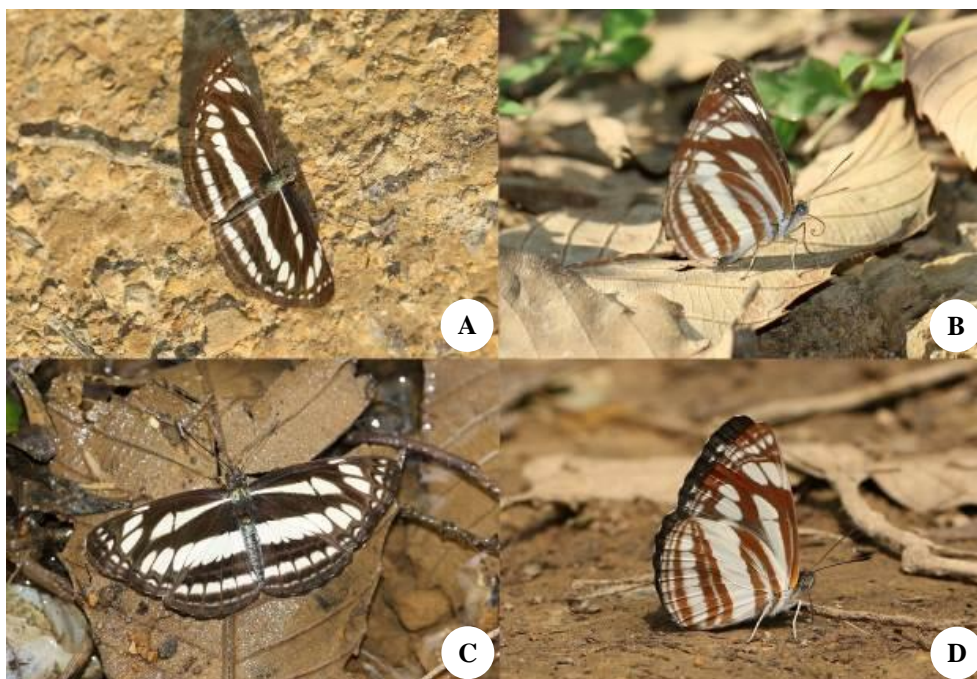


Figure 11. A. *Neptis* cf. *capnodes pandoces*, Eliot's Sailer (DSF), from Pokhara; B. Ditto, underside; C. *Neptis soma butleri*, Creamy Sailer (DSF), from Pokhara; D. Ditto underside

***Aeromachus kali* (de Nicéville, 1885): Blue-spotted Scrub Hopper**

An individual was seen at Paripatle, Dhankuta on 29 August, 2021, mud puddling on an open trail (Figure 12.A). Another was seen at Bhedetar, Dhankuta on 14 November, 2021 also mud puddling on an open trail. It was recorded only once earlier, from Central Nepal, Kaski, in 1987 by Colin Smith in May at around 1,250 masl (Smith 2011b).

***Aeromachus pygmaeus* (Fabricius, 1775): Pygmy Scrub Hopper**

This is the smallest of *Aeromachus* found in Nepal with very short antennae and almost insignificant apiculi (Evans 1949; Smith 2010). An individual was seen at Bhorletar, Lamjung in September, 2020, on an open trail. Another was seen at Lakeside, Pokhara in April, 2021 on an *Ageratum conyzoides* flower (Figure 12.B). Then in October, 2021, several individuals were seen in Pokhara along rural open trails. This species was only recorded once, in Pokhara at 1,160 m in September, 2000 (Smith 2011b). It is not rare, at least in October.

***Niphanda cymbia cymbia* de Nicéville, [1884]: Pointed Pierrot**

An individual was seen at Bhedetar, Dhankuta on 20 August, 2021 (Figure 12.D). The individual briefly appeared and sat on a leaf in the first sunlight of a cloudy day. Earlier, it was recorded only once, from Sunsari (south of Dhankuta) at around 480 masl in March, 1978 (Smith 1989).

