

**44. PARAPHLOMIS (Prain) Prain, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 74: 721. 1908.**

假糙苏属 *jia cao su shu*

*Phlomis* Linnaeus sect. *Paraphlomis* Prain, Ann. Roy. Bot. Gard. (Calcutta) 9: 60. 1901.

Herbs or subshrubs, rhizomatous. Stems ascending or erect. Leaves sessile or long petiolate; leaf blade membranous to ± leathery, margin dentate. Verticillasters axillary; bracteoles lanceolate to bristlelike, sometimes minute, early deciduous. Calyx tubular to obconical, mouth sometimes slightly constricted, gradually or abruptly dilated, truncate or pleated; veins 5–10, ± distinct; teeth 5, broadly triangular to subulate, straight, spreading or reflexed, bristlelike-acuminate to acute or widened into wings from veins. Corolla 2-lipped; tube hairy annulate inside, gradually dilated at apex; upper lip flat, erect or galeate, densely hairy outside; lower lip spreading at about 90°, 3-lobed, middle lobe larger. Stamens 4, anterior 2 longer; filaments filiform, complanate, ± hairy; anther cells 2, parallel or divergent. Ovary apex truncate, glabrous or hairy. Style apex subequally 2-cleft, lobes subulate. Disc ringlike or cupulate, apex truncate. Nutlets obovoid or triquetrous oblong, glabrous or hairy.

About 24 species: China, India, Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam; 23 species in China.

- 1a. Calyx tubular or tubular-campanulate.
  - 2a. Calyx teeth minute, mouth subtruncate, pleated ..... 10. *P. membranacea*
  - 2b. Calyx teeth conspicuous, broadly triangular to subulate, apex bristlelike to acute.
    - 3a. Leaves ovate, ovate-orbicular, or subcircular.
      - 4a. Stems and leaves sparsely bristly; calyx tube densely bristly, teeth narrowly triangular, apex bristlelike ..... 7. *P. seticalyx*
      - 4b. Stems, leaves, and calyces densely pubescent and/or villous; calyx teeth broadly triangular, apex acute.
        - 5a. Erect herbs; stems, leaves, and calyces densely villous and pubescent; corolla densely white villous outside; bracteoles minute ..... 8. *P. albiflora*
        - 5b. Ascending herbs; stems, leaves, and calyces densely villous only; corolla sparsely pubescent outside; bracteoles linear, 2–5 mm ..... 9. *P. foliata*
    - 3b. Leaves elliptic, elliptic-ovate, to oblong-elliptic.
      - 6a. Calyx bristly.
        - 7a. Leaves ± leathery; leaves and stem glabrous; calyx sparsely white bristly at apex and along veins otherwise strigose ..... 4. *P. paucisetosa*
        - 7b. Leaves membranous or thin papery; leaves and stem hairy; calyx densely bristly.
          - 8a. Leaves thin papery; leaves and stem densely spreading bristly ..... 5. *P. patentisetulosa*
          - 8b. Leaves membranous, strigose and finely papillate except for hispid veins of adaxial surface; abaxially white granular, finely strigose and sparsely hispid; stem densely retrorse fine strigose ..... 3. *P. hispida*
      - 6b. Calyx not bristly.
        - 9a. Stems and calyx densely tawny hirsute ..... 2. *P. hirsutissima*
        - 9b. Stems and calyx not tawny hirsute.
          - 10a. Stems retrorse strigose; calyx glabrous or hirtellous becoming glabrescent in fruit ..... 1. *P. javanica*
          - 10b. Stems and calyx densely and finely bristly puberulent ..... 6. *P. setulosa*
- 1b. Calyx obconical.
  - 11a. Calyx teeth lanceolate-triangular, acute.
    - 12a. Verticillasters surrounded by leaflike bracts, with linear basal bracteoles ..... 11. *P. albotomentosa*
    - 12b. Verticillasters surrounded by linear bracts, with bristlelike basal bracteoles.
      - 13a. Leaves elliptic or elliptic-ovate; calyx densely tomentose outside ..... 12. *P. tomentosocapitata*
      - 13b. Leaves broadly ovate or ovate-lanceolate to lanceolate; calyx pubescent outside.
        - 14a. Leaves 3–5 cm wide; calyx ca. 9.5 mm; corolla ca. 1.8 cm ..... 13. *P. lancidentata*
        - 14b. Leaves 6.5–9.5 cm wide; calyx ca. 11 mm; corolla ca. 1.4 cm ..... 14. *P. reflexa*
  - 11b. Calyx teeth not lanceolate-triangular.
    - 15a. Calyx teeth triangular or inconspicuous, calyx mouth subtruncate, distinctly extended into winged extensions from veins.
      - 16a. Leaves oblong to ovate-oblong, 5–8×2.4–3.4 cm, margin undulate-crenate; calyx teeth conspicuously triangular, calyx mouth not subtruncate ..... 22. *P. brevifolia*
      - 16b. Leaves lanceolate to narrowly lanceolate, 7–15×1.5–3 cm, margin remotely, shallowly serrate above base; calyx teeth inconspicuous, calyx mouth subtruncate ..... 23. *P. subcoriacea*
    - 15b. Calyx teeth broadly triangular to broadly ovate-triangular or subulate, apex acuminate to acute.
      - 17a. Apical part of stem, petiole, and abaxial leaf surface densely retrorse pilose, especially on leaf veins ..... 19. *P. albida*
      - 17b. Apical part of stem, petiole, and abaxial leaf surface not densely retrorse pilose.
        - 18a. Plants sparsely pubescent or subglabrous ..... 16. *P. lanceolata*
        - 18b. Plants densely retrorse strigose or pubescent.
          - 19a. Corolla tube shorter than calyx tube; calyx teeth subulate ..... 15. *P. gracilis*
          - 19b. Corolla tube longer than calyx tube; calyx teeth not subulate.
            - 20a. Leaves lanceolate to sublanceolate.

