

Peliosanthes siamensis (Asparagaceae), a new species from northern Thailand

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ABSTRACT

Peliosanthes siamensis (Asparagaceae) is described from northern Thailand. A description, distribution, ecology, phenology, notes and illustration are provided. A provisional conservation status of the species in Thailand is also given.

KEYWORDS: conservation status, flora, limestone, threatened plant.

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INTRODUCTION

Peliosanthes Andrews belongs to the family Asparagaceae (Chase *et al.*, 2009) with about 82 species worldwide (POWO, 2025). This genus is distributed in South and South-East Asia (Jessop, 1976). The genus is characterized by its distinctly petiolate leaves, elliptic leaf blades usually prominent longitudinal and transverse veins, racemose inflorescences, monadelphous stamens and blue berry-like seeds (Tanaka, 2018, 2019; Taram *et al.*, 2020). In Thailand, 10 species are recognized viz. *P. brevicoronata* M.N.Tamura & Poopath (Tamura *et al.*, 2013), *P. caesia* J.M.H.Shaw (Shaw, 2009), *P. curnberlegii* K.Larsen (Larsen, 1966), *P. gracilipes* (Craib) N.Tanaka (Tanaka, 1999), *P. macrostegia* Hance (Hance, 1885), *P. oksanae* Kalyuzhny & N.Tanaka (Tanaka & Kalyuzhny, 2020), *P. teta* Andrews (Andrews, 1810; Pooma & Suddee, 2014), *P. triandra* Aver. & N.Tanaka (Tanaka & Kalyuzhny, 2020), *P. violacea* Wall. ex Baker (Baker, 1879) and *P. weberi* (L.Rodr.) N.Tanaka (Tanaka, 2004). During the assessment of threatened plants on limestone in Thailand project between 2021 and 2023, unidentified specimens of *Peliosanthes* were found from Chiang Rai and Nan

provinces. Later, the authors rechecked and carefully consulting the relevant literature (Chang, 1978; Chen & Tamura, 2000; Tamura *et al.*, 2013; Tanaka *et al.*, 2013; Averyanov *et al.*, 2015; Tanaka & Kalyuzhny, 2020). Furthermore, we examined physical specimens and high-resolution digital images of types or authentic materials for the majority of the species recorded in Thailand and neighboring regions, deposited in **BKF** (*P. brevicoronata*), **BM** (*P. macrostegia*), **K** (*P. brevicoronata*, *P. gracilipes*, *P. teta*, *P. violacea*), **L** (*P. curnberlegii*), **P** (*P. weberi*) and **PE** (*P. sinica*). For taxa where digital type images were unavailable, specifically *P. caesia* (**WSY**), *P. oksanae* (**IRKU**) and *P. triandra* (**IRKU**), identifications were rigorously cross-referenced with their original protologues and high-quality botanical illustrations provided in the type descriptions (e.g. Tanaka & Kalyuzhny, 2020), which offered sufficient diagnostic detail for a conclusive comparison. We found that it did not match with any known species and that it clearly represents an undescribed species. The morphological description were based on the field and herbarium specimens. Conservation status is also assessed using the IUCN Standards and Petitions Committee (2024).

