

THE DISTRIBUTION AND STATUS IN SINGAPORE OF *TRISTELLATEIA AUSTRALASIAE* A.RICH. (MALPIGHIACEAE)

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ABSTRACT. — *Tristellateia australasiae*, an attractive, yellow-flowered, mangrove forest climber, is now rare in Singapore and found only at the landward edge of mangrove forests sites including those at Kampong Melayu (Pulau Ubin), Punggol, Kranji, and Lim Chu Kang so efforts must be made to propagate plants from local stock. This species is commonly cultivated in streets, parks, and gardens here, but stock for planting is unlikely to be of local provenance.

KEY WORDS. — *Tristellateia australasiae*, Malpighiaceae, Singapore

INTRODUCTION

This paper documents the distribution and status of maiden's jealousy, *Tristellateia australasiae* A.Rich. (Malpighiaceae) in Singapore (Fig. 1). The generic name *Tristellateia*, is Latin for three-starred, referring to this plant's three star-shaped fruits that develop from each flower (Backer, 1936). The specific epithet *australasiae* reflects its Australasian distribution (Backer, 1936).

Maiden's jealousy is a climber with opposite leaves whose leaf blades are glabrous, papery or leathery, elliptic, with a rounded base (Jacobs, 1958; Fig. 2a). The leaf margin is somewhat recurved (Jacobs, 1958; Sirirugsa, 1991). Typically, two glands are adnate to distinctly grooved leaf stalk (Sirirugsa, 1991; Chen & Funston, 2008). The stem is narrowly cylindrical, covered with lenticels, and has somewhat thickened nodes. Its terminal or axillary racemes (Fig. 2b) bear bright yellow flowers (Fig. 2c) that are radially symmetrical, with five petals that are oblong, rounded at the tip and have a stalk-like base (Jacobs, 1958; Sirirugsa, 1991; Chen & Funston, 2008). The flower is bisexual, has unequal filaments, a roundish ovary, and one style. The filaments are initially yellowish and turn bright red after the anthers fall off (Jacobs, 1958; Fig. 2c). Each flower, after fertilisation consists of three mericarps (Fig. 2d), each with wings that are unequally developed and expanding in one plane to become star-like (Ridley, 1922; Keng, 1990). This plant is usually found in the landward edge of tidal swamps, forests, and mangrove forests of Singapore. It is also commonly cultivated as an ornamental climber in Singapore and the tropics. Maiden's jealousy is naturally distributed from Taiwan, southern Vietnam, west of the Mergui Islands, Thailand, Malaysia, Singapore, New Ireland, Queensland (Australia), and New Caledonia (Jacobs, 1958; Ridley, 1922).

This species was classified as nationally vulnerable in the first edition of The Singapore Red Data Book (Turner et al., 1994) and its status has since been changed to nationally endangered in the second edition (Tan et al., 2008) as it was estimated that there are more than 50 but fewer than 250 mature individuals left in the wild.

It has been collected mostly in coastal localities on Singapore Island or the other islands (Table 1).

DISTRIBUTION

From its previous collection localities from Jurong to Changi, maiden's jealousy was probably common throughout Singapore (Table 1). Some of these collections may have been of cultivated specimens as Ridley (1900) indicated that this species was "often cultivated". Those specimens collected at coastal sites are more likely to be from wild plants as the collection localities are similar to its natural habitat of the transitional zone between dryland rainforest and mangrove forest (Jacobs, 1958; Sirirugsa, 1991). From our Singapore observations, this species, when observed, is often found in the landward fringe of mangrove forests.

Currently, this species consists of a few individuals found naturally at the landward edge of the mangrove forests at Kampong Melayu (Pulau [=Island] Ubin), Punggol, Kranji, and Lim Chu Kang so is a rather dire situation. As the plant propagates easily from stem cuttings, material from wild plants can be taken for cultivation and re-introduction to mangrove forest areas in other parts of Singapore. This was carried out for the plants at the Lim Chu Kang site.

