

***Aspidistra australis* (Ruscaceae), a New Species from Guizhou, China**

Author(s): Shun-Zhi He, An-Li Liu & Wen-Fen Xu

Source: *Annales Botanici Fennici*, 50():305-308.

Published By: Finnish Zoological and Botanical Publishing Board

DOI: <http://dx.doi.org/10.5735/086.050.0502>

URL: <http://www.bioone.org/doi/full/10.5735/086.050.0502>

BioOne (www.bioone.org) is a nonprofit, online aggregation of core research in the biological, ecological, and environmental sciences. BioOne provides a sustainable online platform for over 170 journals and books published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Web site, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/page/terms_of_use.

Usage of BioOne content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

Aspidistra australis (Ruscaceae), a new species from Guizhou, China

Shun-Zhi He, An-Li Liu & Wen-Fen Xu*

Department of Pharmacy, Guiyang College of Traditional Chinese Medicine, Guiyang 550002, People's Republic of China (*corresponding author: wenfenxu@126.com)

Received 3 July 2012, final version received 29 June 2013, accepted 8 May 2013

He, S. Z., Liu, A. L. & Xu, W. F. 2013: *Aspidistra australis* (Ruscaceae), a new species from Guizhou, China. — *Ann. Bot. Fennici* 50: 305–308.

Aspidistra australis S.Z. He & W.F. Xu *sp. nova* (Ruscaceae) is described and illustrated from southern Guizhou Province, China. It differs from its closest sibling, *A. claviformis*, by its leaf blades which are oblong-lanceolate and sparsely serrulate above the middle, by its light yellow perianth, by its stamens being inserted slightly below the middle of the perianth tube, and by its stigma being a little enlarged and with a concave apex.

In November 2008, we came across an *Aspidistra* species with mature fruits during field investigation in a valley in the Libo National Nature Reserve, Guizhou province, China. Its anthesis was over, so it was planted in the Guiyang College of Traditional Chinese Medicine. It flowered in September–October of 2009. After studying the relevant taxonomic literature (*see also He et al.* 2011), we concluded that the plant represented an undescribed species.

***Aspidistra australis* S.Z. He & W.F. Xu *sp. nova* (Figs. 1 and 2)**

TYPE: China. Guizhou, Libo National Nature Reserve, under shrubs in a valley, 500–550 m a.s.l., 11 Nov. 2008, S.Z. He *et al.* 081111 (holotype ZGTM).

Herbs perennial, rhizome creeping, subterete, 4–5 mm thick, covered with nodes and scales. Leaf sheaths 3–5, purplish red, 4–13 cm long, enclosing base of leaves, fibrous when withered. Leaves solitary, 1.5–3 cm apart, leaf

blade oblong-lanceolate, 18–28 × 4–5 cm, apex acuminate, base gradually narrowed, margins sparsely serrulate above middle, leaf blade with a few yellow-white spots; petiole rigid, 26–36 cm, grooved adaxially. Scape 0.8–1.5 cm, bracts 3–4, purplish red, broadly ovate, 6–7 × 5–6 mm. Flower solitary, erect. Perianth campanulate, fleshy, light yellow, 10–20 × 3.3–3.6 mm, 8-lobed, 2 mm in length, ca. 1.5 mm wide at base, with spurlike basal protuberances; tube 0.8–1 cm in length, 3.3–3.6 mm in diam. Stamens 8, subsessile, inserted slightly below middle of perianth tube; anthers oblong, ca. 3 × 0.8 mm. Pistil nearly clavate, purplish, ca. 0.6 cm long; style inarticulate, stigma slightly enlarged, purple, ca. 0.4 cm in diam., apex concave, upper surface with margin deeply 4-lobed and radially 4-sulcate, then each apex lobe shallowly 2-lobed again; lobelets obtuse at apex, margin recurved. Berry subglobose, tuberculate, ca. 1 cm high and 0.8 cm in diam. Flowering in September–October, fruiting in November the following year. $2n = 38$.

