

**47. STACHYS** Linnaeus, Sp. Pl. 2: 580. 1753.

水苏属 shui su shu

Herbs erect perennials or diffuse annuals, rarely subshrubs or shrubs, sometimes rhizomatous. Verticillasters 2- to many flowered, in terminal spikes. Pedicel short or obsolete. Calyx tubular-campanulate, obconical or tubular, 5- or 10-veined; teeth 5, equal or posterior 3 larger, acute to bristlike, or spinescent. Corolla red, purple, yellow, gray, or white, 2-lipped; tube cylindric, nearly always villous annulate inside, sometimes saccate, incurved at apex, throat not dilated; upper lip straight or subpatent; lower lip longer, 3-lobed, middle lobe entire or emarginate, lateral lobes shorter. Stamens 4, reaching upper lip of corolla, anterior 2 longer and curved laterally at corolla throat; anther cells 2, conspicuous, parallel or divergent. Style apex subequally 2-cleft, lobes subulate. Nutlets ovoid to oblong, smooth or tuberculate, apex obtuse to rounded.

About 300 species: Africa, Asia, Europe, North America, South America; 18 species in China.

- 1a. Annual herbs; corolla tube short, included ..... 18. *S. arvensis*
- 1b. Perennial herbs.
  - 2a. Bracteoles much longer than pedicels, at least 1/2 as long as calyx.
    - 3a. Plants densely gray sericeous-lanate; leaves thick; verticillasters in long compact spikes ..... 1. *S. lanata*
    - 3b. Plants pilose; leaves papery; verticillasters in widely spaced spikes.
      - 4a. Branches few or none; calyx teeth ovate-lanceolate, apex spinescent, strongly reflexed ..... 3. *S. strictiflora*
      - 4b. Branches many from near stem base; calyx teeth triangular, apex rigid, straight ..... 2. *S. melissaefolia*
  - 2b. Bracteoles shorter to slightly longer than pedicels, early deciduous.
    - 5a. Stem leaves ovate-cordate, 8–12×5–9.5 cm; petiole 3–6.5 cm ..... 4. *S. sylvatica*
    - 5b. Stem leaves smaller.
      - 6a. Leaves lanceolate to oblong-lanceolate.
        - 7a. Abaxial leaf surface densely gray villous-tomentose, veins villous ..... 9. *S. oblongifolia*
        - 7b. Abaxial leaf surface puberulent to hispid or glabrous.
          - 8a. Stems densely retrorse villous, nodes and angles sparsely hispid ..... 5. *S. palustris*
          - 8b. Stems spreading hispid or subglabrous.
            - 9a. Stems densely hispid or minutely hispid; calyx densely white villous-hispid ..... 6. *S. baicalensis*
            - 9b. Stems glabrous or minutely hispid to villous-hispid on nodes and angles; calyx villous-hispid or glandular puberulent.
              - 10a. Adaxial leaf surface sparsely minutely hispid or subglabrous; petiole 0–5 mm; calyx sparsely villous-hispid along veins and margin ..... 7. *S. chinensis*
              - 10b. Leaves glabrous; petiole 3–17 mm; calyx glandular puberulent ..... 8. *S. japonica*
        - 6b. Leaves ovate, oblong-ovate, or cordate.
          - 11a. Rhizomes not enlarged or succulent; leaves cordate- to truncate-triangular, ca. 3 cm ..... 17. *S. kuyangensis*
          - 11b. Rhizomes enlarged, succulent; leaves ovate, oblong-ovate, or cordate, more than 3 cm.
            - 12a. Plants subglabrous; calyx teeth with rigid apices ..... 11. *S. adulterina*
            - 12b. Plants conspicuously hairy.
              - 13a. Calyx teeth linear-lanceolate, reflexed, apex acuminate ..... 16. *S. pseudophlomis*
              - 13b. Calyx teeth narrowly triangular, straight.
                - 14a. Plants much branched, pubescent; leaves cordate ..... 12. *S. arrecta*
                - 14b. Plants unbranched or few branched; leaves ovate to oblong-ovate.
                  - 15a. Corolla white.
                    - 16a. Adaxial leaf surface silky-strigose; calyx teeth 1–2 mm, acute ..... 15. *S. taliensis*
                    - 16b. Adaxial leaf surface sparsely pilose-hispid; calyx teeth ca. 3 mm, awned, ± reflexed ..... 13. *S. geobombycis*
            - 15b. Corolla yellow or red to purple.
              - 17a. Calyx teeth ca. 1.5 mm, acute ..... 13. *S. geobombycis*
              - 17b. Calyx teeth 2.5–4 mm, spinescent.
                - 18a. Corolla yellow; petiole to 5 cm ..... 14. *S. xanthantha*
                - 18b. Corolla red to purple; petiole ca. 3 cm ..... 10. *S. sieboldii*

**1. *Stachys lanata*** Jacquin, Icon. Pl. Rar. 1: 11. 1781.

绵毛水苏 mian mao shui su

Herbs perennial, usually densely gray or white silky-lanate throughout. Stems erect, ca. 60 cm tall. Petiole semiamplexicaul; basal leaf blade oblong-elliptic, ca. 10×2.5 cm, base attenuate, margin crenulate, apex attenuate. Spikes 10–22 cm; verticillasters many flowered, contiguous except for lowest 1–3; floral leaves subsessile, minute, lower ones slightly longer than verticillasters, upper ones shorter; bracteoles linear to linear-lanceolate, ca. 6 mm. Flowers

sessile. Calyx tubular-campanulate, slightly curved, ca. 1.2 cm, glabrous except for teeth on inside, 10-veined, accessory veins inconspicuous; teeth subequal or posterior teeth larger, ovate-triangular, 2–3 mm, apices rigid. Corolla ca. 1.2 cm, silky-lanate, base glabrous; tube ca. 6 mm; upper lip ovate, margin entire; lower lip subpatent, middle lobe broadly ovate, lateral lobes oblong. Filaments densely villous basal to middle. Style much exserted. Immature nutlets brown, oblong, glabrous. Fl. Jul.

