Gardens' Bulletin Singapore 54 (2002) 247-251.

A New Species of *Vatica* (Dipterocarpaceae) from Peninsular Malaysia

L.G. SAW

Forest Research Institute Malaysia,
Kepong, 52109 Kuala Lumpur, Malaysia

Abstract

A new species of Dipterocarpaceae, *Vatica yeechongii* L.G. Saw is described from Peninsular Malaysia. The species is currently known from only two localities: the type locality at Sungai Lalang Forest Reserve, Selangor, and the Setul Forest Reserve, Negri Sembilan.

Introduction

The genus *Vatica* comprises about 65 species (Ashton, 1982) distributed in Sri Lanka, southern and eastern India, Myanmar, Thailand, Indochina, south China and through Malesia. In the most recent revision for the genus for the Malesian region, Ashton (1982) recognised 21 species in Peninsular Malaysia. Based on fruits, the genus can be divided into two sections, *viz.*, sect. *Vatica* (with fruit calyx lobes equal) and sect. *Sunaptea* (with fruit calyx lobes unequal). In the recent mast flowering in Peninsular Malaysia (mid-2002), a *Vatica* was collected from the Sungai Lalang Forest Reserve that proved to be a new species belonging to sect. *Vatica.*

The species has unusually large leaves and the fruits are similar to those of *Vatica havilandii* Brandis, *V. venulosa* Blume and *V. chartacea* P.S. Ashton but its size, the leaves and fruits are much larger than those of these three related species (Table 1).

Vatica yeechongii L.G. Saw, **sp. nov.**

Vaticae venulosae similis, sed foliis crasse coriaceis supra bullatis oblanceolatis 44-84 cm longis 10-16.5 cm latis, basi anguste contracta in basi cordata, acumine 1.5-2.5 cm longo, calycis lobis 3.5-4 cm longis, et nuce ovoidea 15-18 mm diam. differt. ***Typus:*** Peninsular Malaysia, Selangor, Sungai Tekala Recreational Forest in Sungai Lalang Forest Reserve, fr. 11 July 2002, *Chung FRI 40344* (holo. KEP; iso. A, K, L, KLU, SAN, SAR, SING).

Table 1. Comparison of *Vatica yeechongii, V. chartacea, V. havilandii* and *V. venulosa.*

	V. yeechongii	*V. chartacea*	*V. havilandii*	*V. venulosa*
Leaves:				
petiole				
length (mm)	20-30	10-22	10-12	5-9
blade				
texture	thickly coriaceous, bullate above	thinly chartaceous	thinly coriaceousi	thinly coriaceous
shape	oblanceolate	oblong to obovate	narrowly oblong to obovate	elliptic to ovate-lanceolate
length (cm)	44-84	11-25	8-17	4-12
width (cm)	10-16.5	3-10	2.5-5	1.5-5
base	tapering narrowly to a cordate base	broadly cuneate or obtuse	cuneate	cuneate
acumen length (cm)	1.5-2.5	1	1	up to 0.5
no. of secondary veins	28-30 pairs	16-20 pairs	15-20 pairs	7-12 pairs
Fruits pedicel				
length (mm)	2-3	up to 6	up to 5	up to 2
Calyx lobes				
length (cm)	3.5-4	up to 6	up to 2.5	up to 3
width (cm)	1-1.5	up to 1.5	up to 1.5	up to 1.3
shape	ovate	lanceolate	ovate	ovate
Nut				
shape	ovoid	ellipsoid	globose	globose
diameter (mm)	15-18	up to 11	up to 12	up to 10

Figure 1

Small tree, 8-15 m tall, 9-13 cm diam., without buttreses. *Bark* smooth with horizontal rings, greyish white with lichen patches; inner bark yellowish-brown; sapwood pale, hard, exuding creamy white resin when cut. *Twigs* robust, 1-2 cm diam., densely rufous stellate hairy when young. *Stipules* narrowly triangular in shape, often curving to one side, 20-35 x 5-8 mm, subpersistent. *Leaves* spreading horizontally to slightly drooping, thickly coriaceous, bullate above, glossy dark green above, pale green below when fresh, glabrescent; petiole 20-30 mm long, 9-13 mm thick, swollen, cracking when dried, densely rufous stellate hairy; blade oblanceolate, 44-84 x 10-16.5 cm, tapering narrowly to a cordate base, margin entire, apex acuminate, acumen 1.5-2.5 cm long; midrib very stout and prominent below, raised above; secondary veins 28-30 pairs, prominent below, distinctly raised