- 21a. Stems densely spreading pubescent toward base, conspicuously grooved; leaves lanceolate, apex long acuminate, base attenuate; petiole ca. 2 cm; corolla conspicuously hairy annulate inside; ovary glabrous ..... 17. *P. parviflora*
- 21b. Stems densely pubescent throughout, not grooved; leaves oblong-elliptic, apex acute, base cuneate; petioles ca. 1 cm; corolla inconspicuously hairy annulate inside; apex of ovary puberulent ..... 18. *P. kwangtungensis*
- 20b. Leaves ovate.
- 22a. Leaves membranous; corolla tube much exerted; anthers ciliate; ovary glabrous ..... 20. *P. intermedia*
- 22b. Leaves papery; corolla tube slightly exerted; anthers not ciliate; ovary apex pubescent ..... 21. *P. pagantha*

**1. *Paraphlomis javanica*** (Blume) Prain, Ann. Roy. Bot. Gard. (Calcutta) 9: 59. 1901.

假糙苏 jia cao su

Herbs erect. Stem solitary, 0.5–1.5 m, retrorse strigose, flexuous, leafless toward base. Petiole slender, to 8 cm; leaf blade elliptic to oblong-ovate, 3–15(–30)×1.5–8.5(–14) cm, adaxially ± minutely hispid, abaxially strigose, base rounded to subtruncate, margin inconspicuously serrate to crenate-serrate, apex acute to acuminate. Verticillasters many flowered, globose, ca. 3 cm in diam., surrounded by few bracteoles at base; bracteoles subulate, ca. 6 mm, shorter than calyx, hirtellous. Flowers sessile. Calyx tubular in flower, abruptly spreading at mouth, enlarged and red in fruit, leathery, densely hirtellous or minutely hispid, glabrescent, inconspicuously veined, tube ca. 7 mm; teeth subequal, needlelike to triangular, 2–4 mm. Corolla yellow or yellowish, less often whitish, ca. 1.7 cm, ± hirtellous on apical parts of tube and limb outside, pubescent annulate inside, upper lip oblong, entire. Nutlets black, triquetrous, obovoid, apex rounded, glabrous. Fl. Jun–Aug, fr. Aug–Dec.

Evergreen and mixed forests; 300–2400 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan [India, Indonesia, Laos, Malaysia, Myanmar, Pakistan, Philippines, Thailand, Vietnam].

- 1a. Calyx teeth triangular, ca. 2 mm, apex not subulate or needlelike; leaves inconspicuously serrate ..... 1d. var. *henryi*
- 1b. Calyx teeth subulate, triangular-subulate or needlelike, 3–4 mm, apex subulate or needlelike; leaves ± conspicuously serrate, crenate, or crenulate.
- 2a. Calyx teeth needlelike, minutely hispid; leaves ovate to narrowly lanceolate, inconspicuously crenulate ..... 1c. var. *angustifolia*
- 2b. Calyx teeth subulate or triangular-subulate, hirtellous; leaves elliptic, elliptic-ovate, or oblong-ovate, crenate-serrate or shallowly widely spaced-serrate to crenate.
- 3a. Leaves 7–15(–30)×3–8.5(–14) cm, membranous or papery, crenate-serrate ..... 1a. var. *javanica*
- 3b. Leaves 3–9(–15)×1.5–6 cm, succulent, shallowly remotely serrate to crenate ..... 1b. var. *coronata*

**1a. *Paraphlomis javanica* var. *javanica***

假糙苏 jia cao su

*Leonurus javanicus* Blume, Bijdr. 828. 1826; *Lamium longipetiolata* Hayata; *Paraphlomis rugosa* (Benth.) Prain; *Phlomis rugosa* Benth.

Leaf blade elliptic, elliptic-ovate, or oblong-ovate, 7–15(–30)×3–8.5(–14) cm, membranous or papery, margin crenate-serrate. Calyx teeth subulate or triangular-subulate, hirtellous.

Forests; 300–1300(–2500?) m. Guangxi, Hainan, Taiwan, Yunnan [India, Indonesia, Laos, Malaysia, Myanmar, Pakistan, Philippines, Thailand, Vietnam].

**1b. *Paraphlomis javanica* var. *coronata*** (Vaniot) C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 13(1): 72. 1975.

小叶变种 xiao ye bian zhong

*Lamium ? coronatum* Vaniot, Bull. Acad. Int. Géogr. Bot. 14: 174. 1904; *Lamium gesneroides* Hayata; *Loxocalyx vaniotiana* H. Lévillé; *Paraphlomis rugosa* (Benth.) Prain var. *coronata* (Vaniot) C. Y. Wu.

Leaf blade 3–9(–15)×1.5–6 cm, succulent, margin shallowly remotely serrate to crenate.

• Evergreen and mixed forests; 400–2400 m. Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan.

A medicinal herb used for soothing lungs, as an antitussive, and for irregular menstruation.

**1c. *Paraphlomis javanica* var. *angustifolia*** (C. Y. Wu) C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 13(1): 73. 1975.

狭叶变种 xia ye bian zhong

*Paraphlomis rugosa* (Benth.) Prain var. *angustifolia* C. Y. Wu, Acta Phytotax. Sin. 8: 38. 1959.

