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A new citation record of *Horaga onyx onyx* (Moore, 1857) from sunderban biosphere reserve, West Bengal, India

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Abstract

Horaga onyx onyx (Moore, 1857) (Lepidoptera: Lycaenidae: Theclinae: Horagini) is a butterfly commonly known as Variable common onyx. Within India, this species is distributed in Assam, Goa, Himachal Pradesh, Meghalaya, Nagaland, Sikkim, Uttarakhand and West Bengal. Other than India this species is reported from Bangladesh, Burma, Nepal and Thailand. This butterfly is mostly reported from high altitude areas. This is the first record of this species from Sunderban Biosphere Reserve, which is under the Indo-Gangetic Plain, a biogeographical region of India, with an elevation of +6 to +9 meters. *H. onyx* (Moore, 1857) is protected under Schedule II part II of the Wildlife (Protection) Act, 1972.

Keywords: *Horaga onyx onyx*, Bio-geography, Elevation, Indo-Gangetic Plain, Sunderban Biosphere Reserve, Wildlife (Protection) Act, 1972.

Abbreviation : DSF- Dry Season form ; F – Forewing ; H- Hindwing ; Unf – Underside of forewing ; Unh– Underside of hindwing; Upf – Upperside of forewing ; Uph– Upperside of hindwing; v1 – Vein 1; v2 – Vein 2; v3 – Vein 3.

Introduction

Horaga onyx onyx (Moore, 1857) (Lepidoptera: Lycaenidae: Theclinae: Horagini) is commonly known as Variable Common onyx. It ranges from Kangra to South Burma [1]. Three sub species of *H. onyx* (Moore, 1857) has been reported from India, namely, *Horaga onyx onyx* (Moore, 1857), *Horaga onyx cingalensis* Moore, 1883 and *Horaga onyx rana* de Nicèville, 1888 [2]. *H. onyx* (Moore, 1857) is protected under Schedule II part II of the Wildlife (Protection) Act, 1972 [3]. Previous studies indicate that this species is confined to hilly area [4] with the habitat of subtropical evergreen forest above 1200 m [5]. In this present study this species is recorded from Sunderban Biosphere Reserve which has an elevation of +6 to +9 meters [6]. This Biosphere Reserve is located on the southern region of West Bengal, India; which includes the district of North 24 paraganas and South 24 paraganas of West Bengal. This Biosphere reserve is a part of Gangetic delta and densely covered by mangrove forest. Sunderban Biosphere Reserve belongs to Indo-Gangetic Plain which is a bio-geographical region of India [7] and this biosphere reserve lies between the coordinates 21°30' to 22°15' N; 88°10' to 89°10' E [6]. A few works on butterflies of Sunderban Biosphere Reserve have been done till now among them, Biswas, *et al.* [8] reported 24 species from this biosphere reserve. Afterwards, Kumar *et al.* [9] has reported 117 species of butterflies and Chowdhury [10] reported 76 species of butterflies from Sunderban Biosphere Reserve. But nothing has been reported so far about the presence of *H. onyx onyx* from Sunderban Biosphere Reserve. This present Communication reports the first record of *Horaga onyx onyx* (Moore, 1857) from Sunderban Biosphere Reserve, West Bengal, India.

Diagnostic characters of *Horaga onyx* (Moore, 1857)

“Mostly cyaneous blue above with a dark blue apex F and a prominent white discal patch. Below ochreous or brown with a prominent white discal band across both wings to middle of 1c on H, whence to the dorsum there is a metallic green line; ternal marking prominent and crowned by a metallic green line, which may run to costa. ♂ in Nos. 1 and 2 has an oval ochreous brand along basal half of v1, dorsum bowed. Tails v1 2mm, v2 4mm. and v3 1mm [1].”

***Horaga onyx onyx* (Moore, 1857)**

“Upf blue colour darker, but very variable, never extending beyond the discal white patch, which, always enters 1b; very variable below. Tail at v3 short. Below DSF whitish outwardly.”^[1]

Distributional range of *Horaga onyx onyx* (Moore, 1857)

Evans ^[1] notified that this species is distributed from Kangra, India to South Burma. With the view of Indian distributional range of this species, the earlier works reveal that Haribal ^[4] reported this species from Sikkim. Smetacek ^[5] reported this species from Jones Estate, Bhimtal, Kumaon Himalaya, Uttarakhand. From the north-eastern India, this species has been reported from Garo hills of Meghalaya ^[11], and Nambor–Doigrung Wildlife Sanctuary, Assam ^[12]. *H. onyx onyx* is also reported from Goa, Nagaland and West Bengal (Alipurduar, Cooch Behar and Jalpaiguri district) ^[13].

