

高黎贡山南星属（天南星科）新资料^{*}

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摘要: 本文描写了高黎贡山地区察隅南星 *Arisaema bogneri* P. Boyce et H. Li、腾冲南星五叶变种 *A. tengtsunense* H. Li var. *pentaphyllum* H. Li、缅甸南星 *A. burmaense* P. Boyce et H. Li; 第一次报道会泽南星 *A. dahaiense* H. Li 在高黎贡山的分布, 对该种的果序和果实作了补充描述。

关键词: 高黎贡山, 天南星科, 南星属, 新资料

分类号: Q 949

Notes on the genus *Arisaema* (Araceae) in Gaoligong Mountains

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Abstract: 3 new taxa, *Arisaema bogneri* P. Boyce et H. Li, *A. tengtsunense* H. Li var. *pentaphyllum* H. Li and *A. burmaense* P. Boyce et H. Li are described and illustrated. The new distribution of *A. dahaiense* in Gaoligong Mountains is reported and its infructescence is described additionally.

Key words: Gaoligong Mountains, Araceae, Arisaema, New taxa

1 察隅南星 新种

Arisaema bogneri P. Boyce et H. Li, sp. nov. Sect. *Franchetiana* Engler. TYPE: China. Yunnan Prov., **Gongshan Xian**, Binzhongluo, west of Salween river, on the E side of Gaoligong Mountains, in thickets, alt. 1550 m, Oct. 18, 1996, Gaoligong Mountains Expedition 7824 (Holo-type, KUN). **Xizang:** Chayu Xian, Delei Valley, 28°21'N, 96°37'E; alt. 2950 ~ 3280 m, Jun. 6, 1928, Kingdon Ward 8299 (K); loc. et coll. ibid. June 10, 1928, Kingdon Ward 8318 (K). Fig 2: 1, Fig 3, Plate I: 1—6.

Species habitu *A. candidissimo* W. W. Smith affinis, sed spathe atro—purpurea et albo—vittata, faucis marginibus angustis patentibus haud auriculatis, appendice stipite 1.2 cm longa subffulta, e basi truncata differet; ab *A. asperato* N. E. Brown recedit foliole intermedie ovato, elliptico subrhombio, petiole et costa subtus glabribus (haud asperatis); ab *A. lobato* Engler recedit spadice appendice recurva.

Diocious. Tuber subglobose, 1 ~ 4 cm in diam. Leaves 1 (—2), petiole 20 ~ 40 cm long,

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greenish, smooth, 1.3 ~ 1 cm thick, basal 1/4 sheathing. Leaf blade chartaceous, trifoliate; leaflets light green at both sides, apex acute or acuminate with a tubular tail 1 cm long, margins entire, ovate, sessile or with a petiolule 1.3 cm long, 3.5 ~ 22 × 2.5 ~ 15 cm; lateral leaflets oblique-oblong or ovate, sessile, base rounded in total, quite oblique, 3.5 ~ 17 × 2 ~ 14 cm. Petiole light green, non spotted, 37 cm long, sheath short; peduncle emerging from petiole sheath, shorter than petiole, purplish green, non spotted, 8 ~ 24 cm long. Spathe dark purple with whitish longitudinal lines which connected near margin into a intramargin line; in female plants spathe tube cylindric, 7 cm long, ca. 1.5 cm in diameter; throat margins slightly recurved outward, non auriculate; limb ovate, acuminate with a tubular tail 1 ~ 2 cm long, 10 × 3 ~ 6 cm, galeate-incurvate from base; spadix u-



Fig. 1 *Arisaema bogneri* P. Boyce et H. Li

1 leaf, 2 tuber, 3 spathe, 4 female spadix, 5, 6 ovary with 2 ovules; From the Gaoligong Mountains Expedition 7824 (Drawn by Wang Ling)

nisexual, male spadix: male portion cylindric, 13×4 mm, appendix 2~3 cm long, base truncate with a stipe 2~3 mm long, apical part attenuate recurved outward or downward, smooth; female spadix: female portion conic, 1×1.2 cm; appendix more robust, whitish green, pyramidal, base truncate with a stipe 1.2 cm long, ca. 10 cm in total, ca. 8 mm thick at base and 4 mm at tip, recurved outward for 90° . Ovaries greenish obovate, style distinct, stigma punctate, basal placentation, ovules 2, erect. Inflorescence ovate, 4×2.5 cm, fruit obovate, red. Flowering in June. Fruiting in September.

