

Short communication

## ***Sastroides besucheti* Medvedev (Coleoptera: Chrysomelidae: Galerucinae) is a pest of nutmeg, *Myristica fragrans* Houtt. (Myristicaceae)**

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### **Abstract**

The leaf beetle, *Sastroides besucheti* Medvedev (Coleoptera: Chrysomelidae: Galerucinae), is reported as a pest of nutmeg, *Myristica fragrans* Houtt. (Myristicaceae), in India for the first time. Massive infestation leads to total defoliation of trees.

**Keywords:** India, Insect pest, Leaf beetle, New record

Nutmeg, *Myristica fragrans* Houtt. (Myristicaceae), originated in the Moluccas islands of the Malay Archipelago, is an introduced crop in India. Joseph (1980) reviewed its cultivation and uses. In India, nutmeg is cultivated in the southern states of Karnataka and Kerala and the Andaman and Nicobar Islands in an area of about 18, 730 hectares with a total production of 12, 730 tons (Spices Board, 2015).

Reddy (1977) listed 19 species of insect pests on nutmeg in Asia and the Pacific, of which 15 occur in Malaysia. Nutmeg is a profitable crop in India as it is generally free of serious pest infestations and does not warrant costly pesticide use. To date, nine insect species have been recorded as pests on this exotic tree spice in India (Devasahayam and Koya 1993; Kumar et al., 1994; Veenakumari et al., 1994). All of them are bugs (one Heteroptera and eight Sternorrhyncha) and none of these sap feeding insects are serious pests of the crop. Here, we report a new pest of nutmeg in India, a leaf beetle

*Sastroides besucheti* Medvedev (Coleoptera: Chrysomelidae: Galerucinae).

The infestation was observed in July, 2015 in the farm of the Indian Cardamom Research Institute at Myladumpara in Idukki District, Kerala (09<sup>o</sup>53.306 N, 77<sup>o</sup>9.355 E, 1083 m above mean sea level). This is a mixed plantation of nutmeg, clove and black pepper raised after clearing the forest of all vegetation, except the large trees retained for shade.

Of the 16 nutmeg trees in the study area, four females (two each five and seven years old) were observed heavily infested with *S. besucheti* (Fig. 1) and two of these trees shed all the leaves. Trees in the neighborhood of the infested plants were free of infestation.

Beetles covered the foliage in large numbers and flew around when disturbed. Adults fed on both abaxial and adaxial sides of the leaves by scraping the green matter and produced characteristic scars (Fig. 2). Heavily-fed leaves dried up completely and

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Figure 1. Adults of *Sastroides besucheti* Medvedev on host plant, nutmeg, in India. 2. Feeding symptoms left by adults on the leaves of nutmeg.

fell off. Total drying up of branches was also observed. Two of the infested trees shed all the leaves and thus appeared to have dried up. However, one of them showed signs of gradual recovery by putting forth new buds in October, 2015. By the second week of February, 2016, both of the denuded trees recovered, though partially. No immature stage of the beetle was observed on shoots. Hence it may be assumed that eggs are laid in soil and the larva is a soil dweller that feeds on the roots, as in a common life cycle of Galerucinae. However, no immature stage was observed in the soil in the root zone. *Sastroides besucheti* was described by Medvedev (1999) based on 15 specimens collected at Periyar in Idukki District, India, on 4<sup>th</sup> November, 1972. Adults are 7.7–8.5 mm long and light lemon yellow in life with slightly dark apical antennomeres. Specimens turn light greyish when preserved. The antenna is thin and long, and reaches the middle of the elytra. The pronotum is about twice as long as broad and glabrous with depressions. The elytra are

clothed with short, golden setae. All claws are simple in the female while the anterior ones are bifid in the male. The juvenile stages are unknown.

So far, no information was available on the biology or host plants of *S. besucheti*. Nutmeg being an introduced plant, it is most likely that the beetle has other native plants as hosts. The family Myristicaceae in the Western Ghats, where the insect occurs, is represented by five native species in three genera (*Gymnacranthera* Warb., *Knema* Lour. and *Myristica* Gronov.) and the introduced *M. fragrans* (Nayar et al., 2014). It is probable that one or more of these are the native hosts of *S. besucheti*. Jolivet and Hawkeswood (1995), who reviewed the host plants of the Chrysomelidae of the world, do not include any member of Myristicaceae amongst the host plants of the leaf beetle family. Chrysomelids reported on Myristicaceae after Jolivet and Hawkeswood (1995) include *Notosacantha* Chevrolat (Cassidinae: Cassidini) (Borowiec et al.,

2013), *Laselva* Furth (Galerucinae: Alticini) (Furth, 2007) and *Sceloenopla* Chevrolat (Cassidinae: Hispini) (Staines 2011). Bernhardt (2000) has mentioned chrysomelids as pollinators of Myristicaceae. This is the first report of a host plant of *S. besucheti*. Total defoliation of trees due to chrysomelid infestation as in this case is unusual. Voucher specimens of *S. besucheti* are deposited in the collections of the National Bureau of Agricultural Insect Resources (NB AIR), Bengaluru and the National Pusa Collection, Indian Agricultural Research Institute, New Delhi, India.

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