Leaf blade ovate-lanceolate to narrowly lanceolate, margin inconspicuously crenulate. Calyx acicular, hispidulous.

Evergreen and mixed forests; 500–1600 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Sichuan, Yunnan [Vietnam].

**1d. *Paraphlomis javanica* var. *henryi*** (Yamamoto) C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 13(1): 73. 1975.

短齿变种 duan chi bian zhong

*Paraphlomis rugosa* (Benth.) Prain var. *henryi* Yamamoto, J. Soc. Trop. Agric. 6: 555. 1934.

Leaf blade margin inconspicuously serrate. Calyx teeth broadly triangular, ca. 2×1.5 mm, not acicular.

• Evergreen forests. Taiwan, Yunnan.

**2. *Paraphlomis hirsutissima*** C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 62. 1965.

多硬毛假糙苏 duo ying mao jia cao su

Herbs. Stems flexuous, densely retrorse tawny hirsute. Petiole 2–5 cm, densely tawny hirsute; leaf blade elliptic, 5.5–13×2–5 cm, papery, adaxially sparsely hirtellous when young, subglabrescent, abaxially tawny, sparsely hirsute, densely hirsute on veins, base cuneate, margin remotely undulate-serrate above base, apex acute; lateral veins 5 or 6 pairs, conspicuously elevated abaxially. Verticillasters 8–10-flowered, subtended at base by minute subulate bracteoles ca. 4 mm. Pedicel short to obsolete. Fruiting calyx tubular, slightly open, red becoming brown when dry, 8–9 mm, inconspicuously 5-veined; teeth ca. 2 mm, broadly triangular, subulate, reflexed. Corolla not seen. Nutlets unknown. Fr. Jan.

- Stony areas in tropical forests; 1300 m. Yunnan.

**3. *Paraphlomis hispida*** C. Y. Wu, Acta Phytotax. Sin. 8: 39. 1959.

刚毛假糙苏 gang mao jia cao su

Herbs. Stems slightly ascending, ca. 60 cm, densely retrorse fine strigose. Petiole slender, to 15 cm, finely strigose, hispid on groove; leaf blade elliptic, 3–20×1.8–11.5 cm, membranous, adaxially dark green, strigose, finely papillate, hispid on veins, abaxially white granular, finely strigose, sparsely hispid, base broadly cuneate to shallow cordate, margin irregularly serrulate or sometimes undulate-crenulate, apex acute to short acuminate. Verticillasters many flowered, globose; bracteoles lanceolate, margin ciliolate. Fruiting calyx tubular-campanulate, tawny outside, densely hispid, glabrous inside; teeth narrowly lanceolate, erect, ca. 5 mm, apex bristlelike-acuminate. Nutlets truncate. Fr. Nov-Jan.

Dense tropical forests, thickets; 1200–1500 m. Yunnan [Vietnam].

**4. *Paraphlomis paucisetosa*** C. Y. Wu ex H. W. Li, Acta Phytotax. Sin. 10: 63. 1965.

少刺毛假糙苏 shao ci mao jia cao su

Subshrubs. Stems ascending, ca. 7 mm in diam., glabrous, finely striate, sometimes lenticellate. Petiole ca. 8 cm; leaf blade ovate-elliptic, to 20×10 cm, ± leathery, glabrous, base rounded to shallowly cordate, margin remotely undulate-serrate, apex acute; midrib brown abaxially. Verticillasters many flowered; bracteoles linear. Pedicel short. Fruiting calyx tubular-campanulate, ca. 1.7 cm, strigose, sparsely white bristly at apex and along conspicuously elevated veins; teeth broadly triangular. Corolla not seen. Nutlets black-brown, triquetrous ovoid, ca. 6×3.5 mm, rounded, base attenuate, glabrous. Fr. Mar.

- Rocky hillsides. Guangxi.

**5. *Paraphlomis patentisetulosa*** C. Y. Wu ex H. W. Li, Acta Phytotax. Sin. 10: 63. 1965.

展毛假糙苏 zhan mao jia cao su

Herbs robust. Stems ascending, leafless toward base, densely fine tawny patent-setose, internodes abbreviated. Petiole 2–8 cm; leaf blade elliptic to broadly elliptic, 5.5–14.5×2.5–7 cm, adaxially densely fine spreading setose, abaxially sparsely fine spreading setose, densely so on veins, base broadly cuneate to rounded-cordate, margin irregularly undulate-serrate, apex acute. Verticillasters many flowered, globose, ca. 2.5 cm in diam. in fruit; bracteoles subulate to linear, ca. 8 mm, hairy outside, glabrous inside. Pedicel short.

Fruiting calyx tubular-campanulate, to 1.1 cm, finely bristly outside, conspicuously 5-veined; teeth broadly triangular, ca. 3 mm, apex long acuminate. Corolla not seen. Nutlets black-brown, triquetrous, oblong, ca. 6×2.5–2.8 mm, rounded, base attenuate, glabrous. Fr. Nov.

- Streamsides. Guangdong.

