

40. BOTHRIOSPERMUM Bunge, Enum. Pl. Chin. Bor. 47. 1833.

斑种草属 ban zhong cao shu

Herbs annual or biennial, hispid and appressed pubescent, hairs discoid at base. Stems erect or prostrate. Leaves alternate, ovate to oblanceolate. Cymes bracteate. Flowers pedicellate. Calyx 5-parted; lobes lanceolate, not enlarged or slightly enlarged in fruit. Corolla rotate, blue or white; tube short; throat appendages 5, scalelike; lobes 5, overlapping in bud, apex obtuse. Filaments extremely short; anthers 5, inserted in corolla tube, included; anthers ovate, obtuse. Ovary 4-parted, valves free, each containing 1 anatropous ovule. Style short, not surpassing valves; stigma capitate. Gynobase flat. Nutlets 4, with cupular emergence adaxially, rounded abaxially, tuberculate, with an oblong, elliptic, or orbicular ringlike aperture; margin of aperture thickened, prominent, entire or sometimes finely dentate; attachment scar basal. Seeds usually not curved.

About five species: Afghanistan, China, India, Indonesia (Java, naturalized), Japan, Kazakhstan, Korea, Kyrgyzstan, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan, Vietnam; all five in China.

- 1a. Nutlets with transverse ringlike aperture on adaxial surface; fruiting calyx strongly accrescent, ca. 8 mm in diam. 1. *B. chinense*
 1b. Nutlets with longitudinal ringlike aperture on adaxial surface; fruiting calyx slightly accrescent, to 5(–6) mm in diam.
 2a. Bracts linear to linear-lanceolate; adaxial aperture of nutlets orbicular 2. *B. kusnezowii*
 2b. Bracts ovate to oblong; adaxial aperture of nutlets elliptic.
 3a. Stems appressed pubescent 5. *B. zeylanicum*
 3b. Stems spreading hispid and appressed pubescent.
 4a. Cymes 3–10 cm; bracts ovate; appendages of corolla throat ca. 0.2 mm 3. *B. hispidissimum*
 4b. Cymes 10–20 cm; bracts oblong to ovate-lanceolate; appendages of corolla throat ca. 0.8 mm 4. *B. secundum*

1. *Bothriospermum chinense* Bunge, Enum. Pl. Chin. Bor. 47. 1833.

斑种草 ban zhong cao

Bothriospermum bicarunculatum Fischer & C. A. Meyer.

Herbs annual, rarely biennial, 20–30 cm tall, densely spreading or appressed hispid. Stems several, cespitose, erect or ascending, branched above or simple. Basal and lower stem leaves long petiolate, spatulate or oblanceolate, usually 3–6 × 1–1.5 cm, hirsute or appressed pubescent, hairs discoid at base, base attenuate, margin crisped or entire, apex obtuse; middle and upper stem leaves sessile, oblong to narrowly oblong, 1.5–2.5 cm × 5–10 mm, base cuneate to broadly cuneate, apex acute. Inflorescences 5–15 cm; bracts ovate to narrowly ovate. Pedicel 2–3 mm, elongated in fruit. Calyx 2.5–4 mm, spreading hispid and short appressed, pubescent outside; lobes lanceolate, fruiting calyx accrescent, ca. 8 mm wide. Corolla pale blue, 3.5–4 mm; throat appendages trapeziform, slightly 2-cleft at apex; limb 4–5 mm wide; lobes orbicular, ca. 1 mm wide. Stamens inserted ca. 1 mm above base; anthers ovate to oblong, ca. 0.7 mm. Style ca. 1/2 as long as calyx. Nutlets reniform, ca. 2.5 mm, wrinkled, densely tuberculate, aperture transversely elliptic. Fl. Apr–Jun.

• Hillside meadows, roadsides; 100–1600 m. Gansu, Hebei, Henan, Liaoning, Shaanxi, Shandong, Shanxi.

2. *Bothriospermum kusnezowii* Bunge, Delect. Seminum Collect. Anni 7. 1840.

狭苞斑种草 xia bao ban zhong cao

Bothriospermum decumbens Kitagawa.

Herbs annual, 15–40 cm tall. Stems several, cespitose, erect or prostrate, much branched from below, spreading hispid and short appressed pubescent. Basal leaves rosulate, oblanceolate to spatulate, 4–7 cm × 5–10 mm, sparsely hispid and appressed pubescent, base attenuate, margin undulate, finely dentate, apex obtuse; stem leaves sessile, oblong to linear-oblanceolate, 2–5 cm × 5–10 mm. Inflorescences 5–20 cm; bracts linear to linear-lanceolate, 15–30 × 2–5 mm, densely hispid and appressed pubescent. Pedicel 1–2.5 mm, elongated in fruit. Calyx 2–3 mm, to 5 mm in fruit, densely spreading hispid and minutely hispid outside, appressed pubescent above middle inside; lobes linear-lanceolate to ovate-lanceolate, apex acute. Corolla blue or purple, campanulate, 3.5–4 mm; throat appendages trapeziform, ca. 0.7 mm, 2-cleft at apex; limb ca. 5 mm wide; lobes orbicular, with conspicuous reticulate veins. Filaments inserted ca. 1 mm above base in corolla tube; anthers elliptic to ovoid, ca. 0.7 mm. Style ca. 1/2 as long as calyx; stigma capitate. Nutlets ellipsoid, 2–2.5 mm, densely tuberculate, aperture orbicular, margin thickened, entire. Fl. and fr. May–Jul.

