

**18. NEPETA** Linnaeus, Sp. Pl. 2: 570. 1753.

荆芥属 *jing jie shu*

Subshrubs or perennial or annual herbs, usually aromatic, occasionally gynomonoecious or gynodioecious. Verticillasters in spikes or opposite cymes in racemes or panicles; floral leaves bractlike; bracts narrow, shorter than to longer than flowers. Calyx (13–)15(–17)-veined, tubular or campanulate, slightly curved or straight, throat oblique or regular; limb 2-lipped or not; teeth 5, equal or unequal, subulate or narrowly lanceolate to oblong-triangular, apex acuminate to spiny-acuminate. Corolla 2-lipped; tube basally narrow, ± abruptly dilated into an ample throat; upper lip ± flat or concave, 2-lobed or emarginate; lower lip large, 3-lobed, with middle lobe larger, concave or ± flat, margin undulate or dentate; lateral lobes small, straight or reflexed, ovate to semicircular. Stamens 4, nearly parallel, glabrous, ascending under upper lip of corolla, posterior 2 longer than anterior, included or exerted, fertile; stamens of pistillate flowers rudimentary, included; anther cells 2, ellipsoid, divaricate, apex not confluent. Style exerted, apex subequally 2-cleft. Nutlets oblong-ovoid, ellipsoid, ovoid, or obovoid, adaxially slightly ribbed, smooth or warty.

About 250 species: temperate Asia, N Africa, and Europe, most abundant in the Mediterranean region and SW and C Asia; 42 species in China.

- 1a. Anterior stamen not arcuate ascending under upper lip of corolla.
  - 2a. Leaves 3-fid; verticillasters widely spaced ..... 41. *N. tenuifolia*
  - 2b. Leaves pinnate to bipinnatifid; apical verticillasters contiguous.
    - 3a. Leaves pinnate or pinnatifid, sometimes pinnately lobed to subentire; verticillasters contiguous, rarely interrupted; calyx teeth acute, not spiny ..... 40. *N. multifida*
    - 3b. Leaves bipinnate; basal verticillasters separated; calyx teeth short spiny ..... 42. *N. annua*
- 1b. Stamens arcuate-ascending under upper lip of corolla.
  - 4a. Herbs slender annuals.
    - 5a. Calyx throat subregular, teeth straight, subequal; nutlets smooth, shiny ..... 39. *N. pungens*
    - 5b. Calyx throat oblique, posterior teeth triangular or oblong-triangular, anterior teeth narrowly lanceolate; nutlets tuberculate ..... 35. *N. micrantha*
  - 4b. Herbs perennial.
    - 6a. Floral leaves longer than flowers ..... 1. *N. longibracteata*
    - 6b. Floral leaves or bracts small, narrow, not longer than calyx.
      - 7a. Leaves incised-serrate; plants densely glandular throughout ..... 2. *N. glutinosa*
      - 7b. Leaves not incised-serrate; plants not densely glandular throughout.
        - 8a. Calyx straight, throat subregular, teeth straight, subulate.
          - 9a. Cymes in lax pyramidal panicles; corolla blue, lower lip directed upward, nearly parallel to upper lip ..... 38. *N. ucranica*
          - 9b. Cymes not in pyramidal panicles; corolla purplish or reddish, lower lip directed ± downward, nearly perpendicular to upper lip.
            - 10a. Plants branched above mid stem; cymes (2–)5–11-flowered, in narrow long panicles; corolla purplish; leaves oblong-ovate or oblong-elliptic to lanceolate, crenate or serrate ..... 36. *N. nuda*
            - 10b. Plants branched almost from base; cymes 5–7-flowered, in narrow racemes; corolla reddish; leaves ovate, dentate-serrate ..... 37. *N. virgata*
        - 8b. Calyx throat ± oblique or 2-lipped, teeth not subulate.
          - 11a. Verticillasters in dense capitula.
            - 12a. Stems white floccose-tomentulose; leaves cordate to triangular-cordate, sparsely white tomentose ..... 14. *N. floccosa*
            - 12b. Stems finely pilose; leaves cordate-ovate, with sparse, short lanate hairs ..... 15. *N. yanthina*
          - 11b. Flowers in cymes or verticillasters, in pairs or terminal spikes.
            - 13a. Middle lobe of lower corolla lip concave, margin with incurved lobes or teeth, not swollen, base villous ..... 29. *N. cataria*
            - 13b. Middle lobe of lower corolla lip flat, pendulous or subhorizontal, base swollen, margin slightly undulate, base not swollen, glabrous.
              - 14a. Flowers in compact terminal spikes, spikes sometimes interrupted, (i.e., with 1–3(–5), widely spaced lower verticillasters).
                - 15a. Verticillasters in globose to ovoid-globose terminal spikes, sometimes widely spaced basally; stem leaves ± circular.
                  - 16a. Plants densely tomentose, gray or white; lateral branches sterile ..... 10. *N. kokanica*
                  - 16b. Plants densely pubescent; lateral branches fertile ..... 9. *N. supina*
                - 15b. Verticillasters in cylindric or ovoid spikes but basal (1– or)2–5 widely spaced; stem leaves ovate, ovate-cordate, to oblong-ovate.
                  - 17a. Stem leaves linear-lanceolate, lanceolate, or oblong-ovate.
                    - 18a. Corolla yellow; leaves linear-lanceolate, apex acuminate, base rounded to cordate, margin serrate ..... 3. *N. nervosa*

- 18b. Corolla blue; leaves lanceolate to oblong-ovate, apex acute to obtuse, base cuneate to rounded, margin entire, upper ones 1–4-serrate ..... 7. *N. densiflora*
- 17b. Stem leaves ovate to rhombic-ovate or triangular-cordate.
- 19a. Leaf bases cuneate, blade ovate or rhombic.
- 20a. Leaves incised-serrate; calyx tube ca. 2.5 mm; verticillasters in cylindrical spikes ..... 11. *N. zandaensis*
- 20b. Leaves serrate; calyx tube 4.5–5.5 mm; verticillasters in broadly ovoid spikes ..... 8. *N. kokamirica*
- 19b. Leaf bases cordate to subtruncate.
- 21a. Plants with underground succulent rhizomes ..... 12. *N. raphanorhiza*
- 21b. Plants without underground succulent rhizomes.
- 22a. Stem leaves broadly ovate-cordate, wider than long; apical verticillasters in terminal ovoid spikes 1.2–3.7 cm ..... 13. *N. lamiopsis*
- 22b. Stem leaves ovate to ovate-cordate or triangular-ovate, longer than wide; verticillasters in cylindrical, more elongated spikes.
- 23a. Leaves ovate to triangular-ovate, 2.1–6 cm; spikes cylindrical, (1.5–)3.5 cm, with 1 or 2 basal, widely spaced verticillasters ..... 4. *N. laevigata*
- 23b. Leaves ovate to broadly triangular-ovate or ovate-cordate, 0.5–1.25 cm; spikes ovoid-oblong to cylindrical, or basally interrupted, 2.5–4 cm.
- 24a. Bracts and bracteoles oblong-linear, as long as calyx; flowers sessile; calyx tube subglabrous, teeth ciliolate ..... 5. *N. discolor*
- 24b. Bracts obovate to narrowly ovate, bracteoles lanceolate-linear, shorter than calyx; flowers pedicellate, pedicel ca. 2 mm; calyx tube pubescent, teeth densely sericeous ..... 6. *N. taxkorganica*
- 14b. Flowers in loose or compact, simple or complex cymes.
- 25a. Calyx throat subregular or slightly oblique, not 2-lipped.
- 26a. Leaves sessile, leathery ..... 33. *N. sessilis*
- 26b. Leaves petiolate, membranous or papery.
- 27a. Flowers ca. 0.8 cm; leaves triangular-ovate, 1.5–6.4×1–5.2 cm, apex acute to apiculate, base cordate, coarsely crenate to dentate ..... 30. *N. fordii*
- 27b. Flowers more than 2 cm; leaves variable.
- 28a. Leaves triangular-cordate, thin papery, dentate-crenate, 4–7.5×ca. 3.6 cm, apex caudate-acuminate, base truncate to cordate ..... 31. *N. everardi*
- 28b. Leaves not triangular-cordate.
- 29a. Calyx throat slightly oblique, posterior calyx tooth slightly longer, erect, other teeth ± oblique, projected, and narrowly lanceolate; leaves 3.2–10.5×1–6.5 cm ..... 32. *N. dentata*
- 29b. Calyx throat regular, teeth subequal, triangular or lanceolate; leaves ovate-lanceolate to narrowly ovate, 1.5–3×1–2 cm, incised-serrate ..... 34. *N. sungpanensis*
- 25b. Calyx throat oblique, conspicuously 2-lipped.
- 30a. Cymes in dense ovoid spikes 3–5 cm, these to 8.5(–12) cm when elongated ..... 16. *N. coerulescens*
- 30b. Cymes in lax, long inflorescences.
- 31a. Leaves subentire, linear-lanceolate, 2–4 cm×7–8 mm ..... 28. *N. hemsleyana*
- 31b. Leaves serrate or crenate, not linear-lanceolate.
- 32a. Leaves subsessile or short petiolate.
- 33a. Leaves less than 2.5 cm, ovate to oblong, tomentose or scaly tomentose ..... 27. *N. leucolaena*
- 33b. Leaves larger, not tomentose or scaly tomentose.
- 34a. Leaves strongly dentate-serrate ..... 24. *N. prattii*
- 34b. Leaves crenate.
- 35a. Leaves oblong-ovate or elliptic-ovate, 4–7.4×1.9–3 cm, densely pubescent adaxially ..... 25. *N. wilsonii*
- 35b. Leaves ovate-oblong to lanceolate-oblong, 2.8–5.2×1.1–1.7 cm, densely pubescent especially abaxially ..... 26. *N. veitchii*
- 32b. Leaves with basal petioles more than 1.5 cm, middle petioles 0.3–1.8 cm.
- 36a. Plants gynomonoeious; pistillate flowers 1.2–1.6 cm, slender ..... 20. *N. tenuiflora*
- 36b. Flowers bisexual, more than 1.6 cm.
- 37a. Leaves pubescent adaxially, densely gray pubescent abaxially, sometimes intermixed with yellow glands ..... 23. *N. souliei*
- 37b. Leaves pubescent along abaxial veins or puberulent on both surfaces.
- 38a. Leaves membranous, puberulent, margin coarsely mucronate-crenate; cymes few flowered ..... 21. *N. membranifolia*
- 38b. Leaves papery, margin serrate or crenate to entire; cymes many

flowered.

