

3. SCABIOSA Linnaeus, Sp. Pl. 1: 98. 1753.

蓝盆花属 lan pen hua shu

Asterocephalus Zinn.

Herbs, biennial or perennial, sometimes subshrubs due to lignification at base, rarely annual. Leaves opposite; cauline leaves amplexicaul; leaf blade pinnatipartite or pinnatisect, rarely entire. Capitula terminal, oblate-globose, ovoid, or ovoid-conical, long pedunculate; involucre bracts leaflike, in 1 or 2 series; receptacles conical to semiglobose, sometimes columnar; bracts linear-lanceolate, 1-veined, back often carinate; involucre (epicalyx) 1, broadly funnelform or angular-columnar, 8-ribbed in fruit, furrowed in entire length, or furrowed only above and rounded at base, often fissured into 2–8 pits apically, top becoming a membranous, campanulate or rotate crown, 16–30-veined, margin dentate. Calyx stalked, disklike, 5-segmented into radial setae. Corolla usually dimorphic, tubular, blue, purple, purple-red, yellow, or white, 4- or 5-lobed; that of marginal ray flowers usually larger, 2-lipped; upper lip usually 2-lobed, shorter; lower lip 3-lobed, elongated and raylike; that of central flowers usually tubular; lobes subequal in length. Stamens 4, exserted. Ovary enveloped in involucre; style slender; stigma peltate or capitate. Achenes enveloped in involucre, crowned with persistent setose calyx. Seeds with a large, straight embryo and scanty endosperm.

About 100 species: S and W Africa, Asia, Europe, mainly in the Mediterranean; six species (one endemic) in China.

- 1a. Annuals; capitula ca. 5 mm in diam. at anthesis; calyx setae up to 1 cm 3. *S. olivieri*
- 1b. Perennials; capitula over 30 mm in diam. at anthesis; calyx setae shorter.
 - 2a. Involucre subcylindrical, not angular below, furrowed or pitted above.
 - 3a. Basal leaf blades lanceolate or elliptic, entire 1. *S. alpestris*
 - 3b. Basal leaf blades pinnatifid; leaf segments 1.5–3 mm wide 2. *S. austroaltaica*
 - 2b. Involucre 8-ribbed, or with 4 obvious and 4 obscure ribs.
 - 4a. Corolla yellow; involucre obviously 8-ribbed 4. *S. ochroleuca*
 - 4b. Corolla blue or purple; involucre 8-ribbed, but only 4 ribs marked, while others obscure.
 - 5a. Leaves pinnatifid to pinnatisect; segments linear or lanceolate 5. *S. comosa*
 - 5b. Leaves linear-lanceolate, margins serrate or lacerate 6. *S. lacerifolia*

1. *Scabiosa alpestris* Karelin & Kirilov, Bull. Soc. Imp. Naturalistes Moscou 15: 536. 1842.

高山蓝盆花 gao shan lan pen hua

Trochocephalus alpestris (Karelin & Kirilov) A. Löve & D. Löve.

Herbs, perennial. Caudexes lignified, 2–5-branched, outside brown-black. Stems 20–50 cm tall, nodes 2–4, usually pubescent, occasionally glabrous. Basal leaves and first pair of lower cauline leaves petiolate; petioles 5–7 cm; leaf blade lanceolate, 5–8 × 0.5–1.1 cm, glabrous or sparsely puberulent, base attenuate into petiole, margin usually entire, ciliate, hairs white, apex acuminate. Cauline leaves in 1–3 pairs, second and third pairs pinnatisect; lateral segments linear-lanceolate; terminal lobe larger, lanceolate, 4–7 × 0.6–0.8 cm; all segments pubescent below, margins ciliate. Peduncles ca. 10 cm; capitula 3–6 cm in diam. at anthesis, globose and ca. 3 cm in diam. in fruit; involucre bracts linear-lanceolate, 1.2–1.5 cm, densely white hirsute; involucre 8–10 mm, rounded and sparsely white pilose below, with 8 pits above, crown membranous, 5–6 mm, 16–18-veined, margin sinuous-dentate. Calyx 5-setose, setae brown, radial, 1–3 mm, longer than crown. Corolla pale purple or purple-red, outside lanate; limb ± lipped, 5-lobed; lobes unequal in size. Anthers yellow. Style purple-red; stigma capitate, exserted. Fl. May–Aug, fr. Aug–Sep.

Alpine meadows; 3000–3200 m. Xinjiang (Huocheng, Wuqia, Zhaosu) [Kazakhstan, Kyrgyzstan].

2. *Scabiosa austroaltaica* Bobrov in Schischkin & Bobrov, Fl.

URSS 24: 457. 1957 [“*austro-altaica*”].

阿尔泰蓝盆花 a er tai lan pen hua

Lomelosia austroaltaica (Bobrov) Soják; *Scabiosa xinjiangensis* Y. K. Yang, G. J. Liu & J. K. Wu.

