



Aspidistra laongamensis (Asparagaceae), a new species from Laos

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ABSTRACT: *Aspidistra laongamensis* C. R. Lin & X. Y. Huang, a new species of the Asparagaceae from Saravan Region, Laos, is described and illustrated. The new species is similar to *A. lubae* Aver. et Tillich in the perianth shape, but differs by the creeping rhizome, externally yellowish white perianths with internall yellow lobes, and the flat, glabrous stigma. The new species is also similar to *A. nankunshanensis* Yan Liu & C. R. Lin in the ovate-triangular, internally yellow perianth lobes, but differs by its urceolate perianth with an internally purplish red tube, and stamens inserted in the middle of the perianth tube, and mushroom-shaped pistil. *Aspidistra laongamensis* is currently known only from Laongam city, southern Laos.

KEY WORDS: *Aspidistra*, Laos, New species, Taxonomy.

INTRODUCTION

The genus *Aspidistra* Ker-Gawler (Asparagaceae) was described in 1822 and is native to eastern and southeastern Asia. Currently, over 170 species of *Aspidistra* are known. The main center of its diversity is in China and Vietnam. Only a few species are known from China, IndoChina, Malaysia, Japan, and NE India (Averyanov & Tillich, 2017; Brauchler & Ngoc, 2005; de Wilde & Vogel, 2005; Fang & Yu, 2002; Nong *et al.*, 2018; Phonsena & de Wilde, 2010; Tillich, 2005, 2014; Zou *et al.*, 2017). Plants of *Aspidistra* are characterized by the perennial habit, conspicuous rhizomes, highly diversified flower structure and flowers that are usually red, purplish red, dark red or purplish black, sometimes (or rarely) yellow or white.

During a field expedition in December 2017, an unusual species of *Aspidistra* with yellow flowers was collected in Laongam City, Saravan Province, Laos. After consulting relevant specimens and taxonomic literature (Averyanov & Tillich, 2014, 2015, 2016, 2017; Li, 2004; Liang & Tamura, 2000; Lin *et al.*, 2013, 2015; Liu *et al.*, 2011; Nguyen *et al.* 2017; Tillich, 2005; 2008, 2014; Tillich *et al.* 2007; Vislobokov *et al.* 2016; Wan, 1987), we reached the conclusion that the plant is a new species.

TAXANOMIC TREATMENT

Aspidistra laongamensis C. R. Lin & X. Y. Huang, *sp. nov.* Fig. 1, 2A-F

Type: LAOS, Saravan Province, Laongam City, Saesed natural reserve, 106°16'29"E, 15°29'42"N, alt. 198 m a.s.l., 12 December 2017, Wei-Bin Xu, Xue-Yan Huang, Koson Sosoulithan, *et al.* LAOS171212077

(holotype: IBK, isotype: GXMG).

Herbs perennial, evergreen, rhizomatous. Rhizome creeping, subterete, 8–10 mm thick, covered with scales, nodes dense. Roots numerous. Vaginal leaves 5–6, purple-red, 2–6 cm long, enveloping base of petiole, becoming black-brown when dry. Leaves solitary, 1–2 cm apart; petiole stiff upright, 12–30 cm long, 2–3 mm thick, adaxially sulcate; leaf blade usually oblong-lanceolate to lanceolate, 28–36 cm long, 4–5 cm wide, dark green, base cuneate, gradually tapered to petiole, inequilateral, margin entire, apex long acuminate. Peduncle erect or declining, purple, 6–9 cm long, with 7–8 bracts, bracts gradually wider from base to top of peduncle, the bract immediately below the perianth broadly ovate, bluish white, 6–7 mm long, 10–12 mm wide, apex acuminate. Flower solitary; perianth slightly urceolate, fleshy, 12–15 mm long, (6) 8-lobed apically; lobes yellow, ovate-triangular, subequal, 6–8 mm long, 5–7 mm wide at base, glabrous, apex rounded and usually explanate; tube 8–10 mm long, 16–20 mm in diam., abaxially yellowish white, adaxially purplish red. Stamens (6) 8, opposite to lobes, inserted in the middle of perianth tube, positioned lower than stigma; filaments ca. 1 mm long; anthers yellow, ovate, ca. 2 mm long and 2 mm wide. Pistil mushroom-shaped, 6–8 mm long; ovary inconspicuous, style delicate, purplish red, cylindrical, 5–7 mm long and ca. 1 mm in diam.; stigma peltate, 6–8 mm in diam., upper surface yellow, flat and shallowly concave occasionally, with (3–) 4 radial, bifurcate, inconspicuous radial lines in center, (3–) 4 lobed at margin, lobes emarginate at apex. Flowering from October to November.