- 39a. Corolla 1.7–2 cm; middle petioles 2–3 cm, as long as 1/5–1/3 of blade ..... 17. *N. manchuriensis*  
 39b. Corolla ca. 2 cm; middle petioles less than 2 cm, more than 1/7 as long as blades.  
 40a. Verticillasters 2–5-flowered; calyx white strigose, glandular puberulent; leaves oblong-ovate or ovate, 2–3.5×1–2 cm ..... 22. *N. jomdaensis*  
 40b. Verticillasters 5–10-flowered; calyx densely glandular puberulent or glandular pubescent; leaves oblong to lanceolate.  
 41a. Leaves 6–10×2–2.5 cm; middle petioles 10–18 mm ..... 19. *N. stewartiana*  
 41b. Leaves 3.4–9×1.2–2.2 cm; middle petioles 3–7 mm ..... 18. *N. sibirica*

**1. *Nepeta longibracteata*** Benth. Labiat. Gen. Spec. 737. 1835.

长苞荆芥 *chang bao jing jie*

*Glechoma longibracteata* (Benth.) Kuntze.

Plants perennial. Stems 9–12 cm, 1–1.5 mm in diam., slender, diffuse; lower internodes long, sparsely short hairy, minutely white glandular, upper minutely long hairy and white. Leaves long petiolate, sessile basally; leaf blade obovate-cuneate or ovate-rhombic to ovate, or linear-lanceolate, scalelike basally, 0.8–1.5 cm×5–12 mm, ± softly gray tomentose, base cuneate or truncate-cuneate, margin coarsely crenate, sometimes 3-lobed, apex obtuse. Inflorescences globose, rarely slightly elongated, 1.5–3(–3.5) cm; bracts purplish, linear, longer than flowers, 1.7–1.9×0.5–0.6 mm, minutely glandular hairy, margin densely ciliate. Pedicel 1–1.5 mm. Calyx straight, narrowly obconical, 7–8×1.6–2.5 mm, throat very oblique; teeth narrow, lanceolate-triangular, apex acuminate, posterior teeth slightly shorter, their margin and tube with long, dense, thin, simple hairs and scattered brown glands, anterior teeth slightly longer than calyx tube. Corolla blue-violet, 1.5–1.8 cm, slightly pubescent; tube thin, curved, 0.9–1.1 cm, gradually dilated apically, exerted part 1/3 as long as tube; upper lip concave; lower lip white with blue spots on middle, larger, middle lobe wide, base short clawed, margin remotely crenate, apex broadly emarginate, lateral lobes obovate. Fl. Jul–Aug.

• Stony or gravelly alpine slopes; 4900–5300 m. Xinjiang, Xizang [India (Kashmir), Tajikistan].

An easily recognized high alpine scree plant.

**2. *Nepeta glutinosa*** Benth. Labiat. Gen. Spec. 735. 1835.

腺荆芥 *xian jing jie*

Herbs perennial, tufted, 40–70 cm or more tall, densely glandular, aromatic. Stems with scalelike leaves basally, densely glandular villous. Leaves sessile; leaf blade cordate-ovate, 1.3–3×0.8–2.2 cm, viscid, glandular, semi-amplexicaul, margin deeply incised-serrate. Verticillasters (2–)4- or 5-flowered, in axils of upper 4–8 pairs of leaves, densely glandular villous, widely spaced basally; lower peduncles 3–5(–10) mm; bracts and bracteoles narrowly lanceolate to linear, almost 1/2 as long as calyx. Pedicel 1–2.5 mm. Calyx 0.8–1.2 cm×2–3 mm, erect, obconical, densely glandular villous, throat oblique; teeth ovate-triangular to lanceolate-triangular. Corolla bluish or purplish, 1.8–2.2 cm; tube

slender, much exerted, dilated into limb, throat inconspicuous; upper lip 2.5–3 mm, lower lip ca. 1.5×as long as upper lip, middle lobe reniform, ca. 2.5×4–5 mm. Nutlets greenish brown to brown, ellipsoid, 2–3×1–1.3 mm, base attenuate, apex attenuate and acute. Fl. Jul–Aug, fr. Aug–Sep (specimens not seen).

• Alpine grasslands; 3500–4200 m. Xinjiang [Afghanistan, India (Kashmir), Tajikistan].

The glandular indumentum is a characteristic feature.

**3. *Nepeta nervosa*** Royle ex Benth. var. *lutea* J. D. Hooker, Fl. Brit. India 4: 658. 1885.

黄花具脉荆芥 *huang hua ju mai jing jie*

Herbs perennial. Stems erect or ascending, 30–60 cm. Leaves sessile or short petiolate, linear-lanceolate, 5–10×0.8–1.7 cm, green or abaxially gray hairy, base rounded or cordate, margin serrate, apex acuminate. Spikes cylindrical, robust, 2.5–7.5 cm; bracts longer than calyx, ovate or lanceolate, apex apiculate, ciliate. Flowers sessile. Calyx ca. 6 mm, throat subtruncate; teeth subulate-acuminate, as long as tube, sparsely villous. Corolla yellow, ca. 2×as long as calyx (specimens not seen).

• Alpine grasslands; 4200 m. Xizang [India, Pakistan].

**4. *Nepeta laevigata*** (D. Don) Handel-Mazzetti, Symb. Sin. 7: 916. 1936.

穗花荆芥 *sui hua jing jie*

*Betonica laevigata* D. Don, Prodr. Fl. Nepal. 110. 1825; *Nepeta spicata* Benth.; *N. spicata* var. *incana* H. Léveillé.

Stems 20–80 cm, white pubescent. Petiole 2–12 mm, white villous; leaf blade ovate to triangular-cordate, 2.1–6×1.5–4.2 cm, adaxially sparsely white pubescent, abaxially gray and densely white pubescent, base cordate to subtruncate, margin crenate-serrate, apex acute or rarely obtuse. Spikes terminal, cylindrical; bracts purplish red apically, linear, white villous. Calyx tubular, ca. 6–8×2 mm; teeth narrowly awned-lanceolate, as long as tube, posterior teeth slightly longer than anterior, margin densely white villous, dilated in fruit. Corolla blue-purple, ca. 1.5×as long as calyx; tube ca. 1.5 mm in diam., to 5 mm in diam. at throat; lobes of upper lip circular-ovate, ca. 2×2 mm, middle lobe of lower lip oblate, ca. 3×5.5 mm. Nutlets gray-green, ovoid, ca. 1.5×1 mm, very shiny. Fl. Jul–Aug, fr. Sep–Nov.

• Grasslands, shrub-grasslands, grassy slopes, coniferous and mixed forest margins, forests; 2300–4100 m. Sichuan, Xizang, Yunnan [Afghanistan, India, Nepal].

Used medicinally as a diaphoretic.

**5. *Nepeta discolor*** Royle ex Bentham, Hooker's J. Bot. Kew Gard. Misc. 3: 378. 1833.

异色荆芥 yi se jing jie

Herbs perennial. Stems slender, ascending, gray pubescent. Leaves short petiolate, broadly ovate to ovate-cordate, ca. 1.2×1 cm, occasionally to 2.2×2 cm, densely puberulent, adaxially green, abaxially gray, with yellowish glands, base subcordate, margin crenate, apex obtuse. Spikes ovoid or cylindrical, continuous or basally interrupted, 3–5.5 cm; bracts oblong-linear, spiny, as long as calyx, ciliate. Flowers sessile. Calyx ca. 8 mm, pubescent; tube ca. 4 mm, throat oblique; teeth awned-lanceolate, ca. as long as tube, posterior teeth slightly longer, margin densely white villous. Corolla purple, glabrous or slightly villous on upper lip, ca. 1.4 cm; tube slender, ca. 1 cm, throat to 2.5 mm wide. Fl. Jul–Aug.

• Grassy or gravelly slopes, forests, thickets; 3600–4300 m. Xizang [Afghanistan, India, Nepal, Pakistan].

**6. *Nepeta taxkorganica*** Y. F. Chang, Bull. Bot. Res. 3(1): 163. 1983.

喀什荆芥 ka shi jing jie

Herbs perennial. Rhizomes with scalelike leaves. Stems erect or ascending, 15–30 cm, slender, sparsely pubescent. Leaves sessile upward; petiole 2–5 mm; leaf blade broadly triangular-ovate, 5–12×4–8 mm, base subcordate to broadly cuneate, margin dentate, apex apiculate. Verticillasters in dense, oblong-ovoid or cylindrical, continuous terminal spikes, sometimes basal 1 or 2 verticillasters interrupted, 2.5–4 cm; bracts obovate to narrowly ovate, 4–6×2–3.5 mm, membranous, pubescent, base cuneate, margin entire and villous, apex acute or acuminate; bracteoles lanceolate-linear, margin silky pubescent. Pedicel ca. 2 mm. Calyx obconical, 5–7×1–1.5 mm, sparsely pubescent; teeth subequal or anterior 2 slightly shorter, narrowly triangular, margin densely sericeous-villous. Corolla bluish, 1.2–1.4 cm, sparsely pubescent; tube narrow, throat dilated; upper lip 3.5–4×3–3.5 mm; middle lobe of lower lip inversely cordate, ca. 2×3 mm. Nutlets brown, broadly ellipsoid, 1–1.5×0.5–0.7 mm.

