

Stichoneuron laoticum (Stemonaceae), a new species from the limestone karst of Laos

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Stichoneuron Hooker (1883: 747) is a genus of small perennial herbs in Stemonaceae (Pandanales), distinguished from the other genera of the family, *Croomia*, *Stemona* and *Pentastemona*, by erect or procumbent, branched and perennial stems, four free tepals and stamens and presence of pseudo-funicles (Duyfjes 1993, Inthachub *et al.* 2009). Currently, five species are known in *Stichoneuron*: one species, *S. membranacea* Hooker (1892: 299) is distributed in India and northern Myanmar, and four species, *S. bognerianum* Duyfjes in Inthachub *et al.* (2009: 219), *S. calcicola* Inthachub in Inthachub *et al.* (2009), *S. caudatum* Ridley (1911: 107) and *S. halabalensis* Inthachub in Inthachub *et al.* (2009), are known from Malay Peninsula of Thailand and Malaysia (Gagnepain 1934, Tanaka *et al.* 2007, Inthachub *et al.* 2009, Duyfjes & Inthachub 2011, Majumdar & Datta 2013, POWO 2026). Here, we describe an additional species of *Stichoneuron* from Laos, which was discovered during a field survey in the forests on limestone hills in Kasi District, Vang Vieng Province, central Laos.

Taxonomy

Stichoneuron laoticum Tagane, Soulad. & V.S.Dang, *sp. nov.* (Figs 1,2)

TYPE:—LAOS. Vientiane Province: Kasi District, Ban Phon Kham, 19.1121°N, 102.0780°E, 582 m elev., 19 Sep 2025, fl. & fr., *Tagane et al.* Z3138 (holotype: FOF0009640; isotypes: KAG202671, KAG202672, VNM00074367).

Stichoneuron laoticum is similar to *S. membranacea* in having erect stems and inflorescences situated above the leaf blades, but it distinguished by its oblong-ovate to oblong-elliptic leaves (vs. ovate-elliptic or narrowly elliptic), longer peduncles (3.1–5.1 cm vs. 1.5–2 cm), longer tepals in hermaphroditic flowers (4.80–5.00 mm vs. 1.21–1.93 mm long) and larger fruits (21.00–24.00 × 11.00–15.00 mm vs. 8.11–20.44 × 4.20–7.19 mm).

Perennial herbs, up to 1 m tall. Stems sparsely hairy when young, soon glabrous, erect at base, gradually curved and zigzag distally. Leaves alternate, petioles 2–6 mm long, sparsely hairy, blade oblong-ovate to oblong-elliptic, 9.7–18.7 × 4.7–8.7 cm, dark yellow-green adaxially, gray-green abaxially, glabrous on both surfaces, apex acuminate, acumen up to 1.4 cm long, base subcordate to broadly cuneate, margin entire, slightly recurved when dry, midrib prominent on both surfaces, secondary veins 3–4 pairs, prominent abaxially, tertiary veins scalariform, prominent abaxially. Inflorescence racemose, 4–7-flowered, pedunculate, situated above the leaf blade, with the peduncle closely appressed to the basal part of the midrib, peduncle 3.1–5.1 cm long, flattened, glabrous; bracts narrowly ovate, 6 mm long, glabrous adaxially, sparsely hairy abaxially, apex acute, margin entire, with a few hairs near apex. Hermaphroditic flowers 8–12 mm in diam., pedicels 5–12 mm long, sparsely hairy at the basal part, upper part glabrous. Tepals ovate-triangular, 4.8–5.0 × 2.9–3.2 mm, dull greenish yellow tinged with pale blue *in vivo*, glabrous adaxially, sparsely hairy abaxially, recurved at anthesis, apex acute, margin entire, recurved. Stamens 4, filaments 1.3 mm long, adnate to tepals at base, thecae 0.3 mm long. Ovary semi-inferior, ovoid-triangular, ca. 2 mm long, green *in vivo*, glabrous, ovules 8–10, style absent, stigma inconspicuous. Staminate flower not seen. Fruits ovoid, 2.1–2.4 × 1.1–1.5 cm, bivalvate, glabrous, apex beaked; fruiting stalk 0.8–1.0 cm long. Seeds 2–4, ellipsoid, 7.0–9.5 mm long, with sharp longitudinal ridges, base surrounded by a lobed, white, hollow aril, ca. 7 mm long.

