

37. PSEUDOLYSIMACHION (W. D. J. Koch) Opiz, Seznam 80. 1852.

穗花属 sui hua shu

Veronica sect. *Pseudolysimachia* W. D. J. Koch, Syn. Fl. Germ. Helv. 527. 1837.

Herbs, perennial. Roots glabrous. Rhizomes usually long. Stems 1 or cespitose, base sometimes woody. Leaves opposite or whorled, rarely alternate. Inflorescences terminal, dense racemes or spikes; bracts small, narrow. Calyx 4-lobed; lobes subequal. Corolla 4-lobed; tube rarely less than 1/3 of corolla length, villous inside; limb slightly zygomorphic; upper lobe widest. Stamens 2; filaments adnate to posterior part of corolla tube; anther locules apically confluent. Style persistent; stigma capitate. Capsule subglobose, slightly laterally compressed, apex rounded-obtuse and emarginate, loculicidal. Seeds numerous per capsule, flattened, smooth.

About 20 species: Asia, Europe; ten species in China.

- 1a. Leaves all alternate or at least apically on stem (rarely all opposite in *P. linariifolium*).
 - 2a. Stems 1, very rarely 2; rhizomes herbaceous; corolla tube ca. 1/3 of corolla length 1. *P. linariifolium*
 - 2b. Stems cespitose; rhizomes woody; corolla tube 1/3–1/2 of corolla length 2. *P. pinnatum*
- 1b. Leaves opposite or whorled (sometimes alternate upward in *P. incanum*).
 - 3a. Pedicel absent or less than 2 mm; ovary and capsule apically hairy.
 - 4a. Stems mostly densely white woolly; corolla lobes ovate to ovate-orbicular 3. *P. incanum*
 - 4b. Stems mostly villous and green, gray-green, or gray; corolla lobes ovate-lanceolate to lanceolate.
 - 5a. Leaf blade deeply cut to dentate; leaf axils often with sterile branches; calyx lobes glandular ciliate; corolla white, lobes apically slightly thickened and reflexed 4. *P. alatavicum*
 - 5b. Leaf blade crenate or entire; leaf axils without branches; calyx lobes eglandular ciliate, otherwise often glandular hairy; corolla blue, purple, rarely white, lobes apically not thickened and erect to slightly patent 5. *P. spicatum*
 - 3b. Pedicel 2 mm or more; ovary and capsule glabrous (ovary sometimes hairy in *P. kiusianum*).
 - 6a. Leaves sessile, ± amplexicaul at least basally or to middle of stem; corolla tube less than 1/3 of corolla length.
 - 7a. Stems usually with white and curly hairs; leaves opposite, petiolate 10. *P. rotundum*
 - 7b. Stems glabrous or puberulent; leaves alternate, sessile or subsessile 1. *P. linariifolium*
 - 6b. Leaves petiolate; corolla tube at least 1/3 of corolla length.
 - 8a. Leaf margin deeply cut to pinnately parted; corolla white or pink 7. *P. dauricum*
 - 8b. Leaf margin dentate to double dentate or serrate to double serrate, sometimes deeply serrate; corolla purple to blue.
 - 9a. Stems glabrous or apically very sparsely villous; leaf blade lanceolate; stamens conspicuously exerted 8. *P. longifolium*
 - 9b. Stems pubescent, sometimes densely so, rarely apically glabrous; leaf blade narrowly oblong, deltoid-ovate, ovate-lanceolate, or elliptic; stamens included.
 - 10a. Lower leaves subsessile; leaf blade narrowly oblong to elliptic 6. *P. spurium*
 - 10b. Lower leaves petiole 1–2.5 cm; leaf blade deltoid-ovate to ovate-lanceolate .. 9. *P. kiusianum*

1. *Pseudolysimachion linariifolium* (Pallas ex Link) Holub, Folia Geobot. Phytotax. 2: 422. 1967.