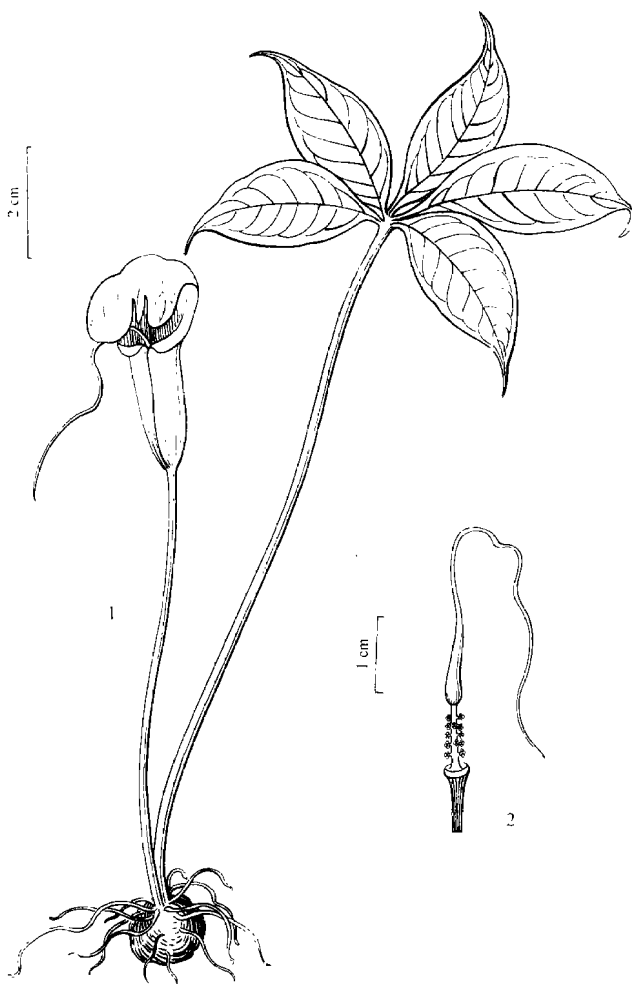


Fig. 2 *Arisaema tengtungense* H. Li var. *pentaphyllum* H. Li. var. nov.

1 flowering plant with 5 leaflets; 2 male spadix (Drawn by Wang Ling)

Paratypes. Yunnan: Gongshan

Xian, Binzhongluo Xiang, Stone Gate, West by Salween River, in thickets, alt. 1650 m. Perennial herb, leaf green, fruit red. 11 September, Gaoligong Mountains Expedition 8841 (KUN), loc. et coll. ibid. alt. 1750 m. Gaoligong Mountains Expedition 8865 (KUN), Loc. ibid. alt. 1650 m. Gaoligong Mountains Expedition 8966 (KUN); **Gongshan Xian**: Binzhongluo Xiang, Niwalong, in thicket on rock slope, alt. 1800–2000 m, tuber subglobose, leaf green, 13 September, 1997, Gaoligong Mountains Expedition 9009 (KUN); Binzhongluo, E side of Niwalong river, E slope of Gaoligong Mountains grassy slope, alt. 1800~2000, male flowers wilting, 14 September 1997, Gaoligong Mountains Expedition 9107 (KUN). **Xizang**: Chayu Xian, Delei Valley, $28^\circ 21' \text{N}$, $96^\circ 37' \text{E}$; alt. 2950–3280 m, Jun. 6, 1928, Kingdon Ward 8299 (K); loc. et coll. ibid. June 10, 1928, Kingdon Ward 8318 (K).

Distribution: SE Xizang and NW Yunnan.

