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## RESEARCH ARTICLE

### CURRENT DISTRIBUTION OF INDIAN MOON MOTH (*ACTIAS SELENE* HUBNER, 1806) IN WEST BENGAL, INDIA

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#### ABSTRACT

Indian Moon Moth (*Actias selene* Hubner, 1806) is widespread moth species of India. It is cosmopolitan in India. Previously it had recorded from four districts of West Bengal including Kolkata. Present paper deals with the three new records from West Bengal. During the biodiversity survey of different regions of South West Bengal this species photographed and identified from three new districts of Southern part of West Bengal. With these three new records update the present distribution of Indian Moon Moth in West Bengal. Beautifully coloured pale green with tailed hindwing, large sized moth *Actias selene* Hubner, 1806 recorded in October 22, 2012, 4.05 PM from Santipur (Nadia), September 23, 2017 6.30 PM from Belpahari (Jhargram), Sunday, September 30, 2018, 8:05:24 AM from Ajodhya hill (Purulia).

## INTRODUCTION

Insect is the major fraction of animal kingdom consists of more than half of the whole faunal species of the planet (May, 1992). Moths (Lepidoptera: Heterocera) are generally nocturnal and phytophagous insects prefers forests, grasslands and agro-horticulture fields etc. (Shah and Mitra, 2015). They help in pollination of night blooming flowering plants, play role as prey in food chain and also help in natural control of weeds in an agro-ecosystem. These insects are frequently considered as bio- indicator because they are sensitive to habitat change (Shah and Mitra, 2015). 1158 moths recorded from British India (Hampson, 1892). In the state of West Bengal 580 species of moths are known to occur (Sanyal et al., 2012). The study of moth fauna of West Bengal in recent past has been undertaken by several authors (Ghosh and Chaudhury, 1997; Mandal and Ghosh, 1997; Bhattacharya, 1997a; Bhattacharya, 1997b; Mandal and Maulik, 1997). They have significantly contributed to the study of moth fauna from different districts of West Bengal after the earlier works undertaken by previous authors (Sevastopulo, 1945; Cotes and Swinhoe, 1889; Hampson, 1892; Hampson, 1894; Hampson, 1895; Hampson, 1896). A total of 39 species belonging to 35 genera under 6 families of moths were recorded from 25 tea gardens of Dooars and Darjeeling hills (Shah and Mitra, 2015).

45 species under 39 genera of 10 families of moths documented from Sundarban Biosphere Reserve (Biswas et al., 2016). All total 94 species of moth reported from Sundarban Biosphere Reserve (Biswas et al., 2017). We present here the three addition record of the *Actias selene* Hubner, 1806 from West Bengal, India. Previously this moth recorded only from four districts (Darjeeling, Kolkata, South 24 Pargana and North 24 Pargana) of state West Bengal (Biswas et al., 2016; Biswas et al., 2017; Gupta, 1997). *Actias selene* (Hubner, 1806) is a Critically Endangered species (ver 1) according to International Union for Conservation of Nature (IUCN). From India it was previously recorded from Kashmir, Sikkim, Assam, Meghalaya, Manipur, Bihar, Odisha, Himachal Pradesh, Uttrakhand, Gujrat, Maharashtra, Karnataka, Tamilnadu and West Bengal (Shubhalaxmi et al., 2011).

## MATERIALS AND METHODS

Samples were photographed during documentation of moths of Southern West Bengal, India (Figure 1) through Pollard Walk Method (Pollard, 1977; Pollard and Yates, 1993). In between August, 2012 to November, 2018. These are the first photographic record of *Actias selene* (Hubner, 1806) from new three districts of West Bengal. Information on this species is based on observation from 04.05 PM to 04.50 PM in Santipur, Nadia, 06.30 PM to 07.55 PM in Belpahari, Jhargram and 08.05 AM to 08.57 AM in Ajodhya hill, Purulia. Specimens were photographed for further identification process with the help of High Resolution Digital Camera (Cannon 550 D with

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EOS 18- 55mm lens) and was identified using documents of Hampson, 1892 and then confirmed by experts.

## RESULTS

### Species description

Head, thorax, abdomen are whitish, prothorax with a dark pink band and legs are pinkish. Fore wings are pale greenish. Hind wings are similar to the fore wings; tail is very long and the central portion of the tail is pinkish (Figure 2).

