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## REDISCOVERY IN SINGAPORE OF *FICUS DELOSyce* CORNER (MORACEAE)

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**ABSTRACT.** — *Ficus delosyce* Corner, a hemiepiphytic strangler fig, was presumed nationally extinct in Singapore. It was recently encountered and rediscovered in Nee Soon Swamp Forest and at MacRitchie Reservoir, and assigned the national conservation status of critically endangered.

**KEY WORDS.** — Moraceae, *Ficus delosyce*, Nee Soon Swamp Forest, MacRitchie Reservoir, rediscovery

### INTRODUCTION

The genus *Ficus* (the figs) consists of about 735 species distributed throughout the tropical and subtropical regions (Berg & Corner, 2005). All members of the genus are woody plants, contain white or yellowish latex in all parts of the plant, have stipules that cover the young shoots, and bear syconia (or figs)—a specialised reproductive structure that contains numerous flowers in it. Figs take on various life forms, including creepers and climbers, epiphytes, hemiepiphytes, stranglers, as well as terrestrial shrubs, trees, and treelets. In Singapore, 45 native species of *Ficus* have been recorded with their national conservation status categories as follows: seven are considered common, two vulnerable, four endangered, 24 critically endangered and eight presumed nationally extinct (Tan et al., 2008; Chong et al., 2009).

*Ficus delosyce* (Latin *ficus*, the fig tree; Greek *delos*, striking, and *syce*, fig tree, referring to the growth form of this species) is a hemiepiphytic strangler or possibly secondarily terrestrial tree up to 25 m tall (Kochummen, 2000; Berg & Corner, 2005; Figs. 1, 2). The leaves are spirally arranged to somewhat two-ranked along the twigs (Fig. 3). The generally hairless and leathery leaf blade is oblong to elliptic, about 3–9 cm long by 1–5 cm wide, with an acuminate to obtuse tip and wedge-shaped to obtuse base. The midrib is slightly depressed to flat above and the basal pair of lateral veins is distinct, usually extending to a quarter or a third of the length of the leaf blade. *Ficus delosyce* is monoecious, bearing both pistillate (functionally female) and staminate (functionally male) flowers within a specialised structure known as a syconium (plural, syconia) which is sessile, with three persistent basal bracts, and possessing a characteristic conical ostiole (the opening at the tip). Syconia usually develop singly or in pairs at the axils of the leaf scars below the leaves in twigs (Fig. 3) or rarely, in the axil of a leaf (Fig. 4). They are almost round to ovoid, about 5–8 mm wide, ripening from green to white (Figs. 3, 4) to orange and purplish red at maturity.

*Ficus delosyce* occurs naturally in Sumatra, Peninsular Malaysia, Singapore, and Borneo, usually in swamp forests at low altitudes (Berg & Corner, 2005). In Singapore, this species is presumed nationally extinct (Tan et al., 2008; Chong et al., 2009).

### PAST AND PRESENT RECORDS

In Singapore, *Ficus delosyce* has been collected from the forests around MacRitchie Reservoir (Table 1) and recently collected in 2011 by Boo Chih Min.

Table 1. Previous Singapore collections of *Ficus delosyce* Corner deposited in the Herbarium, Singapore Botanic Gardens (SING).

| S/No. | Bar Code No. | Collector       | Collector's No. | Date Collected | Locality   |
|-------|--------------|-----------------|-----------------|----------------|--|
| 1.    | 0011704      | E. J. H. Corner | s.n.            | 9 Sept.1940    | MacRitchie Reservoir                               |
| 2.    | 0166392      | C. M. Boo       | s.n.            | 15 Sept.2011   | MacRitchie Reservoir<br>Boardwalk, Chemperai Trail |



Fig. 1. Tree (arrowed) along the boardwalk at MacRitchie Reservoir. (Photograph by: Ang Wee Foong).



Fig. 2. Leaning trunk with vertical branches bearing aerial roots. (Photograph by: Ang Wee Foong).



Fig. 3. *Ficus delosyce* leafy twig with two syconia, ring-like stipular scars at each node, and stipule-covered tip. Some leaf blades are overgrown by algae. Scale bar = 1 cm. (Photograph by: Ang Wee Foong).