Notes. The specimen Kingdon Ward 8299 was named by Jin Murata in 1987 as *Arisaema wattii* Hook. f. (left plant) and *A. asperatum* N. E. Brown, but *A. wattii* must have an erect and spotted appendix and a terminal leaflet narrowly cuneate at base; *A. asperatum* differs from our species in having obovate terminal leaflet, petiole, midrib and lateral veins spinescent beneath. There are four plants

in Kingdon Ward 8318(K), they were named by Jin Murata as *A. asperatum*, but all these smooth plants are without spines and terminal rhombiforme leaflets are not obovate. *Arisaema borneri* differs from *A. candidissimum* in having spathe dark purple with whitish longitudinal lines and the appendix is distinct stipulate and the base truncate.

2 腾冲南星五叶变种 新变种

Arisaema tengtsungense H. Li, var. *pentaphyllum* H. Li, var. nov. Sect. *Trisecta* Schott

TYPE: Type: China, Yunnan Prov.: **Tengchong** July 1963, J. S. Yang et X. N. Wang 1539 (Holotype, KUN). Fig. 2

A var. *tengtsungense* recedit foliis 5—sectis.

This plant is similar to *Arisaema tengtsungense* var. *tengtsungense* because they share all aspects such as subglobose tuber, trilobed spathe—limb and flagelliform appendix, but it can be distinguished by 5—foliolate leaf—blade.

Distribution Endemic to Gaoligong Mountains; Tengchong Xian.

3 会泽南星 高黎贡山新分布

Arisaema dahaiense H. Li in Acta Phytotax. Sin. 15(2): 107, pl. 9: 3. 1977 et in C. Y. Wu et H. Li (eds.) Flora Reip Popul. Sin. 13(2): 151, pl. 9: 3. 1979. Section *Trisecta*. Plate I: 7~9, Plate 2.

Dioecious. Rhizome ovate cylindric, 12 cm long by 8 cm thick, consists of 3 years growth, outside and inside pale yellow. The end of rhizome truncate, 6 cm in diameter, internodes with ovate offsets 5 cm long and 6 cm thick and several convex bulbils on each internode.

Leaf 1, petiole green to dark green, smooth without any spots, not verrucose, 125 cm long with a diameter of 3 cm, the basal part of 35 cm underground and whitish, lower 6 cm sheathing. Leaf trifoliate, green above, pale green below; the medial leaflet elliptical—rhombic, 46 cm by 28 cm, acute at the apex, broadly cuneate at the base. The middle vein is concave above and convex below; lateral veins 12 on each side, convex below; connective veins 1 cm remote from the margin. Lateral leaflets extremely oblique, 45 cm by 23 cm; outside basal auriculate, up to 19.5 cm wide, inside 4 to 5 cm wide.

Peduncle emerging from petiole sheath, much shorter than petiole, to 38 cm long in infructescence, lower part hiding in the ground, erect, cylindrical, 12 cm long by 5.5 cm diameter; fruit different sizes, cylindrical or obconic, 1.5 cm in diameter, while the base 5 mm in diam, top truncate, pale green in basal part, yellowish green to purple in upper part with a purple spot of 7 mm in diameter, without style and stigma inconspicuous. Ovules 4, developed seeds usually 3, irregular in form, creamish—white, subglobose, at basal placenta. Fruit in October.

Specimens examined. China, Yunnan Prov.: **Lushui Xian**, Pianma, adjacent to the road and stream, among shrubs in evergreen forest, alt. 2360 m. Perennial herb ca. 1.3 m tall, rhizome robust, fruit pale green to purple Oct. 5, 1997, Gaoligong Mountains Expedition Expedition 9986 (KUN, the rhizome is cultivated in Kunming Bot. Garden); **Lushui Xian**, Km 74 on road between the Salween and Pianma on the west side of Gaoligong Mountains, 26° 0' 2" N, 98° 39' 43" E.