**6. *Paraphlomis setulosa*** C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 65(2): 602. 1977.

小刺毛假糙苏 xiao ci mao jia cao su

Herbs. Stem solitary, erect, 30–70 cm, grooves purple or purple-red, densely retrorse fine bristly-puberulent. Petiole 0.5–2 cm, longest and narrowly winged on mid stem leaves; leaf blade elliptic to oblong-ovate, 8–15×4–6(–8) cm, adaxially sparsely fine bristly-puberulent, abaxially finely bristly-puberulent mainly along veins, sometimes indistinctly yellowish glandular, base cuneate-decurrent, margin crenate-serrate, apex acute. Verticillasters (2–)4–14-flowered, subglobose, 1.5–2 cm in diam. before anthesis; bracteoles linear, to 4×0.5 mm. Pedicel 1–2 mm. Calyx tubular, ca. 7 mm, sparsely fine bristly, inconspicuously yellowish glandular; teeth finely bristly-puberulent on inside, triangular, 2.5–3 mm, ca. 1.5 mm wide, apex bristlelike-acuminate, reflexed. Corolla white, ca. 1.5 cm; tube straight, cylindric or throat slightly dilated, sparsely pilose, pilose annulate inside; upper lip oblong, ca. 5 mm, concave, entire, densely pilose; middle lobe of lower lip trapeziform, less than 3 mm wide, margin undulate, glabrous except for densely pilose center; lateral lobes ovate, ca. 2 mm wide, densely pilose outside. Ovary glabrous. Nutlets unknown. Fl. Jun.

- Montane, subtropical evergreen broad-leaved forests; 400 m. Anhui, Jiangxi.

**7. *Paraphlomis seticalyx*** C. Y. Wu ex H. W. Li, Acta Phytotax. Sin. 10: 64. 1965.

刺萼假糙苏 ci e jia cao su

Herbs. Stem solitary, ascending, 40–60 cm, apex sometimes flexuous, sparsely fine floccose-setose, leafless toward base. Petiole slender, 3.5–9 cm; leaf blade ovate to subcircular, 10–12×6–8 cm, papery, adaxially sparsely finely tawny pilose, abaxially sparsely golden glandular, gray-green, finely tawny setose on veins, base broadly cuneate to shallowly cordate, margin irregularly crenate, apex acute. Verticillasters (2–)10–18-flowered, subglobose, ca. 2.5 cm in diam. before anthesis; bracteoles linear, 2–7×0.8 mm. Pedicel short to obsolete. Calyx tubular, 1–1.2 cm, papery, veins finely tawny setose, conspicuously 10-veined, throat and teeth puberulent; teeth narrowly triangular, ca. 3×1.3 mm, bristlelike-acuminate. Corolla white, purple spotted on throat, ca. 1.8 cm; tube erect, cylindric or slightly dilated at throat, sparsely pilose, obliquely hairy annulate inside; upper lip oblong, slightly concave, entire, densely pilose outside; middle lobe of lower lip trapeziform, margin undulate, pilose in center outside; lateral lobes ovate. Ovary glabrous. Fl. Jun-Jul.

- Clumps of grass, dense forests, streamsides, wet sandy areas; 500–800 m. Guangxi.

**8. *Paraphlomis albiflora*** (Hemsley) Handel-Mazzetti, Acta Horti Gothob. 13: 347. 1939.

白花假糙苏 bai hua jia cao su

Herbs with or without tubers. Stems erect or ascending, 30–60 cm, base purplish, leafless, unbranched. Petiole slender, to 8 cm; leaf blade ovate, sometimes circular in basal stem leaves, 6–8×3.5–4 cm, villous-pubescent, abaxially gray-green, margin irregularly coarse crenate-serrate. Verticillasters 2–20-flowered, subglobose, to 3(–4) cm in diam.; bracteoles ca. 2 mm, linear, ciliate. Pedicel short to obsolete. Calyx tubular, slightly curved, somewhat dilated toward apex, villous pubescent, 10-veined, throat and teeth strigose; teeth broadly triangular, subequal, apex acute. Corolla white or purple spotted on throat, 1.2–1.5 cm; tube 8–10 mm, straight, cylindrical, slightly dilated at throat, much exerted, glabrous, villous annulate inside; limb white villous outside; upper lip oblong, erect, concave, margin entire. Ovary glabrous. Nutlets triquetrous, oblong, glabrous, apex truncate. Fl. Jun.

• Wet areas in valley forests, waste areas; 100–800 m. Hubei, Sichuan.

1a. Plants without tubers, densely long hairy; verticillasters ca. 20-flowered ..... 8a. var. *albiflora*

1b. Plants with tubers, sparsely short hairy; verticillasters 2–6-flowered ..... 8b. var. *biflora*

**8a. *Paraphlomis albiflora* var. *albiflora***

白花假糙苏 bai hua jia cao su

*Phlomis albiflora* Hemsley, J. Linn. Soc., Bot. 26: 304. 1890; *Paraphlomis hirsuta* Handel-Mazzetti.

Plants without tubers, densely long hairy. Verticillasters ca. 20-flowered.

• Wet areas in valley forests; 100–800 m. Hubei, Sichuan.

**8b. *Paraphlomis albiflora* var. *biflora* (Sun) C. Y. Wu ex H. W. Li, Acta Phytotax. Sin. 10: 65. 1965.**

二花变种 er hua bian zhong

*Paraphlomis biflora* Sun, Acta Phytotax. Sin. 4: 47. 1955.

Plants with tubers, sparsely short hairy. Verticillasters 2–6-flowered.

• Waste areas. Sichuan.

**9. *Paraphlomis foliata* (Dunn) C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 66. 1965.**

曲茎假糙苏 qu jing jia cao su

*Lamium foliatum* Dunn, J. Linn. Soc., Bot. 38: 363. 1908.

