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## Range extension of *Pelopidas sinensis* (Mabille, 1877) (Insecta: Lepidoptera: Hesperidae) to Western Arunachal Pradesh

**Narender Sharma**DOI: <https://doi.org/10.22271/j.ento.2023.v11.i5a.9227>**Abstract**

Recently, while conducting surveys in the Itanagar Wildlife Sanctuary under the mandates of the Zoological survey of India, only one individual of the Hesperiid species, The Large Branded Swift, *Pelopidas sinensis* (Mabille, 1877) was collected from Lobby, Itanagar, Arunachal Pradesh on 24<sup>th</sup> January, 2020. This is the second sighting of this species in Arunachal Pradesh.

**Keywords:** Lepidoptera, hesperiidae, Itanagar wildlife sanctuary, Arunachal Pradesh**Introduction**

On the basis of physiographic, climate and ecobiological attributes, out of ten diverse biogeographic zones known from India, the Indian Himalaya comprised of two such zones. These two zones namely Trans Himalaya and Himalaya. Himalayan zone is further comprising four biotic provinces -North-West Himalaya, West Himalaya, Central Himalaya and East Himalaya. Eastern Himalaya biotic province forms the state of Arunachal Pradesh. The state lies between the latitude 26°28" and 29°30" N and longitude 91°30" and 97°30" E and has a geographical area of 83,743 sq. km. About 82% of the state is under forest cover with currently 13 Wildlife Sanctuaries, 1 Orchid Sanctuary, 2 National Parks, 3 Tiger Reserves, 8 Community Reserves and one Biosphere Reserve with a cumulative area of approximately 12000 sq. km. The major forest type present in this zone is Tropical wet evergreen forest. The average summer temperature is generally 20° C. The average annual rainfall is 10,000 mm.

The state, Arunachal Pradesh is having high degree of endemism and relatively higher occurrence of rare and threatened taxa. Such unmatched difference can be attributed primarily to the unique geophysical location of the state in the transition zone between the Palearctic and Oriental biogeographic regions. The state possess biotic elements from both the regions as well as have its exclusive components and thus represents Indo-Chinese, Indo-Malayan, Indo-Burmese and India biotic components. This has made the state the peculiarity of one of the main corridor for eastern entrant of the Indian sub-region. That is why it is also referred as an active centre of organic evolution. The state, Arunachal Pradesh is a biodiversity hotspot of India which is mostly covered by sub-tropical wet forest. Sub-tropical wet forest is very rich in species diversity.

The butterflies of the family Hesperidae are commonly called as the Skippers because they have rapid and skipping flight pattern. The skippers are usually small, mostly orange or brown butterflies with short fat bodies, hooked antennae and rapid, hopping flight. There are 3500 species of Skippers occurs throughout the world and 321 species in India. The Hesperidae are having two types of sitting posture i.e., one type hold their wings open flat when settled and the others usually alight with their wings completely closed or with their hindwings more or less completely open, but forewings only partially open.

*Pelopidas* Walker, 1870 is a genus of skipper butterflies which are commonly known as branded swifts or millet skippers. The genus *Pelopidas* Walker, 1870 is represented by seven species from India i. e., *P. agna* (Moore, [1866])<sup>[12]</sup> (Andaman & Nicobar Islands, Jammu & Kashmir, Kerala to Gujarat and Wet Bengal); *P. assamensis* (De Niceville, 1882)<sup>[13]</sup> (Himachal Pradesh to Northeast India, Gujarat, Madhya Pradesh, Odisha); *P. conjuncta*

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(Herrich-Schaeffer, 1869) <sup>[14]</sup> (Andaman & Nicobar Islands, Himachal Pradesh to Northeast India, Gujarat to Kerala and Jharkhand); *P. mathias* (Throughout India); *P. sinensis* (Mabille, 1877) <sup>[11]</sup> (Uttarakhand to N.E. India); *P. subochracea* (Maharashtra to Kerala, Sikkim to Northeast India, Jharkhand to West Bengal); *P. thrax* (Huebner, [1821]) <sup>[15]</sup> (Jammu & Kashmir to Delhi & Gujarat).

**Materials and Methods**

**Study area:** The collections and observations were made at Itanagar Wildlife Sanctuary from April 2019 to March, 2022, in district Papum Pare, Arunachal Pradesh (Map 1). The Itanagar wildlife sanctuary covers an area of 140 sq. km. and established in 1978. The study area i.e., Lobby is situated within the Itanagar Wildlife Sanctuary, located at the bank of river Senki. The vegetation of the area is tropical semi evergreen and wet evergreen. Pure patches of bamboos are common in the campus area. The terrain of the campus is hilly slope.

