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First record of tortoise beetles (Coleoptera: chrysomelidae: Cassidinae) on Shisham (*Dalbergia sissoo* Roxb.) in Jharkhand, India

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Abstract

Leaf infestation by the two species of tortoise beetles, *Aspidomorpha miliaris* (Fabricius) and *Laccolptera nepalensis* Boheman was observed in the shisham (*Dalbergia sissoo* Roxb.) nursery and plantation in the Birsa Agricultural University campus, Ranchi, Jharkhand. This findings document the first record of host plant (*Dalbergia sissoo*) for both the species of tortoise beetles from the State of Jharkhand and adults of *Laccolptera nepalensis* were found more abundant than *Aspidomorpha miliaris*.

Keywords: Tortoise beetles, foliage infestation, *Dalbergia sissoo*, first record, Jharkhand

Introduction

Shisham or Indian rosewood (*Dalbergia sissoo* Roxb.) is one the most preferable timber-producing tree species and is well suited for forestry, agroforestry and farm forestry plantations throughout India^[1]. Among the foliage damaging insect pests, coleopterans are the key pests of shisham in both nurseries as well as plantations in different regions of India^[6]. Chattopadhyay^[2, 3] reported two coleopteran leaf damaging insect pests of shisham viz. *Myloccerus undecimpustulatus undatus* and *Apoderus sissu* from Jharkhand. Kumar^[8] documented five leaf damaging coleopteran insect pests from the state of Jharkhand, India. However, there has been no record of tortoise beetles damaging shisham or Indian rosewood in Jharkhand. In the present investigation, an attempt has been made to report two species of coleopteran leaf damaging insect pest viz. *Aspidomorpha miliaris* (Fabricius) and *Laccolptera nepalensis* Boheman for the first time in nursery and plantation condition of *Dalbergia sissoo*.

Materials and methods

Weekly survey of insect pests was conducted in the nursery and plantation of the Forestry faculty, Birsa Agricultural University, Ranchi (23.18° N, 85.19° E; alt. 625 MSL) of Jharkhand and incidences of leaf infestations by quite a good number of adult tortoise beetles were noticed in nursery and different shisham plantation sites during the month of March – July, 2019. The beetles were collected with a long handled insect catching net and killed in the insect killing bottle containing ethyl acetate. The freshly killed specimens were pinned and kept in insect boxes containing naphthalene balls for further study. Later, these insects were identified as *Aspidomorpha miliaris* (Fabricius) and *Laccolptera nepalensis* Boheman (Coleoptera : Chrysomelidae : Cassidinae) after thorough morphological studies and with the help of available literature^[5, 7, 9].

The materials of the present study are in the collection of insects (BAUFENT) and will be deposited to the National Zoological Collections at Zoological Survey of India, Kolkata in due course.

Results and Discussion

Both the tortoise beetles *A. miliaris* and *L. nepalensis* are known on Convolvulaceae hosts mainly *Ipomoea* spp. in different parts of India^[1, 4, 10]. Vazirani^[12] recorded both the species from North Eastern region of India. However, the occurrence of these two species on *Dalbergia sissoo* is reported for the first time. The adults of *A. miliaris* (Fig. 1) are 11 – 12 mm long and having 17 to 19 black spots on the elytra whereas the length of *L. nepalensis* (Fig. 2) ranges from 7.5 – 8.5 mm and with a pair of blackish markings on the pronotum. During day hours both the beetles were found to take rest on the underside of the leaves and

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they were observed to feed on leaves at night. The adults of *A. miliaris* were found to eat away from the lower surface of the leaf lamina by making small irregular or almost circular holes (Fig. 3) and *L. nepalensis* were observed to feed from both upper and lower leaf surfaces by creating elongated holes (Fig. 4). The adult population of *L. nepalensis* was more than *A. miliaris* in all study sites. The present report of these two species associated with shisham (*Dalbergia sissoo* Roxb.) is the first record from Jharkhand state of India.



Fig 1: *Aspidomorpha miliaris* (Adult)



Fig 2: *Laccoptera nepalensis* (Adult)



Fig 3: Feeding pattern of *A. miliaris*



Fig 4: Feeding pattern of *L. nepalensis*

Conclusion

This new food plant record of both the tortoise beetles constitutes a notable endeavour for future studies on the interaction of this valuable timber yielding species and two species of tortoise beetles viz. *A. miliaris* and *L. nepalensis*.

References

1. Bhatia S, Mehmood I, Singh M. Insect associated with *Ipomea carnea* Jacq (Convolvulaceae) in the Jammu and their potential for its biological control. Journal of Crop and Weed. 2007; 3(2):56-58.
2. Chattopadhyay S. *Myloccerus undecimpustulatus undatus* Marshall- a newly recorded leaf damaging weevil (Coleoptera: Curculionidae) on shisham (*Dalbergia sissoo* Roxb.) plantation from Ranchi, Jharkhand, India. Jour Res (BAU). 2013; 25(1):88-89.
3. Chattopadhyay S. Record of *Apoderus sissu* Marshall (Coleoptera: Curculionidae) on foliage of shisham (*Dalbergia sissoo* Roxb.) in Ranchi, Jharkhand. J Exp. Zool. India. 2017; 20(2):1213-1214.
4. Ghatte HV, Borowiec L, Rane NS, Ranade SP, Pandit S. Tortoise beetles and their host plants from Pune (Maharashtra State, India) and nearby places (Coleoptera: Chrysomelidae: Cassidinae). Genus. 2003; 14(4):519-539.
5. Gressitt JL. The tortoise beetles of China (Chrysomelidae: Cassidinae). Proceedings of California Academy of Sciences. 1952; XXVII(17):433-592.
6. Khan HR. Insect pests of *Dalbergia* and their management. Indian Council of Forestry Research and Education Publ. Dehradun, India, 1995, 141.
7. Kimoto S, Noerdjito WA, Nakamura K. Cassidinae of Java (Insecta: Coleoptera: Chrysomelidae) Tropics. 1995; 5(1-2):101-114.
8. Kumar A. The study of insect pests of *Dalbergia sissoo* Roxb. and their seasonal incidence in Jharkhand, India. American Journal of Agriculture and Forestry. 2017; 5(5):137-144.
9. Maulik S. The fauna of British India including Ceylon and Burma. Coleoptera, Chrysomelidae (Hispiinae and Cassidinae). Taylor and Francis, London, 1919, 439.
10. Sultan A, Borowiec L, Rafi MA, Ilyas M, Naz F, Shehzad A. Tortoise beetles of Rawalpindi- Islamabad, Pakistan and their host preferences (Coleoptera:

- Chrysomelidae: Cassidinae). Genus. 2008; 19(1):93-102.
11. Tewari DN. A monograph of *Dalbergia sissoo* Roxb. Indian Council of Forestry Research and Education. International Book Distributers, Dehradun, India, 1994, 202.
 12. Vizirani TG. Notes on collection of Hispinae and Cassidinae (Coleoptera: Chrysomelidae) from N.E. India. Record Zoological Survey, India. 1972; 66(1-4):143-152.