

19. LINDERNIA Allioni, *Mélanges Philos. Math. Soc. Roy. Turin.* 3: 178. 1766.

母草属 mu cao shu

Anagalloides Krocker; *Bonnaya* Link & Otto; *Ilysanthes* Rafinesque.

Herbs, erect, prostrate, or creeping. Leaves opposite; petiolate or sessile; leaf blade margin often toothed or rarely entire; veins pinnate or palmate. Inflorescences terminal or axillary, racemose, sometimes pseudo-umbellate, rarely in large panicles, or flowers solitary. Flowers opposite or alternate, often pedicellate. Bracteoles absent. Calyx lobes 5, equal or subequal, parted, or split on 1 side. Corolla lower lip larger than upper, extended; upper lip erect. Stamens 4, all fertile or 2 anterior reduced and filaments appendaged; anthers coherent or apex of locules of anterior ones pointed or spurred. Style mostly 2-lamellate, apex often enlarged. Seeds small, numerous.

About 70 species: widely distributed throughout warm regions of New and Old World; 29 species in China.

- 1a. Stems creeping, procumbent, or diffuse, rarely suberect or erect, sometimes long stoloniferous.
- 2a. Calyx shallowly lobed, lobes triangular-ovate 3. *L. crustacea*
- 2b. Calyx lobed to or almost to base, lobes sublinear.
- 3a. Capsule much longer than persistent calyx.
- 4a. Leaves narrow, linear-lanceolate, rarely lanceolate; main veins parallel 19. *L. micrantha*
- 4b. Leaves wide, mostly oblong; veins pinnate.
- 5a. Leaf margin conspicuously mucronate toothed.
- 6a. Leaves petiolate; margin acute-serrate; corolla 10–14 mm 24. *L. ruellioides*
- 6b. Leaves sessile or short petiolate; margin aristate-serrate; corolla ca. 7 mm 25. *L. ciliata*
- 5b. Leaf margin without conspicuous mucronate teeth.
- 7a. Leaf base gradually narrowing; flowers paired, corolla violet; fruiting pedicel less than 0.6 cm 20. *L. brevipedunculata*
- 7b. Leaf base truncate to subcordate; flowers solitary, corolla white or pale purple; fruiting pedicel 0.6–2 cm 21. *L. anagallis*
- 3b. Capsule almost as long as or shorter than persistent calyx.
- 8a. Leaf length much greater than width at least in lower part of stem, oblong-lanceolate to obovate-oblong.
- 9a. Plants without long stolons; calyx ca. 3 mm in fruit.
- 10a. Plants hairy throughout except corolla; leaves to 5 cm, apex obtuse to rounded; pedicel to 1 cm, recurved in fruit 10. *L. viscosa*
- 10b. Plants glabrous throughout except calyx; leaves 1–1.5 cm, apex acute; pedicel 1–2 cm, not recurved in fruit 29. *L. dubia*
- 9b. Plants with long stolons, rooting from nodes; calyx ca. 5–8 mm in fruit.
- 11a. Stems and branches densely with horizontally spreading, silvery and shiny hairs 7.5–10 mm; leaf apex acute to obtuse 11. *L. mollis*
- 11b. Stems and branches sparsely pubescent with uniformly curved, neither silvery nor shiny hairs ca. 2.5 mm; leaf apex rounded 26. *L. cyrtotricha*
- 8b. Leaf length almost equalling width, subovate to orbicular.
- 12a. Inflorescences terminal; capsule ovoid-globose 9. *L. pusilla*
- 12b. Inflorescences axillary; capsule fusiform-ovoid to ellipsoid-oblong.
- 13a. Plants densely hairy; leaf blade suborbicular, apex rounded 17. *L. kiangsiensis*
- 13b. Plants setose or subglabrous; leaf blade ovate, deltoid-orbicular, or subtriangular-ovate, apex subacute to subobtuse.
- 14a. Leaves 0.4–1.3 cm; flowers solitary 15. *L. setulosa*
- 14b. Leaves 1.6–2.5 cm; flowers 6–10 16. *L. scutellariiformis*
- 1b. Stems erect, occasionally decumbent.
- 15a. Stem nodes 2–4; inflorescences pseudo-umbellate, at base with 2 pairs decussate or unequally pseudo-whorled bracts 2. *L. dictyophora*
- 15b. Stem nodes many; inflorescences racemose, spicate, or umbellate fascicles, without pseudo-whorled bracts.
- 16a. Leaf veins parallel.

- 17a. Leaf blade margin conspicuously crenate or serrate; calyx lobed to middle or 2/3 of calyx length 1. *L. nummulariifolia*
- 17b. Leaf blade margin entire or somewhat serrate; calyx lobed almost to base.
- 18a. Capsule as long as or only slightly longer than persistent calyx.
- 19a. Plants glandular hairy; fertile stamens 2; stigma discoid 6. *L. jiuahuanica*
- 19b. Plants glabrous; fertile stamens 4; stigma 2-lobed 7. *L. procumbens*
- 18b. Capsule at least ca. 2 × as long as persistent calyx.
- 20a. Leaves ovate-lanceolate to narrowly ovate, 0.5–1.5 cm; capsule narrowly ovoid to ellipsoid, ca. 2 × as long as persistent calyx 27. *L. hyssopoides*
- 20b. Leaves linear to linear-lanceolate, 1–4 cm; capsule linear, more than 2 × as long as persistent calyx 19. *L. micrantha*
- 16b. Leaf veins pinnate.
- 21a. Leaves to 12 cm; upper calyx lobe larger than other lobes 8. *L. megaphylla*
- 21b. Leaves less than 4.5 cm; calyx lobes subequal.
- 22a. Calyx lobed to 1/3 of its length.
- 23a. Stems often much branched; branches spreading at an angle of 50–90°; internodes mostly equal in length 3. *L. crustacea*
- 23b. Stems often simple or sparsely branched; branches spreading at an angle of 10–50°; internodes short below, elongated above middle.
- 24a. Leaf margin usually irregularly toothed; capsule shorter than persistent calyx 5. *L. oblonga*
- 24b. Leaf margin entire; capsule as long as persistent calyx 4. *L. taishanensis*
- 22b. Calyx lobed to or near base.
- 25a. Flowers numerous in racemes or sometimes panicles.
- 26a. Perennials; capsule shorter than persistent calyx 13. *L. macrobotrys*
- 26b. Annuals; capsule 2–3 × as long as persistent calyx.
- 27a. Leaf base amplexicaul, margin densely aristate-serrate 25. *L. ciliata*
- 27b. Leaf base cuneate and decurrent, margin not densely aristate-serrate.
- 28a. Capsule cylindrical, 2 × or more as long as persistent calyx 23. *L. antipoda*
- 28b. Capsule globose to ellipsoid, almost as long as to shorter than persistent calyx.
- 29a. Leaves sessile or short petiolate 10. *L. viscosa*
- 29b. Petiole to 1.4 cm 12. *L. elata*
- 25b. Flowers solitary or few umbellate or in short racemes.
- 30a. Branches spreading at an angle of 45°; plants often wider than tall or as wide as tall.
- 31a. Plants 14–20 cm tall, ± woody with age; leaves thick, margin 12–18-toothed; calyx ca. 10 mm, lobes with long needlelike tip, longer than fruit 18. *L. stricta*
- 31b. Plants less than 10 cm tall, herbaceous; leaves thin, margin 8–12-toothed; calyx ca. 5 mm, lobes without long needlelike tip, ± as long as fruit 28. *L. delicatula*
- 30b. Branches not spreading at angle of 45°; plants longer than wide.
- 32a. Capsule ovoid, as long as persistent calyx; leaves not linear 14. *L. yaoshanensis*
- 32b. Capsule cylindrical, 2–3 × as long as persistent calyx; leaves linear.
- 33a. Leaf base somewhat amplexicaul; bracts linear; corolla lower middle lobe larger than other lobes 22. *L. tenuifolia*
- 33b. Leaf base cuneate and decurrent; bracts subulate; corolla lobes subequal 23. *L. antipoda*