Cultivated in China [SW Asia, Europe].

Used as an ornamental.

**2. *Stachys melissaefolia*** Benth. Labiat. Gen. Spec. 538. 1834.

多枝水苏 duo zhi shui su

*Stachys splendens* Wallich.

Herbs perennial. Stems erect, 60–80 cm, retrorse pilose, slender; branches many, divaricate. Petiole 0.6–2.5 cm; leaf blade ovate-cordate to oblong-cordate, 5–6×ca. 2.3 cm, adaxially somewhat bullate, villous, abaxially densely villous, base cordate, margin crenate or double crenate, apex acute. Verticillasters ca. 10-flowered, widely spaced; floral leaves sessile, ovate; bracteoles few, linear, villous, 2.5–3.5 mm. Calyx obconical, 5–7×5–7 mm, sparsely pubescent, puberulent inside, obscurely 10-veined; teeth triangular, ca. 1.5 mm, subequal or posterior 3 larger, apex rigid, pubescent. Corolla reddish, to 1.3 cm, puberulent except for glabrous base, tube ca. 7 mm; upper lip straight, ovate, ca. 3 mm, margin entire; lower lip ca. 6 mm, lateral lobes ovate; middle lobe largest, obcordate. Stamens reaching middle of upper corolla lip; filaments puberulent. Style slightly exerted. Nutlets brown, triquetrous, ovoid, ca. 2 mm, adaxially ribbed, glabrous. Fl. Jul, fr. Aug.

Wet areas in forests; 3100 m. Xizang [India (Sikkim), Nepal].

**3. *Stachys strictiflora*** C. Y. Wu, Acta Phytotax. Sin. 10: 220. 1965.

直花水苏 zhi hua shui su

Herbs erect, rhizomatous, perennial, usually densely pilose throughout. Stems 30–60 cm, slender, branches few or none. Petiole 0.7–1.5 cm; leaf blade ovate-cordate, 3–5×2–3 cm, adaxially bullate, base cordate, margin crenate, apex acute. Verticillasters 2–6-flowered, widely spaced; floral leaves short petiolate or subsessile, triangular-oblong to ovate, base shallowly cordate to subrounded, apex acute; bracteoles few, linear, ca. 2 mm. Pedicel less than 1 mm. Calyx campanulate, ca. 7 mm, pilose, glandular, 10-veined, accessory veins inconspicuous; teeth subequal, ca. 3 mm, glandular puberulent outside, finely pilose inside. Corolla reddish, sparsely puberulent; tube ca. 9 mm, base saccate; upper lip straight, ovate, ca. 3.5 mm, margin entire; lower lip spreading, ca. 4×5 mm; middle lobe trapeziform, emarginate; lateral lobes ovate, ca. 1.5 mm wide. Stamens reaching middle of upper lip of corolla; filaments puberulent, apex slightly dilated. Ovary dark brown, glabrous. Style nearly included. Fl. Jun-Jul.

• Grassy slopes; 2100–3400 m. Yunnan.

- 1a. Calyx teeth ovate-lanceolate, spinescent, conspicuously reflexed; corolla ca. 1.2 cm; plants densely pilose throughout . 3a. var. *strictiflora*
- 1b. Calyx teeth ovate-triangular, acute, nearly straight; corolla more than 1.5 cm; plants densely villous throughout ..... 3b. var. *latidens*

**3a. *Stachys strictiflora* var. *strictiflora***

直花水苏 zhi hua shui su

Plants densely pilose throughout. Calyx teeth ovate-lanceolate, spinescent, conspicuously reflexed. Corolla ca. 1.2 cm.

• Grassy slopes; 2100 m. Yunnan.

**3b. *Stachys strictiflora* var. *latidens*** C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 221. 1965.

宽齿变种 kuan chi bian zhong

Plants densely villous throughout. Calyx teeth ovate-triangular, apex acute, suberect. Corolla more than 1.5 cm.

• Grassy slopes; 2500–3400 m. Yunnan.

**4. *Stachys sylvatica*** Linnaeus, Sp. Pl. 2: 580. 1753.

林地水苏 lin di shui su

Herbs perennial. Stems erect or slightly flexuous, 30–120 cm, branched toward apex, hispid, angles glandular puberulent. Petiole slender, 3–6.5 cm; stem leaf blades ovate-cordate, 8–12×5–9.5 cm, adaxially shiny, appressed villous-hispid, abaxially gray-green, yellowish glandular, villous-hispid along veins, base cordate, margin coarsely callose crenate-serrate, apex acuminate. Spikes 10–20 cm; verticillasters 6(–8)-flowered, widely spaced; lower floral leaves petiolate, 10–15×2–4 mm, margin dentate; upper floral leaves sessile, oblong-lanceolate, slightly longer than verticillasters, margin entire; bracteoles minute or absent. Pedicel ca. 1 mm. Calyx tubular-campanulate, ca. 7 mm, spreading hispid, glandular puberulent, 10-veined, accessory veins inconspicuous; teeth triangular-lanceolate, 2–3 mm, subequal, apex spinescent; fruiting calyx slightly saccate-dilated. Corolla red to purple, ca. 1.4 cm, sparsely puberulent; tube straight, ± saccate; upper lip straight, oblong, ca. 5×3 mm; lower lip spreading, ca. 7×6 mm; middle lobe subcircular, emarginate; lateral lobes ovate. Filaments villous below middle. Style nearly exerted. Nutlets dark brown, triquetrous, ovoid, glabrous. Fl. Jul-Aug, fr. Aug.

