

First Record of *Vanessa atalanta* (Linnaeus, 1758) from India: An Extension of its Known Distribution in Eurasia (Lepidoptera: Papilionoidea, Nymphalidae)

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Abstract

This study reports the first confirmed record of *Vanessa atalanta* (Linnaeus, 1758) in India, marking a significant range extension of this species into the Eurasian region. A single specimen was documented during an opportunistic field survey conducted in April 2025 in the Dharamshala region of Himachal Pradesh. This observation expands the known geographical distribution of *V. atalanta* and provides preliminary insights into its local habitat preferences and potential larval host plants in the Western Himalayan ecosystem. These findings contribute to the broader understanding of the species' ecological adaptability and biogeographical dynamics in South Asia.

Keywords: Lepidoptera, Papilionoidea, Nymphalidae, migration, *Vanessa*, Western Himalayas, Eurasia.

Primer registro de *Vanessa atalanta* (Linnaeus, 1758) de la India: una extensión de su distribución conocida en Eurasia (Lepidoptera: Papilionoidea, Nymphalidae)

Resumen

Este estudio presenta el primer registro confirmado de *Vanessa atalanta* (Linnaeus, 1758) en la India, lo que supone una importante ampliación del área de distribución de esta especie en la región euroasiática. Se documentó un único espécimen durante un estudio de campo oportunista realizado en abril de 2025 en la región de Dharamshala, en Himachal Pradesh. Esta observación amplía la distribución geográfica conocida de *V. atalanta* y proporciona información preliminar sobre sus preferencias de hábitat local y las posibles plantas nutricias de las larvas en el ecosistema del Himalaya occidental. Estos hallazgos contribuyen a una comprensión más amplia de la adaptabilidad ecológica y la dinámica biogeográfica de la especie en el sur de Asia.

Palabras clave: Lepidoptera, Papilionoidea, Nymphalidae, migración, *Vanessa*, Himalaya occidental, Eurasia.

Introduction

The European Red Admiral *Vanessa atalanta* (Linnaeus, 1758) is a common and widely spread species and well-known for its active migration (Tuzov et al. 2000; Mikkola, 2003; Bozano & Floriani, 2012). The species currently comprises two distinct subspecies: the nominate form, which occurs across the Old World, and *Vanessa atalanta rubria* Fruhstorfer, 1909, which is distributed throughout North America, ranging from Canada to Mexico (Bozano & Floriani, 2012). Records of *Vanessa atalanta* in Central Asia remain sparse and are likely the result of incidental or migratory occurrences rather than established populations. The species has been observed as far east as the Altai Mountains and the Zaisan Valley in Kazakhstan (Tshikolovets et

al. 2016). In the Altai Territory, the species has started to appear annually, but only in autumn (Chumakov et al. 2024). To date, *Vanessa atalanta* has not been recorded in Afghanistan (Tshikolovets et al. 2018) but is highly expected. In contrast, its presence in Iran is well established, with confirmed occurrences ranging from the southwestern regions, including the Zagros Mountains, to the northern provinces such as the Alborz range and areas along the southern coast of the Caspian Sea (Nazari, 2003; Naderi, 2019). Notably, there are currently no confirmed reports of its presence in regions such as China and Mongolia. *Vanessa atalanta* was first reported in South Asia from a specimen collected by Colonel Stockley in 1929 in Shinghar, located in the Zhob district of Balochistan province, at an elevation of approximately 2400 meters, in a forest dominated by *Pinus gerardiana* (Evans, 1932a; Roberts, 2001). The species was recently rediscovered in Pakistan, with two confirmed records from the Lower Chitral District in Khyber Pakhtunkhwa Province (Awan et al. 2022). After the recent rediscovery, the species has also been reported from various locations in Pakistan, including Upper Chitral, Swat, Taxila, Khyber, Noshehra and Rawalpindi (Awan, pers. comm., 2025). To date, there have been no verified records of its presence in India; therefore, the current study represents the first confirmed documentation of the species in this region.