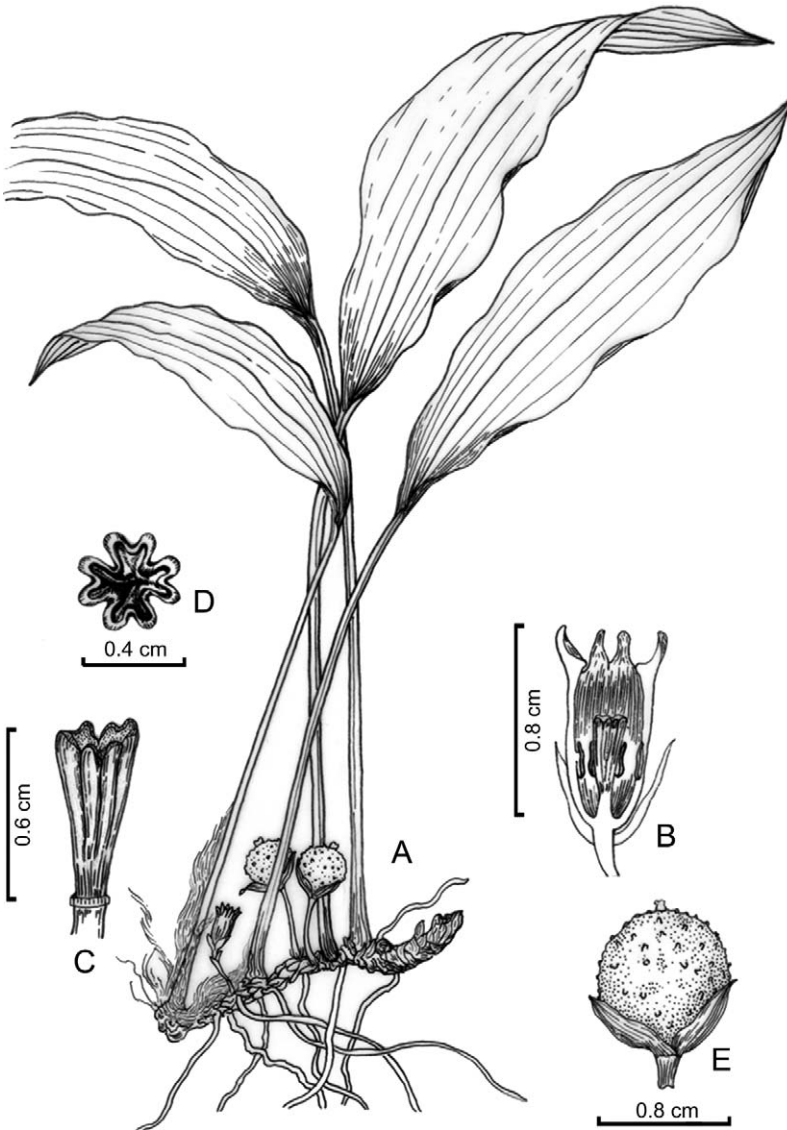


Fig. 1. *Aspidistra australis* (from the holotype). — **A:** Habit. — **B:** Longitudinal section of flower. — **C:** Pistil. — **D:** Adaxial surface of stigma. — **E:** Fruit.

The pistil of *A. australis* is similar to that of *A. claviformis*, *A. saxicola* and *A. cerina*. The species can be distinguished by the key below.

Key to *A. australis* and three morphologically similar species

1. Scapes 2–5-tufted, perianth campanulate, 4–5 inconspicuous ridges on inner lobe *A. saxicola*
1. Scapes solitary, perianth tubular-campanulate, no ridges on inner lobe 2
2. Leaf blade elliptic, stamens inserted above the middle of perianth tube *A. claviformis*
2. Leaf blade oblong-lanceolate, stamens inserted in the middle or below middle of perianth tube 3
3. Leaf margin sparsely serrulate, stamens 8, inserted below middle of perianth tube, anthers ca. 3 × 0.8 mm, pistil purplish, upper surface of stigma concave *A. australis*
3. Leaf margin undulate, stamens 6, inserted in the middle of perianth tube, anthers ca. 6 × 1.5 mm, pistil waxy yellow, upper surface of stigma flat *A. cerina*

A review of the chromosome cytology of 39 species of *Aspidistra* in China was presented by Li (2004). The majority of the species have a chromosome number of $2n = 36$ or 38 . *Aspidistra* is essentially a dibasic genus with $x = 18$

