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Rediscovery of white-striped snow flat *Tagiades cohaerens* Mabille, 1914 (Lepidoptera: Hesperiiidae) from Uttarakhand, India

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Abstract

In the present paper, we have documented the rediscovery of White-striped Snow Flat *Tagiades cohaerens* Mabille, 1914 from a hilly state Uttarakhand of India. It was rediscovered from the Skimmer Biodiversity Reserve, Vasant Vihar, Dehradun, Uttarakhand about 70 years after it was documented from northwest Himalaya. This finding is the result of regular field visit and observations carried out in the Skimmer Biodiversity Reserve from October 2018 to November 2019. During such a visit on 06 October 2019, a butterfly was reported basking on a leaf of a shrub at 1000 hr, 644 meters above sea level. It was photographed and later identified as White-striped Snow Flat *Tagiades cohaerens*. A number of photographs were taken from different angles for the proper identification of the species. This finding is pretty helpful for further study of this species as well as updating the checklist of the butterflies of Uttarakhand.

Keywords: Vasant Vihar, skimmer biodiversity reserve, white-striped snow flat, *Tagiades cohaerens*, Dehradun, new records, rediscovery

1. Introduction

Butterflies are a good food source for predators i.e. birds, lizards, spiders and other organism. In addition, they are an indicator of the health of the ecological system. By studying their status, the climate of a place can be told better. Uttarakhand, a hilly state of India, lies in the foothills of the Himalaya. It shares its international boundaries with Tibet in the North and Nepal in the West. This small state hosts a significant proportion of India's butterfly diversity; some of them are very rare and endemic. Evans ^[2] had documented nearly 450 species of butterflies from this hilly region. In the last two decades, researchers have added some more species to this list. Some of them are Redbreast Jezebel ^[14], Bath White & Desert Bath White ^[15], Red Pierrot ^[12], Redspot ^[13], Transparent Six-lineblue, Spangled Plushblue & Aberrant Oakblue ^[16]. Beside it Black-veined Branded Redeye ^[6], Common Ciliate Blue & Blank Swift ^[7], White-line Bushbrown & Obscure Branded Swift ^[8], Powdered Oakblue & Common Tinsel ^[9], Narrow Spark ^[10], Newar Three-ring ^[11] are some recent and significant records of butterflies from Uttarakhand. A number of observations were made from October 2018 to November 2019 in Skimmer Biodiversity Reserve to find the relative abundance of butterflies. White-striped Snow Flat *Tagiades cohaerens* was recorded after seven decades in such an observation and hence claimed as rediscovery.

2. Materials and Methods**2.1 Study area**

White-striped Snow Flat *Tagiades cohaerens* was first photographed at Skimmer Biodiversity Reserve, Vasant Vihar, Dehradun, Uttarakhand, when it was basking on a leaf of a shrub. The Skimmer Biodiversity Reserve (30°19'29.2"N and 77°59'57.9"E) is bound in the south by Vivek Gupta Park with open area, bushes, trees and flowering plants and is surrounded by residential areas with plenty of green plants. (Fig. 1, Google Map of Skimmer Biodiversity Reserve in Vasant Vihar). The area exhibits wide range of floral and faunal variety.

The Area has large number of well-maintained flowering plants, shrubs, wild flowers and a variety of vegetables and medicinal plants. It is spread in an area of 800 yards ^[2]. Around 30% area is constructed; rest is trees, flowering plants and kitchen garden. From the butterflies point of view, this area can be described as biodiversity rich area and make this a perfect area

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to study and document butterflies, nectar plants and larval host plants.

Generally PAs, Reserved Forest areas or well-wooded areas are selected for majority of studies in biodiversity or butterflies diversity studies. This leads to data-deficiency in urban or semi urban areas. House sparrows, many other species of birds, butterflies, bees and majority of insects are vanishing from urban or semi-urban areas. The monitoring and documentation in project area will help in understanding the butterfly diversity that exists in such a small landscape and later on assist in developing models for butterfly gardens. Thus it is imperative that we document biodiversity from this area. Some of the butterflies breeding here are Red Pierrot, Pale Grass Blue, Dark Grass Blue, Tiny Grass Blue, Common Mormon, Palmfly, Cabbage White and Plains Cupid.

