

Liriope zhejiangensis (Asparagaceae), a new species from eastern China

Guo-Hua Xia, Shui-Hu Jin, Dan-Dan Ma & Gen-You Li

School of Forestry & Biotechnology, Zhejiang Agriculture and Forestry University, Lin'an Hangzhou 311300, Zhejiang, China

Received 27 Jan. 2011, final version received 13 May 2011, accepted 17 May 2011

Xia, G. H., Jin, S. H., Ma, D. D. & Li, G. Y. 2012: *Liriope zhejiangensis* (Asparagaceae), a new species from eastern China. — *Ann. Bot. Fennici* 49: 64–66.

Liriope zhejiangensis G.H. Xia & G.Y. Li (Asparagaceae), from Zhejiang Province, eastern China, is described and illustrated as a new species. It is similar to *L. muscari*, but differs by the yellow, fleshy and odorous rhizome; soft and narrow leaves with an acuminate apex and lower surface pale green when dry; articulate pedicel apex; and by the purple filaments, stigma and ovary.

Liriope is a small genus in the Asparagaceae with eight species mainly distributed in eastern Asia, Japan, Philippines and Vietnam. Six of them occur in China and three are endemic (Chen & Tamura 2000). Some species, such as *L. muscari* and *L. spicata* are often used as ground cover and border plants for landscaping in the temperate zone.

During an investigation in the Yangtze River Delta, China in July 2008, we found that one *Liriope* which the local people called “Lan hua san qi” was cultivated extensively. At first glance, this plant was somewhat similar to *L. muscari* by having linear leaves, erect inflorescence, flowers in clusters of (3–)4–8, and globose seeds which are blackish purple at maturity. During a plant survey on the Tianmu Mountain (NW Zhejiang Province, China) in 2009, we found this *Liriope* and *L. muscari* at 600–1200 m altitude. Both wild and cultivated plants of these species were collected and cultivated in the Botanic Garden of ZAFU. After observing the morphological characters, checking specimens of *Liriope* in the ZJFC and HHBG herbarium and consulting

relevant floras and other literature (Bailey 1929, Wang & Tang, Hsu & Li 1981, Miao 1982, Liang & Dai 1992, Lin 1993, Chen & Tamura 2000, Zheng 2005), we were convinced that this species actually was new.

***Liriope zhejiangensis* G.H. Xia & G.Y. Li, sp. nova (Fig. 1)**

TYPE: China. Zhejiang Province, Lin'an County, Tianmu Mountain. 30°23'35.1''N, 119°27'35.6''E, alt. 1044 m, 7 May 2009 Xia *et al.* TM052 (ZJFC).

Perennial herbs. Rhizome 1–3 cm long, fleshy, yellow and odorous. Roots with a few fleshy, tuberous part near tip, root tuber 1.0–2.0 × 0.5–0.8 cm. Leaves linear, 18–55 × 0.4–1.2 cm, apex acuminate, soft, base suberect, 10–15-veined; lower surface pale green on dry specimens. Scapes erect, purple to dark green, 20–45 cm long including inflorescence, and somewhat ridged in transverse section; inflorescence 15–25 cm. Flowers in clusters of (3–)4–8; bracts canary

