

38. LEONURUS Linnaeus, Sp. Pl. 2: 584. 1753.

益母草属 yi mu cao shu

Herbs annual, biennial, or perennial, erect. Leaves 3–7-lobed, basal ± palmately lobed, usually deciduous at anthesis; stem leaves entire, incised, or 3-lobed. Verticillasters many flowered, in long spikes; bracteoles subulate or spinescent, rigid or flaccid. Calyx obconical or tubular-campanulate, 5-veined, obscurely 2-lipped; upper lip straight, 3-toothed; lower lip 2-toothed, teeth coalescent, spreading or slightly spreading. Corolla white, reddish, to purplish, 2-lipped, tube exerted; upper lip oblong, obovate, or ovate-orbicular, margin entire, straight, villous or glabrous; lower lip straight or spreading, spotted, 3-lobed, lobes oblong-ovate or middle lobe shallowly cordate, larger than ovate lateral lobes. Stamens 4, anterior 2 longer, posterior 2 parallel; anther cells 2, parallel. Style apex equally 2-cleft, lobes subulate. Nutlets acutely triquetrous, base cuneate, apex truncate.

About 20 species: Africa, Asia, Europe, North America, South America; 12 species in China.

- 1a. Calyx indistinctly 2-lipped; anterior teeth not spreading; corolla tube not dilated, with or without distinct hairy annulus inside, if hairy annulus present then horizontal; upper lip of corolla oblong, base inconspicuously constricted; lower lip of corolla limb nearly straight; middle lobe much larger than lateral lobes, apex conspicuously emarginate, margin membranous; stamens nearly straight; leaves 3-lobed.
 - 2a. Corolla less than 1 cm; without hairy annulus inside, puberulent 1. *L. chaituroides*
 - 2b. Corolla more than 1 cm, distinctly ± horizontally scaly annulate inside.
 - 3a. Leaves 3-lobed, lobes pinnately divided.
 - 4a. Lobules of leaves more than 3 mm wide; floral leaves entire or rarely few dentate; corolla 1–1.2 cm; lower lip ca. as long as upper lip; calyx appressed puberulent 2. *L. japonicus*
 - 4b. Lobules of leaves 1–3 mm wide, linear; floral leaves conspicuously 3-partite, lobules linear; corolla ca. 1.8 cm; lower lip ca. 3/4 as long as upper lip; calyx densely pilose especially at middle 3. *L. sibiricus*
 - 3b. Leaves many lobed, lobes incised or coarsely serrate-dentate.
 - 5a. Calyx teeth 5–10 mm; corolla 2.5–2.8 cm, reddish or reddish purple; leaves not corrugate, herbaceous 6. *L. macranthus*
 - 5b. Calyx teeth 3–5 mm; corolla 1.5–2.1 cm, white, somewhat purple lineate; leaves corrugate, rigid.
 - 6a. Plants densely villous 4. *L. villosissimus*
 - 6b. Plants hirsute or strigose-hirtellous 5. *L. pseudomacranthus*
 - 1b. Calyx distinctly 2-lipped; anterior teeth strongly spreading; corolla tube distinctly oblique hairy annulate inside, conspicuously dilated above hairy annulus; upper lip of corolla obovate, base constricted; lower lip of corolla limb horizontally spreading, its 3 lobes subequal, oblong-ovate, margin revolute; anterior stamens projected, reflexed; leaves 5–7-lobed.
 - 7a. Inflorescences densely lanate-villous; bracteoles flaccid 12. *L. pseudopanzerioides*
 - 7b. Inflorescences not lanate-villous; bracteoles rigid.
 - 8a. Bracteoles and calyxes appressed pubescent, setose 8. *L. wutaishanicus*
 - 8b. Bracteoles and calyxes appressed pubescent or appressed pubescent, white villous.
 - 9a. Leaves 7-palmatilobed to 1/3 of their radius; lobes irregularly coarse dentate 7. *L. urticifolius*
 - 9b. Leaves distinctly 5-palmatipartite from 2/3 to nearly entire radius; lobes pinnatilobulate, lobules linear to broadly lanceolate.
 - 10a. Leaves numerous, lower stem leaves not early deciduous, lobes broadly cuneate, lobules broadly lanceolate; anterior teeth of calyx dilated in flower 10. *L. turkestanicus*
 - 10b. Leaves few, lower stem leaves early deciduous, lobes narrowly cuneate to rhombic, lobules lanceolate to linear-lanceolate; anterior calyx teeth inconspicuously dilated in flower.
 - 11a. Basal part of stems, nodes, rachises of inflorescences, and calyxes appressed pubescent, subpart white villous 11. *L. deminutus*
 - 11b. Stems and calyxes appressed gray pubescent 9. *L. glaucescens*

