

A new species of *Tetrastigma* (Vitaceae) from Vietnam

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ABSTRACT

Tetrastigma quangninhense (Vitaceae), a new species found in Quang Ninh Province, northern Vietnam, referable to *Tetrastigma* sect. *Tetrastigma* is described. A morphological comparison with resembling species is provided. A description, details of distribution and habitat are supplemented with photos.

KEYWORDS: dioecious, lianas, Quang Ninh, stigma, taxonomy.

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INTRODUCTION

The genus *Tetrastigma* (Miq.) Planch. is characterized by its polygamo-dioecy, 4-merous flowers, 4-lobed or 4-parted stigma in the pistillate flowers, and belongs to the family Vitaceae in the order Vitales (APG IV, 2016). The genus comprises about 137 species, distributed in tropical and subtropical Asia with a few of them reaching Australia (POWO, 2026). Based on the morphology of seeds (Latiff, 1983), the genus was divided into two sections: sect. *Tetrastigma*, with globose to ellipsoid, 1–2-seeded berries, seeds globose or plano-convex with smooth testa, chalazal knot extending 3/4 of the length of the seeds, endosperm M shaped in transverse section; and sect. *Carinata* Latiff. with pyriform, 3–4-seeded berries, seeds carinate ventrally with tuberculate testa, chalazal knot extending 1/2 along the length of the seeds, endosperm T shaped in transverse section. In the most recent revisions of the family for Vietnam (Ho, 2003; Hien, 2003; Cuong, 2009), 39 species of *Tetrastigma* have been recorded from the country, of which 32 belong to *T.* sect. *Tetrastigma* and seven to *T.* sect. *Carinata*.

During our floristic survey in Quang Ninh Province of Vietnam and study on *Tetrastigma* specimens in herbarium HN, we found some very distinctive *Tetrastigma* specimens. After close scrutiny of available literature including: Planchon (1887), Gagnepain (1912, 1950), Latiff (1983), Ho (2003) and Chen *et al.* (2007) and relevant protologues, as well as examination of specimens in the following herbaria: HITBC, HN, HNU, IBSC, KUN, NIMM, NY, P and VNM (herbarium acronyms follow Thiers (2025–continuously updated)), we concluded that the specimens were referable to *Tetrastigma* sect. *Teterastigma* but did not match any previously known species, and is formally described here as a new species.

TAXONOMIC TREATMENT

Tetrastigma quangninhense N.T.Cuong, H.M.Tam & Pornp. **sp. nov.** Fig. 1.

Tetrastigma quangninhense resembles *T. planicaule* (Hook.f.) Gagnep. distributed from Sri Lanka, East India to South China and Indo-China

