

1. LYSIMACHIA Linnaeus, Sp. Pl. 1: 146. 1753.

珍珠菜属 zhen zhu cai shu

Herbs erect or procumbent, rarely suffruticose, glabrous or pubescent, often with internal glands appearing as pustulate dots or stripes. Leaves alternate, opposite, or whorled, usually entire. Flowers solitary in axils of upper leaves or in terminal and axillary panicles or racemes, often shortened into capitate clusters, with bracts. Calyx green, usually 5(or 6–9)-parted. Corolla white or yellow, rarely pink, homomorphic, rarely heteromorphic, subrotate or campanulate, deeply 5(or 6–9)-parted; lobes contorted in bud. Filaments glabrous, free or connate into a ring or tube at base and \pm adnate to corolla tube; anthers basifixed, dorsifixed, or versatile, opening by apical pores or by lateral slits. Capsule subglobose, usually dehiscent by valves, rarely indehiscent.

About 180 species: temperate and subtropical parts of the northern hemisphere, but with a few species in Africa, Australia, and South America; 138 species in China.

- 1a. Flowers usually 6- or 7-merous, in pedunculate, dense capitate, or spikelike racemes 138. *L. thyrsoiflora*
- 1b. Flowers 5-merous, in terminal racemes, or inflorescences not racemose.
 - 2a. Flowers heteromorphic, with anthers and stigma at 2 levels; corolla tubular, parted scarcely to middle 137. *L. crispidens*
 - 2b. Flowers homomorphic; corolla rotate or campanulate, parted below middle.
 - 3a. Corolla white to pink; filaments free, adnate to middle of corolla Key 3
 - 3b. Corolla yellow, rarely white; filaments connate into a thin ring or tube, adnate to base of corolla tube.
 - 4a. Anthers longer than filaments, distinctly basifixed, usually opening by apical pores, occasionally by lateral slits; plants not colored glandular punctate or striate Key 1
 - 4b. Anthers shorter than filaments, \pm dorsifixed (rarely indistinctly so) to versatile, opening by lateral slits (except *L. albescens*); plants often colored glandular punctate or striate Key 2

Key 1

- 1a. Stems 1–1.5 cm tall; flowers forming terminal racemes on leafless scapes 1. *L. scapiflora*
- 1b. Stems more than 20 cm tall; flowers solitary or in racemes on leafy stems.
 - 2a. Leaves terminal.
 - 3a. Flowers in many-flowered racemes, 6–9 cm; capsules indehiscent 2. *L. insignis*
 - 3b. Flowers in clusters or extremely shortened racemes; capsules dehiscent by valves.
 - 4a. Leaf blade rounded to obtuse at apex; calyx lanceolate, 6–8 mm; corolla lobes acute at apex 6. *L. crassifolia*
 - 4b. Leaf blade acute at apex; calyx ovate, 2–4 mm; corolla lobes obtuse at apex.
 - 5a. Inflorescences distributed along stems under leaf whorls 3. *L. saxicola*
 - 5b. Inflorescences subterminal.
 - 6a. Leaves nearly equal, rounded at base 4. *L. dushanensis*
 - 6b. Leaves unequal, cordate at base 5. *L. linguensis*
 - 2b. Leaves alternate or opposite, not terminal.
 - 7a. Leaves opposite.
 - 8a. Leaf blade cuneate to rounded at base 36. *L. engleri*
 - 8b. Leaf blade cordate at base.
 - 9a. Flowers solitary; leaf blade 1–4 cm 37. *L. cordifolia*
 - 9b. Flowers usually in pairs; leaf blade 4.5–8 cm 38. *L. biflora*
 - 7b. Leaves alternate.
 - 10a. Anthers conical, less than 3.5 \times as long as wide; stems herbaceous.
 - 11a. Flowers in racemes.
 - 12a. Bracts subulate; leaf blade with more than 10 pairs of lateral veins 25. *L. physaloides*
 - 12b. Bracts leaflike; leaf blade with 5–7 pairs of lateral veins.
 - 13a. Stems not winged; flowers subverticillate 28. *L. subverticillata*
 - 13b. Stems winged; flowers racemose.
 - 14a. Racemes corymbiform, 2–5-flowered 26. *L. wilsonii*
 - 14b. Racemes elongated, 5- to many flowered 27. *L. nutantiflora*
 - 11b. Flowers solitary, axillary.
 - 15a. Stems \pm procumbent at base, upper part erect, rarely branched; leaf blade broadly ovate to elliptic.
 - 16a. Calyx 7–12 mm; corolla 2–3.5 cm in diam.; leaf blade attenuate to cuneate at base 29. *L. foenum-graecum*
 - 16b. Calyx 2.5–6 mm; corolla 1.2–2 cm in diam.; leaf blade rounded or