细叶穗花 xi ye sui hua

Rhizomes short, herbaceous. Stems erect, 1 or rarely 2, 30–80 cm tall, often simple, usually with white curly hairs. Leaves alternate at least apically on stem, rarely all opposite, sessile or subsessile; leaf blade linear to ovate-orbicular, glabrous or white pubescent, margin entire or occasionally distally dentate. Inflorescences 1 or several. Pedicel 2–4 mm, pubescent. Corolla blue,

purple, or rarely white, 5–6 mm; tube ca. 2 mm; upper lobe ovate-orbicular, other 3 lobes ovate. Stamens exerted, glabrous. Capsule 2–3.5 × 2–3.5 mm. Fl. Jun–Oct.

Meadows, thickets, sparse forests; 200–2100 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea, Mongolia, Russia (Far East, E Siberia)].

- 1a. Leaves alternate or sometimes lower ones opposite; leaf blade linear to linear-oblong 1a. subsp. *linariifolium*
1b. Leaves almost all opposite or at least lower ones; leaf blade broadly linear to ovate-orbicular 1b. subsp. *dilatatum*

1a. *Pseudolysimachion linariifolium* subsp. *linariifolium*

细叶水蔓菁 xi ye shui man jing

Veronica linariifolia Pallas ex Link, Jahrb. Gewächsk. 1(3): 35. 1820; *V. angustifolia* Fischer ex Link.

Leaves alternate or sometimes lower ones opposite; leaf blade linear to linear-oblong, 2–6 × 0.2–1 cm, margin basally entire and apically dentate, occasionally entire. Fl. Jun–Sep.

Meadows, thickets, sparse forests; 200–2100 m. Heilongjiang, Jilin, Liaoning, Nei Mongol [Japan, Korea, Mongolia, Russia (Far East, E Siberia)].

1b. *Pseudolysimachion linariifolium* subsp. *dilatatum* (Nakai & Kitagawa) D. Y. Hong, Novon 6: 23. 1996.

水蔓菁 shui man jing

Veronica angustifolia Fischer var. *dilatata* Nakai & Kitagawa, Rep. Exped. Manchoukuo sect. 4(1): 54. 1934; *Pseudolysimachion galactites* (Hance) Holub; *Veronica galactites* Hance; *V. jeholensis* Nakai; *V. linariifolia* Pallas ex Link var. *dilatata* (Nakai & Kitagawa) Nakai & Kitagawa; *V. linariifolia* subsp. *dilatata* (Nakai & Kitagawa) D. Y. Hong; *V. linariifolia* var. *jeholensis* (Nakai) Kitagawa.

Leaves opposite at least on lower nodes; leaf blade broadly linear to ovate-orbicular, 0.5–2 cm wide, margin always dentate. Fl. Jul–Oct.

• Meadows, thickets; 200–2100 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang. Edible, used as a vegetable.

2. *Pseudolysimachion pinnatum* (Linnaeus) Holub, Folia Geobot. Phytotax. 2: 425. 1967.

羽叶穗花 yu ye sui hua

Veronica pinnata Linnaeus, Mant. Pl. 1: 24. 1767; *Pseudolysimachion laetum* (Karelin & Kirilow) Holub; *Veronica laeta* Karelin & Kirilow.

Rhizomes woody. Plants with short upwardly appressed white hairs. Stems several, cespitose, erect or slightly procumbent, 10–40 cm tall, often with sterile branches in axil of leaves, base woody. Leaves alternate; leaf blade pinnatisect, 1–3 cm × 1–5 mm, ± falciform curved; segments linear to oblanceolate, margin dentate to subentire. Inflorescences narrowly spicate. Pedicel as long as or slightly longer than calyx lobes. Calyx 2–2.5 mm. Corolla pale blue, pale purple, or rarely white, 5–7 mm; tube 2–3 mm; lobes apically rounded obtuse, upper lobe orbicular, other 3 lobes ovate-orbicular. Stamens slightly exerted. Capsule 2–4 × 2–4 mm. Seeds ca. 1 mm. Fl. Jun–Aug. $2n = 34$.

Stony slopes, forests steppes; below 2000 m. N Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia].

3. *Pseudolysimachion incanum* (Linnaeus) Holub, Folia Geobot. Phytotax. 2: 424. 1967.

白兔儿尾苗 bai tu er wei miao

Veronica incana Linnaeus, Sp. Pl. 1: 10. 1753; *V. xilinensis* Y. Z. Zhao.