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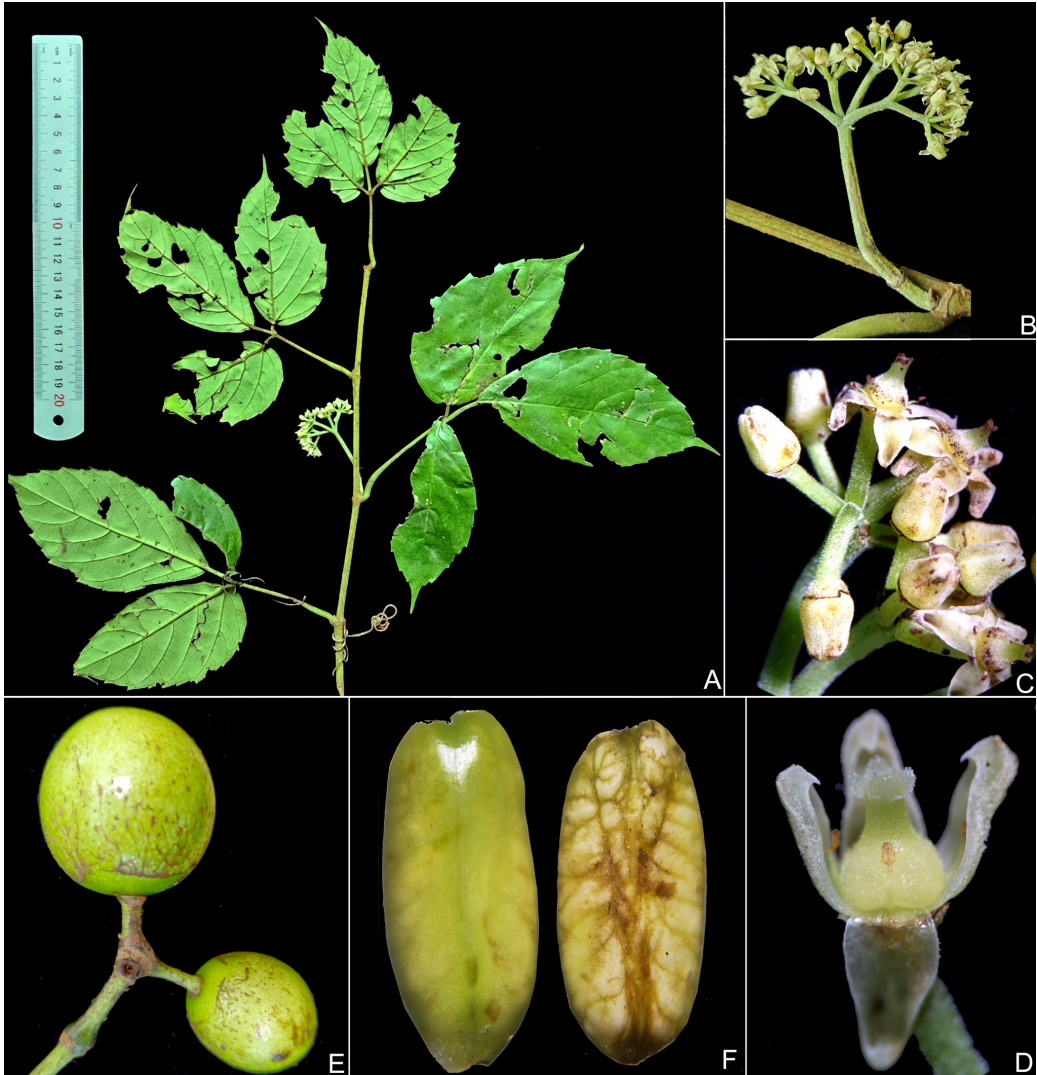


Figure 1. *Tetrastigma quangninhense* N.T.Cuong, H.M.Tam & Pomp. A. Branches bearing leaves and inflorescences; B. pistillate inflorescences; C. detail of pistillate inflorescences; D. pistillate flower; E. fruits; F. seeds).

in habit (lianas with flat stems), inflorescences (compound polychasium), flower buds (oval, 2.5–3 mm long, apex obtuse), petals (ovate-triangular, 2–2.5 mm long, apex galeate, sparsely papillose), fruits (globose, 2–3 cm in diameter, 1 or 2-seeded), and seeds (oblongoid, 1.8–3 cm long, ventral holes furrowed from base to apex), but differs in having 3-foliolate leaves, and a conspicuous style in the pistillate flowers (versus leaves palmately 5-foliolate, and style inconspicuous in *T. planicaule*). Type: Vietnam, Quang Ninh Province, Dam Ha District,

Quang Lam Commune, 21°27'27"N, 107°32'53"E, alt. 155 m, 30 Apr. 2024, *N.T. Cuong 1005* [flowers] (holotype HN; isotype HN).