- slightly cordate, rarely cuneate at base.
- 17a. Corolla 1.5–2 cm in diam.; calyx 4–6 mm; plants not aromatic 30. *L. trichopoda*
- 17b. Corolla ca. 1.2 cm in diam; calyx ca. 2.5 mm; plants aromatic
when dry 31. *L. pseudotrichopoda*
- 15b. Stems erect or sometimes arcuate at base, usually branched; leaf blade lanceolate to narrowly elliptic or oblong-lanceolate.
- 18a. Corolla 3–5 mm; calyx lobes narrowly ovate, ca. as long as or slightly shorter than corolla; capsules 3.5–4 mm in diam. 32. *L. brachyandra*
- 18b. Corolla more than 6 mm; calyx lobes ovate to ovate-elliptic, 1/3 to 1/2 × as long as corolla; capsules more than 5 mm in diam.
- 19a. Flowers in racemes continuing apically into vegetative shoots 35. *L. cauliflora*
- 19b. Flowers solitary, in axils of upper leaves.
- 20a. Corolla 10–15 mm; anthers opening by apical pores 33. *L. grandiflora*
- 20b. Corolla 6–8 mm; anthers opening by lateral slits 34. *L. laxa*
- 10b. Anthers linear, more than 4 × as long as wide; stems subwoody.
- 21a. Flowers in elongated racemes.
- 22a. Petiole less than 2 mm; leaf blade rounded or subcordate at base; bracts subulate 7. *L. filipes*
- 22b. Petiole 5–30 mm; leaf blade subattenuate at base; at least lower bracts leaflike.
- 23a. Calyx lobes lanceolate 8. *L. heterobotrys*
- 23b. Calyx lobes ovate 9. *L. chapaensis*
- 21b. Flowers solitary or 2 to many flowers crowded in leaf axils.
- 24a. Pedicel 3–10(–12) mm.
- 25a. Leaf blade 6–12 × 3–7 cm; calyx 6–9 mm 10. *L. inaperta*
- 25b. Leaf blade 0.6–1.7 × 0.2–0.8 cm; calyx 3–4 mm.
- 26a. Leaves sparsely setulose adaxially; corolla epunctate 11. *L. aspera*
- 26b. Leaves glabrous; corolla glandular punctate 12. *L. tianyangensis*
- 24b. Pedicel usually more than 12 mm.
- 27a. Leaf blade linear or leathery, veinlets obscure.
- 28a. Leaf blade linear, subfalcate at apex, herbaceous 13. *L. vittiformis*
- 28b. Leaf blade neither linear nor falcate at apex, subleathery.
- 29a. Leaves oblanceolate, ± crowded in interrupted whorls 14. *L. pittosporoides*
- 29b. Leaves lanceolate, evenly distributed along stems 15. *L. millietii*
- 27b. Leaf blade neither linear nor leathery, veinlets conspicuous.
- 30a. Calyx ca. as long as to slightly longer than corolla 16. *L. evalvis*
- 30b. Calyx shorter than corolla.
- 31a. Stems conspicuously angular, usually herbaceous.
- 32a. Calyx 5–6 mm, lobes subulate; leaf blade truncate to subcordate at base 22. *L. jingdongensis*
- 32b. Calyx 2–4 mm, lobes acuminate; leaf blade subattenuate at base.
- 33a. Stems angular or winged, usually much branched; leaf blade ovate to lanceolate 23. *L. capillipes*
- 33b. Stems angular, usually simple; leaf blade lanceolate 24. *L. lancifolia*
- 31b. Stems terete, subwoody.
- 34a. Pedicel ca. as long as to shorter than petiole; capsules indehiscent 17. *L. navillei*
- 34b. Pedicel much longer than petiole; capsules dehiscing by valves.
- 35a. Capsule 3–4 mm.
- 36a. Leaf blade elliptic-lanceolate to lanceolate; free parts of filaments distinctly longer than sinus of cordate base of anthers 18. *L. fooningensis*
- 36b. Leaf blade ovate to ovate-lanceolate; free parts of filaments ca. as long as sinus of cordate base of anthers 19. *L. microcarpa*
- 35b. Capsule 5–6 mm.
- 37a. Leaf blade elliptic to elliptic-lanceolate, 1–3(–4) cm wide 20. *L. ardisioides*