Etymology: The specific epithet refers to the City where this new species was found.

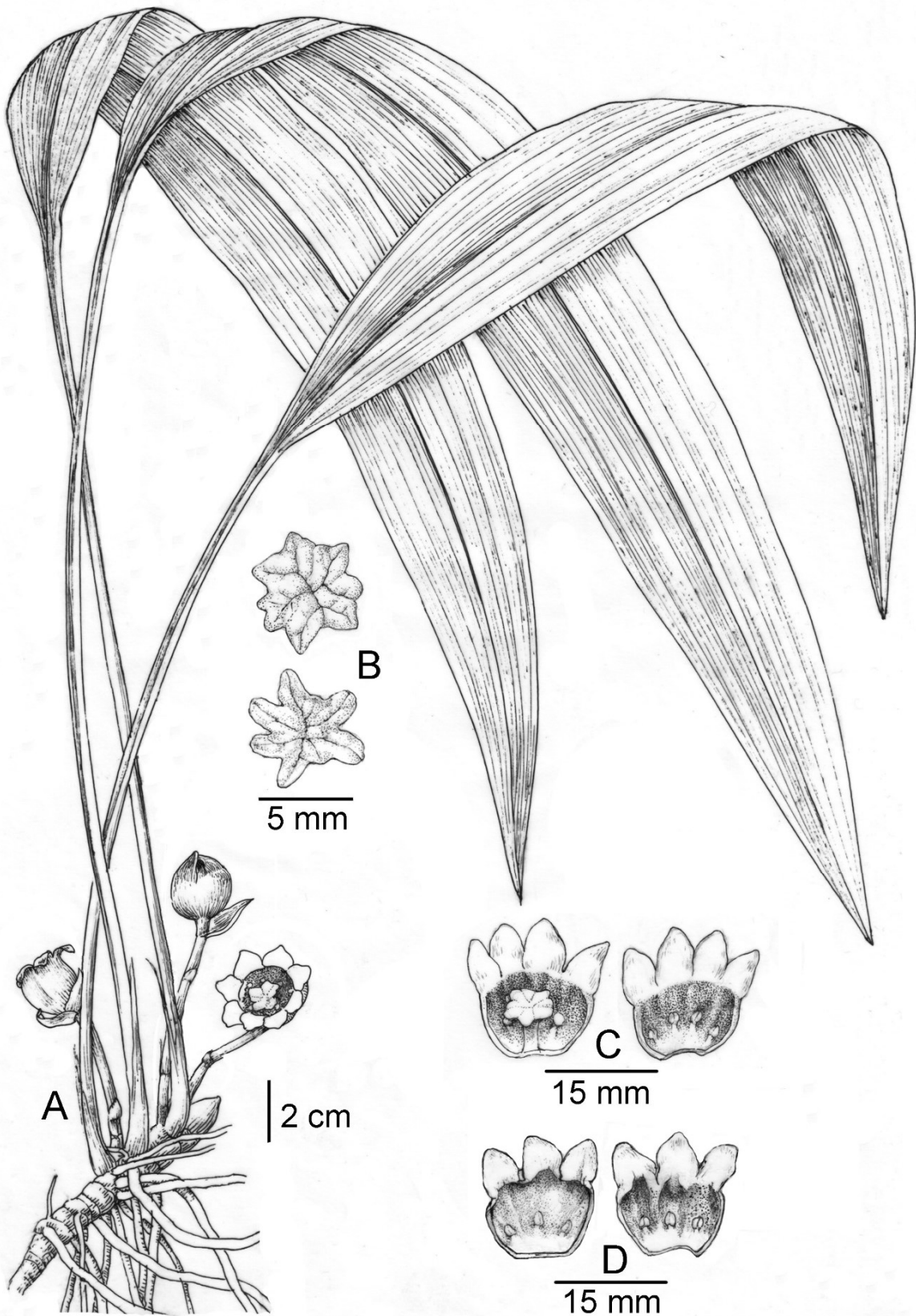


Fig. 1. *Aspidistra laongamensis* sp. nov. **A**, Habit; **B**, Stigmas, adaxial view; **C**, Flower 8-merous, dissected to show stamens and pistil; **D**, Flower 6-merous, perianth dissected to show stamens. Drawn by Wen-Hong Lin from the holotype.