Subshrubs, 20–60 cm tall. Caudexes robust, lignified, several branched. Stems erect, nodes 1–4, densely puberulent. Leaves mostly basal; basal leaves petiolate; petiole 1–2.5 cm; leaf blade oblong, 3–10 × 0.7–3 cm, pinnatifid; segments linear-lanceolate, incised, pubescent. Cauline leaves smaller, 2- or 3-paired, sessile, sparsely puberulent, ± setose at axils of veins, pinnatisect; segments lanceolate, 5–20 × 1.5–3 mm. Capitula 2–3 cm in diam. at anthesis, globose and 1.5–2 cm in diam. in fruit; involucre bracts narrowly ovate, 1/3–1/2 as long as marginal ray flowers, sparsely puberulent, apex acuminate; bracts linear-lanceolate, upper 1/3 carinate, lower part linear, sparsely villous; involucre 3–4 mm, above with 8 pits, base densely white hirsute, crown 2–3 mm wide. Calyx 5-setose. Corolla blue-purple, outside adpressed puberulent. Fl. Jun–Jul, fr. Aug.

Grassy slopes; ca. 1200 m. Xinjiang [E Kazakhstan].

3. *Scabiosa olivieri* Coulter, Mém. Dipsac. 36. 1823.

小花蓝盆花 xiao hua lan pen hua

Lomelosia olivieri (Coulter) Greuter & Burdet; *Scabiosa olivieri* var. *longinvolucra* Y. K. Yang, N. R. Cui & Y. Hazit; *Trochocephalus olivieri* (Coulter) A. Löve & D. Löve.

Herbs, annual, 10–38 cm tall. Taproots solitary, 40–50 ×

3–4 mm. Stems terete, slender, branched from base and dichotomous from lower middle part, white puberulent. Leaves opposite, sessile; leaf blade oblong or linear-lanceolate, 20–50 × 3–10 mm, both surfaces densely villous, margin often entire, not segmented, or with 1 or 2 pairs of leaflets, sometimes pinnatifid. Peduncles 3–10 cm, slender, sparsely villous; capitula globose, 3–5 mm in diam. at anthesis, flowers 5–15, strongly dimorphic; involucre bracts 3–5, oblong-ovate or ovate-orbicular, 2–3 × 1.5–2 mm, shorter than flowers, rather densely villous, apex acuminate; involucels broadly funnelliform, ca. 2 mm, base white hispidulous, upper half 8-pitted; crown spreading, 3–6 mm wide, membranous, with 20–24 ribs, outside sparsely villous along ribs. Calyx radially 5-setose, shortly stalked, brown, setae sometimes to 1 cm, 4–5 × as long as involucre crown. Corolla pale purple or white, outside puberulent. Achenes white hairy. Fl. May–Jun, fr. Jun–Jul. $2n = 18$.

Sandy places, deserts of plains. N Xinjiang (Manas He basin, Ürümqi) [from E Mediterranean to C Asia and India].

4. *Scabiosa ochroleuca* Linnaeus, Sp. Pl. 1: 101. 1753.

黄盆花 huang pen hua

Herbs, perennial. Caudexes columnar, often multi-branched, brown. Stems caespitose or solitary, erect, 25–80 cm tall, shallowly furrowed, white villous above. Basal leaves petiolate; petiole 1–5 cm; leaf blade pinnatifid, 5–10 cm, with 2–4 pairs of segments, or undivided. Cauline leaves 2–5-paired, subsessile or shortly petiolate; leaf blade 4–10 cm, abaxially densely pubescent, adaxially white villous, pinnatifid to pinnatisect or bipinnatisect, segments unequal in length; ultimate segments lanceolate or linear-lanceolate, 1.5–2 mm wide, 1-veined, apex acuminate. Peduncles 18–30 cm, white villous; capitula solitary, terminal, oblate-spheroidal, 2–2.5 cm in diam. at anthesis, becoming oblong, ca. 1.5 cm in fruit; involucre bracts linear-lanceolate, both surfaces sparsely pubescent, apex acuminate; bracts oblanceolate, sparsely puberulent, apex acute; involucels funnelliform, 3–4 mm, 8-ribbed and 8-furrowed, sparsely white villous on ribs and sparsely puberulent in furrows, crown 1.5–2 mm wide, outside sparsely puberulent, edges dentate. Calyx lobes 5, brown-yellow, ca. 4 mm, setose. Corolla yellow or white, 7–10 mm; marginal ray flowers subequal to central ones in size. Corolla tube 6–7 mm, outside densely white villous; lobes 5, unequal in size, middle one of lower lip to 3 mm, others 1.5–2 × ca. 1.5 mm. Stamens 4, inserted at middle part of corolla tube, exserted. Achenes yellowish, ellipsoid, ca. 2.5 mm, setae up to 7 mm; receptacles visible after achenes shed, fusiform, 10–15 × ca. 4 mm, densely puberulent. Fl. Jul–Aug, fr. Aug–Sep. $2n = 16$.

Meadows, grasslands, grassy slopes: 1300–2200 m. NW Xinjiang [Kazakhstan, Mongolia, Russia (Siberia); C Europe].

5. *Scabiosa comosa* Fischer ex Roemer & Schultes, Syst. Veg. 3: 84. 1818.