1. *Lindernia nummulariifolia* (D. Don) Wettstein in Engler & Prantl, Nat. Pflanzenfam. 4(3b): 79. 1895.
宽叶母草 kuan ye mu cao

Vandellia nummulariifolia D. Don, Prodr. Fl. Nepal. 86. 1825; *Lindernia sessiliflora* (Benth) Wettstein; *Vandellia chinensis* T. Yamazaki; *V. sessiliflora* Benth.

Annuals, 1–15 cm tall. Roots fibrous. Stems erect, subquadrangular, sparsely spreading hairy on angles. Leaf blade broadly ovate to orbicular-ovate, 5–12 × 4–8 mm, abaxially glabrous or sparsely hairy only on midrib, base broadly cuneate to cordate, margin shallowly crenate to undulate or acuminate toothed, apex obtuse; veins parallel from base. Inflorescences terminal or axillary subumbels, few flowered. Central flowers sessile or short pedicelled, cleistogamous; other flowers on pedicels ca. 2 cm, sometimes sterile. Calyx ca. 3 mm, lobed to middle or 2/3 of length; lobes ovate to lanceolate-ovate. Corolla violet, rarely blue or white, ca. 7 mm; lower lip spreading flat, 3-lobed; upper lip ovate. Filaments of anterior stamens basally small appendaged. Capsule narrowly ellipsoid, ca. 2 × as long as persistent calyx, apex acuminate. Seeds brown. Fl. Jul–Sep, fr. Aug–Nov.

Edge of rice fields, along streams, wet places; below 1800 m. Gansu, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan, Zhejiang [Kashmir, Myanmar, Nepal, Sikkim, Thailand, Vietnam].

2. *Lindernia dictyophora* P. C. Tsoong, Fl. Reipubl. Popularis Sin. 67(2): 397. 1979.

网萼母草 wang e mu cao

Annuals, erect, 7–10 cm. Stems simple, with 2–4 nodes, conspicuously ribbed, subglabrous, with or without adventitious roots on first node. Petiole 4–5 mm, narrowly winged; leaf blade ovate to ovate-elliptic, 1.2–2.5 × 0.6–1.2 cm, subglabrous to sparsely hirtellous, base rounded to broadly cuneate, margin appressed serrate, apex acute to obtuse. Inflorescences pseudo-umbellate; bracts 2 pairs, decussate or unequally whorled. Flowers open, cleistogamous, or sterile. Calyx campanulate, 5-ridged, upper ridge narrowly winged; lobes often irregular in fruit, upper lobe narrowly ovate, smaller than lower lobe, margin entire, apex acuminate. Corolla white. Filaments of anterior stamens unappendaged. Ovary glabrous. Style persistent; stigma lamellate. Capsule ellipsoid to oblong, slightly shorter than persistent calyx.

Forests; ca. 1400 m. Yunnan (Jinghong Xian) [Thailand].

3. *Lindernia crustacea* (Linnaeus) F. Mueller, Syst. Census Austral. Pl. 1: 97. 1882.

母草 mu cao

Capraria crustacea Linnaeus, Mant. Pl. 1: 87. 1767;

Vandellia bodinieri H. Léveillé; *V. crustacea* (Linnaeus) Benth.

Annuals, 10–20 cm tall, much branched. Branches widely spreading, subquadrangular, deeply sulcate, glabrous. Petiole 1–8 mm; leaf blade triangular-ovate to broadly ovate, 1–2 × 0.5–1.1 cm, abaxially pilose along veins to subglabrous, adaxially subglabrous, base broadly cuneate to rounded, margin shallowly crenate or serrate, apex obtuse to subacute. Flowers axillary and solitary or in short apical racemes. Pedicel slender, 0.5–2.2 cm, subglabrous. Calyx urnlike, 3–5 mm, shallowly lobed; lobes triangular-ovate, outside sparsely

pubescent. Corolla purple, 5–8 mm; tube slightly longer than calyx; lower lip 3-lobed, middle lobe larger and slightly longer than upper lip; upper lip ovate, sometimes shallowly 2-lobed. Stamens didynamous. Style fugacious. Capsule broadly ellipsoid, almost as long as persistent calyx. Seeds pale yellow-brown, subglobose, scrobiculate. Fl. and fr. year round.

Moist areas, rice fields, grassland, trailsides; below 1300 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [widely distributed in tropics and subtropics].

Used medicinally.

4. *Lindernia taishanensis* F. Z. Li, Bull. Bot. Res., Harbin 6(1): 169. 1986.

泰山母草 tai shan mu cao

Annuals, 3–10 cm tall. Stems erect, quadrangular, branched, nodes 3 or 4, internodes increasing in length upward. Branches few, ascending. Petiole short; leaf blade ovate to narrowly ovate, 3–7 × 2–4 mm, glabrous, base rounded to broadly cuneate, margin entire and short strigose, apex obtuse. Flowers axillary, solitary or in short racemes. Pedicel slender, 0.5–2 cm, sparsely short strigose to subglabrous. Calyx tubular, 3–4 mm, outside sparsely short strigose, shallowly lobed; lobes triangular-ovate. Corolla purple; lower lip 3-lobed; upper lip emarginate. Stamens didynamous, anterior ones with a curved clavate appendage. Capsule ellipsoid, nearly as long as persistent calyx. Seeds yellowish, globose. Fl. and fr. Oct.