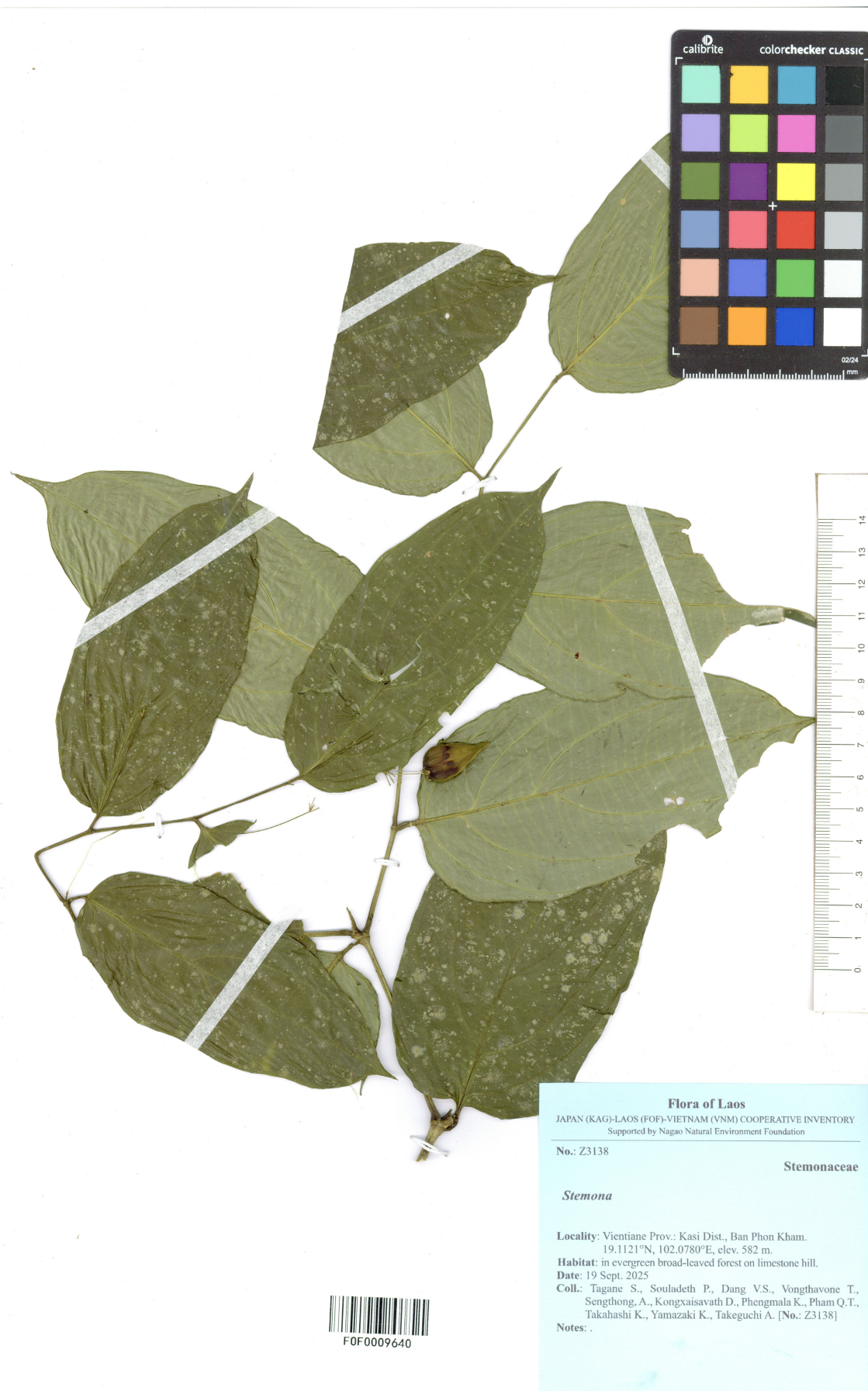


FIGURE 1. Holotype of *Stichoneuron laoticum* (Tagane et al. Z3138, FOF0009640).