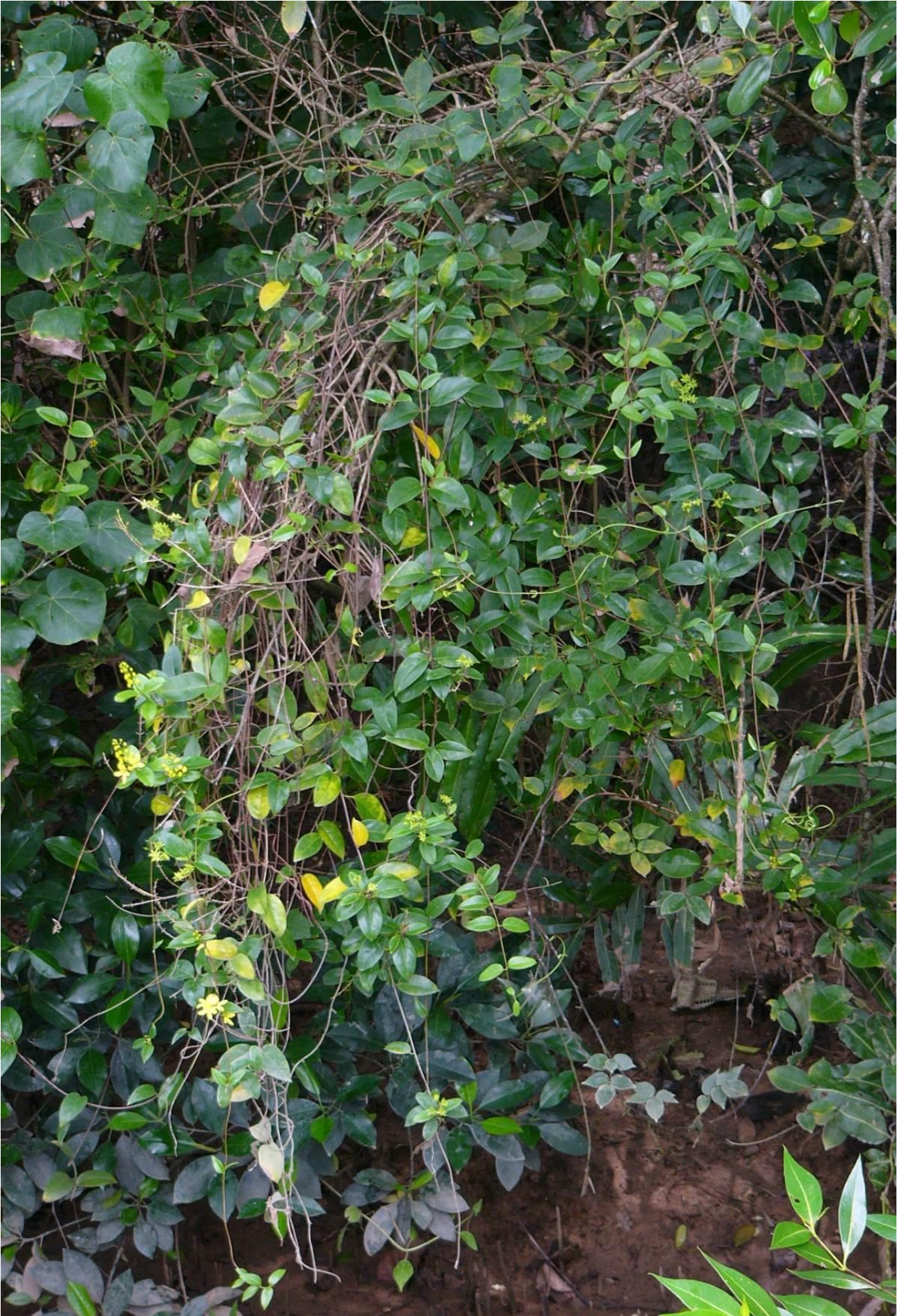


Fig. 1. *Tristellateia australasiae* found at Lim Chu Kang. (Photograph by: Hugh Tan Tiang Wah).