1. *Leonurus chaituroides* C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 161. 1965.

假鬃尾草 jia zong wei cao

Herbs annual or biennial. Rhizomes slender, trailing. Stems erect, 30–100 cm, densely retrorse puberulent, purple with age. Lower stem leaves early deciduous; petiole of mid stem leaves less than 1 cm; blade oblong to ovate, 2.5–4×1.5–2 cm, herbaceous, puberulent, abaxially gray-green, glandular, base cuneate, 3-partite 1/3–2/3 of leaf, apex acuminate. Verticillasters 2–12-flowered, to 1.5 cm in diam., in widely spaced long spikes; floral leaves sessile or short petiolate, reduced toward apex, linear to linear-lanceolate, 2–3 cm×5–8 mm, base cuneate, margin entire or remotely 1- or 2-dentate, apex acuminate; bracteoles spiny, spreading or slightly reflexed, puberulent, 3–5 mm. Flowers sessile. Calyx

turbinate slightly dilated at middle, urceolate in fruit, ca. 4 mm, gray-green, puberulent; anterior teeth subulate, 2.5–3 mm, apex spinescent, projected; posterior teeth equal, triangular, 1.5–2 mm, straight, apex spinescent. Corolla white or purple-red, 7–8 mm; tube glabrous except for finely white pilose middle, sparsely fine pilose inside, 4–5 mm; limb finely white pilose; upper lip straight, ovate, concave; lower lip spreading, middle lobe obcordate, apex 2-lobulate, margin membranous; lateral lobes ovate. Nutlets chestnut brown, ovoid, triquetrous, ca. 2.5 mm, base cuneate, apex truncate, dotted. Fl. Sep, fr. Oct.

- Waste areas; 1000–1100 m. Anhui, Hubei, Hunan.

2. *Leonurus japonicus* Houttuyn, Nat. Hist. 9: 366. 1778.

益母草 yi mu cao

Leonurus artemisia (Loureiro) S. Y. Hu; *L. heterophyllus* Sweet; *Stachys artemisia* Loureiro.

Herbs annual or biennial. Taproots with dense, fibrous rootlets. Stems erect, 30–120 cm, retrorse strigose, nodes and angles densely strigose. Petiole of stem leaves 0.5–3 cm, narrowly winged at apex; lower stem leaf blades ovate, base broadly cuneate, 3-palmatipartite; lobes oblong-rhombic to ovate, 2.5–6×1.5–4 cm, pinnately divided, adaxially strigose, abaxially pilose, glandular; mid stem leaf blade rhombic, palmatipartite, lobes oblong-linear, base narrow cuneate. Verticillasters 8–15-flowered, 2–2.5 cm in diam.; floral leaves subsessile, linear to linear-lanceolate, 3–12×2–8 mm, entire or dentate; bracteoles spiny, shorter than calyx, ca. 5 mm, appressed puberulent. Flowers sessile. Calyx tubular-campanulate, 6–8 mm, appressed puberulent; teeth broadly triangular, 2–3 mm, apex spinescent. Corolla white or reddish to purplish red, 1–1.2 cm, villous; tube ca. 6 mm, inconspicuously scaly annulate inside; upper lip straight, concave, oblong, ca. 7×4 mm, margin entire, ciliate; lower lip slightly shorter, base sparsely scaly; middle lobe obcordate, base constricted, margin membranous, apex emarginate; lateral lobes ovate. Filaments sparsely scaly. Nutlets brownish, oblong, triquetrous, ca. 2.5 mm, base cuneate, apex truncate, smooth. Fl. Jun-Sep, fr. Sep-Oct.