***Discophora timora timora* Westwood, [1850]: Great duffer**

This species was reported by Tamang and Limbu (2019) from Jhapa in February 2019 at 200 masl for the first time in Nepal. Another individual was found at Chittal Lodge, a garden hotel in Meghauli, Chitwan in September, 2021 at 150 masl (Figure 12.E-12.F). Thus, so far, it is reported from only two locations in Nepal.

***Tarucus nara* (Kollar, 1848): Striped Pierrot**

The second author was out early morning at 7 to enjoy the sunrise at a hilltop in Baglung on 15 April, 2021 when she came back rushing to show the first author the photo of an odd butterfly she saw (Figure 13.A). The first author realized that it was a *Tarucus nara* complex, but this butterfly was never expected at 2,100 masl. The UnHW PD spots resembled *T. nara* and so did the upperside however the UnHW PD spot 6 was halfway between PD spot 5 and 7 which is typical for *T. callinara* Butler, 1886 which also shares the same upperside.

The specimen was a male and its dissection proved that it was *T. nara* according to Basu et al. (2019). This species was recorded only once in Nepal, from Morang in the east at 150 masl on 22 June, 1963 by Fujioka (1970). Although Tamang et al. (2019) recorded it from the east, the ID is not convincing enough with the underside alone because as stated above in *T. balkanicus nigra*, there are at least two more species which are virtually same from the underside.

Figure 13.C-13.D show the male genitalia.



Figure 12. Second records for Nepal; A. *Aeromachus kali*, Blue-spotted Scrub Hopper, from Dhankuta; B. *Aeromachus pygmaeus*, Pygmy Scrub Hopper, from Pokhara; C. *Gerosis sinica narada*, White Yellow-breasted Flat, from Dhankuta; D. *Niphandia cymbia cymbia*, Pointed Pierrot, from Dhankuta; E. *Discophora timora timora*, Great Duffer, from Chitwan; F. Ditto, upperside

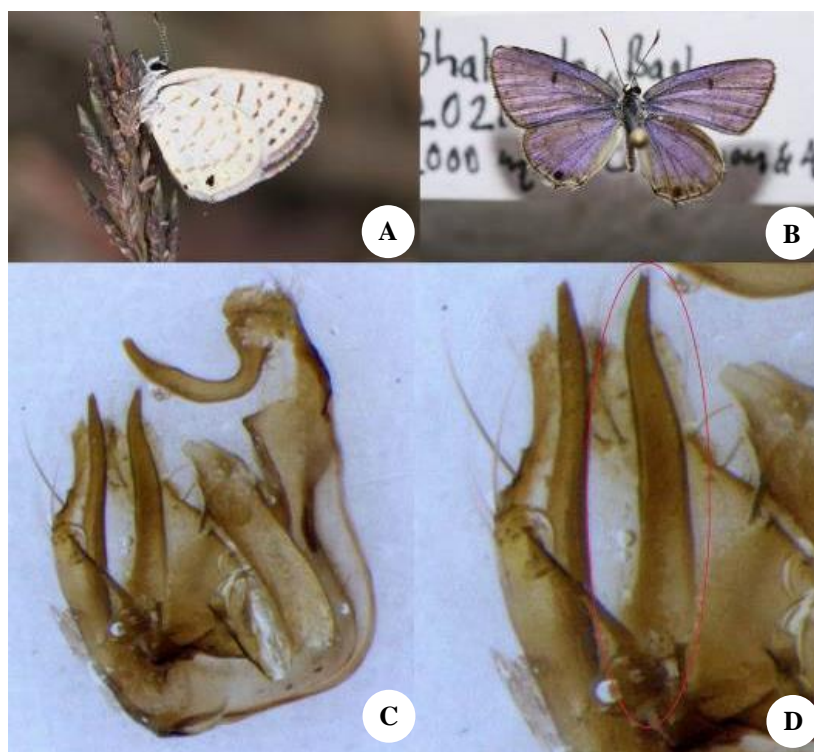


Figure 13. A. *Tarucus nara*, Striped Pierrot, from Baglung, underside; B. Ditto, upperside; C. Male genitalia capsule; D. Ditto with valva focused



