

Short Communication

New Distributional Record of Tasar Silkmoth *Antheraea mylitta* Drury (Lepidoptera: Saturniidae) from Terai region, West Bengal, India

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Received: May 4, 2022; revised: July 26, 2022; accepted: July 29, 2022

<https://doi.org/10.56716/4/1114>

Abstract: Tropical tasar or *Antheraea mylitta* is a commercially important non-mulberry silkworm that produces the world famous Indian tropical tasar silk. So far forty-four ecoraces of the species have been reported from different states of India. In West Bengal, previously it had been recorded from the Southern part including Kolkata and the hill region of North Bengal. In June 2020, two beautifully coloured, large-sized male and female tasar moths, a mature tasar worm and an emerged tasar cocoon is observed on the Ber plant or Indian jujube plant (*Ziziphus mauritiana* Lam.) a secondary food plant of tasar silkworm near Farabari, Siliguri subdivision of Terai agro-ecological zone, West Bengal. This new record updates the present distribution of tasar moth in West Bengal. An attempt has been made in the present work to report the existence of *Antheraea mylitta* Drury along with photographs from Terai region, West Bengal, India. During the investigation, length and breadth with wing expanded of female and male tasar moth measured about 6cm, 15.4cm and 5.3cm, 14cm respectively. The mature larva was 10.1cm in length, 2.3cm in width and 30.62g in weight. The colour of emerged cocoon was grayish brown, having a shell weight of 1.62g. Based on the present report, further investigation may be carried out in the future to identify the ecorace along with its economic importance in Sericulture.

Keywords: *Antheraea mylitta*, Tasar Silkmoth, Sericulture

Introduction

India produces four types of commercial silk: Mulberry, Tasar, Eri and Muga. Tasar silk is the product of tasar silkworm, generally classified into two types: tropical tasar and temperate tasar (Bambhaniya *et al.*, 2017). The species is distributed across different states of India in the form of 44 ecoraces (Singh and Srivastava, 1997; Srivastava *et al.*, 2003). Being polyphagous, the tropical tasar silkworm thrives on several food plants viz. Arjun (*Terminalia arjuna*), Asan (*Terminalia tomentosa*), Sal (*Shorea robusta*), Ber (*Zizyphus mauritiana*) etc. India is the world's second largest tasar silk producer after China and has the distinction of being the only country

producing tropical tasar silk (Saha *et al.*, 2018). The species is distributed in different states of India namely Himachal Pradesh, Meghalaya, West Bengal, Punjab, Rajasthan, Orissa, Uttar Pradesh, Sikkim, Assam, Bihar, Madhya Pradesh, Karnataka, Maharashtra, Andhra Pradesh, Tamil Nadu, Pondicherry and a few other countries such as Pakistan, Bangladesh, Southern part of China, Nepal, Bhutan, Burma and Sri Lanka. (Arora and Gupta, 1979). In West Bengal, the species has been mostly recorded from Southern part namely Arka, Manbhum, Calcutta & Chandannagar whereas, Kurseong (1524m msl) is the only place in Northern part

from where this species has been reported (Arora and Gupta, 1979). The present study reports the occurrence of *Antheraea mylitta* from the foothills, Terai region and North Bengal plains.

Materials and methods

During an opportunistic field survey, in the time period of summer, 2 June 2020, a pair of large-sized tasar moth, mature tasar larva and an emerged tasar cocoon were observed on the Ber plant or Indian jujube plant (*Ziziphus mauritiana* Lam.), a secondary food plant of tropical tasar silkworm, near Farabari in Siliguri subdivision of West Bengal. The moths, mature larva and the emerged cocoon were collected manually and photographed for the further identification process. The specimen was identified using relevant literature (Arora and Gupta, 1979; Sinha *et al.*, 2016). The female moth was tied to a bamboo-made kharika (traditional egg-laying device) to lay eggs. Information on this species is based on observation from 10 AM to 11 AM of collected specimens. The length and breadth of mature larva and moths were measured with the help of a scale and the weight of mature larva and the emerged cocoon were taken using an electronic weighing balance. All the photographs are provided in Fig.1-6.

Results

Terai region of West Bengal is comprised of the Siliguri Subdivision of Darjeeling district, Islampur Subdivision of North Dinajpur district and the whole district of Jalpaiguri, Alipurduar and Coochbehar. In the present report, tasar silkmoth has been recorded from the Siliguri subdivision of the Terai region, West Bengal. Geographically Siliguri is located at the base of the Himalaya mountains in the plains of Darjeeling and Jalpaiguri district on the banks of River Mahananda and Teesta at a location of 26.71°N latitude, 88.43°E longitude, in the Northern part of West Bengal, which has an average elevation of 400 feet and falls under humid subtropical climate. Siliguri and entire Terai region of West Bengal has been blessed in abundance with a great variety of flora and fauna. The forest here is moist tropical and contains

