

## 11. MAHARANGA A. de Candolle, Prodr. 10: 71. 1846.

胀萼紫草属 zhang e zi cao shu

Herbs perennial or biennial, perhaps sometimes annual. Cymes terminal on main stem and sometimes on leafy branches, not clearly scorpioid, forming ± glomerate clusters wider than long, becoming ± corymbose or loosely racemose in fruit, bracteate. Calyx parted to middle or slightly below; lobes 5, narrowly triangular or cuneate. Corolla blue, purplish, yellow, or white, ovoid-ellipsoid or obovoid, contracted at both ends, abruptly expanding from a short tube into a relatively large inflated throat, with inflated ribs below lobes and deep furrows between them; throat unappendaged; lobes loosely recurved above middle; nectary ringlike, ± minutely villous. Anthers coherent at base, affixed below middle; filaments affixed at base of throat. Style included or slightly exerted. Gynobase broadly pyramidal. Nutlets slightly incurved, ± ovoid, ca. as long as wide, adaxially with a coarse prominent keel; attachment scar basal.

About nine species: Bhutan, India, Nepal, Thailand; five species in China.

- 1a. Corolla 1.4–1.6 cm.
  - 2a. Stem leaves crowded, rounded at base; corolla tube with inflated, pubescent folds ..... 1. *M. microstoma*
  - 2b. Stem leaves widely spaced, attenuate at base; corolla tube glabrous inside except for pilose glands ..... 2. *M. lycopsioides*
- 1b. Corolla 0.9–1.1 cm.
  - 3a. Corolla dirty red, urceolate ..... 3. *M. emodi*
  - 3b. Corolla yellow or purple, tubular.
    - 4a. Stem leaves oblong or oblong-lanceolate, 2–5 × 0.6–1.3 cm; filaments 1.5–2.5 mm ..... 4. *M. bicolor*
    - 4b. Stem leaves broadly lanceolate, 3–7 × 1.5–2.5 cm; filaments 4–5 mm ..... 5. *M. dumetorum*

**1. *Maharanga microstoma*** (I. M. Johnston) I. M. Johnston, J. Arnold Arbor. 35: 81. 1954.

镇康胀萼紫草 zhen kang zhang e zi cao

*Onosma microstoma* I. M. Johnston, J. Arnold Arbor. 32: 360. 1951.

Herbs perennial, 30–50 cm tall, with stout roots. Stems several, cespitose, erect or ascending, unbranched, densely yellow hispid, short strigose. Basal leaves linear-lanceolate, 4–10 cm × 3–7 cm, abaxially densely strigose and densely hispid on midvein and margin, adaxially hispid and strigose, gradually withered at anthesis; stem leaves crowded, sessile, lanceolate, 3–6 × 1–1.5 cm, base rounded, apex acuminate. Inflorescences terminal, subcapitate, 3–4 cm wide at anthesis, many flowered. Pedicel slender, 2–8 mm, densely yellow hispid. Calyx cupular, 6–8 mm, yellow hispid and short strigose outside, densely white villous inside, parted to middle or slightly below; lobes narrowly triangular, ca. 5 mm. Corolla blue-purple, 1.1–1.6 cm, base 1.5–2 mm wide, gradually expanded upward, widest above middle, 7–9 mm wide; throat constricted, 3–4 mm wide, densely short strigose, 5-sulcate below middle; folds inflated, 4–6 mm, pubescent; nectary 1–1.5 mm, pubescent. Filaments subulate, 4–4.5 mm, pubescent at base, inserted 5–6 mm above base of corolla tube; base of anthers united, 5–5.5 mm, included, sterile apex ca. 1 mm. Style 1.6–1.7 cm, glabrous, exerted. Fl. Aug.

• Open rocky slopes; ca. 3000 m. SW Yunnan.

**2. *Maharanga lycopsioides*** (C. E. C. Fischer) I. M. Johnston, J. Arnold Arbor. 35: 81. 1954.

宽胀萼紫草 kuan zhang e zi cao

*Onosma lycopsioides* C. E. C. Fischer, Bull. Misc. Inform. Kew 1940: 39. 1940.

Herbs perennial, ca. 30 cm tall, with stout straight roots.

Stems several, cespitose, erect or ascending, densely hispid, short strigose. Basal leaves petiolate, oblanceolate, 10–15 × 1–1.5 cm, densely hispid and short strigose, base attenuate, apex acuminate; stem leaves widely spaced, lanceolate or broadly lanceolate, 4–9 × 1–2 cm, sparsely white hispid, base attenuate. Inflorescences terminal, in panicle, 2–4 cm wide at anthesis, 9–11 cm in fruit; bracts ovate-lanceolate, 7–10 × 2–3 mm. Pedicel 3–6 mm, elongated in fruit, densely hispid and strigose. Calyx 6–7 mm, parted to 1/3 from base; lobes narrowly triangular or ovate-lanceolate, 4–5 mm, hispid and short strigose outside, densely antrorse villous inside. Corolla blue or pale blue-purple, tubular, 1.4–1.5 cm, ca. 5 mm wide at middle; throat constricted, 3–4 mm wide, densely pubescent outside, glabrous inside except for pilose glands; nectary ca. 1 mm, glabrous or sparsely pubescent; lobes triangular, ca. 1 mm. Filaments ca. 5 mm, inserted ca. 5 mm above base of corolla tube; base of anthers united, ca. 5 mm, included, sterile apex ca. 1 mm. Style ca. 1.5 cm, glabrous. Nutlets ovoid, ca. 2 mm, not shiny. Fl. and fr. Apr–May.

