



# *Myrica tristigma* (Myricaceae), a new species from Vietnam

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## Keywords

Endemism  
*Myricaceae*  
*Myrica tristigma*  
Vietnam

**Abstract** *Myrica tristigma* (Myricaceae), a new species found only in Vietnam, is described here. A morphological comparison with resembling species and a key to the *Myrica* species in Vietnam are provided. Details about the distribution and habitat are supplemented with photographic illustrations.

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## INTRODUCTION

*Myrica* L. is a genus of small trees or shrubs, dioecious or monoecious, with resinous, peltate glands in young parts, flowers perianthless, staminate flowers with 2–8(–20) stamens, pistillate flowers with a gynoeceium of 2 carpels united into a compound and 1-locular ovary, fruit drupaceous, often covered with variously shaped protuberances. It belongs to the family *Myricaceae* in the order *Fagales* (APG IV 2016). The family contains three genera, *Canacomyrca* Guillaumin, *Comptonia* L'Hér. and *Myrica* L., and comprises 45–57 species, which mostly occur in temperate to the subtropical and tropical montane regions in the world, only *Canacomyrca* is endemic and occurs on New Caledonia (Kubitzki 1993, Takhtajai 2009).

*Myrica* is divided in two subgenera: *Myrica* subg. *Morella* (Lour.) Engl., with the fruit covered with numerous emergences; and *Myrica* subg. *Myrica*, with the fruit smooth and flanked by accrescent, fleshy bracteoles (Kubitzki 1993). *Myrica* subgenus *Morella* comprises three sections: *Myrica* sect. *Morella*, with emergences fleshy, seven species from Malesia to India; *Myrica* sect. *Cerophora* (Raf.) A.Chev., the emergences with fatty exudate, 45–50 species in the Old and New World; and *Myrica* sect. *Faya* (Webb & Berthel) A.Chev., with three species in eastern North America and Atlantic Islands (Kubitzki 1993). In the most recent revision for Vietnam (Ban 2003, Ho 2003, Khang 2017), *Myrica* sect. *Morella* comprises three species: *Myrica adenophora* Hance, *Myrica esculenta* Buch.-Ham. ex

D.Don, and *Myrica rubra* (Lour.) Siebold ex Zucc., with three varieties *M. esculenta* var. *balansae* Dode, *M. esculenta* var. *chevalieri* (Dode) H.H.Pharm, and *M. esculenta* var. *tonkinesis* A.Chev.

During our floristic survey in Quang Ninh and Quang Binh provinces of Vietnam, we found and collected some very distinctive *Myrica* samples. After close scrutiny of the available literature (Dode 1929, Lu & Bornstein 1999, Larsen 2000, Ho 2003, Herbert 2005, Khang et al. 2017), examination of type specimen images in herbaria (BM, K, P; all herbarium acronyms follow Thiers continuously updated) and relevant protologues, the specimens did not match any known *Myrica* species. We also compared the new materials with specimens of *Myrica* deposited in Vietnamese herbaria (HN, HNU, NIMM, VNM).

The specimens resemble *M. adenophora* from China and Vietnam, in habit (evergreen monoecious shrubs 1–2.5 m tall), leaves (leaf blade narrowly elliptic-obovate), inflorescences (staminate spikes axillary, nearly solitary; pistillate spikes axillary, inconspicuously branched at base or solitary) and infructescences (usually with only 1 fruit) but differs from other species in the stigma (style with 3 relatively long stigmatic branches in the specimens, versus 2 stigmatic branches in other species). The morphological differences with other species in Vietnam are mentioned in Table 1.

The deviating specimens are here described as a new species.

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**Table 1** Comparison of morphological characters of *Myrica tristigma* sp. nov. with resembling species in Vietnam.

Character	<i>M. tristigma</i>	<i>M. adenophora</i>	<i>M. esculenta</i>	<i>M. rubra</i>
Habits	Monoecious shrubs	Monoecious shrubs	Dioecious trees	Dioecious trees
Leaf blade	Narrowly elliptic-obovate, 1.8–5 by 0.7–1.5 cm	Elliptic-obovate to cuneate-obovate, 1.5–6.5 by 0.7–3 cm	Cuneate-obovate or ovate-oblong to oblanceolate, 7–12 by 1.5–2.5 cm	Narrowly elliptic-obovate to cuneate-obovate, 4–13 by 2–4.5 cm
Staminate inflorescences	Spikes nearly solitary, 1–2.3 cm long, 1–3-flowered	Spikes nearly solitary, 1–2.5 cm long, 1–3-flowered	Spikes nearly solitary, 1.7–2.8 cm long, many flowered	Spikes much branched, 3–6.5 cm long, many flowered
Stamens	2–6, anthers broadly ellipsoid, 0.7–0.8 mm long	2–6, anthers ellipsoid, 0.7–0.8 mm long	6–8, anthers ellipsoid, to 1.5 mm long	3–7, anthers ellipsoid, to 1.5 mm long
Pistillate inflorescences	Spikes 1–1.5 cm long, 1–3-flowered	Spikes 1–1.5 cm long, 1–3-flowered	Spikes 1–1.5 cm long, many flowered	Spikes 1–5 cm long, many flowered
Ovaries	Ovary glabrous, stigma divided in 3 long stigmatic branches	Ovary velutinous, stigma with 2 long stigmatic branches	Ovary velutinous, stigma with 2 stigmatic branches	Ovary velutinous, stigma with 2 stigmatic branches
Infructescence	Drupes solitary	Drupes solitary	Drupes solitary	Many drupes
Fruits	Globose, 0.8–1 cm diam	Ellipsoid, 0.7–1 cm long	Ellipsoid, 1.5–1.8 cm long	Ellipsoid, 1.0–1.3 cm long

