

***Arisaema wangmoense* (Araceae), a New Species from China**

Author(s): Ming-Tai AnHua-Hai ZhangQi LinTang-Ling Wei

Source: Novon: A Journal for Botanical Nomenclature, 21(1):1-3.

Published By: Missouri Botanical Garden

DOI: <http://dx.doi.org/10.3417/2009125>

URL: <http://www.bioone.org/doi/full/10.3417/2009125>

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.

Volume 21
Number 1
2011

NOVON



Arisaema wangmoense (Araceae), a New Species from China

Ming-Tai An

Forestry College of Guizhou University, Guiyang 550025, People's Republic of China.
gdanmingtai@126.com

Hua-Hai Zhang

Guizhou Provincial Wild Animal and Plant Administrative Station, Guiyang 550001,
People's Republic of China

Qi Lin

State Key Laboratory of Systematic and Evolutionary Botany, Institute of Botany,
Chinese Academy of Sciences, Beijing 100093, People's Republic of China. Author for
correspondence: linqi@ibcas.ac.cn

Tang-Ling Wei

Wangmo Forestry Bureau, Wangmo, Guizhou 552300, People's Republic of China

ABSTRACT. A new species of *Arisaema* Mart. (Araceae) is described and illustrated from Wangmo County, Guizhou Province, China. The relationship between *A. wangmoense* M. T. An, H. H. Zhang & Q. Lin and related taxa is discussed. The new species is distinguished by its obtuse cataphylls, petiolulate leaflets, serrulate or denticulate margins, and stipitate appendix.

Key words: Araceae, *Arisaema*, China, Guizhou, IUCN Red List.

The genus *Arisaema* Mart. (Araceae) consists of ca. 180 species and is distributed in northeastern Africa, the Arabian Peninsula, Asia, eastern North America, and Mexico. Seventy-seven species are reported to occur in China (Li et al., 2010).

Within Guizhou Province, many limestone hills distinguish Wangmo County. During fieldwork in Wangmo County in southwestern Guizhou, southwestern China, in April and May 2009, a previously unknown species belonging to *Arisaema* sect. *Sinarisaema* Nakai (Nakai, 1950) was collected on limestone rocks. This species was found to be

distinctive when compared with related taxa. For comparison, *Arisaema* specimens were examined at CDBI, GZAC, GZTM, HGAS, HIB, HNNU, IBK, IBSC, KUN, LBG, NAS, PE, SYS, and SZ. The new species is described and illustrated herein. In addition, living plants were collected and cultivated in the greenhouse at the Forestry College of Guizhou University during April and May 2009.

Arisaema wangmoense M. T. An, H. H. Zhang & Q.

Lin, sp. nov. TYPE: China, Guizhou: Wangmo Co., Lewang, Shuijingwan, 1100 m, 8 May 2009 (♂), M. T. An & T. L. Wei 2009-999 (holotype, GZAC). Figure 1.

Haec species *Arisaemati consanguineo* Schott et *A. rubescenti* (Wall.) Schott affinis, sed ab eis cataphyllis apice obtusis (non acutiusculis), foliis petiolulatis (non sessilibus) margine serrulatis vel denticulatis (non integris vel undulatis) atque spadici masculae appendice stipitata (non sessili) differt.

Plants dioecious; tuber depressed-globose, 2–3.5 cm diam., stolons absent; cataphylls 3, to 22 cm, greenish white, with brown striae and red spots,