Figure 14. *Caltoris sirius*, Sirius Swift, female from Dhankuta; A. Underside; B. Ditto, upperside; C. Ditto, genitalia. ID keys source: Zhang et al. (2010)

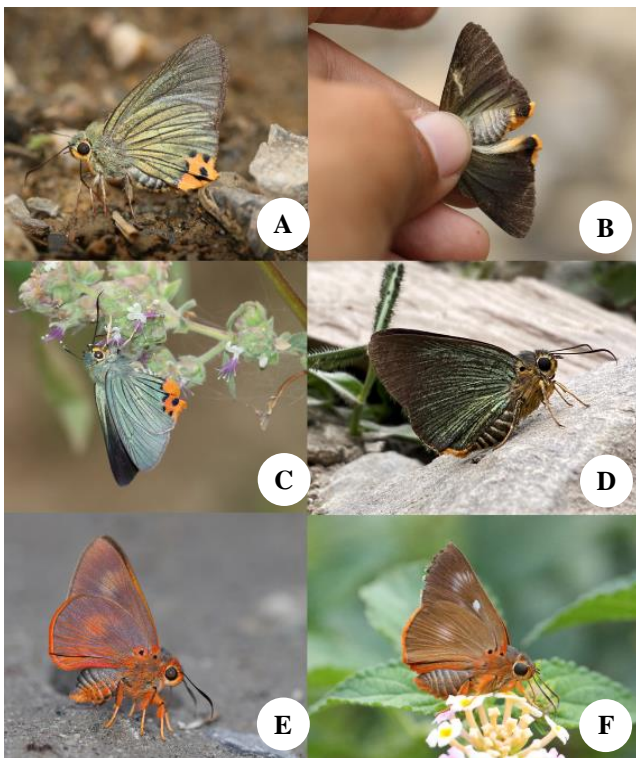


Figure 15. Coeliadinae (Awls); A. *Choaspes heximanthus furcata*, Hooked Awlwing, from Chitwan; B. Ditto, upperside; C. *Choaspes benjaminii japonica*, Japanese Awlwing, from Chitwan; D. *Burara vasutana*, Green Awlet, from Mugling; E. *Burara oedipodea belesis*, Branded Orange Awlet, from Dhankuta; F. *Burara jaina jaina*, Orange Awlet, from Kaski

