Scientific Note

First record of Blue Admiral *Kaniska canace* (Linnaeus, 1763) (Lepidoptera: Nymphalidae) from the state of Rajasthan, India

Primer registro de *Kaniska canace* (Linnaeus, 1763) (Lepidoptera: Nymphalidae) del estado de Rajastán, India

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Abstract. The Blue Admiral *Kaniska canace* (Linnaeus, 1763) is recorded for the first time from Rajasthan and new elevation record from Western India. This observation also states about the feeding alteration of this forest species in human disturbed landscapes.

Key words: Butterfly; feeding alteration; disturbed areas; Western India.

Resumen. Se registra por primera vez a *Kaniska canace* (Linnaeus, 1763) en Rajastán con un nuevo reporte de elevación en el oeste de la India. Esta observación también indica la alteración de la alimentación de esta especie forestal en paisajes perturbados por humanos.

Palabras clave: Alteración de la alimentación; áreas perturbadas; India occidental; mariposa.

Butterflies play a vital role in the environment as a pollinator and also act as bio-indicators for the changes in environmental conditions (Kunte 2000). The butterfly fauna of India has been extensively studied in various geographic regions and protected areas. The western region of India (especially the state of Rajasthan) has a semi-arid landscape, which has been extensively studied by MacPherson (1927), Pruthi and Bhatia (1952), Mathur and Champakavalli (1961), Shull (1963, 1964), Kushwaha *et al*. (1963), Gupta and Thakur (1986) and Varshney and Gupta (1996). In the 21st century, the butterfly fauna of Rajasthan has been studied by Kazmi *et al.* (2003), Sharma (2014, 2015), Kulshrestha and Jain (2016), Singh *et al.* (2017) and Meena (2020).

The Blue Admiral

The monotypic genus *Kaniska* Moore, 1899 belongs to the family Nymphalidae, subfamily Nymphalinae and tribe Nymphalini (Wahlberg *et al.* 2009). The family Nymphalidae consists of approximately 7,200 species occurring in all habitats throughout the world except Antarctica (Freitas and Brown 2004). *Kaniska canace* (Linnaeus, 1763) is the only member of this genus represented by two subspecies from India, *K. c. canace* which is found in the Himalayan region and *K. c. viridis* Evans, 1924 which is restricted to the Western Ghats. Both subspecies have non-iridescent blue band across the wings

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(Kehimkar 2008), but the Himalayan subspecies (*K. c. canace*) differ from the Western Ghats sub species (*K. c. viridis*) by larger wing expanse and wider bluish postdiscal band (Editor-Director 2003). The northern subspecies *K. c. canace* is distributed throughout the Himalayas region to the hills of North East India (Assam, Arunachal Pradesh, Meghalaya, Nagaland and Manipur) (Bingham 1907; Varshney and Smetacek 2015). In the Himalayas, *K. c. canace* occupies the elevation from 500 m to 3,000 m (Sondhi and Kunte 2018). Additionally, this species was recorded from the plains of Punjab (Singh *et al.* 2016). As the state of Rajasthan is comparatively nearer to the distribution range of *K. c. canace*, then *K. c. viridis*, it is assumed that *K. c. canace* is likely to be found in the state.

This opportunistic observation of *K. c. canace* from Thanagazi (27.399468 N, 76.31581 E; 416 masl) (Fig. 1), District-Alwar (in the vicinity of Sariska Tiger Reserve), Rajasthan was made on February 24, 2018 at around 1125 h. Upper wing colour of the sighted individual was indigo blue with broad silvery blue discal band on both wings (Fig. 2). On this band there were small black spots between the veins. The underwing was cryptically mottled dark brown and black in colour (Fig. 3). The species was observed for approximately 12 minutes in an open area (near a public dustbin) feeding on fecal matter of a domestic dog. It was observed that the species would fly around repeatedly and perch to feed on the fecal matter. Morphological characteristics were not recorded as the species was not captured.