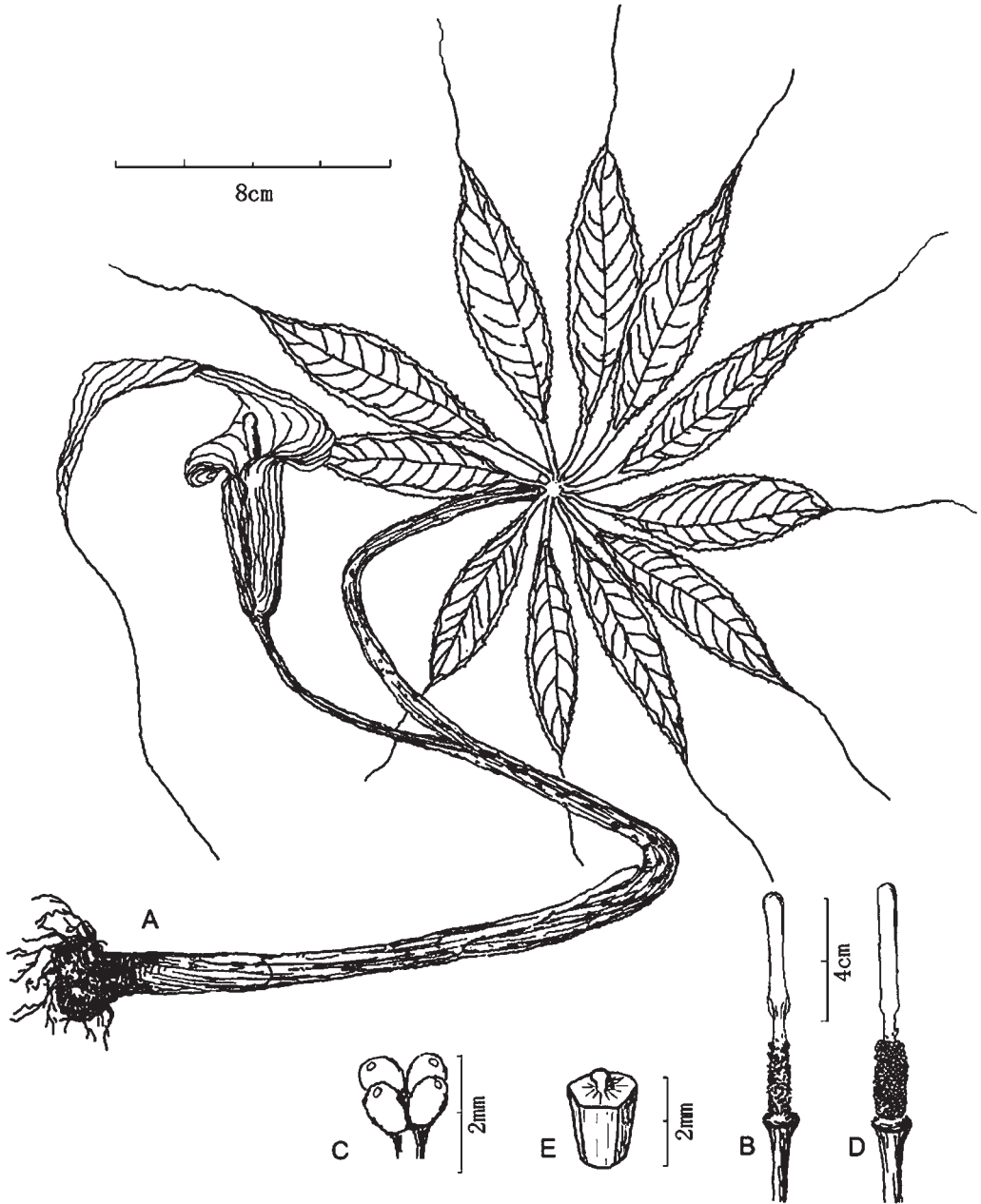


Figure 1. *Arisaema wangmoense* M. T. An, H. H. Zhang & Q. Lin. —A. Habit of staminate plant. —B. Inflorescence, showing the staminate stage. —C. Male flower. —D. Inflorescence, showing the pistillate stage. —E. Ovary. A–C from the holotype, M. T. An & T. L. Wei 2009–999 (GZAC); D, E from the paratype, M. T. An & T. L. Wei 2009–1001 (GZAC). Drawn by Chao Yang.

obtuse at apex. Leaf solitary; petiole 40–60 cm, 7–9 mm diam., the leaf sheathing in the lower 20 cm; leaf blade radiate; leaflets 7 to 13, petiolulate, with petiolule 1–2 cm, dull green with impressed veins adaxially, green with raised veins abaxially, narrowly elliptic, lanceolate, or oblanceolate, 7–22 × 1.5–2.5 cm, base attenuate or cuneate, apex long acuminate

or caudate, with a filiform extension to 5–8 cm, margins serrulate or denticulate; lateral veins numerous, pinnate and obliquely ascending. Fertile peduncle shorter than petiole, 20–50 cm, the free portion 5–7 cm from pseudostem; spathe greenish white, with or without indistinct whitish stripes; spathe tube cylindric, 4.5–7 cm, recurved at mouth;

Table 1. Comparison of morphological characteristics of *Arisaema wangmoense* and related taxa.

