
假糙苏属 jia cao su shu


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 bristlike, 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, bristlike-acuminate to acute or widened into wings from veins. Corolla 2-lipped; tube hairy annulate inside, gradually or abruptly 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 bristlike to acute.

3a. Leaves ovate, ovate-orbicular, or subcircular.

4a. Stems and leaves sparsely bristly; calyx tube densely bristly, teeth narrowly triangular, apex bristlike ................................................................. 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 villose and pubescent; corolla densely white

5b. Ascending herbs; stems, leaves, and calyces densely villose only; corolla sparsely pubescent
outside; bracteoles linear, 2–5 mm ......................................................... 8. *P. albiflora*

7a. Leaves ± leathery; leaves and stem glabrous; calyx sparsely white bristly at apex and along
veins otherwise strigose ........................................................................... 4. *P. paucisetulosa*

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*

6a. Calyx bristly.

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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 bristlike basal bracteoles.

13a. Leaves elliptic or elliptic-ovate; calyx densely tomentose outside ........................................ 12. *P. tomentosocapitata*

13b. Leaves broadly ovate or ovate-lanceolate to lancifoliate; 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.

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 truncate, 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, pubescent. Fl. Jun-Aug, fr. Aug-Dec.

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

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-lanceolate, 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 glabrous................................................................................................. 21. **P. pagantha**

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.

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


...
Herbs. Stems flexuous, densely retrorse tawny hirsute. Petiole 2–5 cm, densely tawny hirsute; leaf blade elliptic, 5.5–13\times2–5 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 2 mm, broadly triangular, subulate, reflexed. Corolla not seen. Nutlets unknown. Fr. Jan.

- Rocky hillsides. Guangxi.


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


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


- Rocky hillsides. Guizhou.


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


- Streamsides. Guangdong.
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, cylindric, slightly dilated at throat, much exserted, 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
  1b. Plants with tubers, sparsely short hairy; verticillasters 2–6-flowered

8a. Paraphlomis albiflora var. albiflora

白花假糙苏

Herbs with long, lanate stolons. Stems solitary, to 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, axially sparsely strigose, densely so on veins; axially 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 horizontally spreading, middle lobe trapeziform, apex marg计划, hirsute-puberulent inside. Ovary glabrous. Fl. Jul.

- Valley streamside. Hunan.


绒毛假糙苏

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, axially sparsely strigose, densely so on veins; axially 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 horizontally spreading, middle lobe trapeziform, apex marg计划, hirsute-puberulent inside. Ovary glabrous. Fl. Jul.

- Valley streamside. Hunan.


薄萼假糙苏

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, petiole, basally, margin crenulate, apex acute. Verticillasters many flowered, globose; bracteoles oblong-elliptic-ovate, 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, 5×3 mm, erect, margin entire; lower lip horizontally spreading, middle lobe ovate, emarginate; lateral lobes oblong, margin entire. Ovary black-brown, glabrous. Nutlets unknown.

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


绒毛假糙苏

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, axially sparsely strigose, abaxially glaucous, puberulent or glabrescent, pubescence on midrib, base obtuse to broadly...
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, axially 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 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. lutienensis

15a. Paraphlomis gracilis var. gracilis

纤细假糙苏 xian xia jia cao su


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

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


罗甸变种 luodian bian zhong


Leaves sessile. Corolla yellow.

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


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.
16a. Paraphlomis lanceolata var. lanceolata

Long leaf false grasses

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

1b. Paraphlomis lanceolata var. sessilifolia

Leaves sessile; leaves and stems sparsely short pilose; corolla yellow.

19b. Paraphlomis albida var. sessilifolia

Paraphlomis albida


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

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 stigrose, glandular inside, conspicuously 5-veined; teeth triangular, subulate to acute, incurved. Corolla white or tinged purple, ca. 1.4 cm, stigrose-villosus, 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.

19b. Paraphlomis albida var. brevidens


Duan chi bian zhong

Herbs erect. Stem solitary, 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, 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.


Zhong jian jia cao su

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, 4 mm, 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.

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 stigrose, glandular inside, conspicuously 5-veined; teeth triangular, subulate to acute, incurved. Corolla white or tinged purple, ca. 1.4 cm, stigrose-villosus, 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.


Bai mao jia cao su

Herbs erect. Stem solitary, 25 cm, base ca. 2.5 mm in diam., base pubescent, 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, 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.

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 stigrose, glandular inside, conspicuously 5-veined; teeth triangular, subulate to acute, incurved. Corolla white or tinged purple, ca. 1.4 cm, stigrose-villosus, 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.
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 anululate 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.

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 anululate 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.

短叶假糙苏 duan 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 anululate; 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.

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 anululate; limb pilose outside; upper lip oblong, ca. 10 × 4.5 mm, galeate, concave, undulate; lower lip ovate, middle lobe ovate. Ovary apex pubescent. Fl. May-Jun.

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

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