## TAXONOMY

*Myrica tristigma* N.T.Cuong, T.D.Binh & D.V.Hai, sp. nov. — Fig. 1.

Shrubs, monoecious, 1–2.5 m tall. Ovary glabrous, stigma sessile, divided into 3 branches. Drupe usually 1 per infructescence, globose, 0.8–1 cm diam. — Type: *N.T. Cuong 1003* (holo HN; iso HN), Vietnam, Quang Binh Province, Quang Trach District, Hon La Island, 17°56'3" N, 106°31'53" E, 15 March 2024. Paratypes: *N.T. Cuong 1004* (HN), Vietnam, Quang Binh Province, Quang Trach District, Hon La Island, 17°56'3" N, 106°31'53" E, 15 March 2024; *N.T. Cuong s.n.* (HN), Vietnam, Quang Ninh Province, Co To District, Co To Island, 20°57'23" N, 107°45'36" E, 23 March 2023.

**Etymology.** The species epithet is based on the character of the stigma divided into three relatively long branches.

Evergreen, monoecious shrubs, 1–2.5 m tall, branched; bark greyish. *Branchlets* and *buds* densely tomentose. *Leaves* simple, in spirals; petiole 0.2–0.8 cm long, pubescent to tomentose; leaf blade narrowly elliptic-obovate, 1.8–5 by 0.7–1.5 cm, subleathery, base cuneate, margin usually serrate or serrate-crenate in apical 2/3, apex acute or obtuse, adaxially golden-glandular when young, abaxially pubescent and densely golden-glandular, midvein pubescent. *Staminate spikes* axillary, nearly solitary, ascending, 1–2.3 cm long, peduncle and rachis pubescent; bracts overlapping, ciliate, densely golden-glandular. *Flowers* lacking sepals and petals. *Staminate flowers* without bracteoles; stamens 2–6, anthers purple to bright red, broadly ellipsoid, 0.7–0.8 mm long. *Pistillate spikes* axillary, inconspicuously branched at base or solitary, 1–1.5 cm long, 1–3-flowered, rachis pubescent; bracts ciliate, densely golden-glandular. *Pistillate flowers* often with 2–4 bracteoles; gynoecium of 2 carpels united into a compound and 1-locular ovary, broadly ovoid, 0.5–0.6 mm long, glabrous, purple to bright red; stigma sessile, divided into 3 relatively long branches, 0.3–0.4 mm long; ovule solitary, basal. *Drupe* usually 1 per infructescence, globose, 0.8–1 cm diam, red to brown when mature; endocarp hard, 3–4 mm in diam.

**Distribution** — Endemic to Vietnam: Quang Ninh (Co To District: Co To Island) and Quang Binh Province (Quang Trach District: Hon La Island).