Plants densely white woolly, leaves adaxially sparsely woolly and gray-green. Stems erect or ascending, several and cespitose, 15–40 cm tall, simple. Leaves opposite, sometimes alternate upward; petiole of lower leaves ca. 2 cm, other leaves subsessile; leaf blade oblong to broadly linear, 1.5–3 × 0.3–1.5 cm, base cuneate, margin crenate or entire, apex obtuse to acute. Inflorescences narrowly spicate. Pedicel short. Calyx ca. 2 mm. Corolla blue, blue-purple, or white, 5–7 mm; tube 1.5–2 mm; lobes often reflexed, ovate to ovate-orbicular. Stamens slightly exerted. Ovary and basal portion of style with multicellular glandular hairs. Capsule slightly longer than calyx, hairy. Fl. Jun–Aug. $2n = 68$.

Steppes, dunes; below 1200 m. N Heilongjiang, N Nei Mongol, N Xinjiang [N Japan, Kazakhstan, Korea, Mongolia, Russia; Europe].

4. *Pseudolysimachion alatavicum* (Popov) Holub, Folia Geobot. Phytotax. 2: 423. 1967.

阿拉套穗花 a la tao sui hua

Veronica alatavica Popov, Byull. Moskovsk. Obshch. Isp. Prir., Otd. Biol. 47: 87. 1938.

Rhizomes branched, woody. Stems gray, erect or ascending, numerous, cespitose, 30–50 cm tall, simple, sometimes with sterile branches from leaf axil, densely with appressed white hairs. Leaves opposite; petiole to 1 cm; leaf blade elliptic, 2–5 × 0.8–2 cm, hairy, abaxially more densely, margin deeply cut or dentate. Inflorescences ca. 5 cm in flower. Pedicel less than 1 mm in flower. Corolla white, ca. 5 mm; tube ca. 2 mm; lobes apically thickened and reflexed, upper lobe narrowly ovate, other 3 lobes lanceolate. Stamens conspicuously exerted. Ovary narrowly ovoid, hispid with multicellular hairs. Fl. Jul–Aug.

Mountain slopes; 1500–2500 m. Xinjiang (Shawan Xian) [Kazakhstan, Kyrgyzstan].

5. *Pseudolysimachion spicatum* (Linnaeus) Opiz, Seznam 80. 1852.

穗花 sui hua

Veronica spicata Linnaeus, Sp. Pl. 1: 10. 1753; *V. porphyriana* Pavlov; *V. spicata* subsp. *porphyriana* (Pavlov) Elenevsky.

Stems often gray or gray-green, erect or ascending, 1 or several and cespitose, 15–50 cm tall, simple, densely villous hairy, rarely basally mixed with glutinous glandular hairs, apically densely with viscid glandular hairs. Leaves opposite, often more crowded at stem base; petiole of lower leaves ca. 2.5 cm, shorter to subsessile on upper leaves; leaf blade oblong to lanceolate, 2–8 × 0.5–3 cm, smaller upward, sparsely to densely with viscid glandular hairs, margin entire or

crenate. Inflorescences densely with viscid glandular hairs. Flowers subsessile. Calyx 2.5–3.5 mm. Corolla purple, blue, or rarely white, 6–7 mm; tube ca. 1/3 of corolla length; lobes slightly patent, upper lobe ovate-lanceolate and other 3 lobes lanceolate. Stamens slightly exerted. Young capsule oblong-globose, with multicellular glandular hairs. Fl. Jul–Sep. $2n = 34, 64, 68, 70$.

Meadows, coniferous forests; below 2500 m. NW Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia; Europe].

6. *Pseudolysimachion spurium* (Linnaeus) Rauschert, Wiss. Z. Martin-Luther-Univ. Halle-Wittenberg, Math.-Naturwiss. Reihe 15: 775. 1966.

轮叶穗花 lun ye sui hua

Veronica spuria Linnaeus, Sp. Pl. 1: 10. 1753; *V. paniculata* Linnaeus.