Coniferous forests, thickets, alpine meadows; 1700 m. Xinjiang (cultivated in other provinces) [Kazakhstan, Kyrgyzstan, Russia; SW Asia, Europe].

Sometimes cultivated as an ornamental.

**5. *Stachys palustris*** Linnaeus, Sp. Pl. 2: 580. 1753.

沼生水苏 zhao sheng shui su

Herbs perennial. Rhizomes robust. Stems usually much branched, 60–110 cm, densely retrorse pubescent, nodes and angles sparsely hispid. Stem leaves petiole 2–3 mm; leaf blade oblong-lanceolate to ovate-lanceolate, 3–8×1.2–1.5 cm, appressed puberulent, densely so on veins and abaxially, base rounded to shallowly cordate, margin serrate-crenate, apex acute to acuminate. Spikes long; verticillasters 6-flowered, ± close together except for lower ones; lower floral leaves subsessile, similar to stem leaves; upper ones long acuminate, entire, shorter than verticillasters; bracteoles ca. 1 mm, early deciduous. Pedicel ca. 1 mm. Calyx tubular-campanulate, ca. 7 mm, grooved, villous, glandular puberulent, puberulent inside, 10-veined, accessory veins inconspicuous; teeth triangular-lanceolate, ca. 3 mm, apex spinescent, ± reflexed; fruiting calyx campanulate, conspicuously pouched. Corolla purple to red-purple, ca. 1.3 cm, sparsely puberulent outside, puberulent on throat; tube ca. 7 mm; upper lip straight, broadly ovate, ca. 3×2 mm; lower lip ± spreading, ca. 6×6 mm; middle lobe reniform, apex rounded; lateral lobes ovate. Nutlets brown, triquetrous ovoid, glabrous. Fl. Jun-Aug, fr. Aug-Sep.

Marshy areas along lakes and streams in tall grass; 500 m. Xinjiang [India, Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan; SW Asia, Europe, North America].

A polymorphic species. Specimens from Xinjiang resemble var. *subcanescens* Ledebour.

**6. *Stachys baicalensis*** Fischer ex Benth, Labiat. Gen. Spec. 543. 1834.

毛水苏 mao shui su

Herbs perennial, rhizomatous. Stems erect, 50–100 cm, sometimes branched toward apex, glabrous to pubescent. Petiole 0–2 mm; leaf blade 3–11×0.4–1.5 cm, hispid, sometimes only on veins abaxially, base rounded, margin crenulate-serrate, apex acute. Spikes continuous except at base; verticillasters 6-flowered; floral leaves lanceolate, shorter to slightly longer than calyx; bracteoles linear, spinescent, early deciduous. Pedicel ca. 1 mm, hispid. Calyx campanulate, ca. 9 mm, veins and margin densely villous-hispid, glabrous inside, conspicuously 10-veined; teeth lanceolate-triangular, ca. 3 mm, apex spinescent. Corolla purplish to purple, to 1.5 cm, hairy on limb outside; tube straight, ca. 9 mm, glabrous; upper lip straight, ovate, ca. 7×4 mm; lower lip ovate, ca. 8×7 mm; middle lobe subcircular, ca. 4 mm in diam.; lateral lobes ovate, ca. 2 mm wide. Nutlets brown, ovoid, glabrous. Fl. Jul, fr. Aug.

Wet grassy areas, riverbanks; 200–1700 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi [Japan, Korea, Russia].

- 1a. Leaves linear to linear-lanceolate, 3–4.5 cm×4–6 mm ..... 6c. var. *angustifolia*  
1b. Leaves oblong-linear, 4–11×0.7–1.5 cm.  
2a. Stem angles sparsely minutely hispid especially toward apex, subglabrous at base, nodes hispid; leaves sparsely minutely hispid; calyx sparsely villous-hispid ..... 6b. var. *hispidula*  
2b. Stems glabrous, angles and nodes densely retrorse to spreading hispid; adaxial surface of leaf sparsely hispid, abaxial surface glabrous, veins hispid; calyx densely villous-hispid along veins and margin ..... 6a. var. *baicalensis*

**6a. *Stachys baicalensis* var. *baicalensis***

毛水苏 mao shui su

*Stachys aspera* Michaux var. *baicalensis* (Fischer ex Benth) Maximowicz; *S. baicalensis* var. *hispidula* (Ledebour) Nakai; *S. japonica* Miquel f. *villosa* Kudô; *S. palustris* Linnaeus var. *hispidula* Ledebour; *S. riederi* Chamisso var. *hispidula* (Ledebour) H. Hara; *S. ringens* Oettingen.

Stems densely retrorse to patent hispid on angles and nodes, glabrous elsewhere. Leaf blade adaxially sparsely hispid, abaxially hispid along veins otherwise glabrous. Calyx densely villous-hispid along veins and margin.

Wet grassy areas, riverbanks; 400–1700 m. Heilongjiang, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi [Russia].

**6b. *Stachys baicalensis* var. *hispidula*** (Regel) Nakai, Bot. Mag. (Tokyo) 34: 46. 1920.

小剛毛变种 xiao gang mao bian zhong

*Stachys palustris* Linnaeus var. *hispidula* Regel, Mém. Acad. Imp. Sci. Saint Pétersbourg 4: 119. 1861; *S. baicalensis*

f. *intermedia* Kudô; *S. riederi* Chamisso var. *hispidula* (Regel) H. Hara.

