

Macrohomotoma gladiata Kuwayama, 1908

(Hemiptera: Psylloidea: Homotomidae)

A New Psyllid Pest of *Ficus microcarpa*

FIRST DETECTION & BACKGROUND

In November 2022, Hawai'i Department of Agriculture, Plant Pest Control Branch (HDOA-PPC) was contacted by a business in the Māpunapuna industrial area about a tree fully covered in a "snow-like" white substance (Fig. 1). Upon a site visit, a single *Ficus microcarpa* (Chinese banyan) tree was found to be heavily infested with psyllids. Immediate surveys in the surrounding areas found additional infested trees (Fig. 2).

Specimens were identified as *Macrohomotoma gladiata* Kuwayama, 1908 and digital images confirmed by Diana Percy (Natural History Museum & University of British Columbia) on November 17, 2022.

Any prior reference of *M. gladiata* established in Hawai'i is erroneous and taken from the account by Koebele of a single damaged female specimen, and apparently not established or seen again in subsequent collecting (Crawford 1919).

THIS IS A NEW STATE RECORD FOR HAWAII'

DESCRIPTION

Eggs: Eggs are cream-colored to light yellowish and are oval-shaped with one pointed end (Figs. 3, 5). Eggs are laid on the new shoot tips in young leaves in clusters of ten to twenty (Pedata et al. 2012).

Immatures: Immatures go through five instar stages. They produce white waxy secretions (Figs. 4, 6). The younger instars (Fig. 3) are orange-brown, while the fifth instar is pale green with brown wing pads (Fig. 6).

Adults: 2.0 to 3.0 mm long, and green to dark brown, wings are transparent with several dark spots (Figs. 7, 8) (Rung 2016).

HOST

Ficus microcarpa L. (Moraceae) is the primary host plant and the only species *M. gladiata* has been confirmed from to date.

According to Hollis and Broomfield (1989), previous records in literature of this species attacking other *Ficus* spp. are questionable.

DAMAGE & SYMPTOMS

Colonies of immature psyllids feed on new shoots (Figs. 1, 9-11), which cause young leaves to curl, protecting them within these leaf layers. The infestation causes stunted growing tips and may cause tip dieback (Fig 10). Immatures produce white woolly wax secretions which cover shoot tips and leaves like "snow." Excessive sooty mold grows on the copious amounts of honeydew near the feeding colonies (Fig. 1).

The final instar exuviae of immature stages can be seen stuck to the undersides of leaves once adults have eclosed (Fig. 11).



Fig. 1. *F. microcarpa* branch infested with *M. gladiata* psyllids and covered with woolly wax secretions. Sooty mold is covering leaves below the growing tips where the immatures are feeding.



Fig. 2. *F. microcarpa* tree infested with *M. gladiata*, showing white woolly wax-covered shoot tips.

