

# First record of *Anereuthina renosa* Hübner, 1823 (Lepidoptera: Erebiidae) from Bangladesh and *Terminalia* sp. (Combretaceae) as a new larval host plant record

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**Abstract:** In the present study, *Anereuthina renosa* Hübner, 1823 is recorded for the first time from Bangladesh. Detailed morphological features of the final instar caterpillar as well as of the adult are provided along with photographic illustrations. A new host plant record for *A. renosa*, *Terminalia* sp. (Combretaceae), is also reported here.

**Keywords:** caterpillar, Chittagong University, ecology, Erebiinae, Mathbaria (Barisal division), palm, tibiae.

## INTRODUCTION

The genus *Anereuthina* Hübner, 1823, a member of Erebiidae, was described with type species *Anereuthina renosa* Hübner, 1823 from Java. *Anereuthina* is externally similar to *Serrodus* Guenée, 1852 and *Avatha* Walker, [1858] in having a similar type of forewing black patch (Holloway, 2005). It is characterized by features of the forewing black patch and the 'hairy' legs, notably the forelegs which are easily visible in nature. In the male genitalia, the tip of the uncus is of the 'ball and claw' type having a scaphium; the juxta is of the inverted 'Y' type; and the valvae are rather paddle-like, with a moderate but slender harpe on the sacculus; the vesica is small and globular (Holloway, 2005).

Currently, the genus contains three species, *Anereuthina atriplaga* (Walker, 1869) from Congo (type locality), *A. renosa* from Java (type locality), Sundaland, Philippines, Myanmar, and India, and *A. somaliensis* (Berio, 1985) from Somalia, Afgoi (type locality). Apart from *A. renosa*, two other species are known only from their type localities. Of the three species, the life history and host plant data are known only for *A. renosa*, whose caterpillars are known to feed on palms (Arecaceae) (Holloway, 2005).

In the present study, *A. renosa* is recorded for the first time from Bangladesh. Morphological features of the final instar caterpillars as well as of the adults are provided. A new larval host plant, *Terminalia* sp. (Combretaceae) is also reported for *A. renosa*.

## MATERIALS AND METHODS

**Study area:** The data were collected from two locations in Bangladesh: Chittagong University campus, located at Zobra village under the Hathazari Upazila, Chittagong (22°28'17.66"N and 91°47'15.65"E), and Mathbaria (Pirojpur, Barisal) of

Bangladesh. Mathbaria is located at 22°17'31.32"N and 89°57'29.10"E and is adjacent to the Sundarbans Mangrove.