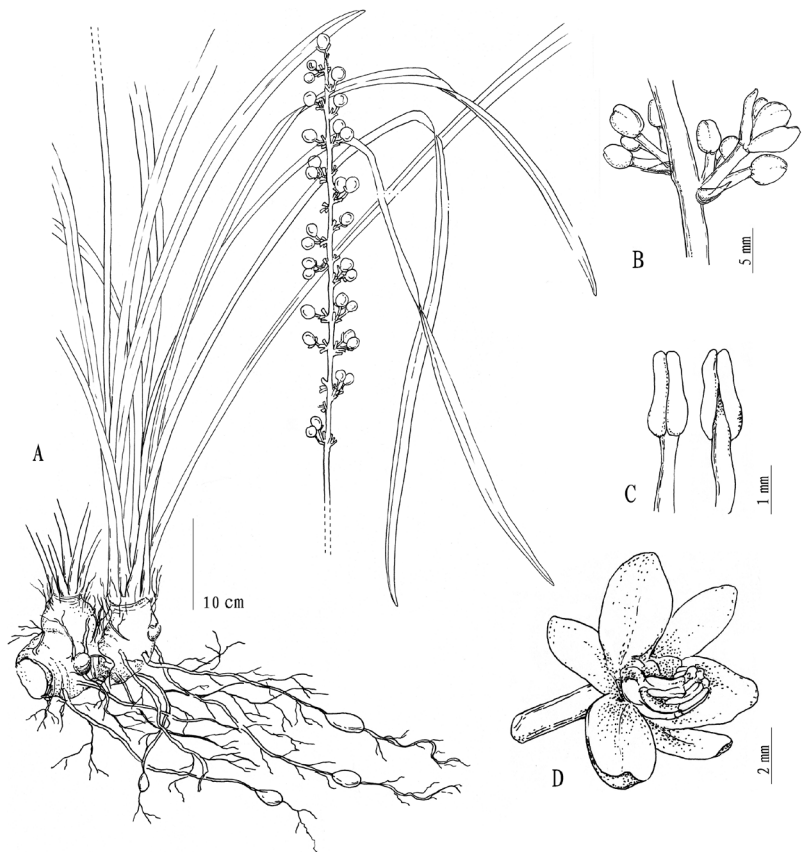


Fig. 1. *Liriope zhejiangensis* (from the holotype, drawn by Hong Mei). — **A:** Habit. — **B:** Flower bud in cluster. — **C:** Stamen. — **D:** Flower.

yellow to yellow green, linear, 3–5 mm long, bracteoles white, membranous; pedicel purple, 3–7 mm long, apex articulate; tepals purple, free, elliptic-oblong to ovate-oblong, $3.5\text{--}4 \times 1.6\text{--}2.4$ mm; filaments usually purple, slightly compressed, 1.5–1.8 mm; anthers yellow, equaling filaments; style ca. 3 mm long, purple; stigma slightly 3-lobed, purple, ovary superior, 3-locular, 2-ovule per locule. Fruit bursting irregularly at an early stage and exposing young seeds; seeds blackish at maturity, globose, 6–7 mm in diam-

eter. Flowering July–August, fruiting September–November. Pollen grains single, elliptical, monosulcate, $33.02 \pm 1.88 \times 16.60 \pm 1.52 \mu\text{m}$ (mean $\pm$ SE, $n = 20$), exine sculpture cerebriform or finely rugulose with perforations and sparse foveolae.

Liriope zhejiangensis is known from Lin'an and Anji Country, Tianmu Mountain, northwest of Zhejiang province, China and it usually grows under forests or shrubberies in valleys at an altitude of 600–1200 m. It is similar to *L. muscari*, but differs by several characters (Table 1).

Table 1. Comparison of morphological characters of *Liriope zhejiangensis* and *L. muscari* (the latter from Chen & Tamura 2000).

Character	<i>L. zhejiangensis</i>	<i>L. muscari</i>
Rhizome	fleshy, yellow and odorous	more or less ligneous
Leaf	soft and narrow, apex acuminate; reclinate in autumn; lower surface pale green when dry	stiff, apex obtuse; procumbent in autumn; lower surface yellow when dry
Pedicel	apex articulate	articulate near middle
Filaments	usually purple	white
Pistil	style ca. 3 mm, ovary purple	style ca. 2 mm, ovary white

Acknowledgements

The authors are grateful to Prof. Chiu Pao-Lin and Prof. Zheng Bing-Song for improving the manuscript. This research was supported from the Project of National Infrastructure of Natural Resources for Science and Technology (2005DKA21403), and the Key Project of Department of Science and Technology of Zhejiang Province (2006C12059-2 and 2008C12019).

References

- Bailey, L. H. 1929: The case of *Ophiopogon* and *Liriope*. — *Gentes Herb.* 2: 3–37.
- Chen, X. Q. & Tamura, M. N. 2000: *Liriope*. — In: Wu, Z. Y. & Raven, P. H. (eds.), *Flora of China*, vol. 24: 250–251. Sci. Press, Beijing & Missouri Bot. Garden Press, St. Louis.
- Hsu, P. S. & Li, L. C. 1981: Critical notes on the classification of the *Liriope muscari* complex. — *Acta Phytotaxonomica Sinica* 19: 456–461. [In Chinese with English summary].
- Liang, S. Y. & Dai, L. K. 1992: Pollen morphology and generic phylogenetic relationships in Ophiopogonoideae (Liliaceae). — *Acta Phytotaxonomica Sinica* 30: 427–437. [In Chinese with English summary].
- Lin, Q. (ed.) 1993: [*Flora of Zhejiang*, vol. 7]: 389–392. — Zhejiang Science and Technology Publishing House, Hangzhou. [In Chinese].
- Miau, R. H. 1982: New taxa of Liliaceae from China. — *Acta Scientiarum Naturalium Universitatis Sunyatseni* 3: 74–76. [In Chinese with English summary].
- Wang, F. T. & Tang, T. 1951: A new *Liriope* long in cultivation but hitherto confused with a key to species of the genus. — *Acta Phytotaxonomica Sinica* 1(3): 331–334. [In Chinese with English summary].
- Zheng, C. Z. 2005: [*Handbook for plant identification in Zhejiang*]. — Zhejiang Science and Technology Publishing House, Hangzhou. [In Chinese].