Lianas, dioecious, 5–10 m long; stem flat, young twigs terete or slightly flat with longitudinal ridges; tendrils unbranched; young twigs, petioles, veins on abaxial surface of leaflets, inflorescences, buds pubescent. *Leaves* 3-foliolate; petiole 4–12 cm long; petiolules 0.5–3 cm long, central petiolule 2–4 times as long as lateral ones; leaflets coriaceous,

broadly ovate to lanceolate, 7–16 × 4–9 cm, lateral veins 4–7 pairs, veinlets raised, base of central leaflet broadly cuneate or rounded, base of lateral leaflets asymmetric, broadly cuneate or rounded, margin serrate with 9–12 -teeth on each side, apex acuminate to caudate. *Staminate inflorescences* and staminate flowers not seen. *Pistillate inflorescences* a compound polychasium, axillary, 6–15 cm long; peduncle 3–11 cm long, with nodes and bracts. *Pistillate flowers*: buds oval, 2.5–3 mm long, apex obtuse; pedicel 4–10 mm long, pubescent; calyx shallow and saucer-shaped, papillose, teeth inconspicuous; petals 4, ovate-triangular, 2–2.5 mm long, apex galeate, not corniculate, sparsely papillose in dorsal surface; staminode 4, 1/2 as long as ovary; disk inconspicuous; ovary broadly coniform, 1.5–2 mm long; style 1–1.2 mm long; stigma 4-lobed, lobes acute. *Berries* globose, 2.5–3.5 cm in diameter, 1–2-seeded. *Seeds* oblongoid, 2–3 cm long, base subacute to rounded, apex rounded, bilobed, ventral holes furrowed from base to apex, endosperm M shaped in cross-section.

Vietnam.— QUANG NINH PROVINCE: Dam Ha District, Quang Lam Commune, 21°27'18"N, 107°32'37"E, alt. 268 m, 21 Aug. 2024, *Cuong 1006 (HN)*.

Distribution.— Endemic to Vietnam: Quang Ninh Province (Dam Ha District: Quang Lam Commune).

Habitat & Ecology.— Found along a stream in the margin of *Cinnamomum cassia* (L.) D. Don plantation, and in secondary forest at altitudes of 150–300 m. Flowering and fruiting from April to September.

Conservation status.— *Tetrastigma quangninhense* is known only from the area of Quang Ninh Province (Dam Ha 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 Data Deficient (DD) in the threat categories of IUCN (IUCN, 2012).

KEY TO THE SPECIES OF *TETRASTIGMA* SECT. *TETRASTIGMA* IN VIETNAM

1. Petals not corniculate at apex
 2. Petals glabrous
 3. Peduncle pubescent or papillose
 4. Leaves 3-foliolate; berries globose, < 1 cm in diameter; seeds obdeltoid **T. annamense** Gagnep.
 4. Leaves 5-foliolate; berries ellipsoid, 1.5–2 cm long; seeds ellipsoid **T. cauliflorum** Merr.
 3. Peduncle glabrous
 5. Pedicels 2–3 as long as buds; petals apiculate at apex **T. apiculatum** Gagnep.
 5. Pedicels as long as or shorter than buds; petals galeate at apex
 6. Leaves palmate, 3–5-foliolate
 7. Leaves leathery, veinlets raised on both surfaces; berries globose **T. retinervium** Planch.
 7. Leaves subleathery or papery, veinlets inconspicuously raised on both surfaces; berries ellipsoid
 8. Tendrils unbranched; leaflets elliptic or elliptic-lanceolate, 7–12 × 2–3 cm; pedicels glabrous **T. caudatum** Merr. & Chun
 8. Tendrils bifurcate; leaflets broadly elliptic or obovate, 12–25 × 6–13 cm; pedicels pubescent **T. oliviforme** Planch.
 6. Leaves pedate, 5–7-foliolate
 9. Old stems flat; inflorescence umbelliform **T. scariosum** (Blume) Planch
 9. Old stems round; inflorescence a polychasium or dichasium **T. robinsonii** Merr.
 2. Petals pubescent, papillose or villous
 10. Young branches with 4-sharp ridges; inflorescence umbellate. **T. quadrangulum** Gagnep. & Craib
 10. Young branches round; inflorescence a polychasium or dichasium
 11. Young branches, tendrils, abaxial leaves and ovary villous **T. voinierianum** (Sallier) Pierre ex Gagnep.
 11. Young branches, tendrils, abaxial leaves and ovary puberulent or glabrous
 12. Leaves pedate, 5-foliolate
 13. Inflorescences glabrous
 14. Leaflets elliptic to ovate-elliptic, 12–20 × 5–9 cm; berries 2.5–3.5 cm in diameter; seeds 1.8–2 cm long **T. hookeri** Planch.
 14. Leaflets lanceolate to elliptic-lanceolate, 10–15 × 3–5 cm; berries 1–1.5 cm in diameter; seeds 0.8–1 cm long **T. leucostaphylum** (Dennst.) Alston
 13. Inflorescences pubescent or papillose
 15. Inflorescences dichasium; stigma lobes acute **T. quadridens** Planch.
 15. Inflorescences polychasium; stigma lobes rotunde or obtuse
 16. Style conspicuous, papillose in female flowers; peduncles flaky in infructescens **T. beauvaisii** Gagnep.
 16. Style inconspicuous, glabrous in female flowers; peduncles verucose in infructescens **T. harmandii** Planch.