Stems sparsely hispidulous along angles especially toward apex, subglabrous at base, hispid on nodes. Leaf blade sparsely hispidulous. Calyx sparsely villous-hispid.

Wet areas; 200–700 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol [Japan, Korea, Russia].

**6c. *Stachys baicalensis* var. *angustifolia*** Honda, Bot. Mag. (Tokyo) 46: 374. 1932.

狭叶变种 xia ye bian zhong

*Stachys japonica* Miquel f. *angustifolia* Miquel; *S. riederi* Chamisso var. *hispidula* (Regel) H. Hara f. *angustifolia* (Honda) H. Hara.

Leaves linear to linear-lanceolate, 3–4.5 cm×4–6 mm.

Open areas; 600 m. Jilin [Japan, Korea, Russia].

**7. *Stachys chinensis*** Bunge ex Benth, Labiat. Gen. Spec. 544. 1834.

华水苏 hua shui su

*Stachys aspera* Michaux var. *chinensis* (Bunge ex Benth) Maximowicz; *S. baicalensis* Fischer ex Benth var. *chinensis* (Bunge ex Benth) V. Komarov; *S. chanetii* H. Léveillé.

Herbs erect, perennial. Stems ca. 60 cm, unbranched or branched at base, glabrous, angles and nodes sparsely retrorse villous-hispid. Petiole (0–)2–5 mm; leaf blade oblong-lanceolate, 5.5–8.5×1–1.5 cm, sparsely minutely hispid or glabrescent, base subrounded, margin serrate-crenate, apex obtuse. Verticillasters 6-flowered, widely spaced; floral leaves sessile, upper blades lanceolate, villous hispid, sessile, margin subentire; bracteoles spiny, ca. 1 mm. Pedicel short to obsolete. Calyx campanulate, ca. 1 cm, veins and margin villous-hispid, accessory veins inconspicuous; teeth lanceolate, equal, ca. 4 mm, apex acute, spinescent. Corolla purple, ca. 1.5 cm, lips puberulent; tube ca. 8 mm, straight, slightly saccate; upper lip erect, oblong, ca. 4×2 mm; lower lip spreading, subcircular, ca. 7×7 mm; middle lobe subcircular, ca. 3×4 mm, emarginate; lateral lobes ovate, ca. 2 mm wide. Nutlets brown, triquetrous, ovoid, glabrous. Fl. Jun-Aug, fr. Jul-Sep.

Sandy areas, ravines; to 1000 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shaanxi, Shanxi [Russia].

**8. *Stachys japonica*** Miquel, Ann. Mus. Bot. Lugduno-Batavum 2: 111. 1865.

水苏 shui su

*Stachys aspera* Michaux var. *chinensis* (Bunge ex Benth) Maximowicz f. *glabrata* Nakai; *S. aspera* var. *japonica* (Miquel) Maximowicz; *S. baicalensis* Fischer ex Benth var. *japonica* V. Komarov; *S. japonica* f. *glabrata* Matsumura & Kudô; *S. riederi* Chamisso var. *japonica* (Miquel) H. Hara.

Herbs perennial, rhizomatous. Stems unbranched, ascending, 20–80 cm, glabrous, angles and nodes minutely hispid. Petiole conspicuous, 0.3–1.7 cm; leaf blade broadly oblong-lanceolate, 5–10×1–2.3 cm, glabrous, abaxially gray-green, base rounded to shallowly cordate, margin crenate-serrate, apex acute. Spikes 5–13 cm; verticillasters 6–8–

flowered, lower widely spaced; floral leaves sessile, lanceolate, margin subentire, lower ones longer than verticillasters, upper shorter; bracteoles spiny, ca. 1 mm, glabrous. Pedicel ca. 1 mm. Calyx campanulate, to 7.5 mm, glandular puberulent, veins pilose, rarely appressed-puberulent or subglabrous, obscurely 10-veined; teeth equal, triangular-lanceolate, spinescent, ciliate, sparsely puberulent inside. Corolla reddish or reddish purple, ca. 1.2 cm; tube ca. 6 mm, ± included, saccate, glabrous, throat scaly-puberulent below lower lip; limb puberulent outside, glabrous inside; upper lip straight, obovate, ca. 4×2.5 mm; lower lip spreading, ca. 7×6 mm; middle lobe subcircular, emarginate; lateral lobes ovate. Filaments slightly dilated at apex, puberulent. Style slightly longer than stamens. Nutlets brown, ovoid, glabrous. Fl. May-Jul, fr. Aug-Sep.

Wet areas in ravines, riverbanks; to 2300 m. Anhui, Fujian, Hebei, Henan, Jiangsu, Jiangxi, Liaoning, Nei Mongol, Shandong, Zhejiang [Japan, Russia].

Used medicinally for tonsillitis, sore throat, and dysentery.

