

Dischidia acutifolia (Apocynaceae, Asclepiadoideae) a new record for the Singapore flora

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ABSTRACT. We report the discovery of *Dischidia acutifolia* Maingay ex Hook.f., a new record for the Singapore flora. The species is only known from a single locality in Sungei Buloh Wetland Reserve and is therefore considered Critically Endangered in Singapore. A lectotype for the name is selected.

Keywords. IUCN Red Lists, Sungei Buloh Wetland Reserve

Introduction

In Singapore there are ten native species of *Dischidia* R.Br. (Chong et al., 2009; Rodda et al., 2012). Five of these are considered nationally extinct and one, *Dischidia singaporensis* Ridl., is considered a globally extinct species. A general introduction to the genus *Dischidia* can be found in various recent local treatments (Rintz, 1980; Li et al., 1995; Forster et al., 1996; Jagtap & Singh, 1999; Livshultz et al., 2005) while information on the local Singapore species is provided in Rodda et al. (2012). In September 2013 Desmond Lee and Mishak Shunari found an unidentified *Dischidia* growing at the base of the trunk of *Talipariti tiliaceum* (L.) Fryxell in Sungei Buloh Wetland Reserve. A small sterile cutting was brought to the Singapore Herbarium for identification. The cutting was incorporated into the Singapore Botanic Gardens' Research Living Collections where it rooted and soon after started flowering before producing any new growth. It was then identified as *Dischidia acutifolia*, a species rather common from Thailand to the Moluccas (Rintz, 1980). The species is not in the most recent checklist of Singapore's vascular plant flora (Chong et al., 2009) and no specimens collected in Singapore have previously been deposited in SING. We therefore here report it as a new record for the Singapore flora.

We can speculate that the Singapore plant may originate from a recent colonisation from seeds wind-dispersed from the coastal mangroves in Johore (Malaysia). However it is equally likely that the species, an epiphyte often growing high up in the tree canopy and bearing inconspicuous flowers, may have always been part of the Singapore flora but was never previously collected.

Conservation considerations

The species is only known from a single collection and is, therefore, to be considered Critically Endangered in Singapore, according to guidelines given in *The Singapore Red Data Book* (Davison, 2008). The original plant observed in 2013 was negatively affected by the drought in early 2014 (Ziegler et al., 2014), and the recovery has been slow (Lee and Mishak, personal observation). In contrast, the clone is very vigorous in cultivation and is being mass propagated at the Singapore Botanic Gardens (SBG acc. no. 20132480). Stock will soon be released for reintroduction trials.

The morphological description below is based on the specimen collected in Singapore. Measurements from cultivated materials are indicated in parentheses when they are significantly different from wild material.

Taxonomy

Dischidia acutifolia Maingay ex Hook.f., Fl. Brit. India 4(10): 51 (1883). – TYPE: Peninsular Malaysia, Malacca, 30 Oct 1865 or 6, *Maingay, A. C. 1960* (*Kew distribution number 1122*) (lectotype K, designated here [K000911032]). (Fig. 1)

Plants succulent, herbaceous, glabrous; epiphytic or hemi-epiphytic vines growing loosely rooted on the host tree stems, clinging by adventitious roots, rarely pendulous. Latex white. **Roots** on mature plants adventitious, produced at the node, along the internodes and just below each node, where they are sometimes paired. **Leafy stems** terete, up to 2.5 mm diameter, dark green; internodes (2–)5–20(–25) cm long. **Leaves** opposite, petiolate; petiole cylindrical, slightly flattened above, 4–7 mm long, 1.5–2 mm in diameter; lamina dark green, underneath lighter green with darker midrib and margin, fleshy, stiff (less so in cultivation), lanceolate, 4–7 × 1.5–4 cm (to 10 × 5 cm in cultivation); apex acute-apiculate, base (round) acute, margin entire, midrib and secondary veins slightly raised on adaxial surface, secondary veins 3–6 pairs, branching at 35–60° from midrib. **Inflorescences** usually bearing a single open flower at a time (up to 5 in cultivation) and 2–4 developing buds; peduncle extra-axillary or apparently axillary when borne on very short shoots, persistent, rachis one or two per peduncle, bearing scars of previous flowerings 2–5 mm long, 2–2.5 mm in diameter (to 2 cm long in cultivation); pedicels 0.6–0.8 mm long, c. 0.6 mm in diameter. **Calyx** c. 2 mm in diameter, green, lobes (round) ovate 0.6–0.8 × 0.5–0.8 mm, apex round, sparsely ciliate. **Calycine colleter** 1 or 2 at each calyx lobe sinus, ovate, with a round apex, 100–120 × 80–100 µm. **Corolla** succulent, urceolate, 3.5–4 × 2–2.5 mm, basally lighter yellow, progressively fading into light pink or white at the lobe apices, externally glabrous, corolla throat with one ring of retrorse hairs; lobes triangular, 0.5–0.7 × c. 0.6 mm, apex acute. Corolline corona absent. **Staminal corona** lobes 1.5–1.7 mm high, c. 1.5 mm in diameter, composed of five light yellow appendages shaped like an inverted anchor with a stipe and lunate apex. **Style head** conical, hidden by the anther appendages. **Pollinarium** erect, 550–600 × 500–600 µm with two oblong

