

Aspidistra albiflora sp. nov. (Asparagaceae) from southwestern Guangxi, China

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Aspidistra albiflora C. R. Lin, W. B. Xu & Yan Liu (Asparagaceae) is described and illustrated as a new species from limestone areas in Guangxi, China. The new species is similar to *A. cerina* G. Z. Li & S. C. Tang, but differs in having the perianth white by the sides, white pistils, bracts longer than the perianth, anthers only 2 mm long, pistil obconical and stigma slightly enlarged, 4–5 mm in diameter. The new species is currently only known from the type locality in southwestern Guangxi, near the border to northern Vietnam.

The genus *Aspidistra* Ker-Gawler (Asparagaceae: Nolinoideae in APG III, Angiosperm Phylogeny Group 2009; former Ruscaceae s.l., Rudall et al. 2000) has its main centre of diversity in China and Vietnam. Recently, many new species have been discovered and described, increasing the total number of species to about 100 (Lang et al. 1999, Liang and Tamura 2000, Li 2004, Tillich 2005, 2008, Tillich et al. 2007, Hou et al. 2009, Lin et al. 2009, 2010, Xu et al. 2010).

The species described here was first discovered in a limestone valley during the course of a floristic investigation in 2007, in Jingxi County, southwestern Guangxi, near the border to northern Vietnam. The plants were transplanted to the Guilin Botanical Garden for further observations and were monitored frequently in the following two years, when they flowered consistently. In April 2010, we returned to Jingxi County to collect the flowering plant. After consulting herbarium specimens and relevant literature on *Aspidistra*, we concluded that it was a new species that we had found.

***Aspidistra albiflora* C. R. Lin, W. B. Xu & Yan Liu sp. nov. (Fig. 1, 2A–D)**

Haec species perianthio in utroque latere cum pistillo albo, bracteis perianthio longioribus, staminibus brevioribus, 2 mm longis, pistillo obconico, stigmate leviter dilatato insignis. Affinis A. cerinae G. Z. Li & S. C. Tang, sed quae differt perianthio in utroque latere cum pistillo cerno, bracteis perianthio brevioribus, staminibus longioribus, 6 mm longis, pistillo clavato, stigmate non dilatato.

Type: China. Guangxi Zhuangzu Autonomous Region, Jingxi County, Hurun Township, limestone mountains,

alt. 390 m a.s.l., 25 Apr 2010, Yan Liu L1631 (holotype: IBK, isotype: IBK).

Perennial herb, evergreen, rhizomatous. Rhizome creeping, subterete, 5–8 mm thick, covered with scales, internodes congested. Roots elongate. Vaginal leaves 3–4, pale green, 1–4 cm long, enclosing the base of the petiole, fibrous when withered. Leaves solitary, 5–10 mm apart; petiole stiff upright, 3.5–7.0 cm long, 2–3 mm thick, adaxially sulcate; leaf blade usually elliptic to ovate-elliptic, 9–14 cm long, 3–5 cm wide, base broadly cuneate, apex acuminate, margin entire. Peduncle decumbent, 5–20 mm long, with 3–4 bracts, bracts gradually widened from below, the two bracts at the base of the perianth broadly ovate, 1.6–2.0 cm long, 1.0–1.5 cm wide, white with pale green tips, apex acuminate, conspicuously longer than the perianth. Flowers numerous, densely arranged; perianth campanulate, white, 13–16 mm long, 6-lobed apically; lobes broadly ovate, subequal, 8–10 mm long, 5–6 mm wide, glabrous, surface with 3–5 shallow longitudinal grooves, apex rounded and usually slightly incurved; tube ca 6 mm long, 7–10 mm in diameter. Stamens 6, subsessile, inserted in the middle of the perianth tube; anthers pale yellow, ovate, ca 2 mm long and 1 mm wide. Pistil obconical, ca 7 mm long, white, glabrous; ovary inconspicuous; style short, cylindrical, ca 2 mm in diameter, stigma 4–5 mm in diameter, the central part nearly flat and with 3–4 radial, inconspicuous bifurcate shallow grooves, with slightly irregularly undulate margin. Flowering occurs in Apr–May.