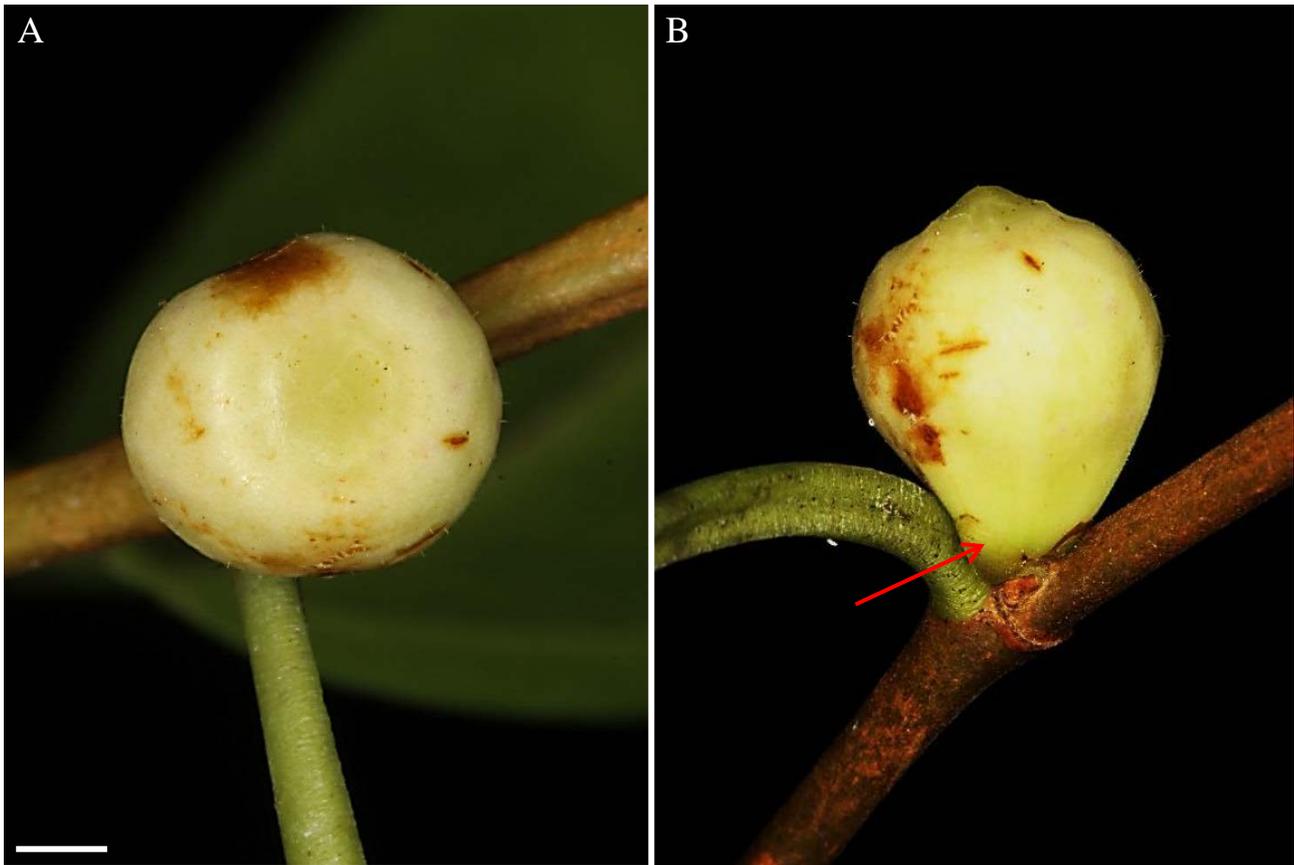


Fig. 4. Unripe syconium. A. Top view. B. Side view, showing one of the three persistent basal bracts (arrowed). (Scale bar = 2 mm). (Photographs by: Ang Wee Foong).

*Ficus delosyae* was first described in 1960 by Edred John Henry Corner (see Corner, 1960) who was Assistant Director of the Singapore Botanic Gardens from 1929–1946 and a highly regarded tropical botanist of great achievement with a special interest in *Ficus* (Mabberley, 1999). His description of the species was based on 13 specimens from Brunei, Peninsular Malaysia, and Singapore, of which the Singapore specimen was coincidentally collected from MacRitchie Reservoir. Although it is uncertain whether the specimen collected by Corner came from the same plant, the forest around MacRitchie Reservoir is likely to harbour more individuals of *Ficus delosyae*. The tree was first encountered by WFA and AFSL on 10 Sept. 2009 in a survey of the forests around MacRitchie Reservoir. Specimens were collected and identified by the Herbarium, Singapore Botanic Gardens. However, no specimens were deposited. It was later encountered by CKY and WFA in Nee Soon Swamp Forest. The most recent encounter was in 9 May 2012, when a fruiting specimen was photographed at MacRitchie Reservoir.

The fig-wasp pollinator of *Ficus delosyae* (at least in Borneo) is *Waterstoniella delicata* Wiebes. Only a single individual in this genus was captured in a study using sticky traps on Kent Ridge, at 25 m above the ground, (Jeevanandam & Corlett, 2013). This suggests that there are not many additional, unknown, individuals of the host figs for this genus in Singapore.

Cuttings of the rediscovered individual at MacRitchie Reservoir were collected by IHA and ZYO and propagated vegetatively at the National Parks Board Pasir Panjang Nursery (PPN) and Singapore Botanic Gardens' Plant Resource Centre (PRC), respectively, for conservation and reintroduction. The cuttings were observed to root very easily in sand and established within a week.

## CONCLUSIONS

Previously, *Plectocomiopsis geminiflora*, a rattan newly recorded in Singapore was discovered along the same stretch of the boardwalk (Tan et al., 2011). The rediscovery of *Ficus delosyae* along this frequently used boardwalk at MacRitchie Reservoir highlights the need for more studies to be done on the remaining pockets of forest in Singapore, as well as the significance of the forest surrounding MacRitchie Reservoir.

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