37b. Leaf blade ovate to elliptic or broadly elliptic,
1.3–7(–9) cm wide 21. *L. petelotii*

Key 2

- 1a. Filaments nearly free, barely connate at base into an indistinct ring; anthers indistinctly dorsifixed to semi-basifixed, erect.
 - 2a. Pedicel 0.5–0.7 cm; leaves and corolla short black glandular striate 39. *L. albescens*
 - 2b. Pedicel 2.5–4.5 cm; plants epunctate 40. *L. peduncularis*
- 1b. Filaments connate basally into a distinct ring or tube; anthers distinctly dorsifixed.
 - 3a. Inflorescences paniculate; calyx lobes black glandular striate at margin.
 - 4a. Stems pubescent; leaves short petiolate, oblong-lanceolate to ovate-lanceolate, pubescent abaxially; corolla 1.5–2 cm in diam. 41. *L. vulgaris*
 - 4b. Stems glabrous on lower part; leaves sessile, broadly or narrowly lanceolate, glabrous; corolla 1.1–1.5 cm in diam. 42. *L. davurica*
 - 3b. Inflorescences not paniculate; calyx lobes not glandular striate at margin.
 - 5a. Stems 1–5 cm; leaves spirally arranged, ± forming a rosette.
 - 6a. Plants hirsute 43. *L. alpestris*
 - 6b. Plants glabrous 44. *L. rupestris*
 - 5b. Stems more than 5 cm; leaves opposite, alternate, or whorled.
 - 7a. Corolla rotate; filaments connate basally into a ring or thin tube; leaves sessile or only lower ones short petiolate (except in white-flowered species).
 - 8a. Leaf blade lanceolate, tapering toward dilated clasping base 49. *L. ophelioides*
 - 8b. Leaf blade ovate to ovate-lanceolate, base rounded or cuneate.
 - 9a. Corolla white; leaf blade cuneate at base 48. *L. huitsunae*
 - 9b. Corolla yellow; leaf blade rounded at base.
 - 10a. Plants less than 10 cm tall; lower leaves short petiolate; upper leaves ca. 1.5 cm; pedicel 0.9–1.6 cm 45. *L. stellarioides*
 - 10b. Plants 15–50 cm tall; lower leaves scalelike; upper leaves 3.5–6.5 cm; pedicel 1–7 cm.
 - 11a. Stems usually simple; pedicel usually more than 20 mm; corolla 1.2–2 cm in diam., red or brown glandular punctate 46. *L. omeiensis*
 - 11b. Stems usually branched; pedicel 5–10 mm; corolla 1–1.5 cm in diam., epunctate 47. *L. hypericoides*
 - 7b. Corolla subfunneliform; filaments connate 1/3–1/2 into a tube, or if only forming a ring, then leaves petiolate or corolla black glandular striate.
 - 12a. Flowers in terminal or axillary racemes; bracts small, not leaflike.
 - 13a. Leaves petiolate.
 - 14a. Racemes densely flowered; pedicel 2–5 mm; plants strigillose, epunctate 53. *L. otophora*
 - 14b. Racemes sparsely flowered; pedicel 8–20 mm; stems glabrous; leaves and corolla glandular punctate 54. *L. nanchuanensis*
 - 13b. Leaves sessile.
 - 15a. Leaf blade ovate-lanceolate, rounded at base 50. *L. longipes*
 - 15b. Leaf blade lanceolate, cuneate at base.
 - 16a. Pedicel 1.5–5 cm; bracts inserted on rachis 51. *L. fukienensis*
 - 16b. Pedicel 0.2–0.4 cm; bracts adnate to pedicel 52. *L. rubinervis*
 - 12b. Flowers axillary and solitary or in terminal clusters or umbels; if in racemes, then bracts leaflike.
 - 17a. Petiole auriculate at base (at least in lower leaves); inflorescences not capitate.
 - 18a. Leaf blade connate-perfoliate 55. *L. perfoliata*
 - 18b. Leaf blade not connate-perfoliate.
 - 19a. Flowers solitary and axillary or in terminal racemes; pedicel 0.4–2 cm; plants strigillose 56. *L. melampyroides*
 - 19b. Flowers in terminal umbels; pedicel 1–1.5 cm; plants glabrescent 57. *L. brittenii*
 - 17b. Petiole slender or, if auriculate at base, inflorescences subcapitate.
 - 20a. Flowers solitary and axillary or in lax terminal racemes.
 - 21a. Plants epunctate or translucent glandular punctate.