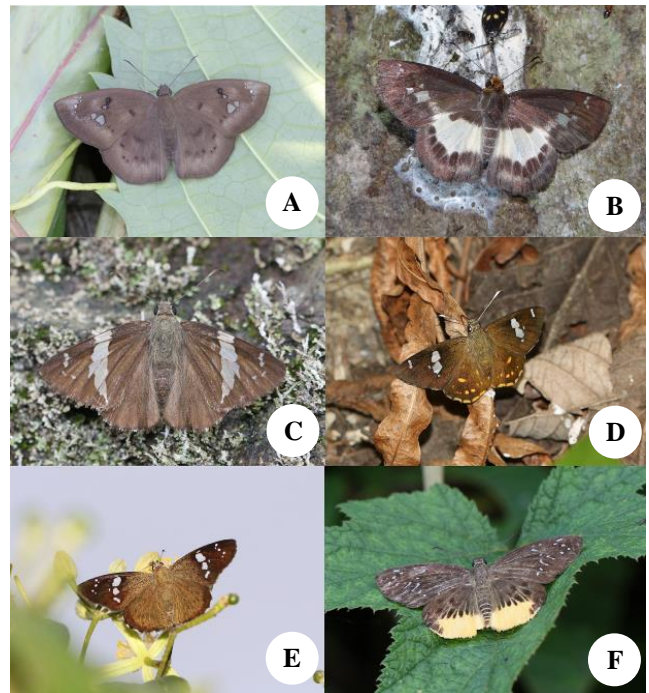


Figure 16. Pyrginae, Eudaminae (Flats); A. *Tagiades japedus ravi*, Common Snow Flat, from Sunsari; B. *Gerosis phisara phisara*, Dusky Yellow-breasted Flat, from Lamjung; C. *Lobocla liliana liliana*, Marbled Flat, from Rukum; D. *Celaenorrhinus putra putra*, Bengal Spotted Flat, from Baglung; E. *Chamunda chamunda*, Olive Flat, from Dhankuta; F. *Mooreana trichoneura pralaya*, Yellow Flat, from Kaski

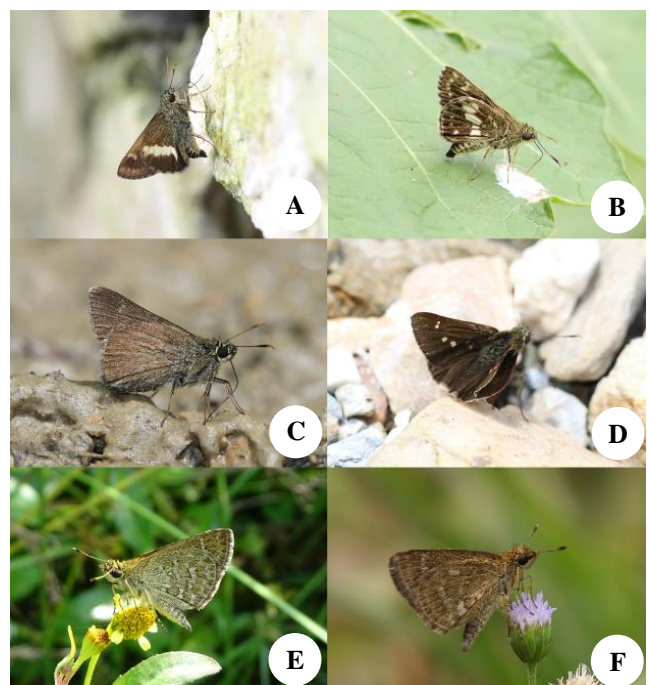


Figure 17. Hesperinae (Skippers); A. *Halpe zema zema*, Banded Ace, from Dhankuta; B. *Halpe porus*, Moore's Ace, from Sunsari; C. *Thoressa gupta gupta*, Olive Ace, from Pokhara; D. Ditto, upperside; E. *Aeromachus jhora*, Grey Scrub Hopper, from Lamjung; F. *Aeromachus dubius impha*, Dingy Scrub Hopper, from Kaski