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DESCRIPTION

Peliosanthes siamensis Thammar. & Rakarcha, **sp. nov.**

Peliosanthes siamensis is similar to *P. sinica* F.T.Wang & T.Tang in having procumbent stem, petiole length, leaf blade and vein, pedicel length, perianth segment length and width but differs in having fertile bract, perianth segment and style shape (Table 1). This species is known only from northern Thailand and easy to distinguish from other species of *Peliosanthes* in having procumbent stem, lanceolate fertile bract, oblong perianth lobes and a trigonal style with dark purple stigma. Moreover, *P. siamensis* is currently known only from northern Thailand, where it inhabits evergreen forests on limestone mountains and along stream banks at elevations of 513–1,600 m. In this region, it occurs sympatrically or in proximity to *P. macrostegia*, *P. teta* and *P. violacea*. Among these congeners, *P. siamensis* is morphologically most similar to *P. macrostegia* in its robust habit. However, it can be readily distinguished by its oblong perianth lobes (vs. deltoid-ovate in *P. macrostegia*) and its smaller, lanceolate fertile bracts. When compared to *P. teta* and *P. violacea*, which are widely distributed in northern Thai forests, *P. siamensis* differs significantly in possessing a conspicuous procumbent stem, whereas the latter two are typically acaulescent. Furthermore, the dark purple, trigonal style and stigma of *P. siamensis* are diagnostic, providing a clear distinction from the greenish or light purple flowers and different floral structures of other species found in the same geographical area. Type: THAILAND. Chiang Rai, Mae Sai, trail to Doi Chong, alt. 1,360 m, 16 Mar. 2021, *S. Rakarcha, W. Tanming, W. Oummad & K. Sompong 1087* (holotype **QBG!**). Figs. 1–2.

Perennial herb ca 55 cm tall. *Stem* procumbent, green, glabrous. *Leaves* 2 or 3; petiole 10–18 cm long, glabrous; blade oblong to elliptic, 14–18 × 5–6 cm, with 7–9 main veins, apex acuminate, base cuneate, adaxially green, glabrous, abaxially pale green, glabrous. *Inflorescence* terminal; peduncle ca 3.5 cm long, dark purple, glabrous, with 4–7 sterile bracts; sterile bracts lanceolate, ca 7 × 2.5 mm, greenish-purplish, apex acute, glabrous; racemose ca 4.5 cm long, ca 1 cm diam.; fertile bracts lanceolate, ca 5.5 × 1.8 mm, greenish-purplish, apex acute, glabrous; bracteoles absent. *Flowers* solitary,

5–7 mm diam.; pedicels 2.5–3 mm long, green. *Perianth* connate into a tube at basal part, ca 1 mm long, free at the upper part; lobes 6, oblong, 2.8–3 × 1.8–2.2 mm, apex obtuse, dark purple. *Corona* annular, ca 1.5 mm high, ca 1 mm diam., dark purple, apex 6-lobed, incurved. *Stamens* 6; anthers elliptic, ca 0.6 mm long, yellow, sessile. *Style* trigonal, ca 0.5 mm long; stigma shortly 3-lobed, dark purple. *Fruit* unknown.

Thailand.— NORTHERN: Chiang Rai [Mae Sai, trail to Doi Chong, 1,360 m, 16 Mar. 2021, *Rakarcha et al. 1087* (**QBG**); Mae Sai, Ban Pha Mi, 531 m, 13 Dec. 2011, *Norsaengsri & Tathana 7496* (**BKF, QBG**); *ibid.*, 534 m, 15 Feb. 2012, *Norsaengsri & Tathana 8993* (**BKF, QBG**); *ibid.*, 513 m, 30 Mar. 2012, *Norsaengsri & Tathana 9348* (**BKF, QBG**); Ban San Pa Sak, 583 m, 22 Mar. 2011, *Norsaengsri & Tathana 7833* (**BKF, QBG**)]; Nan [Song Khwae, Yot, Tham Sakoen NP, 811 m, 10 Feb. 2011, *La-ongsri & Romkham 1374* (**BKF, QBG**); *ibid.*, 702 m, 10 Feb. 2011, *La-ongsri & Romkham 1409* (**BKF, QBG**); *ibid.*, 12 Feb. 2011, *La-ongsri & Romkham 1538* (**BKF, QBG**); Pua, Doi Phu Kha NP, 1,330 m, 24 Sept. 2000, *Srisanga 1675* (**QBG**); Tham Pha Kong, 700 m, 26 June 2002, *Srisanga 2523* (**QBG**); *ibid.*, 1,600 m, 10 Dec. 2002, *Srisanga 2613* (**QBG, TNS**)].

Distribution.— Endemic to Thailand.

Ecology and Phenology.— In evergreen forest of limestone mountain and stream bank, at 500–1,600 m alt. Flowering from February to December.

