

Biodiversity Record: Fig tree defoliated by *Phauda flammans* moth larvae parasitized by *Gotra* cf. *octocinctus* wasps

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Subjects: Moth, *Phauda flammans* (Insecta: Lepidoptera: Phaudidae: Phaudinae);
Parasitic wasp, *Gotra* cf. *octocinctus* (Insecta: Hymenoptera: Ichneumonidae: Cryptinae).

Subjects identified by: Jerome Cai Jiajun and Hwang Wei Song (for moth), Foo Maosheng (for wasp).

Location, date and time: Singapore Island, Lim Ah Pin Road, MINDS Idea Employment Development Centre; 19 January 2024; around 1230 hrs.

Habitat: Urban area among concrete buildings.

Observers: Foo Maosheng, Choo Ruirong, Katelyn Teh and Sri Harini.

Observations: A large fig tree situated in the middle of the centre's compound was stripped nearly bare of foliage (Figs. 1 & 2). The ground around the tree was littered with over 150 caterpillars, both dead and live (Fig. 3), and around 60 recently eclosed adult moths (Fig. 4). The recently eclosed moths had plump abdomens and crumpled wings. A few cocoons were located in the topsoil at the base of the tree. These were well camouflaged among the soil. A handful of late-stage caterpillars, cocoons and adult moths were collected as voucher specimens, and for ex-situ observations.



Fig. 1. Fig tree stripped bare of foliage. Fig. 2. Canopy of the tree was so defoliated that one is able to see through it (Photographs by: Foo Maosheng).

A few late-stage caterpillars had spun cocoons and entered the pupal stage (Fig. 5) where different development phases were observed before the moth eclosed. One of the cocoons collected was in the late phase of development, as it contained the fully developed body of a moth (Fig. 6), which was visible through the translucent pupal case. Another cocoon revealed a fully developed wasp inside the pupa instead of a moth (Fig. 7). The wasp appeared identical to several wasps that were noted hovering around the caterpillars. The few wasps that were taken as voucher specimens (Fig. 8) appear similar in morphology to *Gotra octocinctus*.

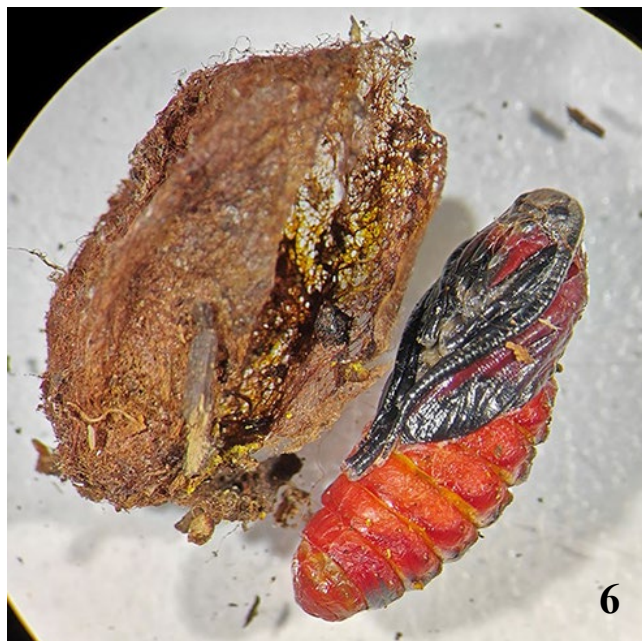


Fig. 3. Lateral view of a late-stage *Phauda flammans* caterpillar of about 10 mm. Fig. 4. Dorsal view of a recently eclosed adult *Phauda flammans* of about 14 mm. Fig. 5. One of the moth caterpillars in the cocoon that it spun, awaiting to enter the pupal stage. Fig. 6. A late pupal-stage from which a fully developed adult moth (right) was ready to eclose (Photographs by: Foo Maosheng).

Remarks: *Phauda flammans* moths are notorious for causing the defoliation of *Ficus* trees, and they may be considered oligophagous pests (Liu et al, 2016; Zheng et al, 2017). The parasitic wasp, *Gotra octocinctus*, has been recorded to parasitise the caterpillars of *Phauda flammans*. It has the highest parasitoid rate among the hymenopteran wasps, including *Apanteles* sp., *Eurytoma verticillata*, and *Exorista yunnanica* (Zheng et al, 2015). This would match the observations on-site where a number of wasps similar to *Gotra octocinctus* were flying near the foliage where live caterpillars were resting on.

Acknowledgements: We would like to thank Miss Jan Teo and the staff of MINDS for providing access and allowing the collection of insect specimens which have been deposited in the Zoological Reference Collection of the Lee Kong Chian Natural History Museum, at the National University of Singapore.

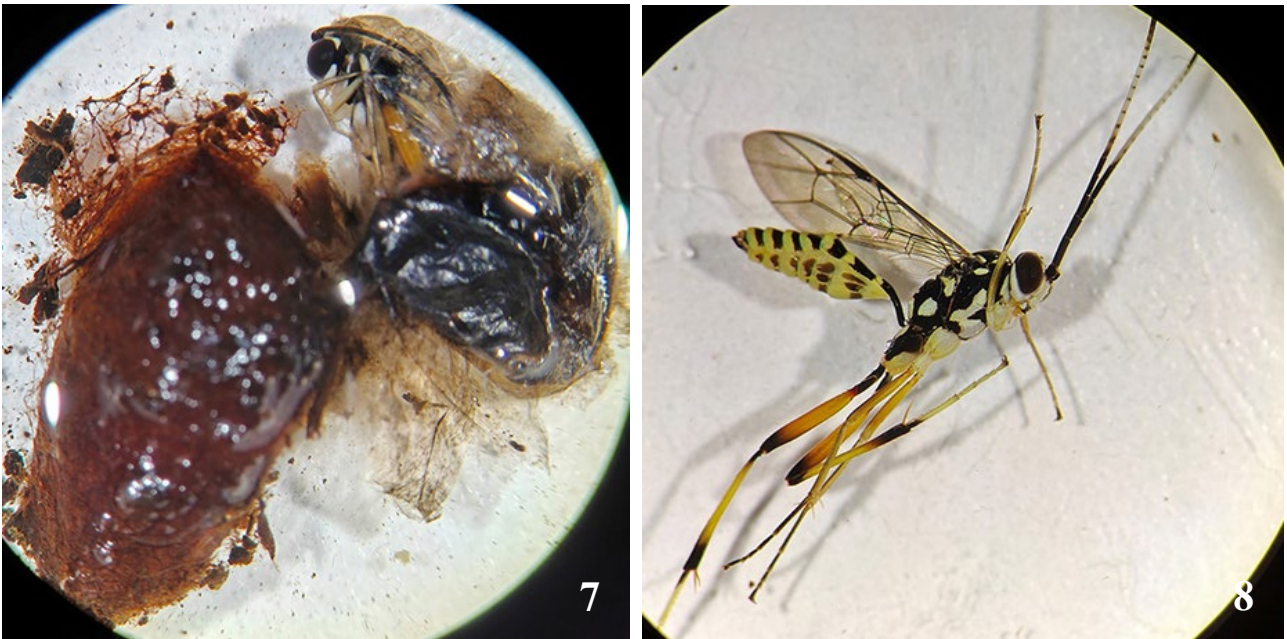


Fig. 7. One of the dissected moth cocoons contained a fully developed parasitic wasp still in the pupal stage (right). Fig 8. Lateral view of an adult wasp of about 11 mm caught hovering near the live caterpillars (Photographs by: Foo Maosheng).

Literature cited:

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