

14. **ASYNEUMA** Grisebach & Schenk, Arch. Naturgesch. 18: 335. 1852.

牧根草属 mu gen cao shu

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Phyteuma Linnaeus sect. *Podanthum* G. Don; *Podanthum* (G. Don) Boissier, nom. superfl.; *Trachantheium* Kitaibel ex Schur.

Herbs, perennial. Roots carrot-shaped. Leaves alternate. Inflorescence elongate, spikelike or racemelike, comprising several axillary cymes, each composed of (1 or)2–4 flowers and subtended by a bract; pedicels short, with a pair of linear bracteoles at base. Calyx 5-lobed; lobes linear (at least in Chinese species). Corolla 5-divided to base; lobes almost free, linear. Stamens 5; filaments dilated at base, margin densely ciliate. Ovary inferior, 3-locular; style nearly as long as corolla, hairy above; stigma 3-fid, segments linear, recurved. Capsule 3-poricidal above middle, 10-ribbed. Seeds ovoid, ellipsoid, or oblong, sometimes angular.

Thirty-three species: N Africa, temperate Asia, Europe; three species (one endemic) in China.

- 1a. Stems hirsute throughout; leaves white hirsute on both surfaces; calyx lobes often recurved after anthesis 3. *A. chinense*
- 1b. Stems glabrous or sometimes sparsely hirsute only below; leaves glabrous or rarely sparsely hirsute along veins; calyx lobes not recurved.
 - 2a. Style longer than corolla; capsule globose 1. *A. japonicum*
 - 2b. Style shorter than corolla; capsule obovoid-conical, base acute or acuminate 2. *A. fulgens*

1. *Asyneuma japonicum* (Miquel) Briquet, Candollea 4: 335. 1931.

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Phyteuma japonicum Miquel, Ann. Mus. Bot. Lugduno-Batavi 2: 192. 1866; *Campanula japonica* (Miquel) Vatke.

Roots fleshy, up to 20 cm, up to 1.5 cm in diam., branched or not. Stems single, erect, more than 60 cm tall, simple or branched above, glabrous or very rarely sparsely hirsute toward base. Lower cauline leaves with petiole up to 4 cm; upper cauline leaves almost sessile; blade ovate, lanceolate, or elliptic from below toward apex, 3–12 × 1.4–5.5 cm, abaxially glabrous, adaxially sparsely puberulent, base cuneate or obtuse, margin serrate, apex acute to acuminate. Flowers glabrous except on filaments and style. Calyx tube globose or campanulate; lobes linear, 4–8 mm. Corolla purple-blue or blue-purple; lobes 8–14 mm. Style 9–15 mm. Capsule globose, base truncate or concave, ca. 5 mm in diam. Seeds yellow to brown, ovoid, ellipsoid, or oblong, ca. 1 mm. Fl. Jul–Aug, fr. Sep. *2n* = 28.

Forests, rarely meadows. Heilongjiang (Huachuan), Jilin (E of Jingyu), Liaoning [Japan, Korea, Russia (Far East)].

2. *Asyneuma fulgens* (Wallich) Briquet, Candollea 4: 334. 1931.

长果牧根草 chang guo mu gen cao

Campanula fulgens Wallich in Roxburgh, Fl. Ind. 2: 99. 1824.

Roots fleshy. Stems often single, erect, 30–100 cm tall, usually simple, branching rarely or more in response to damage, usually glabrous, sometimes sparsely hirsute below. Leaves all subsessile, or lower leaves with petiole up to 2 cm; blade ovate, lanceolate, or elliptic, 3.5–7 × 1–3 cm, abaxially usually glabrous, sometimes sparsely hispidulous along veins, adaxially glabrous or sparsely hispidulous. Cymes distantly separated from each other, sometimes gaps up to 10 cm. Calyx glabrous; tube obovoid to obconic, longer than broad; lobes 5–10 mm. Corolla blue or purple; lobes equal to calyx lobes in length or

slightly longer. Style much shorter than corolla. Young capsule narrowly obovoid, 7–10 × 3–5 mm. Fl. Jul.

Grassy slopes, forest margins in ravines; 1800–3000 m. S Xizang (Gyirong, Yadong, Zayü) [Bhutan, India, Myanmar, Nepal, Sri Lanka].

3. *Asyneuma chinense* D. Y. Hong, Fl. Reipubl. Popularis Sin. 73(2): 188. 1983.

球果牧根草 qiu guo mu gen cao

Roots fleshy. Stems single, erect, 20–100 cm tall, usually simple, ± hirsute. Leaves all subsessile, or lower cauline leaves with petiole up to 3.5 cm; blade ovate, lanceolate, or elliptic, 2–8 × 0.5–4 cm, both surfaces ± white hirsute, margin serrate or crenate, rarely callose-denticulate. Spikes with bract subtending 1–4 flowers; bract sometimes pubescent or rarely callose-denticulate. Calyx usually glabrous, less frequently hispidulous; tube globose or campanulate; lobes 7–10 mm, slightly longer than corolla, recurved after anthesis, rarely callose-denticulate. Corolla purple or blue. Style slightly shorter than corolla. Capsule globose, with 3 broad pores, 4–6 × 4–5 mm, base truncate or concave. Seeds brown-yellow, ovoid to oblong, slightly compressed, ca. 0.5 mm, with 1 rib. Fl. and fr. Jun–Sep (capsule mature in Apr in Guangxi).

• Grassy slopes, forest margins, forests; below 3000 m. Guangxi (Yangshuo), Guizhou, W Hubei, SW Sichuan, Yunnan.

Fl. China 19: 553–554. 2011.