• Grassy slopes; 4600 m. Xinjiang (Taxkorgan Xian).

**7. *Nepeta densiflora*** Karelin & Kirilow, Bull. Soc. Naturalistes Moscou 14: 725. 1841.

密花荆芥 mi hua jing jie

*Nepeta tarbagataica* C. Y. Yang & B. Wang.

Plants perennial. Rhizomes with dark brown scalelike leaves. Stems 25–40 cm, ascending, 1.5–2.5 mm in diam., with sparse, curved villous hairs intermixed with minute glandular hairs especially basally, internodes to 5–6 cm, leaf axils mostly with short, sterile branchlets. Petiole 0–4 mm; leaf blade lanceolate or oblong-ovate, 1.5–3 cm×2–10 mm, sparsely covered with short simple hairs and minute yellow glands, base truncate to rounded-truncate, margin remotely 1–4-serrate, apex acute to obtuse. Spikes ovoid to cylindrical, 1.5–8×2.5–3 cm, with lower verticillasters widely spaced. Calyx blue-purple, 8–10 mm, villous and densely glandular

puberulent on veins otherwise pubescent, throat oblique; teeth narrowly triangular, apex acuminate, anterior teeth slightly shorter, posterior teeth ca. 2/3 as long as calyx tube. Corolla blue, 1.5–1.6 cm, pubescent; tube ca. 9 mm, base ca. 1.1 mm wide, abruptly dilated into throat ca. 4×5 mm; upper lip ca. 3 mm; middle lobe of lower lip 3–4×(6.5–)7–8 mm, deeply 2-lobulate; lateral lobes semicircular-triangular, 0.75–1(–1.5)×2.3–3 mm. Nutlets dark brown, broadly ovoid, ca. 2×1–1.25 mm. Fl. and fr. Aug.

• Stony and grassy slopes, valley thickets along rivers, sparse forests; 1400–2500 m. Xinjiang [Mongolia, Russia].

**8. *Nepeta kokamirica*** Regel, Trudy Imp. S.-Peterburgsk. Bot. Sada 6: 358. 1880.

绢毛荆芥 juan mao jing jie

Plants perennial. Rhizomes with brown scalelike leaves. Stems numerous, ascending or prostrate, 15–50 cm tall, 1.5–3 mm in diam., base with brown scalelike leaves and dense, crisped, gray, simple, very short glandular hairs. Petiole 6–8.5 mm basally, ca. 2 mm upward; leaf blade ovate to rhombic-ovate, to 1.7×8 cm, densely gray stellate tomentose, base cuneate, margin serrate above base, apex acuminate to obtuse. Verticillasters in terminal, broadly ovoid or subglobose spikes, rarely remote basally; floral leaves and bracts tinged blue-purple, densely villous, with short glandular hairs and yellow glands; bracts linear, 4.5–6 mm. Calyx tinged blue-purple, 7–8×2–3 mm, pubescent and glandular as bracts; teeth oblong-triangular, 2–2.5×1–1.5 mm, apex acuminate, equal or anterior 2 slightly narrower, as long as 2/5–1/2 of calyx tube. Corolla bluish, pubescent, 1.6–1.8 cm; tube exerted; upper lip (2.5–)3 mm; middle lobe of lower lip 4.5–5×7–8 mm, base with claw 0.4–0.6 cm. Nutlets dark brown, oblong-ellipsoid, 1.6–2×0.7–1.25 mm. Fl. Jun–Jul, fr. Jul (specimens not seen).

• Gravelly and stony alpine areas. Xinjiang [Kazakhstan].

**9. *Nepeta supina*** Steven, Mém. Soc. Imp. Naturalistes Moscou 3: 265. 1812.

平卧荆芥 ping wo jing jie

Plants perennial. Rhizomes with scalelike leaves, dark brown. Stems 10–30 cm, decumbent or subprostrate, ± densely pubescent, white glandular. Petiole 0–3 mm; leaf blade ovate, 1–2(–2.5)×0.7–1.8(–2) cm, smaller on branches, adaxially with dense, simple, small, papillate glandular hairs when young, abaxially glandular dotted and subglabrous except on veins, base truncate to rounded, sometimes cuneate to shallowly cordate, margin dentate to subcrenate, apex acute to obtuse. Verticillasters in very compact, globose-ovoid capitula, sometimes remote basally; bracts slightly shorter than calyx, lanceolate-linear to linear, with dense, minute, and glandular hairs, margin ciliate. Calyx blue apically or rarely throughout, 7–8.5 mm, slightly curved, 2-lipped or nearly so; posterior teeth triangular, apex acute, (1/6–)1/4–1/3 as long as tube; anterior teeth narrowly lanceolate, apex acuminate to sometimes subulate, 1.5–2×as long as posterior teeth. Corolla blue, 1.4–2 cm, tube dilated to 4.5–5.5×5–6 mm. Anterior stamens conspicuously shorter than posterior 2. Nutlets dark brown, ellipsoid, ca. 2×0.75–1 mm. Fl. Jul–Sep, fr. Aug–Oct (specimens not seen).

• Mountainous rocky crevices; 3600 m. Xizang [Pakistan, Russia].

This is possibly the same as *Nepeta kokanica*. True *N. supina* is probably restricted to the Caucasus and Turkey. In *Conspect. Fl. As. Med.* 9: 52. 1987, *N. supina* auct. is given as a synonym of *N. pamirica* Franchet, which Hedge considers a synonym of *N. kokanica*.

**10. *Nepeta kokanica*** Regel, *Descr. Pl. Nov. Rar.* 65. 1882.

绒毛荆芥 rong mao jing jie

Plants perennial, with gray or white tomentose hairs. Rhizomes with scalelike leaves. Stems (5–)10–40 cm, slender, ascending or erect, with scalelike leaves basally, branched along entire length, ± densely white tomentose especially on nodes below inflorescence. Petiole 2/7–2/3 as long as blade; stem leaf blade circular to rhombic-ovate, rarely subreniform, 5–15×5–15 cm, densely tomentose, base cuneate, margin dentate to crenate above base, apex obtuse to acute. Capitula terminal, 1.7–3.5×(2–)2.5–3.5 cm, rarely with a distant basal verticillaster; bracts shorter than calyx, narrowly linear, with dense, small capitate glands, margin ciliate. Calyx 6–7.5 mm, with dense, small capitate glands, throat very oblique; teeth subequal, narrowly triangular or tubular-lanceolate, apex subulate-acute, posterior teeth 1/2–2/3 as long as calyx tube. Corolla bluish, 1.5–1.8 cm; pubescent, glandular; tube exerted, 2–2.5 mm wide beyond calyx; upper lip 2.7–3.3 mm; middle lobe of lower lip 3.8–4.5×6–6.5 mm, broadly emarginate. Nutlets dark brown, triquetrous, 2–2.3×1–1.8 mm, slightly narrower basally. Fl. Jul–Sep, fr. Aug–Oct (specimens not seen).

• Gravelly alpine alluvial fans and rock crevices. Xinjiang [Afghanistan, Pakistan, Tajikistan].

**11. *Nepeta zandaensis*** H. W. Li, *Fl. Xizang.* 4: 126. 1985.

札达荆芥 zha da jing jie

Plants perennial. Stems 20–25 cm, slender, ascending or erect, ± densely white puberulent, nodes white ciliate. Petiole 1.5–2.5 mm; stem leaf blade ovate to rhombic-ovate, 9–12×7–10 mm, base cuneate, margin incised-serrate, apex acute, with dense, white puberulent hairs and yellowish glands. Verticillasters many flowered, in long pedunculate spikes; spikes 2.5–4.5×ca. 1.5 cm, terminal, and cylindrical; bracts narrowly ovate, 8×2 mm; bracteoles linear, ca. 6×less than 1 mm, margin ciliate, apex spiny. Calyx tubular-campanulate, puberulent, ca. 7.5 mm, tube ca. 2.5 mm, throat oblique; teeth 5, linear-lanceolate, margin ciliate, posterior teeth slightly longer. Corolla reddish, ca. 1.1 cm, slightly puberulent outside; tube much exerted, gradually dilated into throat, to 2 mm wide; upper lip ca. 1.5 mm, 2-lobed to 2/3 its length. Fl. Jun–Jul.

• On gravelly slopes and mountainous, stony alluvial fans; 4300–4600 m. Xizang.

Related to *Nepeta kokanica*; differing from it in the incised-serrate leaves.

**12. *Nepeta raphanorhiza*** Bentham, *Labiata. Gen. Spec.* 734. 1835.

块根荆芥 kuai gen jing jie

Plants perennial, with succulent walnut-sized tubers. Stems numerous, diffuse or ascending 15–45 cm tall, puberulent basally, slightly viscid, unbranched or branched. Petiole ca. 1/2 as long as blade; leaf blade broadly ovate to ovate-cordate, 1.2–2.5×1.2–2.5 cm, hirtellous, base truncate, margin serrate-crenate, apex somewhat obtuse. Verticillasters

in ovoid, ± interrupted spikes less than 2.5 cm; bracts ovate to lanceolate, as long as calyx. Calyx ca. 4 mm; teeth subulate, ciliate, shorter than tube. Corolla purple blue; tube slender, ca. 2×as long as calyx. Fl. Jun–Jul.