Stems erect, 30–100 cm tall, apically branched, densely with short curly hairs. Leaves in whorls of 3 or 4 or opposite, lower leaves subsessile, others with petioles 3–8 mm; leaf blade narrowly oblong to elliptic, 3–8 × 1–3 cm, puberulent, margin deeply dentate, sometimes double dentate, upper leaves often subentire. Inflorescences several to numerous racemes, short glandular hairy. Pedicel ca. 2 mm. Calyx ca. 2 mm. Corolla purple to blue, 5–6 mm; tube 1/3–2/5 of corolla length; lobes patent, upper lobe obovate-orbicular, other 3 lobes narrowly ovate. Stamens slightly exerted. Ovary glabrous. Style ca. 6 mm. Capsule 2.5–3.5 × 2–2.5 mm. Fl. Jul–Aug. $2n = 34$.

Mountain slopes, steppes; ca. 1100 m. NW Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia; Europe].

7. *Pseudolysimachion dauricum* (Steven) Holub, Folia Geobot. Phytotax. 2: 424. 1967.

大穗花 da sui hua

Veronica daurica Steven, Mém. Soc. Imp. Naturalistes Moscou 5: 339. 1817.

Stems erect, 1 or several and cespitose, to 1 m tall, simple or rarely apically branched, usually densely with multicellular glandular hairs or villous, with a ring at each node connecting petiole base. Leaves opposite; petiole 1–1.5 cm, rarely shorter; leaf blade ovate, ovate-lanceolate, or lanceolate, 2–8 × 1–3.5 cm, glandular pubescent, base often cordate to rarely acute, margin basally deeply cut to pinnately parted, often mixed with double teeth, apically and segments coarsely dentate, apex often obtuse. Inflorescences 1, rarely several, never in a large panicle, glandular hairy. Pedicel 2–3 mm. Corolla white or pink, ca. 8 mm; tube ca. 1/3 of corolla length; lobes patent, ovate-orbicular to narrowly ovate. Stamens slightly exerted. Capsule as long as calyx. Persistent style ca. 1 cm. Fl. Jul–Aug. $2n = 32$.

Steppes, dunes, sparse forests; below 1300 m. Hebei, Heilongjiang, Henan (Shangcheng Xian), Jilin, Liaoning, Nei Mongol [Korea, Mongolia, Russia (Far East, E Siberia)].

8. *Pseudolysimachion longifolium* (Linnaeus) Opiz, Seznam 80. 1852.

兔儿尾苗 tu er wei miao

Veronica longifolia Linnaeus, Sp. Pl. 1: 10. 1753; *V.*

exortiva Kitagawa, p.p. excl. specim. Saghal; *V.*

longifolia var. *exortiva* (Kitagawa) Kitagawa.

Stems erect, 1 or several and cespitose, 40–100 cm tall or more, usually simple, with sterile branches in leaf axils, with a ring at each node connecting petiole bases, glabrous or apically very sparsely white villous. Leaves opposite, occasionally in whorls of 3 or 4; petiole 2–4(–10) mm; leaf blade lanceolate, 4–15 × 1–3 cm, glabrous or with short curly hairs, base rounded to broadly cuneate to sometimes cordate, margin deeply serrate, and often partly double serrate, apex acuminate. Inflorescences 1 or several, never in a large panicle, with white short curly hairs. Pedicel straight, ca. 2 mm. Corolla purple to blue, 5–6 mm; tube 2/5–1/2 of corolla length; lobes patent, upper lobe ovate, other 3 lobes narrowly ovate. Stamens conspicuously exerted. Capsule ca. 3 mm, glabrous. Persistent style ca. 7 mm. Fl. Jun–Aug. $2n = 34, 64, 68, 70$.

Steppes, grassy mountain slopes, meadows at forest edges, *Betula* forests; below 1500 m. Heilongjiang, Jilin (Wangqing Xian), Nei Mongol, N Xinjiang [Kazakhstan, N Korea, Mongolia, Russia; SW Asia, Europe].

9. *Pseudolysimachion kiusianum* (Furumi) T. Yamazaki, J. Jap. Bot. 43: 409. 1968.

长毛穗花 chang mao sui hua

Veronica kiusiana Furumi, Bot. Mag. (Tokyo) 30: 122.