Sunny areas; to 3400 m. In all provinces [Cambodia, Japan, Korea, Laos, Malaysia, Myanmar, Thailand, Vietnam; Africa, North America, South America].

Used medicinally.

3. *Leonurus sibiricus* Linnaeus, Sp. Pl. 2: 584. 1753.

细叶益母草 xi ye yi mu cao

Leonurus manshuricus Yabe; *L. sibiricus* var. *grandiflora* Benth.

Herbs annual or biennial. Stems erect, 20–80 cm, appressed strigose. Lower stem leaves early deciduous. Petiole of mid stem leaves ca. 2 cm; leaf blade ovate, ca. 5×4 cm, sparsely strigose, abaxially glandular, base broadly cuneate, 3-palmatisect; lobes narrowly oblong-rhombic, 3-lobulate, lobules linear, 1–3 mm wide; veins yellowish white abaxially. Verticillasters many flowered, 3–3.5 cm in diam.; upper floral leaves subrhombic, 3-palmatisect; lobes narrow, with 3 linear lobules 1–2 mm wide; bracteoles spiny, reflexed, shorter than calyx tube, 4–6 mm, strigose. Flowers sessile. Calyx tubular-campanulate, 8–9 mm, densely pilose at middle otherwise appressed puberulent; anterior teeth slightly spreading, subulate-triangular, 3–4 mm, apex spinescent; posterior teeth triangular, 2–3 mm, apex spinescent. Corolla white or reddish to purple-red, ca. 1.8 cm; tube ca. 9 mm, glabrous, scaly annulate inside; limb densely villous, glabrous inside; upper lip oblong, straight, concave, ca. 10×5 mm, margin entire; lower lip ca. 7×5 mm, 3/4 as long as upper lip; middle lobe obcordate, base constricted, margin membranous, apex emarginate; lateral lobes ovate. Filaments sparsely scaly. Nutlets brown, oblong, triquetrous, ca. 2.5 mm, base cuneate, apex truncate. Fl. Jul-Sep, fr. Sep.

Stony or sandy grasslands, *Pinus* forests; to 1500 m. Hebei, Nei Mongol, Shaanxi, Shanxi [Mongolia, Russia].

4. *Leonurus villosissimus* C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 65(2): 601. 1977.

柔毛益母草 rou mao yi mu cao

Herbs annual. Stem erect, ca. 60 cm, solitary, striate, densely yellowish villous, much branched apically. Petiole of mid stem leaves 1–3.5 cm; leaf blade triangular-ovate, 5–6.5×5–5.5 cm, papery, densely yellowish villous, 3-lobed, base broadly cuneate, margin coarsely serrate-dentate, apex acute; middle lobe rhombic-oblong, ca. 4×2.5 cm, lateral lobes oblong, ca. 1.5 cm wide; upper leaves with petiole less than 5 mm, blade circular-ovate or ovate to subcircular, margin coarsely serrate-dentate, entire, or 3-lobed. Verticillasters many flowered; bracteoles spiny, straight, 5–6 mm. Flowers sessile. Calyx tubular, 0.8–1.2 cm, densely yellowish villous, golden glandular; tube 5–7 mm, slightly constricted at mouth, obscurely veined; teeth 3–5 mm, straight, broadly triangular-subulate, apex abruptly acuminate-spinescent, anterior teeth larger. Corolla 1.5–2.1 cm, densely gray-white sericeous-villous, scaly annulate inside, sparsely scaly-puberulent on posterior part of tube; tube 6–7 mm, gradually dilated to 3 mm in diam. at throat; upper lip oblong, spreading, ca. 9×4 mm, emarginate; lower lip ovate, ca. 7×5 mm, middle lobe obcordate, lateral lobes ovate. Filaments puberulent basally. Ovary brown, glabrous. Nutlets unknown. Fl. Aug.

- Sunny slopes; 500 m. Hebei (Yi Xian).

5. *Leonurus pseudomacranthus* Kitagawa, Bot. Mag. (Tokyo) 48: 109. 1934.

