
斑龙芋属 ban long yu shu

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Herbs, seasonally dormant. Underground part a depressed-globose tuber. Leaves entire, sagittate-hastate, 3-lobed or -partite to pedatisect. Inflorescence simultaneous with or preceding leaves; peduncle short. Spathe divided into a connate or strongly convolute basal part with a ± strong apical constriction and a spreading lanceolate to ovate-triangular limb. Spadix as long as spathe, with 4 zones: a proximal female zone, an intermediate sterile zone with staminodes all over or only at base, a male zone, and a sessile or stipitate appendix. Female flowers 1-loculed with 1 or 2 (or 3) orthotropous basal ovules. Proximal staminodes clavate, distal ones (when present) irregularly cristate or elongate aristate. Male flowers with 1–3 stamens opening by slits or pores; connective sometimes prolonged. Fruiting zone with spathe caducous or remaining; berries ovoid, 1(or 2)-seeded. Seeds with endosperm.

Eight species: Bhutan, Cambodia, China, India, Indonesia, Laos, Myanmar, Nepal, Thailand, Vietnam; seven species (two endemic) in China.

See the comment under *Typhonium* above.

1a. Sterile zone between male and female zones largely smooth and terete or grooved, except for proximal part carrying staminodes.
2a. Leaf and outside of spathe densely hirsute ........................................ 5. *S. hirsutum*
2b. Leaf and outside of spathe glabrous.

3a. Spathe base fully closed (margins connate), limb inside with background off-white, almost entirely hidden by numerous strongly confluent, oval, deep maroon spots; leaves always pedate .................. 7. *S. venosum*
3b. Spathe base convolute (margins overlapping), limb inside uniformly whitish green, or with purple stripes, or uniformly purple; leaves varying (often in one plant) from entire to pedate .................. 2. *S. diversifolium*

1b. Sterile zone between male and female zones fully covered with staminodes, distally gradually becoming smaller.
4a. Leaves simple, cordate, at least 10 cm ............................................... 4. *S. giganteum*
4b. Leaves pedate.

5a. Spathe base convolute ............................................................... 6. *S. hirsfieldii*
5b. Spathe base fully closed, margins connate.

6a. Proximal staminodes gradually changing upward from clavate through irregularly short and curved to irregularly cristate or strongly reduced to almost absent; petiole often with 1 or a few intercalary bulbils near base ................................................ 3. *S. gaoligongense*
6b. Intermediate staminodes absent between proximal (clavate) and distal (irregularly cristate) staminodes .......................................................... 1. *S. brevipes*


短柄斑龙芋 duan bing ban long yu


Tuber globose, 1–1.5 cm in diam., producing numerous tiny, annual bulbils. Petiole pinkish or dull purplish red, 15–30 cm × ca. 2 mm; leaf blade green adaxially, 5–9-pedatisect; lobes ± fused at base; central lobe linear-lanceolate or narrowly elliptic, 6.5–25 × 1–5 cm, margin undulate, with or without a purple midrib; outermost lobes progressively smaller. Inflorescence(s) appearing alongside developing leaves; peduncle pale green, 2–2.5 cm. Spathe outside base ocher or yellow-brown with purple spots or faint pinkish spots, inside ± cream-colored or dark pink, closed, subglobose, 1.4–3.5 × 1.5–2.5 cm; limb inside ± cream-colored with a purple zone at apex, base partly closed, partly convolute, margins sinuous, distal part arching and twisting, outside and inside as spathe base, or grayish, lanceolate, 10–15 × 1.2–2 cm. Spadix as long as spathe; female zone subcylindric, ca. 6 mm; ovary green or ± cream-colored, depressed obovoid, 2-ovuled; sterile zone 4–6 mm, with a few staminodes at base, rest grooved-ridged and set with irregular, pale purple warts; staminodes clavate, ca. 4 mm; male zone 3–5 mm; appendix pink to yellow, with or without a pinkish base, slender, filiform, 5–14 cm, 0.6–3 mm in diam. at base, apex obtuse. Fl. Jun.

Mountain grasslands; 1500–2700 m. S Xizang [Bangladesh, India (Sikkim), Nepal].


高原犁头尖 gao yuan li tou jian

*Typhonium diversifolium* Wallich ex Schott, Aroideae, 13. 1855; *Heterostalis foliolosa* Schott; *T. alpinum* C. Y. Wu & H. Li, Y. Xiao & X. L. Zeng; *T. austrotibeticum* H. Li; *T. diversifolium var. huegelianum* (Schott) Engler; *T. foliolosum* (Schott) Engler; *T. huegelianum* Schott.