Broadleaved evergreen forest. Alt. 2380m. 11 October 1998. Li Heng et G. Ruckert 10371 (KUN); **Lushui Xian**: On road side between the Salween and Pianma on the west side of Gaoligong Mountains. $25^{\circ}59'38''\text{N}$, $98^{\circ}39'7''$. Broadleaved evergreen forest. Alt. 2630m. Perennial herb ca. 1.7 m tall, growing on surface of soil in moist area on hillside in shade. 14 Oct. 1998. Li Heng et G. Ruckert 10442 (Leaf specimen in KUN); **Baoshan Shi**: Mangkuan xiang, Sanba Gou, west of Mangkuan, on the E side of Gaoligong Mountains. $25^{\circ}26'4''\text{N}$, $98^{\circ}49'32''\text{E}$. Broadleaved evergreen forest on a facing slope. Alt. 1950 m. Perennial herb, rhizome robust, leaf green. 19 October 1998. Li Heng et G. Ruckert 10666 (KUN). NE Yunana, **Huize Xian**: Daihai. Forest margins, 2600 m, type specimen (KUN, from cultivated plant in Kunming Bot. Garden).

Distribution: West Yunnan (West and East slopes of Gaoligong mountains; Lushui and Baoshan) and NE Yunnan disjuncted; Altitude 1950 ~ 2630 m. Endemic to Yunnan.

Notes 1. The rhizomes of Gaoligong Mountains Expedition 9986, Li Heng et G. Ruckert 10371 and 10442 from Lushui, of Li Heng et G. Ruckert 10666 from Baoshan are growing in Kunming Botanical Garden. May 1999 they came into flower. The inflorescence can not be distinguished from *Arisaema dahaiense* H. Li which was originally described based on two cultivated plants (male one and female one) 20 years ago. The gardener said: these plants were introduced from Huize (Dahai). We have no any collections from Dahai, but type specimens. The *Arisaema dahaiense* was recently found in West Yunnan from Gaoligong Mountains. It implies that the distribution of *A. dahaiense* in NE Yunnan may be a wrong report. 2. The specimens of this taxon from W Yunnan were collected in fruit time. In appearance it is similar to *A. dulongense* H. Li, but the infructescence of *A. dulongense* have not been seen, so that they cannot be compared. 3. In field conditions the taxon was misidentified and described as "*Arisaema gigas*" or "*Arisaema giganteum*" which was published as a non valid "nomen nudum" in *Areae Journal*, December 1998: 19—20.

4 缅甸南星 新种

Arisaema burmaense P. Boyce et H. Li, sp. nov. Sect. Pistillata Engler, TYPE: North Myanmar: Triangle; Wing Bum, above Ahbai. Alt. 2950 m. Open grassy patches, bamboo slopes or scattered openings in forest. 14, May, 1953. F. Kingdon—Ward 20841 (Holotype, BM). Fig. 3

Species nova *A. lobato* Engler proxima sed differt: 1. spathe viride vel brunnea pallide vittata; 2. synandrio stipitato thecis rimulis in unam hippocrepicam confluentibus brunnea pallide vittata; 3. folii foliolis lateralibus petiolulo instructis; a Sectionis *Trisectae* speciebus spadiceis appendice erecta, 4. 5 ~ 7 cm longa, stipite 7 mm longa suffulta basi truncata differt.

Tuber? Petiole 60 ~ 76 cm long. Leaf blade trifoliolate, leaflets subcoriaceous, petiolulate, margins sparsely dentate; terminal leaflet rhombic—elliptic, apex acute and cuspidate, base cuneate, 24×16 cm, petiolate 1 cm long; lateral leaflets obliquely ovate, base cuneate at inner side, rounded at outer side, 21×12 cm. Spathe green or brown with white stripes, 15 ~ 21 cm long, tube cylindric $5 \sim 8 \times 1.7 \sim 2.6$ cm, throat margins narrowly recurved, not auriculate; limb oblong—ovate, to base constricted, rounded at apex with an acuminate tail 2 ~ 5 cm long, 9 ~ 13 (excl. tail) $\times 6 \sim 11$ cm.