Distribution and ecology

Aspidistra albiflora is currently known only from the type locality in Jingxi County, southwestern Guangxi, China,

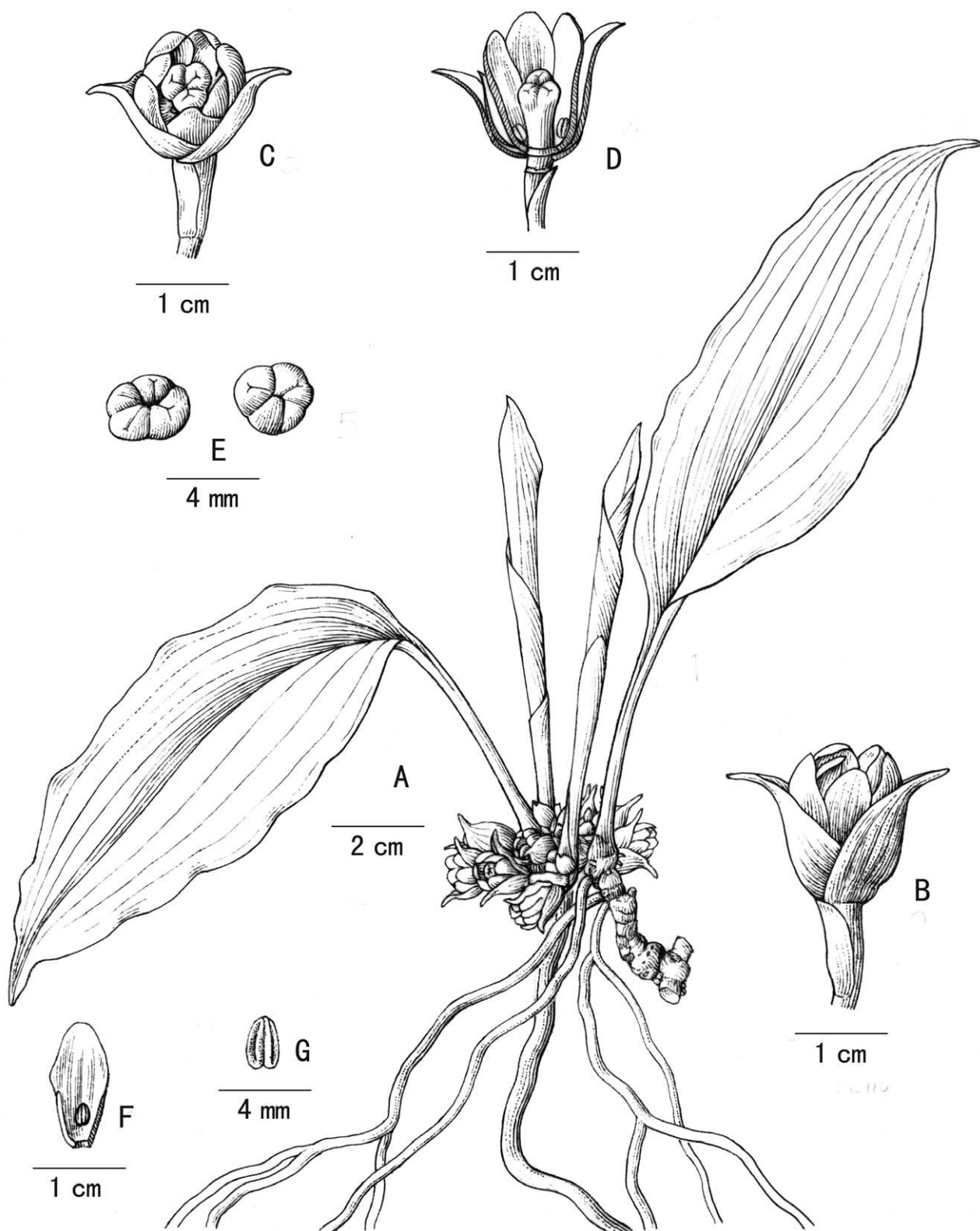


Figure 1. *Aspidistra albiflora* C. R. Lin, W. B. Xu & Yan Liu sp. nov. (A) flowering plant, (B) flower lateral view, (C) flower apical view, (D) flower with half of perianth removed showing stamens and pistil, (E) stigma apical view, (F) perianth opened to show stamens, (G) anther.