**9. *Stachys oblongifolia*** Wallich ex Benth, Pl. Asiat. Rar. 1: 64. 1830.

针筒菜 zhen tong cai

Herbs perennial, rhizomatous. Stems erect or ascending, 30–60 cm, slightly scabrid at base, ± puberulent, angles and nodes villous, branches few or none. Petiole 0–2 mm; leaf blade oblong-lanceolate, 3–7×1–2 cm, adaxially sparsely puberulent, villous, abaxially densely white villous-tomentose, villous on veins, base shallowly cordate, margin crenate-serrate, apex acute. Verticillasters 6-flowered, lower widely spaced, upper in terminal spikes 5–8 cm; floral leaves sessile, lanceolate, longer than calyx, margin subentire; bracteoles linear-setiform, ca. 1 mm, puberulent. Calyx campanulate to obconical-campanulate, ca. 7 mm, 10-veined, glandular villous-tomentose, veins sparsely villous, accessory veins inconspicuous; teeth triangular-lanceolate, ca. 2.5 mm, subequal or lower 2 longer, apex spinescent. Corolla reddish or reddish purple, ca. 1.3 cm, sparsely puberulent; limb densely pilose; tube ca. 7 mm, throat puberulent, annulus inconspicuous or absent; upper lip oblong; lower lip spreading, middle lobe reniform, lateral lobes ovate. Filaments puberulent. Nutlets brown, ovoid, ca. 1 mm in diam., glabrous.

Bamboo forests, thickets, dry sandy areas, reed marshes, wet areas; 200–1900 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan [India (Sikkim)].

- 1a. Leaves short petiolate to subsessile; calyx campanulate; corolla ca. 2×as long as calyx, tube equal to slightly longer than calyx ..... 9a. var. *oblongifolia*  
 1b. Leaves petiolate; calyx obconical-campanulate; corolla slightly longer than calyx, tube included ..... 9b. var. *leptopoda*

**9a. *Stachys oblongifolia* var. *oblongifolia***

针筒菜 zhen tong cai

*Stachys imaii* Nakai; *S. modica* Hance; *S. palustris* Linnaeus var. *imaii* (Nakai) Nakai; *S. subargentea* Hayata.

Leaves short petiolate to subsessile. Calyx campanulate. Corolla ca. 2×as long as calyx, tube equal to slightly longer than calyx.

Bamboo forests, thickets, reed marshes, wet areas; 200–1900 m. Anhui, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan [India (Sikkim)].

Used medicinally for dysentery and traumatic injury, and as a tonic. Young stems and leaves fed to pigs.

**9b. *Stachys oblongifolia* var. *leptopoda*** (Hayata) C. Y. Wu, Acta Phytotax. Sin. 10: 222. 1965.

细柄变种 xi bing bian zhong

*Stachys leptododa* Hayata, Icon. Pl. Formos. 8: 93. 1919; *S. oblongifolia* Benth f. *leptopoda* (Hayata) Kudô.

Stems slender. Leaves petiolate. Calyx obconical-campanulate. Corolla slightly longer than calyx, tube included.

• Dry sandy areas, waste fields; to 500 m. Fujian, Guangdong, Guangxi, Sichuan, Taiwan, Yunnan.

**10. *Stachys sieboldii*** Miquel, Ann. Mus. Bot. Lugduno-Batavum 2: 112. 1865.

甘露子 gan lu zi

Herbs perennial. Rhizomes white. Stems erect or inclined, 30–120 cm. Petiole 1–3 cm; leaf blade ovate to elliptic-ovate, 3–12×1.5–6 cm, base broadly cuneate to shallowly cordate, margin crenate-serrate, apex acute to acuminate. Spikes 5–15 cm; verticillasters 6-flowered, widely spaced; floral leaves bractlike, reflexed (especially in cultivated form), adaxial ones sessile, lanceolate, margin subentire, shorter than calyx; bracteoles linear, ca. 1 mm. Pedicel ca. 1 mm. Calyx narrowly campanulate, ca. 9 mm, glandular pubescent, ± conspicuously 10-veined; teeth narrowly triangular, ca. 4 mm, apex spinescent, slightly reflexed. Corolla red to purple; lower lip purple spotted, ca. 1.3 cm, tube ca. 9 mm, somewhat saccate, puberulent; upper lip oblong, ca. 4×2 mm, straight or slightly reflexed; lower lip ca. 7×7 mm, middle lobe subcircular, ca. 3.5 mm in diam., lateral lobes ovate. Filaments slightly dilated apically, puberulent. Nutlets black-brown, ovoid, ca. 1.5 cm in diam., tuberculate. Fl. Jul-Aug, fr. Sep.

Hillsides, wet and submersed areas; to 3200 m. Nei Mongol, Shaanxi, Shanxi, Xinjiang (cultivated in other provinces) [Japan; Europe, North America].

- 1a. Plants subglabrous throughout ..... 10c. var. *glabrescens*  
 1b. Plants ± hairy throughout.  
 2a. Hairs of stems and leaves gray, slender, short ..... 10b. var. *malacotricha*  
 2b. Hairs of stems and leaves not gray, rigid, long ..... 10a. var. *sieboldii*

**10a. *Stachys sieboldii* var. *sieboldii***

甘露子 gan lu zi

*Stachys affinis* Bunge; *S. tuberifera* Naudin.

Hairs of stems and leaves not gray, rigid, long.

Wet and submersed areas; to 3200 m. Gansu, Hebei, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Xinjiang (cultivated in other provinces) [Japan; Europe, North America].

Rhizomes edible. Entire plant used as medicine for colds and pneumonia.

**10b. *Stachys sieboldii* var. *malacotricha*** Handel-Mazzetti, Acta Horti Gothob. 9: 83. 1934.

软毛变种 ruan mao bian zhong

Hairs of stems and leaves gray, slender, short.

• Wet areas in valleys, streamsides; 800–1600 m. Shaanxi, Shanxi.

**10c. *Stachys sieboldii* var. *glabrescens*** C. Y. Wu, Acta Phytotax. Sin. 10: 222. 1965.

近无毛变种 jin wu mao bian zhong

Plants subglabrous throughout.

• Hillsides; 2400 m. Hubei, Sichuan.