• Shandong (Tai Shan).

5. *Lindernia oblonga* (Benth) Merrill & Chun, Sunyatsenia 5: 180. 1940.

棱萼母草 leng e mu cao

Vandellia oblonga Benth, Scroph. Ind. 35. 1835; *Lindernia subcrenulata* (Miquel) Merrill; *Torenia oblonga* (Benth) Hance; *Vandellia subcrenulata* Miquel.

Perennials. Roots fibrous. Rhizomes horizontal. Stems erect or sometimes procumbent and ascending, subquadrangular, glabrous, median internodes to 6 cm. Branches few, ascending. Leaves short petiolate below, sessile and subamplexicaul above; leaf blade rhomboid-ovate to rhomboid-lanceolate, 5–20 × 3–8 mm, base broadly cuneate, margin often with few irregular undulate sinuses or small teeth, or entire, apex subacute to rounded. Racemes lax, usually less than 10-flowered; bracts lanceolate. Pedicel slender, 0.7–2.5 cm. Calyx narrowly campanulate, lobed to 1/4 length; lobes triangular-ovate, glabrous, apex acute and recurved, midrib evident. Corolla purple to purple-blue, to 1.3 cm or more; tube ca. 7 mm; lower lip 3-lobed; upper lip 2-lobed. Stigma broadly lamellate. Capsule ellipsoid, shorter than persistent calyx. Seeds numerous. Fl. May–Jul, fr. Aug–Oct.

Sandy soil; low elevations. Guangdong, Hainan [Cambodia, Laos, Vietnam].

6. *Lindernia jiuahuanica* X. H. Guo & X. L. Liu, Acta Phytotax. Sin. 26: 153. 1988.

九华山母草 jiu hua shan mu cao

Annuals, 10–15 cm tall. Stems erect, branched, pilose, sparsely glandular hairy. Leaves sessile, broadly ovate, 4–6 × 2–5 mm, sparsely glandular hairy, margin entire, apex acute; veins parallel from base. Flowers axillary. Pedicel 3–10 mm, rarely subsessile. Calyx ca. 3 mm, lobed almost to base; lobes linear-lanceolate, outside glandular hairy. Corolla blue-purple, ca. 4.5 mm; lower lip 3-lobed, middle lobe 2-parted; upper lip emarginate. Fertile stamens 2, posterior, included; filaments ca. 0.5 mm; reduced stamens 2, anterior. Stigma discoid. Capsule ovoid, ca. 4 mm, slightly longer than persistent calyx. Seeds pale brown, cylindric-fusiform; seed coat reticulate. Fl. Jul–Sep, fr. Aug–Oct.

• Mountains; ca. 700 m. Anhui (Jiuhua Shan).

7. *Lindernia procumbens* (Krocker) Borbás, Békés Vámegey Fl. 80. 1881.

陌上菜 mo shang cai

Anagalloides procumbens Krocker, Fl. Siles 2(1): 398. 1790; *Lindernia erecta* (Bentham) Bonati; *Vandellia erecta* Bentham.

Herbs, erect, caespitose, 5–20 cm, basally much branched, glabrous. Roots slender. Leaves sessile, elliptic to oblong, somewhat rhomboid, 1–2.5 × 0.6–1.2 cm, glabrous, margin entire or weakly obtusely toothed, apex obtuse to rounded; veins 3–5, parallel from base. Flower axillary, solitary. Pedicel slender, 1.2–2 cm, longer than subtending leaf, glabrous. Calyx lobed almost to base; lobes linear-lanceolate, ca. 4 mm, outside sparsely pubescent, apex obtuse. Corolla pink to purple, 5–7 mm; tube ca. 3.5 mm; lower lip ca. 3 mm, 3-lobed, middle lobe rounded and larger than other lobes, lateral lobes elliptic; upper lip ca. 1 mm, 2-lobed. Stamens 4, all fertile; filaments of anterior stamens with a small glanduliform appendage. Stigma 2-lobed. Capsule globose to ovoid-globose, as long as or slightly longer than persistent calyx. Seeds oblong; seed coat reticulate. Fl. Jul–Oct, fr. Sep–Nov.

Next to water, wet areas; below 1200 m. Anhui, Guangdong, Guangxi, Guizhou, Heilongjiang, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Sichuan, Taiwan, Yunnan, Zhejiang [Afghanistan, India, Indonesia (Java), Japan, Kashmir, Kazakhstan, Laos, Nepal, Pakistan, Russia, Tajikistan, Thailand, Vietnam; S Europe].

8. *Lindernia megaphylla* P. C. Tsoong, Acta Phytotax. Sin. 8: 67. 1959.

大叶母草 da ye mu cao

Annuals, erect, to 40 cm tall. Stems usually branched, subquadrangular, striate, puberulent, nodes inflated. Petiole to 2.4 cm, winged; leaf blade oblong to ovate-oblong, to 12 × 5.3 cm, abaxially glabrous but veins puberulent, adaxially puberulent, base broadly cuneate and often asymmetrical, margin rounded serrate, apex

acute. Racemes to 15 cm, glandular hairy; bracts linear, ca. 2 mm. Pedicel to 2 cm. Calyx lobed to base; lobes irregular, linear, 3-veined, upper lobe almost 2 × as long as other lobes and to 1.5 cm after flowering. Corolla white, to 1.2 cm; lower lip 3-lobed, middle lobe broadly ovate and larger than narrowly ovate lateral lobes; upper lip triangular-ovate, margin entire. Stamens didynamous; anterior filaments basally with a reniform appendage. Style included; stigma 2-lamellate. Capsule ovoid-ellipsoid.

• Dense forests. Guangdong, Guangxi, Hainan.

Lindernia megaphylla is similar to *L. foliosa* Bonati of Vietnam, from which it is distinguished by the lack of rhizomes and by having calyx upper lobes ca. 2 × as long as lower lobes and corolla tube glabrous inside.

9. *Lindernia pusilla* (Willdenow) Boldingh, Zakfl. Java 165. 1916.