Fig. 2. *Aspidistra laongamensis* sp. nov. (A-F): **A**, Flowers; **B**, Habit; **C**, Flower 8-merous, dissected to show stamens and pistil; **D**, Flower 6-merous, dissected to show stamens and pistil; **E**, Flower, side view; **F**, buds. *Aspidistra nankunshanensis* Yan Liu & C. R. Lin (**G-H**): **G**, Flower, apical view; **H**, Flower, side view.

Distribution and ecology: This new species is currently known only from Laongam City, southern Laos. It grows in a primary broad-leaved evergreen forest at 160–250 m a.s.l.

Relationship: The new species resembles *Aspidistra lubae* Aver. et Tillich (2014:752) and *A. nankunshanensis* C.R. Lin & Yan Liu in Lin *et al.* (2013: 123) (Fig. 2G-H) in the yellow, ovate-triangular perianth lobes. *Aspidistra laongamensis* is also similar to *A. quadrpartita* in aspect, but is distinguishable by the perianth tube slightly urceolate (vs. campanulate), lobes explanated (vs. erect), stigma ϕ 6–8 mm (vs. 2 mm). A detailed comparison to distinguish among these species is presented in Table 1.

Note: According to the literature and field investigations, there are six species of *Aspidistra* in Laos (Tillich, 2005; Averyanov & Tillich 2014; 2015; 2016; 2017). An identification key for the six species is presented below.

Key to the six species of *Aspidistra* known from Laos

- 1a. Shoot growing vertically, supported by stilt roots 2
- 1b. Shoot (rhizome) growing adjacent to substrat, or hypogeous 3
- 2a. Leaf narrowly elliptic to lanceolate. Perianth tube shortly obpyramidal, 30–40 × 10–20 mm. Stamens inserted at basal part of perianth tube *A. khangii*

- 2b. Leaf ovate to broadly elliptic. Perianth tube urceolate, 4–5 × 4–5 mm. Stamens inserted at upper part of perianth tube *A. laotica*
- 3a. Perianth tube globular, ϕ 20 mm, lobes ovate, flat, 6×4 mm. Pistil obconical, 12 mm long; style gradually thickened toward stigma *A. glandulosa*
- 3b. Perianth tube campanulate or slightly urceolate. Pistil mushroom-shaped; style cylindrical 4
- 4a. Perianth lobes yellow, ovate-triangular, glossy, 6–8 × 5–7 mm, tube slightly urceolate, 8–10 × 16–20 mm. Stigma flat, ϕ 6–8 mm *A. laongamensis*
- 4b. Perianth lobes dark violet; tube campanulate. Stigma convex5
- 5a. Perianth tube widely campanulate, 8 × 18 mm; lobes ovate-lanceolate, papillose, 18–23 × 8–10 mm. Stigma hemispherical, purple, ϕ 19 mm, 13 mm high *A. subrotata*
- 5b. Perianth tube campanulate to cupulate, 8–10 × 8–10 mm; lobes ovate; glossy, 6–7 × 6–7 mm. Stigma umbrella-like, pure white, ϕ 5.5–6.5 mm, ca. 2 mm high *A. elegans*

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**Table 1. Morphological comparison between *Aspidistra laongamensis* sp. nov., *A. lubae* and *A. nankunshanensis*.**

	<i>Aspidistra laongamensis</i>	<i>A. lubae</i>	<i>A. nankunshanensis</i>
Rhizome	creeping	erect	creeping
Leaf	28–36 × 4–5 cm	12–20 × 2–5 cm	21–31 × 5–7.5 cm
Petiole	12–30 cm	5–10 cm	17–45 cm
Perianth	urceolate	urceolate	campanulate
Outside color	yellow-white,	light green to white or yellowish, speckled with purple-brown markings	purple-red
Inside color	tube purplish red, lobes yellow	dark purple-violet to almost black	yellow
Stamens	inserted in the middle of perianth tube	inserted in the middle of perianth tube	inserted in base of perianth tube
Pistil	mushroom-shaped, 6–8 mm long, style 5–7 mm tall	desk-shaped, peltate, style 7–8 mm tall	obconical, 6–8 mm long, style ca. 2 mm tall
Stigma	yellow, glabrous, ⌀ 6–8 mm	white to light yellowish, papillose, ⌀ 3.5–5 mm	yellow, glabrous, ⌀ 10 mm
Flowers	October to November	December	April to May
Distribution	Laos	Vietnam	China

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