

Additions to the Vietnamese species of *Magnolia* L., sect. *Gwillimia* DC. (Magnoliaceae)

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Published on 26 June 2015

Vu T. C., Duy N. V., Phan N. H. T., Tran V. T., Tiep N. V. & Xia N. 2015 — Additions to the Vietnamese species of *Magnolia* L., sect. *Gwillimia* DC. (Magnoliaceae). *Adansonia*, sér. 3, 37 (1): 13-18. <http://dx.doi.org/10.5252/a2015n1a2>

ABSTRACT

Magnolia champacifolia J. E. Dandy ex F. Gagnepain, sp. nov., originally described, but invalidly published in 1938, is validated here by designating the flowering sheet as the holotype. Otherwise, a new species of *Magnolia* L., *M. lamdongensis* V.T. Tran, N.V. Duy & N.H. Xia, sp. nov. from southern Vietnam is described and illustrated. It is distinguished from the closely related *M. champacifolia* J. E. Dandy ex F. Gagnepain, sp. nov., and *M. albosericea* Chun & Tsoong by its leaf blades narrowly ovate, glabrous, apex long acuminate, petiole *c.* 3 cm long, tepals short and glabrous, peduncle *c.* 3 cm long and densely papillate when young, and gynoecium glabrous.

KEY WORDS

Magnoliaceae,
valid publication,
Gwillimia,
Vietnam,
new species.

RÉSUMÉ

Additions aux espèces vietnamiennes de Magnolia L., sect. Gwillimia DC. (Magnoliaceae).

Magnolia champacifolia J. E. Dandy ex F. Gagnepain, sp. nov., originellement décrit, mais publié invalidement, en 1938, est ici validé en choisissant comme holotype la part fleurie. Par ailleurs, une espèce nouvelle de *Magnolia* L., *M. lamdongensis* V.T. Tran, N.V. Duy & N.H. Xia, sp. nov., est décrite et illustrée pour le Vietnam méridional. Elle se distingue des espèces très affines *M. champacifolia* J. E. Dandy ex F. Gagnepain, sp. nov., and *M. albosericea* Chun & Tsoong par ses limbes foliaires étroitement ovés, glabres, à apex longuement acuminé, un pétiole d'env. 3 cm long, des tépales courts et glabres, un pédoncule inflorescentiel long d'env. 3 cm et densément papilleux à l'état jeune, ainsi qu'un gynécée glabre.

MOTS CLÉS
Magnoliaceae,
publication validée,
Gwillimia,
Vietnam,
espèces nouvelles.

INTRODUCTION

Magnolia L. is a very large genus in the subfamily Magnolioideae (Magnoliaceae), which was established in 1753 by Linnaeus, based on *Magnolia virginiana* L. The genus consists of *c.* 250 species, and is widely distributed in the tropical, subtropical and warm-temperate regions of Asia and America. This genus is distinguished from the other related genera of the tribe Magnolieae by leaves conduplicate in prefoliation, terminal flowers, introrse anther, and sessile gynoeceum. Fruit is more or less ovoid or ellipsoid with fused or connivent carpels until dehiscence (Figlar & Nooteboom 2004).

Among these taxa, *M. champacifolia* J. E. Dandy ex F. Gagnepain, sp. nov. in the section *Gwillimia* DC. was described as a new species in 1938 (Gagnepain 1938). However, this name was not validly published, because two things: the species type was not indicated; and the name of this new taxon was not accompanied by a Latin description or diagnosis or by a reference (art. 40.1 and 39.1 of the “International Code of Botanical Nomenclature” – ICBN; McNeil *et al.* 2012). For its formal use, the name is here validated and lectotypified with the two flowering specimens *Poilane 6472*. According to article 46.2, the authorship of the name *M. champacifolia* J. E. Dandy ex F. Gagnepain, sp. nov. is still to be attributed to J. E. Dandy and F. Gagnepain.

During a floristic survey in Phu Son slope, Lam Ha district, Lam Dong Provinces, southern Vietnam, in June 2013, we found a small population of *Magnolia* growing sparsely scattered in broad-leaved forest between 1300 and 1500 m asl. Specimens of vegetative and reproductive material of *Magnolia* were collected. After having examined the specimens and consulted the relevant literature (Gagnepain 1938; Chun & Tsoong 1964; Xia *et al.* 2008), we found that *M. champacifolia* J. E. Dandy ex F. Gagnepain, sp. nov. and *Magnolia albosericea* Chun & Tsoong in the section *Gwillimia* DC (Figlar & Nooteboom 2004) are very similar in certain characters, but differ by leaf blades narrowly ovate, glabrous, apex long acuminate, petiole *c.* 3 cm long, tepals short and glabrous, peduncle *c.* 3 cm long and densely papillate when young, as well as gynoeceum glabrous. These features clearly suggest that our plant is the representative of a new species which is described below.

