

Short Communication

New locality record of the Lofty bath white butterfly *Pontia callidice* (Hübner, 1800) in Nepal

Sanej Prasad Suwal^{1,2*}  | Krishna Dev Hengaju³  | Naresh Kusi⁴ 

¹Butterfly Watchers Nepal, Bhaktapur, Nepal.

²Nature Conservation and Study Centre, Kathmandu, Nepal.

³IUCN Nepal, Lalitpur, Nepal.

⁴Resources Himalaya Foundation, Sanepa, Lalitpur, Nepal.

* Correspondence: sanej100@gmail.com

Suggested citation: Suwal, S. P., Hengaju, K. D. and Kusi, N. 2021. New locality record of the Lofty bath white butterfly *Pontia callidice* (Hübner, 1800) in Nepal. *Nepalese Journal of Zoology* 5(2):90–93. <https://doi.org/10.3126/njz.v5i2.42037>

Article History:

Received: 14 July 2021

Revised: 14 December 2021

Accepted: 14 December 2021

Publisher's note: The editorial board and the publisher of the NJZ remain neutral to the opinions expressed and are not responsible for the accuracy of the results and maps presented by the authors.



Copyright: © 2021 by the authors
Licensee: Central Department of Zoology, Tribhuvan University, Kathmandu, Nepal.

Abstract

Lofty bath white *Pontia callidice* is a little-known butterfly of Nepal, reported only from Darchula district, Far Western Nepal. We recorded the new distribution eastward of this species 166 km N-E far from its previous range in Talung and Gyaukhola Valley of Upper Humla in July 2017 at elevations between 4400 to 4829 m above sea level. This is also the highest elevation record of this species.

Keywords: Distribution, Pieridae, *Pontia callidice*, Trans-Himalaya, Upper Humla

1 | Introduction

The genus *Pontia* belongs to family Pieridae which occurs in Palearctic region (Sidhu et al. 2012) in flower-rich grasslands near or above timberline and plain tundra along the meadows of a river valley, meadow-steppe forbs on the

home to three species including Lofty bath white *Pontia callidice*, Sherpa bath white *P. sherpae* and Bath white *P. daplidice* (Smith 1994). *P. daplidice* was reported from west to central Nepal; *P. sherpae* is endemic to Nepal and reported only from central Nepal (Mustang and Manang) and *P. callidice* was known from far-western Nepal. Plants from the families like Brassicaceae (*Erysimum* sp., *Sisymbrium* sp., *Thiaspi* sp.), and Resedaceae (*Reseda* sp.) are some of its host species (Nekrutenko 1990). The species is globally least concern (Sway et al. 2014) while it is not listed under Nepal Red Data Book 1995.

P. callidice was previously reported from Tata, Darchula district (30.139162° N, 80.900740° E, 4490 m) in 1998 (Morishita 1998) (Table 1). There are no further records of this species in Nepal. The present study is the new distribution record of this species.

peaks and slopes of small and medium-sized mountains (Sway et al. 2014). There are 11 species of *Pontia* recorded globally (Funet 1990). They are distributed in the Alps and the Pyrenees of Europe, Lebanon, Turkey, the northern Iran, central Asia from the Himalayas to Mongolia and Siberia, including the lowlands and Rocky Mountains of Alaska to California (Hemming 1937). Nepal is

Table 1. Observation details of *Pontia callidice*

S.N.	Observation location	Observation date	Geographic location details		Altitude (m)
			Northing	Easting	
1	Tata, Darchula	July 2, 1995	30.139162°	80.900740°	4490
2	GyauKhola valley, Humla	July 27, 2017	30.354576°	81.566277°	4829
3	Talung valley, Humla	July 29, 2017	30.203489°	81.700368°	4400

2 | Materials and methods

2.1 | Study area

The study area was Upper Humla (30.19°–30.42°N, 81.48°–81.42°E). It is located in the north-western Transhimalayan belt of Nepal bordered with the Tibet, China. Landscapes of the area comprised valleys steep mountain cliffs, rolling grasslands (Kusi et al. 2019). Vegetation was dominated by dry alpine steppe rich in sedges and graminoids such as *Stipa* spp., *Carex* spp. and *Kobresia* spp. while grasses and shrubs such as *Caragana brevifolia* and *Lonicera spinosa* dominate drier sites and rugged slopes (Miehe et al. 2016).