**11. *Stachys adulterina*** Hemsley, J. Linn. Soc., Bot. 26: 300. 1890.

少毛甘露子 shao mao gan lu zi

Herbs perennial, glabrous nearly throughout. Stems 60–120 cm, solitary, internodes sometimes longer than leaves. Basal leaves absent; stem leaves conspicuously long petiolate except for a few upper floral leaves; petiole ciliolate; leaf blade oblong-lanceolate, to 15 cm including petiole, smaller and sometimes subcircular in upper leaves, membranous, glabrous or sparsely strigose, base rounded or sometimes cordate, margin serrate-crenate, apex acute. Verticillasters few, ca. 6-flowered. Flowers sessile. Calyx minutely hispid, slightly oblique, ca. 1 cm, conspicuously 5-veined; teeth broadly triangular, rigid, apex obtuse. Corolla red or white, ca. 1.9 cm; upper lip galeate, hirsute outside; lower lip oblong, undulate, lateral lobes smaller. Stamens included; filaments dilated below middle, puberulent. Nutlets subglobose, glabrous, adaxially ribbed (specimens not seen).

• Garden margins; 1800 m. Hubei, Sichuan.

Rhizomes edible.

**12. *Stachys arrecta*** L. Bailey, Gentes Herb. 1: 43. 1920.

蜗儿菜 wo er cai

Herbs perennial. Rhizomes succulent. Stems erect, 40–60 cm, much branched along entire length, densely villous; branches slender, densely villous. Petioles of stem leaves 0.5–1.5 cm, densely pubescent; stem leaves blade cordate, 2.5–6.5×1.5–3 cm, papery, adaxially sparsely pubescent, abaxially pubescent, densely pubescent and glandular on veins, base cordate, margin crenulate or crenate-serrate, apex acuminate; lateral veins 3–5 pairs, conspicuously elevated abaxially. Verticillasters 2–6-flowered, few, widely spaced, subapical; upper floral leaves sessile, lanceolate; bracteoles linear, ca. 1 mm. Pedicel ca. 1 mm. Calyx tubular-campanulate, ca. 5 mm, conspicuously 10-veined, densely glandular pubescent or pubescent outside, apex sparsely puberulent inside; teeth subequal, narrowly triangular, 2–2.5 mm, apex acuminate, rigid. Corolla reddish, ca. 1.2 cm, tube ca. 8 mm, subequal in diam., puberulent; upper lip erect, oblong-ovate, ca. 3×2 mm; lower lip subpatent, subcircular, ca. 4×3.5 mm. Filaments puberulent; anthers ovoid, divaricate. Ovary glabrous. Nutlets brown, ovoid, ca. 1.5 mm, tuberculate. Fl. Jul-Aug, fr. Sep-Oct.

• Jungles, shady valleys; 1500–2000 m. Anhui, Henan, Hubei, Hunan, Jiangsu, Shaanxi, Shanxi, Zhejiang.

**13. *Stachys geobombycis*** C. Y. Wu, Acta Phytotax. Sin. 10: 222. 1965.

地蚕 di can

Herbs perennial. Rhizomes enlarged, succulent. Stems erect, 40–50 cm, angles and nodes sparsely retrorse pilose-hispid. Petiole of stem leaves 1–4.5 cm; blade oblong-ovate, 4.5–8×2.5–3 cm, sparsely pilose-hispid, densely so on abaxial veins, base shallowly cordate or rounded, margin coarsely crenate-serrate, apex obtuse. Spikes 5–18 cm; verticillasters 4–6-flowered, widely spaced; bracteoles few, less than 0.5 mm, early deciduous. Pedicel ca. 1 mm. Calyx obconical, ca. 5.5 mm, densely puberulent, glandular, conspicuously 10-veined; tube ca. 4 mm; teeth deltate to lanceolate-triangular, equal, 1.5–3 mm, margin glandular puberulent. Corolla ca. 1.1 cm; tube ca. 7 mm, cylindric, apex puberulent; upper lip straight, oblong-ovate, ca. 4×2.5 mm; lower lip horizontally spreading, ovate, ca. 5×4 mm; middle lobe narrowly ovate, ca. 1.5 mm wide, sparsely puberulent; lateral lobes ovate, ca. 1.5 mm wide. Stamens included; filaments puberulent below middle. Ovary black-brown, glabrous. Fl. Apr-May.

• Broad-leaved forests, waste areas, wet grasslands; 200–700 m. Fujian, Guangdong, Guangxi, Hubei, Hunan, Jiangxi, Zhejiang.

1a. Corolla white; calyx teeth lanceolate-triangular, ca. 3 mm, awned, ± reflexed

..... 13b. var. *alba*

1b. Corolla reddish to purple-blue; calyx teeth deltate, ca. 1.5 mm, acute

..... 13a. var. *geobombycis*

**13a. *Stachys geobombycis* var. *geobombycis***

地蚕 di can

Corolla reddish to purple-blue. Calyx teeth deltate, ca. 1.5 mm, acute.

• Waste areas, wet grasslands; 200–700 m. Fujian, Guangdong, Guangxi, Hubei, Hunan, Jiangxi, Zhejiang.

Rhizomes edible. Entire plant used medicinally to treat traumatic injury and scabies.

**13b. *Stachys geobombycis* var. *alba*** C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 223. 1965.

白花变种 bai hua bian zhong

Corolla white. Calyx teeth lanceolate-triangular, ca. 3 mm, aristate, ± reflexed.

• Broad-leaved forests; 600 m. Guangdong, Guangxi, Hunan.

