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## Incidence of foliage infestation by the larvae of *Phalanta phalantha* (Drury) (Lepidoptera: Nymphalidae) on *Populus deltoides* Bartr. ex Marsh in Jharkhand, India

**Sailesh Chattopadhyay**DOI: <https://doi.org/10.22271/j.ento.2023.v11.i4a.9218>**Abstract**

Incidence of leaf infestation of *Populus deltoides* Bartr. ex Marsh by the Larvae of *Phalanta phalantha* (Drury) was noticed for the first time in forest nursery of Jharkhand state. The present findings document a new record of host plant (*Populus deltoides*) of this lepidopteron insect from Jharkhand. This new record in Jharkhand is enormously important for *Populus deltoides* as a promising agroforestry tree species and the damage potential of *Phalanta phalantha*.

**Keywords:** *Phalanta phalantha*, foliage infestation, *Populus deltoides* new record

**Introduction**

Poplars are multipurpose, fast growing, deciduous tree species belonging to the family Salicaceae and are of high demand as industrial softwood for paper and pulp, matchwood, plywood and light constructional timber industry throughout India<sup>[13]</sup>. Among the poplar species, *Populus deltoides* is a good choice for agroforestry system, the cultivation of which has employment and income generating potentiality in the rural sector in India<sup>[3]</sup>. Nursery seedlings, saplings and young trees of this poplar species are often prone to foliage damaging insect pest attack, the infestation of which has hampered the production of this tree species in all poplar cultivating/growing states of India including Jharkhand<sup>[14, 10, 18, 5, 7, 8, 17]</sup>. Altogether 133 insect species of different categories including defoliators have been recorded by different workers infesting poplar species in India<sup>[1]</sup> and among the lepidopteran defoliating insects, significant damage is caused by Larvae of leopard butterfly, *Phalanta phalantha* (Drury) in both nursery and young plantation of poplars especially *Populus deltoides*<sup>[10, 16, 1, 17]</sup>. *Phalanta phalantha* (Drury) (Lepidoptera: Nymphalidae) is a polyphagous insect pest feed on foliages from a variety of tree species in India and the infestation and damage potentiality by the larvae of this species was recorded on *Salix tetrasperma*, *Flacourtia* sp. and *Ixora* sp.<sup>[2]</sup>, willow<sup>[10]</sup>, *Xylosma longifolium*, *Flacourtia indica*, *Phalanta phalantha* and *Salix* sp.<sup>[12]</sup>. *Lantena*, *Duranta*, *Meyna laxiflora*, *Gymnosporia montana* and thistles have been recorded as adult nectar food plants of adult *Phalanta phalantha*<sup>[11]</sup>. In the present finding, an endeavour has been made to record larvae of *Phalanta phalantha* (Drury) as a leaf infesting insect pests on *Populus deltoides* for the first time from Jharkhand, India.

**Materials and Methods**

Periodical survey were carried out to know the insect pest complex in the campus nursery and plantation areas of Faculty of Forestry, Birsa Agricultural University, Ranchi (23.18° N, 85.19° E; alt 625 MSL), Jharkhand. During the course of survey, quite a good number of caterpillars were noticed to feed on leaves of *Populus deltoides* seedlings and saplings during July-August, 2022. Those larvae were collected and reared in the laboratory using rearing cages as in other lepidopteron insects<sup>[9]</sup> and later the adults were identified as *Phalanta phalantha* (Drury) (Fig. 1) with the help of available literature<sup>[2, 15-17]</sup>.

Pinned specimens of adult butterflies are kept in the collections of insects (BAUFENT) and will be deposited in the National Zoological Collections at Zoological Survey of India, Kolkata, West Bengal in course of time.

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## Results and Discussion

Incidence of Larval infestation on the seedlings and saplings of *Populus deltoides* was first noticed just after the onset of monsoon (last week of July) like other leaf damaging lepidopteron insects [4, 6] and continued up to the month of December. Maximum infestation was recorded from 4<sup>th</sup> week of August to 3<sup>rd</sup> week of September conforming Roychoudhury *et al.* [16]. Larvae were found to be very active voracious feeders and caused serious damage by defoliating complete seedlings leaving behind the hard midrib. Young larvae (Fig. 2) were light brown in colour whereas mature larvae (Fig. 3) were purple brown, 25-27 mm long and with

six rows black erect branched spines on the body. Head with orange red vertex and anterior ends of the parietals black and enclose a triangular white frons in between. Pupae (Fig. 4) were green or light brown with shiny brown projections and remained attached to the leaves of the food plant. Adult butterflies were very restless active fliers, with wing expansion from 54-56 mm, yellowish orange in colour with black spots of various sizes and with scalloped sub terminal black lines. As there is no information of *Phalanta phalantha* in the existing literature on insect pests of *Populus deltoides* in Jharkhand, this leopard butterfly is the new record as an insect pest on Poplar in Jharkhand state of India.

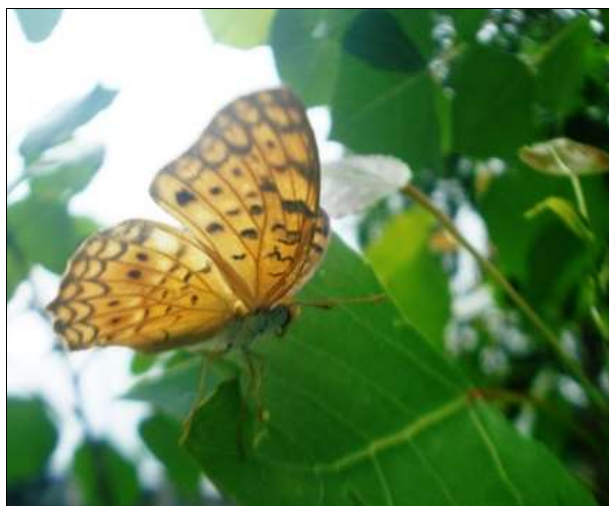


Fig 1: Adult of *Phalanta phalantha*



Fig 2: young larva of *Phalanta phalantha*



Fig 3: Full-grown larva of *Phalanta phalantha*



Fig 4: Pupae of *Phalanta phalantha*

## Conclusion

This current information is a new addition to insect pests of poplars in Jharkhand and the detailed study on biology and damage potentiality of this leopard butterfly (*Phalanta phalantha*) has been undertaken for formulating effective management strategy.

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