Thickets along streams; 4100 m. Xizang [Afghanistan, India (Kashmir)].

Of uncertain affinity but easily recognized by the prominent tubers if they are present.

**13. *Nepeta lamiopsis*** Bentham ex J. D. Hooker, *Fl. Brit. India* 4: 659. 1885.

假盖草 jia bao gai cao

Herbs perennial. Stems ascending, ca. 25 cm tall, few branched, flaccid, puberulent. Petiole 0–3 mm; stem leaf blade broadly ovate-cordate, 1.5–2×1.7–2.3 cm, gray puberulent, base cordate, margin coarsely crenate, apex obtuse. Lower verticillasters axillary, upper, in ovoid spikes 1.2–3.7 cm; bracts leaflike, circular, margin crenate, ciliate; bracteoles linear, to 7 mm, ciliate. Calyx ca. 8.5 mm, puberulent, throat oblique; teeth 3–3.5 mm, subulate, posterior teeth longer, ciliate. Corolla violet, ca. 1.2 cm, puberulent; tube slender, ca. 8 mm. Nutlets broadly oblong. Fl. Jun–Jul, fr. Aug.

Xizang [Bhutan, India (Sikkim), Nepal].

A number of Yunnan specimens at Edinburgh seem to belong here. Probably there is confusion with *Nepeta laevigata* and *N. discolor*.

**14. *Nepeta floccosa*** Bentham, *Labiata. Gen. Spec.* 736. 1835.

丛卷毛荆芥 cong juan mao jing jie

*Nepeta kunlunshanica* C. Y. Yang & B. Wang.

Herbs perennial. Stems purplish basally, ca. 35 cm, few branched, erect or ascending, with dense, whitish floccose-tomentose hairs. Basal 3 leaf pairs clustered, long petiolate; upper 2 pairs remote, sessile or short petiolate; leaf blade cordate to triangular-cordate, 1.5–3×1.5–3 cm, rigid, thick, corrugate, densely white tomentulose and glandular, margin crenulate. Verticillasters capitate, 6–8-flowered, ca. 1×0.7–1 cm; bracts violet, lanceolate, ca. 1/2 as long as calyx, margin with entangled, white villous hairs. Calyx violet, tubular, 8–10 mm, straight but somewhat curved apically, sparsely white tomentose and yellow, scaly glandular, throat very oblique; teeth narrowly triangular, 1.2–1.7×0.7 mm, margin ciliate, apex acuminate, teeth of upper lip ca. 1/4 as long as calyx tube, teeth of lower lip ca. 1/3 as long. Corolla blue or bluish, 1.2–1.3 cm, densely puberulent, glandular; tube slender, incurved, exerted beyond calyx, 2–3 mm, throat dilated; lobes of upper lip elliptic, ca. 1.5×1 mm, apex obtuse; lower lip ca. 2×as long as upper lip, middle lobe 2.5×3.5–4 mm, base bearded inside, margin crenate. Nutlets dark brown, oblong, ca. 2.5×1 mm, glabrous. Fl. Jun–Jul.

Stony, alpine slopes, grasslands, valleys; 2100–3800 m. Xinjiang, Xizang [Afghanistan, India].

**15. *Nepeta yanthina*** Franchet, *Bull. Mus. Hist. Nat. (Paris)* 3: 324. 1897.

淡紫荆芥 dan zi jing jie

Plants suffrutescent, with cylindrical roots and numerous stems. Stems to 30 cm, finely pilose. Petiole 4.5–5.5 cm basally, gradually shorter to almost absent upward, flat,

sparsely short lanate; leaf blade broadly ovate to ovate-cordate, 1–2.5×1–2.5 cm, bullate, sparsely short lanate, base cordate, margin irregularly crenate, apex rounded to obtuse. Verticillasters remote, pedunculate basally, many flowered and subsessile upward; bracts lanceolate, margin entire, apex mucronate, purple lanate; bracteoles purple lanate. Calyx purple lanate outside; teeth lanceolate, subulate, those of upper lip almost divaricate, teeth of lower lip projected and slightly longer. Corolla blue-purple, ca. 1.2 mm, tube slightly exerted. Fl. Jun-Jul.

- Gravelly slopes, deserts near lakes; 4200–4300 m. Xizang.

**16. *Nepeta coerulescens*** Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, sér. 3, 27: 529. 1881.

蓝花荆芥 lan hua jing jie

*Dracocephalum coerulescens* (Maximowicz) Dunn;  
*Nepeta thomsonii* Benthham ex J. D. Hooker.

Herbs perennial. Stems 25–42 cm, pubescent. Petiole of basal leaves 3–10 mm, 0–2.5 mm in upper ones; stem leaf blade lanceolate-oblong, 2–5×0.9–2.1 cm, densely pubescent, adaxially olive green, abaxially greenish, glandular, base truncate to shallowly cordate, margin crenate-serrate, apex acute. Verticillasters on the apical 4 or 5(–10) stem nodes, in ovoid spikes 3–5 cm, to 8.5–12 cm when elongated; peduncle 0–2 mm; bracts bluish, as long as to longer than calyx, linear or linear-lanceolate, ciliate. Calyx 6–7 mm, hirtellous, yellow glandular, throat very oblique; teeth of upper lip broadly triangular-lanceolate, apex acuminate; teeth of lower lip linear-lanceolate. Corolla blue, 1–1.2 cm, puberulent; tube ca. 6×1.5 mm, abruptly dilated into throat 3–3.5×ca. 4.5 mm; upper lip straight, ca. 3 mm, 2-lobed; lower lip ca. 6.5 mm, middle lobe inversely cordate, ca. 3×3.5 mm, apex emarginate; lateral lobes reflexed, semicircular, ca. 1.5×2 mm. Nutlets brown, ovoid, ca. 1.6×1.1 mm, glabrous. Fl. Jul-Aug, fr. Aug-Sep.

- Grassy slopes, stony, alluvial fans, ravine sides, thickets, grassy riverbanks; 3300–4800 m. Gansu, Qinghai, Sichuan, Xizang.

**17. *Nepeta manchuriensis*** S. Moore, J. Bot. 18: 5. 1880.

黑龙江荆芥 hei long jiang jing jie

Herbs perennial. Stems to 1 m, to 4–5 mm in diam., rigid, erect, basally dark purple, subglabrous or sparsely short simple hairy, apically densely pilose, finely glandular. Petiole 3–5 mm; leaf blade lanceolate, to 15×3.5–4(–7) cm, thin, papery when dry, adaxially dark green, glabrous or sparsely simple hairy, abaxially greenish gray, sparsely pilose, densely yellow glandular, base rounded-truncate to cuneate or rarely obtuse, margin serrate, entire on upper blades, apex acuminate or acute. Verticillasters 4–7, forming spikes 2–6(–9) cm; peduncle 0.4–3 cm; bracts narrow lanceolate, 4–7 mm. Pedicel to 1.5 cm. Calyx 8.5–9.5 mm, densely fine glandular; teeth lanceolate, apex acuminate, posterior teeth ca. 2/5 as long as tube, anterior longer. Corolla 1.7–2 cm, densely short glandular hairy, narrowest part of tube exerted to 1/3 its length, gradually dilated into broad throat 5–7×5–7 mm; upper lip 2.5–3.5 mm, middle lobe reniform, 3–4×7–7.5 mm, apex broadly emarginate; lateral lobes triangular, 2–2.2×2.8–3 mm. Nutlets brown, ellipsoid-obovoid, 2.5–2.6×1–1.2 mm, indistinctly ribbed adaxially. Fl. Jun-Jul, fr. Aug.

- Mixed forests on gravelly soil along riverbanks. Heilongjiang [Japan, Russia].

**18. *Nepeta sibirica*** Linnaeus, Sp. Pl. 2: 572. 1753.

大花荆芥 da hua jing jie

*Dracocephalum sibiricum* (Linnaeus) Linnaeus;  
*Moldavica elata* Moench; *M. sibirica* (Linnaeus) Moench ex Steudel; *Nepeta macrantha* Fischer.

Herbs perennial. Stems numerous, ca. 40 cm, puberulent, glandular. Petiole 3–7 mm, 1.5–1.7 cm in basal leaves; leaf blade triangular-oblong to triangular-lanceolate, 3.4–9×1.2–2.2 cm, adaxially sparsely puberulent, abaxially densely yellow glandular, veins pubescent, base shallowly cordate, margin denticulate, apex acute. Verticillasters lax, on apical part of stem, 9–15 cm; peduncle 5–8 mm; bracts linear, 2.5–3 mm, pubescent, ciliate. Pedicel ca. 1 mm. Calyx 9–10 mm, densely glandular pubescent, throat very oblique; teeth joined for 1/3–1/2 their length, lanceolate-triangular, apex acuminate; teeth of lower lip separated to base, longer, narrower, apex acute. Corolla blue or bluish, 2–2.9 cm, sparsely pubescent; tube nearly straight, narrow, abruptly dilated into throat ca. 6×6 mm; lobes of upper lip ca. 1/2 as long as upper lip, elliptic, apex obtuse; middle lobe of lower lip reniform, deeply sinuate, margin coarsely crenate; lateral lobes ovate to ovate-triangular. Nutlets unknown. Fl. Aug-Sep.

- Hillsides; 1800–2700 m. Gansu, Nei Mongol, Ningxia, Qinghai [Mongolia, Russia].

Source of an essential oil. Cultivated as an ornamental.

**19. *Nepeta stewartiana*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 237. 1912.

多花荆芥 duo hua jing jie

*Dracocephalum stewartianum* (Diels) Dunn.