Materials and Methods

On 22 April 2025, during an opportunistic field survey in the Thatharna region near Dharamshala, Himachal Pradesh, a single specimen of *Vanessa atalanta* (Figure 3a) was observed in association with multiple individuals of *Vanessa cardui* (Linnaeus, 1758) and *Vanessa indica* (Herbst, 1794). Thatharna is a famous trekking place around Dharamshala town of the district of Kangra, situated very close to the Dhauladhar mountains of the Western Himalayan range. The hilltop is a meadow with *Urtica dioica* L. (stinging nettle) (Figure 4), the host plants of *V. atalanta* (Newland et al. 2015), growing in abundance along with *Cirsium wallichii* DC. (Figure 5), a possible larval host of the species. The specimen was recorded at coordinates 32°13'39" N, 76°22'46" E, at an elevation of 2,500 meters (Figure 1), at approximately 14:45 local time. Notably, the individual was observed interacting with its larval host plant, stinging nettle, on two occasions and exhibited territorial behaviour by attempting to ward off *V. indica*. Photographic documentation included a few images of the upper wing surface and one additional distant image capturing the underside. *V. atalanta* closely resembles *V. indica* (Figure 3b) but differs in that the upper forewing of *atalanta* is characterised by a darker, crimson-red discal band that is compact and narrow, in contrast to the broader, paler scarlet-red band seen in *indica*, which typically has irregular margins. Unlike *V. indica*, the discal band in *V. atalanta* is not intersected by three prominent black spots. Additionally, the costal sub-apical spot on the upper forewing is distinctly white in *atalanta*, whereas it appears reddish in *indica*. Another distinguishing feature is the consistent presence of a spot in wing space 3 in *V. atalanta*, which is invariably absent in *V. indica*. Moreover, sub-apical spots on the upper forewing in *atalanta* are larger than those of *indica* (Evans, 1932b; Roberts, 2001).

Results and Discussion

The rediscovery of *Vanessa atalanta* in Pakistan after a 93-year interval, followed by subsequent records from the same region, suggested a possible range expansion of the species within the Indian subcontinent (Awan et al. 2022). A comprehensive review of existing literature on Indian Rhopalocera reveals no prior evidence of *V. atalanta* occurring in India (Evans, 1932b; Talbot, 1947; Tshikolovets, 2005; Varshney & Smetacek, 2015; Kehimkar, 2016; Sondhi & Kunte, 2018; Van Gasse, 2021). Furthermore, the checklist of butterflies of Jammu and Kashmir (Sheikh et al. 2021), the book Butterflies of Pirpanjal Range of Kashmir Himalaya (Parey & Sheikh, 2021) do not report this species in Jammu and Kashmir. The recently published annotated checklist of Rhopalocera of Himachal Pradesh (Garlani, 2024) makes no mention of this species. The present observation from Dharamshala, Himachal Pradesh, therefore, constitutes the first confirmed record of *V. atalanta* in India. This finding also adds a new species to the documented Papilionidea fauna of Himachal Pradesh, increasing the total recorded species count for the state to 440. This record indicates that *V. atalanta* may be more widely distributed across India than previously recognised and highlights the need for further surveys, particularly in the Western Himalayan region. The probable range of this species in India stretches along the Nepal border, and it will probably be found in Uttarakhand in the future, if explored.

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Conflict of Interest

The author declares that he has no financial interest or personal relationship that could influence the work presented in this article.

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Figure 1. Location Map of the study site. The Blue dot represents the first record of *Vanessa atalanta* from India, confirming the extension of its distribution in the Indian subcontinent. [Developed with QGIS Bratislava].