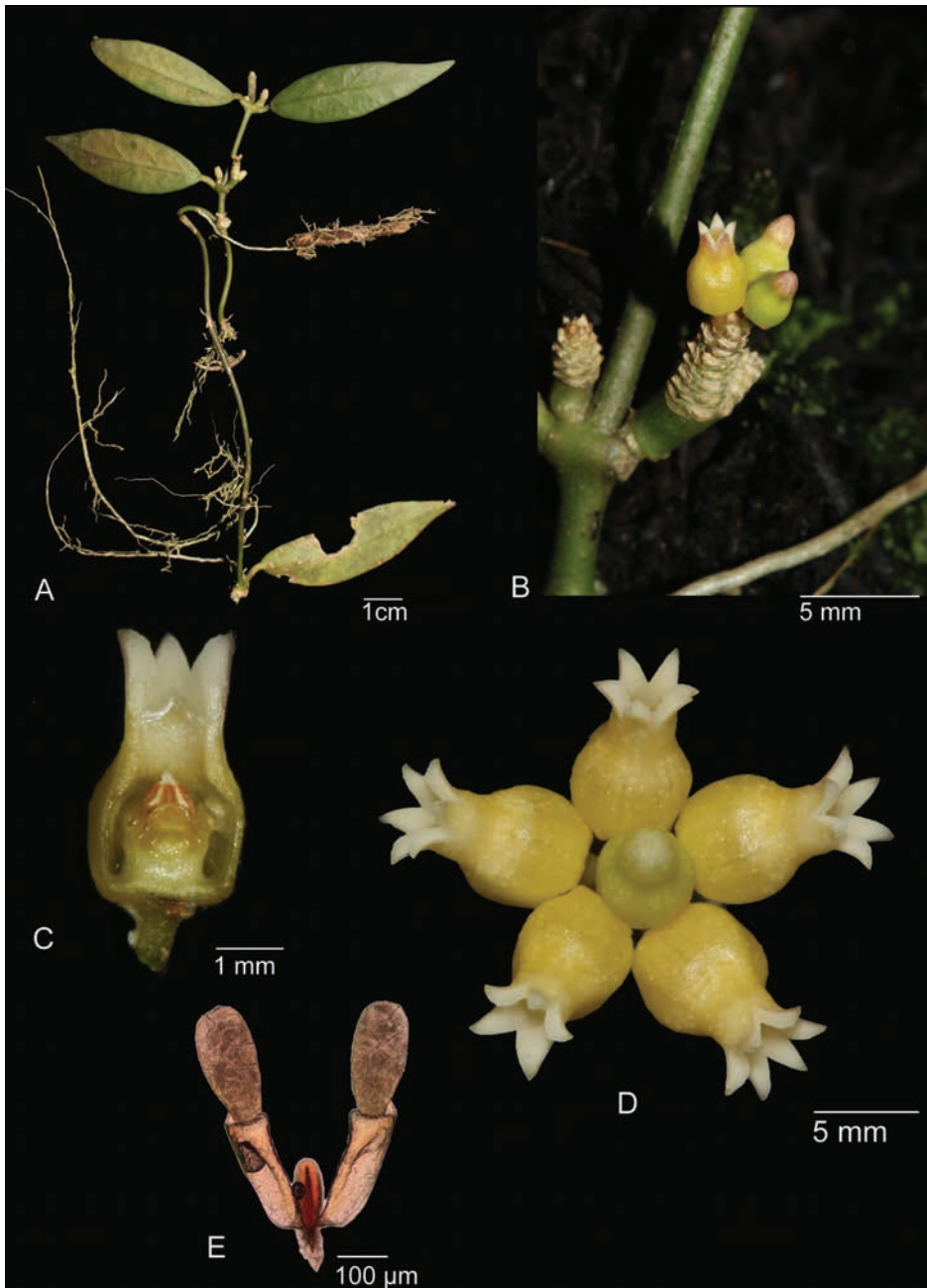


Fig. 1. *Dischidia acutifolia* in Singapore. **A.** The original plant as collected by Lee and Mishak in Sungei Buloh Wetland Reserve in 2013. **B.** First flowering in cultivation at SBG. **C.** Dissected flower. The single ring of hairs lining the corolla throat, the yellow corona appendages and the anther appendages covering the stigma head can be observed. **D.** Inflorescence with five open flowers; usually in wild-collected plants the inflorescences have only one open flower at a time. **E.** Pollinarium with twin pollinia. B–E Based on living plants cultivated at the Singapore Botanic Gardens (SBG acc. no. 20132480). (Photos: M. Rodda)

pollinia, 230–250 × 90–100 µm, apex and base rounded to obtuse, retinaculum 170–190 × 60–70 µm, caudicles elongated, laterally crested, 250–270 µm long. **Ovary** bicarpellate, bottle-shaped, 1–1.5 mm long, each carpel c. 0.7 mm in basal diameter. Fruits and seeds not seen.

Singapore specimens examined. Sungei Buloh Wetland Reserve, Lee, D. & Shunari, M. s.n., cultivated at the Singapore Botanic Gardens, vouchered on 30 Oct 2014 as *Rodda, M. MR898* (SING, K, KEP).

Notes. The description of *Dischidia acutifolia* by Hooker (1883) was based on the collection *Maingay* (*Kew Distrib. 1122*). The herbarium of a particular specimen was not indicated. In Kew there is a specimen labelled as *Kew distribution number 1122* which is also labelled with the Maingay numbering series (*Maingay 1960*). An exhaustive search for duplicates has not been carried out but since the K specimen is not labelled as a unicate it is possible that duplicates may be found in other herbaria holding Maingay materials (B, BM, CAL, CGE-B, G, L [Steenis-Kruseman, 1950]). Therefore a lectotype needs to be selected. The K specimen is well preserved and matches the description of *Dischidia acutifolia* and is therefore selected as lectotype for the name.

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