



A new combination and new records of *Tetrastigma* (Vitaceae) from Thailand

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Abstract

Four species of *Tetrastigma* are newly recorded for Thailand, including *T. assimile* (Kurz) C.L.Li ex P.Kochaiphath & Trias-Blasi, *T. macrocorymbum* Gagnep. ex J.Wen, Boggan & Turland, *T. pyriforme* Gagnep., and *T. triphyllum* (Gagnep.) W.T. Wang var. *triphyllum*. A new combination, *T. assimile* (Kurz) C.L.Li ex P. Kochaiphath & Trias-Blasi is provided.

Introduction

The genus *Tetrastigma* Planch. (1887: 423) comprises 95 species distributed in tropical and subtropical Asia, primarily in Southeast Asia, and extending to Australia, (Planchon 1887; Latiff 1983; Chen *et al.* 2011). The genus is characterized by its dioecious sexual system and 4-lobed stigmas. Previously, the members of this genus were included in *Vitis* L. section *Tetrastigma* by Miquel (1863) due to their 4-lobed stigmas. Later, Planchon (1887) elevated the section to generic level.

Currently there is no taxonomic account for *Tetrastigma* in Thailand. Only a checklist is available (Craib 1931), where 16 species are reported. Three new species have been described since by Li (1997). Therefore, a complete revision of the genus is needed. During the preparation of taxonomic treatment for the Flora of Thailand, the first author came across four species that are newly recorded in Thailand. Among these, a new combination for one species, *Vitis assimilis* Kurz, is needed.

Key to the species of *Tetrastigma* in Thailand

1. Tendrils 5–7 palmately branched; leaves palmately 3-foliolate 26. *T. triphyllum*
- Tendrils simple or bifurcate; leaves simple, palmately 3–5(–7)-foliolate or pedately 5–7(–9)-foliolate 2.
2. Inflorescences on old stems (cauliflorous plants), more than 5 inflorescences per nodes 6. *T. cauliflorum*
- Inflorescences on young branches, 1–3 inflorescences per nodes 3.
3. Young branches with 4–5 sharp ridges 21. *T. quadrangulum*
- Young branches round or nearly round 4.
4. Leaves palmately 3–5(–7)-foliolate or mixed with simple leaves or all leaves simple 5.
- Leaves pedately 5–7(–9)-foliolate rarely mixed with 3-foliolate 16.
5. Stems verrucose or with corky protuberances 6.
- Stems smooth, pubescent or with flaky cork 8.
6. Stems with corky protuberances; leaves ovate to elliptic; stigma distinctly 4-lobed 7.
- Stems verrucose; leaves lanceolate; stigma peltate 12. *T. harmandii*
7. Leaves fleshy; stigma cruciform; berries ellipsoid when dry 7. *T. cruciatum*
- Leaves coriaceous or papyraceous; stigma pointed lobes; berries pyriform when dry 2. *T. assimile*
8. Shrubs, creeping, erect or decumbent 9.
- Lianas 10.
9. Leaves simple or mixed with palmately 3(–5)-foliolate; pedicel 0.4–0.6 cm long 4. *T. bambusetorum*
- Leaves palmately 3-foliolate; pedicel 0.8–1.2 cm long 1. *T. apiculatum*
10. Leaflets glabrous 11.
- Leaflets pubescent or hirsute at least along the midrib on lower leaf surface 15.
11. Female flower disc conspicuous, thick and adnate to lower part of ovary 12.
- Female flower disc inconspicuous 14.

stem with flaky bark, *T. serrulatum* has leaves with 5–8 pairs of secondary veins and a slightly corrugated stem with a smooth surface.

Tetrastigma triphyllum (Gagnep.) W.T. Wang (1979: 83). *Tetrastigma yunnanense* Gagnep. var. *triphyllum* Gagnep. in Lecomte (1910: 271). Type:—China, Yunnan, environs de Lou-lan, 16 March 1905, *Ducloux 3439* ♀ fl. (holotype P!)

var. *triphyllum* (Fig. 1C, D)

Sub-woody climber. *Stems* terete, mature stems flaky; tendrils palmately 5–7 branched; stipules 2, ovate-deltoid, 0.3–0.6 × 0.3–0.5 cm, glabrous. *Leaves* compound, palmately 3-foliolate; petiole 2.5–8.0 cm long, pilose; leaflets papyraceous; terminal leaflet petiolule 0.1–0.3 cm long, pilose, terminal leaflet blade rhombic-broadly lanceolate, 2.8–9.0 × 1.0–4.5 cm, base cuneate-obtuse, margin broadly serrate with teeth at apex, apex acute-attenuate, lateral leaflet petiolule, 0.05–0.2 cm long, pilose, lateral leaflet blade ovate-lanceolate, 1.5–6.5 × 0.8–3.8 cm, base asymmetrical-round or asymmetrical-cuneate, margin as terminal leaflet, apex acute; veins conspicuous on both sides, 1 main basal vein, 5–8 pairs of lateral veins. *Inflorescences* in female plants on pseudo-terminal branch, compound umbel, globose, 2–2.5 cm in diameter; peduncles 1–1.2 cm long, pilose, male plants not seen. *Male flowers* not seen. *Female flowers* bud 0.2–0.25 cm long, pedicels 0.2–0.35 cm long, slightly pilose; calyx disciform, lobe-inconspicuous, glabrous, margin entire; corolla squarrose at anthesis, petals ovate, 0.2–0.3 × 0.1–0.2 cm, apex rounded, outer surface glabrous; disc membranaceous, adnate to the lower part of ovary; staminode filiform, 0.6–0.8 mm long; ovary ovoid, 1.8–2.0 × 1.7–2.0 mm; style truncate, ca. 0.5 mm long; stigma 4-lobed, callose. *Berries* and *Seeds* not seen.

Distribution:—China and Thailand.

Distribution in Thailand:—NORTHERN: Nan (Fig. 2).

Ecology:—Limestone mountains, in upper montane scrub forest, at 1750 m elev.

Phenology:—Flowering in February.

Specimens examined:—Thailand. Nan: Doi Phu Wae, *P. Srisanga*, *S. Sasirat*, *W. Pongamornkul*, *S. Sukiam* & *P. Panyachan 2422* ♀ fl. (QBG, Herbarium of Biology Department, Chiang Mai University).

Conservation status in Thailand:—A single population of this species has been recorded, and is represented by only one specimen collected in Doi Phu Wae, Doi Phu Kha National Park (Nan). This species has an extremely restricted distribution with a very specific habitat (upper montane scrub forest on limestone soil), therefore a preliminary assessment of endangered (EN) is indicated.

Note:—This species is distinguished by its palmate tendrils and 3-foliolate leaves. It is the only species from Thailand with palmate tendrils. This variety differs from Yunnan (China) endemic var. *hirtum* (Gagnep.) W.T. Wang (1979: 84), by its densely pilose young branches, leaves, petioles and pedicels.

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