### Systematic position of *Actias selene* (Hubner, 1806)

Class: Insecta

Order: Lepidoptera

Family: Saturniidae

Genus: *Actias* Macleay, 1815

Species: *Actias selene* (Hubner, 1806)

## DISCUSSION

### Early distributional range

*Actias selene* (Hubner, 1806) previously recorded from Darjeeling of North Bengal and South 24 Pargana, North 24 Pargana and Kolkata of South Bengal (Biswas *et al.*, 2017, Biswas *et al.*, 2016, Gupta IJ (1993). From India it was previously recorded from Kashmir, Sikkim, Assam, Meghalaya, Manipur, Bihar, Odisha, Himachal Pradesh, Uttarakhand, Gujrat, Maharastra, Karnataka, Tamilnadu and West Bengal (Shubhalaxmi *et al.*, 2011).

### Habitat structure of new locality

West Bengal is situated in eastern part of India, neighbor states are Odisha, Jharkhand, Bihar, Sikkim and Assam. On the eastern side the country Bangladesh is situated.

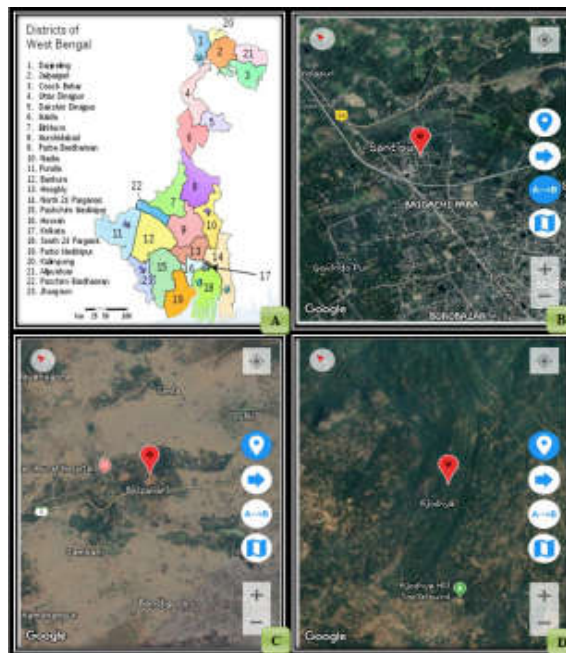


Figure 1. Study area [(A) Greenish stars showing previous record and violet stars showing new records of West Bengal, (B) Santipur, Nadia, (C) Belpahari, Jhargram, (D) Ajodhya hill, Purulia]



Figure 2. A. *Actias selene* (Hubner, 1806), Santipur, Nadia; B. *Actias selene* (Hubner, 1806), Belpahari, Jhargram; C. Top view of *Actias selene* (Hubner, 1806), Ajodhya hill, Purulia; D. Front view of *Actias selene* (Hubner, 1806), Ajodhya hill, Purulia

Three new places of record are Santipur (Nadia), Belpahari (Jhargram) and Ajodhya hill (Purulia). All three districts are situated southern part of State West Bengal. The Area of Nadia is 3927 km<sup>2</sup>. The Nadia district lies between 22°53' N and 24°11' N latitudes and between 85°09' E and 88°48' E longitudes. Annual normal rainfall in this district is 1760 millimeter per year. Annual maximum temperature varies between 35-42°C, whereas minimum temperature varies between 10-12°C. The Area of Jhargram is 3037.64 km<sup>2</sup>. The Jhargram district lies between 21°52' N and 22°48' N latitudes and between 86°34' E and 87°20' E longitudes. Annual normal rainfall in this district is 1400 millimeter per year. Annual maximum temperature varies between 35-45°C, whereas minimum temperature varies between 7-9°C. The Area of Purulia is 6259 km<sup>2</sup>. The Purulia district lies between 23°47'10" N and 23°50' N latitudes and between 88°55'56" E and 86°65' E longitudes. Three actual places of record lay 22°40'33" N latitude and 88°26'23" E longitude of Nadia, 22°38' N latitude and 86°45'58" E longitude of Jhargram and 23°13'24" N latitude and 86°8'37" E longitude of Purulia. Annual normal rainfall in this district is 1436 millimeter per year. Annual maximum temperature varies between 35-45°C, whereas minimum temperature varies between 7-10°C.

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