SYSTEMATICS

Magnolia champacifolia

J. E. Dandy ex F. Gagnepain, sp. nov. (Fig. 1)

Arbor parva 6-8 m alta sempervirens. Ramulitio juvenio indumento. Folia lanceolato-acutata, 20-25 cm longa 6-8 cm lata, apice longa acutata, basi attenuato-cuneata, supra glabrescentia, subtus villosa; petiolus 3-4 cm longus. Pedunculus c. 25 mm longus, pilosus. Flos ovoideus, pilosus. Tepala 9-10, 4 cm longa, 3 cm lata. Stamina numerosa, c. 1 cm longa. Carpella 3-faria.

TYPUS. — Vietnam. Annam. Prov. Nhatrang, Nord de Ninh Hoa, versant sud-est du massif de la Mère et l'Enfant, 1300 m alt., 17.V.1923, *Poilane 6472* (lecto-, P[P00203965]!; isolecto-, P[P00204036]).

Magnolia lamdongensis

V.T. Tran, N.V. Duy & N.H. Xia, sp. nov.
(Figs 2; 3)

M. champacifolia J.E. Dandy ex F. Gagnepain, sp. nov. et *M. albosericea* Chun & Tsoong affinis, sed folia angustato-ovata, apice longa acutata, glabrescentia, petiolus c. 3 cm longus, pedunculus c. 3 cm longus, juventute papillatus, tepala atque gynoecea glabra.

TYPUS. — Vietnam. Lam Dong Province, Lam Ha District, Phu Son Slope, elevation 1300 m asl, 11°55'05"N, 108°10'04"E, 12.VI.2013, *N.V. Duy & V.T. Tran 982* (holo-, Tay Nguyen Institute for Scientific Research – VTN!); iso-, Vietnam National Museum of Nature – VMN, Da Lat University – DLU!).

OTHER MATERIAL EXAMINATED. — Vietnam. Prov. Nha Trang, Ninh Hoa Dist. 17.V.1923, *Poilane 6473* (syntype of *M. champacifolia*); *ibid.*, versant sud-est du massif de la Mère et l'Enfant, 1500 m alt., 20.V.1923, 6594 (P[P00204037, P00204038]!) [by comparison material from paratypes of *M. lamdongensis* V.T. Tran, N.V. Duy & N.H. Xia, sp. nov.]. — Typus: China, Hainan, *How 72740* (holo-, of *M. albosericea*, IBSC!) [by comparison material from other species].

DISTRIBUTION, HABITAT. — South Vietnam, Lam Dong Province. Lam Ha district, Phu Son slope and Hon Nga mountain. Growing sparsely scattered in montane evergreen broad-leaved forest, between 1300 and 1500 m asl, associated with species such as *Rhodoleia championii* Hook., *Castanopsis chinensis* (Spreng) Hance, *Manglietia chevalieri* Dandy, *Paramichelia bailonii* Hu... So far there are no seedlings and young trees around the mature individuals.

PHENOLOGY. — The plants were flowering and fruiting between May and July.

VERNACULAR NAME. — Dạ hợp lâm đồng [magnolia of Lâm đồng].

ETYMOLOGY. — The specific epithet refers to Lâm đồng Province.



Fig. 1. — Lectotype of *Magnolia champacifolia* J. E. Dandy ex F. Gagnepain, sp. nov. (P00203965).