鑿菜 zan cai

Herbs perennial. Stem erect, 60–100 cm, solitary, branched toward apex, densely appressed retrorse puberulent. Petiole of basal leaves 1–2 cm, ± narrowly winged; leaf blade ovate, 6–7×4–5 cm, subequally 3-lobed, ± leathery, adaxially densely strigose-hirtellous, scabrid, corrugate, abaxially appressed hirtellous, yellowish glandular, base broadly cuneate, margin coarsely serrate-dentate, apex acute; mid stem leaves simple, with petiole less than 1 cm, leaf blade oblong, margin serrate-dentate. Verticillasters many flowered; floral leaves sessile, linear-oblong, ca. 3×1 cm, entire or 1- or 2-serrate-dentate; bracteoles few, spiny, straight, 5–6 mm, hispid. Flowers sessile. Calyx tubular, 7–8 mm, hirtellous, hirsute on veins, yellowish glandular, base stramineous; anterior teeth ca. 5 mm, straight, subulate, apex spinescent; posterior teeth equal, ca. 3 mm, straight, triangular-subulate, apex spinescent. Corolla white or with purple spots, ca. 1.8 cm, pilose; tube ca. 8 mm, scaly annulate inside; upper lip oblong-ovate, to 1 cm, subrounded, straight, margin entire; lower lip ovate, ca. 8×5 mm; middle lobe obcordate, 2-lobulate; lateral lobes ovate. Nutlets black-brown, oblong, triquetrous. Fl. Aug-Sep, fr. Sep-Oct.

- Slopes; 100–1200 m. Anhui, Gansu, Hebei, Henan, Jiangsu, Liaoning, Shaanxi, Shandong, Shanxi.

6. *Leonurus macranthus* Maximowicz, Prim. Fl. Amur. 9: 476. 1859.

大花益母草 da hua yi mu cao

Plants perennial. Rhizomes woody. Stem erect, 60–120 cm, solitary, appressed retrorse strigose. Petiole of basal leaves ca. 2 cm; lower stem leaf blades cordate-orbicular, 7–12×6–9 cm, 3-lobed, sparsely minutely hispid, base cordate, margin incised, apex acute; mid stem leaves ovate. Verticillasters sessile, 8–12-flowered; floral leaves reduced, ovate to ovate-lanceolate, margin irregularly incised to subentire, apex long acuminate; bracteoles spiny, ca. 7 cm,

hispid. Flowers subsessile. Calyx tubular-campanulate, 7–9 mm, strigose, with spinescent teeth, veins conspicuously elevated; anterior teeth subulate-triangular, ca. 1 cm; posterior teeth triangular, ca. 5 mm. Corolla reddish or reddish purple, 2.5–2.8 cm, densely pubescent, scaly annulate inside, scaly near lower lip; tube gradually dilated at apex, ca. 1/2 as long as corolla; upper lip straight, oblong, concave, ca. 12×5 mm, margin entire; lower lip ca. 8×5 mm, middle lobe ca. 2×as long as ovate lateral lobes, obcordate, conspicuously emarginate. Nutlets black-brown, oblong, triquetrous, ca. 2.5 mm, base cuneate, apex truncate. Fl. Jul-Sep.

Grassy slopes, thickets; to 400 m. Hebei, Jilin, Liaoning [Japan, Russia].

7. *Leonurus urticifolius* C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 65(2): 601. 1977.

荨麻叶益母草 qian ma ye yi mu cao

Plants perennial. Rhizomes woody. Stems erect, 30–50 cm, finely striate, sparsely pubescent, angles densely so. Petiole of mid stem leaves 2.5–5.5 cm; leaf blade broadly ovate-cordate, palmately 7-lobed, gray pubescent, densely so along margin and on veins abaxially otherwise yellowish glandular, base cordate, margin coarsely dentate, apex acute; upper leaves gradually reduced, ovate, similar to basal leaves but with shorter petioles. Verticillasters many flowered, subglobose, less than 2 cm in diam.; bracts purplish, spiny, spreading or reflexed, to 7 mm, base slightly dilated. Flowers sessile. Calyx dark purple, campanulate-tubular, ca. 6 mm, base stramineous, densely gray puberulent, veins inconspicuous; teeth broadly triangular-subulate, anterior teeth subequal, ca. 2 mm, spreading. Corolla reddish, to 1.2 cm, gray pubescent; tube ca. 7 mm, villous annulate inside, dilated beyond annulus, to 2.5 wide at throat; upper lip obovate, ca. 5×2.5 mm, concave, incurved; lower lip obliquely spreading, ca. 4 mm, lobes ovate, middle lobe larger. Ovary brown, apex truncate, villous. Fl. Jun.

