

Biodiversity Record: Large clusters of Dutchman's pipe, *Aristolochia acuminata*, at Marsiling

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Subjects: Dutchman's pipe, *Aristolochia acuminata* (Magnoliophyta: Aristolochiaceae).

Subjects identified by: Gan Cheong Weei and Anuj Jain.

Location, date and time: Singapore Island, opposite Marsiling Park at the junction of Woodlands Centre Road and Marsiling Road (Fig. 1); 3 & 5 December 2021 and 15 January 2022; during the day.

Habitat: Patch of young secondary forest. Likely a former village where forest grew spontaneously.

Observers: Gan Cheong Weei and Cheo Zi Han.

Observations: Three large clusters of the climbing vine, *Aristolochia acuminata*, were found growing wild within the patch of young secondary forest. The first and largest cluster (1.439811°N 103.772799°E) was noted on 3 December 2021 (Figs. 1 & 2). The observers explored this cluster for about one hour and estimated it to cover around 25 m². Saplings of *Aristolochia acuminata* were seen all over the ground amid shrubs of *Piper sarmentosum* (Fig. 3). A large vine of *Aristolochia acuminata* was noted growing on a *Ficus variegata* tree (Fig. 4). Of butterflies that use *Aristolochia acuminata* as their larval hostplant, one common birdwing (*Troides helena*) and one common rose (*Pachliopta aristolochiae*) were observed.

On two subsequent visits to the forest patch on 5 December 2021 and 15 January 2022, two additional clusters of *Aristolochia acuminata* were found. The second cluster was at 1.438954°N 103.773249°E (Figs. 1 & 5) and the third cluster was at 1.439849°N 103.772867°E (Figs. 1 & 6). Six common birdwing and seven common rose butterflies were recorded (Figs. 7–9).

Remarks: The Dutchman's pipe, *Aristolochia acuminata*, is considered a non-native plant in Singapore, having been introduced there for its ornamental value, and recorded from the Singapore Botanic Gardens since 1918 (Singapore Botanic Gardens, 2022, as *Aristolochia tagala*). However, *Aristolochia acuminata* is native to Malaysia and Indonesia, and some plant taxonomists argue that it may well be native to Singapore (Jain et al., 2019). The common birdwing (*Troides helena*) and common rose (*Pachliopta aristolochiae*), two large and strikingly coloured butterflies that are regarded as vulnerable in Singapore use *Aristolochia acuminata* as their dominant larval host plant in the country (Jain et al., 2021). Despite the debate over the native status of *Aristolochia acuminata*, this plant is of crucial importance for the threatened butterflies because their native host plant *Aristolochia jackii* is believed to be extirpated in Singapore (Jain et al., 2021).

The distribution of the common birdwing and common rose butterflies and their host plant *Aristolochia acuminata* in Singapore was recently mapped by Jain et al. (2021). The previously known strongholds in north Singapore include the Mandai area around the Singapore Zoo and the Yishun area around Yishun Pond and Khoo Teck Puat Hospital. The authors have been aware of increasing records of common birdwing and common rose butterflies in the Admiralty and Marsiling area in the past two years. This phenomenon is likely to be linked to the featured discovery of clusters of *Aristolochia acuminata*. The presence of a large number of saplings on the ground and the presence of mature vines in the area suggests that the plant is well established there. It would be of interest to find out if the *Aristolochia acuminata* had recently dispersed from a planted vine in the immediate vicinity, or if plants were already present in the area when it was a village.



Fig. 1. Aerial view of the forest patch with the locations of the three clusters of *Aristolochia acuminata*. (Map by: Google Earth)



Fig. 2. General view of cluster 1 on 3 December 2021 showing *Aristolochia acuminata* growing among *Piper sarmentosum* and other plants, with first author crouching in the middle for scale. (Photograph by: Cheo Zi Han)



Fig. 3. *Aristolochia acuminata* growing among *Piper sarmentosum* in cluster 1 on 3 December 2021. The secondary veins of *Aristolochia acuminata* (top tile photo) are more angled compared to the secondary veins of *Piper sarmentosum* (bottom tile photo) that are relatively linear to the primary veins. Fig. 4. *Aristolochia acuminata* seed pods on *Ficus variegata* at cluster 1. Fig. 5. *Aristolochia acuminata* on a saga tree at cluster 2. (Photographs by: Gan Cheong Weei)



Fig. 6. *Aristolochia acuminata* seedlings (circled in red) on the ground at cluster 3. Fig. 7. A common rose (*Pachliopta aristolochiae*) ovipositing at cluster 1 on 5 December 2021. Fig. 8. A common rose nectaring on *Asystasia gangetica* at the periphery of the area on 5 December 2021. Fig. 9. A male common birdwing (*Troides helena*) at cluster 1 on 15 January 2022. (Photographs by: Gan Cheong Weei)

Literature cited:

- Jain A, Gan CW, Tsang A & Tsang KC (2019) The common rose and common birdwing: a race against time? *Nature Watch*, Oct–Dec 2019: 9–11.
- Jain A, Zeng Y & Webb EL (2021) Critical dependence of butterflies on a non-native host plant in the urban tropics. *Frontiers in Ecology & Evolution*, 9: 10.3389/fevo.2021.655012.
- Singapore Botanic Gardens (2022) Singapore Herbarium Online. <https://herbaria.plants.ox.ac.uk/bol/sing>. Accessed on 12 February 2022.