

Biodiversity Record: A third mature grey fig, *Ficus virens*, at Dover Forest

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Subject: Grey fig, *Ficus virens* (Plantae: Magnoliophyta: Rosales: Moraceae).

Subject identified by: The Singapore Botanic Gardens Herbarium (SING).

Location, date and time: Singapore Island, Dover Forest between Ulu Pandan canal and Commonwealth Avenue West (1.31164°N, 103.78082°E) (Fig. 1); May to July 2021.

Habitat: Secondary forest.

Observer: Chin Tat Chua.

Observations: The subject was a mature *Ficus virens* strangling a durian (*Durio zibethinus*) tree in the eastern patch of Dover Forest. The *Durio zibethinus* host had the distinctive shape of an inverted lowercase ‘h’, and the roots of the *Ficus virens* wrapped mainly around the principal stem of the host while also bridging the space between the base of the host’s secondary stem and the ground (Fig. 2).

Girth measurements made on 30 June 2021 were 2.6 m and 1.7 m respectively for the main and secondary stems of the *Durio zibethinus* host, and 1.0 m for the main stem of the *Ficus virens* that was attached to the host’s main stem up to a height of about 5 m above ground (Fig. 3). Height measurements were not attempted as it was not possible to get a view of the entirety of both host and strangler—the foliage of both trees merged into the forest canopy, which was about 15 m above the ground.

The *Ficus virens* was putting out a significant number of thread-like aerial roots that were about 1 mm in diameter, and these were either reaching vertically down towards the forest floor, draping around other plants, or seeking to envelope the host’s trunk (Fig. 4). New aerial roots were also observed to be growing from the broken ends of older ones (Fig. 5).

On 25 May 2021, the *Ficus virens* was observed to be shedding its leaves (Fig. 6) and putting out new ones (Fig. 7).

Remarks: As the subject was sterile over the period of observation, its identity was determined by SING on 22 June 2021 from a cutting consisting of leaves and twigs (Fig. 8), and can only be fully confirmed when it becomes fertile and its syconia are available for examination.

In tropical ecosystems such as Singapore’s, members of the genus *Ficus* provide frugivorous animals with a reliable year-round supply of syconia, and so are widely regarded as keystone food resources (Lok et al., 2013). Within the genus, *Ficus virens* ranked a lofty second in terms of the number of frugivorous species recorded feeding on their syconia (Shanahan et al., 2001). *Ficus virens* is also directly useful to humans in landscaping, as food, in medicine and in fighting pollution. However, being deciduous, its mass shedding of leaves could make it unsuitable for active propagation in the urban landscape (Lee et al., 2013).

As of 1 July 2021, only 21 mature *Ficus virens* had been recorded in Singapore, out of which two were from Dover Forest (Chua, 2021). The featured subject is therefore the third mature *Ficus virens* to be discovered and documented in Dover Forest, and the national 22nd. Recruitment of this nationally critically endangered species had also been observed on at least one streetscape tree on the periphery of Dover Forest (Chua, 2021). All the above evidence suggests that *Ficus virens* is thriving in Dover Forest for reasons as yet unknown, and it is hoped that the present record can help inform future decisions on the conservation of this species and its habitat.

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In a previous biodiversity record (Chua, 2021), the second mature *Ficus virens* of Dover Forest was identified by SING based on a sterile cutting (voucher specimen SING 2021-324). The identity of this tree has since been confirmed as *Ficus virens* on 23 August 2021, based on a fertile specimen consisting of twigs, leaves and syconia (voucher specimen SING 2021-606).

Literature cited:

