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Arisaema wangmoense (Araceae), a New Species from China

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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. erubescenti* (Wall.) Schott affinis, sed ab eis cataphyllis apice obtusis (non acutiusculis), foliolis petiolulatis (non sessilibus) margine serrulatis vel denticulatis (non integris vel undulatis) atque spadiceis 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,

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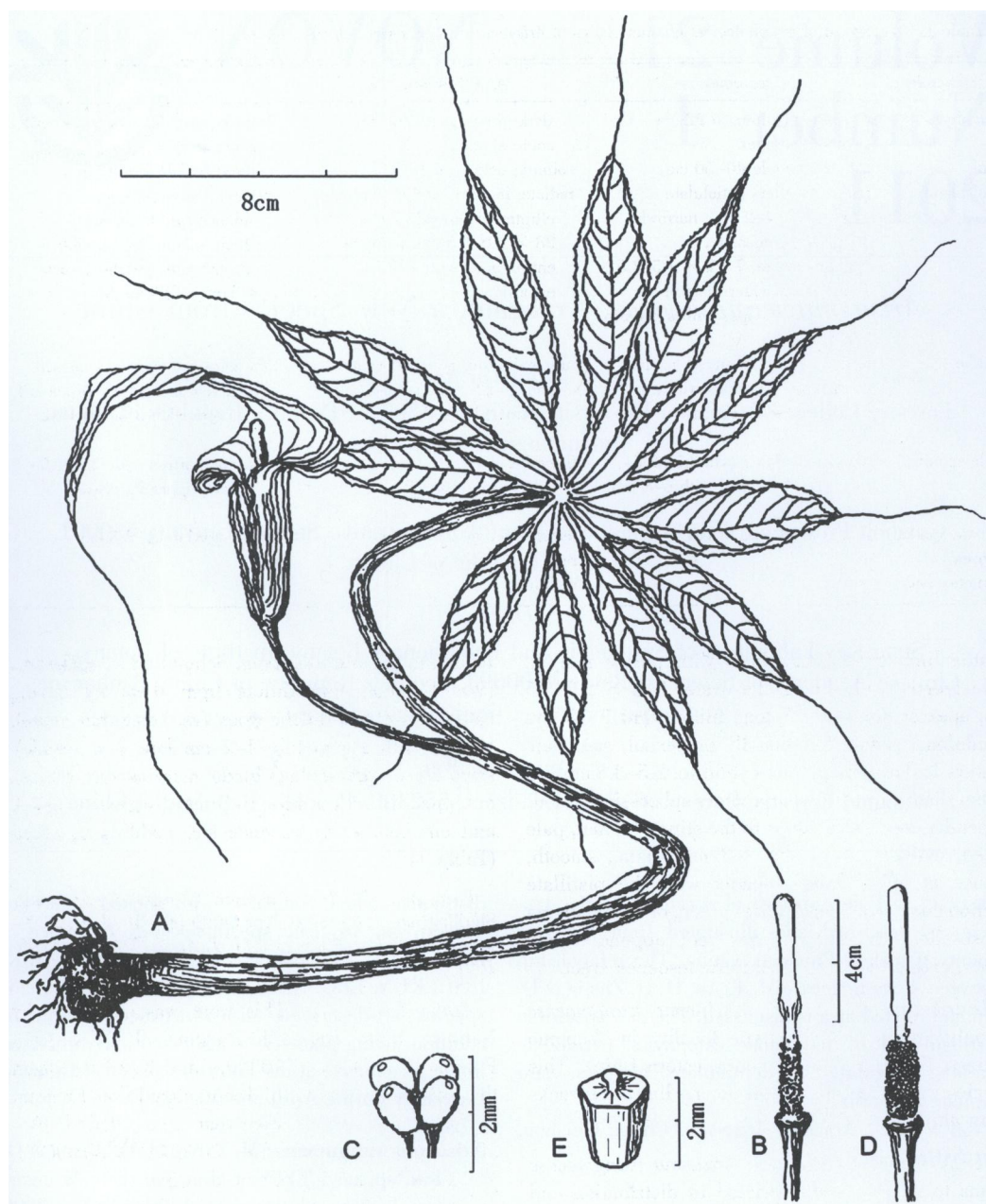


Figure 1. *Arisaema wangmoense* M. T. An, H. H. Zhang & Q. Lin. —A. Habit of staminate plant. —B. Inflorescence, showing the staminate stage. —C. Male flower. —D. Inflorescence, showing the pistillate stage. —E. Ovary. A–C from the holotype, M. T. An & T. L. Wei 2009–999 (GZAC); D, E from the paratype, 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 cylindric, recurved at mouth; limb 5–8 cm; apex with a filiform tail 7–15 cm	tube cylindric, recurved at mouth; limb 8–12 cm; apex with a filiform tail 5–35 cm	tube narrowly cylindric, slightly recurved at mouth; limb ca. 10 cm; apex with a long filiform tail
Male spadix	flowering portion cylindric, 2.5–3.5 cm; appendix with 6–8 mm stipe	flowering portion cylindric, 4–4.5 cm; appendix sessile	flowering portion cylindric, 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 cylindric, 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, cylindric, 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 cylindric 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).

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