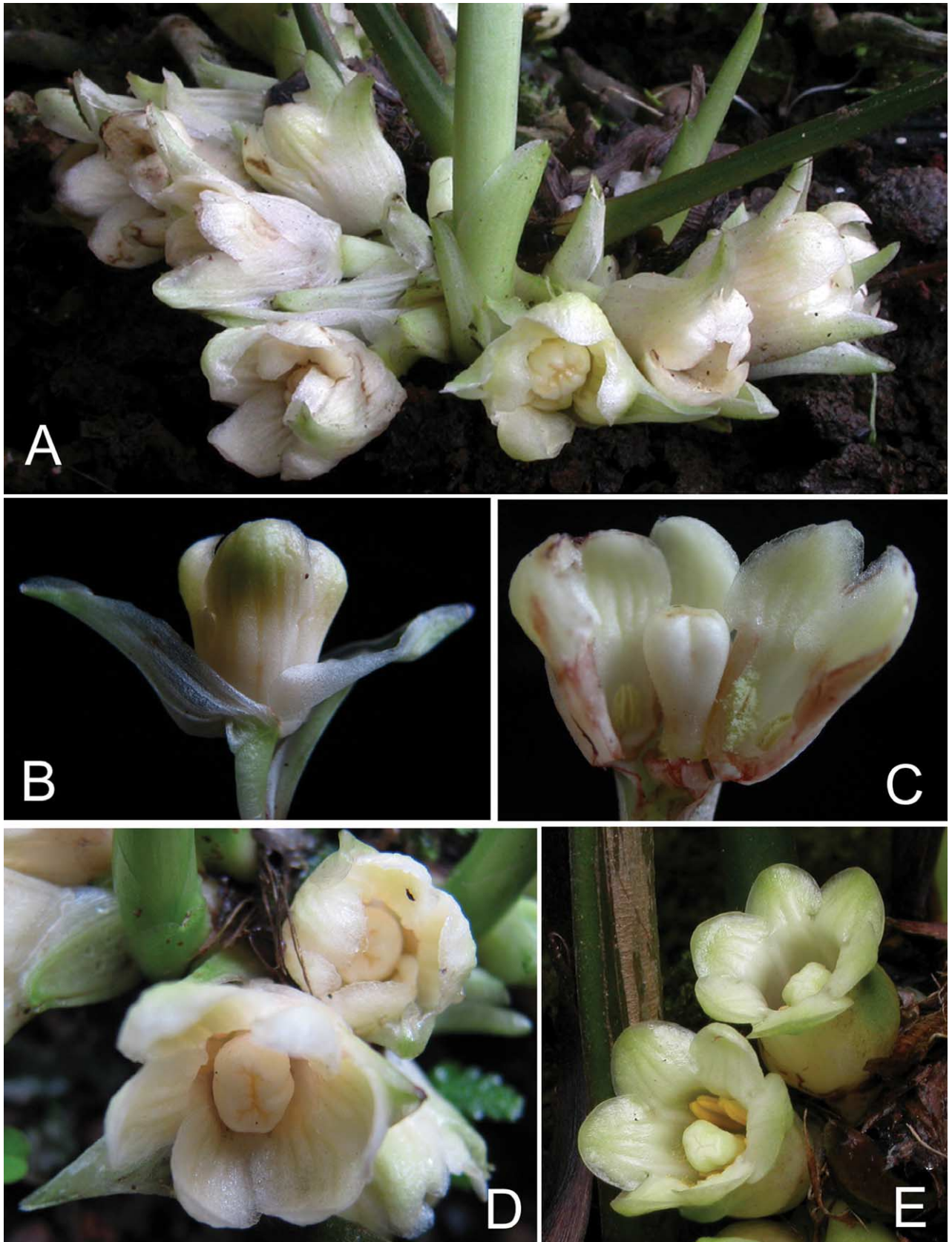


Figure 2. *Aspidistra albiflora* C. R. Lin, W. B. Xu & Yan Liu sp. nov. (A) habit, (B) flower with bracts, (C) perianth dissected open to show stamens and pistil, (D) flower face view. *Aspidistra cerina*: (E) flower.

Table 1. Morphological comparison between *Aspidistra albiflora* sp. nov. and *A. cerina*.

	<i>A. albiflora</i>	<i>A. cerina</i>
Leaf blade	9–14 × 3–5 cm	13–20 × 6.0–8.5 cm
Bracts (color)	white with pale green tips	yellow-green
Bracts length	1.6–2.0 cm	1.2–1.6 cm
Perianth color	white	wax yellow
Perianth tube	6 mm	12 mm
Perianth lobes	8–10 mm long, longer than tube	3.5 mm long, shorter than tube
Anther (length)	2 mm	6 mm
Pistil	obconical	clavate
Stigma diameter	4–5 mm	2 mm

near the border with northern Vietnam. It grows on shaded rocky limestone slopes in broad-leaved forests.

