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## Record of two new butterflies for Bangladesh

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### Abstract

Butterflies are considered as one of the most studied groups of insects and are termed as bio-indicator. Hence the total number of butterflies of a certain region should be well documented. In the field survey of Pablakhali Wildlife Sanctuary and Madhabkunda Eco Park, we found two butterflies which are new to Bangladesh, according to the most recent checklist. The Plane (*Bindahara phocides*, Fabricus) was recorded from Pablakhali Wildlife Sanctuary and Orange Tail Awl (*Bibasis sena*, Moore) from Madhabkunda Eco Park. Though Plane was recorded by Gladman (1947) and Emmet (1948) but Larsen did not find this species. In addition, no one ever recorded Orange Tail Awl from this region.

**Keywords:** Biodiversity, *Bibasis sena*, *Bindahara phocides*, Conservation, Discovery

### Introduction

Tropical regions are very rich in biodiversity but we know very little about them. Because of that, almost 40000 already estimates to have gone extinct over the past 600 years, only 70 have been documented, half of which were Lepidoptera <sup>[1]</sup>. The world contains roughly 18000-20000 species of butterflies, of which most are distributed in the tropical region <sup>[2, 3]</sup>.

Butterflies are a biodiversity indicator group and the redundancy of a forest or an area largely depends upon the abundance and diversity of butterflies <sup>[4]</sup>. Therefore, it is essential to know the exact number of butterflies of a certain region. Butterflies are broadly considered as potent ecological indicators and are very sensitive to the abiotic factors like temperature, humidity and light levels and also to the habitat disturbance <sup>[5, 6]</sup>. There is a very strong relationship between butterflies and plants which is highly complex and co-evolved as they depend on plants for food and to continue their life cycle and most importantly, plant species are pollinated by butterflies <sup>[7, 8]</sup>

It is difficult to give a well-organized checklist of every country and for these reasons, in each year, number of butterfly species are added in the list. Pelham (2008) listed 800 species throughout the United States and Canada and Lamas (2004) estimated 7784 in the Neotropics <sup>[9, 10]</sup>. IUCN checklists of butterflies (2004) were recorded 236 species directly identified by Larsen <sup>[11]</sup>. Furthermore, Encyclopedia of Flora and Fauna of Bangladesh mentioned 148 butterfly species <sup>[12]</sup>. Monwar Hossain Tuhin, Professor of department of zoology, Jahangirnagar University recorded 225 butterfly species with pictorial evidence from all over the Bangladesh entire his book <sup>[13]</sup>. In addition there are some regional works have been done on butterfly checklist such as 158 species from Savar, Dhaka <sup>[14]</sup>; 49 species from Tangail <sup>[15]</sup>; 71 species from Dinajpur <sup>[16]</sup>, 37 species from Sundarban <sup>[17]</sup>. In Bangladesh, few works are available on butterfly species diversity and status. Moreover, there is no particular documented record of total number of butterfly species in Bangladesh region. The objective of this study was to identify butterflies to contribute the butterfly checklist of Bangladesh.

### Study Area

The Pablakhali Wildlife Sanctuary in Bangladesh is located in the Rangamati District in the Chittagong Division. It was established in 1983 so the wildlife and vegetation in the sanctuary is quite settled and well-developed. It is not a very big wildlife sanctuary, and it covers 420.87 square kilometers.

Madhabkunda situated in the northeast area and about 350 km distance from Dhaka city. It is in the district of Maulvi Bazar, Barlekha Upazila, Sylhet division about 7 km from Dakshinbhag railway station. Madhabkunda Ecopark will cover an area of 654.42 acres of land including about 400 acres of reserve forest.

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**Fig 1:** Map of Pablakhali Wildlife Sanctuary



**Fig 2:** Map of Madhabkunda Eco Park.

**Methods**

The butterflies were recorded from the study area during different butterfly surveys conducted in the Pablakhali Wildlife Sanctuary and Madhabkunda Eco Park in between 2014 and 2015. Butterflies were primarily identified directly in the field using photographs Canon Powershot SX510 HS and then with the help of related books [13, 18, 19]. In a few cases, specimens were collected for further testing in the laboratory.

**Results and Discussion**

We found two new species, The Plane (*Bindahara phocides*, Fabricus) in Pablakhali Wildlife Sanctuary and Orange Tail Awl (*Bibasis sena*, Moore) in Madhabkunda Eco Park.

**1. The Plane (*Bindahara phocides*, Fabricus)**

This species has been found on 24<sup>th</sup> April, 2014 in the GPS co-ordinates between 23<sup>o</sup>11'54.10" N and 92<sup>o</sup>16'56.62" E. The Plane was recorded from 'Sylhet' and was found in lowland Arakan [20, 21]. However, Larsen did not find this species and mentioned that; type localities are forests in the Srimangal area

and Chittagong Hill Tracts. This is has also been recorded in India, Sri Lanka, Bhutan and Myanmar.

The wingspan is 36-42 mm. Hind wing has a long fluffy tail. On UPH, tornal area and tail yellowish brown, outer margin of tornal area brilliant metallic blue. Female brown on the UP. UPH tornal area and tail white large black spot in tornal area. On UN, male yellowish brown and female white. In both sexes, UNF has a broad dark discal band, and another band, usually dark brown through the cell. UNH has highly irregular discal band. And the larval food plant is *Salacia* sp.



**Fig 3:** The Plane (*Bindahara phocides*, Fabricus).

**2. Orange Tail Awl (*Bibasis sena*, Moore)**

This species has been found on 30<sup>th</sup> October, 2014 in the GPS co-ordinates between 24<sup>o</sup>38'17.98"N and 92<sup>o</sup>13'28.73"E. Larsen did not have found this species but mentioned that type localities are Srimangal forests and the forests of Chittagong. This species has also been recorded from India, Pakistan, Sri Lanka, Nepal, Bhutan and Myanmar.

The wing span is 42-50 mm. Wings dark brown, with bright orange fringe on HW and on tip of abdomen. UP unmarked but with darker brown wing borders. Broad, pure white, outwardly diffused, central discal band on UNH, continued on UNF. Sexes alike, males without brand. The larval food plant is *Combretum latifolium*.



**Fig 4:** Orange Tailed Awl (*Bibasis sena*, Moore).

**Conclusion**

For any kind of research, it is essential to know the exact number of species and hence these two new species will help for future research. As the numbers of butterflies are decreasing at a great speed therefore, to find a new species has many importances. This kind of finding is significantly important to update the status and distribution of butterfly fauna.

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