• Forest margins; 3200 m. Xizang (Gyirong Xian).

8. *Leonurus wutaishanicus* C. Y. Wu & H. W. Li, Acta Phytotax. Sin. 10: 164. 1965.

五台山益母草 wu tai shan yi mu cao

Herbs erect. Rhizomes woody. Stem erect, 60–90 cm, solitary, angles retrorse puberulent, nodes densely pilose. Petiole of stem leaves 1–1.2 cm; leaf blade subcircular, ca. 5 cm in diam., palmately 5-partite, pilose, abaxially glandular, base cordate; lobes oblong, ca. 1 cm wide, margin irregularly serrate, apex caudate-acuminate. Verticillasters to 1.5 cm in diam., many flowered, in spikes 5–20 cm; floral leaves with petioles 1–1.5 cm, blade narrowly rhombic, 3-partite, base cuneate, lobes linear-lanceolate; bracts spiny-aristate, 3–5 mm, pilose. Flowers sessile. Calyx obconical, densely puberulent, pilose, conspicuously veined, tube ca. 4 mm; teeth triangular, anterior teeth narrow, ca. 2.5 mm; posterior teeth 2 mm, spinescent, reflexed in fruit. Corolla ca. 8 mm; tube ca. 4 mm, pilose, obliquely pilose annulate inside, conspicuously dilated beyond annulus; upper lip straight, slightly concave, oblong-ovate, pilose; lower lip horizontally spreading, middle lobe largest, lateral lobes ovate. Immature nutlets brown, triquetrous, oblong, base cuneate, apex truncate. Fl. Jul, fr. Aug-Sep.

• Slopes; 2100 m. Shanxi.

9. *Leonurus glaucescens* Bunge in Ledebour, Fl. Altaic. 2: 409. 1830.

灰白益母草 hui bai yi mu cao

Herbs biennial or perennial. Stems erect, 50–100 cm, branched. Petiole of mid stem leaves ca. 1.5 cm; leaf blade circular, ca. 5 cm in diam., palmately 5-partite nearly to base, short strigose, base subtruncate; lobes cuneate to rhombic, pinnately divided into linear to linear-lanceolate segments. Verticillasters 1.5–1.8 cm in diam., numerous; floral leaves with petiole ca. 2 cm, blade rhombic, ca. 4 cm, 3-lobed, base cuneate, lobe margin entire or linear incised; bracteoles spiny, slightly reflexed, appressed pubescent, shorter than calyx tube. Calyx obconical, appressed pubescent, conspicuously veined, tube ca. 4 mm; teeth subulate, spinescent; anterior teeth spreading, 3–3.5 mm; posterior teeth ca. 2.5 mm. Corolla reddish purple, 1–1.2 cm, villous; tube ca. 5 mm, villous annulate inside; upper lip straight, concave, narrowly ovate; lower lip horizontally spreading, narrowly ovate, middle lobe ovate, lateral lobes oblong. Ovary brown, apex truncate, puberulent. Fl. Jul.

Pastures, valleys, thickets; 400–900 m. Nei Mongol [Kazakhstan, Mongolia, Russia].

10. *Leonurus turkestanicus* V. Kreczetovicz & Kuprianova, Bot. Mater. Gerb. Inst. Komarova Akad. Nauk SSSR 11: 134. 1949.