Similar species

Aspidistra albiflora is similar to *A. cerina* G. Z. Li & S. C. Tang (Li and Tang 2002, Fig. 2E) in flower shape, but differs by having perianth with white sides, white pistils, bracts conspicuously longer than the perianth, anthers shorter, 2 mm long, pistil obconical and stigma slightly enlarged, 4–5 mm in diameter. The morphology of the two species is compared in Table 1.

The white flower colour is rather rare in *Aspidistra*, currently only known from *Aspidistra albiflora*, *A. dolichanthera* X. X. Chen (Chen and Fang 1982) and *A. campanulata* Tillich (Tillich et al. 2007). However, *A. dolichanthera* differs with respect to its perianth tube: 6–8 mm long and wide, with lobes recurved, oblong, ca 12 mm long and 7–8 mm wide at base, anthers 5–6 mm long, pistil ca 10 mm long, stigma ca 1.7 mm diameter, and *A. campanulata* differs by perianth tube 10 mm long and wide, lobes recurved, narrow triangular, 10 mm long and 2.5–3.0 mm wide at base, anthers 2.5 mm long, pistil ca 8 mm long, stigma 1.0–1.2 mm diameter.

Etymology

The specific epithet '*albiflora*' is derived from the white flowers of the new species.

Additional specimen examined (paratype)

China. Guangxi Zhuangzu Autonomous Region, Guilin City, Yanshan Township, introduced by Yan Liu from the type locality, cultivated, 26 Apr 2009, C. R. Lin 016 (IBK).

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References

- Angiosperm Phylogeny Group 2009. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG III. – Bot. J. Linn. Soc. 161: 105–121.
- Chen, X. X. and D. Fang. 1982. Two new species of the *Aspidistra* (Liliaceae) from Guangxi. – Guihaia. 2: 77–79, in Chinese.
- Hou, M. F. et al. 2009. *Aspidistra daxinensis* (Ruscaceae), a new species from limestone areas in Guangxi, China. – Bot. Stud. 50: 371–378.
- Lang, K.Y. et al. 1999. Taxonomic and phytogeographic studies on the genus *Aspidistra* Ker-Gawl. (Liliaceae) in China. – Acta Phytotax. Sin. 37: 468–508, in Chinese.
- Li, G. Z. 2004 (ed.). The genus *Aspidistra*. – Guangxi Sci. Technol. Publ. House, in Chinese.
- Li, G. Z. and Tang, S. C. 2002. New taxa of *Aspidistra* Ker-Gawl. from Guangxi, China. – Guihaia 22: 289–291, in Chinese.
- Liang, S. Y. and Tamura M. N. 2000. *Aspidistra*. – In: Wu, Z. Y. and Raven, P. H. (eds), Flora of China. Vol. 24. Science Press, Miss. Bot. Gard. Press, pp. 240–250.
- Lin, C. R. et al. 2009. *Aspidistra bamaensis* (Ruscaceae), a new species from Guangxi, China. – Ann. Bot. Fenn. 46: 416–418.
- Lin, C. R. et al. 2010. *Aspidistra obconica*, Asparagaceae (Ruscaceae), a new species from limestone areas in Guangxi, China. – Bot. Stud. 51: 263–268.
- Rudall, P. J. et al. 2000. Systematics of Ruscaceae/Convallariaceae: a combined morphological and molecular investigation. – Bot. J. Linn. Soc. 134: 73–92.
- Tillich, H. J. 2005. A key for *Aspidistra* (Ruscaceae), including fifteen new species from Vietnam. – Feddes Rep. 116: 313–338.
- Tillich, H. J. 2008. An updated and improved determination key for *Aspidistra* Ker-Gawl. (Ruscaceae, Monocotyledons). – Feddes Rep. 119: 449–462.
- Tillich, H. J. et al. 2007. Six new species of *Aspidistra* (Ruscaceae) from northern Vietnam. – Blumea. 52: 335–344.
- Xu, W. F. et al. 2010. *Aspidistra chishuiensis* (Ruscaceae), a new species from Guizhou, China. – Ann. Bot. Fenn. 47: 118–120.