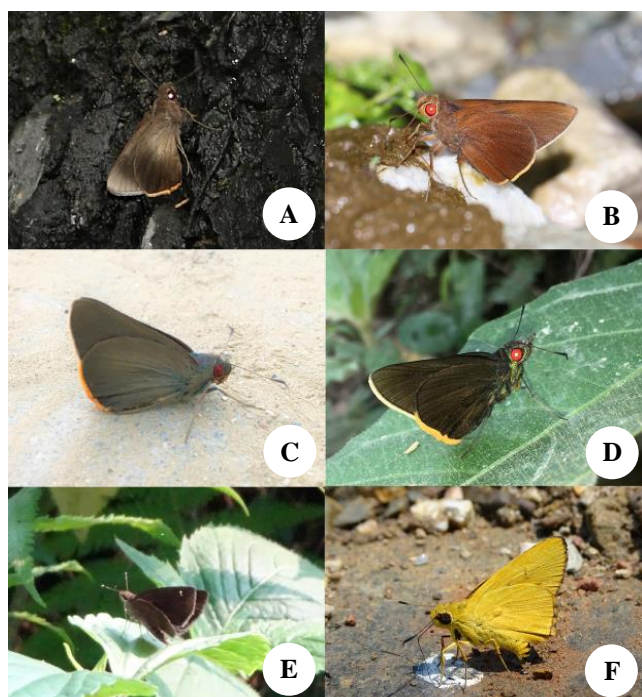


Figure 18. Hesperinae (Skippers); A. *Matapa cresta*, Fringed Red-eye, from Dhankuta; B. *Matapa druna*, Grey-brand Red-eye, from Dhankuta; C. *Matapa purpurascens*, Purple Red-eye, from Kathmandu; D. *Matapa sasivarna*, Black-veined Red-eye, from Lamjung; E. *Astictopterus jama olivascens*, Forest Hopper, from Tanahun; F. *Cupitha purreea*, Wax Dart, from Chitwan



Figure 19. *Heliophorus epicles* complex; A. *Heliophorus epicles latilimbata*, Purple Sapphire, from Pokhara; B. Ditto, HW purple mark well reaching sp. 4 and not quite reaching sp. 5; C. *Heliophorus indicus*, Indian Purple Sapphire, from Pokhara, HW purple mark well reaching sp. 5; D. *Heliophorus ila pseudonexus*, Restricted Purple Sapphire, from Lamjung; E. Ditto, HW purple mark barely reaching sp. 4. ID keys source: Yago and Nakanishi, 2003

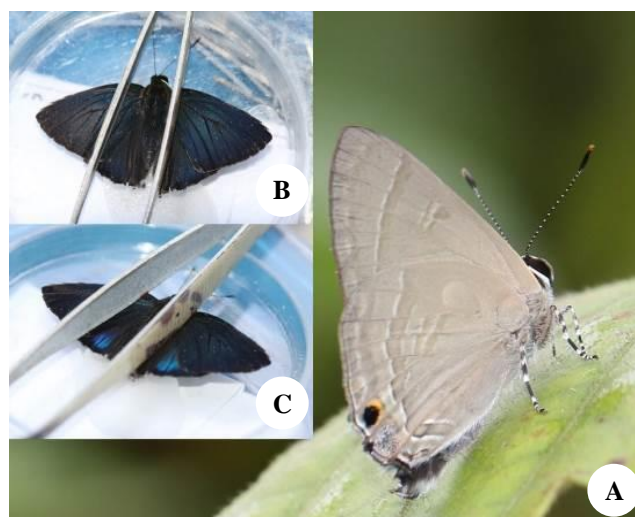


Figure 20. A. *Rapala scintilla scintilla*, Scarce Slate Flash, from Pokhara; B. Ditto upperside; C. Ditto, upperside showing only the lowerwing glow in sidelight. ID keys source: Inoyashi Y. <http://yutaka.it-n.jp/>