突厥益母草 tu jue yi mu cao

Plants perennial. Rhizomes woody. Stems purple-red, numerous, much branched, 0.7–1.5(–2) m tall, glabrous. Petiole of stem leaves 2–5 cm; leaf blade circular to ovate-orbicular, 6–10×4–6 cm, palmately 5-partite, sparsely villous, abaxially glandular, base broadly cuneate to shallowly cordate; lobes ± broadly cuneate, pinnately divided into broadly lanceolate, apically obtuse segments. Verticillasters 15–20-flowered, to 2 cm in diam., in widely spaced spikes 10–30 cm; floral leaves narrowly rhombic, 3-partite, base cuneate; bracts spiny, spreading or reflexed, 4–6 cm. Flowers sessile. Calyx campanulate, slightly saccate toward apex, appressed fine puberulent, gray-green at apex, veins slightly elevated, tube ca. 6 mm; teeth triangular, spinescent; anterior teeth spreading, ca. 5 mm, narrow; posterior teeth equal, ca. 3 mm. Corolla reddish, ca. 1 cm, villous; tube ca. 6 mm, obliquely villous annulate inside, dilated beyond annulus; upper lip obovate, concave, curved forward; lower lip with ovate lobes, middle lobe larger. Nutlets gray-brown, triquetrous, oblong, ca. 2 mm, base cuneate, apex truncate, puberulent. Fl. Jul-Aug, fr. Aug-Sep.

Slopes, floodplains, streamsides; 1000–2000 m. Xinjiang [Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan].

11. *Leonurus deminutus* V. Kreczetovicz ex Kuprianova, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 11: 134. 1949.

兴安益母草 xing an yi mu cao

Herbs biennial or perennial. Stems erect, ca. 60 cm, appressed pubescent. Petiole 1.7–2 cm; blade of mid and upper leaves subcircular, ca. 4.5 cm in diam., palmately 5-partite, short strigose, base broadly cuneate; lobes rhombic, pinnately divided. Verticillasters numerous, in interrupted spikes; floral leaves with petiole ca. 2 cm, blade rhombic, 2.5–3 cm, 3-partite, base cuneate, lobes entire or linear incised; bracteoles spiny, slightly reflexed, appressed

pubescent, villous, 3–4 mm. Calyx obconical, appressed pubescent, tube ca. 3 mm; veins conspicuous, villous; teeth 2–3 mm, broadly triangular, long spinescent, anterior teeth spreading. Corolla purplish, ca. 8 mm, villous; tube ca. 4 mm, pilose annulate inside; upper lip straight, oblong; lower lip horizontally spreading, middle lobe larger. Nutlets brownish, triquetrous, oblong, ca. 1.5×1 mm, adaxially ribbed, apex truncate, puberulent. Fl. Jul, fr. Aug.

Forested slopes; 800–900 m. Nei Mongol [Mongolia, Russia].

The species was treated in FRPS as *Leonurus tataricus* Linnaeus.

12. *Leonurus pseudopanzerioides* Krestovskaya, Bot. Zurn. SSSR 73: 1749. 1988.

绵毛益母草 mian mao yi mu cao

Herbs perennial. Rhizomes woody. Stems erect, 50–80 cm, few, appressed puberulent, sparsely spreading pilose, lanate-pilose at insertion of verticillasters. Petiole of mid stem leaves 1.5–2.5 cm; leaf blade circular, 4–5 cm in diam., palmately 5-partite almost to base, sparsely puberulent, glandular, base cordate; lobes rhombic, pinnately divided into linear-lanceolate segments. Verticillasters to 2 cm in diam., 12–18-flowered, lanate-pilose, numerous, in spikes 5–10(–15) cm; floral leaves with petiole 1–2 cm, blade narrowly rhombic, 1–2.5 cm, 3-lobed, lobes entire or dentate; bracteoles spiny, curved upward, slightly shorter than calyx, villous. Calyx obconical, 6–8 mm, lanate-pilose, obscurely veined, tube ca. 5 mm; teeth broadly triangular, apex acute; anterior teeth spreading, ca. 2.5 mm; posterior teeth equal, straight, ca. 1.5 mm. Corolla reddish or purple-red, ca. 1.2 cm, pilose, villous annulate inside; tube ca. 6 mm; upper lip straight, concave, oblong-ovate, margin entire; lower lip horizontally spreading, lobes ovate, middle lobe larger. Immature nutlets yellow-brown, triquetrous, oblong, base cuneate, apex truncate, villous, Fl. Jul-Aug.

Dry slopes, hilltops; 1100–1800 m. Xinjiang [Mongolia].

The species was treated in FRPS as *Leonurus panzerioides* M. Popov.

