

**64. CLINOPODIUM** Linnaeus, Sp. Pl. 2: 587. 1753.

风轮菜属 feng lun cai shu

Herbs perennial. Leaves dentate, reduced upward, bractlike. Verticillasters ± headlike, in panicles; peduncle sometimes present; bracts linear to needlelike, to as long as calyx. Calyx tubular, 13-veined, sometimes constricted at middle, swollen on 1 side at base, straight or slightly curved, throat sparsely hairy, limb 2-lipped; upper lip 3-toothed, teeth ciliate, apex mucronate; lower lip longer, 2-toothed. Corolla purple-red, reddish, or white, 2-lipped; tube exerted, gradually dilated upward to throat, with 2 rows of hairs, puberulent; upper lip straight, apex emarginate; lower lip 3-lobed, lateral lobes entire; middle lobe larger, emarginate or entire. Stamens 4, anterior 2 longer than posterior 2, reaching upper corolla lip, included or slightly exerted, posterior stamens sometimes rudimentary; anther cells 2, divaricate, ± obliquely inserted on dilated connectives. Style apex unequally 2-cleft, anterior lobe lanceolate, posterior lobe indistinct; ovary glabrous. Nutlets ovoid or subglobose, less than 1 mm in diam., glabrous, areolae small, basal.

About 20 species: Asia, Europe; 11 species in China.

Closely allied to *Calamintha*; many species are poorly defined.

- 1a. Peduncles of verticillasters much branched, secund.
  - 2a. Bracts needlelike, minute, indistinctly ribbed; calyx ca. 6 mm; corolla less than 1 cm ..... 4. *C. chinense*
  - 2b. Bracts linear, distinctly ribbed; calyx ca. 8 mm; corolla ca. 1.2 cm ..... 5. *C. urticifolium*
- 1b. Verticillasters sessile or on few-branched peduncles, not secund.
  - 3a. Plants with 1 or 2 stems, mostly erect.
    - 4a. Plants branched, branches gradually shorter toward stem apex; corolla 1.5–2.0 cm ..... 7. *C. discolor*
    - 4b. Plants unbranched or irregularly branched; corolla less than 1 cm.
      - 5a. Leaves glabrous to subglabrous except for densely puberulent veins adaxially; verticillasters in continuous panicles on stem and branch apices; calyx white ciliate on veins otherwise glandular outside ..... 11. *C. omeiense*
      - 5b. Leaves strigose; verticillasters globose, in capitate, ample panicles on stems and branches; calyx villous, glandular puberulent along veins outside ..... 1. *C. polycephalum*
  - 3b. Plants with numerous, diffuse or much-branched, mostly slender, ascending basal stems.
    - 6a. Calyx less than 4 mm.
      - 7a. Verticillasters with floral leaves; calyx tube cylindric, glabrous or veins sparsely hairy, teeth of upper lip not reflexed in fruit ..... 10. *C. confine*
      - 7b. Verticillasters without floral leaves; calyx tube unequal in diam., puberulent, veins minutely hispid, teeth of upper lip reflexed in fruit ..... 9. *C. gracile*
    - 6b. Calyx more than 4 mm.
      - 8a. Corolla 1.5–2 cm, tube elongated, ca. 2× or more as long as calyx ..... 6. *C. megalanthum*
      - 8b. Corolla less than 1 cm.
        - 9a. Verticillasters more than 9-flowered, globose; bracts numerous, almost as long as calyx ..... 2. *C. repens*
        - 9b. Verticillasters 2–8-flowered, not globose; bracts few, shorter than calyx.
          - 10a. Bracts much shorter than pedicels; pedicel 3–5 mm; leaves spatulate, 10–25×7–10 mm ..... 3. *C. longipes*
          - 10b. Bracts longer than pedicels; pedicel ca. 2 mm; leaves ovate, 7–12×5–8 mm ..... 8. *C. laxiflorum*