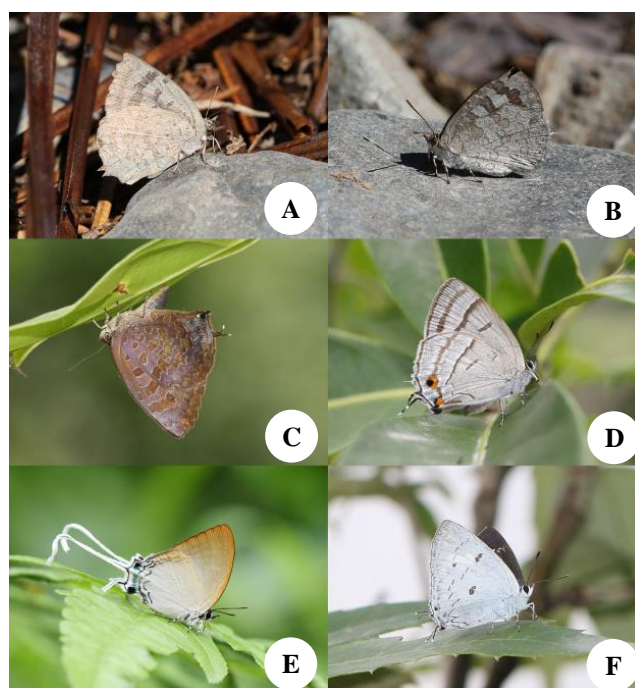


Figure 21. Theclinae (Royals, Oakblues, Hairstreak and Imperials); A. *Arhopala dodonaea*, Pale Himalayan Oakblue, from Rukum; B. *Arhopala ganesa ganesa*, Tailless Bushblue, from Rukum; C. *Arhopala bazalus teesta*, Powdered Oakblue, from Rukum; D. *Chrysozephyrus syla*, Silver Hairstreak, from Rukum; E. *Cheritra freja evansi*, Common Imperial, from Sunsari; F. *Tajuria illurgis*, White Royal, from Rukum

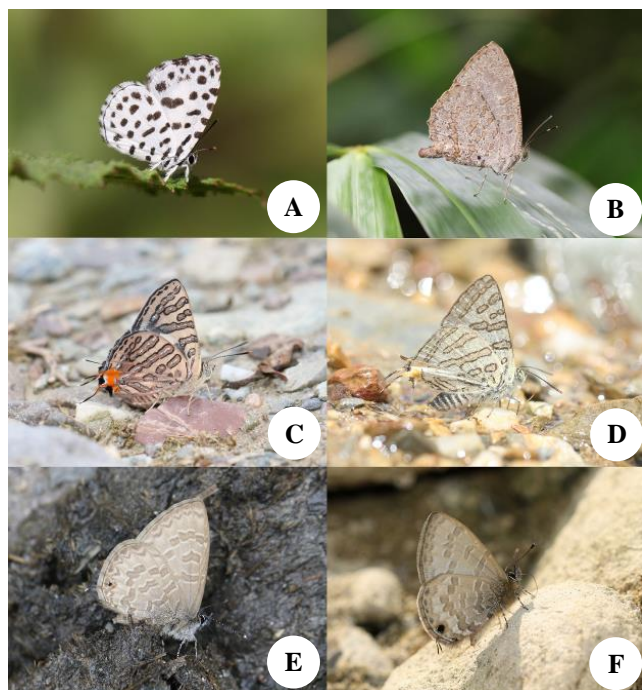


Figure 22. Lycaenidae, Miscellaneous; A. *Taraka hamada mendesia*, Forest Pierrot, from Pokhara; B. *Allotinus drumila drumila*, Great Darkie, from Dhankuta; C. *Spindasis elima uniformis*, Scarce Shot Silverline, from Sunsari; D. *Spindasis nipalicus nipalicus*, Silver-grey Silverline, from Baglung; E. *Prosotas nora ardates*, Common Lineblue, from Rukum; F. *Prosotas pia marginata*, Margined lineblue, from Lamjung