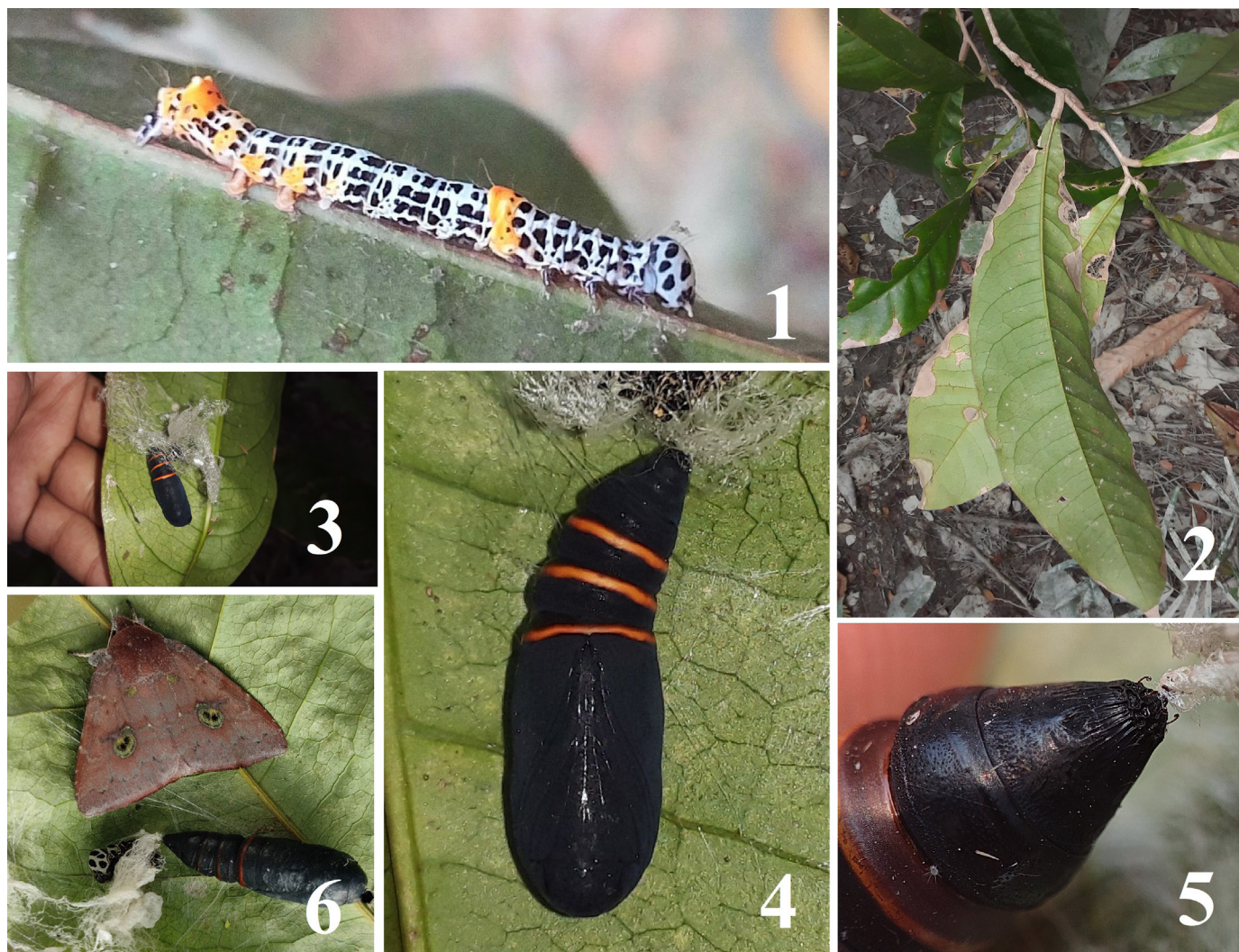
**Species record, identification and analysis:** Data on immature stages along with the adult moths were collected from both locations. The immature stages were collected and reared inside plastic boxes with ventilation and moisture levels monitored. The adult which emerged from the rearing was killed and prepared for further study following standard procedures. The identification was confirmed using external morphological and genitalia characteristics (Hampson, 1894; Holloway, 2005). Genitalia dissection was performed following Robinson (1976). The genitalia was photographed and studied using a L-101 student compound microscope. A Redmi Note 10 Pro Max cell-phone was used for photography.

## RESULTS

The life history was observed and recorded from the final instar caterpillar. Two caterpillars, both in the final instar, were observed from the study areas. The one observed from the Chittagong University campus was not collected, whereas another caterpillar observed at Mathbaria was in the pre-pupal stage and was collected for study. The caterpillar started to pupate on the same day joining two leaves of the host plant together, one over another with silk threads. Inside the leaf shelter, a silken cocoon was created. The adult male emerged after almost 20 days of pupation.

## Description

*Final instar caterpillar* (Fig. 1). Caterpillar approximately 70 mm in length. Ground color pale gray. Three pairs of prolegs present, first one in third abdominal segment rudimentary. Whole body covered with rectangular black spots of two kinds, one elongated, another somewhat oval. Head covered with oval black rectangles while rest of body covered mostly with elongated black rectangles between which a small number of oval rectangles. Black rectangles



**Figures 1-6.** *Anereuthina renosa*. 1. Final instar caterpillar; 2. Leaf shelter on *Terminalia* plant; 3. Pupa with silken cocoon; 4. Pupa (abdomen showing three orange bands); 5. Pupa abdominal tip (showing wrinkles and hook-like cremaster); 6. Imago.

arranged in parallel-chain fashion resulting in ground color appearing as longitudinal and ring-like lines. Black spots and lines create a reticulated pattern on whole body. Orange marks present in various places: one at first abdominal segment, where orange ring-like band present, three orange blotches on each side of body with three sets of abdominal prolegs, eighth abdominal segment strongly humped dorsally, orange in color, two more orange bands present, one before hump and another one after hump. All orange marks spotted with black rectangles and circular spots.