细茎母草 xi jing mu cao

Gratiola pusilla Willdenow, Sp. Pl. 1: 105. 1797; *Lindernia hirta* (Chamisso & Schlechtendal) Pennell; *L. stellarifolia* Hayata; *Torenia hirta* Chamisso & Schlechtendal; *Vandellia hirta* (Chamisso & Schlechtendal) T. Yamazaki.

Annuals, 6–30 cm tall, diffuse, sometimes long stoloniferous. Stems suberect, subglabrous or hairy, densely coarsely hairy on nodes, internodes to 6 cm. Leaves short petiolate below, sessile above; leaf blade ovate, cordate, or occasionally orbicular, to 1.2 cm, sparsely with appressed coarse hairs, base cuneate to subcordate, margin subcrenate or entire, veins impressed on adaxial surface. Inflorescences terminal, subumbellate-racemose, 3–5-flowered. Pedicel slender, 0.8–1.5 cm, pilose to subglabrous. Calyx deeply lobed; lobes lanceolate, coarsely hairy outside. Corolla purple, ca. 9 mm; lower lip ca. 5.5 mm, much longer than upper lip; upper lip broadly ovate, emarginate. Filaments of anterior stamens slender, base geniculate. Stigma 2-lamellate. Capsule ovoid-globose, almost as long as persistent calyx. Seeds oblong, tuberculate. Fl. May–Sep, fr. Sep–Nov.

By water, wet places, rice fields, forests; 800–1600 m. Guangxi, Hainan, Taiwan, S Yunnan [Cambodia, India, Indonesia, Laos, Malay-sia, Myanmar, Nepal, New Guinea, Philippines, Sri Lanka, Thailand, Vietnam].

10. *Lindernia viscosa* (Hornemann) Boldingh, Zakfl. Java 165. 1916.

黏毛母草 nian mao mu cao

Gratiola viscosa Hornemann, Enum. Pl. Hort. Hafn. 19. 1807; *Hornemannia viscosa* (Hornemann) Willdenow; *Lindernia cruciformis* Hayata; *Vandellia viscosa* (Hornemann) Merrill.

Annuals, without long stolons. Stems erect or sparsely diffuse, striate, with coarse spreading long hairs. Leaves short petiolate below, sessile above; leaf blade ovate-oblong, to 5 cm, sparsely coarsely hairy, base decurrent,

margin undulate and toothed, apex obtuse to rounded. Upper leaves sessile, wider than long, smaller than basal leaves, base semiamplexicaul and sometimes broadly cordate. Raceme lax, 6–10-flowered; peduncle ascending to spreading at anthesis, recurved after flowering, to 1 cm in fruit, coarsely hairy; bracts small, lanceolate. Pedicel ascending to spreading at anthesis, recurved and to 1 cm in fruit, coarsely hairy. Calyx ca. 3 mm, lobed to base; lobes narrowly lanceolate, outside coarsely hairy. Corolla white or yellowish, to 5–6 mm; lower lip ca. 3 mm, lobes subequal; upper lip ca. 2 mm, 2-lobed. Stamens 4, all fertile. Capsule globose, almost as long as persistent calyx. Seeds ellipsoid-oblong. Fl. May–Aug, fr. Sep–Nov.

Forests, next to rocks; 900–1300 m. Guangdong, Guangxi, Jiangxi, Taiwan, S Yunnan [Cambodia, India (Darjeeling), Indonesia, Laos, Myanmar, New Guinea, Philippines, Sikkim, Thailand, Vietnam].

11. *Lindernia mollis* (Benth) Wettstein in Engler & Prantl, Nat. Pflanzenfam. 4(3b): 79. 1895.

红骨母草 hong gu mu cao

Vandellia mollis Benth, Scroph. Ind. 37. 1835; *Diceros montanus* Blume; *Lindernia montana* (Blume) Koorders, not Hiern; *Vandellia montana* (Blume) Benth.

Annuals, creeping, stoloniferous, rooting from nodes, shiny white hirtellous except for corolla. Roots fibrous. Stems ± curved and apically ascending, 5–20 cm or longer, few branched, striate, internodes long. Leaves sessile to short petiolate; leaf blade oblong-lanceolate to oblong, 0.7–2.5 cm × 2–6 mm, with white shiny sericeous appressed hairs, base cuneate to subcordate, margin irregularly serrate to crenate, apex acute to obtuse. Racemes axillary from upper leaves, short or sometimes subumbellate, to 10-flowered or more, sometimes flowers solitary in axils; bracts small, subulate. Pedicel to 2.5 cm. Calyx to 5–7 mm, lobed to base; lobes lanceolate. Corolla purple to yellow-white, 8–10 mm; lower lip spreading flat, 3-lobed. Filaments of anterior stamens with a toothlike appendage. Stigma 2-lobed. Capsule narrowly ovoid, shorter than persistent calyx. Seeds lattice-tuberculate. Fl. Jul–Oct, fr. Sep–Nov.

Fields, scrub on sunny mountain slopes, forest edges, along streams; 900–1400 m. Fujian, Guangdong, Guangxi, Jiangxi, S Yunnan [Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Pakistan, Vietnam].

12. *Lindernia elata* (Benth) Wettstein in Engler & Prantl, Nat. Pflanzenfam. 4(3b): 79. 1891.

荨麻母草 qian ma mu cao

Vandellia elata Benth, Scroph. Ind. 36. 1835; *Lindernia urticifolia* (Hance) Bonati; *Vandellia urticifolia* Hance.

Annuals, erect, to 40 cm tall, usually much branched, basally woody with age. Stems conspicuously angled, densely hirsute. Petiole to 1.4 cm, narrowly winged; leaf blade triangular-ovate, 1.2–2 × 1.2–2 cm, patently hirsute, base cuneate to truncate and often decurrent, margin coarsely acute serrate, apex acute. Flowers numerous, mostly in axillary racemes forming panicles; bracts narrowly lanceolate, hairy. Pedicel 2–7 mm, ascending, hairy. Calyx to 4 mm in fruit, lobed to base; lobes linear-lanceolate, patently hairy. Corolla purple, purple-red, or blue, ca. 4 mm; tube ca. 1 mm, inflated at middle; lower lip 3-lobed; upper lip emarginate. Filaments of anterior stamens with a clavate appendage. Capsule ellipsoid, shorter than persistent calyx. Seeds ribbed. Fl. Jul–Oct, fr. Sep–Nov.

Rice fields, grassland, sandy mountain slopes; low elevations. Fujian, Guangdong, Guangxi, Yunnan [Cambodia, Indonesia (Kalimantan), Malaysia, Thailand, Vietnam].