Plants perennial. Stems 5–1.5 m, glabrescent. Petiole 0.5–2 cm, 2–3 mm in upper leaves; leaf blade oblong to lanceolate, 6–10×2–2.5 cm, adaxially olive green, abaxially whitish pubescent, mixed with yellow glands, base rounded to broadly cuneate, margin crenulate-serrate, apex acute to ± obtuse. Verticillasters ± sessile apically; peduncle ca. 5 mm; bracts linear-lanceolate, shorter than calyx, densely puberulent, glandular. Calyx 1–1.4 cm, dilated in fruit, densely glandular puberulent, throat very oblique; adaxial teeth joined for ca. 2/3 their length, lanceolate triangular, 1.5–1.8 mm, apex acute; teeth of lower lip narrow lanceolate, ca. 5 mm, apex acuminate. Corolla purple or blue, 2–2.5 cm, sparsely pubescent; tube slightly incurved, ca. 2×as long as calyx, gradually dilated into broad throat; upper lip deeply divided into 2 obtuse lobes; middle lobe of lower lip elliptic, ca. 5×10 mm, base bearded inside, apex sinuate; lateral lobes semicircular, ca. 4 mm wide. Posterior stamens slightly shorter than upper lip of corolla. Nutlets brown, oblong, somewhat flattened, ca. 2.6×1.3 mm, adaxially ribbed, glabrous. Fl. Aug-Oct, fr. Sep-Nov.

- Grassy slopes, forests; 2700–3300 m. Sichuan, Xizang, Yunnan.

**20. *Nepeta tenuiflora*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 238. 1912.

细花荆芥 xi hua jing jie

*Dracocephalum tenuiflorum* (Diels) Dunn.

Herbs perennial. Stems numerous, 30–160 cm tall. Petiole (2–)4–20 mm; leaf blade broadly lanceolate to oblong-lanceolate, 4–8×1.5–2.5 cm, thin papery, adaxially densely puberulent, abaxially sparsely pubescent, with small yellowish white glands, base rounded to shallowly cordate, margin somewhat unequally crenulate-serrate, apex acute. Verticillasters on 3–8 apical nodes, short pedunculate; bracts linear, to as long as calyx, densely yellow glandular puberulent. Calyx (6–)8–11 mm, yellow glandular puberulent, throat very oblique; teeth of upper lip ca. 1/3 as long as lip, broadly lanceolate or lanceolate-triangular; teeth of lower lip narrowly lanceolate. Corolla purple-blue or bluish, puberulent, 1.3–1.5 cm in pistillate flowers, to 2.1 cm in bisexual flowers; tube slightly incurved, slender, narrowest part slightly exerted, abruptly dilated into throat to 5 mm wide; upper lip ca. 4×4 mm, divided into 2 obtuse lobes ca. 1/2 as long as lip; middle lobe of lower lip obovate, ca. 3 mm, margin undulate, apex emarginate; lateral lobes subcircular, ca. 1 mm. Nutlets grayish brown, oblong, somewhat flattened, ca. 2×1.4 mm, adaxially ribbed, minutely pubescent. Fl. Aug–Sep, fr. Sep–Oct.

• Grassy hillsides, forest margins, thickets; 2800–3600 m. Sichuan, Yunnan.

**21. *Nepeta membranifolia*** C. Y. Wu, Fl. Yunnan. 1: 574. 1977.

膜叶荆芥 mo ye jing jie

Herbs perennial. Stems few, 45–60 cm, puberulent basally, glandular puberulent upward. Petiole 1–2.5 cm; leaf blade oblong-lanceolate, 5.5–10.5×2–3.8 cm, wider basally, gradually narrowed to apex, membranous, puberulent, adaxially olive green, abaxially greenish, base rounded to shallowly cordate, margin coarsely mucronate-crenate, apex obtuse. Verticillasters on 3–5 apical nodes, close together, few flowered; peduncle 2–5(–25) mm; bracts linear, 1.5–2 mm, glandular puberulent. Calyx 9–10 mm, glandular puberulent, throat very oblique; teeth of upper lip triangular-lanceolate, 1.8–2.1 mm; teeth of lower lip linear, 4.2–5 mm. Corolla purple, 2–2.2 cm, sparsely puberulent; tube slightly incurved, base 1.2–1.5 mm wide, narrowest part slightly exerted, abruptly dilated into throat ca. 6.5×7 mm; upper lip deeply 2-lobed, straight, ca. 3.5 mm; lower lip upwardly oblique, ca. 1 cm; middle lobe inversely cordate, 2-lobulate, base bearded; lateral lobes obliquely semicircular, conspicuous. Style exerted, apex 2-cleft. Fl. Aug.

• Mixed valley forests; 3100 m. Yunnan.

Distinguished from *Nepeta stewartiana* in the original description by the membranous leaves with wider bases and larger marginal serrations.

**22. *Nepeta jomdaensis*** H. W. Li, Fl. Xizang. 4: 132. 1985.

江达荆芥 jiang da jing jie

Herbs perennial. Stems 30–40 cm, retrorse puberulent. Petiole 0.5–2.5 cm, longer basally, shorter upward, retrorse puberulent; leaf blade ovate to oblong-ovate, 2–3.5×1–2 cm, puberulent, abaxially intermixed with yellowish glands, base truncate-cordate to shallowly cordate, margin crenate, apex obtuse. Verticillasters 1–5-flowered, short pedunculate or sessile; bracts linear, ca. 6×less than 1 mm, finely white strigose. Calyx tubular, ca. 1 cm, white strigose, glandular puberulent, glabrous inside; tube 5–6 mm, throat oblique; teeth of upper lip oblong-lanceolate, apex acute; teeth of

lower lip recurved, triangular-lanceolate. Corolla purple-blue, 2.4–2.8 cm, pilose, glabrous inside; tube 2–2.3 cm, abruptly dilated on apical 2/5; upper lip 2-lobed, lobes to 1/2 its length; middle lobe of lower lip inversely cordate. Fl. Jul.

• Hillside thickets; 3500 m. Xizang (Jomda Xian).

Related to *Nepeta hemsleyana* but with distinctly petiolate leaves.

**23. *Nepeta souliei*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 9: 221. 1911.

狭叶荆芥 xia ye jing jie

*Dracocephalum souliei* (H. Léveillé) Handel-Mazzetti.

Herbs perennial. Stems 60–80 cm, densely pubescent. Petiole 0.4–3.5 cm; leaf blade broadly to narrowly lanceolate, 3.5–6(–9.5)×(1.5–)1.8–2.4 cm, papery, adaxially olive green, puberulent, abaxially grayish, densely pubescent, sometimes mixed with small yellow glands, base rounded or subtruncate to shallowly cordate, margin serrulate, apex acute. Verticillasters on 4–6 apical nodes; peduncle short, densely pubescent, glandular; bracts linear, to 8 mm, ciliate. Pedicel densely pubescent, glandular. Calyx 6–8 mm, glandular pubescent, ciliate, throat very oblique; teeth of upper lip to 1/3 as long as lip, narrowly triangular, apex acute; teeth of lower lip narrowly lanceolate, apex acuminate. Corolla purple, 1.6–2.2(–2.5) cm, ca. 1.4 cm in pistillate flowers; tube slender, slightly incurved, base ca. 1.5 mm wide, abruptly dilated into throat ca. 10×7 mm; upper lip ca. 5×5 mm, with obtuse lobes to 2.5 mm; middle lobe of lower lip inversely cordate, yellow barbate, ca. 4×6 mm, margin erose, apex emarginate; lateral lobes semicircular, ca. 1.5 mm. Nutlets unknown. Fl. Jul–Oct.

• Hillsides, forest margins, sparse forests; 2600–3400 m. Sichuan, Xizang.

**24. *Nepeta prattii*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 9: 245. 1911.

康藏荆芥 kang zang jing jie

*Dracocephalum prattii* (H. Léveillé) Handel-Mazzetti; *D. robustum* Nakai & Kitagawa; *Nepeta macrantha* Dunn.

Herbs perennial. Stems 70–90 cm, retrorse hirtellous or glabrate, yellowish glandular. Petiole 3–6 mm, very short to absent in upper leaves; leaf blade ovate-lanceolate to lanceolate, 6–8.5×2–3 cm, adaxially olive green, sparsely pubescent, abaxially greenish, glandular puberulent, veins hirtellous, base shallowly cordate, margin densely dentate-serrate, apex acute. Verticillasters on 3–9 upper nodes, widely spaced basally, upper 3–6 in compact spikes; bracts to 1.3 cm, linear to linear-lanceolate, glandular puberulent, ciliate. Calyx 1.1–1.3 cm, pubescent, white glandular, throat very oblique; teeth of upper lip broadly lanceolate or lanceolate-triangular; teeth of lower lip narrowly lanceolate, apex acuminate. Corolla purple or blue, 2.8–3.5 cm, sparsely pubescent outside; tube slightly incurved, base ca. 1.5 mm wide, exerted portion of narrowest part ca. as long as calyx, abruptly dilated into throat to 10×9 mm; lobes of upper lip to 1/2 as long as lip; middle lobe of lower lip reniform, base white barbate, margin erose, apex emarginate. Nutlets brown, obovoid-oblong, ca. 2.7×1.5 mm, basally attenuate, adaxially ribbed, smooth. Fl. Jul–Oct, fr. Aug–Nov.

• Wet grassy slopes; 1900–4400 m. Gansu, Hebei, Qinghai, Shaanxi, Shanxi, Sichuan, Xizang.

**25. *Nepeta wilsonii*** Duthie, Gard. Chron., ser. 3, 40: 334. 1906.

圆齿荆芥 *yuan chi jing jie*

*Dracocephalum wilsonii* (Duthie) Dunn.

