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Short Communication

The first record of *Neptis cartica* (Insecta: Lepidoptera: Nymphalidae) from a northeastern forest of Bangladesh

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ABSTRACT

Neptis cartica (Moore, 1872), commonly known as the Plain Sailer and belonging to the family Nymphalidae, is reported here for the first time from Madhabkunda Eco-Park (MEP) (24°38′25″N, 92°13′06″E) in Moulvibazar District, northeastern Bangladesh. To species was identified based on the following key diagnostic characteristics: the upperside exhibits whitish to sullied-white markings; the basal streak extends to the origin of vein 8; the forewing upperside shows a prominent spot in space 3, a non-extended cell streak, and a zigzag outer margin; the hindwing upperside bears a distinct whitish discal band; and the discal fascia is dark, while the underside is dark ochreous brown with white markings. The photographed specimen of *Neptis cartica* represents the first confirmed record of this species in Bangladesh, highlighting the importance of conserving the biodiversity of MEP and updating its butterfly checklist.

Introduction

Butterflies are scaly-winged insects of the order Lepidoptera, which serve as indicators of biodiversity and pollinators (Chowdhury et al., 2014; Hasan et al., 2018). In Bangladesh, a total of 421 butterfly species have been recorded across different regions (Hossain, 2023). Among them, the northeast region of Bangladesh included the Sylhet division (covering about 8.5% of Bangladesh's landscape), with four districts namely, Habiganj, Moulvibazar, Sunamganj, and Sylhet with 10 forest patches (Siddique et al., 2024; Ahmed et al., 2020), which represents mixed evergreen forest habitats and reported a dense landscape for butterfly species (IUCN, 2015), while a total of 231 butterflies encountered from the Satchari National Park (Hasan et al., 2018; Akhter et al., 2023; Akhter et al., 2026), 159speciesfrom LawacharaNational Park: (Khandokar et al., 2013), 165 species from Rema-KalengaWildlifeSanctuary (Shihan and Prodhan, 2014; Akhter et al., 2026), and 266 species from Adampur forests (Babu et al., 2024). However, there is limited information on butterfly species in Madhabkunda Eco-Park (MEP). MEP (24°38'25"N 92°13'06"E) is a tropical mixed evergreen forest located in the Moulvibazar district in northeast Bangladesh (IUCN, 2015; Islam et al., 2022) (Fig. 1). Geologically, the study area is the Bhuban rock formation, sandy clay-loam to clay-loam of top soils, and a 61m-high waterfall, and the landscape is dominated by slopes and hillocks that are intersected by several water sources (Islam et al., 2022) (Fig. 2).

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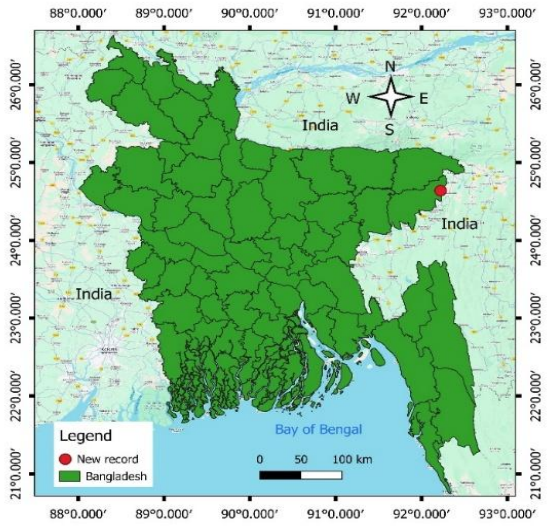

Fig. 1. Map of the study area: New record (*Neptis cartica*) in Bangladesh.

Fig. 2. Habitat of Madhabkunda Eco-Park.

The study spanned three days, from November 27 to November 29, 2024. On the first day at 15:35 hours +06 GMT, we observed an individual of *Neptis cartica* (Moore, 1872) from the nearest stream of MEP at an elevation of 30 meters (location- Fig. 1, species- Fig. 3). The geographic coordinate was taken by GPS (Garmin e-Trex 10). The activity of this species was puddling; it was taking nutrients from the surface of wet rocks along the waterfall (Fig. 3). During this time, the butterfly was systematically observed and documented by following Pollard and Yates (1993). This species was sighted in the morning between 8:00 and 16:30 hours. Butterfly identification was primarily done by direct observation, and we took photos with a Nikon D7200 camera and 70-300mm lens. The average temperature and humidity were 28.7°C and 63% during the observation period. The temperature and humidity were measured using a digital thermometer-hygrometer (HTC-1).