Regularly sighted butterflies include Great Eggfly, Baron, Common and Mottled Emigrant, Lemon Pansy, Peacock Pansy, Common Castor, Yellow Pansy, Oakblues, Yamfly, Yellows, Common Gull, Four Rings, Five Rings, Tree Brown, Evening Brown, Painted Lady, Indian Red Admiral, Tawny Coster, variety of Tigers and Indian Fritillary.

The Project Area is monitored on daily basis with photographic evidence. Already the list of butterflies observed and photographed is ~100 species.



Fig 1: Map of the Skimmer Biodiversity Reserve, Vasant Vihar. Courtesy- Google Earth ©2018 Google. Image©2019 Maxar Technologies.

2.2 Methodology

A number of observations were made on daily basis to find the relative abundance of butterfly fauna in Skimmer Biodiversity Reserve. These observations were made at various fixed spots within the study area by point and line transect methods [1]. The encountered species were counted along the line transects. Information related to the activities of each individual species along with the habitat, i.e. location, altitude, weather conditions, GPS details was also documented. White-striped Snow Flat was photographed by a digital single-lens reflex (DSLR) camera with a 70–300 mm lens. Identification was confirmed with the help of ID keys provided by Evans [2], Wynter-Blyth [19] and Kehimkar [5], from Himanchal Pradesh to northeast India. Globally the range of *ssp. cynthia* is listed by Paul Van Gasse [4] from Murre to northeast India and Burma to Karens.

3. Results and Discussion

3.1 White-striped Snow Flat *Tagiades cohaerens* Mabille, 1914

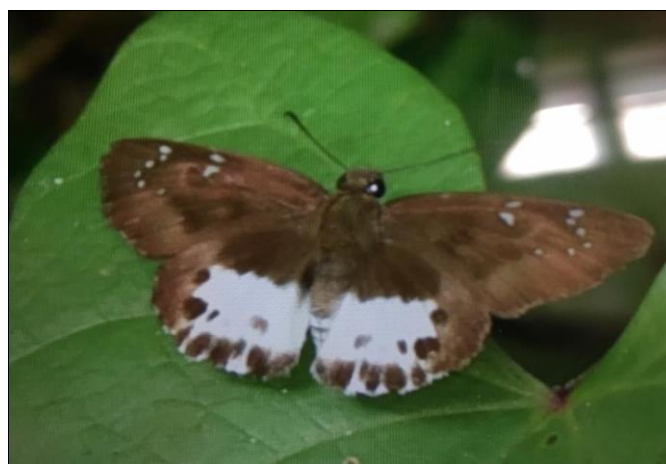


Fig 2: White-striped Snow Flat *Tagiades cohaerens*.

This species was last recorded from northwest Himalaya by Evans [3] nearly 70 years ago. There are very few published records of this species from India. It was recently recorded from Eaglenest WLS [17] and Namdapha in Arunachal Pradesh.

A single specimen of *Tagiades cohaerens* was first recorded (fig. 2) when it was basking on a leaf of a shrub at 10:00 hrs (IST), 644 meters above sea level (asl) on 06 October, 2019 at Skimmer Biodiversity Reserve, Dehradun, Uttarakhand, India. The butterfly was observed from 10:00 hours till 13:15 hours. It kept on flitting from one plant to another. It sat mostly on Ivy along the wall and on the broad leaves of pumpkin plant. It was moving continuously. We suspect this species is not as rare as previously thought, but its status in Uttarakhand can be reliably assessed only after further studies are conducted.

4. Conclusion

The rediscovery of White-striped Snow Flat *Tagiades cohaerens* indicated the immediate need to undertake detailed field surveys to understand the ecology of this species and many more other butterflies, which have no recent records in Uttarakhand. Most of them are lowland butterflies. The importance of this record can be understood in the context of promoting butterfly gardens in urban areas, which have a potential of different types of nectar as well as host plants for butterflies. In short, this record encourages the people living in urban areas to study and to document the butterflies found nearby. It will help in updating the status and distribution of butterfly species in Uttarakhand, also.