Herbs perennial. Stems 35–70 cm, erect, sparsely retrorse pubescent. Petiole 0–4 mm; leaf blade oblong-ovate to elliptic-ovate, 4–7.4×1.9–3 cm, papery, adaxially olive green, sometimes blackish, densely puberulent, abaxially greenish, sparsely pubescent, yellowish glandular, base shallowly cordate or subtruncate, margin crenate, apex obtuse. Verticillasters on 2–6 apical nodes; bracts lanceolate to linear, ca. 1/2 as long as calyx or slightly shorter, long ciliate. Calyx 0.9–1.1 cm, sparsely villous, with a mixture of long ciliate and glandular puberulent hairs, throat very oblique; upper lip ca. 3 mm, teeth triangular; lower lip ca. 2.5 mm, teeth lanceolate, apex acuminate. Corolla purple or blue, sometimes white, 1.8–2.5 cm, sparsely pubescent or subglabrous; tube slightly incurved, exerted portion of narrowest part slightly shorter than calyx, abruptly dilated into throat, to 10×8 mm; lobes of upper lip to more than 1/2 as long as lip; middle lobe of lower lip obcordate, base white barbate, margin undulate, apex emarginate. Style exerted. Nutlets black-brown, oblong, flattened, ca. 2.8×1.5 mm, adaxially ribbed, smooth. Fl. Jul-Sep, fr. Sep-Nov.

• Grassy slopes; 2600–4100 m. Sichuan, Yunnan.

**26. *Nepeta veitchii*** Duthie, Gard. Chron., ser. 3, 40: 334. 1906.

川西荆芥 *chuan xi jing jie*

*Dracocephalum veitchii* (Duthie) Dunn.

Herbs perennial. Stems 30–60 cm, erect, puberulent. Petiole 0–2 mm; leaf blade ovate-oblong to lanceolate-oblong, 2.8–5.2×1.1–1.7(–2.2) cm, pubescent, adaxially olive green, abaxially gray-green, yellowish glandular, becoming black when dry, base rounded to shallowly cordate, margin crenulate-serrulate, apex acute. Verticillasters on 5 or 6 apical nodes, 2 or 3 basal nodes very widely spaced but 3 apical nodes in spikes; bracts ca. 2/3 as long as calyx, ciliate. Calyx 8–9 mm, spreading pubescent, yellowish glandular, throat very oblique; teeth of upper lip narrowly triangular, teeth of lower lip narrowly lanceolate. Corolla blue-purple, 1.8–2.5 cm, sparsely pubescent, yellowish glandular; tube incurved, exerted portion of narrowest part ca. 1/2 as long as calyx, abruptly dilated into throat ca. 6×4 mm; upper lip ca. 3 mm, obtusely 2-lobed; lower lip obcordate, base white barbate, apex emarginate. Nutlets unknown. Fl. Jul-Aug.

• Grassy slopes; 3600–4100 m. Sichuan, Yunnan.

**27. *Nepeta leucolaena*** Bentham ex J. D. Hooker, Fl. Brit. India 4: 662. 1885.

白绵毛荆芥 *bai mian mao jing jie*

Stems 60–90 cm, erect, white stellate dendroid tomentose. Petiole 0–4 mm; leaf blade ovate, 0.8–2.5 cm, scaly tomentose, base rounded to cordate, margin crenate, apex acute to obtuse. Verticillasters few flowered, widely spaced, in interrupted terminal spikes, short pedunculate basally; bracts lanceolate. Calyx 5–6 mm, lanate; posterior teeth much shorter than calyx tube, triangular; anterior teeth subulate, shorter. Corolla 1.5–1.8 cm, tube incurved, funnel-form, limb short. Nutlets linear-oblong, 1.5–2 mm.

• Slopes; 2600–4000 m. Xizang [India].

**28. *Nepeta hemsleyana*** Oliver ex Prain, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 59: 305. 1890.

藏荆芥 *zang jing jie*

*Dracocephalum hemsleyana* (Oliver ex Prain) Prain ex Marquand & Airy Shaw; *Nepeta angustifolia* C. Y. Wu.

Plants perennial. Stems erect, ca. 60 cm, finely striate, retrorse floccose-puberulent. Stem leaves sessile, linear-lanceolate, 2–4 cm×7–8 mm, puberulent, glandular, base broadly cuneate, margin entire or remotely 1–3-serrate, apex acute to obtuse. Verticillasters axillary, 2–10-flowered, pedunculate; peduncle 2–7 mm; bracts linear, 5–10×ca. 1 mm, puberulent. Calyx tubular, ca. 1.5 cm; tube ca. 8 mm, incurved, puberulent, conspicuously 15-veined; teeth spiny, posterior teeth triangular, anterior teeth reflexed, lanceolate-triangular. Corolla blue or purple, 2.5–3 cm, pilose; tube 2–2.5 cm, abruptly dilated beyond calyx; upper lip straight, ca. 3×8 mm, lobes to 1.5 mm; lower lip reflexed, ca. 5×13 mm; middle lobe inversely cordate, base with triangular pulvinate swelling inside, apex emarginate. Nutlets oblong-ovoid, ca. 3×2 mm, apex rounded, villous-tufted. Fl. Jul-Sep, fr. Sep-Oct.

• Grassy slopes; 4200–4500 m. Xizang.

Used medicinally in Xizang for convulsions.

**29. *Nepeta cataria*** Linnaeus, Sp. Pl. 2: 570. 1753.

荆芥 *jing jie*

*Calamintha albiflora* Vaniot; *Nepeta bodinieri* Vaniot.

Plants perennial. Stems 40–150 cm, white pubescent. Petiole 0.7–3 cm, slender; leaf blade ovate to triangular-cordate, 2.5–7×2.1–4.7 cm, adaxially yellow-green, hirtellous, abaxially whitish pubescent especially on veins, base cordate to truncate, margin coarsely crenate to dentate, apex obtuse to acute. Cymes axillary basally, upper ones in loose or compact, interrupted terminal panicles; bracts and bracteoles subulate, minute. Calyx tubular, ca. 6×1.2 mm, white pubescent; teeth hirsute inside, subulate, 1.5–2 mm, posterior teeth longer, urceolate in fruit. Corolla white with purple spots on lower lip, white villous; throat pubescent inside, ca. 7.5 mm; tube slender, ca. 0.3 mm in diam., abruptly dilated into broad throat; upper lip ca. 2×3 mm, apex emarginate; middle lobe of lower lip subcircular, ca. 3×4 mm, cordate, margin coarsely dentate. Stamens included. Nutlets nearly triquetrous, ovoid, ca. 1.7×1 mm. Fl. Jul-Sep, fr. Sep-Oct.

• Thickets or around houses; to 2500 m. Cultivated in Gansu, Guizhou, Henan, Hubei, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Yunnan [Afghanistan, Japan; Africa, Europe, North America].

Dried leaves and flowering tops are used medicinally as a stimulant, tonic, carminative, diaphoretic, and for infantile colic.

**30. *Nepeta fordii*** Hemsley, J. Linn. Soc., Bot. 26: 289. 1890.

心叶荆芥 *xin ye jing jie*

Herbs perennial. Stems slender, 30–60 cm tall, pubescent. Petiole slender, 1–4 cm; leaf blade triangular-ovate, 1.5–6.4×1.5–2 cm, hirtellous, adaxially olive green, abaxially greenish, base cordate, margin crenate to dentate,



apex acute. Cymes axillary, sometimes helicoid, in loose terminal panicles; bracts subulate, minute, ca. 2.5 mm. Calyx tubular, minutely hispid, ca. 4 mm, veins elevated; teeth subequal, lanceolate, ca. 1 mm. Corolla purple, ca. 8 mm, pubescent, glabrous inside; tube ca. 0.8 mm in diam. at base, narrowest part ca. 2 mm, abruptly dilated into throat ca. 3×3 mm; upper lip ca. 1.2 mm, 2-lobed; lower lip longer, middle lobe subcircular, ca. 2.5×2.2 mm, margin undulate. Style exerted. Nutlets dark purple-brown, ovoid, triquetrous, ca. 0.8×0.6 mm, glabrous. Fl. and fr. Apr–Oct.

• Thickets; 100–700 m. Guangdong, Henan, Hubei, Hunan, Shaanxi, Sichuan.

**31. *Nepeta everardi*** S. Moore, J. Bot. 16: 135. 1878.

浙荆芥 zhe jing jie

Herbs erect. Stems 60–100 cm, finely striate, puberulent. Petiole narrowly winged, 1.5–4.5 cm, puberulent; leaf blade triangular-cordate, 4–7.5×ca. 3.6 cm, thin papery, puberulent, base truncate to cordate, margin dentate-crenate, apex caudate-acuminate. Cymes 7–9-flowered, short pedunculate, in compact, terminal panicles on apices of stems and branches; floral leaves and bracts linear; bracteoles linear, 1–1.5 mm. Pedicel ca. 1 mm. Calyx tubular, ca. 5 mm, densely minute hispid, glandular, throat oblique; teeth lanceolate, ca. 1.7 mm, apex acute. Corolla purple, to 2 cm; tube ca. 0.6 mm in diam. at base, to 6 mm at mouth, puberulent; upper lip ca. 3×5 mm, minutely hispid near margin; middle lobe of lower lip inversely cordate, ca. 5×6 mm, base cordate, margin undulate, apex rounded; lateral lobes very distinct, subtruncate. Nutlets dark brown, ovoid, triquetrous, ca. 1.5×1 mm. Fl. May, fr. Aug.

• Thickets of low elevations. Anhui, Hubei, Zhejiang.

**32. *Nepeta dentata*** C. Y. Wu & Hsuan, Fl. Reipubl. Popularis Sin. 65(2): 589. 1977.

齿叶荆芥 chi ye jing jie

*Nepeta atroviridis* C. Y. Wu & Hsuan.