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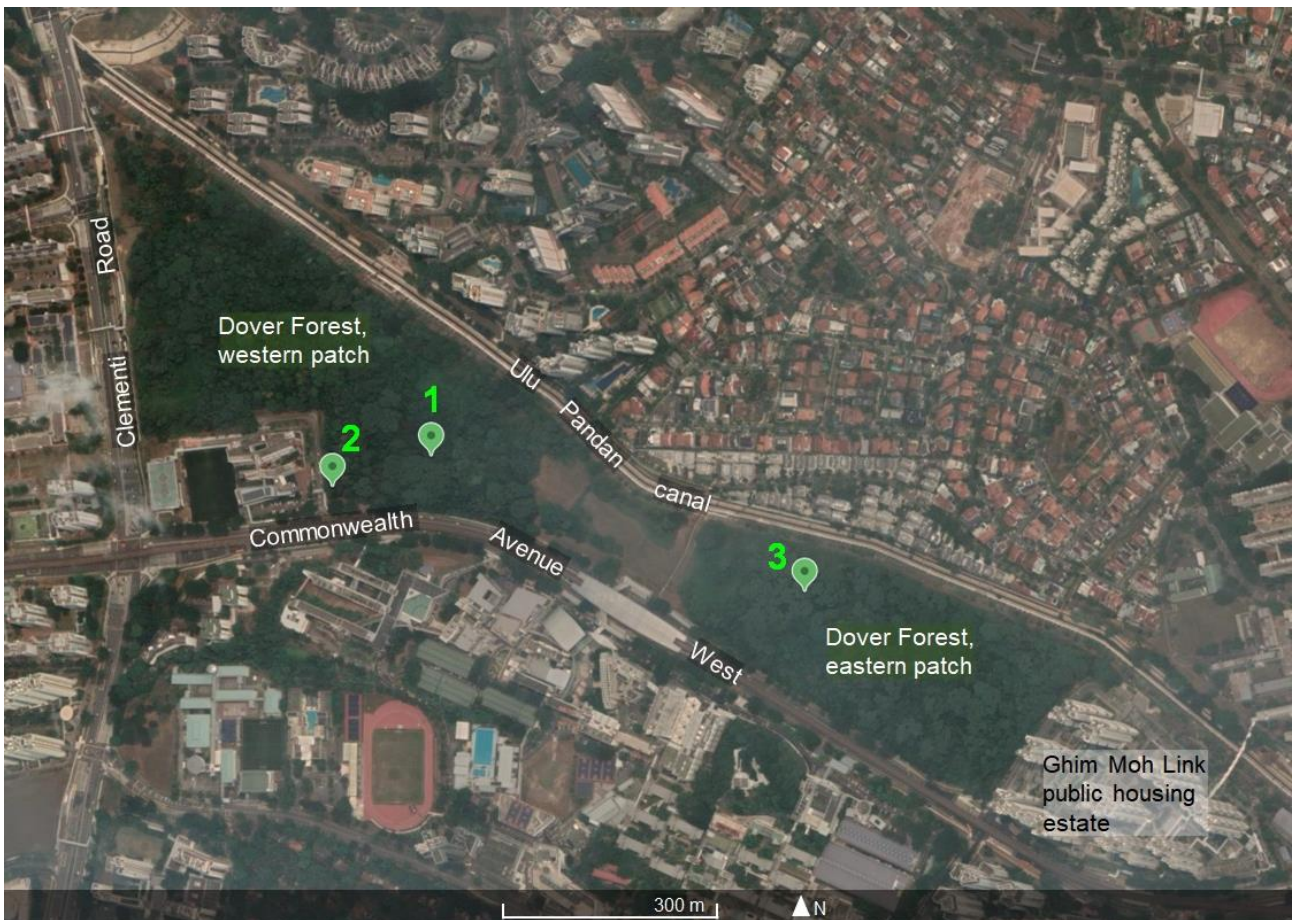


Fig. 1. Map showing the locations of the three mature trees of the nationally critically endangered *Ficus virens* in Dover Forest (numbered green pins). Tree 1 was reported in late 2020 in an environmental baseline study of the forest (Thomas et al., 2020); tree 2 was reported in June 2021 in a biodiversity record (Chua, 2021); while tree 3 is the subject of the present record. (Base map by: Google Earth).