**1. *Clinopodium polycephalum*** (Vaniot) C. Y. Wu & Hsuan ex P. S. Hsu, *Observ. Ad Florulam Hwangshanicam* 169. 1965.

灯笼草 deng long cao

*Calamintha polycephala* Vaniot, *Bull. Acad. Int. Geogr. Bot.* 14: 183. 1904; *Calamintha clinopodium* Benth var. *nepalensis* Dunn; *Calamintha clinopodium* var. *polycephala* (Vaniot) Dunn; *Calamintha clinopodium* var. *pratensis* Dunn; *Calamintha tsacapensis* H. Léveillé; *Clinopodium chinense* Kuntze subsp. *grandiflorum* H. Hara var. *parviflorum* (Kudô) H. Hara; *Satureia chinensis* Briquet var. *parviflora* Kudô.

Stems erect, 50–100 cm, base sometimes trailing, much branched, spreading glandular hairy. Petiole to 1 cm; leaf blade ovate, 2–5×1.5–3.2 cm, strigose, base broadly cuneate to rounded, margin remotely crenate-dentate, apex obtuse to acute; upper leaves bractlike. Verticillasters many flowered, globose, to 2 cm in diam. in flower, in capitate, ample panicles; bracts needlelike, 3–5 mm. Pedicel 2–5 mm. Calyx ca. 6×1 mm, villous, veins glandular puberulent, throat sparsely hispid; fruiting calyx swollen on 1 side at base, to 2 mm wide; upper teeth triangular, caudate; lower teeth awned.

Corolla purple-red, ca. 8 mm, tube puberulent; upper lip straight, emarginate. Stamens included, posterior 2 with small anthers; anterior 2 exerted, with normal anthers. Nutlets brown, ovoid, ca. 1 mm, smooth. Fl. Jul-Aug, fr. Sep.

• Hillsides, forests, thickets; 0–3400 m. Anhui, Fujian, Gansu, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Shaanxi, Shandong, Shanxi, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang.

Widespread and very variable. Some authors consider this and the following species as conspecific with the Eurasian *Clinopodium umbrosum* (M. Bieberstein) Koch.

Used medicinally.

**2. *Clinopodium repens*** (Buchanan-Hamilton ex D. Don) Benth, *Pl. Asiat. Rar.* 1: 66. 1830.

匍匐风轮菜 pu fu feng lun cai

*Thymus repens* Buchanan-Hamilton ex D. Don, *Prodr. Fl. Nepal.* 113. 1825; *Calamintha clinopodium* Benth var. *repens* (Buchanan-Hamilton ex D. Don) Dunn; *Calamintha repens* (Buchanan-Hamilton ex D. Don) Benth; *Clinopodium kudoii* (Hosokawa) Mori; *Melissa repens* (Buchanan-Hamilton ex D. Don) Benth; *Satureia chinensis*

Briquet var. *parviflora* Kudô; *S. chinensis* Briquet var. *repens* (Buchanan-Hamilton ex D. Don) Kudô; *S. kudoi* Hosokawa; *S. umbrosa* var. *repens* (Buchanan-Hamilton ex D. Don) Briquet.

Stems trailing, ascending, ca. 35 cm, pilose, angles and upper part densely so. Petiole 5–14 mm; leaf blade ovate, 1–3.5×1–2.5 cm, sparsely minutely hispid, base broadly cuneate to rounded, margin incurved-serrate, apex acute to obtuse. Verticillasters subglobose, 1.2–1.5 cm in diam., 1.5–1.8 cm in fruit, widely spaced; floral leaves longer than verticillasters; bracts needlelike, 3–5 mm. Calyx ca. 6 mm, white ciliate, glandular puberulent; upper teeth triangular, caudate; lower teeth awned. Corolla rose, ca. 7 mm, slightly longer than calyx, puberulent. Nutlets subglobose, ca. 0.8 mm in diam. Fl. Jun-Sep, fr. Oct-Dec.

Hillsides, grasslands, streamsides, forests; 0–3300 m. Fujian, Gansu, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Bhutan, India, Indonesia, Japan, Myanmar, Nepal, Philippines, Sri Lanka].