Herbs flexuous ascending, with short stolons. Stem solitary, to 25 cm, densely white villous, base prostrate, leafless. Petiole 1.5–5 cm, longest basally, densely white villous; leaf blade ovate, 6–9×4–7.5 cm, densely villous, abaxially sparsely yellowish glandular, base shallowly cordate, margin crenate, apex obtuse to rounded. Verticillasters many flowered, globose; bracteoles linear, 2–5 mm. Flowers sessile. Calyx tubular, to 1 cm, conspicuously 10-veined, slightly curved at apex, sparsely yellowish glandular, veins villous, apical part of tube and teeth puberulent inside; teeth subequal, triangular, ca. 2 mm, apex acute. Corolla ca. 2 cm, sparsely pubescent, puberulent annulate inside; tube ca. 1.8 cm, straight, cylindrical, throat

slightly dilated; upper lip oblong, flat, ca. 7×2.5 mm; middle lobe of lower lip obcordate, ca. 3 mm wide; lateral lobes ovate, ca. 2.5 mm wide. Stamens included. Ovary black-brown, glabrous. Nutlets triquetrous, oblong, glabrous. Fl. Jul-Aug, fr. Sep-Oct.

• Clumps of grass in evergreen forests; 600–800 m. Anhui, Fujian, Guangdong, Jiangxi.

**10. *Paraphlomis membranacea* C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 66. 1965.**

薄萼假糙苏 bo e jia cao su

Herbs. Stems ascending, to 50 cm, base prostrate, to 7 mm in diam., strigose, glabrescent. Petiole 2–6 cm, densely pubescent; leaf blade ovate, 11–18×6–8 cm, membranous, sparsely pubescent, densely so on veins, adaxially also bristly, base rounded, margin crenulate, apex acute. Verticillasters many flowered, globose; bracteoles oblanceolate-obovate, 3–6×2–3 mm, membranous, conspicuously ribbed, apex sparsely bristly. Flowers sessile. Calyx tubular-campanulate, nearly transparent, sparsely white bristly, glabrous inside, ca. 7 mm; teeth broadly triangular, acute, less than 1×2 mm; mouth subtruncate, pleated. Corolla purple, ca. 1.5 cm, glabrous on limb; tube slender, to 10×1.2 mm, uniformly wide, glabrous, pilose annulate inside; upper lip oblong, ca. 5 mm, erect, margin entire; lower lip horizontally spreading, middle lobe ovate, emarginate; lateral lobes oblong, margin entire. Ovary black-brown, glabrous. Nutlets unknown.

Sandy streambanks in tropical rain forests; 100–2500 m. Yunnan [Vietnam].

**11. *Paraphlomis albotomentosa* C. Y. Wu, Acta Phytotax. Sin. 8: 36. 1959.**

绒毛假糙苏 rong mao jia cao su

Herbs with long, lanate stolons. Stems solitary, ca. 50 cm, retrorse strigose, leafless toward base. Lower stem leaves early deciduous; petiole densely strigose, 3–5 cm, longest basally; upper stem leaf blades broadly triangular-ovate, 4–9×3–6 cm, herbaceous, adaxially sparsely strigose, densely so on veins, abaxially densely white tomentose except for strigose veins, base broadly cuneate, margin gradually remote dentate-serrate above base, apex short acuminate; lateral veins 5–7 pairs, inconspicuous. Verticillasters 4–8-flowered, surrounded by leaflike bracts and linear bracteoles; peduncle ca. 5 mm. Flowers sessile. Calyx tubular-campanulate, 8–9 mm, densely strigose, hirsute inside, veins inconspicuous; teeth equal, narrowly triangular, acute. Corolla white, 1.5–2 cm, densely strigose, slender, straight, recurved at apex; upper lip oblong, entire; lower lip somewhat larger, middle lobe trapeziform, apex emarginate, hirsute-puberulent inside. Ovary glabrous. Fl. Jul.

• Valley streambanks. Hunan.

**12. *Paraphlomis tomentosocapitata* Yamamoto, J. Soc. Trop. Agr. Taiwan 6: 556. 1934.**

绒头假糙苏 rong tou jia cao su

Subshrubs. Stems unbranched, suberect or flexuous, retrorse fine pubescent, ca. 55 cm tall, leafy toward apex, base prostrate, rooting from nodes. Petiole 4–5 cm, pubescent; leaf blade elliptic to elliptic-ovate, 18–19×8–9 cm, membranous, adaxially sparsely strigose, abaxially glaucous, puberulent or glabrescent, pubescent on midrib, base obtuse to broadly

acute, margin crenate-dentate, apex acute to acuminate. Verticillasters fascicled, globose, densely hirsute; bracteoles linear-lanceolate to awnlike, ca. 5×0.5–1 mm, sparsely villous. Flowers subsessile. Calyx obconical-campanulate, ca. 1 cm, to 7 mm wide at throat, leathery, densely tomentose outside; teeth spreading, lanceolate-triangular, apex acute. Corolla gray-yellow, exserted, ca. 2 cm; upper lip spatulate, rounded, hirsute on back outside; lower lip hirsute at base outside. Stamens nearly included. Fl. Aug.

- Taiwan.

**13. *Paraphlomis lancidentata*** Sun, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 10: 30. 1935.

云和假糙苏 yun he jia cao su

Herbs perennial, erect. Stems to 50 cm, rarely branched, red-purple, base glabrous, apex puberulent. Petiole 1–4 cm; leaf blade ovate-lanceolate to lanceolate, 8–16×3–5 cm, adaxially hirsute, abaxially gray-green, finely puberulent, base cuneate-decurrent into petiole, margin coarsely dentate-serrate, apex long acuminate. Verticillasters widely spaced, 10- or more flowered. Calyx tubular, ca. 9.5 mm, puberulent; tube ca. 7 mm, conspicuously 10-veined; teeth narrowly triangular, ca. 2.3×1.8 mm, apex acute. Corolla gray-yellow, tubular, ca. 1.8 cm, densely villous outside, pilose annulate near base inside; tube ca. 1.2 cm; upper lip oblong, ca. 6×3.5 mm, erect, margin entire; lower lip broadly obovate, ca. 6×7 mm; middle lobe obcordate, ca. 3×2.6 mm, emarginate; lateral lobes broadly elliptic, ca. 2.2×1.9 mm, margin entire. Nutlets black-brown, ca. 2×0.9 mm, base cuneate, apex truncate. Fl. Jun.