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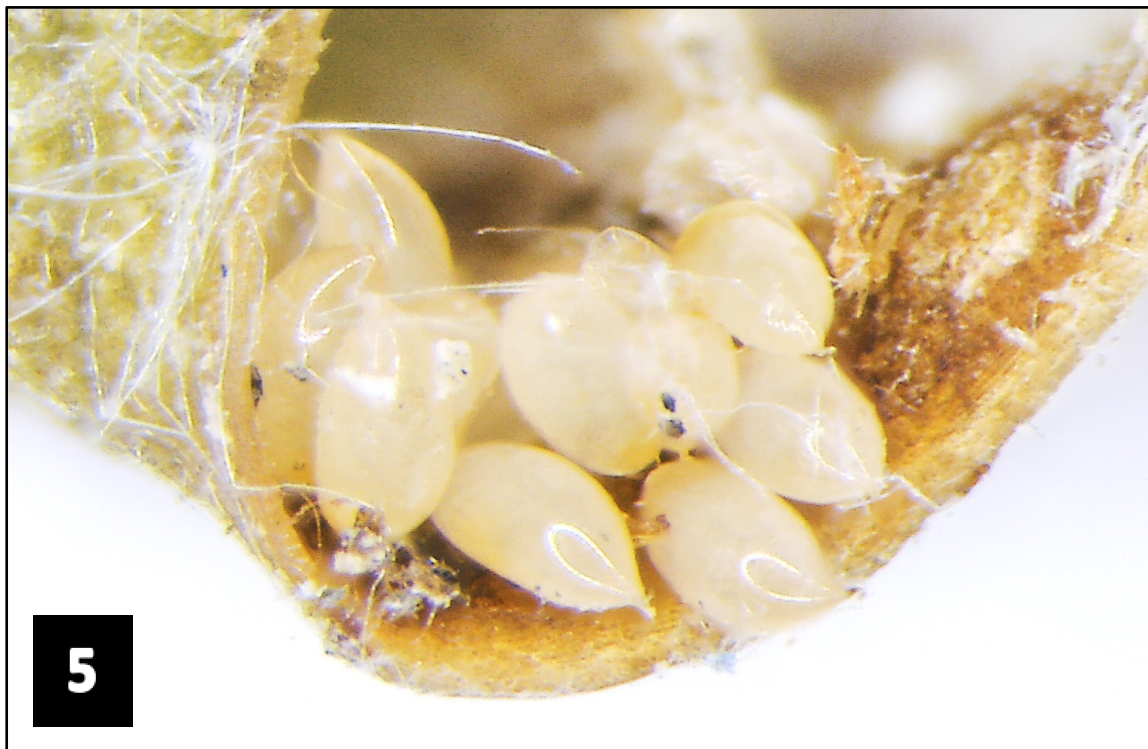
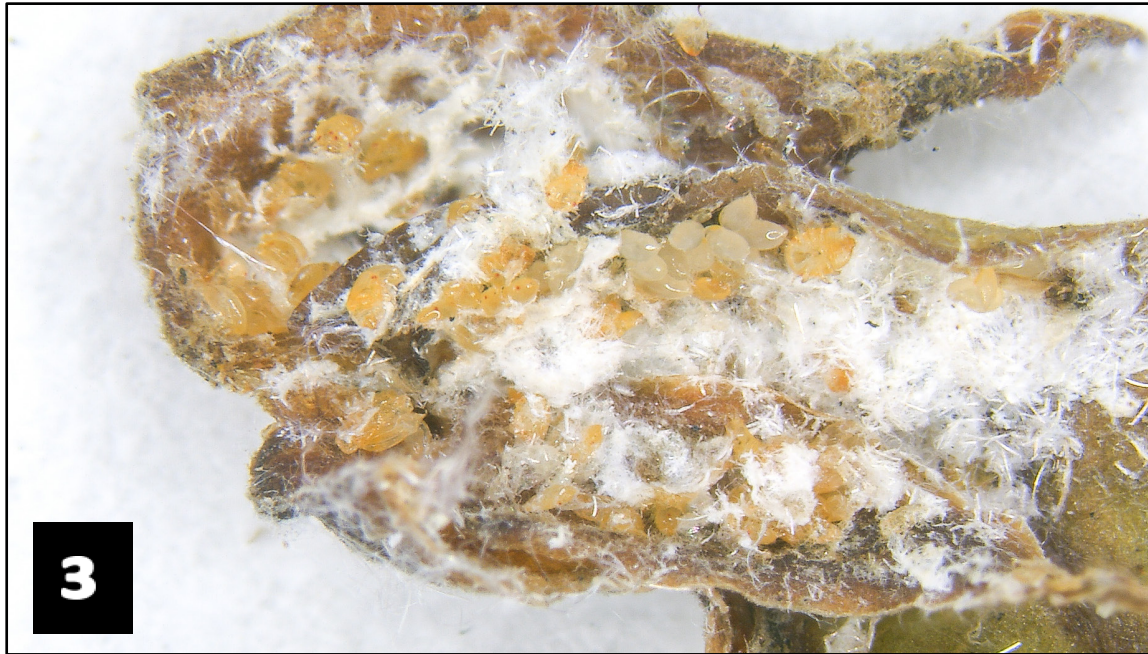


Fig. 3. Infested apical branch tip of *F. microcarpa* after outer stunted leaves were pulled off. Showing eggs and early instar immatures.

Fig. 4. Two immature psyllids producing woolly wax secretions.

Fig. 5. Close up of eggs.

Fig. 6. Immature, late instar.

Fig. 7. Male (top) and female (bottom) dorsal view.

Fig. 8. Male (top) and female (bottom) lateral view.

DISTRIBUTION

Worldwide: *Macrohomotoma gladiata* has a native range spanning China, India, Indonesia, Japan, Malaysia, and Taiwan (Burckhardt, et al. 2018). It has invaded California (Rung 2016) and Mediterranean countries in South Europe and North Africa.

Hawai'i: To date, this pest has been reported from **O'ahu** and has been detected throughout the southern part of the island, from Salt Lake through Ala Moana.

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Fig. 9. *F. microcarpa* branch, showing infested shoot tips with curled leaves and stunting.



Fig. 10. *F. microcarpa* branch infested with *M. gladiata*, showing tip dieback.



Fig. 11. *F. microcarpa* branch showing final instar exuviae stuck to the undersides of leaves.

NATURAL ENEMIES

Very few predatory coccinellid (lady beetles), syrphid (hoverflies) and hemerobiid (brown lacewings) larvae were found amongst infestations. No parasitoids have been observed to date.

PREVENT THE SPREAD

Do not transport *Ficus microcarpa* plants or cuttings from O'ahu to uninfested islands. All plant material should be inspected by HDOA Plant Quarantine Inspectors prior to moving interisland.

Report infestations on islands outside of O'ahu: 643pest.org

Email: hdoa.ppc@hawaii.gov

ACKNOWLEDGEMENT

Thanks to Diana Percy for assistance with confirming the identification of this species.

REFERENCE

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