12. Leaves palmate, 3–5-foliolate
 17. Inflorescences arise on old stems or in axillary, 6–15 cm long; berries 2–3 cm in diameter
 18. Leaves 3-foliolate; style conspicuous in pistillate flower
 18. Leaves 5-foliolate; style inconspicuous in pistillate flower
 17. Inflorescences in axillary, shorter than 5 cm; berries 0.8–1 cm in diameter
 19. Inflorescences 1–1.5 cm long; calyx shallow, teeth fine, shorter than 1/4 petals
 19. Inflorescences 4–5 cm long; calyx cupular, teeth lanceolate, longer than 1/2 petals
1. Petals corniculate at apex
 20. Petals glabrous
 21. Peduncles glabrous
 21. Peduncles pubescent or papillose
 22. Leaves palmate, (1–)3–4-foliolate
 23. Inflorescences longer than petioles, 12–15 cm long
 23. Inflorescences shorter than petioles 2–8 cm long
 24. Inflorescences a polychasium, 6–8 cm long
 24. Inflorescences a dichasium, 2–5 cm long
 25. Berries ellipsoid, 1-seeded; seeds ellipsoid
 25. Berries globose, 1–2-seeded; seeds subglobose
22. Leaves pedate, (3–)5(–7)-foliolate
 26. Calyx pubescent, teeth acute; berries globose
 26. Calyx glabrous, teeth inconspicuous; berries ellipsoid
20. Petals pubescent, papillose or villous
 27. Leave palmate, 3-foliolate
 28. Inflorescence umbelliform; stigma cruciform in female flowers
 28. Inflorescences a compound dichasium or polychasium; stigma pointed lobes in female flowers
 29. Inflorescences a compound dichasium
 29. Inflorescences a compound polychasium
27. Leaves pedate, (3–)5–7-foliolate
 30. Branchlets, petioles, and abaxial veins pubescent, papillose or villous
 31. Calyx cupular, teeth lanceolate, as long as or longer than 1/2 petals; disk distinct, 4-lobed in female flowers
 31. Calyx saucer-shaped, teeth fine, shorter than 1/2 petals; inconspicuous in female flowers
30. Branchlets, petioles, and abaxial veins glabrous
 32. Inflorescences 1–1.5(–2) cm long; stigma 4 obtuse lobes in female flowers; fruits 1.2–1.5 cm in diameter.
 32. Inflorescences 2–4 cm long; stigma 4 acute lobes in female flowers; fruits 0.8–1 cm in diameter.
- T. quangninhense** sp.nov.
T. planicaule (Hook.f.) Gagnep.
T. backanense Gagnep.
T. longisepalum Gagnep.
T. serrulatum (Roxb.) Planch.
T. grandidens Gagnep.
T. chapaense Merr.
T. erubescens Planch.
T. gaudichaudianum Planch.
T. eberhardtii Gagnep.
T. touranense Gagnep.
T. cruciatum Craib & Gagnep.
T. subsuberosum Planch.
T. heterophyllum Gagnep.
T. dubium (M.A.Lawson) Planch.
T. tonkinense Gagnep.
T. crassipes Planch.
T. rupestre Planch.

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