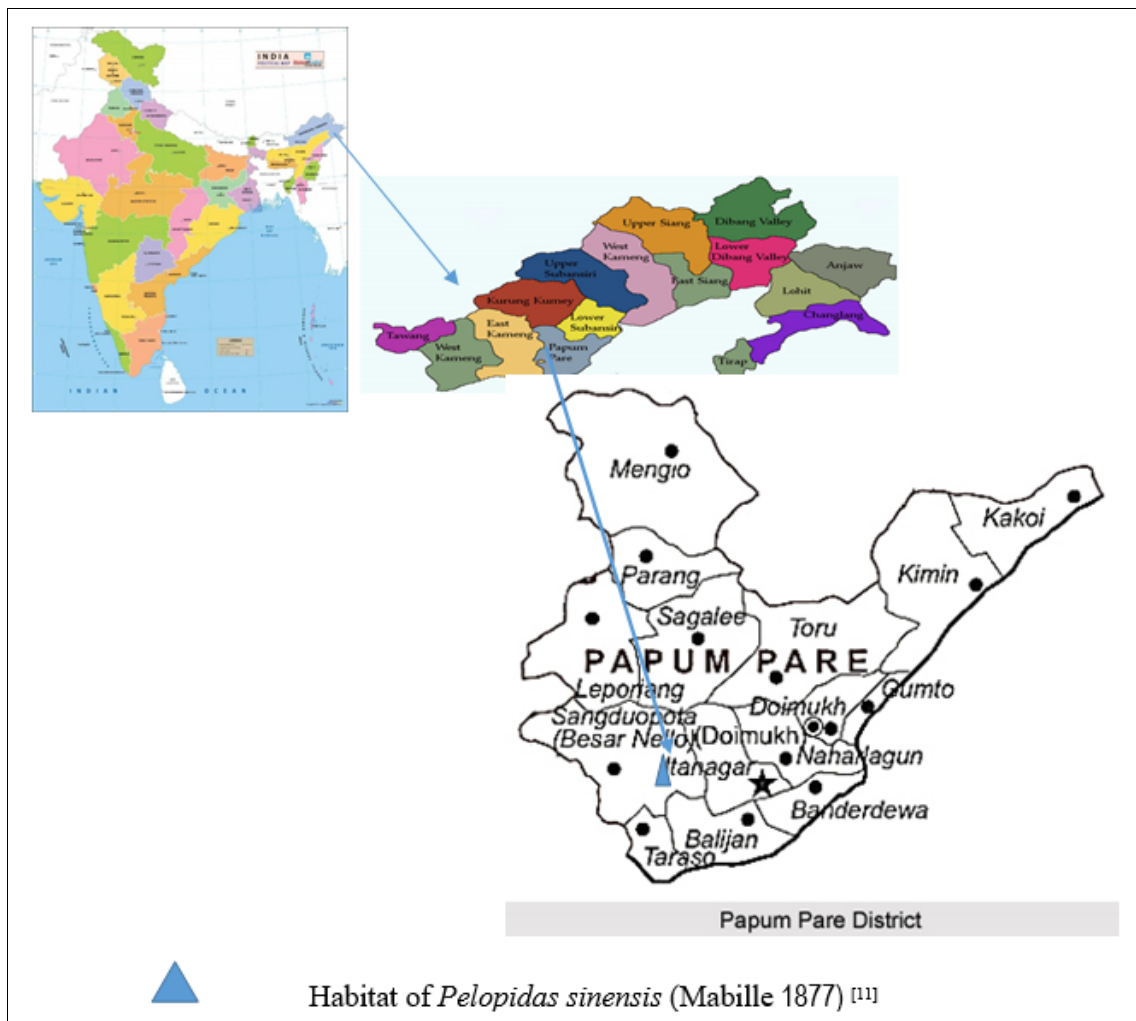
**Methodology**

While doing collections and observations under the mandates of Zoological Survey of India, in and around Itanagar Wildlife Sanctuary, Itanagar, in district Papum Pare, Arunachal Pradesh in the forenoon of 24<sup>th</sup> January, 2020, one specimen of The Large Branded Swift, *Pelopidas sinensis* (Mabille, 1877) <sup>[11]</sup> was collected with the help of butterfly net while basking on a shrub, near the bank of the river Senki. The specimen was killed by gently pressing the thorax and placed

in the insect folder. The specimen was stretched on the stretching board and kept in the drying chamber for three days. Later, the specimen was deposited as the National Zoological Collections (NZC) at Entomology Museum, Arunachal Pradesh Regional Centre, Itanagar. Photograph has been clicked of the species using Digital Camera (DX-80 model of Nikon make). For identification of the species, (Evans, 1932, Wynter-Blyth, 1957, Kehimkar, 2016) <sup>[1, 10, 5]</sup> were followed. Observations were made at Lobby, Itanagar Wildlife Sanctuary with GPS reading on Origon 550 GPS of Garmin make with GPS readings: N 27.07591; E 93.56816; Elevation 297 m.



