

ISSN 0972- 1800



VOLUME 22, NO. 3

QUARTERLY

JULY-SEPTEMBER, 2020



Date of Publication: 28th September, 2020

BIONOTES

**A Quarterly Newsletter for Research Notes and News
On Any Aspect Related with Life Forms**

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From Volume 21

**Published by the Entomological Society of India (ESI), New Delhi (Nodal Officer: V.V.
Ramamurthy, ESI, New Delhi)**

And

Butterfly Research Centre, Bhimtal

Executive Editor: Peter Smetacek

Assistant Editor: Shristee Panthee

Butterfly Research Trust, Bhimtal

Published by Dr. R.K. Varshney, A Biologists Confrerie, Raj Bhawan, Manik Chowk,
Aligarh (up to volume 20 (2018)) R.N.I. Registration No. 71669/99.

Cover Photo of *Spialia zebra* by Mukesh Panwar

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SOME NEW DISTRIBUTION RECORDS OF HESPERIID BUTTERFLIES IN NEPAL

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Introduction

Butterflies are highly mobile organisms that frequently travel from one place to another place in search of host plant, mates, food and proper climate for their survival. This leads to their distribution in newer places every now and then. Their colonisation of an area mainly depends upon suitable habitat structure and availability of their food plants (Abideen *et al.*, 2015). Moreover, they can be taken as vital ecological indicators and their distribution can be related to factors like habitat loss, fragmentation, land use change and most of all, climate change (Thomas *et al.*, 1998).

Nepal is home to 660 species of butterflies (Smith, 2011), although the correct number adds up to 670 today after taking into consideration recent additions. Colin Smith recorded the distribution of butterflies of Nepal from four zones. These are: West (W), encompassing the Karnali watershed, the Centre (C) encompassing the Gandaki watershed, the East, encompassing the Koshi and Mechi watersheds and Kathmandu (K) encompassing the Bagmati watershed (Smith 2011). However, it is natural that these distribution records, most of which were based on decades old records, have changed over time, and the species in the east (E) and the west (W) have frequently been seen in Kathmandu (K) and other central Nepal regions (C) as well.

This paper highlights my findings during the past 2 years (2019-2020) at Bhorletar, Lamjung (28°09'57" N 84°13'02" E) and Lakeside, Kaski (28°26'29" N 83°96'85" E) in which anomalous records with reference to

Colin Smith's distribution records (1994; 2011; 2016) have been presented. The findings are based on photographic records. ID keys from Evans (1927, 1932, 1949) have been followed.

Family: HesperIIDae

1. *Burara anadi anadi* (de Niceville, [1884])- Plain Orange Awlet

This species is new to Nepal. A rather worn individual was spotted at Lakeside, Kaski at 850 m in mid-September 2020. The HW patch is in thin streaks and not bulky solid like in *B. oedipodea* (Swainson, 1820) or broad as in *B. harisa harisa* (Moore, [1866]); and the dorsal part of antennae is white. The HW streak extends up to space 7. Moreover, it does not have a white FW discoidal cellspot like in *B. jaina jaina* (Moore, [1866]), in which the abdominal end is also more broadly orange than brown. Blurred ochraceous area on disc and more or less purple washed (Evans, 1949). Note that the only similar species found in Nepal, *B. jaina jaina* always has an UnFW discoidal white cell spot.

This species has been reported from Uttarakhand and N.E. India (Varshney & Smetacek, 2015), so it was expected in Nepal.

2. *Celaenorhynchus putra putra* (Moore, [1866])- Bengal Spotted Flat

This species was very common in Lamjung, Bhorletar throughout March-October, although it was reported only from the East in the past. The termen of FW is equal to the dorsum giving FW a sharper and more produced appearance. In *C. leucocera* (Kollar, [1844]), the FW dorsum is longer, giving the

wing a rounded look. Also, the UpFW cell spot does not extend up to the costa in *C. putra*, while it usually extends up to costa in *C. leucocera* (Evans, 1949) and, if not, is present as a tiny spot only.

3. *Seseria dohertyi dohertyi* Watson, 1893- Himalayan White Flat

It was only recorded in the east and Kathmandu area by Smith (2011). An individual was seen in Lamjung at Bhorletar, at 1500 ft in the month of April 2020. It has been reported from Jammu & Kashmir to N.E. India (Varshney & Smetacek, 2015), so its appearance in Lamjung is not unusual.