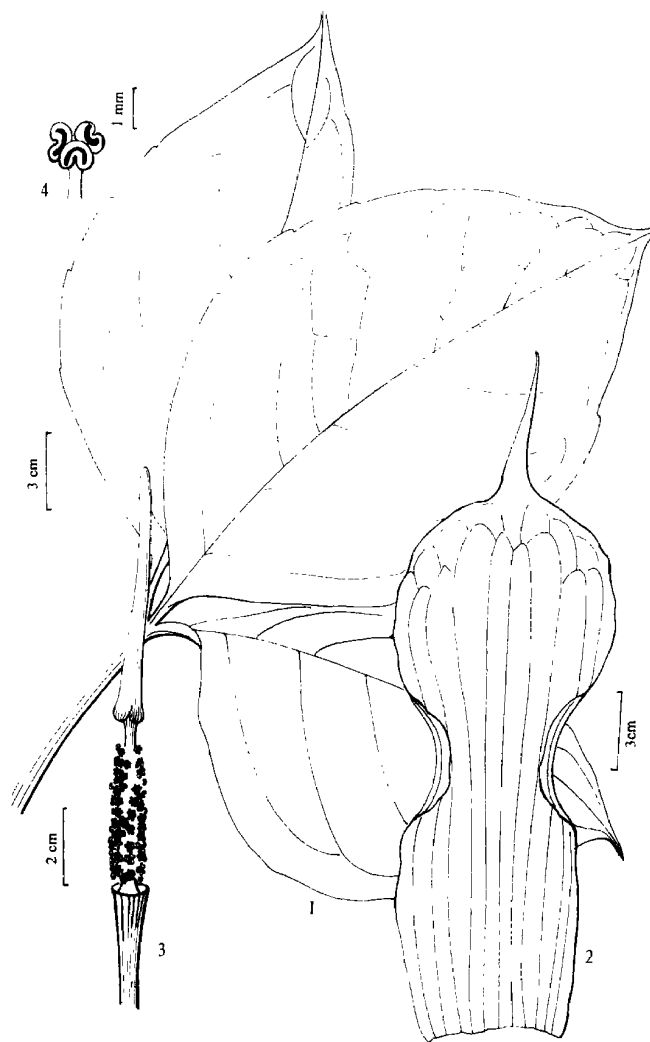


Fig. 3 *Arisaema burmaense* P. Boyce et H. Li, sp. nov.

1. Leaf; 2. Spathe; 3. Male spadix; 4. Synandria (Drawn by Wang Ling)

Spadix unisexual. Male spadix: male portion cylindrical, 4.5 by 1.2 cm, synandria lax, anthers stipitate dehiscing by horseshoe-shaped slit. Appendix cylindric, erect 4.5~7 cm long, 5~7 mm thick, apex obtuse, base truncate and stipitate, stipe 7 mm long. Flowering in May.

Distribution: North Myanmar, the west side of Gaoligong Mountains.

Notes: Type Kingdom—Ward 20841 was named by J. Murata as *A. asperatum* but it can be distinguished from latter in having smooth petiole and peduncle, larger rhombic—elliptic terminal leaflet to 23×16 cm with petiolule 1 cm long and erect cylindric spadix. Its male flower with anthers dehiscing by horseshoe-shaped slit represents the one of the characters of Section *Trisecta*, but the shorter erect cylindric appendix with truncate and stipitate base means, it is a species in Section *Pistillata*. However *Arisaema*

burmaense is a markable species between Sect. *Trisecta* and Sect. *Pistillata*.