**3. *Clinopodium longipes*** C. Y. Wu & Hsuan ex H. W. Li, Acta Phytotax. Sin. 12: 217. 1974.

长梗风轮菜 chang geng feng lun cai

Stems ca. 20 cm, base trailing, tinged purple-red, retrorse pilose. Petiole 2–3 mm; leaf blade spatulate, 1–2.5 cm×7–10 mm, papery, adaxially sparsely minutely hispid, abaxially sparsely spreading ciliate, base cuneate, margin 2–6-crenate-serrate, apex acute to obtuse. Verticillasters 2–8-flowered, ca. 1.5 cm in diam. after anthesis, in upper axils, slightly crowded; peduncle 1–2 mm; floral leaves gradually reduced, bractlike; bracts needlelike, 2–2.5 mm, shorter than pedicels, ribbed. Calyx tubular-campanulate after anthesis, ca. 5×2 mm, tinged purple-red, veins and throat sparsely white ciliate, base slightly swollen on 1 side; upper teeth reflexed, triangular, apex acuminate; lower teeth straight, awned. Corolla nearly included in bud, puberulent. Nutlets yellow-brown, subglobose, ca. 0.9 mm in diam. Fr. Nov.

- Streamsides. Sichuan (Hongya Xian).

**4. *Clinopodium chinense*** (Benth) Kuntze, Revis. Gen. Pl. 2: 515. 1891.

风轮菜 feng lun cai

*Calamintha chinensis* Benth, Prodr. 12: 233. 1848; *Calamintha clinopodium* Benth var. *chinensis* (Benth) Miquel; *Satureia chinensis* (Benth) Briquet.

Stems to 1 m, base trailing, finely striate, densely pubescent, glandular puberulent. Petiole 3–8 mm; leaf blade ovate, bractlike apex, 2–4×1.3–2.6 cm, papery, adaxially densely appressed minutely hispid, abaxially pilose, base rounded to broadly cuneate, margin crenate-serrate, apex acute to obtuse. Verticillasters many flowered, semiglobose, to 3 cm in diam., upper ones ca. 1.5 cm, widely spaced; bracts numerous, needlelike, 3–6 mm. Calyx narrowly tubular, tinged purple-red, ca. 6 mm, pilose, glandular puberulent, pilose inside on teeth, base slightly swollen on 1 side in fruit; upper teeth ± reflexed, narrowly triangular, apex acuminate; lower teeth straight, awned. Corolla purple-red, ca. 9 mm, puberulent; throat with 2 rows of hairs, ca. 2 mm wide; upper lip emarginate. Nutlets yellow-brown, obovoid, ca. 1.2×0.9 mm. Fl. May-Aug, fr. Aug-Oct.

Hillsides, streamsides, grassy places, thickets, forests; 0–1000 m. Anhui, Fujian, Guangdong, Guangxi, Hubei, Hunan, Jiangsu, Jiangxi, Shandong, Taiwan, Yunnan, Zhejiang [Japan].

**5. *Clinopodium urticifolium*** (Hance) C. Y. Wu & Hsuan ex H. W. Li, Acta Phytotax. Sin. 12: 219. 1974.

麻叶风轮菜 ma ye feng lun cai

*Calamintha clinopodium* Benth var. *urticifolia* Hance, Ann. Sci. Nat. Bot., sér. 5, 5: 235. 1866; *Calamintha chinensis* Benth var. *grandiflora* Maximowicz; *Calamintha coreana* H. Léveillé; *Calamintha urticifolia* (Hance) Handel-Mazzetti.