Underground part a subglobose tuber, 1–1.5 cm high, 0.5–1.2 cm in diam., producing annual offsets. Petiole 10–30 cm; leaf blade simple and ovate-lanceolate, 2–22 × 1–25 cm, cuneate to hastate, 3–5-lobed or pedately 5–9-sect, lobes elliptic to linear. Inflorescence appearing just before or alongside leaves; peduncle 3–14 cm. Spathe base oblong-ovoid, 2–4 × 1–2 cm; limb outside green, sometimes flushed with purple or
purple all over, inside dark purple or greenish with dark purple veins and flushes, oblong-lanceolate, 4–13 × 2–5 cm, apex acuminate to shortly caudate. Spadix shorter than spathe, 4–12 cm; female zone cylindric, 0.5–1.5 cm × 4–7 mm; ovary: basal half white, apical half purple, ellipsoid; stigma sessile, white; sterile zone 1–3 cm, base swollen and with long staminodes, rest fusiform, with verrucate staminodal structures; proximal staminodes clavate, with only apical part distinctly and abruptly swollen, basal part filiform, whitish with purple flushes, clavate part yellow with a purple tip or purple; staminodal structures with verrucose; staminodes clavate, distally changing to aristate

Open grasslands, meadows, alpine damp open ground; [ca. 2300 m in Bhutan] 3000–4000 m. W Sichuan, S Xizang (Gyirong), NC Yunnan (Dayao) [Bhutan, Cambodia, NE and NW India, Myanmar, Nepal].


贡山斑龙芋 gong shan ban long yu


Tuber depressed globose, ca. 2 cm high, 2.5–3.5 cm in diam., producing several annual offsets. Petiole uniformly green or dark purple, to 40 cm, proximally often developing intercalary, irregular bulbils; leaf blade deeply 5–13-pedatifid; central lobe elliptic to obovate, to 12 × 5 cm; lateral lobes progressively smaller. Inflorescence appearing before leaves; peduncle largely subterranean, yellowish green with a few scattered purple spots, 4–5 cm × 3–6 mm. Spathe closed at base, outside purplish brown, inside whitish, base triangular-ovate, to 3 × 2.8 cm, tapering to constricted apex; limb strongly convolute at base, slightly arching, outside brownish purple with a few darker spots, inside pale purple, narrowly oblone, ca. 7 × 2.5 cm, apex acuminates. Spadix shorter than spathe, ca. 6 cm; female zone cylindric, ca. 4 × 5–6 mm; ovary obovoid, 1-loculed, 2-ovuled; sterile zone narrowly conic, ca. 3 cm, carrying staminodes in proximal half, these distally progressively shorter and finally disappearing, distally grooved, verrucose; staminodes clavate, distally changing to aristate and upcurved; male zone oblong, ca. 1 cm × 3 mm; male flowers purple, with 1 stamen, pores apical; appendix stipitate, clavate, ca. 1.6 cm, apex narrowly fusiform-conic, rugose.

- Broad-leaved evergreen forests, shaded ravines; ca. 2200 m. W Yunnan (Gaoligong Shan: Baoshan, Longling, Tengchong).

In all respects, this species is similar to Typhonium horsfieldii (Sauromatum horsfieldii) except for the closed spathe base.


独角莲 du jiao lian

Typhonium giganteum Engler, Bot. Jahrb. Syst. 4: 66. 1883; T. giganteum var. giraldii Baroni; T. giraldii (Baroni) Engler; T. stoliczkae Engler.

Underground part a rhizome, 5–8 × 2–5 cm, producing numerous annual fusiform offsets. Petiole green, with or without numerous purple spots, 20–60 cm; leaf blade ovate, cordate to hastate, 15–45 × 9–25 cm, margin entire, apex acuminate. Inflorescence preceding or simultaneous with leaves; peduncle 13–17 cm. Spathe convolute at base, erect, oblong-ovate, 4–8 cm; limb recurved or recurved, ovate, to 15 cm, margin sinuous, apex acuminate. Spadix sessile or nearly so, slightly shorter than spathe, to 14 cm; female zone cylindric, 1–1.5 cm × ca. 8 mm; ovary: basal part whitish, apical part purple, cylindric, apex truncate, 2-ovuled; stigma sessile, gray, disciform; sterile zone 2–3 cm, covered by distant staminodes of different types; proximal staminodes with clavate apical part, middle ones with subulate apical part, distal ones with apical part reduced to a stump; male zone ca. 2 cm × 8 mm; male flowers sessile; anthers ± cream-colored, with pinkish flushes, ovoid, opening by apical pore; appendix sessile, cylindric, to 6 cm, ca. 5 mm in diam. at base, base slightly attenuate, apex obtuse. Fruiting zone elongate, naked, ca. 5 × 3 cm; berries crowded, violet-purple, keeled, apex acute. Fl. Jul.