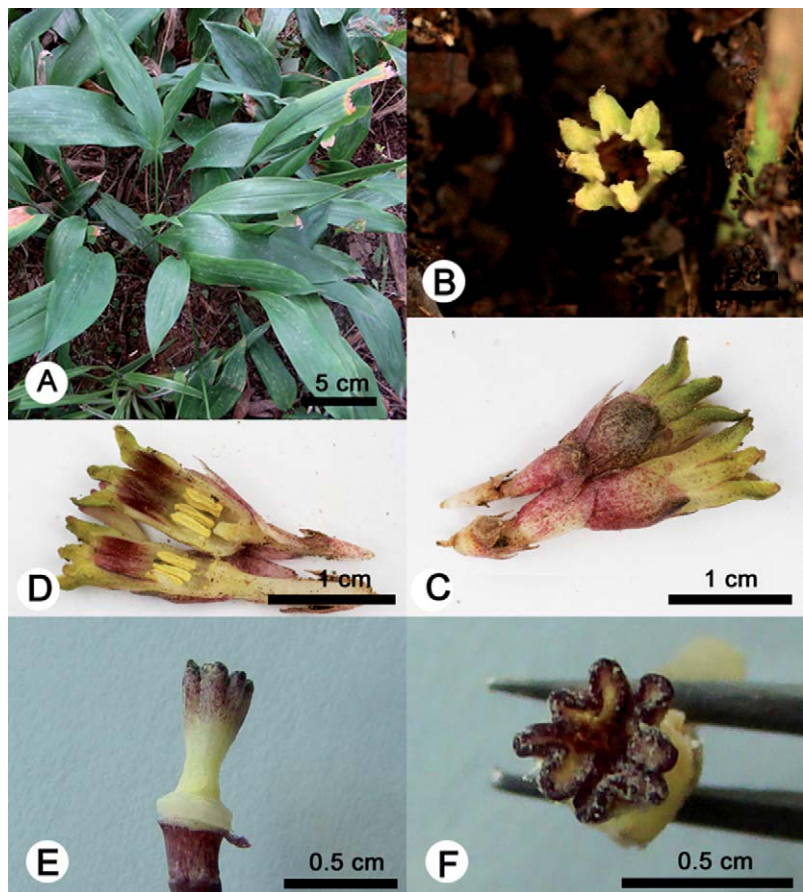


Fig. 2. *Aspidistra australis*. — **A:** Habit. — **B** and **C:** Flower. — **D:** Longitudinal section of flower, showing stamens. — **E:** Pistil. — **F:** Adaxial surface of stigma.

and 19. Wang *et al.* (2001) assumed that $x = 19$ in some species of *Aspidistra* may have been derived from an ancestral $x = 18$.

The chromosome number of *A. australis* is $2n = 38$, with a karyotype formula of $2n = 38 = 20\ m + 6\ sm + 12\ st$. It has eight pairs of long and medium chromosomes and eleven pairs of short chromosomes. The ratio of the longest to the shortest chromosomes is 7.4, and the karyotype symmetry is 2C (Table 1 and Fig. 3). The chromosome number of *A. claviformis* is $2n = 36$, with the karyotype formula of $2n = 36 = 18\ m + 8\ sm + 10\ st$, and the ratio of the longest to the shortest chromosomes is 5.89 (Wang *et al.* 2000).

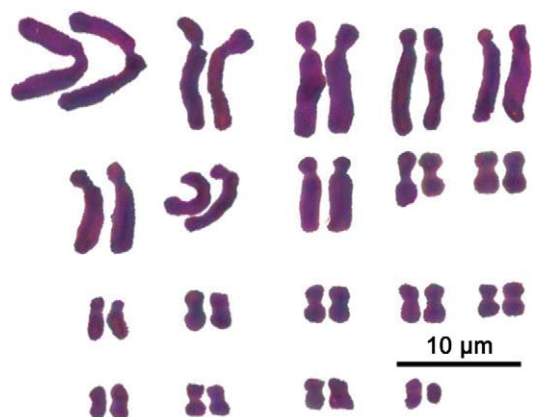


Fig. 3. Photomicrograph of chromosomes of *Aspidistra australis*.

Acknowledgements

We thank Dr. G. Z. Li and Dr. Y. Liu (Guangxi Institute of Botany, Guangxi Zhuangzu Autonomous Region and the Chinese Academy of Science) for their examination of

specimens, Dr. P. S. Wang for improving the manuscript and Xiang-Li Wu for the drawing. The work was supported by the Natural Science Foundation of China (grant no. 81360623) and the Science and Technology Foundation of Guizhou province (2011 no. 2154).

Table 1. The parameters of chromosomes of *Aspidistra australis*. Abbreviations: m = median region, sm = submedian region, st = subterminal region.

Chromosome number	Relative length (%) ($T = L + S$)	Arm ratio (L/S)	Type
1	$7.56 + 6.43 = 13.99$	1.18	m
2	$7.19 + 1.89 = 9.08$	3.8	st
3	$6.81 + 2.08 = 8.89$	3.27	st
4	$6.81 + 1.51 = 8.32$	4.5	st
5	$6.62 + 0.95 = 7.56$	7	st
6	$5.67 + 1.51 = 7.19$	3.75	st
7	$6.05 + 1.13 = 7.19$	5.33	st
8	$4.54 + 1.51 = 6.05$	3	sm
9	$2.08 + 1.70 = 3.78$	1.22	m
10	$2.08 + 1.32 = 3.40$	1.57	m
11	$2.46 + 0.95 = 3.40$	2.6	sm
12	$1.78 + 1.32 = 3.10$	1.34	m
13	$1.70 + 1.32 = 3.03$	1.29	m
14	$1.89 + 1.13 = 3.03$	1.67	m
15	$1.51 + 1.13 = 2.65$	1.33	m
16	$1.70 + 0.95 = 2.65$	1.8	sm
17	$1.32 + 1.13 = 2.46$	1.17	m
18	$1.40 + 0.95 = 2.34$	1.48	m
19	$1.13 + 0.76 = 1.89$	1.5	m

References

- He, S. Z., He, K. & Wu, J. Y. 2011: *Aspidistra liboensis* (Ruscaceae), a new species from Guizhou, China. — *Ann. Bot. Fennici* 48: 439–442.
- Li, G. Z. 2004: [The genus *Aspidistra*]. — Guangxi Science & Technology Publishing House, China. [In Chinese].
- Wang, R. X., Li, G. Z. & Lang, K. Y. 2000: Cytotaxonomy of the genus *Aspidistra* from China II. — *Guihaia* 20: 138–143.
- Wang, R. X., Li, G. Z. & Lang, K. Y. 2001: Karyotypes of eight species of the genus *Aspidistra* from China. — *Acta Phytotax. Sin.* 39: 51–64.