The species *Neptis cartica* is commonly known as the Plain sailer under the family Nymphalidae (Varshney and Smetacek, 2015). This species is widely distributed across northern India (from Uttarakhand to Arunachal Pradesh), Nepal, Bhutan, Myanmar, and Thailand (Kehimkar, 2016; https: //yutaka.it-n.jp/lim1/720300010.html). The upper side markings are white or sullied, and the upper forewing (UPF) has a prominent spot in space 3. The UPF cell streak is not extended from the base of space 3, and it has a highly zigzag marginal line (Kehimkar, 2016).

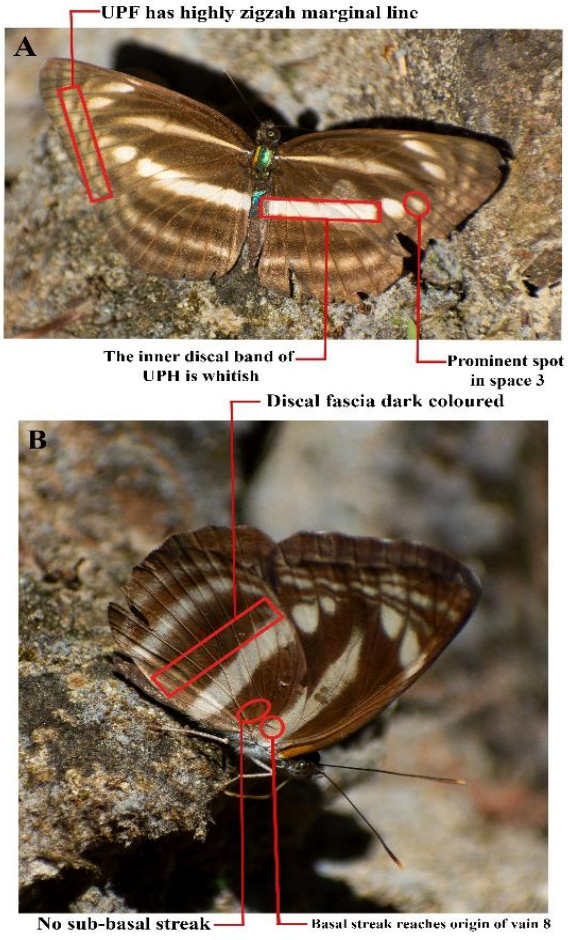

Fig. 3. Paddling behavior of *Neptis cartica* (ventral and dorsal view with identification marking).

Table 1. Major diagnostic differences andecological information of Neptis species in Bangladesh.