**14. *Stachys xanthantha*** C. Y. Wu, Acta Phytotax. Sin. 10: 224. 1965.

黄花地钮菜 huang hua di niu cai

*Stachys xanthantha* var. *gracilis* C. Y. Wu & H. W. Li.

Herbs perennial. Rhizomes not enlarged. Stems erect or ascending, slender, few branched above middle, angles and nodes retrorse strigose, internodes much longer than leaves. Petiole 1–5 cm; leaf blade oblong-ovate, rarely triangular-ovate, (1.5–)4–10×(1–)1.8–4 cm, adaxially sparsely strigose, densely so on margin, abaxially subglabrous, base shallowly cordate to broadly cuneate, margin regularly crenate-serrate, apex acute; midrib and veins abaxially sparsely strigose, conspicuous, whitish. Spikes 5–12 cm; verticillasters 6-flowered, lower 1 or 2 widely spaced; upper floral leaves sessile, lanceolate; bracteoles less than 1 mm, early deciduous. Pedicel ca. 1 mm. Calyx narrowly campanulate,

ca. 8 mm, conspicuously 10-veined, veins hispid; teeth equal or posterior 3 larger, triangular, 2.5–3 mm, glandular puberulent, apical spine ca. 0.5 mm. Corolla yellow, ca. 1.5 cm; tube ca. 9 mm, saccate, apex sparsely puberulent; upper lip straight, oblong-ovate, ca. 5×3 mm, undulate; lower lip horizontally spreading, ca. 7×6 mm; middle lobe subcircular, ca. 5 mm wide; lateral lobes ovate, ca. 2 mm wide. Filaments apex slightly dilated, puberulent at middle. Ovary dark brown, glabrous. Fl. Jun-Jul.

- Waste areas; 1900–2300 m. Sichuan.

**15. *Stachys taliensis*** C. Y. Wu, Acta Phytotax. Sin. 10: 225. 1965.

大理水苏 da li shui su

Herbs perennial. Rhizomes not enlarged. Stems erect, slender, unbranched, angles retrorse strigose, base subglabrous, apex densely pilose-strigose, internodes much longer than leaves. Petiole 1–2 cm; leaf blade lanceolate-ovate, 4–8×2–2.5 cm, adaxially densely silky-strigose, abaxially sparsely strigose, base truncate to shallowly cordate, margin crenate-serrate, apex acute. Spikes 5–7 cm; verticillasters 6-flowered, lower 2 or 3 ± widely spaced; upper floral leaves sessile, ca. as long as verticillasters; bracteoles few, less than 1 mm, early deciduous. Pedicel ca. 1 mm. Calyx campanulate, 6–7 mm, silky-strigose, 5-veined; teeth triangular, subequal or posterior 3 slightly larger, 1–2 mm, apex acute, glandular puberulent. Corolla white, ca. 1.3 cm; tube ca. 8 mm, subcylindric, sparsely puberulent, saccate; upper lip straight, oblong-ovate, ca. 5×3 mm; lower lip horizontally spreading, ovate, ca. 5 mm wide; middle lobe subcircular, ca. 3 mm wide, emarginate; lateral lobes ovate, ca. 1.5 mm wide. Stamens included; filaments puberulent below middle, slightly dilated at apex. Ovary black-brown, glabrous. Fl. Jun.

- Evergreen, broad-leaved forests; 2000 m. Yunnan.

**16. *Stachys pseudophlomis*** C. Y. Wu, Acta Phytotax. Sin. 10: 226. 1965.

狭齿水苏 xia chi shui su

Herbs perennial. Rhizomes enlarged. Stems ascending-erect, 50–100 cm, densely retrorse pilose. Petiole 1.5–2.5 cm; stem leaf blade ovate-cordate, 5–7×2.8–4 cm, membranous, adaxially densely silky-strigose; abaxially densely strigose, densely pilose on veins, base cordate, margin crenulate-serrate, apex acuminate. Verticillasters 2–6-flowered, widely spaced; upper floral leaves sessile, lanceolate, base rounded, shorter than flowers; bracteoles linear, less than 1 mm. Pedicel ca. 1 mm. Calyx tubular-campanulate, 6.5–7 mm, densely pilose, glandular, ± conspicuously 10-veined, inside silky-puberulent; teeth subequal, linear-lanceolate, 2.5–3 mm, apex acuminate, reflexed. Corolla purple or red, ca. 1.5 cm; tube cylindric, saccate, apex puberulent; upper lip straight, oblong-ovate, ca. 4×2.5 mm; lower lip horizontally spreading, ca. 5 mm wide; middle lobe largest, subcircular, ca. 3 mm wide; lateral lobes ovate, ca. 1.5 mm wide. Stamens included; filaments puberulent, apex slightly dilated. Ovary brown, glabrous. Fl. Jul-Aug.

- Bamboo forests; 800 m. Hubei, Sichuan.

**17. *Stachys kouyangensis*** (Vaniot) Dunn, Notes Roy. Bot. Gard. Edinburgh 8: 167. 1913.

西南水苏 xi nan shui su

Herbs perennial, rhizomatous. Stems slender, flexuous, base prostrate, ca. 50 cm, angles and nodes hispid. Petiole ca. 1.5 cm; leaf blade triangular-cordate to hastate-triangular, ca. 3×2.5 cm, base cordate to truncate, margin crenate, apex obtuse. Spikes lax; verticillasters 5- or 6-flowered, widely spaced; upper floral leaves subsessile, ovate-triangular, remotely crenate, shorter than calyx tube; bracteoles ca. 1 mm, early deciduous. Pedicel less than 1 mm. Calyx obconical, ca. 6 mm, minutely hispid, conspicuously 10-veined; teeth ca. 2×2 mm, apical spine ca. 1 mm. Corolla reddish to purple red, ca. 1.5 cm; tube ca. 1.1 cm, puberulent, saccate; upper lip erect, oblong-ovate, ca. 4×3 mm; lower lip spreading, ca. 6×6 mm; middle lobe circular, ca. 3.5 mm in diam.; lateral lobes ovate, ca. 1.5 mm wide. Nutlets ovoid to obovoid, 1.5–3 mm in diam., brownish, smooth to tuberculate. Fl. Jul-Aug, fr. Sep, sometimes fl. and fr. Nov.