Herbs perennial. Rhizomes woody. Stems erect, 25–80 cm, finely striate, rigid, base semiwoody, purple-red, sparsely retrorse minutely hispid. Petioles 1–1.2 cm in lower stem leaves, 2–5 mm in upper ones; leaf blade ovate to ovate-oblong, 3–5.5×1.2–3 cm, papery, adaxially sparsely minutely hispid, abaxially sparsely pilose, base subtruncate to rounded, margin serrate, apex obtuse to acute. Verticillasters many flowered, semiglobose, lower to 3 cm in diam., upper ca. 2 cm, widely spaced; peduncle 3–5 mm, much branched; lower floral leaves longer than verticillasters, upper ones as long as verticillasters, bractlike; bracts linear, tinged purple-red, conspicuously ribbed, 2/3–3/4 as long as calyx, white ciliate. Pedicel 1.5–2.5 mm. Calyx narrowly tubular, ca. 8 mm, tinged purple-red, glandular puberulent, veins white ciliate, teeth sparsely pilose inside, base slightly swollen on 1 side in fruit; upper teeth reflexed, narrowly triangular, short awned; lower teeth straight, awned. Corolla purple-red, ca. 1.2 cm, puberulent, throat with 2 rows of hairs, tube ca. 1 mm wide at base, gradually dilated beyond basal 1/3 to ca. 3 mm wide at throat. Anterior stamens nearly included or slightly exerted. Nutlets obovoid, ca. 1×0.8 mm. Fl. Jun-Aug, fr. Aug-Oct.

Hilly grasslands, forests; 300–2200 m. Hebei, Heilongjiang, Henan, Jiangsu, Jilin, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan [Japan, Korea, Russia].

Doubtfully distinct and often reduced to synonymy of *Clinopodium chinense* var. *chinense*.

**6. *Clinopodium megalanthum*** (Diels) C. Y. Wu & Hsuan ex H. W. Li, Acta Phytotax. Sin. 12: 220. 1974.

寸金草 cun jin cao

*Calamintha chinensis* Benth var. *megalantha* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 233. 1912; *Calamintha clinopodium* Benth var. *megalantha* (Diels) Dunn; *Calamintha megalantha* (Diels) Handel-Mazzetti; *Clinopodium megalanthum* var. *intermedium* C. Y. Wu & Hsuan ex H. W. Li, var. *lancifolium* C. Y. Wu & Hsuan ex H. W. Li, var. *robustum* C. Y. Wu & Hsuan ex H. W. Li, var. *speciosum* C. Y. Wu & Hsuan ex H. W. Li; *Satureia chinensis* Briquet var. *megalantha* (Diels) Kudô.

Plants rhizomatous. Stems numerous, 10–60 cm, base trailing, tinged purple-red, densely spreading white hispid or pubescent to subglabrous, internodes much longer than leaves. Petiole 1–3(–5) mm; leaf blade triangular-ovate to lanceolate, 1.2–3.8(–5)×0.7–1.7(–4) cm, adaxially white ciliate or minutely hispid, abaxially distinctly impressed glandular, sometimes subglabrous, base rounded to shallowly subcordate, margin crenate-serrate, apex obtuse to acute. Verticillasters many flowered, semiglobose, to 3.5 cm in diam. in flower, crowded apically; lower floral leaves slightly longer than

calyx, upper ones reduced and bractlike; bracts needlelike, to 9 mm. Calyx ca. 9 mm in flower, glandular, white hispid or puberulent mainly along veins outside, throat white pilose, base slightly swollen on 1 side in fruit; upper teeth narrowly triangular, ± reflexed, apex short aristate; lower teeth triangular, as long as upper teeth, apex long aristate. Corolla rose to purple, 1.5–2 cm, puberulent, throat with 2 rows of hairs; tube exerted, ca. 1.5 mm wide at base, throat to 5 mm. Nutlets obovoid, ca. 1×0.9 mm. Fl. Jul-Sep, fr. Aug-Nov.

• Hillsides, grasslands, thickets, forests; 1300–3200 m. Guizhou, Hubei, Sichuan, Yunnan.

Considered by some as *Clinopodium umbrosum* (M. Bieberstein) Koch var. *souliei* (H. Léveillé) McKean (cf. Notes Roy. Bot. Gard. Edinburgh 40: 161. 1982).

Used medicinally.

**7. *Clinopodium discolor*** (Diels) C. Y. Wu & Hsuan ex H. W. Li, Acta Phytotax. Sin. 12: 221. 1974.

异色风轮菜 yi se feng lun cai

*Calamintha discolor* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 232. 1912; *Calamintha clinopodium* Benth var. *discolor* (Diels) Dunn; *Satureia chinensis* (Benth) Briquet var. *discolor* (Diels) Kudô.