- Shady slopes. Zhejiang.

**14. *Paraphlomis reflexa*** C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 65(2): 602. 1977.

折齿假糙苏 zhe chi jia cao su

Herbs perennial. Stems erect, 50–100 cm, densely yellowish or gray tomentose, base glabrescent, unbranched. Petiole 1–2.5 cm; leaf blade broadly ovate, 12–14×6.5–9.5 cm, adaxially sparsely pubescent, densely so on veins, abaxially densely yellowish or gray-white tomentose, base broadly cuneate to rounded, margin coarsely crenate-dentate, apex acute. Verticillasters widely spaced, (2–)4–10-flowered; bracteoles needlelike, ca. 1 mm. Pedicel 1–2 mm. Calyx obconical, ca. 1.1 cm, densely pubescent, glabrous except for pubescent teeth inside, 10-veined; teeth triangular-subulate, ca. 3×1.5 mm, apex subulate-acuminate, conspicuously reflexed after anthesis. Corolla dark-purple when dry, ca. 1.4 cm; tube ca. 8 mm, cylindrical to slightly dilated at throat, densely gray pubescent, base glabrous, pilose annulate inside lower lip; upper lip oblong, ca. 6×2 mm, slightly concave; lower lip obliquely patent, ca. 5.5×5 mm; middle lobe ca. 2 mm wide, densely pubescent at middle, margin entire; lateral lobes ca. 1.5 mm, margin entire. Nutlets brown, triquetrous, oblong, ca. 2×1.2 mm, adaxially ribbed, rounded, basally broadly cuneate, glabrous. Fl. Aug, fr. Sep.

- Hillsides. Jiangxi.

**15. *Paraphlomis gracilis*** (Hemsley) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 210. 1929.

纤细假糙苏 xian xi jia cao su

Herbs erect, bearing stolons. Stems ca. 1 m, rigid, slender, retrorse strigose, apex few branched, with internodes longer than leaves. Petiole narrowly winged, dilated at apex, 1–2.5 cm; leaf blade lanceolate, 5–10×1.7–3.3 cm, reduced apically, thin papery, adaxially sparsely strigose, densely so on veins, abaxially densely strigose, golden glandular, base attenuate, decurrent into petiole or leaves sessile, margin crenate-serrate above base, apex acute to acuminate. Verticillasters (2–)4–8(–12)-flowered; bracteoles minute, subulate or obsolete. Calyx obconical, ca. 1.2 cm, densely retrorse strigose, obscurely 10-veined; teeth subulate, almost as long as tube. Corolla white with purple-spotted lower lip or yellow, ca. 1.5 cm; tube included, ca. 5 mm, glabrous, pilose annulate inside; upper lip erect, pilose, oblong, apex rounded, concave, ca. 2×as long as tube; lower lip somewhat wider, spreading. Ovary subglabrous. Fl. Jun-Jul.

- Dense forests, shady streamsides; 300–1400 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Taiwan(?).

- 1a. Leaves short petiolate, petiole narrowly winged; corolla white with purple-spotted lower lip ..... 15a. var. *gracilis*  
1b. Leaves sessile, narrower; corolla yellow ..... 15b. var. *lutiensis*

**15a. *Paraphlomis gracilis* var. *gracilis***

纤细假糙苏 xian xi jia cao su

*Phlomis gracilis* Hemsley, J. Linn. Soc., Bot. 26: 305. 1890; ? *Ajuga formosana* Hayata; ? *Lamium formosanum* Nakai ex Hayata.

Leaves short petiolate; petiole narrowly winged. Corolla white, purple spotted on lower lip.

- Dense forests; 600–800 m. Guizhou, Hubei, Hunan, Taiwan(?).

**15b. *Paraphlomis gracilis* var. *lutiensis*** (Sun) C. Y. Wu., Acta Phytotax. Sin. 8: 34. 1959.

罗甸变种 luo dian bian zhong

*Paraphlomis lutiensis* Sun, Acta Phytotax. Sin. 4: 48. 1955.

Leaves sessile. Corolla yellow.

- Shady streamsides; 300–1400 m. Guangdong, Guangxi, Guizhou, Sichuan.

**16. *Paraphlomis lanceolata*** Handel-Mazzetti, Symb. Sin. 7: 922. 1936.

长叶假糙苏 chang ye jia cao su

Herbs erect. Stems ca. 50 cm, subglabrous to sparsely retrorse pubescent or short pilose, unbranched or few branched toward apex. Petiole 0–1.5 cm, upper leaves sessile; leaf blade lanceolate, 5–13×1.3–3.3 cm, adaxially minutely dotted or sparsely short pilose, slightly puberulent on midrib, abaxially glabrous or sparsely short pilose, base attenuate, decurrent into petiole, apex long acuminate. Verticillasters 8–10-flowered; bracteoles ca. 1 mm, subulate, deciduous. Pedicel ca. 2 mm. Calyx obconical, ca. 5 mm, sparsely fine strigose, glabrous inside, inconspicuously 5-veined; teeth broadly ovate-triangular, ca. 2 mm, equal, apex long acuminate. Corolla ca. 1.5 cm, glabrous, villous annulate inside; tube ca. 6 mm, uniformly wide; upper lip oblong, erect, margin entire; lower lip horizontally spreading, spotted inside, middle lobe trapeziform. Ovary apex puberulent.