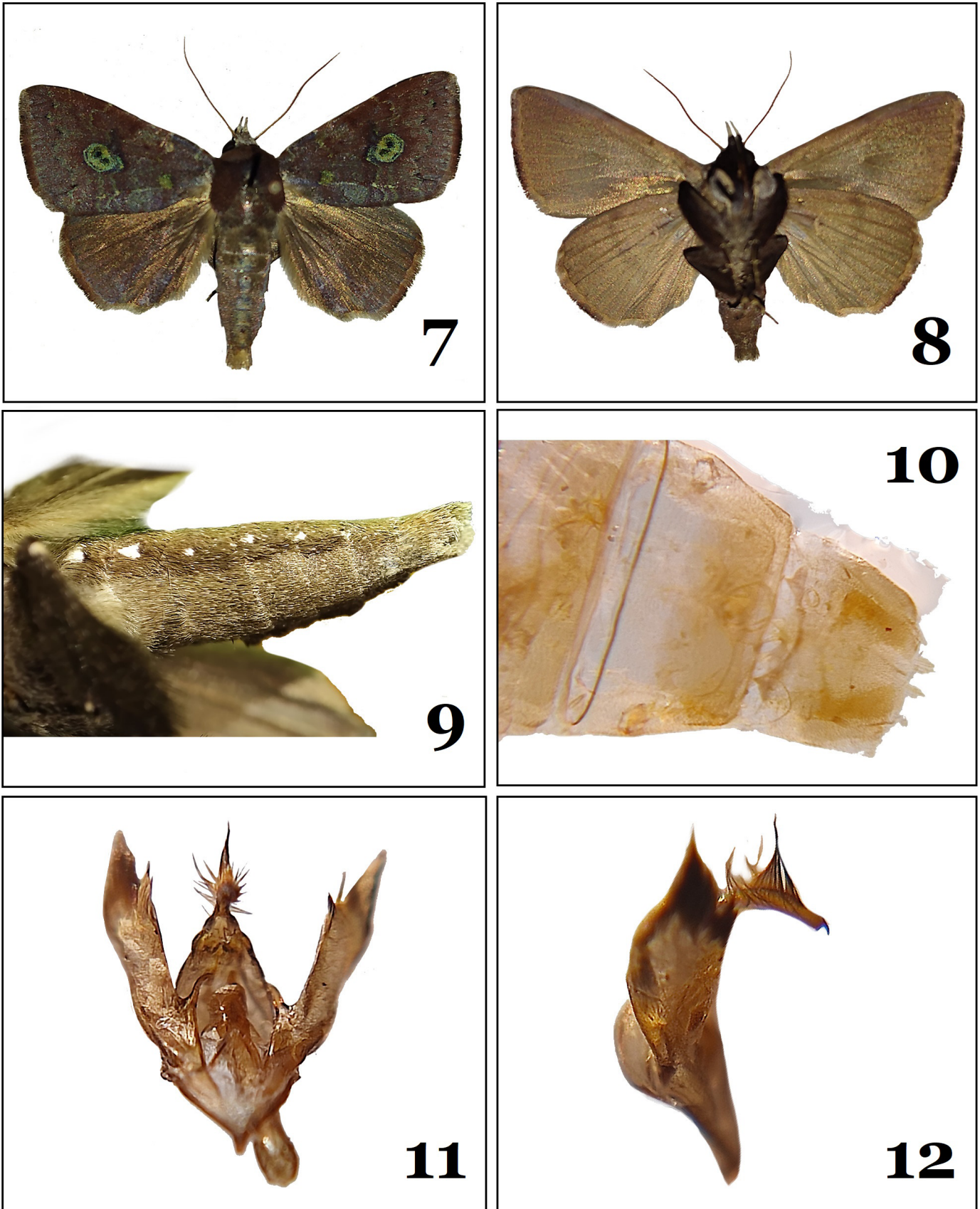
**Pupa** (Figs. 2-5). Pupa 24 mm in length, black with a slight shiny bluish tinge, but lacking powdery bloom. Fourth to sixth abdominal segments with dark orange bands, each band situated on lower part of segment before joint with next segment. Last abdominal segment with cremaster, wrinkled on tip and cremaster having several curved hook-like spines of two sizes, some larger than others.

