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Report of occurrence of *Lymantria mathura* (Lepidoptera: Erebidae) from Saranda Forest Division, Jharkhand, India

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Abstract

Saranda forest division is the famous Sal-forest of Jharkhand, India. *Shorea robusta*, commonly known as 'Sal' is an indigenous plant species, profusely regenerating and growing in the forest region. It is ecologically as well as economically important timber of India. *Lymantria mathura* Moore, [1866], commonly called Rosy Gypsy Moth (Lepidoptera, Erebidae, Lymantriinae) is an established pest species of *Shorea robusta* (Dipterocarpaceae). As a result of taxonomic identification, a major pest species of moth, *Lymantria mathura* Moore, [1866] has been identified for the first time from Saranda forest division.

Keywords: Saranda forest division, *Lymantria Mathura*, *Shorea robusta* and pest species

Introduction

Saranda forest division is the famous Sal-forest of Jharkhand, India. The area shares its boundary with West Bengal and Odisha. The division comprises four forest ranges, Samta, Koina, Sasganda and Gua. It has very diverse flora which produces different types of forest products like- Sal leaves, Sal seeds, Salai gum, Siyali (*Bauhinia spp.*) leaves, Mahua (*Madhuka sp.*) flowers and fruits, Sabai grass, Honey and other plants of medicinal importance^[8]. *Shorea robusta*, commonly known as 'Sal' is an indigenous plant species^[7, 11], profusely regenerating and growing in the forest region. It is ecologically as well as economically important timber of India^[17, 11]. Sal trees are source of many forest products on which the local population survives.

Lymantria mathura Moore, [1866], the Rosy Gypsy Moth (Lepidoptera) is a polyphagous species belonging to subfamily Lymantriinae under family Erebidae. Sexual dimorphism is prominently seen in this species in terms of size and colour. Adult males have forewing brown and hindwing yellow. Females have forewings white with black markings and hindwing pink. Wingspan of adult female is found larger in comparison with the male. It is an established pest species of *Shorea robusta* (Dipterocarpaceae)^[1, 2, 10, 3, 11]. Till date, there is no published report of occurrence of this moth species from Saranda Forest Division. However, Singh (2019)^[14] reported *Lymantria marginata* Walker, 1855 from Saranda Forest Division.

In the present study, *Lymantria mathura* Moore, [1866] has been collected for the first time from Saranda forest division. Photograph of the adult male and female adult have been provided.

Methodology

Study Area

Saranda forest division is a reserve forest situated in West Singhbhum district of Jharkhand (Figure 1). Landscape is full of hills and has rich diversity of flora and fauna. During this study, the studied species was collected from Kiriburu and B. B. Mine area (Figure 2).