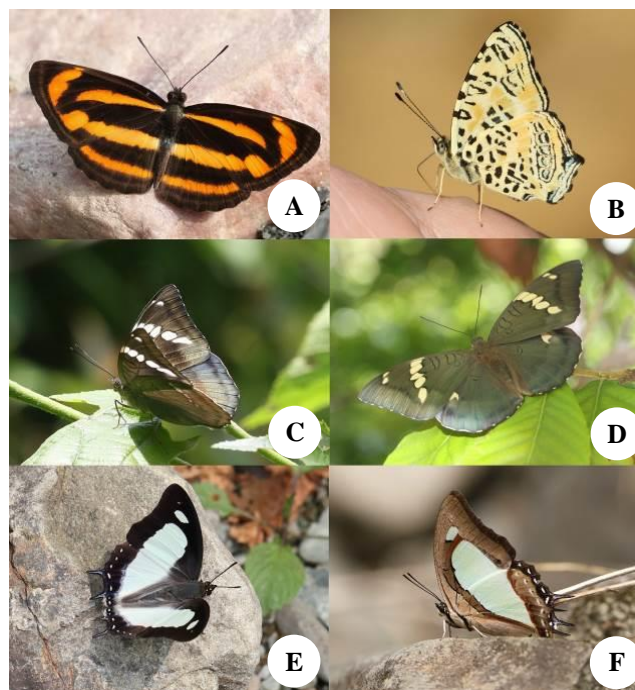


Figure 24. Nymphalidae; A. *Neptis miah miah*, Small Yellow Sailer, from Dhankuta; B. *Symbrenthia brabira brabira*, Himalayan Jester, from Kaski; C. *Euthalia nara nara*, Bronze Duke, from Rukum; D. *Euthalia patala patala*, Grand Duchess, from Baglung; E. *Polyura arja*, Pallid Nawab, from Sunsari; F. Ditto, underside

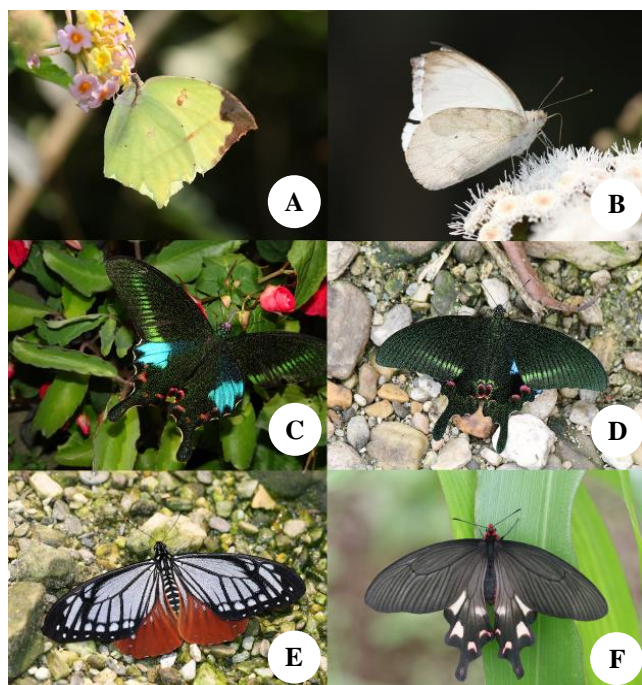


Figure 23. Pierids and Papilionids (Whites, Yellows, and Swallowtails); A. *Dercas verhuelli doubledayi*, Tailed Sulphur, from Dhankuta; B. *Appias indra indra*, Plain Puffin, from Chitwan; C. *Papilio polyctor ganesa*, Common Peacock, from Lamjung; D. *Papilio arcturus arcturus*, Blue Peacock, from Kaski; E. *Papilio agestor*, Tawny Mime, from Kaski; F. *Byasa dasarada dasarada*, Great Windmill, from Rukum

