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Cover: Digital illustration of *Impatiens chamchumroonii* in Krita by Dupati Poojitha.



## Record of *Euploea mulciber* (Cramer, [1777]) (Lepidoptera: Nymphalidae) in Delhi, India: evidence of range extension in a restored urban ecosystem

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Butterflies (Lepidoptera) are important indicators of ecosystem health, as their distribution reflects environmental conditions and habitat quality (Pollard & Yates 1994). Range extensions in butterfly species often signal ecological changes, such as habitat restoration or climate shifts, providing insights into biodiversity dynamics. The Striped Blue Crow *Euploea mulciber*, a nymphalid butterfly (subfamily Danainae), has an established range that includes Jammu & Kashmir to northeastern India and the Andaman Islands (Varshney & Smetacek 2015), as well as Punjab and northwestern India.

Delhi's urban landscape supports a diverse butterfly fauna, with past surveys recording 115 species and more recent studies documenting 91 species in areas such as Jawaharlal Nehru University campus (Prakash et al. 2022). Despite extensive documentation (e.g., Jandu 1941, 1942, 1943; Donahue 1966, 1967; Ashton 1973; Anonymous 1991; Ghosh & Varshney 1997; Gupta 1997; Mondal et al. 1997; Kunte 2000; Larsen 2002; Zaidi 2010), *E. mulciber* had not been reported in Delhi. The closest previous records were from Bijnor and the foothills of the western Himalaya, approximately 200–300 km away (iNaturalist 2026). This study presents new evidence of *E. mulciber* in Delhi, suggesting a possible

range extension facilitated by urban green spaces (Paul & Sultana 2020).

The DDA's Aravalli Biodiversity Park (ABP) in Vasant Vihar, southern Delhi (28.557° N, 77.147° E), spans 692 ac along the Aravalli Hill range. Formerly a quartzite mining site, it has undergone ecological restoration since 2004. The Park now supports a diverse array of flora and fauna, including a butterfly conservatory established in 2005. This area provides key resources for Lepidoptera, with over 300 larval host plants (*Ficus racemosa*, *Nerium oleander*), nectar sources (*Ageratum*, *Vitex*, *Tagetes*, etc.) and microhabitats such as space for mud puddling, litter, rotten fruits, with water and shade (Paul & Sultana 2021a).

The observation of *E. mulciber* was an opportunistic sighting within the ABP's Butterfly Conservatory. It is an open conservatory, and no butterfly species has ever been deliberately introduced here. The identification of the butterfly relied on direct visual observation, confirmed by photographs capturing diagnostic features, adhering to the ethical standards of ABP, and was authenticated against standard references, including Smetacek (2000). *Euploea mulciber* is distinguished from similar species like the Common Crow *Euploea core*, present in the area, by its deep iridescent blue upperside (absent in *E.*

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Image 1. Striped Blue Crow *Euploea mulciber* (male) in DDA's Aravalli Biodiversity Park, Delhi, India.



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Image 2. Striped Blue Crow *Euploea mulciber* (male) feeding on *Chromolaena odorata* in DDA's Aravalli Biodiversity Park, Delhi, India.

*core*'s duller brown), specific white spot/streak patterns, and more elongated forewings; *E. core* generally has a rounder wing shape and lacks the vibrant blue and prominent hindwing streaks of *E. mulciber*. This species also derives chemical defences from larval feeding on toxic plants such as *Ficus* sp. and Apocynaceae (Kehimkar 2008). Three male *E. mulciber* were sighted in November

2013, 2018, and 2022 under mild winter conditions (temperature 23–28°C, 55–60% relative humidity), which are conducive to butterfly activity at the same location and habitat. Adults were observed basking and nectaring on *Chromolaena odorata*. Photographs (Images 1 & 2) verified key features, including a 60–70 mm wingspan, dark brown wings with iridescent blue

stripes, and the slow, gliding flight typical of Danainae (Kehimkar 2008).

The occurrence of *E. mulciber* in ABP as documented on iNaturalist (2026), confirm the species' persistence in that area. The presence of host plants like *Ficus* sp. and *Nerium oleander* within the conservatory likely supports the occurrence of this species.

These records represent a notable range extension into Delhi from its known forested habitats. The repeated November sightings suggest seasonal movement, possibly linked to post-monsoon conditions (after rainfall, vegetation conditions). Since 2004, restoration efforts at ABP have created a favourable habitat with host plants and nectar sources, potentially enabling this expansion. This aligns with research showing that urban green spaces promote butterfly diversity (Blair & Launer 1997; Paul & Sultana 2020). Climate change (Parmesan et al. 1999) and habitat connectivity (Paul & Sultana 2021b) may also play a role, though the species' limited flight capability suggests a gradual spread. The repeated sightings suggest a potential establishment, but the small sample size and lack of systematic surveys prevent definitive conclusions. Further monitoring in other areas of Delhi and host plant mapping are recommended to better understand this range expansion.

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