Rhizomes slender, trailing. Stems 20–40 cm, finely striate, densely retrorse gray puberulent. Petiole 0.5–2 cm; leaf blade narrowly ovate, (1.5–)2–5×(0.8–)1.5–3 cm, ± membranous, sparsely fine pilose, base cuneate-attenuate to rounded, margin 3–8-serrate or crenate-serrate, apex obtuse to acute. Verticillasters 6–12-flowered, to 4 cm in diam.; peduncle 4–8 mm; floral leaves longer than verticillasters; bracts linear-subulate, 5–7 mm, distinctly ribbed, white ciliate. Pedicel 2–5 mm. Calyx narrowly tubular, slightly curved, ca. 1 cm, glandular, white hispid along veins, throat sparsely hispid, sometimes tinged purple-red; teeth awned, upper 3 reflexed, triangular, lower 2 straight, subulate. Corolla rose with purple spots, 1.5–2 cm, puberulent; tube ca. 1.5 mm wide at base, to 5 mm wide at throat. Nutlets dark brown, globose-ovoid, ca. 1.2 mm in diam., smooth. Fl. Aug-Sep, fr. Sep-Oct.

• Forest margins, waste areas, forests; 1600–3000 m. Xizang, Yunnan.

**8. *Clinopodium laxiflorum*** (Hayata) C. Y. Wu & Hsuan ex H. W. Li, Acta Phytotax. Sin. 12: 222. 1974.

疏花风轮菜 shu hua feng lun cai

*Calamintha laxiflora* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30: 228. 1911; *Satureia laxiflora* (Hayata) Matsumura & Kudô.

Rhizomes ± woody, slender. Stems numerous, ascending, ca. 20 cm, slender, twisted, densely retrorse white pubescent. Petiole 1–2 mm; leaf blade ovate, 7–12×5–8 mm, papery, subglabrous, abaxially sometimes red-purple, base rounded, margin shallowly serrate, apex obtuse to acute. Verticillasters 2–6-flowered, semiglobose, 1.2–1.5 cm in diam.; peduncle ca. 1 mm; floral leaves entire, apex bractlike; bracts needlelike, ca. 3 mm, ribbed, purple-red, white ciliate. Pedicel ca. 2 mm. Calyx tubular, ca. 6 mm, tinged purple-red, glandular pubescent, veins and teeth minutely hispid; upper teeth 3, subtriangular, short awned; lower teeth 2, subulate, awned. Corolla tube ca. 1.1 cm, slightly curved outward, to 3 mm wide at throat; upper lip ca. 2.5 mm, 2-lobed; lower lip

spreading, ca. 5 mm; middle lobe broadly circular, ca. 3 mm. Nutlets ovoid, ca. 0.7×0.6 mm.

• Hillsides. Taiwan.

**9. *Clinopodium gracile*** (Benth) Matsumura, Index Pl. Jap. 2: 538. 1912.

细风轮菜 xi feng lun cai

*Calamintha gracilis* Benth, Prodr. 12: 232. 1848; *Calamintha radicans* Vaniot; *Satureia gracilis* (Benth) Briquet; *Satureia ussuriensis* Kudô.

Herbs slender, stoloniferous. Stems numerous, ascending, 8–30 cm, retrorse pubescent. Petiole 0.3–1.8 cm; blade of basal leaves circular-ovate, ca. 10×8–9 mm, base rounded, margin remotely crenate, apex obtuse; blade of lower and mid stem leaves ovate, 1.2–3.4×1–2.4 cm, papery, subglabrous, abaxially sparsely minutely hispid on veins, base rounded to cuneate, margin remotely dentate or crenate-serrate, apex obtuse; blade of upper stem leaves ovate-lanceolate, margin serrate, apex acute. Verticillasters few flowered, lax or crowded in short terminal raceme; floral leaves ovate-lanceolate, margin serrate, apex acute; bracts needlelike, much shorter than pedicels. Pedicel 1–3 mm. Calyx tubular, base rounded, ca. 3 mm in flower, ca. 5 mm and declinate in fruit, puberulent or subglabrous, minutely hispid on veins, throat sparsely fine pilose; teeth ciliate, lower 2 subulate, upper 3 triangular, reflexed in fruit. Corolla white to purple-red, ca. 4.5 mm, puberulent. Nutlets ovoid, smooth. Fl. Jun-Aug, fr. Aug-Oct.