Nutlets brown, triquetrous, oblong, truncate, puberulent, base attenuate. Fl. Apr-Aug, fr. Aug-Sep.

• Broad-leaved forests, valley forests, streamsides, shady areas, grasslands; 600–1700 m. Guangdong, Guangxi, Hunan, Jiangxi.

- 1a. Leaves sessile; leaves and stems sparsely short pilose; corolla yellow..... 16b. var. *sessilifolia*  
1b. Leaves petiolate, adaxially slightly puberulent along midvein, abaxially glabrous; stems subglabrous or sparsely retrorse pubescent; corolla yellowish white or rose.  
2a. Corolla yellowish white ..... 16a. var. *lanceolata*  
2b. Corolla rose ..... 16c. var. *subrosea*

**16a. Paraphlomis lanceolata var. lanceolata**

长叶假糙苏 chang ye jia cao su

Stems subglabrous or sparsely retrorse pubescent. Leaves petiolate; blade adaxially slightly puberulent along costa, abaxially glabrous. Corolla yellowish white.

• Broad-leaved forests; 1000–1200 m. Guangdong, Hunan, Jiangxi.

**16b. Paraphlomis lanceolata var. sessilifolia** Handel-Mazzetti, Symb. Sin. 7: 922. 1936.

无柄变种 wu bing bian zhong

Stems sparsely short pilose. Leaves sessile; blade sparsely short pilose. Corolla yellow.

• Valley forests, streamsides, shady areas; 600–1700 m. Guangxi.

**16c. Paraphlomis lanceolata var. subrosea** Handel-Mazzetti, Symb. Sin. 7: 922. 1936.

红花变种 hong hua bian zhong

Corolla rose.

• Grasslands. Hunan.

**17. Paraphlomis parviflora** C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 69. 1965.

小花假糙苏 xiao hua jia cao su

Herbs erect, with yellowish indumentum. Stems ca. 35 cm, solitary, base ca. 2.5 mm in diam., apex densely retrorse appressed puberulent, hairs ± spreading toward base. Petiole (0.5–)2–2.5 cm, longer basally; leaf blade lanceolate, ca. 10×3.5 cm, membranous, sparsely puberulent, densely so on adaxial midrib and veins, densely impressed glandular abaxially, base attenuate, margin irregularly serrate, apex long acuminate. Verticillasters (3–)5–7-flowered; bracteoles subulate, ca. 1 mm. Pedicel ca. 2 mm. Calyx obconical, ca. 5 mm, dilated to 3 mm wide at throat, sparsely retrorse puberulent, glabrous except for puberulent teeth inside, obscurely 5-veined; teeth broadly triangular, ca. 1.5×1.3 mm, apex long acuminate. Corolla ca. 9 mm; tube ca. 4 mm, puberulent apically, glabrous basally, pilose annulate inside; upper lip erect, oblong, entire, densely puberulent outside; lower lip sparsely puberulent outside. Ovary glabrous. Fl. Jun.

• Grasslands; 1500 m. Taiwan.

**18. Paraphlomis kwangtungensis** C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 70. 1965.

八角花 ba jiao hua

Herbs erect. Stem solitary, ca. 25 cm, base ca. 2.5 mm in diam., base glabrous, apex densely retrorse yellowish puberulent. Petiole 0.5–1.5 cm; leaf blade oblong-elliptic, 6–8×2–3 cm, densely pubescent especially along veins, base cuneate, margin shallowly serrate, apex acute. Verticillasters 2- to many flowered; bracteoles subulate, less than 1 mm, adaxially glabrous, abaxially puberulent. Pedicel ca. 1.3 mm. Calyx obconical, ca. 4 mm, sparsely appressed yellowish puberulent, pubescent on teeth inside, otherwise glabrous, conspicuously 5-veined; teeth broadly triangular, ca. 1.3 mm, apex acute. Corolla ca. 9 mm; tube ca. 4 mm, glabrous, obscurely pilose annulate inside; limb pubescent outside, glabrous inside; upper lip straight, oblong, margin entire. Ovary apex pubescent. Fl. Jul.

• Hilly bamboo forests. Guangdong.

**19. Paraphlomis albida** Handel-Mazzetti, Symb. Sin. 7: 922. 1936.

白毛假糙苏 bai mao jia cao su

Herbs erect. Stem solitary, 30–60 cm, densely retrorse white pilose, leafless toward base, unbranched. Petiole narrowly winged; leaf blade ovate, 4–9×2.5–4.5 cm, adaxially dark green, sparsely white pubescent, densely so on veins, abaxially gray, densely retrorse pilose especially on veins, golden glandular, base rounded or cuneate-attenuate into petiole, margin irregularly crenate-serrate, apex acute to acuminate. Verticillasters 2–8-flowered; bracteoles minute, subulate, early deciduous. Pedicel 1–2 mm. Calyx obconical, 6–7 mm, densely fine strigose, glabrous inside, conspicuously 5-veined; teeth triangular, subulate to acute, incurved. Corolla white or tinged purple, ca. 1.4 cm, strigose-villous, glandular, villous annulate inside; tube ca. 6 mm, throat slightly dilated; upper lip elliptic, entire, erect, concave; lower lip larger, middle lobe trapeziform, emarginate. Ovary apex villous. Fl. Jul-Oct.

• Forests, thickets, streamsides; 100–900 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Taiwan.