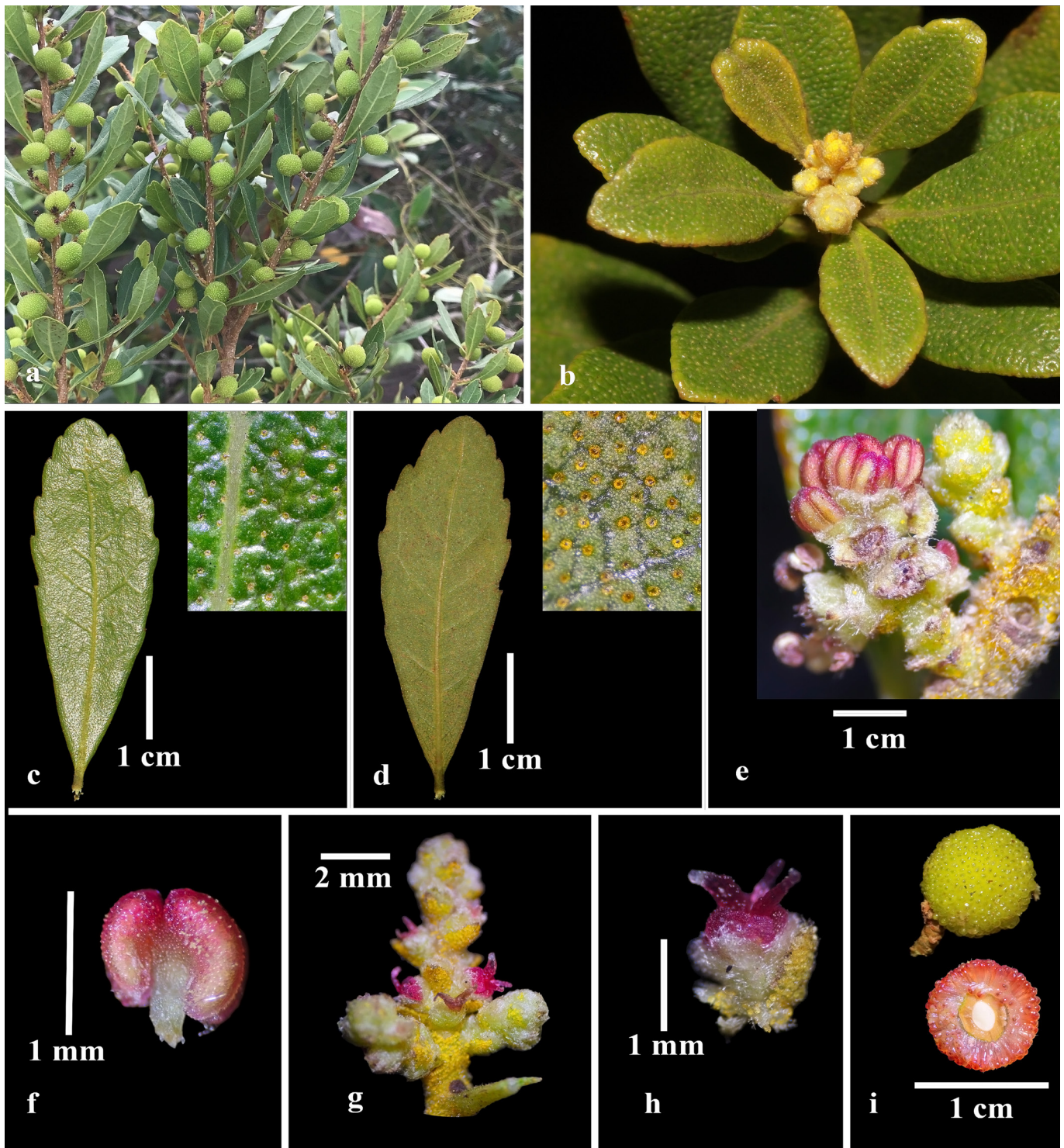
**Habitat & Ecology** — In shrublands on islands at altitudes of 10–50 m, dominated by *Casearia glomerata* Roxb. (Salicaceae), *Melastoma malabathricum* L. subsp. *normale* (D.Don) Karst.Mey. (Melastomataceae), *Myrsine linearis* (Lour.) Poir. (Primulaceae), *Planchonella obovata* (R.Br.) Pierre (Sapotaceae), *Rhodomyrtus tomentosa* (Aiton) Hassk. (Myrtaceae). Flowering and fruiting: February to May.

**Conservation status** — *Myrica tristigma* is known only from the area including Quang Ninh (Co To District) and Quang Binh Province (Quang Trach District). Detailed distribution, the size of populations, and their phenology have so far not been investigated. More research is needed, so the species provisionally must be regarded as Not Evaluated (NE) in the threat categories of IUCN (IUCN 2012).

## KEY TO THE SPECIES OF *Myrica* IN VIETNAM

1. Shrubs, monoecious, 1–3 m tall . . . . . 2
1. Trees, dioecious, 3–10 m tall. . . . . 3
2. Ovary velutinous, stigma divided into 2 branches. Drupe ellipsoid. . . . . *M. adenophora*
2. Ovary glabrous, stigma divided into 3 branches. Drupe globose. . . . . *M. tristigma*
3. Staminate spikes much-branched, 3–6.5 cm long. Infructescences with many drupes . . . . . *M. esculenta*
3. Staminate spikes nearly solitary, 1–2.5 cm long. Drupes solitary . . . . . *M. rubra*

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**Fig. 1** *Myrica tristigma* N.T.Cuong, T.D.Binh & D.V.Hai. **a.** Branches bearing leaves and infructescences; **b.** Branch bearing leaves and bud; **c.** Leaf with detail of adaxial surface; **d.** Leaf with detail of abaxial surface; **e.** Staminate spike with flowers; **f.** Stamen; **g.** Pistillate spike; **h.** Pistillate flower; **i** Fruit. (a–d: photos by N.T. Cuong from isotype in HN, e–i: photos by T.D. Binh from holotype in HN).

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