Moist thickets, open hillsides; 1600–3000 m. Yunnan (Jinghong Xian) [India, Thailand].

**3. *Maharanga emodi*** (Wallich) A. de Candolle, Prodr. 10: 71. 1846.

污花胀萼紫草 wu hua zhang e zi cao

*Onosma emodi* Wallich in Roxburgh, Fl. Ind. 2: 11. 1824.

Herbs perennial, 30–40 cm tall, with straight roots. Stems several, cespitose, prostrate or ascending, not branched, hispid, short strigose. Leaves sessile, linear-lanceolate or oblanceolate, 5–10 × 0.6–1.7 cm, hispid and short strigose, base rounded or cuneate, apex acuminate. Inflorescences terminal, subcapitate, 2–4 cm wide at anthesis; bracts lanceolate, 5–10 × 1–2 mm, densely hispid and pubescent. Pedicel slender, 4–10 mm, to 1.5 cm in fruit, densely hispid and strigose. Calyx 7–9 mm, parted to 1/3 from base; lobes

lanceolate-triangular, densely hispid and short strigose outside, densely villous inside. Corolla dirty red, urceolate, 0.9–1.1 cm, base 2–3 mm wide, widest at middle, 6.5–8 mm wide; throat 3–4 mm wide; nectary ringlike, ca. 1 mm, membranous, pubescent; lobes of limb reflexed, triangular, ca. 1 mm, densely strigose outside, 5-sulcate below middle, folds semielliptic, ca. 2 mm, pubescent. Filaments ca. 1.5 cm, inserted 2–2.5 mm above base of corolla tube; anthers united at base, 4.5–5 mm, included. Style ca. 1 cm, glabrous. Nutlets 2–2.5 mm, tuberculate, wrinkled. Fl. Jun-Jul.

Moist places by streams; 1600–3000 m. Xizang [Bhutan, NE India, Nepal].

*Maharanga microstoma* resembles *M. emodi* but differs by having a blue-purple, oblong-obovoid corolla.

**4. *Maharanga bicolor*** (Wallich ex G. Don) A. de Candolle, Prodr. 10: 71. 1846.

二色胀萼紫草 er se zhang e zi cao

*Onosma bicolor* Wallich ex G. Don, Gen. Hist. 4: 317. 1837.

Herbs perennial or biennial, green, 20–35 cm tall, hispid, short strigose. Stems single or several, caespitose, erect or ascending, not branched, slender. Basal leaves linear-lanceolate or oblanceolate, 5–12 × 0.5–1.5 cm, hispid and short strigose, base attenuate, apex obtuse or acute; stem leaves sessile, oblong or oblong-lanceolate, 2–5 × 0.6–1.3 cm. Inflorescences terminal, subcapitate, 1.5–2.5 cm wide at anthesis; bracts lanceolate, 3–5 mm, densely hispid, short strigose. Pedicel 2–4 mm, to 8 mm in fruit, densely hispid and strigose. Calyx 5–6 mm, densely hispid and short strigose outside, densely villous inside; lobes triangular-lanceolate. Corolla blue apically, orange basally, tubular, 8–10 mm; throat 3–4 mm wide; nectary ringlike, 1.5–2 mm, membranous, sparsely pubescent; lobes reflexed, rarely straight, triangular, ca. 0.5 mm, with sparsely villous folds. Filaments 1.5–2.5 mm, inserted 4–5 mm above base of corolla tube; anthers united at base, 3.5–4 mm, included. Nutlets brown, ca. 3 mm, densely tuberculate and papillate. Fl. and fr. Jul.  $2n = 14$ .

Hillside meadows, valleys, forest margins; 2300–3700 m. SW Xizang (Gyirong Xian) [Bhutan, NE India, Nepal].

**5. *Maharanga dumetorum*** (I. M. Johnston) I. M. Johnston, J. Arnold Arbor. 35: 81. 1954.

丛林胀萼紫草 cong lin zhang e zi cao

*Onosma dumetorum* I. M. Johnston, J. Arnold Arbor. 32: 361. 1951.

Herbs biennial, gray, 30–60 cm tall, densely white hispid, strigose. Stems single or several caespitose, erect or ascending, not branched. Basal leaves oblanceolate, 4–6 cm × 3–5 mm, densely hispid and short strigose, base attenuate, apex obtuse or acute; stem leaves broadly lanceolate, 3–7 × 1.5–2.5 cm. Inflorescences terminal, branched, 2.5–4 cm wide at anthesis; bracts lanceolate, 5–10 × 1–4 mm, hispid, strigose. Pedicel 2–5 mm, densely hispid, strigose. Flowers crowded. Calyx 6–7 mm, parted to slightly below middle, hispid and short strigose outside, densely villous inside; lobes triangular-lanceolate. Corolla yellow, tubular, 1–1.2 cm, 3–4

mm wide at middle, densely short strigose outside; nectary ringlike, ca. 1.5 mm, membranous, irregularly lobed, base white pubescent; lobes usually recurved, triangular, ca. 0.5 mm, margin revolute. Filaments decurrent, 4–5 mm, decurrent part and nearby part of corolla tube pubescent, inserted 2.5–3 mm above base of corolla tube; anthers 3.5–4 mm, included, united at base, sterile apex ca. 1 mm. Nutlets tuberculate, papillate. Fl. Jul.

- Thickets, forest margins; ca. 2400 m. SW Yunnan.

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