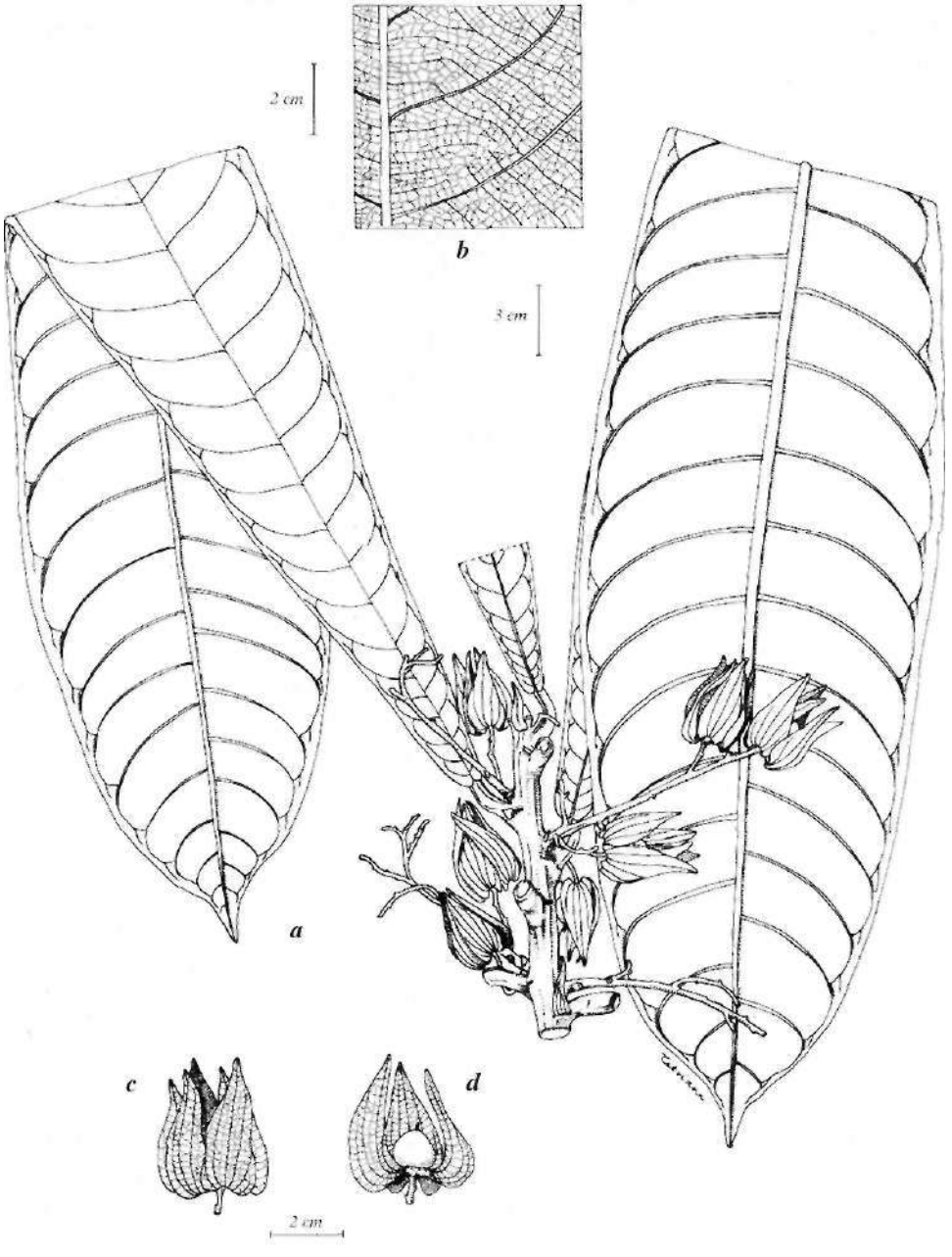

Figure 1. *Vatica yeechongii*. A. leafy fruiting twig; B. details of lower surface of leaf; C. fruit; D. fruit with two calyx lobes removed. (All from *Chung FRI 40344)*

