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Biodiversity Record: Herbivory of *Melastoma malabathricum* by *Apogonia* and *Adoretus* beetles

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Subjects: Scarab beetle, *Apogonia* sp. (Insecta: Coleoptera: Scarabaeidae: Melolonthinae);
Rose beetle, *Adoretus* sp. (Insecta: Coleoptera: Scarabaeidae: Rutelinae);
Singapore rhododendron, *Melastoma malabathricum* (Angiosperms: Myrtales: Melastomataceae).

Subjects identified by: Foo Maosheng and Choo Ruirong.

Location, date and time: Singapore Island, Kent Ridge, campus of the National University of Singapore, compound of Ridge View Residential College; 19 September 2024; around 2110 hrs.

Habitat: Urban parkland.

Observers: Choo Ruirong and Lim Cheng Puay.

Observations: Many individuals of scarab beetle belonging to the genera *Apogonia* (Fig. 1) and *Adoretus* (Fig. 2) were observed at night, with illumination from a head lamp, actively feeding on the leaves of *Melastoma malabathricum* shrubs within a plant plot.

Subsequent visits did not record any presence of the beetles during the day, while more individuals were found feeding on the plants at night. *Melastoma malabathricum* plants at other plots within the compound were not affected by beetle predation.

Fig. 1. Dorso-lateral view of an adult *Apogonia* sp. (about 9 mm body length) feeding on *Melastoma malabathricum* leaves. Fig 2. Dorso-lateral view of an adult *Adoretus* sp. (about 13 mm body length) feeding on a *Melastoma malabathricum* leaf (Photographs by: Choo Ruirong).

Remarks: The investigation began when all seven shrubs of *Melastoma malabathricum* planted at the plot were found to suffer serious herbivory damage (Figs. 3, 4) in early September 2024. Visual examinations of the plants during the day did not reveal the creatures responsible. The predators were only discovered on the night of 19 September 2024.

The present observation reveals the nocturnal feeding habits of adult *Apogonia* sp. and *Adoretus* sp., and the potential for these beetles to become serious horticulture pests. Other plants at the same plot did not suffer from herbivory damage from

these beetles, suggesting their dietary restriction to *Melastoma malabathricum* leaves. It is not known why *Melastoma malabathricum* plants at other plots within the compound were unaffected by beetle predation.

We are not able to determine the species of the featured *Apogonia*, but its identity is required to ascertain its exact feeding habits and horticultural pest potential based on existing literature (Kumar et. al, 2009; Pathania et. al, 2015; Calcetas et. al, 2021). It is possible to narrow the specific identity of the featured *Adoretus* sp. to either *Adoretus compressus* or *Adoretus sinicus*. However, to distinguish these two species reliably will require dissection and examination of male genitalia (Dunlap, 2016). Both species have similar pest potential, and their adults are known to be herbivorous and nocturnal, hiding under leaves, loose bark, or shallowly buried in soil at the base of their food plants during the day (Dunlap, 2016; McQuate & Jameson, 2011).

Fig 3. An example out of three *Melastoma malabathricum* shrubs that were completely defoliated. Fig 4. One of four *Melastoma malabathricum* that suffered extensive herbivorous damage (Photographs by: Choo Ruirong).

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