Species Name	Major Diagnostic	IUCN Status (Local and Global)	Wingspan, Habitat, Elevation, Flight period
Neptis clinia Moore, 1872	Generally, with wider white bands. From the cell streak UPF and discal band UPH sullied and with diffused edges (wet season) (Sondhi and Kunte., 2018). UPH central band broad and prominent, lower band obscure/absent, UPF streak usually sullied, larger spots below cell streak outwardly square/concave (Kehimher, 2016).	VU, NE	45-60mm, Forest, Up to 1500m, February to December
Neptis harita Moore, 1874	UPF discal spot in 2 crescentic; cilia not prominently white at apex. UPH in discal band only to v5; postdiscal and sub-marginal pale lines wide and close together, encircling the dark area between so as to form a row of dark spots (Evans, 1932). Markings are dusky pale, narrow, and suffused with brown (Kehimher, 2016).	EN, NE	55-60mm, Forest, Low elevations, March to November
Neptis hylas Linnaeus, 1758	Above white markings broad and sharp. Below rather dark ochreous and UNF veins beyond cell prominently black (Evans, 1932). UPF streak short, spot at end cell outwardly sharp. An imaginary line drawn throught spots in spaces 2 and 3 joins outer edge below UPF apex. UPH central band dose not widen towards leading edge (Kehimher, 2016). UPF white spots in 2 and 3 not in line with 5 (Sondhi and Kunte., 2018).	LC, NE	55-60mm, Forests and Gardens, Up to 3000m, January to December
Neptis jumbah Moore, 1857	UPF: white spots in 2 and 3 in line with 5, centers directed to costa below apex (Sondhi and Kunte, 2018). Central white band on UPH could be broad. Dark chestnut streak beyond UNF cell. In row of white spots absent/reduced near UPH (Kehimher, 2016).	LC, NE	60-70mm, Forest, Up to 1900m, February to November
Neptis magadha Felder & Felder, 1867	Marking on UP always white. UPF: cell streak and a spot beyond. 2 larger spots and 1 smaller in middle are in line on UPF. UN light brown (Kehimher, 2016).	EN, NE	55-60mm, Forest, Up to 880m. March to December
Neptis mahendra Moore, 1872	Central band wider at UPH leading edge. End-cell spot well-separated from white cell streak. UPF central spots in spaces 2 and 3 not in line with spot in space 5 (Kehimher, 2016). In UPH, discal white band expands to costa (Sondhi and Kunte, 2018).	NE, NE	55-60mm, Hill forest, 1200-3000m, April to October
Neptis nata adipala Moore, 1872	UPF: white spots in 2 and 3 not in line with 5, centers directed to termen below apex. Cell-end spot sepearated from cell streak (Sondhi and Kunte, 2018). UPH has inner band to conjoined spots. Reddish brown UN, markings slightly blurred, not black-edged (Kehimher, 2016).	NE, NE	58-70mm, Forest, 450 to 2200m, February to November
Neptis pseudovikasi Moore, 1899	In FW, apex cilia prominently white. UPF: discal spot in 3 more/less quadrate. UPH: Post-discal and sub-marginal bands well separated. UNH: markings sullied, narrower (Sondhi and Kunte, 2018). No crescent shaped spot near lower tip of UPF (Kehimher, 2016).	EN, NE	55-70mm, Forest, Up to 1220m, Up to 700m in the Himalaya, March to November
Neptis sappho astola Moore, 1872	Very similer to *N. hylas*, Differ in size and colour. UP markings narrow and often sullied. UN chocolate (Kehimher, 2016). UNF: veins never blackened beyond cell.	NE, NE	44-57mm, Hill forest, Up to 1900m, February to October
Neptis soma Moore, 1858	UPF cell streak narrowly separated from end cell (Kehimher, 2016). Spots in 2 and 3 not in line with 5 and a line joining centers is pointed to termen below apex. 3 sub-marginal spot shifted in and at right angles to costa. UNF: cell spot often joined/close to cell streak. UPH: broad white discal band, entering base of 3 and expending to costa (Sondhi and Kunte, 2018).	VU, NE	47-54mm, Hill forest, 700-2800m, March to December
Neptis cartica (Moore, 1872)	The upper side markings are white or sullied, and the upper forewing (UPF) has a prominent spot in space 3. The UPF cell streak is not extended from the base of space 3, and it has a highly zigzag marginal line (Kehimkar, 2016). The inner discal band of UPH is whitish, with other markings in pale brown. The discal fascia dark coloured. The UNF submarginal pale line at the apex does not align parallel to the apical discal spots. Basal streak reaches origin of vein 8. The underside of it is dark ochreous brown, with markings highlighted in white (Evans, 1932; Eliot, 1969). UNH white costal streak at base broad, and no pale streak at base of cell (Sondhi and Kunte, 2018).	NE, NE	55-70mm, Forest, Up to 1800m, March to December

LC: Least Concern, VU: Vulnerable, EN: Endangered, NE: Not Evaluated, mm: Millimeter, m: Meter, UPF: Upper Forewing, UPH: Upper Hindwing, UNF: Under Forewing, UNH: Under Hindwing, UP: Upper side, UN: Under side, FW: Forewing.

The inner discal band of UPH is whitish, with other markings in pale brown. The discal is fascia dark colored. The UNF submarginal pale line at the apex does not align parallel to the apical discal spots. The basal streak reaches the origin of vein 8. The underside is dark ochreous brown, with markings highlighted in white (Evans, 1932; Eliot, 1969). The UNH white coastal streak at the base is broad, and there is no pale streak at the base of the cell (Sondhi and Kunte, 2018). A total of 10 *Neptis* species in the family Nymphalidae are recorded from Bangladesh (Hossain, 2023; Larsen, 2004; IUCN, 2015). Regarding the species *Neptis cartica* (Moore, 1872), there is no published article, nor is it listed in any published books from Bangladesh. This observation is the first confirmed record for Bangladesh.

The habitat of MEP is not only good for rare mammals (Akhter et al., 2024a) but also for butterflies, while *Mooreana trichoneura* and *Bibasis sena* were reported as new for Bangladesh from this habitat (Khan et al., 2014;Das and Chowdhury, 2016). Therefore, *Ancema blanka*, *Faunis canens*, and *Euthalia anosia* were also reported very recently for the first time as country records from MEP (Akhter et al., 2024b). Afterwards, the photographic evidence of *Neptis cartica* from this location has been documented as the first country record and a new addition to the butterfly fauna of Bangladesh. These findings highlight the significance of this habitat for rare species. Further faunal studies and conservation efforts are needed to better understand species diversity and protect this vital habitat.

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Authors contribution

Akash Mojumdar: Conceptualization, original draft, review, editing, and visualization; Rasel Debbarma: Review and editing; Tania Akhter: Investigation, supervision, review, editing, and project administration.

Conflict of interest

The authors declare that there are no potential conflicts of interest regarding the publication of this article.

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