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CONSERVATION STATUS OF *NOTHOCISSUS SPICIFERA* (MIQ.) LATIFF (VITACEAE) IN SINGAPORE

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ABSTRACT. — The conservation status of *Nothocissus spicifera* (Miq.) Latiff (Vitaceae) in Singapore is reviewed in the light of recently collected plant specimens and sightings. We are of the opinion that it merits a nationally endangered status owing to its occurrence being restricted to forests, and has suffered some shrinkage of range owing to deforestation. It is a woody climber with ornamental value even when vegetative owing to its large attractive leaves. As it rarely fruits, vegetative propagation is suggested as a viable way of mass propagating the species for introduction into wider horticultural use, providing a form of ex situ conservation of the species.

KEY WORDS. — Vitaceae, *Nothocissus spicifera*, Singapore, conservation status

INTRODUCTION

The grape family (Vitaceae) is represented by 25 native species in Singapore with over 20 species still extant in seven genera (Chong et al., 2009). The genus *Nothocissus* (Miq.) Latiff is monotypic with its single species, *Nothocissus spicifera* (Griff.) Latiff native to Singapore. Chong et al. (2009) considered it to be nationally critically endangered, while we would propose a nationally endangered status in view of its occurrence at a number of forest localities in Singapore and its infrequent sexual reproduction in Singapore (pers. obs.).

Nothocissus was first described by Miquel (1861) as a section of *Ampelocissus*, but recognised as a monotypic genus by Latiff (1982), for its distinctive inflorescence, inflorescence position, and seed morphology. The work of Ren et al. (2011) corroborated that the genus has a close affinity to *Ampelocissus*. The following description relies mostly on the earlier work of Latiff (1982) and Keng (1990), supplemented by our own observations. *Nothocissus spicifera* is a woody liana with reddish angular or cylindrical stem when young, flattening with age up to 2 cm thick × 4 cm wide. The tendril is leaf-opposed and unbranched, and not ending in an adhesive disc. The stalked leaf is simple and the leaf blade obovate-oblong, 6–16 × 2–10 cm, and reddish when young (Fig. 1a). The leaf blade apex is acuminate to caudate, the base is acute to subcordate, and the margin is toothed. The terminal or sometimes leaf-opposed inflorescence is an unbranched or branched spike 40–60 cm long (Fig. 1b). When unbranched, the inflorescence often twines like a tendril (Fig. 1c). The flower has a cup-shaped calyx, four green and soon shedding petals, four stamens, and a gynoecium with disc, and simple stigma on a short style. The berry is ellipsoid to round, about 15–18 × 8–11 mm, with 1–2 seeds. The seeds are oblong and about 12 × 6 mm. The species is rarely found flowering or fruiting in Singapore, but WFA was able to obtain a reproductive specimen on 25 Jul.2011 (Fig. 1d). It is found in the fringes of lowland dipterocarp forest, often along rivers and streams in Peninsular Thailand, Peninsular Malaysia, Singapore, Sumatra, and Borneo (Latiff, 1982).

PAST AND PRESENT RECORDS

The first collection of *Nothocissus spicifera* in Singapore was made by H. N. Ridley in 1892 at Chan Chu Kang (SING 0019161). It has since then been continuously collected at various locations in the Singapore Botanic Gardens (SBG), the Central Catchment Nature Reserve (CCNR), and the Bukit Timah Nature Reserve (BTNR), while historically it has also been collected at Cluny Road, Bukit Mandai, and Jurong (Table 1). The shrinkage of its distribution is probably caused by deforestation brought about by land use changes in Singapore (Corlett, 1991). Being a forest species, habitat loss is the only major threat to its continued existence, though this is ameliorated by the number of populations still in existence, and justifies our suggestion of the nationally endangered status for it.