**Photo 1:** *Pelopidas sinensis* (Mabille, 1877), (Dorsal side)



**Map 1:** Distribution of *Pelopidas sinensis* (Mabille, 1877) <sup>[11]</sup>, in Itanagar WLS

**Material examined:** Arunachal Pradesh: District Papum Pare: Itanagar Wildlife Sanctuary, Lobby, 1 example, 24.i.2020 (Collector N. Sharma).

### Results & Discussion

In a list of 285 species of butterflies from Dibang Valley, Gogoi (2012) <sup>[3]</sup> could not record the species *Pelopidas sinensis* from Arunachal Pradesh. However, Gogoi (2013) <sup>[4]</sup> published a list of one hundred and thirty-seven species of the skipper butterflies from Panbari Forest and its adjoining areas, Kaziranga-Karbi Anglong, Upper Assam and mentioned the species *Pelopidas sinensis* as very common species. However, during the course of present studies, the species was found rare in Arunachal Pradesh. Sondhi & Kunte (2014) <sup>[8]</sup> reported three hundred and twenty-seven species of butterflies from Pakke Tiger reserve and mentioned that the species, *P. sinensis* can be found there in Pakke Tiger Reserve. Sondhi & Kunte (2016) <sup>[9]</sup> while publishing a list of four hundred and twenty-one species of butterflies, recorded two species of the genus *Pelopidas* Walker, 1870 except *Pelopidas sinensis* from Kameng Protected Area Complex, Western Arunachal Pradesh. Singh (2017) <sup>[7]</sup> reported 416 species of butterflies associated with major forest types in Arunachal Pradesh, Eastern Himalaya and reported only one individual of the species *P. sinensis* from Forest Subtype *i.e.*, 2B/1S1 Sub-Himalayan Light Alluvial Semi-Evergreen Forests which includes Lohit, Changlang, Tirap, Dibang Valley, Upper Siang, West Siang and East Siang districts but did not mention the exact locality of the species. Gayen *et al.* (2019) <sup>[2]</sup>, Mazumder *et al.* (2019) <sup>[6]</sup> could not record the species, *P. sinensis* Swinhoe from Arunachal Pradesh.

Recently, while conducting surveys in the Western Arunachal Pradesh under the mandates of the Zoological survey of India, only one individual of the species, *Pelopidas sinensis* was recorded at Lobby, Itanagar Wildlife Sanctuary, Arunachal Pradesh on 24<sup>th</sup> January, 2020. The species is a rare species in Arunachal Pradesh and the sighting of only one individual of the species goes in accordance with the studies made by Singh (*loc. cit.*) from the Eastern Arunachal Pradesh. Evans (1932) <sup>[1]</sup> and Wynter-Blyth (1957) <sup>[10]</sup> has given distribution of this species from South India to West Bengal, Kangra to Shan States, Sri Lanka, China. Wynter-Blyth (*loc. cit.*) mentioned that the range of The Large Branded Swift, *P. sinensis* (Mabille, 1877) <sup>[11]</sup> is limited to the wetter parts of India and the males of the species can be separated by the long narrow Band on the forewing upperside.

Thus, the presence of this species at Lobby, Itanagar Wildlife Sanctuary, Papum Pare district, Arunachal Pradesh appears to be a westward extension of its distributional range, as Singh (*loc. cit.*) did not mention its exact locality from Eastern Arunachal Pradesh.

### Conclusion

The species, *P. sinensis* is a rare species as per present study and also mentioned by Singh (*loc. cit.*) from Eastern Arunachal Pradesh from where he could record only one individual of the species. The reporting of this species from Lobby, Itanagar Wildlife Sanctuary is a second report from Arunachal Pradesh and the species shows its range extension towards western Arunachal Pradesh. The species is well protected as the habitat of the species is in the protected area *i.e.*, Itanagar Wildlife Sanctuary. This species should be included in the Wildlife (Protection) Act.

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