- Grasslands, field sides, stream sides, grassy slopes; below 1500 m. Anhui, Gansu, Hebei, Henan, Jilin, Liaoning, Shandong, Shanxi, Sichuan, S Xizang; cultivated in Guangdong, Guangxi, Jilin, and Yunnan as a medicinal plant.


毛犁头尖 mao li tou jian


Herbs, cormous, with single-celled hairs ca. 0.5 mm. Underground part a depressed-globose tuber, 1.5–2.5 cm in diam., producing numerous annual, subglobose, angulate offsets. Petiole 20–25 cm; leaf blade pedately 5–7-foliolate; leaflets almost sessile; central leaflet elliptic, 7–31 × 2.5–10 cm, apex acuminate; lateral leaflets elliptic, oblique at base, outermost one ca. 2/3 length of central one. Inflorescence appearing alongside first developing leaf; peduncle very short, 1–1.5 cm. Spathe hirsute outside, smooth inside; basal part convolute but lower ca. 1 cm with fused margin, ca. 4 × 2 cm, slightly constricted at apex; limb laterally incurred, lanceolate-ovate, 8–13 × 5–8 cm. Spadix shorter than spathe; female zone broadly cylindric-conic, to 6.5 × 10 mm; ovary subcylindric, 1-loculed, with 2 or 3 ovules; stigma white or ± cream-colored, disciform; sterile zone to 3.5 cm, proximal 0.5–1 cm densely covered with staminodes, rest naked, grooved; proximal staminodes pale pinkish purple or dark brownish purple, clavate, to 7 mm, apex obtuse; male zone 1–1.7 × ca. 0.8 cm; appendix sessile or sub-sessile, brown or grayish brown, narrowly conic, to 10.5 cm, to 6 mm in diam. at base, base truncate. Infrequence naked, globose, to 4 cm in diam. Berries with distinct angulate distal part, ca. 1 × 0.5 cm; style remnant sharply acute, ca. 1 mm. Fl. May, fr. Jul.

Secondary evergreen forests, tea plantations; 500–1100 m. S Yunnan [N Thailand].

西南犁头尖 xi nan li tou jian

*Arisaema submonocarpum* Gagnepain; *Typhonium calicola* C. Y. Hu ex H. Li; *Syzygium mexicanum* Bern. B., *T. horridum* (Miquel) P. Burkill; *T. jemmense* Miquel; *T. kochii* H. L. Li ex H. Peng & S. Z. He; *T. kunmingense var. alatum* H. L. Li ex H. Peng & S. Z. He; *T. kunmingense var. cerebriforme* H. L. Li ex H. Peng & S. Z. He; *T. larsenii* S. Y. Hu; *T. omeiense* H. L. Li; *T. pedatum* Schott.