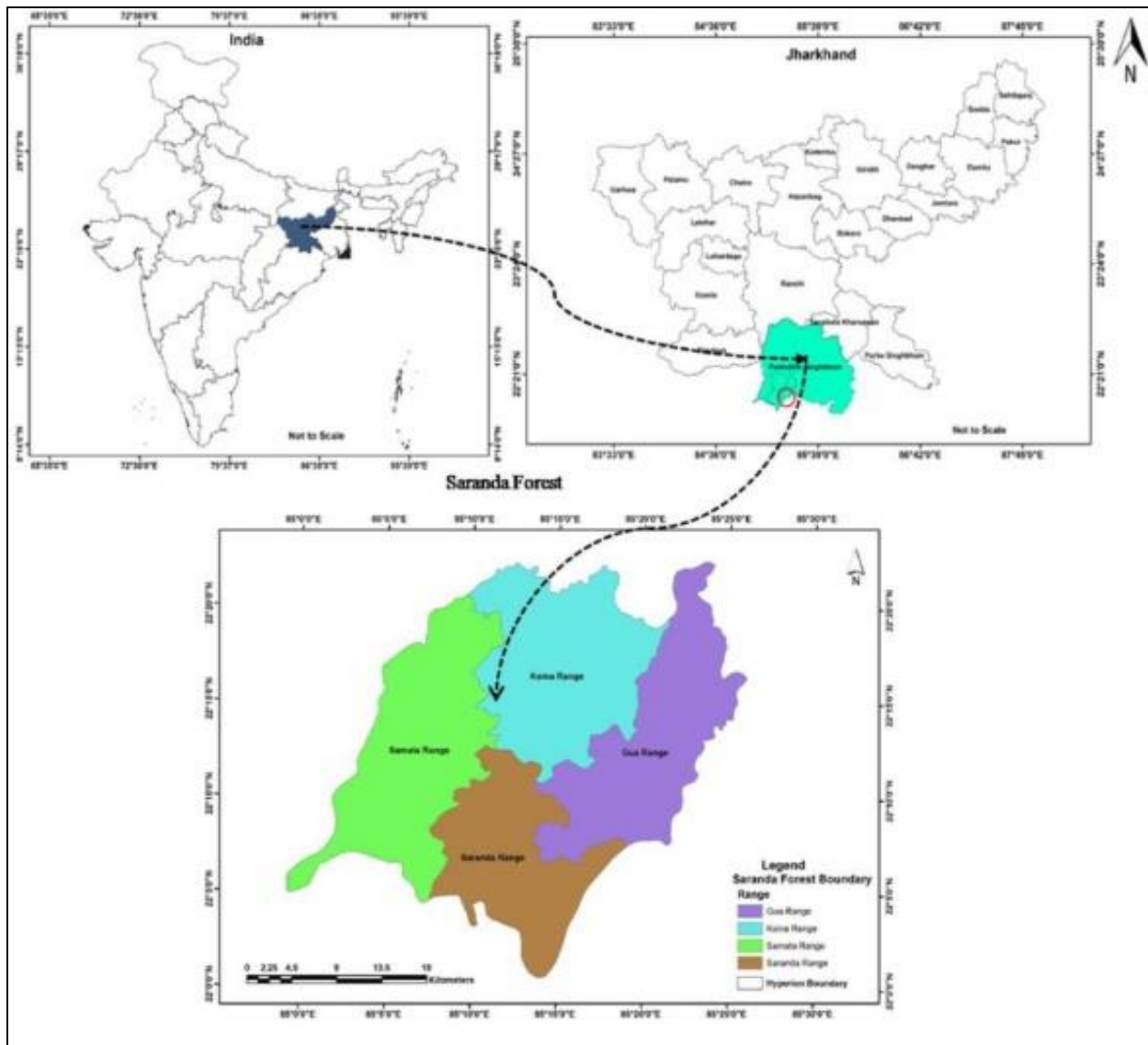


Fig 1: Map of India, Jharkhand and Saranda Forest Division (Courtesy-Google India)



Fig 2: Map of Saranda Forest Division showing the localities where moths were recorded (Courtesy-Google Earth)



Fig 3: A survey locality (Tholkobad) in Saranda Forest Division, Jharkhand

Collection & Identification

Adult moths were collected using vertical light traps fitted with Mercury bulb (200 W). Collection was done during pre-monsoon and post-monsoon seasons in the forest. The collected samples were treated as per recent techniques of Lepidopterology. Specimens were photographed using camera (Canon EOS 600D). All the specimens are deposited at the National Zoological Collection of Zoological Survey of India, Gangetic Plains Regional Centre, Patna, Bihar. Identification of the specimens was done with the help of relevant literature [4, 5, 12]. Detail about host plants and distribution was taken from Robinson *et al.* 2010; Shubhalaxmi *et al.*, 2011; Singh, 2019 and Singh 2022 [9, 13, 14, 15].

Results and Discussion

Family: Erebidae

Subfamily: Lymantriinae

Genus *Lymantria* Hübner

Hübner [1819]; *Verz.bek.Schmett.* (10): 160.

Lymantria mathura Moore, [1866] (Plate-1, Figure- 1 and 2)

Lymantria mathura Moore, 1866; *Proc. Zool. Soc. Lond.* 1865 (3): 805.

Material Examined: India: Jharkhand, Saranda Forest, Kiriburu (22°07.066' N; 85°17.831' E), Alt.- 897.7 m, 13.xi.2017, 1 ex-♂, 01.x.2018-1ex-♂, 02.x.2018- 2ex-♂, 03.x.2018- 1 ex-♂, 06.viii.2019-1ex.-♀, 1ex-♂, B. B. Mine (22°10.030' N; 85°21.299' E), 523.9 m asl, 08.viii.2019-1ex.-♂ (Coll.by- K. Kaustubh).

Distribution: India: Bihar, Jharkhand, Maharashtra, Meghalaya, North West Himalaya, Sikkim, Uttarakhand and

West Bengal (Singh, 2019). *Elsewhere:* China, Japan, Korea, Nepal (Singh, 2019).

Host Plant: *Lagerstroemia parviflora* (Lythraceae), *Mangifera indica* (Anacardiaceae), *Planchonia careya* (Lecythidaceae), *Quercus serrata* (Fagaceae), *Shorea robusta* (Dipterocarpaceae), *Syzygium cumini* (Myrtaceae), *Terminalia arjuna*, *Terminalia bellirica*, *Terminalia myriocarpa*, *Terminalia tomentosa* (Combretaceae) (Robinson *et al.* 2010), *Quercus griffithii* (Fagaceae) (Singh 2022 in Sondhi *et al.*).



Plate 1: *Lymantria mathura* Moore, [1866]

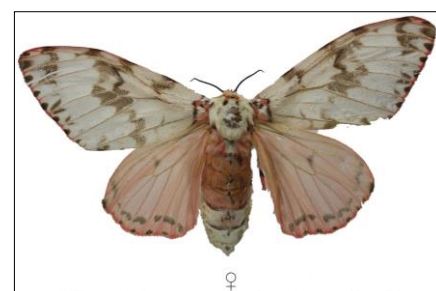


Plate 2: *Lymantria mathura* Moore, [1866]

Conclusion

Since the moth fauna of this region in Jharkhand is insufficiently studied earlier, there was no published record of this species. Presence of pest species raises alarm of threat to the forest ecosystem because of dominance of a single type of plant species. Mass emergence of caterpillars of *L. mathura* caused an epidemic like situation in the Doon valley and neighbouring forest areas of Uttar Pradesh during 1953-54^[10]. Caterpillars of this moth were reported to cause defoliation in Sal trees in forests of Assam and Madhya Pradesh in India^[1, 3, 11]. Since, Saranda forest division is dominated by *Shorea robusta*, so it is important to know about the presence and distribution of such pest species. The moth has been recorded from the two important mining areas (Kiriburu and B. B. Mine area) of the Sasganda range of Saranda forest division, Jharkhand. Repeated surveys in the area and proper monitoring will help to ensure a check before it starts damaging like a havoc.

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Competing Interests

Authors have no conflict of interest to any extent.

Authors' Contributions

“Author A-Kumar Kaustubh’ designed the study, performed the laboratory work, analysed the data and wrote the first draft of the manuscript. ‘Author B-Rahul Joshi’ and ‘Author C-S. M.M. Hassan’ managed the analyses of the study. All authors read and approved the final manuscript.”

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