Lindernia elata var. *chinensis* (Bonati) Handel-Mazzetti has been reported from China, but no specimens have been seen by the authors.

13. *Lindernia macrobotrys* P. C. Tsoong, Fl. Reipubl. Popul. Sin. 67(2): 396. 1979.

长序母草 chang xu mu cao

Perennials, more than 30 cm tall, suberect or basally decumbent and curved. Roots adventitious. Stems subquadrangular, narrowly winged. Petiole 2–6 mm, narrowly winged; leaf blade triangular to broadly triangular-ovate, 1.6–2.3 × 1.2–2 cm, abaxially subglabrous, adaxially sparsely hispidulous, base truncate to broadly cuneate, margin triangular serrate, apex acute to rarely obtuse. Racemes 6–10 cm, in large lax panicles; bracts linear-lanceolate, ca. 5 mm, spreading to reflexed, margin entire. Pedicel 1–1.5 cm, glabrous. Calyx 6–7 mm, lobed to base; lobes linear-lanceolate, glabrous or sparsely hairy, apex acuminate, midrib conspicuous. Corolla white, ca. 6 mm. Capsule ovoid-oblong to fusiform-ovate, shorter than persistent calyx. Seeds ovoid, bulging on surface.

• Guangdong (Qujiang Xian).

14. *Lindernia yaoshanensis* P. C. Tsoong, Fl. Reipubl. Popul. Sin. 67(2): 396. 1979.

瑶山母草 yao shan mu cao

Herbs, to 50 cm tall, often rhizomatous. Stems suberect or ascending, subquadrangular, pubescent to subglabrous, rooting from basal nodes. Petiole to 5–10 mm, pubescent; leaf blade narrowly triangular to narrowly triangular-ovate, 2–3.5 × 1–2 cm, appressed hairy, base broadly cuneate, margin 11–25-toothed, apex acute. Flowers axillary and solitary or in 3–5-flowered racemes; bracts narrow. Pedicel 2–8 mm, to 16 mm in fruit, pubescent. Calyx to 9 mm, lobed to base; lobes linear, to 6 mm, subequal, hirsute along midrib, apex acute. Corolla to 1–1.2 cm; lower lip ca. 6.5 mm, 3-lobed, lateral lobes oblong and ca. 2/3 as

long as middle lobe; upper lip triangular, ca. 3.5 mm, apex truncate and subemarginate. Filaments of anterior stamens basally with a clavate appendage ca. 0.5 mm; anthers mucronate. Stigma lamellate. Ovary glabrous. Capsule ovoid, as long as persistent calyx. Fl. Jul.

• Guangxi (Yaoshan), Guizhou.

15. *Lindernia setulosa* (Maximowicz) Tuyama ex H. Hara, J. Jap. Bot. 19: 207. 1943.

刺毛母草 ci mao mu cao

Torenia setulosa Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 31: 72. 1887; *Vandellia cavaleriei* H. Léveillé; *V. setulosa* (Maximowicz) T. Yamazaki.

Annuals. Stems mostly procumbent, rarely ascending to suberect, branched, subquadrangular, winged at ridges, striate, setose or subglabrous. Petiole less than 3 mm; leaf blade broadly ovate to deltoid-orbicular, 4–13 × 3–12 mm, sometimes wider than long, adaxially sparsely appressed hairy, base broadly cuneate and subequal, margin with 4–6 pairs of broadly triangular teeth, apex subacute. Flowers axillary and solitary, or more often in lax racemes. Pedicel to 2 cm. Calyx to 5 mm in fruit, lobed to base; lobes linear, spreading flat at anthesis, inflexed and covering capsule with age, margin hirsute, midrib raised and hirsute. Corolla white or light purple, to 7 mm, slightly longer than calyx; lower lip spreading flat; upper lip ovate. Stamens 4, all fertile. Capsule fusiform-ovoid, shorter than persistent calyx. Seeds ellipsoid. Fl. May–Aug, fr. Jul–Nov.

Valleys, trailsides, forests, grassland; below 1100 m. Fujian, Guangdong, Guangxi, Guizhou, Jiangxi, Sichuan, Zhejiang [Japan].

16. *Lindernia scutellariiformis* T. Yamazaki, J. Jap. Bot. 27: 67. 1952.

黄芩母草 huang qin mu cao

Vandellia scutellariiformis (T. Yamazaki) T. Yamazaki.

Herbs. Roots fibrous. Stems slender, much branched, 20–36 cm, channeled, pubescent, base creeping and rooting from nodes. Petiole ca. 5 mm; leaf blade triangular-ovate, 1.6–2.5 × 0.8–1.5 cm, abaxially hairy along veins, adaxially glabrous, base broadly cuneate, subtruncate, or subcordate, margin with 6–10 pairs of triangular acute teeth, apex acute to subobtuse. Racemes 6–10-flowered, lax, axillary; bracts linear-lanceolate, ca. 5 mm, sparsely hairy. Pedicel 1–1.8 cm, gradually shorter upward, sparsely hairy. Calyx campanulate, 5–9 mm, lobed to base; lobes linear-lanceolate, outside sparsely short hairy, margin entire, apex acuminate. Corolla to 1.3 cm; lower lip 3-lobed, lobes broadly ovate, middle lobe larger and longer than upper lip; upper lip 2-lobed, lobes narrow. Filaments of anterior stamens with a clavate appendage. Stigma lamellate. Capsule ellipsoid-oblong, shorter than persistent calyx.

• Taiwan (Tainan Xian).

17. *Lindernia kiangsiensis* P. C. Tsoong, Fl. Reipubl. Popularis Sin. 67(2): 396. 1979.

江西母草 jiang xi mu cao

Annuals, to 20 cm, creeping, sparsely branched.

Rhizomes slender. Stems and branches quadrangular, striate, densely patent hirsute. Petiole 3–5 mm, hirsute; leaf blade suborbicular, rarely broadly ovate to suboblong, 0.8–1.5 × 0.8–1.5 cm, densely patent hirsute, base usually truncate, margin triangular serrate, apex rounded; veins abaxially conspicuous. Peduncle patent hirsute. Inflorescences axillary, (1 or)2(–4)-flowered; bracts linear-lanceolate to narrowly ovate. Pedicel 1.5–1.9 cm, patent hirsute. Calyx 6–8 mm, lobed to base; lobes linear-lanceolate to linear, outside patent hirsute, margin patently hirsute, veins conspicuous. Corolla pink to bluish, ca. 1.2 cm; tube ca. 8 mm; lower lip 3-lobed, longer than upper lip; upper lip 2-lobed. Filaments of anterior stamens with a clavate appendage. Capsule fusiform-ovoid, shorter than persistent calyx, ribbed. Seeds yellow-brown, ovoid-globose.