above; intermediate veins 2-4, with the middle one longer than the rest, 3-3.5 cm from the midrib; tertiary veins scalariform-reticulate, conspicuous above; linear domatia sometimes present along distal portion of secondary veins at junction joining preceding veins. *Flowers* unknown. *Infructescence* axillary, 1 per node, along branches of the leafy shoots, branching to only 1 order, short, densely rufous stellate hairy; rachis 4-8 cm long, *c.* 2 mm thick at base and tapering to *c.* 1 mm thick apically. *Fruits* along main rachis and on first order branches; *pedicel* 2-3 mm long, *c.* 1 mm thick, densely rufous stellate hairy; *calyx lobes* green to reddish brown when fresh, 3.5-4 x 1-1.5 cm, ovate, acute, connate up to 4-5 mm from the base, glabrescent; *nut* ovoid, 15-18 mm in diameter, glabrescent, completely hidden in, but free from, the calyx lobes. *Germination* epigeal.

Distribution: Endemic to Peninsular Malaysia. Rare, known from the Sungai Lalang Forest Reserve, Selangor, and the Setul Forest Reserve, Negri Sembilan.

Habitat: It was found in lowland dipterocarp forest, at about 50 m altitude, on a gentle slope near the riverbank in the Sungai Lalang Forest Reserve in association with *Saraca cauliflora* Baker (Leguminosae). The fruits appear to be water dispersed. Of the nine mature trees the Forest Research Institute Malaysia (FRIM) team managed to locate, all were within 5 m of the stream bank, where the gradient of the stream is gentle. We were unable to locate trees on the upper slopes of the river valley nor on the banks further upstream where the stream is torrential. In the Setul Forest Reserve, the species was also observed in a similar habitat.

Notes: The growth pattern on shoots is rhythmic: on the stem there are obvious resting periods where nodes are close together, followed by elongation periods of leaf-free growth with only stipules, then followed by a cluster of spirally arranged leaves. Largest leaves are found on the proximal ends of these clusters, the distal ones are smaller.

Chan Yee Chong, FRIM Research Assistant, had noted this species as an unnamed *Vatica* sometime ago and during the recent mast flowering and fruiting, he managed to collect fruiting material, which enabled the description of this new species. The species epithet honours Chan Yee Chong.

Other specimen examined: Peninsular Malaysia - Selangor: Sungai Tekala Recreational Forest in the Sungai Lalang Forest Reserve, close to ranger's office and camping site, fr. 3 July 2002, *Y.C. Chan FRI 46657* (KEP); Negri

Sembilan: Setul Forest Reserve, fr. 20 Aug 2002, *Y.C. Chan FRI 46668* (KEP).

Acknowledgements

I thank Azid Adam, Mohd. Jantan, Borhan Mat Saad and Abu Kasim Omar, Selangor District Office, Cheras, Kuala Lumpur; Peter S. Ashton for advice on the affinity of this new species; J. F. Veldkamp, Nationaal Herbarium Nederland, for the Latin diagnoses; R. C. K. Chung, FRIM; E. Soepadmo for help in editing the final draft; Tetriana Ahmed Fauzi for the line drawing; Damahuri Sabri, Mohd. Aidil Noordin, Fakhrul Effendi Othman and Mustapa Data, FRIM, for their help in the field; and especially to Chan Yee Chong who first pointed out the new species and made the first collection. Support for the research came from the Flora Malaysiana Centre Fund, Ministry of Primary Industries, Malaysia under Project 6: Conservation Monitoring System for Threatened Plants.

Reference

Ashton, P. S. 1982. Dipterocarpaceae. *Flora Malesiana.* Ser. 1, **9**: 237-552.