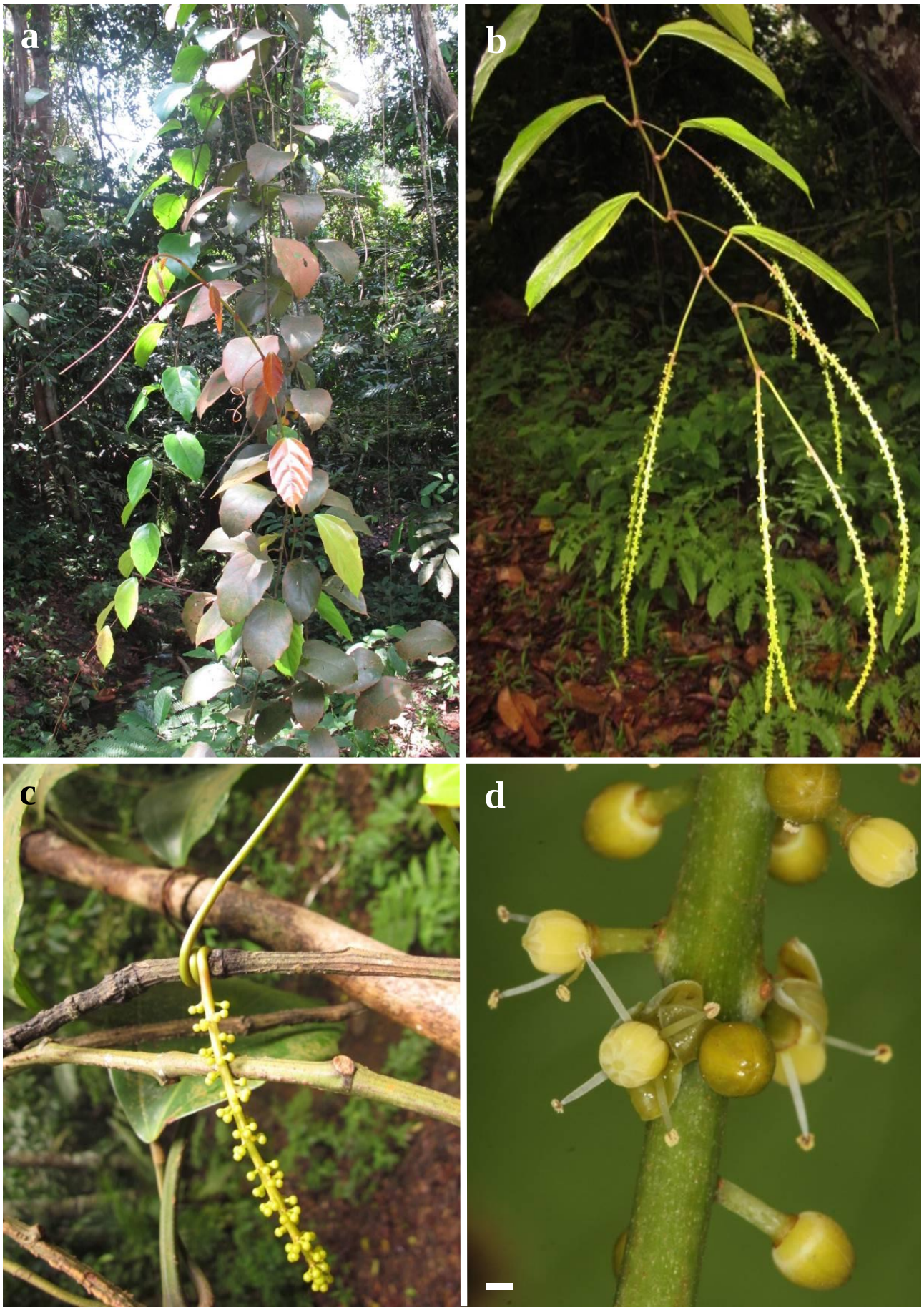

Fig 1. *Nothocissus spicifera* (Miq.) Latiff found at Mandai Track 7: (a) A branch with attractive red leaves; (b) flowering branch with long whip-like spikes; (c) leaf-opposed spike twining like a tendril; and (d) close-up on the flowers in different stages of anthesis. Scale bar = 1 mm. (Photographs by: Yeo Chow Khoon [a–c] and Ang Wee Foong [d]).

Table 1. Singapore collections of *Nothocissus spicifera* (Miq.) Latiff specimens deposited in the Herbarium, Singapore Botanic Gardens (SING) and Herbarium, Raffles Museum of Biodiversity Research, National University of Singapore (SINU).

S/No.	Accession/ Bar Code No.	Herbarium	Collector(s)	Collector's No.	Date	Locality
1.	0019161	SING	H. N. Ridley	s.n.	1892	Chan Chu Kang
2.	0019158	SING	H. N. Ridley	5585	1893	Jurong
3.	0019159	SING	H. N. Ridley	5743	1893	Cluny Road
4.	0019154	SING	J. S. Goodenough	5084	1893	Bukit Mandai
5.	0019157	SING	H. N. Ridley	s.n.	1894	Bukit Timah
6.	0019155	SING	J. Sinclair	39689	24 Jun.1953	BTNR
7.	Not assigned	SINU	H. Keng & Jumali	K3021	7 Jul.1965	Nee Soon Swamp Forest
8.	0019194	SING	J. F. Maxwell	81–162	10 Jul.1981	Bukit Kalang Service Reservoir
9.	0019153	SING	E. Tang & Hj. Sidek	49	17 Sep.1994	Upper Pierce Reservoir
10.	0019156	SING	J. Lai	147	1 Jan.1997	Mandai Road
11.	2007012313	SINU	A. B. H. Loo & C. K. Yeo	01	7 Jul.2000	MacRitchie Reservoir
12.	2007012323	SINU	C. K. Yeo	185	25 Aug.2000	Upper Seletar Reservoir
13.	2007012324	SINU	C. K. Yeo	203	28 Aug.2000	Jalan Ulu Sembawang
14.	2007012319	SINU	C. K. Yeo	242	8 Sep.2000	SBG
15.	2007012307	SINU	C. K. Yeo	277	24 Sep.2000	Nee Soon Swamp Forest

CONCLUSIONS

Nothocissus spicifera is a regularly encountered forest liana in Singapore with ornamental potential. Though usually not reproductive and displaying its spectacular inflorescences, this species can be used to drape large structures such as gazebos or trellises. The attractive, large, leathery, mature, green leaves contrast with the young red leaves, and makes this an attractive plant. The thick, woody, and flattened stems of older plants are a further attraction.

Propagation is easy from stem cuttings rooted in water and soil (CKY, pers. obs.), although it does not seem to root at the nodes or sucker naturally. It is therefore a plant that could be easily propagated to fulfill landscaping needs. Furthermore, it was observed to be generally pest-free and shows vigour under full sun or light shade (CKY, pers. obs.), making it suitable for use in open or shadier conditions, thus broadening its potential for use in landscaping. Bringing it under cultivation may provide a viable option of ex situ conservation for this overlooked species.

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