2.2 | Methods

We obtained observational records of this species in July 2017. We photographed the butterflies using NikonD500 DSLR and AF-S DX NIKKOR 55-200mm f/4-5.6G ED VR II lens and noted the geographical positions in a Global Positioning System (GPS) device (ETREX10).

3 | Results

We observed *P. callidice* in Talung Valley (30.203489° N, 81.700368° E, 4400 m) and Gyaukhola Valley (30.354576° N, 81.566277° E, 4829 m) of Humla district, Karnali Province, on 27 July at 1:30 hrs and 29 July 2017 at 1:15 hrs respectively (Table 1). The butterfly was basking along with *Aglaia cashmirensis* and *Paralasa nepalica* near the wide river valleys of Talungkhola and Gyaukhola. The butterfly (Fig. 1) was identified with its upper side of wings white; forewing with black at extreme base; discocellulars of forewing marked with a quadrate black spot; a discal curved series of inwardly dentate spots; underside hindwing veins not prominently yellow (Evans

1927; Mani 1986; Bingham 1907; Sidhu et al. 2012). These features confirmed it as *P. callidice*. The identification was also confirmed by butterfly expert from Nepal, Prof. Dr. Bhaiya Khanal.

4 | Discussion

P. callidice was reported from Nepal by Morishita (1998). There was no further information on this species. We obtained additional distribution records of this species after 22 years of its first record. The new locality in Upper Humla lies 166 km north-east from its observation site in Darchula. This represents an eastward extension of



Figure 1. Lofty bath white from Talung valley, Upper Humla, Nepal



Figure 2. Habitat of lofty bath white at Talung valley, upper Humla, Nepal

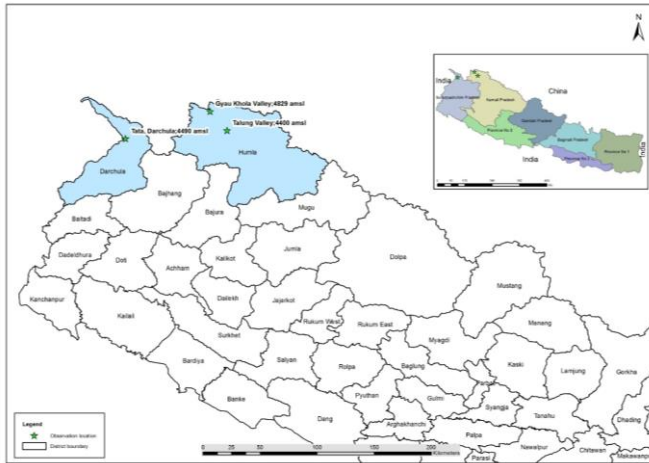


Figure 3. Location map of observation of lofty bath white

the species (Fig. 3). We observed and photographed the species as high as 4829 masl in Upper Humla which was nearly 340 m high from its previous elevation record.

P. callidice is distributed in the higher mountains of Europe, in Asia from the Altai to the Himalayas as well as in China (Bingham 1907; Tuzov 1997). We observed the species above tree line where the landscapes comprised of open alpine grasslands with lots of rocks and screes (Fig. 2). Similar habitat is also recommended by NCBS (2021), Sidhu et al. (2012) and Wyatt (1961). Our team has photographed the species during the month of July. Similar records were observed by NCBS (2021), Dekastle (2015), Khramov (2021) and Rowlings (2020).

5 | Conclusions

Our observation of *P. callidice* from Upper Humla extends the distributional range of the species eastwards in Nepal. It also provides the new highest elevation record for the species across its global distributional range. A lack of any information on the species for almost 22 years indicates an extremely low research interest. We recommend more scientific researches on the species in Nepal.

Acknowledgements

The Rufford Foundation, UK has provided financial support towards the wild yak research

during which this record was obtained. We would like to thank the Department of National Parks and Wildlife Conservation, and Department of Forests and Soil Conservation, Kathmandu and Division Forest Office, Humla for granting research permission. We thank Prof. Bhaiya Khanal, Ph.D. and Mr. Mahendra Singh Limbu for the species identification confirmation and Mr. Suman Prajapati for the preparation of the map layout. Our sincere gratitude goes to the Rufford Foundation, UK for providing financial support towards the wild yak research during which this record was obtained. Our deepest respect goes to Mr. Pema Rikjin Lama, Funjo Tamang and Yangkep Lama for supporting the team in the field.