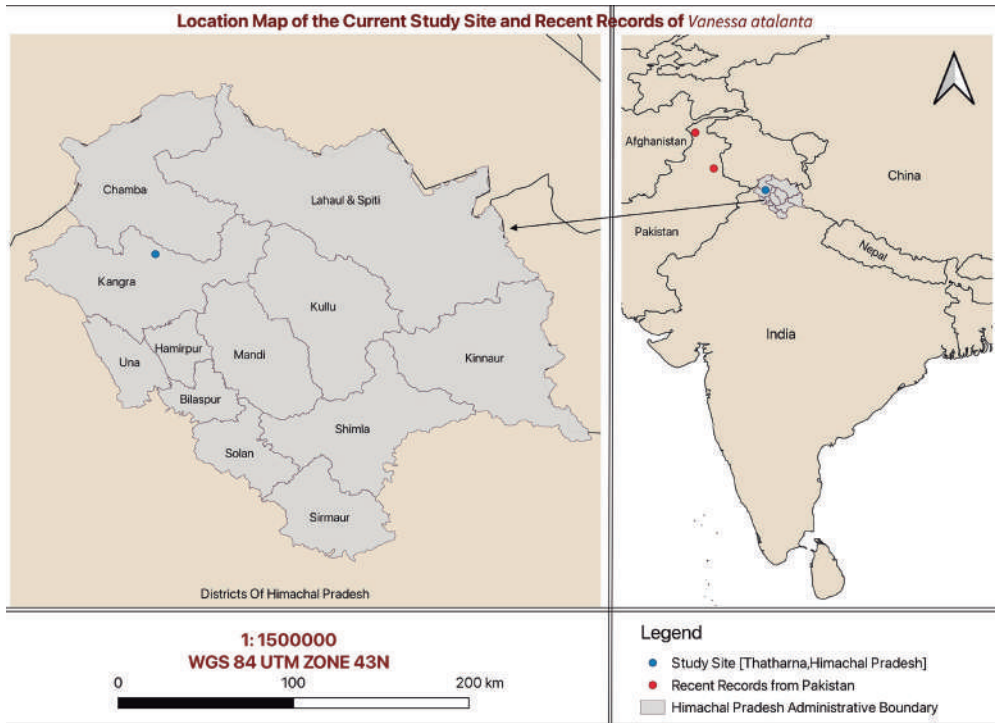
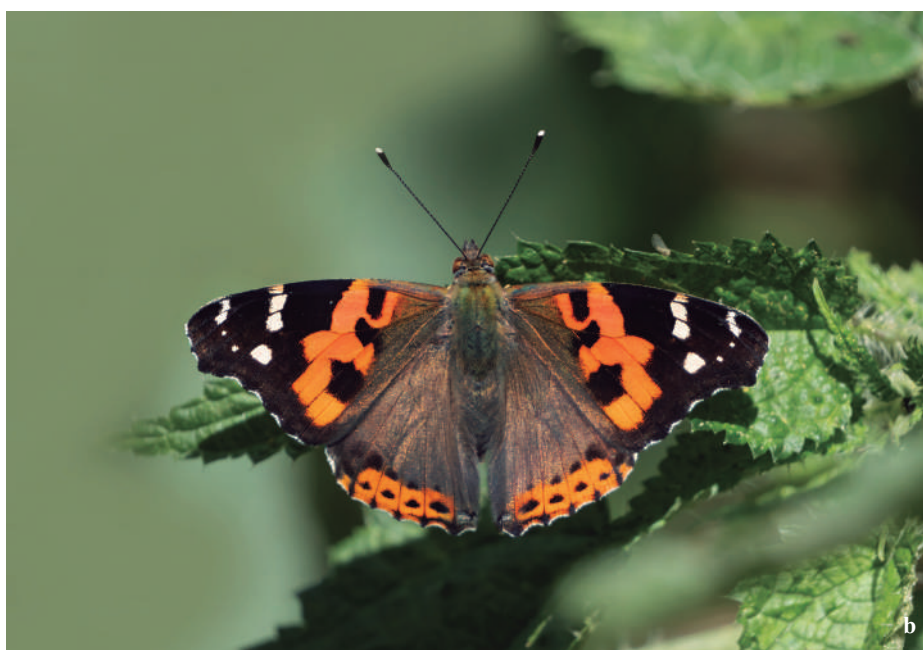


Figure 2. Habitat of *Vanessa atalanta* at the study site.



Figure 3. (a) *Vanessa atalanta* (Linnaeus, 1758). (b) *Vanessa indica* (Herbst, 1794).



Figures 4-5. 4. *Urtica dioica* L., recorded at the study site; a pre-reported larval host plant of *Vanessa atalanta*. 5. *Cirsium wallichii* DC., host plant of *Vanessa indica* and a possible larval host of *Vanessa atalanta*.