- 22a. Flowers in terminal racemes; filaments connate to 1/2 their length into a tube.
- 23a. Flowering Jul–Aug; pedicel usually ascending to erect in fruit; lower leaves ovate or elliptic 61. *L. hemsleyi*
- 23b. Flowering May–Jun; pedicel recurved in fruit; lowest 1 or 2 pairs of leaves rhomboid-ovate to ovate 62. *L. pseudohenryi*
- 22b. Flowers axillary, solitary; filaments basally connate into a thin ring.
- 24a. Roots fasciculate, stringy; stems with 1 or 2 pairs of scalelike leaves near base; upper leaves obtuse at apex, rust-colored pubescent 58. *L. deltoidea*
- 24b. Roots fibrous; stems without scalelike leaves; upper leaves acute at apex, grayish pubescent.
- 25a. Stems erect or ascending-erect, decumbent at base; corolla 1–1.5 cm in diam. 59. *L. remota*
- 25b. Stems prostrate to decumbent; corolla 0.5–0.8 cm in diam. 60. *L. japonica*
- 21b. Plants red to black glandular punctate or striate.
- 26a. Stems erect.
- 27a. Leaves and corolla red or dark glandular punctate 63. *L. erosipetala*
- 27b. Leaves and corolla black glandular striate 64. *L. grammica*
- 26b. Stems prostrate to ascending or arcuate.
- 28a. Plants purple or black glandular punctate.
- 29a. Calyx lobes abaxially cristate, glabrous 88. *L. carinata*
- 29b. Calyx lobes not cristate, pilose.
- 30a. Leaves strigillose; pedicel 2–4 mm 89. *L. debilis*
- 30b. Leaves setulose or glabrate; pedicel more than 5 mm.
- 31a. Stems prostrate; plants black or purple glandular, rarely transparent glandular 90. *L. hemsleyana*
- 31b. Stems prostrate to ascending; plants transparent glandular 91. *L. chekiangensis*
- 28b. Plants purple or black glandular striate.
- 32a. Calyx lobes not cristate.
- 33a. Calyx lobes glabrous or pubescent on margin and abaxially; corolla lobes long glandular striate; pedicel ca. as long as to shorter than subtending leaves 96. *L. christinae*
- 33b. Calyx lobes pubescent on abaxial surface only, margin glabrous; corolla lobes short glandular striate; pedicel usually longer than subtending leaves 97. *L. drymarifolia*
- 32b. Calyx lobes cristate abaxially.
- 34a. Leaf blade lanceolate to ovate-lanceolate, apex acuminate, base rounded; crest of calyx lobes uniform in width or widest below middle.
- 35a. Leaves and calyx glabrescent; crest of calyx lobes widest below middle 92. *L. pterantha*
- 35b. Leaves and calyx pubescent; crest of calyx lobes uniform in width 93. *L. baoxingensis*
- 34b. Leaf blade ovate or rounded, apex acute or obtuse, base cordate; crest of calyx lobes widest above middle.
- 36a. Leaves densely minutely bristly, transparent purplish glandular striate 94. *L. pteranthoides*
- 36b. Leaves strigillose or glabrescent, densely black glandular striate and punctate; crest of calyx lobes decurrent forming a spur 95. *L. crista-galli*