Authors' contributions

Suwal, S. P. Conceptualized, investigate, and collected data, analyzed, and wrote the manuscript. Hengaju, K. D. Investigated and collected data, reviewed and edited of the manuscript. Kusi, N. Reviewed and edited of the manuscript. All authors contributed critically to the drafts and gave final approval for its publication.

Conflicts of interest

Authors declare no conflict of interest.

ORCID

Sanej Prasad Suwal: <https://orcid.org/0000-0002-5370-2087>

Krishna Dev Hengaju: <https://orcid.org/0000-0002-7994-085X>

Naresh Kusi: <https://orcid.org/0000-0002-3485-8959>

References

- Bingham, C. T. 1907. The fauna of British India, including Ceylon and Burma. Vol. II. Taylor and Francis, Red Lion Court, Fleet Street, London.
- Dekastle, A. 2015. Butterflies of the Suusamyry Valley, Kyrgyzstan (Lepidoptera, Diurna). Distance Master of Science in Entomology Project, University of Nebraska-Lincoln, USA.

- Evans, W. H. 1927. The identification of Indian butterflies. Mumbai, India: The Bombay Natural History Society. The Diocesan Press, Madras, p 42.
- FUNET. 1990. *Pontia*. <https://www.nic.funet.fi/pub/sci/bio/-life/insecta/lepidoptera/index.html>. Accessed on June 2020.
- Hemming, F. 1937. A bibliographical and systematic account of the entomological works of Jacob Hübner and of the supplements by Carl Geyer, Fottfried Franz von Frölich and Gottlieb August Wilhelm Herrich-Schäffer. Vol.I. London (Royal Entomological Society of London), p 605.
- Khramov, P. 2021. *Pontia crafty* (Humber, 1800). <http://insecta.pro/>
- Kusi N., Sillero-Zubiri C., Macdonald D. W., Johnson P. J. and Werhahn G. 2019. Perspectives of traditional Himalayan communities on fostering coexistence with Himalayan wolf and snow leopard. Conservation Science and Practice. <https://doi.org/10.1111/csp2.165>.
- Mani, M. S. 1986. Butterflies of the Himalaya. Volume 36 of Series entomologica. Oxford & IBH Publishing Company, New Delhi, Bombay, Calcutta. ISBN: 8120401263, 9788120401266, p 49.
- Miehe, G., Pendry, C. and Chaudhary, R. (Eds.). 2016. Nepal: An introduction to the natural history, ecology and human environment of the Himalayas. Edinburgh, UK: Royal Botanic Garden Edinburgh.
- Morishita, K., and Inomata, T. 1998. New or little-known butterflies from Nepal. Transactions of the Lepidopterological Society of Japan **49**(1):1–8.
- NCBS. 2021. *Pontia callidice* (Hübner, 1800) – Lofty Bath White. Kunte, K., S. Sondhi, and P. Roy (Chief Editors). *Butterflies of India*, v. 3.15. Indian Foundation for Butterflies. <http://www.ifoundbutterflies.org/sp/-3042/Pontia-callidice>
- Nekrutenko Y. P. 1990. Butterflies of the Caucasus: keys to their identification (Papilionidae, Pieridae, Satyridae, Danaidae). Naukova Dumka, Kiev, p 215.
- Rowling, M. 2021. *Pontia callidice*. <http://www.euro-butterflies.com/sp/callidice.php>
- Sidhu, A. K., Chandra, K. and Palot, J. 2012. Observations on the status and diversity of butterflies in the fragile ecosystem of Ladakh (J & K). Records of the Zoological Survey of India **112**(3):101–112.
- Smith, C. 1994. Butterflies of Nepal. Craftsman Press, Bangkok, p 65.
- Sway, V. C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., et al. 2014. *Pontia callidice*. The IUCN Red List of Threatened Species: e.T174365A53720074.
- Tuzov, V. K. 1997. Guide to the Butterflies of Russia and adjacent territories: Hesperidae, Papilionidae, Pieridae, Satyridae (Reference work, Vol 1). PENSOFT, Sofia-Moscow. <http://rusinsects.com/p-calli.htm>.
- Wyatt, C. W. 1961. Additions to the Rhopalocera of Afghanistan with descriptions of new species and subspecies. Journal of the Lepidopterists' Society **15**(1):1–18.