- 1a. Calyx teeth broadly triangular extending into subulate apex ..... 19a. var. *albida*  
1b. Calyx teeth ovate-triangular, apex acute ..... 19b. var. *brevidens*

**19a. Paraphlomis albida var. albida**

白毛假糙苏 bai mao jia cao su

Calyx teeth broadly triangular-subulate, apex subulate.

• Forests, streamsides; 200–900 m. Guangdong, Hunan.

**19b. Paraphlomis albida var. brevidens** Handel-Mazzetti, Symb. Sin. 7: 922. 1936.

短齿变种 duan chi bian zhong

Calyx teeth broadly ovate-triangular, apex acute.

• Evergreen and pine forests, thickets; 100–900 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Taiwan.

**20. Paraphlomis intermedia** C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 72. 1965.

中间假糙苏 zhong jian jia cao su

Herbs erect. Stem solitary, to 1 m, retrorse puberulent, base to 4 mm in diam., leafless, unbranched. Petiole 1.5–4 cm, narrowly winged; leaf blade ovate, 6.5–11×4–6.5 cm, sparsely pubescent, glandular, base broadly cuneate, abruptly decurrent, margin crenate-serrate, apex acute to acuminate. Verticillasters 10–14-flowered, globose, ca. 3 cm in diam.; bracteoles subulate, ca. 0.5 mm, deciduous. Pedicel obsolete. Calyx obconical, ca. 5 mm, sparsely pubescent, glabrous except for puberulent teeth inside, conspicuously 5-veined; teeth subequal, broadly triangular, ca. 1 mm, apex acute. Corolla white, ca. 1.5 cm, sparsely puberulent, glandular, pilose annulate inside; tube ca. 9 mm, throat ca. 3 mm wide; upper lip oblong, margin entire; middle lobe of lower lip ovate, lateral lobes oblong. Nutlets brown, triquetrous, oblong, ca. 2.2×1.3 mm, base attenuate, apex truncate, sparsely pubescent.

- Clumps of grass in bamboo forests; 400 m. Anhui, Zhejiang.

**21. *Paraphlomis pagantha*** Dunn, Fl. Indo-Chine 4: 1015. 1936.

奇异假糙苏 qi yi jia cao su

Herbs erect. Stem solitary, to 1 m, retrorse fine strigose. Petiole 3–4 cm, ± winged toward apex; leaf blade ovate, 10–16×4–7 cm, adaxially dark green, sparsely and finely strigose, densely so on veins, abaxially densely golden glandular, finely strigose along veins, base broadly cuneate, attenuate-decurrent along petiole, margin crenate-serrate, apex acute. Verticillasters (4–)6–13-flowered, subglobose, 1.5–1.8 cm in diam. in bud; bracteoles subulate, ca. 1 mm, early deciduous. Pedicel ca. 1.5 mm, strigose. Calyx obconical, ca. 4 mm, strigose, glandular or sometimes subglabrous, glabrous inside, conspicuously 10-veined; teeth equal, triangular, ca. 1 mm, apex acute. Corolla yellow or white, ca. 1.3 cm; tube slender, straight, cylindric, slightly longer than calyx tube, glabrous, villous annulate inside; upper lip elliptic, apex 2-lobed, sparsely pubescent outside; middle lobe of lower lip trapeziform, emarginate; lateral lobes ovate. Ovary apex pubescent. Fl. May–Jun.

- Shady areas in dense forests, forest margins; 100 m. Hainan.

**22. *Paraphlomis brevifolia*** C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 73. 1965.

短叶假糙苏 duan ye jia cao su

Herbs erect, with yellowish indumentum. Stems densely retrorse pilose, leafless toward base, unbranched. Petiole 3–6 mm; leaf blade oblong to ovate-oblong, 5–8×2.4–3.4 cm, ± leathery, densely puberulent, abaxially golden glandular, base obtuse to rounded, margin undulate-crenate, apex acute. Verticillasters 2-flowered; bracteoles minute, deciduous. Pedicel ca. 1 mm. Fruiting calyx obconical, ca. 6 mm, densely fine pilose, conspicuously 5-veined apically; teeth triangular, ca. 1.8 mm, puberulent inside, conspicuously extended into wings from veins, reflexed. Corolla unknown. Immature nutlets brown, triquetrous, oblong, ca. 2.5×1.5 mm, densely fine pilose, base attenuate, apex truncate.

- Guangxi.

**23. *Paraphlomis subcoriacea*** C. Y. Wu ex H. W. Li, Acta Phytotax. Sin. 10: 73. 1965.

近革叶假糙苏 jin ji ye jia cao su

Herbs erect, with yellowish indumentum. Stems ca. 60 cm, densely retrorse appressed pilose, leafless toward base, unbranched. Leaves lanceolate to narrowly lanceolate, 7–15×1.5–3 cm, ± leathery, adaxially densely appressed pilose, sparsely so with age, abaxially glabrous, densely appressed pilose along veins, sparsely so with age, base attenuate or abruptly obtuse, margin remotely serrulate, apex acuminate. Verticillasters 2–8-flowered; bracteoles subulate, less than 0.5 mm. Pedicel 3–4 mm. Calyx obconical, ca. 6 mm, sparsely fine appressed pilose, conspicuously 5-veined apically; teeth ca. 1.5 mm, inconspicuous so that calyx mouth appears subtruncate, extended into wings from veins. Corolla white or purple-white, ca. 1.6 cm; tube slightly longer than calyx, glabrous, interior pilose annulate; limb pilose outside; upper lip oblong, ca. 10×4.5 mm, galeate, concave, undulate; lower lip ovate, middle lobe ovate. Ovary apex sparsely puberulent.

- Forests, rocky valleys. Guangdong.