- 20b. Flowers in terminal umbels or capitate clusters.
- 37a. Leaves verticillate.
- 38a. Plants rust-colored pilose 67. *L. klattiana*
- 38b. Plants glabrous.
- 39a. Umbels sessile 65. *L. paridiformis*
- 39b. Umbels pedunculate 66. *L. sciadantha*
- 37b. Leaves opposite.
- 40a. Plants colored glandular punctate or striate.
- 41a. Plants black glandular striate.
- 42a. Flowers 3–5, crowded at apices of branches, seldom at apex of main axis 86. *L. rubiginosa*
- 42b. Flowers in terminal, abbreviated, subcapitate racemes 87. *L. alfredii*
- 41b. Plants black or purple punctate.
- 43a. Glandular dots black, very dense on leaf blade and calyx.
- 44a. Leaves in 3 to many pairs, nearly equal, ovate to ovate-elliptic, 3.5–8 cm 78. *L. punctatilimba*
- 44b. Leaves usually in 2 pairs crowded toward stem apex, elliptic to rhomboid-ovate, 10–18 cm; lower leaves scalelike, reduced.
- 45a. Stems and pedicels glabrous 79. *L. fordiana*
- 45b. Stems and pedicels rust-colored villous 80. *L. miyiensis*
- 43b. Glandular dots purple or black, sparse or only near leaf margins.
- 46a. Flowers crowded at stem apex, without bracts 81. *L. nanpingensis*
- 46b. Flowers in terminal, subcapitate clusters, with bracts.
- 47a. Flowers 2–4, on leafless axillary short branches 82. *L. liui*
- 47b. Flowers usually more than 4, on leafy stems and branches.
- 48a. Leaves sessile, tapering toward dilated clasping base 85. *L. lychnoides*
- 48b. Leaves petiolate, base not clasping.
- 49a. Stems prostrate, rooting at nodes, upper part ascending; leaf blade ovate to suborbicular 83. *L. congestiflora*
- 49b. Stems erect; leaf blade lanceolate to ovate-lanceolate 84. *L. kwangtungensis*
- 40b. Plants epunctate or translucent glandular.
- 50a. Stems procumbent, elongated; corolla with thick translucent glandular stripes sometimes becoming dark when dry.
- 51a. Flowers 2–4, crowded at stem apex, without bracts; calyx not keeled 76. *L. patungensis*
- 51b. Flowers many, in terminal, subcapitate clusters, with bracts; calyx keeled abaxially 77. *L. yingdeensis*
- 50b. Stems erect or ascending from creeping base; corolla with or without translucent glands.
- 52a. Leaves glabrous or sparsely pilose on midvein abaxially 68. *L. henryi*
- 52b. Leaves pilose or minutely bristly adaxially.
- 53a. Leaf blade lanceolate or elliptic-lanceolate, long attenuate at base.
- 54a. Upper leaves falcate-lanceolate, 4–9 mm wide 74. *L. sciadophylla*
- 54b. Upper leaves lanceolate to elliptic-lanceolate, not falcate, usually wider than 10 mm.
- 55a. Leaves herbaceous, lateral veins

- 3–5 pairs 75. *L. fistulosa*
- 55b. Leaves papery, lateral veins invisible 68. *L. henryi*
- 53b. Leaf blade ovate or ovate-elliptic, if ovate-lanceolate, then broadly cuneate or rounded at base.
 - 56a. Stems with only 3 or 4 pairs of leaves on upper part; petiole 2.5–4 cm; corolla 1.8–2 cm in diam. 69. *L. esquirolii*
 - 56b. Stems with evenly distributed leaves; petiole less than 2 cm; corolla 0.8–1.6 cm in diam.
 - 57a. Flowers many, in terminal, subcapitate clusters.
 - 58a. Stems erect; leaves strigillose; flower clusters lax; lowest pedicels recurved in fruit 62. *L. pseudohenryi*
 - 58b. Stems ascending from creeping base; leaves with articulate hairs; flower clusters compact; lowest pedicels ascending-erect in fruit 70. *L. phyllocephala*
 - 57b. Flowers 2–4, in axils of uppermost 1 or 2 leaf pairs.
 - 59a. Stems erect; leaf blade ovate, subacuminate, sparsely bristly; corolla ca. 7.5 mm 71. *L. shimienensis*
 - 59b. Stems ascending from creeping base; leaf blade ovate, with articulate hairs; corolla to 13 mm.
 - 60a. Leaf blade subrounded at base; petiole 2–10 mm 72. *L. tengyuehensis*
 - 60b. Leaf blade broadly cuneate at base; petiole (at least in medial leaves) more than 1 cm 73. *L. siamensis*