Etymology.— The specific epithet refers to Siam (Thailand) where we collected the plant.

Vernacular.— Nang laeo sayam (นางแลสยาม) (Proposed here).

Conservation status.— In Thailand, this species is known only from three locations in Chiang Rai and Nan provinces (Fig. 2) with an Extent of Occurrence (EOO) of 2,545.804 km², and an estimated known Area of Occupancy (AOO) around 12 km². Although these locations are within protected areas, our field observations between 2021 and 2023 revealed that the populations are subject to habitat degradation caused by tourism-related activities and recurring annual fires. It is proposed here as Endangered (EN), B1ab(iii), B2ab(iii), following the IUCN Standards and Petitions Committee (2024).



Figure 1. *Peliosanthes siamensis* Thammar. & Rakarcha: A. Habit; B. Flowers; C. Inflorescence; D. Adaxial leaf surface; E. Abaxial leaf surface. Photos A–C. by W. Tanming; D–E. by W. Thammarong from *Rakarcha et al. 1087* (QBG).

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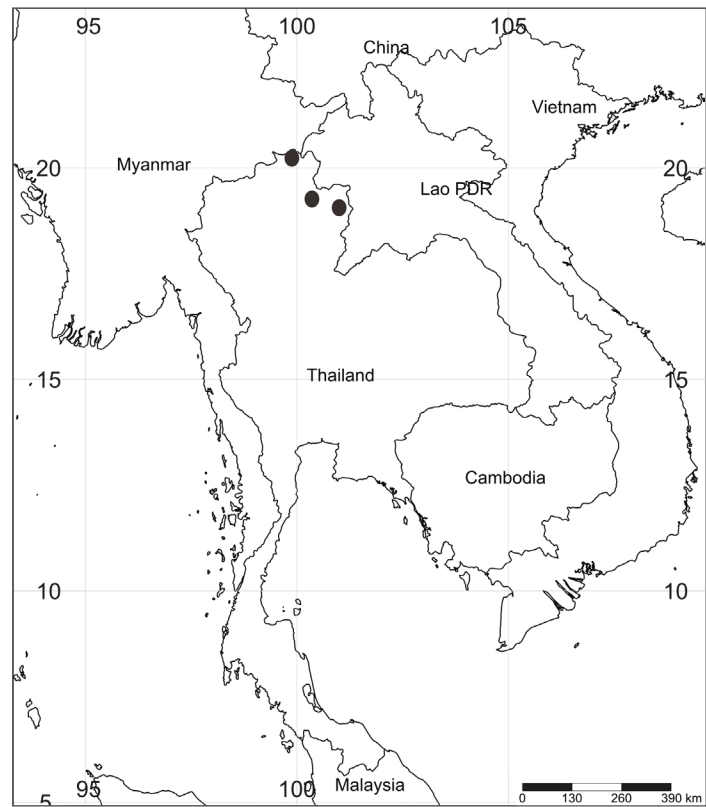


Figure 2. Distribution of *Peliosanthes siamensis* Thammar. & Rakarcha in Thailand. The map was created using SimpleMapppr (Shorthouse, 2010).

Table 1. Comparison of characters among *Peliosanthes siamensis* and *P. sinica*.

Characters	<i>P. siamensis</i>	<i>P. sinica</i> ^{1, 2, 3}
Petiole length (cm)	10–18	(2–)7–20
Leaf		
blade (cm)	14–18 × 5–6	12–18 × 2.8–5
vein	7–9	7
Fertile bract		
Shape	lanceolate	narrowly deltoid
Length (mm)	ca 5.5	7–10(–13)
Width (mm)	ca 1.8	2–4(–5.5)
Pedicel length (mm)	2.5–3	(1.5–)2–3
Perianth segment		
Shape	oblong	ovate
Length (mm)	2.8–3	2.5–3
Width (mm)	1.8–2.2	2–2.2
Style shape	trigonal	conic

¹ Chang (1978); ² Chen & Tamura (2000); ³ Tanaka *et al.* (2013).

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