Other than India, *H. onyx onyx* is also distributed in Nepal ^[14], Chittagong Division, Bangladesh ^[15], Burma and Thailand ^[16]. There is no report of this butterfly from Bangladesh Sunderban ^[17]. (Figure 1)



Fig 1: Distributional range of *Horaga onyx onyx* (Moore, 1857) (Excluding Burma and Thailand); Red mark point locates Sunderban Biosphere Reserve where this species is newly recorded in present communication.

New observation of *Horaga onyx onyx* (Moore, 1857) from Sunderban Biosphere Reserve

H. onyx onyx (Moore, 1857) was observed on a place named 9 no. gheri, (location: 22°05.358' N; 088°45.364' E, Model name of GPS- GPS72H, GARMIN) situated on Bali island located in Sunderban Biosphere reserve. The observed place was adjacent to river bank, river locally named as Gomor, a tributary of river Ganges and covered with different plants of mangrove mainly *Avicennia marina*, *Avicennia officinalis*, *Avicennia alba*, *Excoecaria agallocha*, *Xylocarpus granatum*, *Xylocarpus mekongensis*, *Aegiceras corniculatum*, *Rhizophora* sp., *Ceriops* sp., *Acanthus illicifolius*, *Bruguiera* sp. and *Aegialitis rotundifolia*. (Figure 3)

This species was cited on the date of 6th September, 2014, a sunny and clear day. Only one individual was cited from this location. The individual was cited on the leaf of a mangrove plant named *Excoecaria agallocha* L. (Magnoliopsida: Euphorbiales: Euphorbiaceae) from 10: 00 am to 10: 05 am and at the very moment the observed specimen was photographed using Nikon D7000 (with Macro lens; AF MICRO-NIKKOR 200 MM F/4D IF-ED). The material was captured by sweep net for closer examination and its field identification. It was released soon after identification. Identification was made following the keys and descriptions given in the available literatures ^[1, 4, 18]. After that time the individual flew away into the forest and due to high tide it was not possible to follow it further and photograph. (Figure 2)



Fig 2: *Horaga onyx onyx* (Moore, 1857) on the leaf of *Excoecaria agallocha* L. in Bali, island, Sunderban Biosphere Reserve; 06.ix.2015. [A] Close wing image; [B] Open wing image.

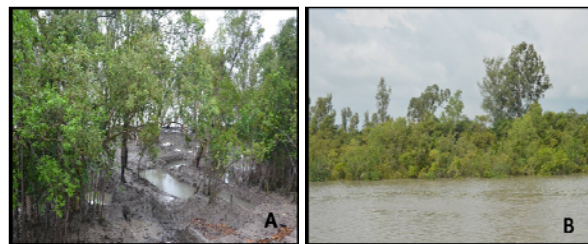


Fig 3: 9 no. Gheri, Bali island, Sunderban Biosphere Reserve; Location of observed individual of *Horaga onyx onyx* (Moore, 1857) [A] in low tide; [B] in high tide.

Discussion

This is the first record of this species from Sunderban Biosphere reserve. Kehimkar ^[18] mentioned that *H. onyx* is “confined to thick hilly forests, never found on plains.” Haribal ^[4] mentioned that *H. onyx onyx* is found in thick hilly country and “Flies before and after rains in the foothills and upto 2,000 m.” Smetacek ^[5] also notified that the usual habitat of *H. onyx onyx* is “Subtropical evergreen forest above 1200m.” But this present communication notifies *H. onyx onyx* to be found in the mangrove forest of Sunderban Biosphere Reserve. The dense mangrove forest of Sunderban Biosphere Reserve is now under threat due to anthropogenic activities and natural calamities. Therefore the population of *H. onyx onyx* probably is not in protected condition. As the observation of this species is from mangrove forest zone; therefore, it can be said that the degradation of mangrove ecosystem might have a negative impact on the population of *H. onyx onyx* (Moore, 1857).

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