Key 3

- 1a. Calyx parted 1/2–2/3 its length; corolla lobes nearly free 98. *L. pentapetala*
- 1b. Calyx parted nearly to base; corolla lobes distinctly connate at base.
 - 2a. Style shorter than corolla, usually only reaching middle of corolla lobes, ca. as long as to shorter than capsules.
 - 3a. Leaves opposite, rarely alternate in upper part of stem; anthers with thick red glands or callus at apex.
 - 4a. Leaves petiolate, abaxially very densely, minutely rust-colored glandular punctate 111. *L. circaeoides*
 - 4b. Leaves sessile, base auriculate and clasping, abaxially sparsely thick glandular punctate.
 - 5a. Corolla lobes oblong, obtuse or subacute at apex 112. *L. auriculata*
 - 5b. Corolla lobes suborbicular or subflabellate, erose-denticulate at apex 113. *L. glanduliflora*
 - 3b. Leaves alternate, rarely opposite; anthers without red glands at apex.
 - 6a. Calyx lobes lanceolate, only margin membranous and apex without red glands; persistent style usually shorter than capsules; racemes sparsely flowered or flowers solitary in axils of upper leaves.
 - 7a. Flowers solitary, in axils of upper leaves; corolla ca. as long as calyx; filaments longer than anthers 107. *L. chenopodioides*
 - 7b. Flowers in racemes, subtended by subulate bracts; corolla distinctly longer than calyx; filament shorter than anthers.
 - 8a. Corolla 3.5–5 mm, lobes not glandular striate; calyx lobes glandular ciliate 108. *L. excisa*
 - 8b. Corolla 6–10 mm, lobes brown or black glandular striate; calyx lobes glabrous along margin.

- 9a. Corolla white, lobes ligulate, reflexed, with many dark glandular stripes; style ca. 1 mm; leaves black glandular punctate near margin 109. *L. reflexiloba*
- 9b. Corolla pink, lobes obovate, not reflexed, with 2 red glandular stripes at middle; style ca. 2 mm; leaves black glandular striate near margin 110. *L. roseola*
- 6b. Calyx lobes elliptic or oblong, apex membranous or red glandular; persistent style ca. as long as capsules; racemes densely flowered.
- 10a. Bracts leaflike; corolla lobes erect; ovary conical; capsules pyriform, ca. 5 mm in diam.; plants glabrous 99. *L. mauritiana*
- 10b. Bracts subulate; corolla lobes spreading; ovary ovoid; capsules globose, ca. 3 mm in diam.; plants glandular puberulent (at least on inflorescences).
- 11a. Corolla 5–9 mm, lobes oblong or sublinear; filaments 2–4 mm.
- 12a. Plants without creeping rhizomes; pedicel shorter than calyx and capsules 100. *L. jiangxiensis*
- 12b. Plants with creeping rhizomes; pedicel longer than calyx and capsules.
- 13a. Corolla lobes 3.5–4.5 mm; leaf blade broadly lanceolate to elliptic, black glandular punctate 101. *L. clethroides*
- 13b. Corolla lobes 5–8 mm; leaf blade oblanceolate to linear, epunctate 102. *L. barystachys*
- 11b. Corolla 3–5 mm, lobes elliptic to ovate-elliptic; filaments 1–1.5 mm.
- 14a. Pedicel ca. 10 mm; leaves black glandular striate near margin 103. *L. stigmatosa*
- 14b. Pedicel 1–6 mm; leaves glandular punctate.
- 15a. Calyx lobes acute and red glandular at apex; pedicel 3–6 mm, longer than bracts 104. *L. tienmushanensis*
- 15b. Calyx lobes obtuse and membranous at apex; pedicel 1–3 mm, ca. as long as to slightly shorter than bracts.
- 16a. Plants with creeping rhizomes; stems rarely branched, glabrescent; leaf blade oblong-lanceolate 105. *L. fortunei*
- 16b. Plants without creeping rhizomes; stems branched, puberulent; leaf blade narrowly lanceolate to linear-lanceolate 106. *L. chikungensis*
- 2b. Style ca. as long as or longer than corolla, longer than capsules (except in *L. violascens*, corolla ca. 1/3 longer than style).
- 17a. Anthers linear, 1–1.5 mm, with thick red glands or callus at apex.
- 18a. Leaves sessile, clasping at base, densely black glandular punctate 114. *L. heterogenea*
- 18b. Leaves usually petiolate, sparsely purple or brown glandular punctate or striate 115. *L. stenosepala*
- 17b. Anthers elliptic or ovate, without glands or callus at apex.
- 19a. Flowers 4–8, near stem apex, in axils of leaves or a capitate cluster.
- 20a. Flowers in axils of apical leaves; corolla shorter than pedicel 135. *L. prolifera*
- 20b. Flowers in a terminal, subcapitate cluster; corolla longer than pedicel 136. *L. pumila*
- 19b. Flowers in terminal, many-flowered, elongated racemes.
- 21a. Corolla parted to ± middle.
- 22a. Corolla campanulate, ca. 5 mm; leaf blade ovate to ovate-lanceolate 132. *L. racemiflora*
- 22b. Corolla narrowly campanulate, 8–10 mm; leaf blade obovate to sublinear.
- 23a. Stems erect, simple or branched; branches ascending to erect; racemes initially broadly coniform, densely flowered 133. *L. candida*
- 23b. Stems ± prostrate, fasciculate, usually much branched; branches elongated flagelliform; racemes slender, sparsely flowered 134. *L. parvifolia*
- 21b. Corolla parted to 2/3 or below.
- 24a. Corolla 2.5–5(–6) mm, ca. as long as calyx.
- 25a. Corolla ca. 6 mm; stamens included or with only apex of anthers exerted 116. *L. silvestrii*
- 25b. Corolla 2.5–4 mm; stamens distinctly exerted.
- 26a. Corolla slightly longer than or ca. as long as calyx, lobes oblong-spatulate 117. *L. decurrens*
- 26b. Corolla shorter than calyx, lobes narrowly oblong 118. *L. breviflora*
- 24b. Corolla 6–12 mm, distinctly longer than calyx.
- 27a. Corolla lobes suborbicular, clawed at base.
- 28a. Leaves abaxially minutely rust-colored glandular punctate 119. *L. platypetala*
- 28b. Leaves abaxially glaucous.
- 29a. Corolla pink, epunctate 120. *L. glauca*
- 29b. Corolla white, reddish brown glandular striate near apex 121. *L. orbicularis*