1916; *V. glabrifolia* Kitagawa; *V. kiusiana* var.

glabrifolia (Kitagawa) Kitagawa.

Stems erect, 1 or several and cespitose, more than 50 cm tall, sometimes apically branched, often pubescent, rarely apically glabrous, with a ring at each node connecting petiole bases. Leaves opposite; petiole 1–2.5 cm, shorter upward, pubescent; leaf blade deltoid-ovate to ovate-lanceolate, 4–12 × 2.5–6 cm, glabrous or sparsely pubescent, base truncate, shallowly cordate, or rarely cuneate, margin deltoid dentate, apex acute to acuminate. Inflorescences 1 or rarely more, never in a large panicle, axis and pedicels villous. Pedicel 2–5 mm. Corolla purple to blue, 5–7 mm; tube ca. 1/3 of corolla length; upper lobe ovate-orbicular, other 3 lobes ovate. Stamens slightly exerted. Ovary hairy or glabrous. Capsule 3–5 mm, glabrous. Fl. Aug–Sep. $2n = 34, 68$.

Meadows, grasses at forest edges. SE Jilin, Liaoning (Zhuanghe Xian) [Japan, Korea].

10. *Pseudolysimachion rotundum* (Nakai) T. Yamazaki, J. Jap. Bot. 43: 411. 1968.

无柄穗花 wu bing sui hua

Veronica rotunda Nakai, Bot. Mag. (Tokyo) 29: 3.

1915.

Stems 1, erect, ca. 1 m tall, simple or apically branched, glabrous or puberulent, with a ring at each node

connecting petiole bases. Leaves opposite, sessile, ± amplexicaul, sometimes short petiolate upward; leaf blade glabrous or abaxially pubescent along veins, base cuneate, margin deltoid dentate, apex acute to short acuminate. Inflorescences mostly 1, axis densely with white short curly hairs. Pedicel 2–5 mm, densely with multicellular glandular hairs, rarely villous. Corolla blue, blue-purple, or rarely white, 6–7 mm; tube less than 1/3 of corolla length; lobes ± patent, upper lobe ovate-orbicular, other 3 lobes narrowly ovate. Stamens exserted. Capsule 3–5 mm. Fl. Jun–Aug. $2n = 34$.

Meadows, among grasses at forest margins, forests, grassy mountain slopes; below 1600 m. Anhui (Yuexi Xian), Heilongjiang, Henan (Shangcheng Xian), Jilin, Liaoning, Shanxi, Zhejiang (Lin'an Xian) [Japan, Korea, Russia (Far East)].

- 1a. Leaf blade narrowly elliptic to lanceolate,
1.5–3 cm wide 10a. subsp. *subintegrum*
1b. Leaf blade ovate, 3–6 cm wide 10b. subsp. *coreanum*

10a. *Pseudolysimachion rotundum* subsp. *subintegrum*
(Nakai) D. Y. Hong, Novon 6: 23. 1996.

东北穗花 dong bei sui hua

Veronica spuria Linnaeus var. *subintegra* Nakai, Bot. Mag. (Tokyo) 25: 62. 1911; *V. komarovii* Monjuschko; *V. rotunda* Nakai var. *subintegra* (Nakai) T. Yamazaki.

Leaf blade narrowly elliptic to lanceolate, 6–13 × 1.5–3 cm. Fl. Jun–Aug.

Meadows, among grasses at forest margins, forests; below 1600 m. Heilongjiang, Jilin, Liaoning [Japan, Korea, Russia (Far East)].

10b. *Pseudolysimachion rotundum* subsp. *coreanum*
(Nakai) D. Y. Hong, Novon 6: 23. 1996.

朝鲜穗花 chao xian sui hua

Veronica coreana Nakai, Bot. Mag. (Tokyo) 32: 228. 1918; *V. rotunda* Nakai var. *coreana* (Nakai) T. Yamazaki.

Leaf blade ovate, 3–6 cm wide. Fl. Jul–Aug.

Grassy mountain slopes; 1100–1300 m. Anhui (Yuexi Xian), Henan (Shangcheng Xian), Liaoning, Shanxi, Zhejiang (Lin'an Xian) [Korea].