Herbs perennial. Stems ca. 80 cm, sparsely puberulent. Petiole 0.4–2.6 cm, sparsely hirtellous; leaf blade ovate-oblong or triangular-lanceolate to lanceolate, 3.2–10.5×(1–)1.6–6.5 cm, papery, sparsely hirtellous, adaxially olive green, abaxially greenish, densely yellow glandular, base rounded to cordate, margin coarsely crenate-dentate, apex acute to acuminate. Cymes 2–11-flowered, inserted on 6–10 apical stem and branch nodes, widely spaced; peduncle 3–15 mm; bracts and bracteoles linear, 1–1.5 mm. Pedicel 1–1.5 mm, glandular puberulent. Calyx purple-red throughout or abaxially, tubular, ca. 8.5 mm, ca. 2.5 mm in diam., glandular puberulent, throat oblique; posterior teeth 3–4 mm; anterior teeth 2, slightly shorter, narrowly lanceolate, base sparsely hirsute inside. Corolla blue-purple, ca. 2 cm, sparsely puberulent, yellow glandular; tube slender, base ca. 1 mm in diam., narrowest part ca. 1.5×as long as calyx, gradually dilated into throat ca. 8×6 mm; upper lip straight, ca. 2 mm; lower lip oblique, ca. 8 mm; middle lobe concave, cordate, ca. 5×7 mm, not bearded inside; lateral lobes semicircular, ca. 1.5×3.5 mm. Nutlets brown, globose-ovoid, ca. 1.5×1.2 mm, adaxially ribbed, glabrous. Fl. and fr. Aug.

• Forests, thickets, grassy hillsides, gravelly terraces; 2100–3500 m. Xizang.

Distinguished, in the original description, from *Nepeta everardi*, by the coarsely crenate-dentate, ovate-oblong leaves.

**33. *Nepeta sessilis*** C.Y. Wu & Hsuan, Fl. Yunnan. 1: 577. 1977.

无柄荆芥 wu bing jing jie

Herbs perennial. Stems 50–80 cm, densely retrorse pubescent, sometimes intermixed with glandular puberulent hairs. Leaves sessile, largest on mid stem; leaf blade leathery, adaxially olive green, densely hirtellous, abaxially greenish, pubescent, with dark brown impressed glands, base cordate, margin undulate-crenate or shallowly serrate, apex obtuse to acute. Cymes dichotomous, 2–15-flowered, inserted in leaf axils of upper leaves; peduncle 3.5–4 mm; bracts and bracteoles linear, 1.5–3 mm, glandular pubescent. Pedicel ca. 1 mm, densely glandular pubescent. Calyx tubular, 7–9×1.6–2 mm, hirtellous, glandular puberulent, throat subregular; teeth subequal, oblong-lanceolate or lanceolate, 1.7–2 mm. Corolla blue, with white spots on middle lobe of lower lip, ca. 2.5 cm, puberulent; tube straight, base ca. 1.8 mm wide, narrowest part ca. 2×as long as calyx, gradually dilated into throat to 9×6.5 mm; upper lip straight, ca. 2.5 mm; lower lip oblique or slightly spreading, ca. 6 mm, 3-lobed; middle lobe of lower lip cordate, margin bent inward, undulate, glabrous inside, base slightly swollen; lateral lobes semicircular, distinct. Nutlets dark brown, triquetrous, ovoid, ca. 2×1.3–1.6 mm, glabrous. Fl. Aug–Sep, fr. Sep–Oct.

• Mountain slopes, thickets; 3100 m. Sichuan, Yunnan.

**34. *Nepeta sungpanensis*** C. Y. Wu, Fl. Reipubl. Popularis Sin. 65(2): 590. 1977.

松潘荆芥 song pan jing jie

Herbs erect or suberect. Stems ca. 90 cm, much branched, puberulent. Petiole 2–10 mm, densely puberulent; leaf blade ovate-lanceolate to narrowly ovate, 1.5–3×1–2 cm, adaxially olive green, densely puberulent, abaxially greenish, densely puberulent, impressed glandular, base rounded to truncate, margin incised-serrate, apex short acuminate to acute. Cymes dichotomous, in upper leaf axils; peduncle 2–10 mm; bracts and bracteoles minute, subulate. Pedicel 1–1.5 mm, puberulent. Calyx campanulate, 5–6 mm, dilated and urceolate in fruit, 11–15-veined, pubescent, mouth regular; teeth lanceolate to triangular-ovate, 1.2–3 mm, posterior 3 slightly longer. Corolla blue, ca. 2.2 cm, puberulent; upper lip straight, 2–4.5 mm; middle lobe of lower lip subcircular, ca. 6 mm wide, base abruptly clawed, margin undulate, apex slightly emarginate; lateral lobes short, indistinct. Nutlets ovoid, slightly flattened, ca. 1.5×1.2 mm, distinctly or indistinctly warty. Fl. Sep–Oct, fr. Oct–Nov.

• Open hillsides, wasteland adjacent to cultivated areas; 1700–2200 m. Sichuan (Songpan Xian).

Two varieties are sometimes recognized: var. *sungpanensis* has calyx 11–13-veined, with triangular-ovate teeth 1.2–1.5 mm, and distinctly warty nutlets; and var. *angustidentata* C. Y. Wu & Y. C. Huang (Fl. Reipubl. Popularis Sin. 65(2): 590. 1977) has calyx 13–15 veined, with lanceolate teeth ca. 3 mm, and nutlets indistinctly warty.

**35. *Nepeta micrantha*** Bunge, Fl. Altaic. 2: 401. 1830.

小花荆芥 xiao hua jing jie

Herbs annual. Stems erect, (2.5–)5–30(–35) cm, densely white pubescent, glandular puberulent. Petiole 1–3 cm,

densely white pubescent; lower and mid stem leaf blades ovate, oblong-elliptic, to lanceolate, 0.8–4×0.7–3.5 cm, thin papery, adaxially olive green, puberulent, abaxially greenish, glandular pubescent, yellow glandular, base broadly cuneate to rounded, margin remotely 3–5-serrate or subentire, apex obtuse. Cymes in axils of upper leaves, (1–)2.5–6.5 cm; peduncle 0–5 mm, densely white pubescent, glandular puberulent; bracts linear, 2.5–3 mm. Calyx tubular, 3.5–4×1–1.2 mm, bottle-shaped and 4.5–6.5×ca. 2 mm in fruit, densely white patent villous, yellow glandular, throat oblique; posterior teeth triangular to oblong-triangular, 0.7–1.1 mm, apex acute to acuminate, middle tooth longest; anterior teeth 2, narrowly lanceolate, apex acuminate. Corolla purplish, 4.5–6 mm, pilose; tube slender, ca. 2.5×0.7 mm, dilated into throat ca. 1×1.2 mm; upper lip straight, ca. 0.8 mm; lower lip almost 2×as long as upper lip, spreading, lobed; middle lobe cordate, ca. 1.1×1.3 mm, reflexed, margin undulate, apex emarginate; lateral lobes semicircular, ca. 0.3×0.7 mm. Nutlets dark brown, oblong-ovoid, ca. 1.5×0.7 mm, adaxially obtusely ribbed, minutely tuberculate. Fl. and fr. Jun-Jul.

• Sandy areas. Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan].

**36. *Nepeta nuda*** Linnaeus, Sp. Pl. 2: 570. 1753.

直齿荆芥 zhi chi jing jie

*Nepeta pannonica* Linnaeus.

Plants perennial. Stems erect, 50–120 cm, 3–5 mm in diam., rigid. Petiole 0–10 mm; leaf blade oblong-ovate or oblong-elliptic to lanceolate, 3.8–6.5×1.8–2.5 cm, adaxially greenish, sparsely puberulent or subglabrous, abaxially pale, pubescent, base truncate or shallowly cordate, margin crenate or serrate, apex obtuse to acute or acuminate. Cymes numerous, axillary, many flowered, in terminal panicles 3–8.5×2.5 cm; bracts and bracteoles linear, 1.5–2.5 mm. Pedicel 0.3–0.5 mm. Calyx tubular, 3–4×1–1.2 mm, pubescent, glandular puberulent inside; teeth subequal, subulate, 1.1–1.3 mm, margin narrow, membranous. Corolla purplish, 5.5–8.5 mm, sparsely pubescent; tube ca. 0.9 mm wide at base, abruptly dilated into throat 1.5–2×ca. 2.5 mm; upper lip straight, 1.8–2 mm, deeply divided into 2 ovate lobes; lower lip spreading, 4–6 mm, with middle lobe of lower lip broadly ovate-cordate, margin slightly undulate, apex emarginate. Nutlets brown, oblong, ca. 1.6×1.1 mm, adaxially ribbed, glabrous, apex minutely tuberculate, sparsely hairy. Fl. Jul-Sep, fr. Aug-Oct.

• Grasslands below forest zone, mountain basins, along valley streams; 1600–1900 m. Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan; Europe].

Used as a honey plant.

**37. *Nepeta virgata*** C. Y. Wu & Hsuan, Fl. Reipubl. Popularis Sin. 65(2): 590. 1977.

帚枝荆芥 zhou zhi jing jie

Herbs perennial. Stems obliquely ascending, ca. 30 cm, finely striate, subglabrous or slightly glandular puberulent. Petiole 1–2 mm; leaf blade ovate or ovate-elliptic, 1.5–3.5×0.7–1.5 cm, sparsely fine strigose, adaxially olive green, abaxially greenish, with small, yellowish impressed glands, base broadly cuneate to shallowly cordate, margin dentate-serrate, apex apiculate. Cymes 5–7-flowered, axillary, in narrow racemes; peduncle 1.5–8 mm; bracts and bracteoles linear, shorter than calyx, 2–3 mm. Calyx narrowly tubular, 4–5 mm, densely puberulent, throat regular; teeth lanceolate-

subulate, nearly as long as tube, apex awned-acuminate. Corolla reddish, less than 1 cm, puberulent, glandular; tube slightly incurved, base ca. 0.6 mm wide, gradually dilated toward apex, abruptly dilated into throat ca. 1.5×1.5 mm; upper lip ca. 2.5×3 mm, apex deeply divided; lower lip downwardly oblique, with middle lobe reniform, ca. 2.5×3 mm, base bearded, emarginate. Nutlets unknown. Fl. Aug.