• Roadsides, dry fields, forest margins in valleys; 800–2500 m. Gansu, Hebei, Heilongjiang, Jilin, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi.

3. *Bothriospermum hispidissimum* Handel-Mazzetti, Anz. Akad. Wiss. Wien. Math.-Nat. Kl. 57: 240. 1920.

云南斑种草 yun nan ban zhong cao

Herbs biennial, 30–40 cm tall. Stems several, cespitose, erect or ascending, branched, spreading hispid and appressed pubescent. Basal leaves forming a rosette; leaf blade 5–6 cm × 7–12 mm, abaxially densely strigose, adaxially scabrous, densely hirsute and appressed pubescent, hairs discoid at base,

base attenuate, apex obtuse or acute; lower stem leaves sessile, oblanceolate, base cuneate, apex obtuse; upper stem leaves sessile, oblong or oblong-lanceolate, 1.5–3 cm × 5–10 mm, apex acute, broadly cuneate or rounded. Inflorescences terminal and lateral, 3–10 cm; bracts ovate, 5–8 × 3–5 mm. Pedicel very short, densely spreading hispid. Calyx 1.5–2 mm, slightly enlarged after anthesis, densely yellow hispid and strigose outside, densely appressed pubescent inside; lobes lanceolate to ovate-lanceolate. Corolla blue or purple, ca. 3 mm; throat appendages trapeziform, ca. 0.2 mm, apex retuse; limb ca. 4 mm wide; lobes orbicular, ca. 1 mm wide. Filaments inserted ca. 0.5 mm above base of corolla tube; anthers ovoid. Style terete, less than 1/2 as long as calyx; stigma capitate. Nutlets ca. 1 mm, densely granulose, aperture longitudinally elliptic, margin irregular, finely dentate.

- Roadsides, forests; 1600–1900 m. SW Sichuan, Yunnan.

4. *Bothriospermum secundum* Maximowicz, Mém. Acad. Imp. Sci. Saint Pétersbourg 9: 202. 1859.

多苞斑种草 duo bao ban zhong cao

Herbs annual or biennial, 25–40 cm tall, with straight roots. Stems single or several, cespitose, branched from base, spreading hispid and appressed pubescent; branches usually slender. Basal leaves petiolate, obovate-oblong, 2–5 cm, base attenuate, apex obtuse; stem leaves sessile, oblong to ovate-lanceolate, 2–4 cm × 5–10 mm, minutely hispid, hairs discoid at base. Inflorescences terminal and axillary, 10–20 cm, flowers and bracts individually secund; bracts oblong to ovate-lanceolate, 0.5–1.5 cm × 3–5 mm, hispid, short appressed pubescent. Pedicel pendulous, 2–3 mm, scarcely elongated in fruit. Calyx 2.5–3 mm, densely hispid outside; lobes lanceolate. Corolla blue to pale blue, 3–4 mm; throat appendages trapeziform, ca. 0.8 mm, retuse at apex; limb 4–5 mm wide; lobes orbicular. Filaments inserted ca. 1 mm above base; anthers oblong, ca. as long as appendages. Style terete, ca. 1/3 as long as calyx. Nutlets ellipsoid-ovoid, ca. 2 mm, densely tuberculate, aperture longitudinally elliptic. Fl. May–Jul.

- Hillsides, roadsides, riverbeds, forest margins, thickets, shaded moist places; 300–2100 m. Gansu, Hebei, Heilongjiang, Jiangsu, Jilin, Liaoning, Shaanxi, Shandong, Shanxi, Yunnan.

5. *Bothriospermum zeylanicum* (J. Jacquin) Druce, Bot. Exch. Cl. Brit. Isles 4: 610. 1917.

柔弱斑种草 rou ruo ban zhong cao

Anchusa zeylanica J. Jacquin, Ecl. Pl. Rar. 1: 47, t. 29. 1812; *A. tenellum* Hornemann; *Bothriospermum asperugoides* Siebold & Zuccarini; *B. tenellum* (Hornemann) Fischer & C. A. Meyer; *B. tenellum* var. *asperugoides* (Siebold & Zuccarini) Maximowicz.

Herbs annual, 15–30 cm tall. Stems slender, crowded, erect or prostrate, much branched, appressed hispid. Leaf blade elliptic to narrowly elliptic, 1–2.5 cm × 5–10 mm, sparsely short appressed bristly or strigose, base broadly cuneate, apex obtuse, mucronulate. Racemes numerous, lax after anthesis; lower bracts few, lanceolate, 1.5–5 mm, apex acute; upper bracts very small. Pedicel 1–2 mm, not elongated or somewhat elongated in fruit. Calyx 1–1.5 mm, to 3 mm in fruit, with short ascending white bristles. Corolla blue or pale blue, 1.5–1.8 mm, base ca. 1 mm wide, slightly longer than

calyx; throat appendages ca. 0.2 mm; limb 2.5–3 mm wide; lobes orbicular, ca. 1 mm. Style terete, ca. 0.5 mm. Nutlets gray, oval-reniform, 1–1.2 mm, aperture longitudinally elliptic. Fl. and fr. Feb–Oct.

Grain fields, hillside meadows, river banks, shaded moist areas. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Heilongjiang, Hunan, Jiangxi, Jilin, Liaoning, Nei Mongol, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Afghanistan, India, Indonesia (Java, naturalized), Japan, Kazakhstan, Korea, Kyrgyzstan, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan, Vietnam].