• Mixed forests, trailsides; ca. 600 m. Jiangxi (Anyuan Xian, Hui-chang Xian).

18. *Lindernia stricta* P. C. Tsoong & T. C. Ku, Fl. Reipubl. Popularis Sin. 67(2): 397. 1979.

坚挺母草 jian ting mu cao

Herbs, 14–20 cm tall. Stems erect, ± woody, quadrangular, narrowly winged on angles, sparsely hirsute; branches spreading at 45° then ascending. Leaves sessile or short petiolate; leaf blade thick, triangular-ovate to ovate-lanceolate, 1.5–2.8 × 0.5–1.4 cm, abaxially hairy on veins, adaxially sparsely hirsute, base broadly cuneate to subrounded, margin with 12–18 appressed saw-teeth, apex acute. Flowers axillary, solitary or few in short umbellate fascicles. Pedicel 1.5–2.5 cm, hirsute. Calyx ca. 1 cm, lobed to base; lobes linear-lanceolate, apex narrowly acuminate, midrib raised with dense rough hairs these dilated at base. Corolla ca. 8 mm; lower lip ca. 5 mm, lobes rounded, apex subemarginate; upper lip ovate, margin entire. Fertile stamens 2, posterior; filaments short; anthers large. Sterile stamens 2, anterior; filaments to 2 mm, without appendages. Capsule oblong-ovoid, ca. 2/3 as long as persistent calyx. Seeds brown.

• Shady places of valleys or trailsides; low elevations. Guangxi (Gui Xian, Xing'an).

19. *Lindernia micrantha* D. Don, Prodr. Fl. Nepal: 85. 1825.

狭叶母草 xia ye mu cao

Lindernia angustifolia (Benth) Wettstein; *Vandellia angustifolia* Benth.

Annuals, to 40 cm tall. Roots fibrous, abundant. Stems usually erect, striate, glabrous; branches few to numerous, ascending, striate, glabrous. Leaves sessile, linear to linear-lanceolate, 1–4 cm × 2–8 mm, glabrous, margin entire or somewhat irregularly serrate; main veins 3–5, parallel. Flowers axillary, solitary. Pedicel to 3.5 cm in fruit, striate, glabrous. Calyx ca. 2.5 mm, to 4 mm in fruit, lobed to base; lobes narrowly lanceolate, glabrous. Corolla purple, blue-purple, or white, ca. 6.5 mm; lower lip slightly longer than upper, spreading flat, 3-lobed; upper lip 2-lobed. Filaments of anterior

stamens with a linear appendage; posterior anthers with connective of lower locule produced into a long tail equalling locule. Style persistent. Capsule linear, to 1.4 cm, more than 2 × as long as persistent calyx. Seeds brownish, oblong. Fl. May–Oct, fr. Jul–Nov.

Rice fields, along rivers, wet areas; ca. 1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Jiangsu, Jiangxi, Henan, Hubei, Hunan, Yunnan, Zhejiang [Cambodia, India, Indonesia (Java), Japan, S Korea, Laos, Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

20. *Lindernia brevipedunculata* Migo, J. Shanghai Sci. Inst. 4: 160. 1949.

短梗母草 duan geng mu cao

Vandellia brevipedunculata (Migo) T. Yamazaki.

Herbs, glabrous. Roots branched, fibrous. Stems procumbent, to 30 cm, quadrangular, diffuse, much branched, rooting from nodes; branches spreading. Petiole 3–5 mm; blades of stem leaves and long branches ovate-elliptic, lanceolate-oblong, or oblanceolate, 1.5–2 × 0.4–1 cm, base gradually narrowing, margin obscurely crenate; leaves on short branches 1/3–1/2 as long as those on stem. Flowers axillary and paired or in apical racemes. Pedicel slender, ca. 6 mm, gradually shorter upward, ridged. Calyx campanulate, basally connate; lobes linear-lanceolate, ca. 5 mm, erect, ± spreading flat. Corolla violet, 7–8 mm. Filaments of anterior stamens filiform, ca. 1.5 mm, appendiculate; posterior filaments ca. 1 mm. Style 2-lobed. Capsule cylindrical-oblong, ca. 2 × as long as persistent calyx; style persistent.

• Zhejiang (Lin'an Xian).

21. *Lindernia anagallis* (N. L. Burman) Pennell, J. Arnold Arbor. 24: 252. 1943.

长蒴母草 chang shuo mu cao

Ruellia anagallis N. L. Burman, Fl. Indica 135. 1768; *Gratiola cordifolia* Colson; *Lindernia cordifolia* (Colson) Merrill; *Vandellia anagallis* (N. L. Burman) T. Yamazaki; *V. callitrichifolia* H. Léveillé; *V. cordifolia* (Colson) G. Don.

Annuals, 10–40 cm. Roots fibrous. Stems creeping, often branched, striate, glabrous, rooting from nodes. Leaves short petiolate to sessile; leaf blade triangular-ovate, ovate, or oblong, 0.4–2 × 0.7–1.2 cm, glabrous, base truncate to subcordate, margin shallowly crenate, apex rounded to acute; lateral veins 3 or 4 on each side of midrib, spreading at an angle of 45°. Flowers axillary, solitary. Pedicel 6–10 mm, to 2 cm in fruit, glabrous. Calyx ca. 5 mm, basally connate; lobes narrowly lanceolate, glabrous. Corolla white or light purple, 0.8–1.2 cm; lower lip slightly longer than upper lip, spreading flat, 3-lobed, lobes subequal; upper lip ovate, 2-lobed. Filaments of anterior stamens basally with a clavate appendage. Stigma 2-lobed. Capsule linear-ovoid, ca. 2 × as long as persistent calyx. Seeds ovoid, tuberculate. Fl. Apr–Sep, fr. Jun–Nov.

Edge of forests, along streams, rice fields, wet places; ca. 1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Tai-

wan, Yunnan [Bhutan, Cambodia, India, Japan, Laos, Malaysia, Myanmar, Philippines, Sikkim, Thailand, Vietnam; Australia].

Used medicinally.

22. *Lindernia tenuifolia* (Colson) Alston in Trimen, Hand. Fl. Ceylon 6(suppl.): 214. 1931.