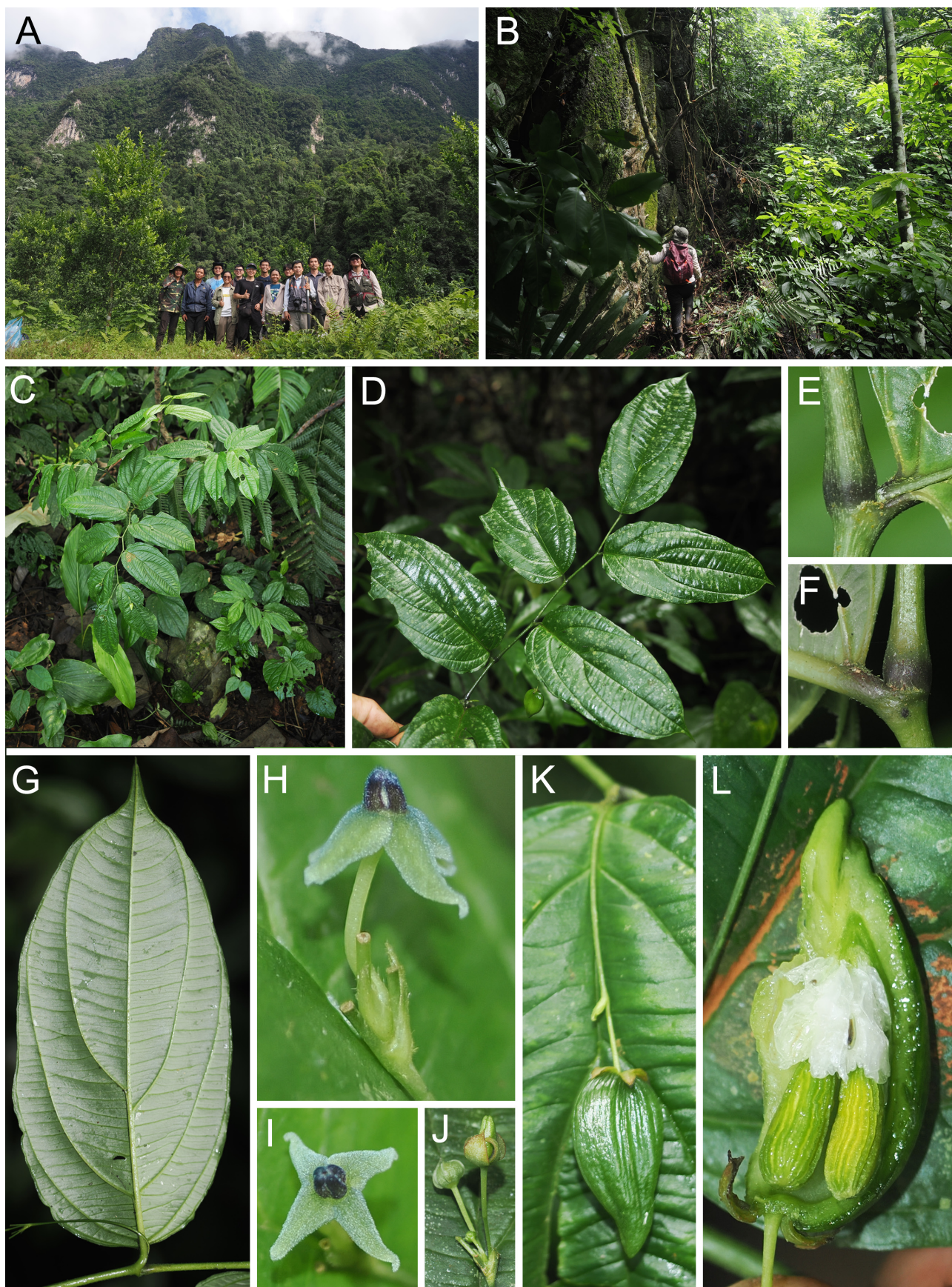


FIGURE 2. *Stichoneuron laoticum*. A, B. Habitat. C. Habit. D. Leafy twig. E & F. Leaf base and stem node (adaxial and abaxial side, respectively). G. Abaxial leaf surface. H. Flower, side view. I. Flower, top view. J. Inflorescence with flower bud (left) and young fruit (right). K. Fruit. L. Dissected fruit showing two seeds and aril. Photographs by S. Tagane.

Distribution:—Vientiane Province.

Habitat and phenology:—Evergreen broad-leaved forests on limestone hills, 550–600 m elev. Flowering and fruiting September.

Etymology:—The species epithet refers to the country name where it was discovered.

Vernacular name:—*Dok dao Lao* (Lao star flower or ດອກຫົວລາວ). The 4-lobed, pale greenish-blue flowers with dark centers uniquely resemble a beautiful 4-pointed star as proposed here.

Preliminary conservation assessment:—Only a single population of *Stichoneuron laoticum* has been found in the understory of evergreen broad-leaved forest on the slope of a limestone hill. We observed approximately 50 individuals in a limited area of ca. 200 × 200 m. The similar habitat of the limestone mountain occurs widely near the type locality, and more populations and individuals can be expected to occur. However, we did only one field survey, and there is no additional available information at present. Due to its limited information and uncertainty, we assessed this species as data deficient (IUCN 2024).

Notes:—*Stichoneuron laoticum* is the sixth species in the genus. In Laos, no species of *Stichoneuron* has been found (Newman *et al.* 2017 onwards). Thus, our new species represents a new genus record in the country as well as for Indochina, with the extension of the distribution range of the genus to the most north-eastern portion. Considering that the four species, *S. bognerianum*, *S. calcicola*, *S. caudatum* and *S. halbalensis*, are distributed in the Malaysia Peninsula, and *S. laoticum* and *S. membranaceum* show a disjunct distribution (Inthachub *et al.* 2009, Majumdar & Datta 2013; Table 1), this pattern may provide interesting material for future biogeographical interpretation.