4. *Ctenoptilum vasava vasava* (Moore, [1866])- Tawny Angle

Within Nepal, it was only recorded from Kathmandu area in the past (Smith, 2011). An individual was seen in Lamjung at Bhorletar, 460 m in April 2020. It has been reported from Uttarakhand to N.E. India (Varshney & Smetacek, 2015), so its appearance westward in Nepal is not unusual.

5. *Halpe filda* Evans, 1949- Elwes' Ace

It was only recorded from the east in the past from as close as Sankhuwasabha (Smith, 1994). Several individuals were seen in Lamjung, Bhorletar at 460 m, in April, May of 2020. UpFW does not have any cell spot (or sometimes a small one) and the discal spots are barely overlapped. UnHW central band is not prominent and suffused (Evans, 1949). Note that the FW discal spots in *H. arcuata* are prominently overlapped. The present record constitutes an extension westward to the global distribution of the species.

6. *Halpe arcuata* Evans, 1937- Evans' Ace

An addition to the known butterflies of Nepal. Records from Assam and Sikkim have been found (Gogoi, 2013; Gasse, 2013). Several individuals were found in April and May of 2020 in Lamjung, Bhorletar, 460 m. They were found in company with *H. filda*, but their discal spots are wider and largely overlapped (Evans, 1949), and sometimes a small forewing cell spot can be found. All of such

individuals bore only 2 subapical spots while individuals with 3 subapical spots were also seen in *H. filda*. UnHW, *vide* Evans (1949), was very variable. Upon dissection of a male, gnathos horn was curved and sharply pointed as stated by Evans (1949).

7. *Pithauria murdava* (Moore, [1866])- Dark Straw Ace

Another species which was recorded only from east in the past (Smith, 2011) was recorded in Lakeside, Kaski at 850 m in September, 2020. This is an extension westward to the known distribution of this species globally. Darker than *P. stramineipennis* with very little straw-colored hair, some spots visible on UnHW as well (Evans, 1932).

8. *Matapa druma* (Moore, [1866])- Grey-Brand Redeye

This species is rarer than its look alike, *M. aria* (Moore, [1866]), and was reported from the East only in the past (Smith, 2011). However, it is rarely seen in central hills as well. Smith *et al.* (2016) had reported it from Rupa, Kaski as well, as very rare. An individual was seen in Lamjung, Bhorletar, 460 m on dung, in August, 2019. The cilia of the HW are clearly deeper orange than that of FW (Evans, 1949). In males, the brand on UpF is bolder and more curved (Evans, 1949).

9. *Zenonoida discreta discreta* (Elwes & Edwards, 1897)- Himalayan Swift

The distribution record of this species is missing in Smith (2011). It is reported from Jammu & Kashmir to N.E. India (Varshney & Smetacek, 2015), so should be found throughout Nepal. An individual was seen in Lakeside at 850 m in May 2019. The tornal HW cilia are white unlike in *Z. eltola eltola* (Hewitson, 1869) in which they are yellow/ochraceous (Evans, 1949).

Discussion

The record of these butterflies in new regions of Nepal confirms the changing distribution of species. In most cases, the extension of distribution of species is from from the west

and the east to central areas. In most cases, the anomalous species were seen in March-May and not in other months, which could be linked to spring migration. These months are also the best months to observe butterflies in Nepal, besides September-November.

Acknowledgements:

I am grateful to Ms. Anisha Sapkota, Mr. Surendra Pariyar and Mr. Piet van der Poel for their kind support.

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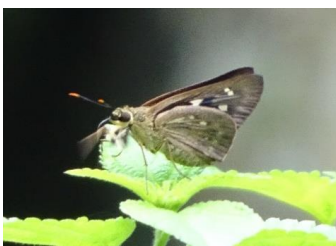


Fig.1: Dark Straw Ace, underside



Fig.2: Dark Straw Ace, upperside



Fig.3: Bengal Spotted Flat



Fig.4: Elwes Ace, underside



Fig.5: Elwes Ace, upperside



Fig.6: Evan's Ace, upperside



Fig.7: Evan's Ace, underside



Fig.8: Evan's Ace, Gnathos



Fig.9: Grey-brand Red Eye, upperside



Fig.10: Grey-brand Red Eye, underside



Fig.11: Himalayan Swift, underside



Fig.12: Himalayan Swift, upperside



Fig.13: Plain Orange Awlet, underside



Fig.14: Plain Orange Awlet



Fig.15: Himalayan White Flat, upperside



Fig.16: Tawny Angle, upperside