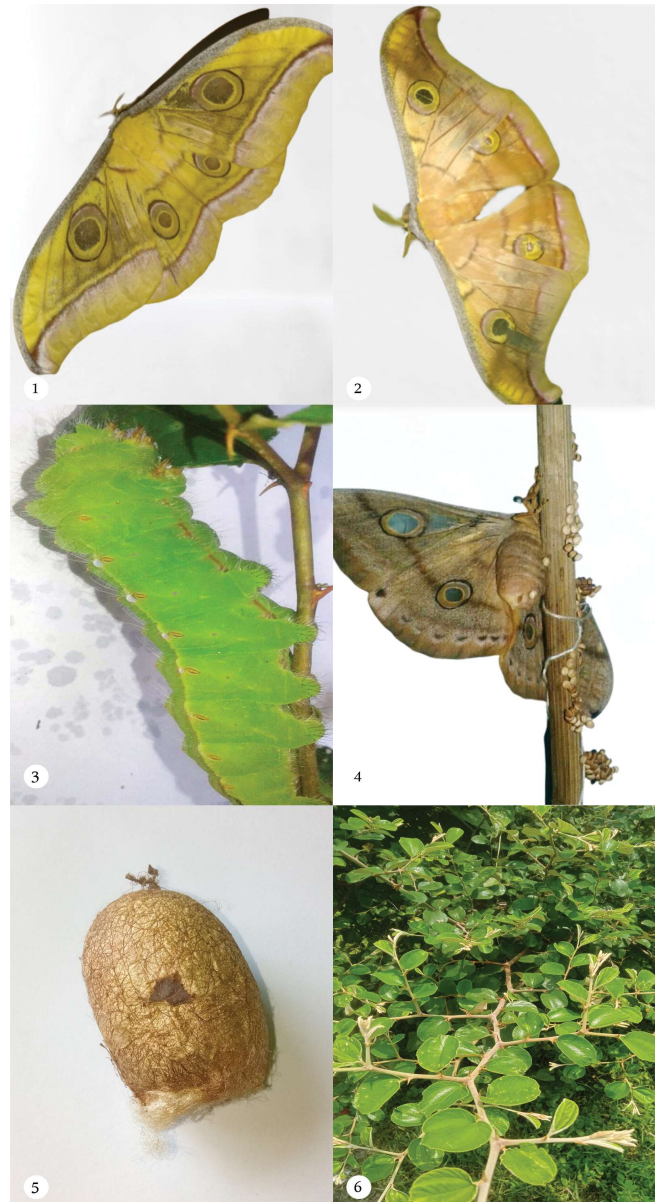


Fig. 1-6. 1. Female *Antheraea mylitta* moth 2. Male *Antheraea mylitta* moth 3. Mature *Antheraea mylitta* larva 4. Female *Antheraea mylitta* moth laying eggs 5. Emerged *Antheraea mylitta* cocoon 6. Ber plant or Indian jujube plant (*Ziziphus mauritiana* Lam.), food plant of Tropical Tasar silkworm

Sal, Khair, Simul, Sissoo, Riverine grasslands, various rare species of Orchids and Ferns.

Species description

The male and female moth exhibit dimorphism in external appearances such as colour, shape and size. Soft velvet like

scales cover the body surface of both the moth. The male moth was light brown in colour, on the other hand, the female moth was yellowish in colour. The male moth displays anterior wings with sharp curve at the apex, while the female displays blunt curve. Black patches were noticed in the portion of apical region of the forewing of male tasar moth. Four transparent eyespots were observed on the wings of both male and female moth. The female moth was larger than the male moth. The length and breadth with wing expanded of the female tasar moth were 6cm and 15.4cm respectively that of male moth were 5.3cm and 14cm. The male moth possesses large, thick antenna and a narrow abdomen whereas, the female has small, narrow antenna and broad abdomen. The eggs were oval-shaped and light brown in colour. The mature larva was greenish in colour and it measured about 10.1 cm in length, 2.3 cm in width and 30.62g in weight. The emerged cocoon was hard, oval-shaped, grayish-brown in colour, having a non-flossy shell and a shell weight of 1.62g.

Discussion

Arora and Gupta (1979) reported the species from the northern hill zone of West Bengal (Kurseong 1524 m.). Based on the available literature, there were no previous records of *Antheraea mylitta* from the Terai region of West Bengal and North Bengal plains. The present study is thought to be the first record of *Antheraea mylitta* from the Terai region of West Bengal and confirms its presence here. This record will help in updating the distribution of tasar moth in West Bengal. Since this is thought to be the first report of tasar silkworm in the Terai region, West Bengal, there is plenty of scopes to carry out in-depth survey work across the Siliguri subdivision and entire Terai region of West Bengal to collection, conservation and further documentation of this species.

Conclusion

Considering the existence of tasar silkworm in the natural habitat of the Terai region, West Bengal rearing can be conducted of this race to assess the economic traits of cocoon and quality of raw silk. Efforts should be made for the



Fig. 7. Map showing the new distribution of *Antheraea mylitta* from West Bengal, India. Map source-www.arcgis.com

conservation of this wild tasar silkmoth naturally distributed in Terai region, West Bengal to protect the Seri-biodiversity of this region. There is a need to ascertain the proper identity of this race through the study of phenotypic characteristics along with molecular characterization.

Acknowledgments

The author is grateful to Dr. Niranjana Kumar, Scientist D, Central Tasar Research and Training Institute, and Dr. Mridul Chandra Sarmah, former Scientist D, Central Silk Board for their valuable suggestions and constant encouragement.

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