In addition to *Stichoneuron membranaceum*, *S. laoticum* can be distinguished from other four species found in Peninsular Thailand and Peninsular Malaysia by a combination of relatively larger leaf blades 9.7–18.7 × 4.7–8.7 cm that are oblong-ovate to oblong-elliptic, longer peduncles 3.1–5.1 cm, larger bracts 6 mm long, larger tepals 4.8–5 × 2.9–3.2 mm, and larger seeds 7.0–9.5 mm long (Table 1).

TABLE 1. Comparison of six *Stichoneuron* species. Information on distribution and characteristics are from Inthachub *et al.* (2009) and Majumdar and Datta (2013), except *S. laoticum*, which was studied here.

	<i>S. bognerianum</i>	<i>S. calcicola</i>	<i>S. caudatum</i>	<i>S. halbalensis</i>	<i>S. laoticum</i>	<i>S. membranacea</i> (hermaphroditic flowers)
Distribution	Peninsular Malaysia (Johor)	Peninsular Thailand (Surat Thani)	Peninsular Thailand (Pattani, Yala, Narathiwat), Peninsular Malaysia (Perak, Terengganu, Kelantan)	Peninsular Thailand (Narathiwat), Peninsular Malaysia (Terengganu, Pahang)	Laos (Vientiane)	Bangladesh (Sylhet), India (Meghalaya, Tripura), Myanmar (Kachin)
Habit	erect herb, 20–40 cm tall	decumbent or trailing or hanging herb, 20–50(–100) cm long	erect herb, (20–)30–80 cm tall	erect herb, 30–60 cm tall	erect herb, up to 1 m tall	erect herb, 50–80 cm tall
Petiole length (mm)	ca. 5	2–5(–10)	5–10	5(–7)	2–6	1–5
Leaf blades shape and size (cm)	narrowly elliptic, 5.0–7.0 × 2.5–4	ovate or suborbicular, 1.5–6.0 × 1.5–5.0	(ob)ovate or narrowly elliptic, 9.0–10.0(–12.0) × 3.0–4.0(–5.0)	narrowly ovate-oblong or elliptic-oblong, 6.0–12.0 × 1.5–5.5	oblong-ovate to oblong-elliptic, 9.7–18.7 × 4.7–8.7	narrowly ovate-elliptic or narrowly elliptic, 5.0–12.0 × 2.0–5.0
Leaf blade base	short-cuneate	cordate	obtuse or shortly cuneate	broadly rounded or short cuneate	subcordate to broadly cuneate	(broadly) rounded or short cuneate
Lateral nerves (pairs)	3(or 4)	4(–7)	3(or 4)	3(or 4)	3 or 4	(2 or) 3
Peduncle length (cm)	c. 0.5	1.5–3.5	3.0–7.0(–10.0)	0.5–1.5	3.1–5.1	1.5–2.0
Number of flowers per inflorescence	1–5	up to 40	up to 40	5–25	4–7	5–10
Bract length (mm)	1–2	1.5–2.0	2.0	1.0–2.0	6.0	2.0–4.0

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TABLE 1. (Continued)

	<i>S. bognerianum</i>	<i>S. calcicola</i>	<i>S. caudatum</i>	<i>S. halbalensis</i>	<i>S. laoticum</i>	<i>S. membranacea</i> (hermaphroditic flowers)
Corolla color	pale greenish	red	pinkish brown or reddish purple	greenish	dull greenish yellow tinged with pale blue	pale green
Corolla size (mm in diam.)	10.0–12.0	4.0–5.0	6.0–8.0	c. 6	8.0–12.0	4.0–4.8
Pedicle length (mm)	10.0–15.0	10.0–15.0(–20.0)	10.0–15.0	(2.0–)5.0–7.0	5.0–12.0	10.0–12.3
Tepal shape and size (mm)	elliptic, 6.0–7.0 × c. 3	ovate-elliptic, 2.0–3.0 × 1.5–2.0	lanceolate, 3.0–4.0 × c. 2	oblong, 3.0–4.0 × 1.0–1.5	ovate-triangular, 4.8–5.0 × 2.9–3.2	subtriangular, 1.2–1.9
Stamen length (mm)	c. 1.5	c. 1	1.5–2.0	c. 1.5	1.6	c. 1–2
Anther length (mm)	1.0(–1.5)	unknown	unknown	c. 0.5	0.3	c. 0.3
Number of ovules per ovary	3 or 4	unknown	unknown	unknown	8–10	unknown
Fruits (mm long; in diam.)	15–20, 6–8, shortly beaked	(5)–10–12 mm, 5(–7), apex narrow and ± bilobed	20–45, 5(–19), beaked	c. 30 mm, unknown	21–24, 11–15, beaked	8–20, unknown, beaked
Number of seeds	1 or 2	1 or 2	2–4	(1 or)2	2–4	1–5
Seed length (mm)	5–6	c. 5	c. 7	c. 9 × 5–6	7–9	5

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