细叶母草 xi ye mu cao

Gratiola tenuifolia Colson, Prodr. Descr. Gratiol. 8. 1793; *Bonnaya tenuifolia* (Colson) Sprengel; *Ilysanthes tenuifolia* (Colson) Urban; *Vandellia tenuifolia* (Colson) Haines.

Annuals, to 15 cm tall. Roots fibrous, fascicled. Stems erect or subprostrate and ascending, much branched, striate, glabrous, rarely rooting from 2nd or 3rd nodes. Leaves sessile, linear, 1–2.8 cm × ca. 2 mm, glabrous, base somewhat amplexicaul, margin obscurely short serrate to subentire; midrib conspicuous. Flowers few, opposite to leaves; bracts linear, 1.5–3.5 mm. Pedicel 5–10 mm, glabrous, reflexed in fruit. Calyx basally connate; lobes linear-lanceolate, ca. 2 mm, glabrous, apex obtuse, midrib conspicuous. Corolla purple-red; lower lip 3-lobed, middle lobe larger than other lobes and slightly longer than upper lip; upper lip reduced, obscurely 2-lobed. Fertile stamens 2, posterior. Staminodes 2, anterior. Capsule cylindrical, to 1.5 cm, 2–3 × as long as persistent calyx, apex acuminate.

Beside water, trailsides; low elevations. Guangdong, Guangxi, Taiwan [Cambodia, India, Indonesia, Laos, W Malaysia, Myanmar, New Guinea, Philippines, Vietnam].

23. *Lindernia antipoda* (Linnaeus) Alston in Trimen, Hand. Fl. Ceylon 6(suppl.): 24. 1931.

泥花母草 ni hua mu cao

Ruellia antipoda Linnaeus, Sp. Pl. 2: 635. 1753; *Bonnaya antipoda* (Linnaeus) Druce; *B. veronicifolia* (Retzius) Sprengel; *Gratiola veronicifolia* Retzius; *Ilysanthes antipoda* (Linnaeus) Merrill; *Lindernia veronicifolia* (Retzius) F. Mueller; *Vandellia veronicifolia* (Retzius) Haines.

Annuals to 30 cm tall. Roots fibrous, fascicled. Stems suberect or prostrate basally and rooting from lower nodes then ascending, many branched, channeled, glabrous. Petiole short and wide; leaf blade oblong, oblong-lanceolate, oblong-oblanceolate, or ± linear-lanceolate, 0.8–4 × 0.6–2 cm, glabrous, base cuneate and decurrent, margin obscurely to sharply serrate or subentire, apex acute to rounded. Racemes terminal, to 15 cm, 2–20-flowered; bracts subulate. Pedicel to 1.5 cm, ascending, spreading, to deflexed in fruit. Calyx lobed to base; lobes lanceolate, hispidulous along midrib and edges. Corolla purple, purplish white, or white, to 1 cm; tube to 7 mm; lower lip 3-lobed, lobes subequal; upper lip 2-lobed. Fertile stamens 2, posterior; filaments unappendaged. Reduced stamens 2, anterior; filaments slightly curved, glandular. Stigma lamellate. Capsule cylindrical, 2 × or more as long as persistent

calyx. Seeds brown, irregularly triangular-ovoid; seed coat reticulate. Fl. and fr. spring-autumn.

Rice fields, wet grassland; below 1700 m. Anhui, Fujian, Guangdong, Guangxi, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Bhutan, Cambodia, India, Japan (Ryukyu Islands), Laos, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Vietnam; Australia, Pacific Islands].

Used medicinally.

According to T. Yamazaki (Fl. Thailand 5(2): 198. 1990) *Lindernia viatica* (Kerr ex Barnett) Philcox occurs in Taiwan. It closely resembles *L. antipoda*, but we have not seen any specimens from Taiwan.

24. *Lindernia ruellioides* (Colsmann) Pennell, Brittonia 2: 182. 1936.

旱田草 han tian cao

Gratiola ruellioides Colsmann, Prodr. Descr. Gratiol. 12. 1793; *Bonnaya reptans* (Roxburgh) Sprengel; *Gratiola reptans* Roxburgh; *Ilysanthes ruellioides* (Colsmann) Kuntze.

Annuals, 10–15 cm tall. Stolons to 30 cm. Stems rarely erect, usually branched, subglabrous, rooting from nodes. Petiole 0.3–2 cm, distally thicker; leaf blade oblong, elliptic, ovate-oblong, or orbicular, 1–4 × 0.6–2 cm, scabrous pubescent to subglabrous, base subamplexicaul or broadly cuneate, margin above base densely and regularly acute-serrate, apex obtuse to acute. Racemes terminal, 2–10-flowered; bracts lanceolate-linear. Pedicel short, distally gradually thicker, glabrous. Calyx ca. 6 mm, to 1 cm in fruit, base connate; lobes linear-lanceolate, glabrous. Corolla purple-red, 1–1.4 cm; tube 7–9 mm; lower lip 3-lobed, lobes subequal or middle lobe slightly larger than other lobes; upper lip 2-lobed. Fertile stamens 2, posterior, unappendaged; sterile stamens 2, anterior. Stigma flattened. Capsule conical, ca. 2 × as long as persistent calyx. Seeds brown, ellipsoid. Fl. Jun–Sep, fr. Jul–Nov.

Grassland, plains, mountain valleys, forests; below 1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Cambodia, India, Indonesia, Japan (Ryukyu Islands), Malaysia, Myanmar, New Guinea, Philippines, Vietnam].

Used medicinally.

25. *Lindernia ciliata* (Colsmann) Pennell, Brittonia 2: 182. 1936.

刺齿泥花草 ci chi ni hua cao

Gratiola ciliata Colsmann, Prodr. Descr. Gratiol. 14. 1793; *Bonnaya brachiata* Link & Otto; *Gratiola serrata* Roxburgh; *Ilysanthes serrata* (Roxburgh) Urban; *Vandellia ciliata* (Colsmann) T. Yamazaki.

Annuals, to 20 cm tall. Stems erect or diffuse, much branched; branches decumbent, sometimes rooting from last node. Leaves sessile or short petiolate; leaf blade oblong to lanceolate-oblong, 0.7–4.5 × 0.3–1.2 cm, glabrous, base amplexicaul, margin densely aristate-

serrate, apex acute to obtuse. Racemes terminal; bracts lanceolate, ca. 1/2 as long as pedicels. Calyx ca. 5 mm, lobed to base; lobes narrowly lanceolate, with a spinelike tip. Corolla light purple or white, ca. 7 mm; tube to 4.5 mm; lower lip almost as long as upper lip, often unequally 3-lobed, middle lobe larger than other lobes; upper lip ovate; lobe apices rounded. Fertile stamens 2, posterior; reduced stamens 2, anterior, forming prominent plaits on base of lower lip. Style ± as long as fertile stamens. Capsule cylindrical, ca. 3 × as long as persistent calyx, apex mucronate. Seeds irregularly triangular. Fl. and fr. summer-winter.