Characters	<i>A. wangmoense</i>	<i>A. consanguineum</i>	<i>A. erubescens</i>
Cataphylls	3, greenish white, to 22 cm, obtuse at apex	3, dark green, to 55 cm, somewhat acute at apex	3, dark green, to 15 cm, somewhat acute at apex
Leaf	solitary; petiole 40–60 cm	solitary; petiole to 100 cm	solitary; petiole 12–30 cm
Leaf blade	radiate; leaflets petiolulate (petiolule 1–2 cm), narrowly elliptic, lanceolate, or oblanceolate, 7–22 × 1.5–2.5 cm, margins serrulate or denticulate, apex with a filiform extension	radiate; leaflets sessile, narrowly elliptic or narrowly linear, 16–28 × 0.6–3.5 cm, margins entire, apex with a filiform extension	radiate; leaflets sessile, oblanceolate to narrowly oblanceolate, 5–15 × 0.6–3 cm, margins undulate, apex without a filiform extension
Spathe	tube cylindrical, recurved at mouth; limb 5–8 cm; apex with a filiform tail 7–15 cm	tube cylindrical, recurved at mouth; limb 8–12 cm; apex with a filiform tail 5–35 cm	tube narrowly cylindrical, slightly recurved at mouth; limb ca. 10 cm; apex with a long filiform tail
Male spadix	flowering portion cylindrical, 2.5–3.5 cm; appendix with 6–8 mm stipe	flowering portion cylindrical, 4–4.5 cm; appendix sessile	flowering portion cylindrical, 2.5–3.5 cm; appendix sessile
Female spadix	female portion ca. 3 cm	female portion ca. 3.5 cm	female portion ca. 3.5 cm
Berries	red	red	red
Infructescence	erect	nodding	erect

spathe limb green, sometimes with purple margin, pale green inside, triangular-ovate, 5–8 × 2.5–5.5 cm, apex acuminate with long filiform tail 7–15 cm, pendulous; spadix functionally unisexual; staminate flowers 1; flowering portion cylindrical, 2.5–3.5 cm, ca. 3 mm diam.; rachis green; anthers subsessile, 2 to 4; appendix erect, stipitate, with the stipe 6–8 mm, pale green, cylindrical, 3–4 cm, 2–3 mm diam., smooth, obtuse at apex; female spadix with the pistillate portion conic, ca. 3 cm; ovaries green, obovoid; stigma subsessile, orbicular. Berries red; appendix pale green, cylindrical, ca. 4 cm; infructescence erect.

Distribution and habitat. *Arisaema wangmoense* is only known from the type locality in Wangmo County, Guizhou Province, southwestern China. This species was observed to grow among limestone rocks at an altitude of 1100 m.

IUCN Red List category. *Arisaema wangmoense* seems to be rare and restricted in distribution and should be considered Critically Endangered (CR) according to IUCN Red List criteria (IUCN, 2001).

Phenology. *Arisaema wangmoense* was observed in flower from April to May and in fruit from June to September.

Discussion. *Arisaema wangmoense* is a member of *Arisaema* sect. *Sinarisaema* based on the depressed-globose tubers, the solitary leaf with radiate segments, the recurved spathe limb, the unisexual spadix, the cylindrical appendix, and the anthers that dehisce by apical pores. This new species appears to be closely

related to *A. consanguineum* Schott and *A. erubescens* (Wall.) Schott, but differs from them by having cataphylls obtuse at the apex (vs. somewhat acute), leaflets with a petiolule 1–2 cm long (vs. sessile), serrulate or denticulate blade margins (vs. entire), an appendix with a stipe 6–8 mm long (vs. sessile), and an erect infructescence (vs. nodding or erect) (Table 1).

Paratypes. CHINA. **Guizhou:** Wangmo Co., Lewang, Shuijingwan, 1100 m, 24 Apr. 2009 (♂), *M. T. An* 2009-410 (MO), 8 May 2009 (♀), *M. T. An* & *T. L. Wei* 2009-1001 (GZAC).

Acknowledgments. This work was supported by National Basic Research Program of China (973 Program) (No. 2006CB403206) and Key Projects in the National Science and Technology Pillar Program during the Eleventh Five-year Plan Period (No. 2006BAC01A00-9 and No. 2006BAD03A1006-2). We thank Chao Yang for the drawing.

Literature Cited

IUCN. 2001. IUCN Red List Categories and Criteria, Version 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland, and Cambridge, United Kingdom.

Li, H., G. H. Zhu & J. Murata. 2010. *Arisaema* (Araceae). In Z. Y. Wu, P. H. Raven & D. Y. Hong (editors), *Flora of China*, Vol. 23: Acoraceae through Cyperaceae. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis.

Nakai, T. 1950. Classes, ordines, familiae, subfamiliae, tribus, genera nova quae attinent ad plantas Koreanas. (Supplementum). *J. Jap. Bot.* 25: 5–7.