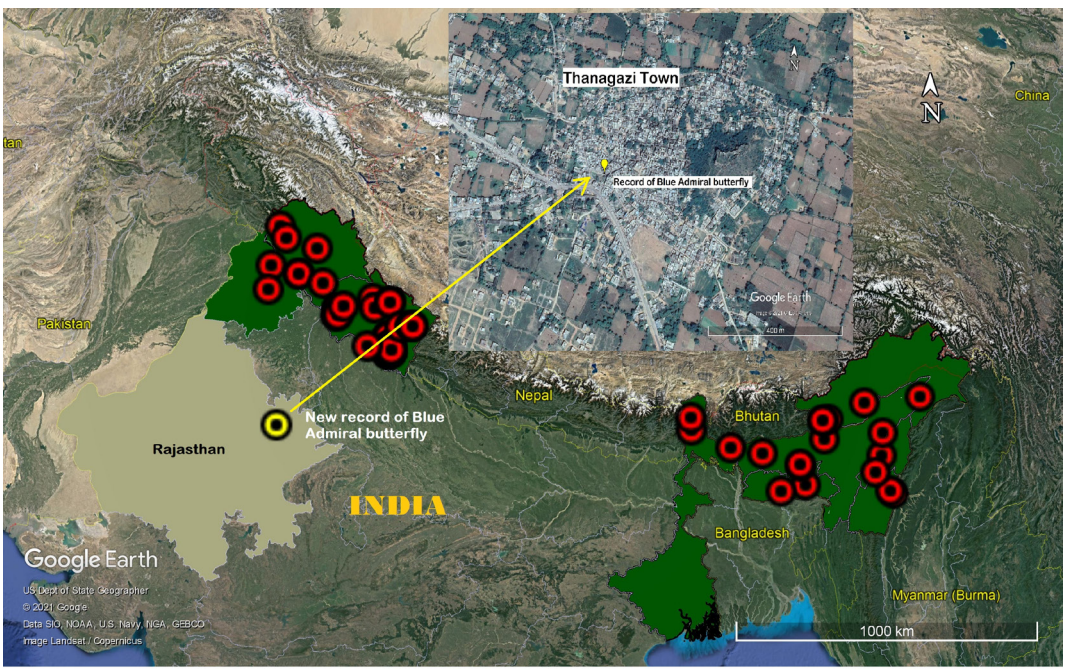

Figure 1. Location where *Kaniska canace* was observed in Rajasthan (Thanagazi Town). The red dots are the locations of *K. c. canace* derived from various online sources (Kunte *et al.* 2021; iNaturalist 2021) and published article (Singh *et al.* 2016); the yellow dot indicates the first record of *K. c. canace* from the state of Rajasthan, India). / Lugar de observación *Kaniska canace* en Rajasthan (ciudad de Thanagazi). Los puntos rojos son las ubicaciones de *K. c. canace* derivado de varias fuentes en línea (Kunte *et al.* 2021; iNaturalist 2021) y artículo publicado (Singh *et al.* 2016); el punto amarillo indica el primer registro de *K. c. canace* del estado de Rajastán, India.

Figure 2. *Kaniska canace canace* Linnaeus (upperwing view) on a domestic dog fecal matter at Thanagazi Town (Rajasthan). / *Kaniska canace canace* Linnaeus (vista superior) sobre materia fecal de un perro doméstico en la ciudad de Thanagazi (Rajastán, India).

Figure 3. *Kaniska canace canace* Linnaeus (underwing view) on a domestic dog fecal matter at Thanagazi Town (Rajasthan). / *Kaniska canace canace* Linnaeus (vista inferior) sobre material fecal de un perro doméstico en la ciudad de Thanagazi (Rajastán, India).

Significance of the observation

Butterflies like *K. c. canace* are normally restricted to the high elevation hill ranges (the Himalayas and the Western Ghats), and has rarely been recorded from plains and in high human disturbed area. The nearest recorded location of this species is from the Dehradun valley (Singh and Sondhi 2016) which is roughly 365 kms away from the current observation.

This observation thus confirms the presence of *K. c. canace* in the state of Rajasthan by successfully presentation the first photographic evidence from the state along with a new elevation record from Western India. This observation also records a feeding alteration of the species, that apart from over-rip fruits and tree sap (Kehimkar 2008), they also feed on fecal matters in human disturbed landscapes.

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Literature Cited

Bingham, L.C. (1907) The fauna of British India including Ceylon and Burma. 501 pp.

Editor-Director (2003) State Fauna Series 9, Fauna of Sikkim (Part-4) Zoological Survey of India, Kolkata. 512 pp.

Freitas, A.V.L. and Brown Jr, K.S. (2004) Phylogeny of the Nymphalidae (Lepidoptera). *Systematic Biology*, *53*(3): 363-383.