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6. References

1. Barhaum KP, Anderson DR, Cauke ZL. Estimation of

- density from line transect sampling of biological population. WILD. Monograph 72, 1980-1981, 515.
2. Evans WH. The Identification of Indian Butterflies. 2nd Edn. Bombay Natural History Society, Bombay, 1932, 464(32).
 3. Evans WH. A catalogue of the Hesperiiidae from Europe, Asia & Australia in the British Museum (Natural History). The British Museum, London, 1949, 502.
 4. Gasse PV. Annotated checklist of the Butterflies of the Indo-Burmese region, 2013; http://flutters.org/home/docs/Butterflies_Of_India_Paul_Van_Gasse.pdf
 5. Kehimkar I. Butterflies of India. Bombay Natural History Society, Mumbai, 2016, xii+528.
 6. Kumar S, Singh P, Joshi K. Range extension of *Matapa sasivarna* [Moore (1884)] Black-veined branded redeye to western Himalaya. Indian Forester. 2018; 144(10):1010-1012.
 7. Kumar S, Singh RS, Singh P. Range extension of Ciliate Blue *Anthene emolus* Godart (Lepidoptera: Lycaenidae) and Blank Swift *Caltoris kumara* Moore (Lepidoptera: Hesperiiidae) into the Lower Western Himalaya. Journal of the Bombay Natural History Society, 2018, 115.
 8. Kumar S, Singh RS, Singh P. New records of white-line Bushbrown *Heteropsis malsara* Moore (Lepidoptera: Nymphalidae) and obscure branded swift *Pelopidas agna* Moore (Lepidoptera: Hesperiiidae) from Uttarakhand. Journal of Entomology and Zoology Studies. 2019; 7(1):125-128.
 9. Kumar S, Singh RS, Singh P, Kumar S. Rediscovery of butterflies *Arhopala bazalus* Hewitson, 1862 and *Catapaecilma major* Druce, 1895 from Uttarakhand, India. Journal of Entomology and Zoology Studies. 2019; 7(1):125-128.
 10. Kumar S, Singh RS, Singh P. Rediscovery of the Narrow Spark butterfly *Sinthusa nasaka pallidior* Fruhstorfer, 1912 (Lepidoptera: Lycaenidae: Theclinae) from Uttarakhand, India. Bionotes. 2019; 21(1):10-11.
 11. Kumar S, Kumar CS, Singh RS, Singh P. Review and status of *Ypthima newara* Moore (Lepidoptera: Nymphalidae) in the Western Himalaya. Bionotes. 2019; 21(2):51-53.
 12. Singh AP. Initial colonization of Red Pierrot butterfly, *Talicauda nyseus nyseus* Guerin (Lycaenidae) in the lower western Himalayas: an indicator of the changing environment. Current Science. 2005a; 89:41-42.
 13. Singh AP. Recent records on the distribution, seasonality and occurrence of Redspot butterfly *Zesius chrysomallus* Hübner from the lower western Himalayas. Journal of the Bombay Natural History Society. 2005b; 102(2):238-239.
 14. Smetacek P. Resolution of the controversial western limit of the range of *Delias acalis* Godart (Lepidoptera: Pieridae). Journal of the Bombay Natural History Society. 2001; 98:298-300.
 15. Smetacek P. The genus *Pontia* Fabricius (Lepidoptera: Pieridae) in the Kumaon Himalaya. Journal of the Bombay Natural History Society. 2002; 99:224-231.
 16. Smetacek P. Four new lycaenid butterfly records from the Kumaon Himalaya, India. Journal of Threatened Taxa. 2011; 3(2):1555-1558.
 17. Sondhi S, Kunte K. Butterflies (Lepidoptera) of the Kameng protected area complex, western Arunachal Pradesh, India. Journal of Threatened Taxa. 2016; 8(8):9053-9124.
 18. Varshney RK, Smetacek P. (Eds). A Synoptic Catalogue of the Butterflies of India. Butterfly Research Centre, Bhimtal and Indinov Publishing, New Delhi, 2015; ii+261(8).
 19. Wynter-Blyth MA. Butterflies of the Indian Region. Bombay Natural History Society, Bombay. 1957; xx+523 72.