**Adult** (Figs. 6-8). Adult 45 mm in wingspan, deep caramel brown or chocolate. Head gray, thorax and abdomen dark brown, latter with white spots laterally on each segment (Fig. 9). White spots larger and triangular in proximal segments of abdomen. Antennae reddish-brown and minutely ciliated. Labial palpi black with third segment grayish white, proboscis (Fig. 16) chocolate-colored, relatively short, 7 mm in length. Legs (Figs. 13-15) darker, smoky black with a grayish tinge, all legs with grayish-white 'hairy' femur. Fore-tibiae covered with easily noticeable dense 'hairs' of whitish-gray color, mid-tibiae with one pair of spurs of unequal sizes (outer one shorter), hind-tibiae with two pairs of spurs, each pair consists of two unequal-sized spurs (outer ones shorter). Spurs and tarsi of all legs gray in some areas. Forewings triangular with rounded tornus, slightly irrorated with gray, especially on outer

margin, wings with indistinct subbasal, antemedial, medial, postmedial, and submarginal crenulate pale lines. Antemedial line with a pale green circular patch on it below discal cell. A complex marking present on postmedial line at lower angle of discal cell, consisting of two black spots enclosed in a large green reniform ocellus emarginated with dark color anteriorly. Area before ocellus pale green and darker with part of adjacent line pale green and with a dark border giving a crescent-shaped impression. Submarginal line having a series of black specks. Wing veins clearly visible because of being whitish near inner margin and darker in rest of wing. Hindwings duller brown with tornus slightly truncate. Cilia of both wings chocolate-dark brown. underside of both wings dark brown with chocolate-colored fringe leaving apex and tornus. Trace of a dark medial band on underside of hindwing with a pale lunulate marking next to discal cell.

Male abdominal eighth segment with shallow and widely spaced apodemes on tergum. Genitalia (Figs. 11-12) with uncus curved, hook-like, and uncus-tip of 'ball and claw' type with a finger-like scaphium. Saccus ends in a finger-like projection having a blunt and rounded tip. Juxta with inverted 'Y' shape. Valvae rather paddle-like with a moderate-sized and moderately curved harpe on sacculus. Aedeagus elongated with small, globular vesica.

**Hostplant:** *Elaeis guineensis* Jacq. (Arecaceae) is the known larval host plant for *A. renosa* from West Malaysia (Yunus & Ho, 1980; Holloway, 2005; Robinson *et al.*, 2010). Apart from this, there is no other report of the life history or host plant of this species. In the present study, the caterpillars from both the



**Figures 7-12.** *Anereuthina renosa*. 7. Adult male in dorsal view; 8. Adult male in ventral view; 9. Abdomen in lateral (showing white spots); 10. Distal abdominal segments 11. Male genitalia (with aedeagus); 12. Male genitalia in lateral view.



**Figures 13-16.** *Anereuthina renosa*. 13-14. Hindleg; 15. Midleg; 16. Proboscis.

study areas were found to feed on the leaves of *Terminalia* sp. (Combretaceae). Pupation also took place inside the leaf shelter on the same plant as discussed above. Thus, we report a new host plant for *A. renosa*.

**Distribution:** *Anereuthina renosa* was described from Java (type locality). The distributional ranges given by Hampson (1894) and Holloway (2005) are Sundaland, Philippines, and Myanmar. The species has not yet been formally reported from India, but there are two observations of this species from Meghalaya (Siju Eco Camp, South Garo Hills District) and Andaman Islands (Haddo, Port Blair, South Andaman District) on the Moths of India website (Anonymous, 2022). The present study reports this species for the first time from Bangladesh (Chittagong and Pirojpur).

#### DISCUSSION AND CONCLUSION

Reporting of *Terminalia* sp. as a new host plant indicates that *A. renosa* is not exclusively a palm-feeder; possibly, in different geographic locations, the species may be adapted to different host-plants, but much more data are obviously needed. These host-plant relationships, along with the ecology and evolution of this species, focusing on features such as the noticeably short proboscis, may be topics of future study. We suggest that the species has a wider distribution than currently appreciated, and that populations from different geographical areas need to be studied both at a morphological as well as at a molecular level.

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