• Mountain basins. Xinjiang.

The relationship to *Nepeta nuda* needs careful consideration.

**38. *Nepeta ucranica*** Linnaeus, Sp. Pl. 2: 570. 1753.

尖齿荆芥 jian chi jing jie

*Teucrium sibiricum* Linnaeus.

Plants perennial. Stems 17–50 cm, erect or ascending, subglabrous or with upwardly curved, short, simple hairs. Petiole almost as long as blade basally, very short in upper leaves; leaf blade ovate to lanceolate or narrowly lanceolate, 1.5–3.5×1–1.8 cm, largest on mid stem, adaxially tinged gray-blue, glabrous or sparsely appressed puberulent, abaxially paler, puberulent, yellowish glandular, veins and margin pubescent, base shallowly cordate to broadly cuneate, margin dentate-serrate, apex acute or obtuse. Cymes pyramidal, compact, many flowered, terminal, cymules 3-flowered; peduncle 2–5 mm; bracts purple, linear, as long as calyx. Pedicel 1–2.5 mm. Calyx ca. 1.1 cm, tubular-campanulate, base densely white lanate, apex glandular; teeth triangular-subulate, at least as long as tube, apex long spiny. Corolla blue, 0.9–1.2 cm, pubescent, tube nearly included, gradually dilated into throat; middle lobe of lower lip reniform, 2–3×3–5 mm. Nutlets black-brown, ellipsoid, 2.5–2.7 mm, round-truncate at apex and base, densely depressed tuberculate. Fl. May-Jun, fr. Jun-Jul.

• Plains, grassy hills, open gravelly slopes. Xinjiang [Kazakhstan, Kyrgyzstan, Russia, Tajikistan; Europe].

The specimens from Xinjiang are somewhat different from the range outside of China: 1) Leaves strongly dentate-serrate, green tinged gray-blue; veins not shiny, impressed adaxially, elevated abaxially; 2) Pyramidal cymes compact, many flowered, terminal on stem and branches; peduncles of cymules 2–5 mm; 3) Calyx densely white lanate at apex. The correct name for our plant is uncertain; it may be the W Asian *Nepeta heliotropifolia* Lamarck.

**39. *Nepeta pungens*** Benth, Labiat. Gen. Spec. 487. 1834.

刺尖荆芥 ci jian jing jie

*Nepeta fedtschenkoi* Pojarkova.

Plants annual. Stems 5–25 cm, erect, pubescent, apex with short-stalked or sessile glands. Petiole 0.8–1.5 cm, subsessile upward; stem leaf blade ovate, 1.4–1.9×1–1.2 cm, adaxially olive green, sparsely puberulent, abaxially pubescent, stalked or sessile glandular, base broadly cuneate, margin remotely dentate to subentire, apex obtuse to acute, or spinescent-acuminate. Cymes 3–5-flowered, 2 or 3 upper pairs sessile, in dense ovoid capitula, basal pairs widely spaced with peduncle 3–13 mm; bracts petiole, elliptic-lanceolate to lanceolate linear, 0.8–1.2 cm, rigid, margin entire, apex spinescent-acuminate, glandular, ciliolate. Calyx 5.5–7 mm, (13–)15-veined, villous, glandular; teeth subequal, 2.5–3.5 mm, straight, apex spinescent-acuminate. Corolla 7–8.5 mm, slightly pilose; tube slender, 4.5–5.8 mm, slightly curved, abruptly dilated into throat; upper lip 1.3–1.7 mm, concave, 2-lobed; middle lobe of lower lip reniform, 0.7–

1×1.5–1.7 mm. Nutlets yellow-brown, obovoid, ca. 1.5×1 mm, adaxially ± distinctly ribbed. Fl. May–Jun, fr. Jun–Jul.

• Foothills above rivers, rocky areas. Xinjiang [Afghanistan, Kazakhstan, Mongolia, Russia; SW Asia].

**40. *Nepeta multifida*** Linnaeus, Sp. Pl. 2: 572. 1753.

多裂叶荆芥 duo lie ye jing jie

*Nepeta lavendulacea* Linnaeus f.

Herbs perennial. Rhizomes woody. Stems numerous, erect, to 40 cm tall, semiwoody, white villous. Petiole ca. 1.5 cm; leaf blade ovate, pinnatifid or pinnatifid, sometimes pinnatilobate to subentire, 2.1–3.4×1.5–2.1 cm, adaxially puberulent, abaxially white-yellow or white hirtellous, glandular, base truncate to cordate, lobes linear-lanceolate to ovate, margin entire or remotely serrate, ciliate, apex acute. Verticillasters in continuous or rarely interrupted terminal spikes 6–12 cm; bracts leaflike, gradually reduced toward apex, ovate, ca. 1 cm basally, divided or entire, apex cuspidate, purplish, longer than flowers; bracteoles ovate-lanceolate to lanceolate, purplish, as long as to slightly longer than flowers. Calyx purple, base yellowish, ca. 5×2 mm, 15-veined, sparsely pubescent; teeth triangular, ca. 1 mm, apex acute. Corolla blue-purple, yellowish when dry, ca. 8 mm, intricately villous, tube gradually dilated toward throat. Anterior stamens shorter than upper lip of corolla, posterior stamens slightly longer. Nutlets brown, triquetrous, oblong, ca. 1.6×0.6 mm, base attenuate, smooth. Fl. Jul–Sep, fr. Aug–Oct.

• Margins of pine forests, grassy slopes, wet grasslands; 1300–2000 m. Gansu, Hebei, Nei Mongol, Shaanxi, Shanxi [Mongolia, Russia].

Source of an essential oil.

**41. *Nepeta tenuifolia*** Benth, Labiat. Gen. Spec. 468. 1834.

裂叶荆芥 lie ye jing jie

*Elsholtzia integrifolia* Benth; *Nepeta vaniotiana* H. Léveillé.

Herbs annual. Stems 30–100 cm tall, much branched, sparsely gray pubescent. Leaves 3-fid, unequal; petiole 2–10 mm; leaf blade 1–3.5×1.5–2.5 cm, adaxially dark puberulent, abaxially gray-green, pubescent especially on veins and margin, glandular, base cuneate-decurrent into petiole, lobes lanceolate, 1.5–4 mm wide, with middle lobe largest, margin entire, apex acute. Spikes terminal, 2–13 cm, interrupted, of numerous verticillasters; bracts leaflike, reduced upward, as long as flowers; bracteoles linear, minute. Calyx tubular-campanulate, ca. 3×1.2 mm, gray pilose, 15-veined; teeth triangular-lanceolate to lanceolate, ca. 0.7 mm, apex acuminate, posterior teeth longer. Corolla violet, ca. 4.5 mm, pilose. Nutlets brown, triquetrous, oblong, ca. 1.5×0.7 mm, dotted. Fl. Jul–Sep, fr. Aug–Oct.

• Sloping forest margins, valleys; 500–2700 m. Gansu, Guizhou, Hebei, Heilongjiang, Henan, Liaoning, Qinghai, Shaanxi, Shanxi, Sichuan [Korea]; cultivated in Fujian, Jiangsu, Yunnan, Zhejiang.

Variety *japonica* (Maximowicz) Kitagawa is native to Japan.

A traditional Chinese herb used for diaphoresis and also as the source of an essential oil.

**42. *Nepeta annua*** Pallas, Acta Acad. Sci. Imp. Petrop. 2: 263. 1783.

小裂叶荆芥 xiao lie ye jing jie

*Nepeta botryoides* Solander; *Schizonepeta botryoides* (Solander) Briquet.

Herbs annual. Stems 13–26 cm tall, branched from base, white pilose, angles purple-brown. Petiole shorter to longer than blade; leaf blade broadly ovate to oblong-ovate, 1–2.3×0.7–2.1 cm, bipinnate-partite, white pilose, densely so abaxially, occasionally yellow glandular, lobes linear-oblong to ovate-oblong, margin entire or occasionally 1- or 2-serrate, apex obtuse to rounded. Spikes terminal, (1–)2–8×1.2–1.4 cm, white pilose; verticillasters numerous, 4–10-flowered, contiguous upward, widely spaced basally; floral leaves linear-lanceolate upward, as long as calyx, margin entire, apex acuminate; bracteoles linear-subulate, minute. Pedicel 1–4 mm. Calyx 5–6×3.5 mm, white pilose, throat oblique, 15-veined; teeth ovate, sinuses with a thickened fold, margin scarious, apex short spiny; posterior teeth ca. 1.8 mm, anterior teeth shorter. Corolla purplish, 6.5–8 mm, villous; tube 5–6 mm, gradually dilated upward; upper lip short, straight, 2-lobed; middle lobe of lower lip unequally dentate. Posterior stamens slightly exserted. Nutlets brown, triquetrous, oblong, 1.7–2 × 0.8–1 mm, base acute, apex rounded, sparsely hairy or glabrous. Fl. Jun–Aug, fr. Aug–Sep.

River terraces; 1700 m. Nei Mongol, Xinjiang, Xizang [Mongolia, Russia].

Source of an essential oil.