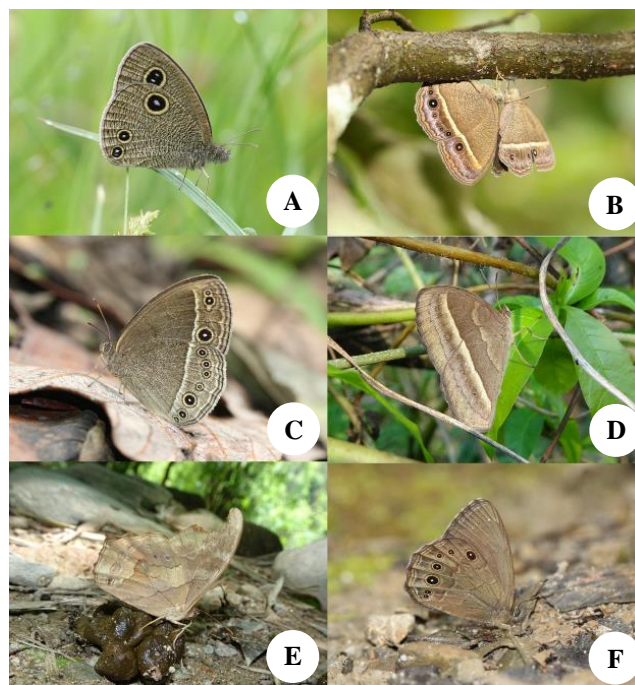


Figure 25. Satyrinae (Browns); A. *Ypthima confusa*, Confusing Threering, from Rukum; B. *Mycalesis nicotia*, Bright-eye Bushbrown, from Dhankuta; C. *Mycalesis suaveolens suaveolens*, Wood-Mason's Bushbrown, from Rukum; D. *Heteropsis mamerta*, Blind-eye Bushbrown, from Chitwan; E. *Lethe distans*, Scarce Red Forester, from Lamjung; F. *Lethe siderea*, Scarce Woodbrown, from Lalitpur

Discussion

Nepal is not a large country in terms of area, so a species found in one butterfly zone is very likely to be found in another one, even more so if they are contiguous. However, there are species which have shown prominent range extensions compared to the distributions given by Van Gasse (2018). Examples include taxa such as *Hasora vitta indica*, *Coladenia agni*, *Lobocla liliana liliana*, *Euthalia nara* and *Discophora timora* which seem to have extended further westward from east. Likely, *Tarucus balkanicus nigra* has extended northward from north of Maharashtra.

Regarding new elevation and seasonal records, one might find a species recorded at one elevation a few tens of meters above or below that elevation, but some insects have shown a significant elevation extension compared to earlier records from Nepal. For example, species such as *Burara vasutana* from lowest 1,010m to 300m, *Choaspes benjaminii* from lowest 910m to 390m, *Choaspes furcatus* from lowest 910m to 393m, *Aeromachus kali* from lowest 1,250m to 580m, *Papilio epycides* from lowest 1,040m to 450m, *Symbrenthia brabira* from lowest 1,430m to 380m. Likewise, *Astictopterus jama* has extended its range from highest 460m to 838m, *Lethe mekara* from highest 490m to 1,062m, *Tarucus nara* from highest 150m to 2,100m, *Pithecopis corvus* from highest 700m to 1,400m etc.

Regarding seasonal variation, one is very likely to find species in one month and not in next month some years while in some years, this could change. It is worth mentioning, however, the occurrence of species months away from their earlier recorded months in Nepal. Example, *Choaspes furcatus* from earliest June to March, *Pithauria murdava* from earliest June to April, *Polyura arja* from earliest June to March, *Matapa purpurascens* from latest June to October, *Matapa druna* from latest June to October, *Mooreana trichoneura* from June only to October as well, *Appias indra* from latest May to November, *Taraka hamada* in spring as well (March), *Abisara chela* from Nov-Dec only to late winter and spring as well (Feb-May), *Symbrenthia brabira* from March-April only to Jan, March-May and November.

The aforementioned changes could have two implications: 1. Intrinsic, i.e. these butterflies were always found in these geographical, elevational or seasonal ranges and previous researchers had not recorded them. It could also be on account of intrinsic range extension over a period of time which seems quite natural. 2. Extrinsic, i.e. the species shifted to a new range or extended their previous range due to anthropological causes such as human-inflicted climate change, habitat destruction, loss of host plants in their previous range, introduction (accidental or intentional) of butterfly species or their host plant(s) into a new area etc. That being said, our data point more towards the impacts of climate change on distribution of butterflies. Species found in a completely different elevation than before could be the effect of attempts to circumvent the effects of climate change. Warmer winters could cause the butterfly species and their host plants to emerge earlier from overwintering causing them to be on the wing much earlier than before. It is also possible that

species which were previously uni- or bivoltine have become multivoltine thus showing up in different months. Larson et al. (2019) highlighted these things focusing on how such changes could influence hybridization and gene flow among insect species. In conclusion, our data not only show new distribution records of butterflies in Nepal, but also corroborate the possible effect of environmental changes in biotic diversity.

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