Moist places, rice fields, grassland, wastelands, trailsides; ca. 1300 m. Fujian, Guangdong, Guangxi, Hainan, Taiwan, SE Xizang, Yunnan [Cambodia, India, Japan (Ryukyu Islands), Laos, Malaysia, Myanmar, Philippines, Vietnam; N Australia].

Used medicinally.

26. *Lindernia cyrtotricha* P. C. Tsoong & T. C. Ku, Fl. Reipubl. Popularis Sin. 67(2): 398. 1979.

曲毛母草 qu mao mu cao

Herbs, long stoloniferous. Stems ribbed, uncinately hispidulous, rooting from nodes. Leaves on stems ca. 1 × 1 cm, margin crenate. Petiole of branch leaves 4–8 mm, narrowly winged, uncinately hispidulous; leaf blade broadly ovate to ovate-oblong, 2.6–6 × 1.8–3.5 cm, with uncinately appressed hairs densely so abaxially along veins, margin above base or middle crenate and serrate, apex rounded. Racemes terminal on short branches, lax, 2–12-flowered; bracts linear-lanceolate, ca. 3 mm. Pedicel 0.8–2.5 cm. Calyx 5–7 mm, lobed to base; lobes lanceolate to linear, uncinately hispidulous, margin entire, midrib conspicuous. Corolla ca. 5 mm; lower lip 3-lobed; upper lip arched, unlobed. Fertile stamens 2, posterior, lower than staminodes; filaments short; anther with a curved hooklike spur. Staminodes 2, filament short, unequal. Capsule subglobose, shorter than persistent calyx. Seeds ovoid, yellow-brown foveolate.

• Mountain slopes, dense forests; ca. 400 m. Hainan (Baoting Xian).

27. *Lindernia hyssopoides* (Linnaeus) Haines, Bot. Bihar Orissa 4: 666. 1922.

尖果母草 jian guo mu cao

Gratiola hyssopoides Linnaeus, Mant. Pl. 174. 1771; *Bonnaya hyssopoides* (Linnaeus) Benthams; *Ilysanthes hyssopoides* (Linnaeus) Benthams.

Herbs, to 30 cm tall. Roots fibrous, tufted. Stems erect or somewhat ascending, simple, striate, glabrous. Leaves sessile, subamplexicaul, narrowly ovate to ovate-lanceolate, 5–15 × ca. 4 mm, glabrous, margin entire or with 2 or 3 pairs of inconspicuous small teeth; veins 3, parallel. Flowers in axils of upper leaves, solitary. Pedicel 0.5–3 cm, slender, ascending in flower, spreading to reflexed after flowering. Calyx ca. 3 mm, lobed to base; lobes lanceolate. Corolla red, purple, or

white, with 2 convex lines at throat, 0.9–1.1 cm; lower lip 3-lobed, lobes subequal; upper lip deeply 2-lobed, lobes narrowly triangular-ovate. Fertile stamens 2, posterior. Staminodes 2, anterior; filaments short, divided. Style short, apex 2-lamellate. Capsule narrowly ovoid, ca. 6 mm. Seeds yellow-brown, oblong, obscurely ribbed. Fl. May–Oct, fr. Aug–Nov.

Dry fields, wet areas; ca. 1200 m. Guangxi, Hainan, Yunnan [India, Indonesia, Sri Lanka, Vietnam].

28. *Lindernia delicatula* P. C. Tsoong & T. C. Ku, Fl. Reipubl. Popularis Sin. 67(2): 398. 1979.

柔弱母草 rou ruo mu cao

Annuals, less than 10 cm tall. Roots fibrous. Stems erect, densely hirsute, branched; branches often spreading at an angle of 45°, densely hirsute. Leaves sessile or petiole short winged; leaf blade thin, narrowly ovate to narrowly ovate-elliptic, 1–1.8 × 0.5–1.2 cm, hairy, abaxially light green, adaxially dark green, margin shallowly obtuse serrate, 8–12-toothed; veins convex. Flowers axillary and solitary or in short terminal racemes; bracts ovate. Pedicel ca. 2 cm, hairy. Calyx ca. 5 mm, lobed to base; lobes lanceolate, densely hirsute, apex acuminate, midrib and reticulate veins conspicuous. Corolla ca. 1 cm; lower lip slightly longer than upper lip, 3-lobed; upper lip obscurely 2-lobed. Fertile stamens 2, posterior; abortive stamens 2, anterior, filaments with a spurlike appendage. Ovary glabrous. Stigma lamellate. Capsule narrowly ovoid to ellipsoid, somewhat shorter than persistent calyx. Seeds brown, ovoid.

• Mountain slopes; ca. 700 m. Guangxi (Longzhou Xian).

29. *Lindernia dubia* (Linnaeus) Pennell, Acad. Nat. Sci. Philadelphia Monogr. 1: 141. 1935.

北美母草 bei mei mu cao

Gratiola dubia Linnaeus, Sp. Pl. 1: 17. 1753; *G. anagallidea* Michaux; *Lindernia anagallidea* (Michaux) Pennell; *L. dubia* var. *anagallidea* (Michaux) Cooperrider.

Annuals to 25 cm tall, diffuse, glabrous throughout except calyx. Stems purple, quadrangular, rooting at lower nodes, much branched. Leaves sessile, elliptic, 1–1.5 cm × 3–6 mm, decreasing in size upward, base rounded to cuneate, apex acute; veins 3–5, only primary vein conspicuous. Flowers axillary, solitary, in panicles. Pedicel slender, 1–2 cm. Calyx ca. 3 mm; lobes free to base, ca. 0.5 mm wide, hispidulous above, apex acuminate, obscurely 3-veined. Corolla white or pale blue, ca. 6.5 mm; lower lip 3-lobed; upper lip galeate, shallowly 2-lobed, lobes sharply pointed. Fertile stamens 2, posterior; staminodes 2, clavate, unappendaged, apex obtuse. Style ca. 3.5 mm. Capsule oblong, ca. 4 × 2.3 mm, rounded at both ends. Seeds ellipsoid.

Shallow water; low elevations. Guangdong, Taiwan [native to North America]