- Thickets, mixed forests, grassy slopes, open areas, field margins, moist stream-sides; 900–3800 m. Guizhou, Hubei, Sichuan, Xizang, Yunnan.

- 1a. Calyx teeth linear to lanceolate, subpatent to reflexed.
- 2a. Calyx teeth subpatent; leaves hastate-triangular, base subtruncate, margin coarsely crenate..... 17e. var. *franchetiana*
- 2b. Calyx teeth reflexed; leaves triangular-cordate, base cordate, margin crenate ..... 17c. var. *leptodon*
- 1b. Calyx teeth triangular, straight.
- 3a. Young parts of plant densely silky-puberulent, especially calyx and abaxial surface of leaves ..... 17d. var. *villosissima*
- 3b. Young parts of stems and abaxial surface of leaves hispid; calyx minutely hispid.
- 4a. Nutlets obovoid, 2.5–3 mm, tuberculate ..... 17b. var. *tuberculata*
- 4b. Nutlets ovoid, ca. 1.5 mm, smooth ..... 17a. var. *kouyangensis*

**17a. *Stachys kouyangensis* var. *kouyangensis***

西南水苏 xi nan shui su

*Lamium kouyangensis* Vaniot, Bull. Acad. Int. Géogr. Bot. 14: 175. 1904; *Stachys cardiophylla* Prain ex Dunn.

Young stems and abaxial leaf surface densely or sparsely hispid. Calyx minutely hispid outside, teeth deltate and erect. Nutlets ovoid, ca. 1.5 mm in diam., smooth.

- Grassy slopes, open areas, moist stream-sides; 900–2800 m. Guizhou, Hubei, Sichuan, Yunnan.

Used medicinally.

**17b. *Stachys kouyangensis* var. *tuberculata*** (Handel-Mazzetti) C. Y. Wu, Acta Phytotax. Sin. 10: 227. 1965.

具瘤变种 ju liu bian zhong

*Stachys sieboldi* Miquel var. *tuberculata* Handel-Mazzetti, Acta Horti Gothob. 13: 348. 1939.

Calyx teeth acute. Nutlets obovoid, 2.5–3 mm, tuberculate.

- Thickets, mixed forests; 1600–3200 m. Yunnan.

**17c. *Stachys kouyangensis* var. *leptodon*** (Dunn) C. Y. Wu, Acta Phytotax. Sin. 10: 227. 1965.

细齿变种 xi chi bian zhong

*Stachys leptodon* Dunn, Notes Roy. Bot. Gard. Edinburgh 8: 167. 1913.

Calyx teeth lanceolate to linear, reflexed. Nutlets ovoid, ca. 2 mm.

- Grassy slopes, streamsides; 1200–2600 m. Guizhou, Yunnan.

**17d. *Stachys kouyangensis* var. *villosissima*** C. Y. Wu, Acta Phytotax. Sin. 10: 228. 1965.

柔毛变种 rou mao bian zhong

Young parts of plant densely sericeous-puberulent, especially calyx and abaxial leaf surface.

- Open areas; 1200–1900 m. Yunnan.

**17e. *Stachys kouyangensis* var. *franchetiana*** (H. Léveillé) C. Y. Wu, Acta Phytotax. Sin. 10: 228. 1965.

粗齿变种 cu chi bian zhong

*Stachys franchetiana* H. Léveillé, Repert. Spec. Nov. Regni Veg. 9: 246. 1911.

Leaf blade hastate-triangular, base subtruncate, margin coarsely crenate. Calyx teeth linear, subpatent.

- Grassy slopes, streamsides, field margins; 2400–3800 m. Sichuan, Xizang, Yunnan.

**18. *Stachys arvensis*** Linnaeus. Sp. Pl. ed. 2, 2: 814. 1762.

田野水苏 tian ye shui su

Herbs annual. Stems slender, suberect to decumbent, 30–50 cm, sparsely puberulent, much branched. Stem leaves petiolate; blade ovate, ca. 2×1 cm, adaxially sparsely puberulent, abaxially densely pubescent, sparsely puberulent on veins, base cordate, margin crenate, apex obtuse. Verticillasters 2(–4)-flowered, widely spaced; upper floral leaves sessile, base cuneate, margin ± entire, shorter than calyx; bracteoles ca. 1 mm. Pedicel ca. 1 mm. Calyx tubular-campanulate, ca. 3 mm, densely puberulent, 10-veined; teeth subequal, lanceolate-triangular, ca. 1 mm, apex acute; fruiting calyx urceolate, conspicuously netted. Corolla red, ca. 3 mm, nearly included; upper lip ovate, ca. 1 mm, puberulent outside; lower lip spreading, pubescent outside; middle lobe largest, circular; lateral lobes ovate. Nutlets brown, ovoid, ca. 1.5 mm. Fl. and fr. year round.

Weed in waste areas adjacent to cultivated land. Fujian, Guangdong, Guangxi, Taiwan [Russia; Europe, North America, South America].