Streamsides, open grasslands, forest margins, thickets; 0–2400 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [India, Indonesia, Japan, Laos, Malaysia, Myanmar, Thailand, Vietnam].

Used medicinally.

Close to *Clinopodium multicaule* (Maximowicz) Kuntze from Japan, but the latter has calyx glabrous inside, as long as bracts, 1/2 as long as corolla, and 3× as long as pedicel.

**10. *Clinopodium confine*** (Hance) Kuntze, Revis. Gen. Pl. 2: 515. 1891.

邻近风轮菜 lin jin feng lun cai

*Calamintha confinis* Hance, J. Bot. 6: 331. 1868; *Calamintha argyi* H. Léveillé; *Clinopodium confine* (Hance) Kuntze var. *globosum* C. Y. Wu & Hsuan ex H. W. Li; *Satureia confine* (Benth) Kudô.

Herbs diffuse. Stems glabrous or sparsely puberulent. Leaves ovate to subcircular, 0.8–2.2(–3)×0.5–1.7(–2.5) cm, papery, glabrous, base rounded to broadly cuneate, margin 5–7-crenate-serrate, apex obtuse. Verticillasters many flowered, globose or subglobose, 1–1.5(–1.8) cm in diam., widely spaced; floral leaves reduced; bracts minute. Pedicel 1–2 mm, puberulent. Calyx subcylindric, narrower at base, ca. 4 mm in flower, slightly dilated in fruit, glabrous or sparsely hairy along veins, throat finely pilose; teeth ciliate, upper 3 triangular, lower 2 narrowly triangular. Corolla rose to purple-red, slightly exerted, ca. 5 mm, puberulent, throat slightly hairy or subglabrous, tube ca. 1.2 mm wide at throat; lips ca. 0.6 mm, middle lobe of lower lip emarginate. Posterior stamens rudimentary. Nutlets ovoid, ca. 0.8 mm, smooth. Fl. Apr-Jun, fr. Jul-Aug.

Hillsides, grasslands, field margins; 0–500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hunan, Jiangsu, Jiangxi, Sichuan, Zhejiang [Japan].

**11. *Clinopodium omeiense*** C. Y. Wu & Hsuan ex H. W. Li, *Acta Phytotax. Sin.* 12: 223. 1974.

峨嵋风轮菜 *e mei feng lun cai*

Plants rhizomatous, perennial. Stems erect, 16–50 cm, tinged purple-red, base sparsely glandular pubescent, apex densely glandular pubescent. Petiole 6–13 mm; leaf blade ovate, 2.3–4×2.2–2.5 cm, papery, glabrous or subglabrous, densely puberulent along veins adaxially, base rounded, margin deeply projected dentate, apex acute. Verticillasters 10–14-flowered, in continuous terminal panicles; peduncle 1–5 mm; floral leaves conspicuously reduced except for lowest, to as long as calyx, bractlike; bracts needlelike, few, 2–3 mm, ciliate. Pedicel 0.5–3 mm. Calyx narrowly tubular, 5–6 mm, glandular, veins white ciliate; upper 3 teeth narrowly triangular, reflexed in fruit; lower 2 triangular-subulate, spreading, ca. 2/3 as long as calyx. Corolla white or purplish, 8–9 mm, puberulent, throat ca. 2 mm wide, upper lip ca. 1 mm. Nutlets yellow-brown, obovoid, ca. 0.8×0.6 mm.

- Forests; 1700 m. Sichuan (Emei Shan).