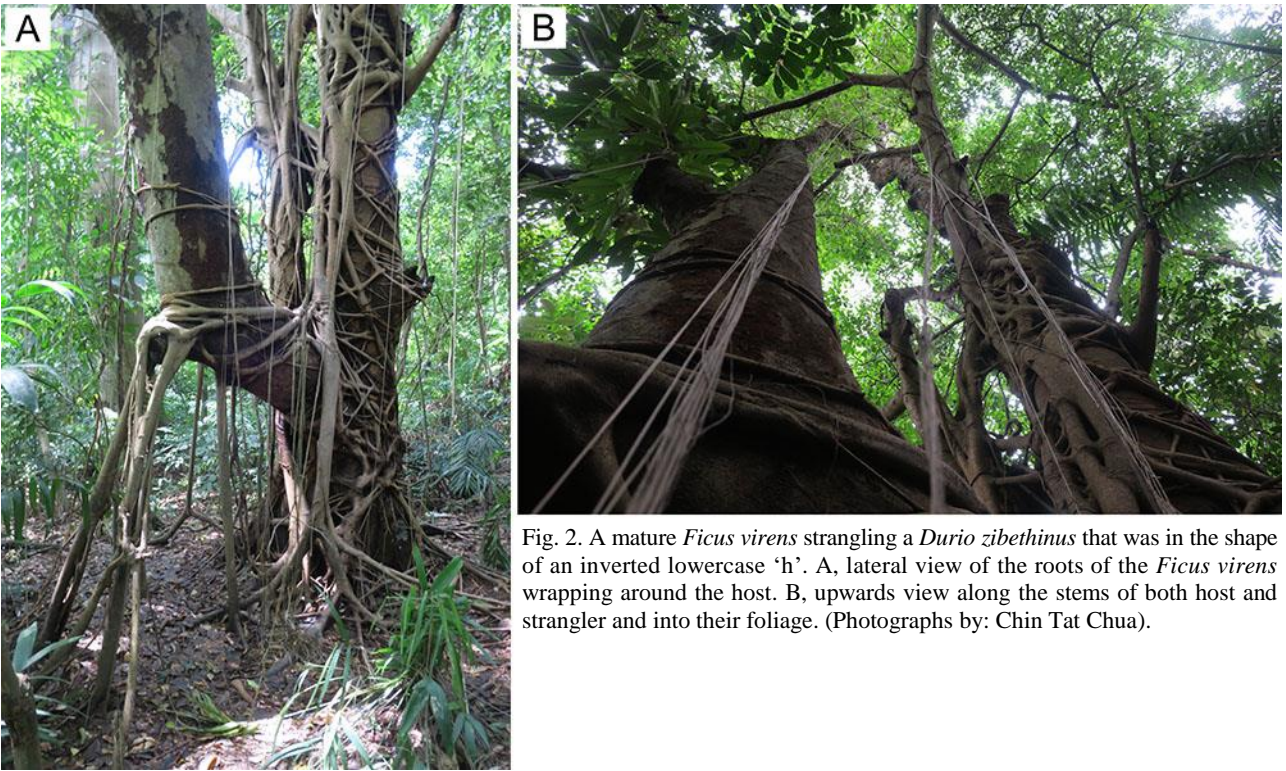


Fig. 2. A mature *Ficus virens* strangling a *Durio zibethinus* that was in the shape of an inverted lowercase 'h'. A, lateral view of the roots of the *Ficus virens* wrapping around the host. B, upwards view along the stems of both host and strangler and into their foliage. (Photographs by: Chin Tat Chua).



Fig. 3. Girth measurements of the main stem of the *Ficus virens*, and the main and secondary stems of its *Durio zibethinus* host. (Photograph by: Chin Tat Chua).



Fig. 4. Aerial roots of the *Ficus virens* hanging vertically downwards to reach the forest floor (A), draping over and around other plants (B) and extending the envelopment of the host's stem (C). (Photographs by: Chin Tat Chua).



Fig. 5. New aerial roots of the *Ficus virens* growing from the truncated end of a woody older one that was about 1.5 cm in diameter. Main image was taken on 30 June 2021, and the inset image was taken on 25 May 2021. (Photographs by: Chin Tat Chua).



Fig. 6. Mass shedding of leaves by the *Ficus virens*. Images taken on 25 May 2021. (Photographs by: Chin Tat Chua).



Fig. 7. New leaves of the *Ficus virens*, indicated by red arrows, growing where stipules had been shed. Foliage in the background was mainly that of the *Durio zibethinus* host. Image was taken on 25 May 2021. (Photograph by: Chin Tat Chua).



Fig. 8. The *Ficus virens* cutting, consisting of leaves and twigs, that was sent to the Singapore Botanic Gardens Herbarium (SING) for identification on 22 June 2021. (Photographs by: Chin Tat Chua).