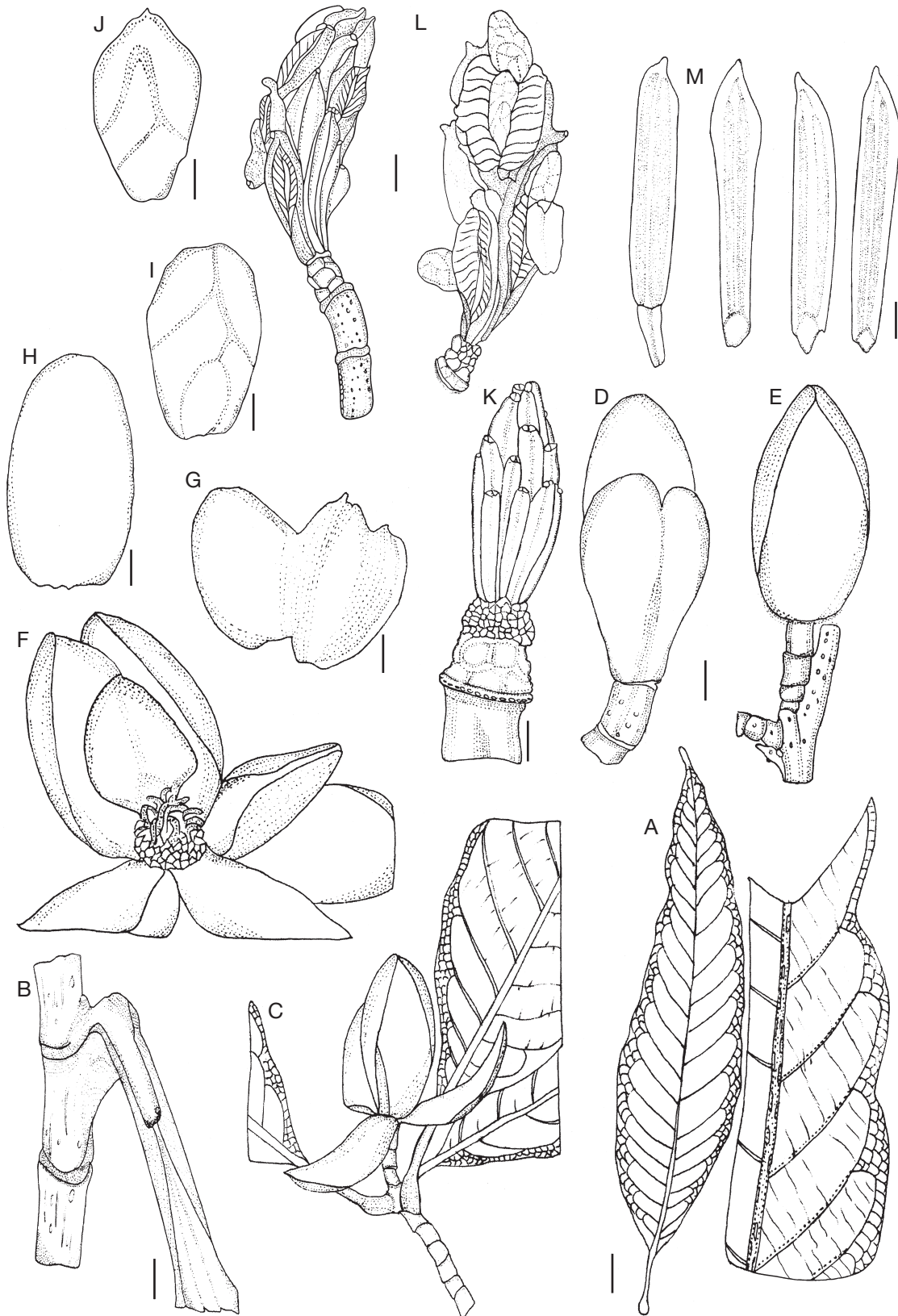


FIG. 2. — *Magnolia lamdongensis* T.V. Tien, N.V. Duy & N.H. Xia, sp. nov.: **A**, leaf blade and venation detail; **B**, petiole with stipular scar; **C**, tip of a flowering twig; **D**, terminal flower with bract; **E**, terminal flower without bracts; **F**, anthetic flower; **G**, spathe; **H**, outer tepal; **I**, middle tepal; **J**, inner tepal; **K**, floral receptacle and gynoecium; **L**, fruit aggregate & fruit with seeds; **M**, 1 upper stamen (left) & 3 lower stamens (right). *N. V. Duy & V. T. Tran 982* (holo-, VTN). Drawn by Tran Van Tien. Scale bars: A, B, M, 1.5 cm; E, 1 cm; G, L, 0.8 cm; H, 0.5 cm; I, J, 0.25 cm; K, 1.2 cm.



FIG. 3. — *Magnolia lamdongensis* V.T. Tran, N.V. Duy & N.H. Xia, sp. nov.: **A**, habit; **B**, bark; **C**, old twigs; **D**, **E**, young twigs with terminal bud; **F**, petiole with stipular scar; **G**, leaf blades (adaxial and abaxial sides); **H**, terminal flower with bracts; **I**, terminal flower without bract; **J**, flowering twig; **K**, androecium and gynoecium at the anthesis (top view); **L**, spathe; **M**, tepals (right: outer tepal, middle: middle tepal and left: inner tepal); **N**, stamens (ventral side); **O**, stamen (dorsal side); **P**, receptacle and gynoecium; **Q**, fruit aggregate; **R**, fruit with seeds. Photos by Nong Van Duy & Tran Van Tien from the type locality.