Underground part a subglobose to depressed-globose tuber, producing annual offsets. Petiole variable in color, uniform, striped, or spotted, ranging from green to purple, 35–60 cm; leaf blade abaxially pale to gray-green, sometimes with scattered reddish purple spots, adaxially mid- to dark rich velvety green, with or without reddish main vein or splashed with golden spots along main vein, pedatisect, 7–13-lobed; lobes elliptic to lanceolate, margin flat or sinuous, entire or occasionally crenate, apex acute. Peduncle 4.5–20 cm. Spathe convolute at base, outside pale or mid-green or dull mid- to dark brown, with or without a few reddish or blackish brown spots or stripes, inside white or whitish green, base ovoid, occasionally with 1 or a few shallow keels, apex ± constricted; limb slightly arching, outside pale or mid-green, dirty greenish, or dirty pale brownish, with or without a few scattered blackish purple spots, ovate to oblong-ovate, cymbiform, 6–17 × 4–6 cm, often keeled at midrib, apex acuminate to caudate. Spadix shorter than spathe; female zone cylindrical or slightly conic, 2.5–10 × 4–8 mm; ovary ovoid to oblong-ovoid, 1-loculed, 1- or 2-ovuled; stigma very small, in a depression of apex of ovary or ringlike surrounding depression; sterile zone narrowly fusiform-conic, 2–6 cm, 3–7 mm in diam. at base, entirely covered by staminodes; proximal staminodes with rhombic, flat base and aristate to clavate process, latter strongly bent upward, white, clavate part yellowish white or occasionally dark red; subbasal staminodes exclusively aristate, strongly pointing upward parallel to spadix axis, ± cream-colored; distal staminodes fused into vertical ridges with numerous irregular short processes, often arranged in ridges, white; male zone cylindrical, 6–10 × 2–7 mm; male flowers white, distal ones often sterile and subclavate to spatulate or occasionally aristate; appendix subsessile or more distinctly stipitate, cream-colored or more rarely grayish brown with purple spots, cylindric or rarely fusiform, 1.5–4.5 cm × 2–6 mm, slightly tapering to obtuse apex, smooth or strongly corrugate, base attenuate to stipe; stipe sometimes ridged-verrucate. Fruiting zone with spathe base remaining; berries pale green when mature, obovoid to ellipsoid, corrugate and shallowly grooved.

Evergreen, bamboo, or secondary forests, grasslands, between rocks; 100–3100 m. Guangxi, Guizhou, Sichuan, NE, SE, and W Yunnan [Cambodia, Indonesia, Laos, Myanmar, Thailand, Vietnam].


斑龙芋 ban long yu

*Arum venosum* Aiton, Hortus Kew. 3: 315. 1789; *Arisaema venosum* (Aiton) Blume; *A. guttatum* Walllich (1831), not Salisbury (1796); *Desmestia venosa* (Aiton) Rafinesque; *Jainenostia fernandopaona* Guina & Gómez Moreno; *Sauromatum abyssinicum* Schott; *S. angolense* N. E. Brown; *S. guttatum* Schott; *S. guttatum* var. *pulchrum* (Miquel) Engler; *S. guttatum* var. *simlense* (Schott) Engler; *S. guttatum* var. *venosum* (Aiton) Engler; *S. nubicum* Schott; *S. nubicum* var. *angolense* (N. E. Brown) Engler; *S. pulchrum* Miquel; *S. punctatum* K. Koch; *S. simlense* Schott; *Typhonium venosum* (Aiton) Bettmerscheid & P. C. Boyce.

Tuber depressed globose, to ca. 9 cm high and ca. 15 cm in diam., producing numerous annual offsets, these globose or depressed globose. Petiole yellowish green, with rounded purplish brown spots, 20–100 cm; leaf blade 9–11-pedatifid; central lobe oblong or oblong-elliptic to oblanceolate, 10–40 × 4–20 cm, acuminate; lateral leaflets elliptic, gradually smaller toward distal end of rachis. Inflorescence appearing before leaves; peduncle greenish white, with or without a few brown spots, 3–7 cm, sometimes elongating during fruiting. Spathe base outside dull dark violet, inside rich reddish purple, ellipsoid, 5–10 × 2–4 cm; limbo convolute at base, ca. 10 cm, distally outside as base but slightly darker and with a few violet longitudinal stripes, inside background color yellowish, almost entirely covered by numerous orbicular to elliptic, confluent dark purple spots, lanceolate, 30–70 × 8–10 cm, apex acuminate. Spadix slightly shorter than or as long as spathe; female zone subcylindric, 2–2.5 × 1–1.5 cm; ovary violet or pale purple, ovobovoid, 2–4-ovuled; sterile zone 8–8.5 cm, proximal 2–2.5 cm sparsely covered with long staminodes, distally grooved and with a few distant conic projections, proximally whitish, distally pale brownish violet; staminodes yellow, clavate, 4–10 mm; male zone 1–2 × 1–1.5 cm; stamens yellow; appendix at first erect, finally recurved, pale brown to pale violet or lead-colored, terete, to 30 cm, ca. 1 cm in diam. at base, obtuse. Fruiting zone globose or subcylindric, naked, to ca. 9 cm in diam.; berries crowded, bright purple, cylindric, 5–10 × 2–4 mm, angulate, apex truncate. Fl. Apr–May, fr. Jul.

Primary evergreen forests, meadows by rivers, secondary thickets, path sides; 1300–2000 m. Xizang, Yunnan [Bhutan, NE and NW India, Myanmar, Nepal; Africa].