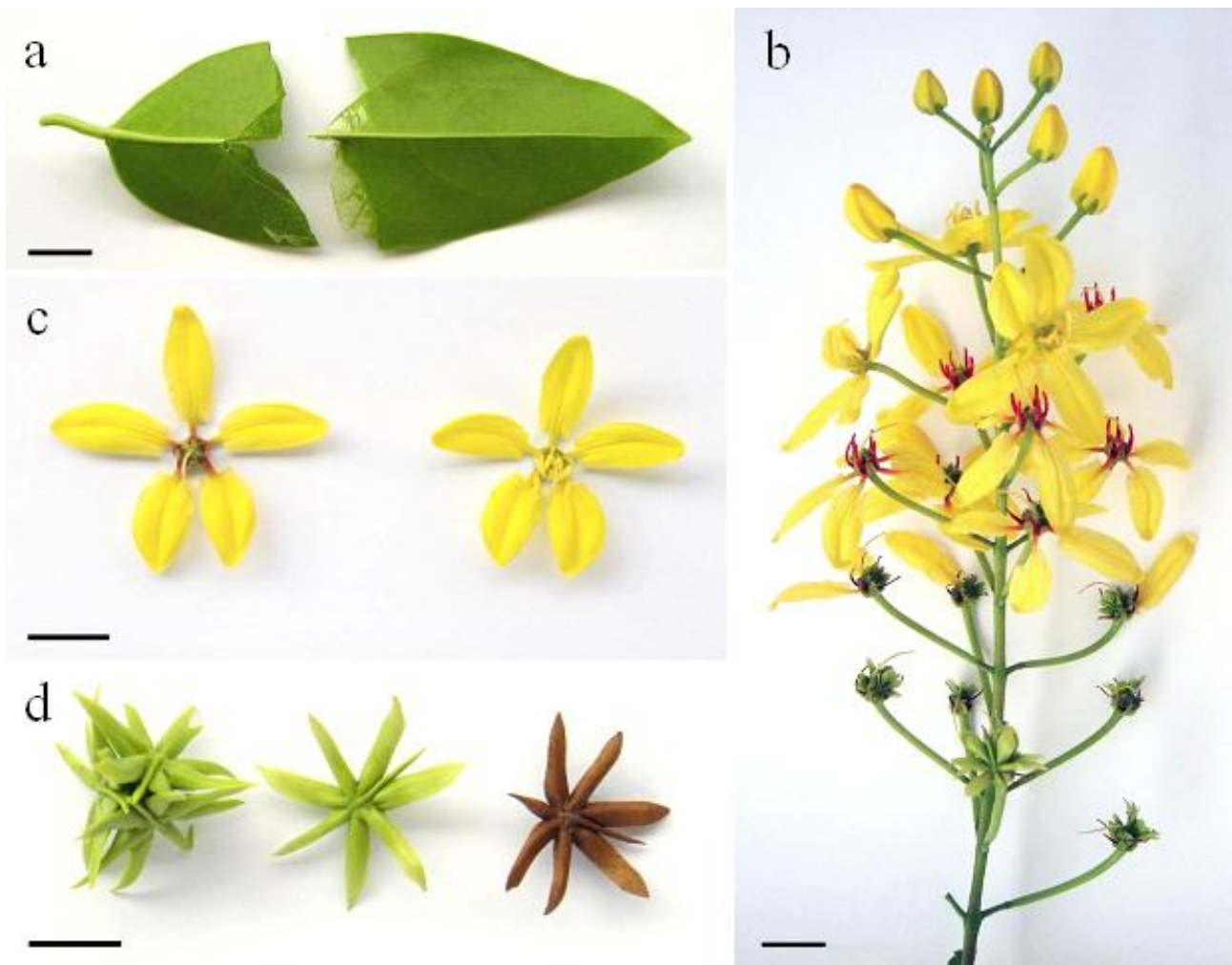


Fig. 2. Parts of *Tristellateia australasiae*. (a) Leaf (note how easily the epidermis can be separated when the leaf is torn, a diagnostic characteristic); (b) Raceme bearing flower buds, open flowers to fruits; (c) Flowers, with yellow stamens (right), immediately after anthesis and bright red stamens (left) after some time later; (d) Fruits (left to right): three star-like mericarps attached to the receptacle of a single flower, single green mericarp, and single dried mericarp. Scale bars = 1 cm. (Photographs by: Ng Pei Xin).

Table 1. Singapore collections of *Tristellateia australasiae* A.Rich. deposited in the Herbarium, Singapore Botanic Gardens (SING, with bar code no.) or Herbarium, Raffles Museum of Biodiversity Research, National University of Singapore (SINU, with accession no.).

S/No.	Accession/Bar Code No.	Herbarium	Collector	Collector's No.	Year	Locality
1.	0013416	SING	R. W. Hullett	526	1886	Changi
2.	0013404	SING	H. N. Ridley	s.n.	1893	Bukit Mandai
3.	0013402	SING	H. N. Ridley	s.n.	1894	Jurong
4.	0013403	SING	H. N. Ridley	s.n.	1894	Sembawang
5.	0013405	SING	H. N. Ridley	s.n.	1894	Serimbun (sic)
6.	0013415	SING	Anonymous	s.n.	1897	Serangoon
7.	0013407	SING	Oackay	s.n.	1898	Ponggol
8.	0013408	SING	C. F. Baker	s.n.	1917	Tampines Road
9.	0013409	SING	G. B. Deshmukh	s.n.	1919	Jurong
10.	0013412	SING	Z. Teruya	820	1929	Tanjong Katong
11.	0013414	SING	I. Ngadiman	374	1955	Kranji
12.	0013413	SING	W. L. Chew	1451	1967	Singapore Botanic Gardens
13.	0013411	SING	A. G. Alphonso	914	1974	Kampong Blukang
14.	0013410	SING	J. S. Womersley	64	1980	Pulau Sudong
15.	2007006296	SINU	J. S. Womersley	64	1980	Pulau Sudong
16.	2007006297	SINU	E. M. Sim & L. P. Ng	20	1990	Pulau Ubin
17.	2007006295	SINU	H. T. W. Tan	Tekong 121	1996	Pulau Tekong, Sungei Belang
18.	2007006294	SINU	H. T. W. Tan	UI 11	1998	Pulau Semecek
19.	2007006289	SINU	K.-x. Tan	403	2003	Sungei Mandai



Fig. 3. Cultivated plants at the the Singapore Management University campus, Bras Basah Road. (Photograph by: Teo Siyang).

This plant is also commonly cultivated in the streets, parks, and gardens of Singapore, but stock for planting is unlikely to be that of local provenance (Fig. 3).

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