蓝盆花 lan pen hua

Scabiosa austromongolica Hurusawa; *S. comosa* var. *lachnophylla* (Kitagawa) Kitagawa; *S. fischeri* A. Candolle; *S. fischeri* f. *brevisetata* Handel-Mazzetti; *S. hairalensis* Nakai; *S. henanensis* Y. K. Yang & J. K. Wu; *S. hopeiensis* Nakai; *S. ja-*

ponica Miquel var. *acutiloba* H. Hara; *S. japonica* subsp. *tschiliensis* (Grüning) Hurusawa; *S. japonica* var. *tschiliensis* (Grüning) Hurusawa; *S. lachnophylla* Kitagawa; *S. liaoningensis* Y. K. Yang & J. K. Wu; *S. mansenensis* Nakai; *S. superba* Grüning; *S. superba* f. *elatior* Grüning; *S. superba* f. *nana* Grüning; *S. togashiana* Hurusawa; *S. tschiliensis* Grüning; *S. tschiliensis* var. *brevisetata* Hurusawa; *S. tschiliensis* var. *longiseta* Hurusawa; *S. tschiliensis* var. *superba* (Grüning) S. Y. He; *Trochocephalus comosus* (Fischer ex Roemer & Schultes) A. Löve & D. Löve.

Herbs, perennial, 30–80 cm tall. Roots simple or 2- or 3-branched, 12–25 × 0.3–0.5 cm. Stems erect, angular, internodes 6–12 cm, with adpressed, white puberulent hairs, more densely so at base and below inflorescences. Basal leaves rosulate, petiolate; petiole 3–10 cm; leaf blade narrowly elliptic to oblong, 6–10 × 1–2 cm, both surfaces sparsely white pubescent, pinnatisect, rarely dentate-lobed; segments linear, 1–1.5 mm wide, often wilted at anthesis. Cauline leaves opposite, amplexicaul, forming a short sheath, sessile or with petiole 1–1.2 cm; leaf blade oblong, 8–15 × 4–5 cm, pinnatisect or bipinnatisect; segments linear, 1–4 mm wide, both surfaces glabrous or sparsely white puberulent, apex acuminate. Peduncles 10–25 cm, tomentulose, hairs white; capitula 1 or 3, oblate-globose, 2.5–4(–7) cm in diam. at anthesis, globose and 1–1.5 cm in diam. in fruit; involucre bracts 6–14, lanceolate, 10–12(–28) × 1–3 mm, glabrous or sparsely pubescent; involucels yellowish, obconical, 2.5–5 mm (excluding crown), ca. 1.7 mm wide, 8-ribbed, but only 4 marked, ribs densely white hirsute, with 8 pits at apex, crown ca. 1.2 mm, 18–20-veined, densely white villous on veins, edges dentate. Calyx 5-divided; segments needlelike, 2.5–3 mm, sparsely hispidulous. Corolla pale blue or light purple, outside densely puberulent, those of central flowers tubular, 4–10 mm; limb 5-lobed; lobes equal in length; those of marginal ray flowers 2-lipped, to 2 cm; upper lip 2-lobed; lower lip 3-lobed, longer; middle lobe up to 1 cm. Style ca. 1 cm, exserted; stigma capitate. Achenes oblong, with 5 brown veins and persistent calyx setae. Fl. Jul–Aug, fr. Sep. $2n = 16, 18$.

Sandy dunes, dry mountain slopes, steppes; 300–1600(–3000) m. E Gansu, Hebei, W Henan, Heilongjiang, Jilin, Liaoning, Nei Mongol, S Ningxia (Guyuan), N Shaanxi, Shanxi [Korea, Mongolia, Russia (Far East, Siberia)].

6. *Scabiosa lacerifolia* Hayata, Bot. Mag. (Tokyo) 20: 16. 1906.

台湾蓝盆花 tai wan lan pen hua

Herbs, perennial, glabrous or puberulent. Stems erect, 10–20 cm tall, sparsely branched. Leaves sessile, semiamplexicaul; leaf blade linear-lanceolate, pinnatisect or lacerate, segments irregularly dentate; basal leaves 5–12 × 5–6 cm. Cauline leaves opposite, 4–5 cm, apex acute. Peduncles 5–6 cm or even longer; capitula terminal, oblate-globose, 3.5–4 cm in diam.; involucre bracts 3-whorled, lanceolate; outermost ones ca. 1.5 cm; inner ones shorter; bracts spatulate, ca. 5 mm; involucels 4-ribbed, with 8 pits at apex, crown membranous, 4-lobed; lobes obtuse. Calyx 5-setose, radial. Corolla blue-purple; marginal ray flowers usually larger, corolla ca. 1.8 cm, 5-lobed, 2-lipped. Stamens 4, all fertile. Style filiform. Achenes surrounded by involucels, and crowned with persistent involucels and calyx setae, obovoid, 3–3.5 mm; setae ca. 1 mm.

Fl. China 19: 656–658. 2011.

- Grassy slopes, rocky ridges; 2000–3600 m. Taiwan.

Fl. China 19: 656–658. 2011.