Gupta, I.J. and Thakur, R.K. (1986) On a collection of Lepidoptera from Rajasthan. *Records of the Zoological Survey of India*, *83*(3-4): 109-120.

iNaturalist (2021) https://www.inaturalist.org/taxa/125589-Kaniska-canace. (Accessed on February 2, 2021)

Kazmi, S.I., Arora, G.S., Bhattacharyya, A.K. and Faisal, M. (2003) On a collection of butterflies (Lepidoptera) at the desert regional station, zoological survey of India, Jodhpur. *Records of the Zoological Survey of India*, *101*(1-2): 161-177.

Kehimkar, I.D. (2008) Book of Indian butterflies. Oxford University Press. 497 pp.

Kulshrestha, R. and Jain, N. (2016) Assessment of diversity of butterfly species at Jhalawar (Rajasthan), India. *Flora and Fauna*, *22*: 105-107.

Kunte, K. (2000) India, a Lifescape: butterflies of peninsular India. Universities Press. 254 pp.

Kunte, K., Saji, K. and Manoj, P. (2021) *Kaniska canace* (Linnaeus, 1763) – Blue Admiral. Kunte, K., Sondhi, S. and Roy P. (Chief Editors). Butterflies of India, v. 3.06. Indian Foundation for Butterflies. http://www.ifoundbutterflies.org/sp/595/Kaniska-canace

Kushwaha, K.S., Sharma, J.C. and Sharma, L.S. (1963) Common Lepidoptera fauna of Udaipur, Rajasthan. Part I, Butterflies. *Indian Journal of Entomology*, *25*(2): 141-146.

MacPherson, A.D. (1927) Notes on a collection of butterflies made in Jodhpur and Mount Abu during the years 1924, 1925 and 1926 *Journal of Bombay Natural History Society*, *32*(1): 222-230.

Mathur, N.S. and Champakavalli, K.R. (1961) Butterflies of Pilani. *Proceeding of Rajasthan Academy of Science*, *6*: 20-23.

Meena, A.R. (2020) Butterfly diversity in urban area of Udaipur city, Rajasthan, India. *BIOINFOLET-A Quarterly Journal of Life Sciences*, *17*(3a): 379-381.

Pruthi, H.S. and Bhatia, D.R. (1952) Peculiarities of the insect fauna of the Rajasthan desert and the share of insects in the maintenance of desert. *Bulletin of the National Institute of Sciences of India*, *1*: 241-245.

Sharma, G. (2014) Studies on Odonata and Lepidoptera fauna of foothills of Aravalli Range, Rajasthan. *Records of the Zoological Survey of India*, *353*: 1-104.

Sharma, R. (2015) Faunal Diversity of Ajmer Aravalis Lepidoptera Butterflies. *IOSR Journal of Pharmacy and Biological Science*, *10*(5): 74-77.

Shull, E.M. (1963) The Butterflies of South Gujarat. *Journal of Bombay Natural History Society*, *60*(3): 585-599.

Shull, E.M. (1964) Supplementary note on the Butterflies of South Gujarat. *Journal of Bombay Natural History Society*, *6*(2): 464-466.

Singh, A.P. and Sondhi, S. (2016) Butterflies of Garhwal, Uttarakhand, Western Himalaya, India. *Journal of Threatened Taxa, 8*(4): 866-869.

Singh, V., Kirti, J.S. and Mehra, D. (2016) Butterflies of district Hoshiarpur, Punjab, India. *Indian Forester, 142*(10): 999-1004.

Singh, D., Singh, H. and Mishra, P. (2017) Diversity of butterflies and snakes in and around campus C.V.A.S. Navania, Udaipur, Rajasthan–India. *International Journal of Science, Environment and Technology*, *6*(2): 1112-1116.

Sondhi, S. and Kunte, K. (2018) Butterflies of Uttarakhand. Bishen Singh Mahendra Pal Singh (Dehradun), Titli Trust (Dehradun), National Centre for Biological Sciences (Bengaluru), and Indian Foundation for Butterflies (Bengaluru). x+310 pp.

Varshney, R.K. and Gupta, I.J. (1996) Lepidopteran fauna of the Thar Desert. *Faunal Diversity in the Thar Desert: Gaps in Research*, 253-270.

Varshney, R.K. and Smetacek, P. (2015) A Synoptic Catalogue of the Butterflies of India. Butterfly Research Centre, Bhimtal and Indinov Publishing, New Delhi, ii + 261 pp.

Wahlberg, N., Weingartner, E., Warren, A.D. and Nylin, S. (2009) Timing major conflict between mitochondrial and nuclear genes in species relationships of *Polygonia* butterflies (Nymphalidae: Nymphalini). *BMC Evolutionary Biology*, *9*(1): 1-16.