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First report of *Malcus indicus Štys*, 1967 (Lygaeoidea, Malcidae, Malcinae) as a pest of clove bean, *Ipomoea muricata* (L.) Jacq. (1798) with a note on the host plants of the genus *Malcus*

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ABSTRACT*: Malcus indicus* has been reported as a pest of clove bean, *Ipomoea muricata* (L.) Jacq. (1798) for the first time from India, Kerala. Nymphs and adults were observed to suck sap from the matured leaves. Feeding points on leaves were seen as minute pale spots. Severely infested leaves were observed to have low photosynthetic area. Damage was observed in summer months but persisted during the onset of monsoon initially. However, heavy rains lowered the population of insect.

KEY WORDS: Damage, photosynthetic area, nymphs, adults, alternate hosts

The monotypic genus *Malcus* Stål found primarily in oriental region belongs to the subfamily Malcinae under the family Malcidae. There were some disagreements on the taxonomic placement of the genus. Stål placed the genus in then polyphyletic family Lygaeidae and later raised to a subfamily status. Finally it has been escalated to a familial status. The family Malcidae consists three extant genera (in two subfamilies namely Malcinae and Chauliopinae (Štys, 1967). One extinct genus's fossil record was also reported (Camier *et al*., 2019).

The family Malcidae claims notable economic relevance after the genus *Chauliops* in Chauliopinae, being important legume pests. Except for a few stray records, there are little insights into the host plants of genus *Malcus. Malcus japonicus* Ishihara & Hasegawa*,* feed on the leaves of *Morus bombycis* Koidz, is known as mulberry bug in Japan as reported by Hasegawa though the genus is doubtlessly not specific to *Morus* (Sweet, 2000). Mohanasundaram (1972) reported the nymphs and adults of *Malcus scutellatus* Distant (= M. *flavidipes* Stål) were found breeding on cucurbits in a fruit farm in south India (Coimbatore district in Tamil Nadu). Kerzhner (2001) stated some Malcinae consume legumes. There was an indication of *Ipomoea indica* as a host plant of a

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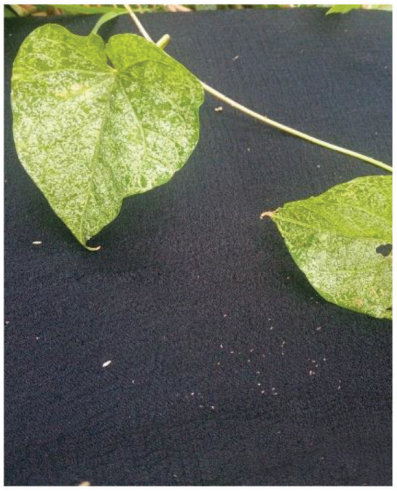
a) Adult and nymphs of *Malcus indicus*



b) *Ipomoea muricata*

c) *Commelina bengalensis*

d) *Synedrella nodiflora*

e) *Acalypha*

Fig. 1 Adult and nymphs of *Malcus indicus*; Host plants with damage by *Malcus indicus*

Malcus sp. (Bay, 2022). *M. flavidipes asper, M. flavidipes flavidipes*, *M. tuberculatus,* and *M. nigrofasciatus* were collected by sweeping herbages from an island in China. *M. flavidipes flavidipes* was reported on banana leaves from Cambodia (Štys, 1967). Zheng (1999) reported the members of the families like Araceae, Convulvulaceae, Fabaceae, Moraceae, Sterculiaceae, and Urticaceae as the host plants of *Malcus* spp. Roca-Cusachs and Goula (2017) discussed about the host plants of the genus, like *Bahuinia variegata, Cassia didymohotrya* or *Sophora japonica* of the family Fabaceae, *Raphis excelsa* of Araceae and *Ficus* spp., *Maclura* spp. or *Morus* spp. of Moraceae.

Ipomoea muricata (L.) Jacq.is a herbaceous climber native to central America whose swollen pedicels are consumed as delicious vegetable mostly in Kerala, India where it is referred as clove bean or 'nithyavazhuthana'. The fruits are medicinal and rich in protein, fibres, vitamin C, Potassium, Calcium, Iron, etc. (Parisa *et al.,* 2019; Palanisamy *et al*., 2019).

Malcus indicus Štys, 1967 (Lygaeoidea, Malcidae, Malcinae) is an endemic species of south India, described by Stys, 1967 from Trichinopoly, Tamil Nadu. No host plant information available for this species so far. Nymphs and adults of *M. indicus* (Fig. 1a) observed feeding on the mature green leaves of clove beans (Fig. 1b) in Kerala in Changanassery and Puthupally of Kottayam district and Mazhuvannoor of Ernakulam district during February to April, 2024. Nymphs and adults were collected from the infested areas and identity was confirmed by dissecting male genitalia. Infestation noticed in seedlings and bearing plants of desi varieties of clove bean.

Nymphs and adults were observed to suck sap from the matured leaves. Feeding points on leaves were seen as minute pale spots. Severely infested leaves were observed to have low photosynthetic area. Damage was observed in summer months but persisted during the onset of Monsoon initially. However, heavy rains lowered the population of insect.

Three weeds, namely, *Commelina bengalensis* L., *Synedrella nodiflora* (L.) Gaertn. and *Acalypha* sp. were recorded as alternate hosts (Fig. 1c-e) of *M. indicus* during the study. Severe incidence was noticed on the leaves of *C. bengalensis* and *Acalypha* sp.

This is the first report of *M. indicus* as a pest of clove bean, *I. muricata*.

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