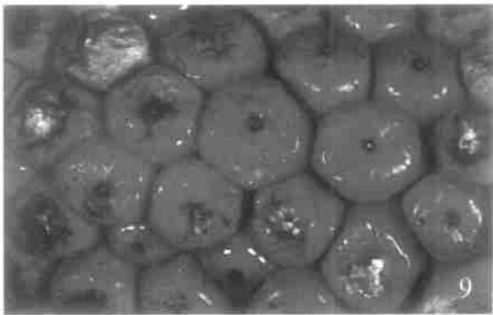
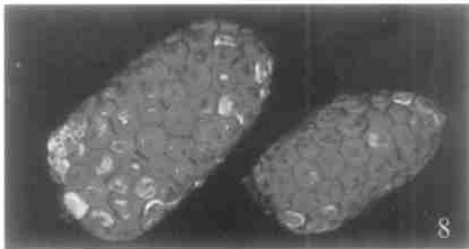
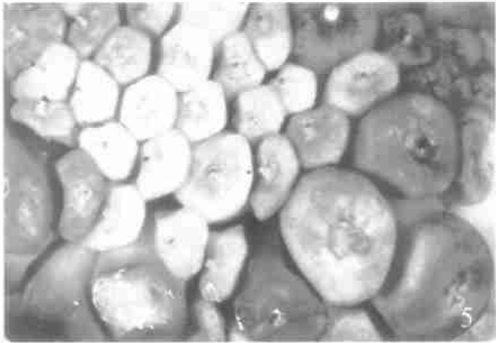
Explanation of Plates

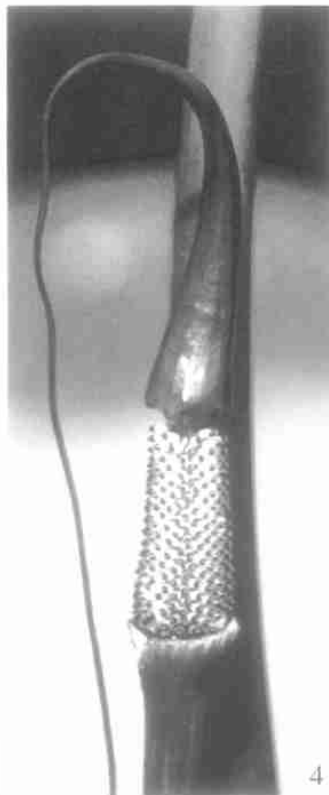
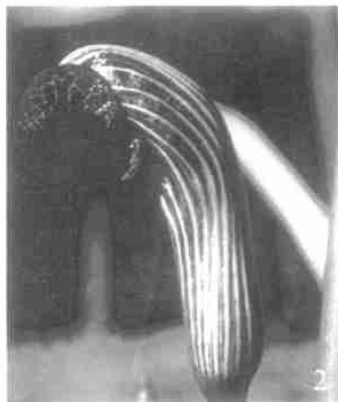
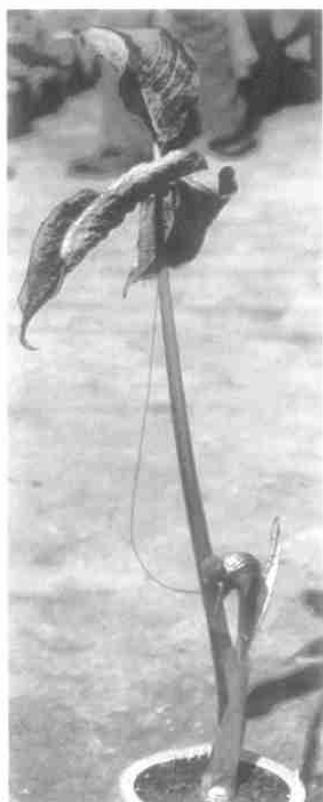
Plate I 1~6; *Arisaema bognerii* P. Boyce et H. Li: 1. flowering plant; 2. spathe; 3. spadix;

4. infructescence; 5. fruits; 6. flowering plant in Edinburgh. (1~3 photo by Zeng Xiao-lian; 4~6. by P. Thomas)

7~9; *Arisaema dahaiense* H. Li: 7. type specimen (1. rhizom; 2. inflorescence and leaf; 3. petiotules; 4. male spadix; 5. synandria; 6. female spadix; 7. gynoeceum; 8. ovary longitudinal section); 8. and 9. infructescence. (7 drawn by Xiao Rong; 8 and 9 photo by P. Thomas)

Plate II *Arisaema dahaiense* H. Li: 1. flowering plant in cultivation; 2 and 3. inflorescence; 4. female spadix; 5. rhizome; 6. rhizome with a young shoot (photo by Wang Zhong-lang)





See explanation at the end of text