TABLE 1. — Morphological comparison between *Magnolia albosericea* Chun & Tsoong, *M. champacifolia* J. E. Dandy ex F. Gagnepain, sp. nov., and a new taxon from Vietnam, *M. lamdongensis* V.T. Tran, N.V. Duy & N.H. Xia, sp. nov.

Characters	<i>M. lamdongensis</i> V.T. Tran, N.V. Duy & N.H. Xia, sp. nov.	<i>M. albosericea</i>	<i>M. champacifolia</i> J. E. Dandy ex F. Gagnepain, sp. nov.
Leaves	narrowly ovate, glabrous, midvein glabrous, apex acuminate ca. 2 cm,	oblong-elliptical, abaxially white villous, midvein sparsely long sericeous, apex short acuminate,	lanceolate, abaxially villous, midvein densely villous, apex acuminate
Petiole	c. 3 cm long, densely papillate when young	c. 3.5 cm long, glabrous	c. 4.5 cm long, densely villous when young
Peduncle	c. 2 cm long, densely papillate	c. 3 cm long, densely sericeous	c. 2.5 cm long, densely villous
Spathes	densely papillate	densely papillate	densely villous
Tepals	outer whorl c. 1.5 cm long, glabrous; middle whorl glabrous	outer whorl c. 4.6 cm long, abaxially densely papillate and white sericeous near base; middle whorl abaxially white sericeous near base	outer whorl c. 4 cm long, abaxially densely villous; middle whorl abaxially densely villous
Gynoecium	glabrous	densely papillate	densely papillate

DESCRIPTION

Evergreen trees, to 4 m tall and 15 cm in stem diam.; bark grayish-brown, rough. Twigs slender 0.3-0.5 cm in diam., young twigs covered with densely grayish-white hairs, old twigs with elevated lenticels; terminal buds grayish-white hairy. Leaves spirally arranged, mature leaf blade rigid and leathery, narrowly ovate, glabrous, 25-35 × 5-8.5 cm; base narrowly cuneate; apex acuminate, c. 2 cm; margins slightly undulate; midvein abaxially prominent, with elevated long lenticels, lateral veins 14-20 on each side, abaxially prominent, reticulate veins dense and prominent on both surface when dry; petiole c. 3 cm long, expanded at base, densely white papillate when young, stipular scar nearly reaching apex of petiole. Peduncle erect, c. 2 × 0.4 cm, 3-4 internodes, densely white papillate. Flower terminal, solitary, ovoid, yellowish-white, 2-2.5 × 1.5-2 cm; two spathaceous bracts, c. 2.5 cm, densely white papillate outside; pedicel inconspicuous. Tepals 9, all glabrous, in 3 whorls and different from each other; 3 outer tepals obovate-oblong, thin, 1-1.5 × 2-2.5 cm, apex slightly obtuse; 3 middle tepals obovate, thick, 0.8-1.3 × 1.5-2 cm, apex obtuse; inner tepals obovate, thick, 1.2-1.5 × 0.5-0.8 cm, apex obtuse or slight acute. Stamens in 4-5 ranges, 70-80, unequal, dehiscent introrsely, apex triangular, acute, 8-10 × 1-1.5 mm, scarred into ventral inner tepals ca. 7 mm long. Gynoecium narrowly obovoid to ellipsoid, white, c. 7 × 1 mm, glabrous; stigmas c. 5-6 mm long, reflexed. Ovules 2, irregular with 3 winged-shape and 3 slight deep-set faces, c. 0.7 mm long. Fruit narrowly ellipsoid, 3.5-4 × 1-1.5 cm, carpels 13-15, dorsally dehiscent, glabrous, apex with an outcurved beak 1-3 mm long. Seeds 1-2, seed irregularly polygonal, testa pink, hilum connected to placenta by filiform funiculus, c. 0.8 × 0.4 mm.

REMARKS

This remarkable species is very similar to *Magnolia champacifolia* J. E. Dandy ex F. Gagnepain, sp. nov. and *albosericea* Chun & Tsoong in certain characters, but differs by leaf blades narrowly ovate, glabrous, apex long acuminate, petiole c. 3 cm long, tepals short and glabrous, peduncle c. 3 cm long and densely papillate when young, gynoecium glabrous.

Acknowledgements

The authors would like to thank Vietnam Academy of Science and Technology for financial support. The curators of the herbaria HN, HNU, IBSC, P and VNM are thanked for the use of their facilities. Ian Turner and Thierry Deroin are also thanked for their constructive remarks on an earlier version of the manuscript.

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Submitted on 9 January 2014;
 accepted on 19 April 2014;
 published on 26 June 2015.