

## Biodiversity Record: Predation of threatened common rose caterpillar by Asian weaver ants

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**Subjects:** Common rose, *Pachliopta aristolochiae* (Insecta: Lepidoptera: Papilionidae);  
Asian weaver or keranga ant, *Oecophylla smaragdina* (Insecta: Hymenoptera: Formicidae).

**Subjects identified by:** Ivy Lim, Han Peng Lim and Anuj Jain.

**Location, date and time:** Singapore Island, Botanic Gardens, Trellis Garden; 6 August 2022, afternoon.

**Habitat:** Urban parkland, with caterpillar host plants *Aristolochia grandiflora* planted on trellis.

**Observers:** Ivy Lim and Han Peng Lim.

**Observation:** Three mature common rose caterpillars were found on a *Aristolochia grandiflora* vine, of varying lengths ranging from 20 to 30 mm. Asian weaver ants were observed firmly biting the caterpillars and hauling them away, presumably towards their nests. One such caterpillar was photographed (Fig. 1) and recorded on video by Han Peng Lim (<https://vimeo.com/737780923>, <https://vimeo.com/742516952>). All of the observed caterpillars were covered with ants, harmed and likely killed by the ants.



Fig. 1. A common rose caterpillar being attacked by Asian weaver ants. (Photograph by: Ivy Lim).

**Remarks:** The arboreal Asian weaver ants are known to be keystone predators in Singapore’s rainforests as they target multiple pollinators across a range of native and non-native flowers as well as their host plants (Tan & Corlett, 2012; Rodriguez-Girones et al., 2013). The authors recently documented their aggressive behaviour against the common tiger *Danaus genutia* caterpillars in an urban park in Singapore (Lim & Jain, 2022). Asian weaver ants routinely attack caterpillars including the common rose, but there appears to be no local published records of their interactions with this species.

Listed as Vulnerable in Singapore, the common rose butterflies use *Aristolochia acuminata* as their dominant larval host plant and less commonly other host plants such as *Aristolochia grandiflora* in Singapore (Jain et al., 2018, Jain et al., 2021). Jain et al. (2021) also recently mapped the distribution of the common rose and identified the Singapore Botanic Gardens as the main hotspot for the species as well as a key source population for central south Singapore.

This predation event raises questions about the caterpillar survival rate of these threatened butterflies, particularly in urban areas where the host plants are planted as a conservation measure. Caterpillars that happen to be near Asian weaver ant nests may be ill fated and are likely to face a near complete decimation. It is useful to note that Asian weaver ants predate on the common rose caterpillars despite the latter being toxic. The caterpillars acquire their toxicity from feeding on the host plants that contain aristolochic acids. Active conservation measures can be considered such as the removal of Asian weaver ants, especially when found near host plants of threatened butterfly species.

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