- 27b. Corolla lobes elliptic, obovate, or narrowly oblong, not clawed at base.
- 30a. Corolla lobes elliptic or broadly obovate, rarely elliptic-oblong, wider than 2 mm.
- 31a. Leaves alternate or occasionally opposite on lower part of stem, lanceolate to ovate-lanceolate.
- 32a. Corolla 8–12 mm, ca. 2 × as long as calyx, sinus between lobes acute; stamens ca. 2/3 as long as corolla lobes 122. *L. violascens*
- 32b. Corolla 6–7(–8) mm, slightly longer than calyx, sinus between lobes rounded; stamens ca. as long as to longer than corolla 123. *L. lichiangensis*
- 31b. Leaves opposite (at least on branches) or in whorls, linear-lanceolate.
- 33a. Corolla ca. 5 mm; leaves subleathery 126. *L. robusta*
- 33b. Corolla 8–10 mm; leaves herbaceous.
- 34a. Leaves sparsely glandular punctate and striate, usually in whorls of 3 or 4 on main stem 124. *L. taliensis*
- 34b. Leaves glandular striate on margin only, subopposite on main stem 125. *L. tsaii*
- 30b. Corolla lobes narrowly oblong, less than 2 mm wide.
- 35a. Leaves sessile.
- 36a. Leaf blade narrowly lanceolate to linear, 0.4–1 cm wide; corolla epunctate 127. *L. delavayi*
- 36b. Leaf blade oblanceolate, 1.8–2.6 cm wide; corolla red glandular striate 128. *L. medogensis*
- 35b. Leaves petiolate.
- 37a. Corolla to 10 mm; leaves glaucescent abaxially 131. *L. tsarongensis*
- 37b. Corolla 5–7 mm; leaves pale green abaxially.
- 38a. Stamens ca. as long as corolla 129. *L. chungdienensis*
- 38b. Stamens 1–2 mm longer than corolla 130. *L. lobelioides*

1. *Lysimachia scapiflora* C. M. Hu, Z. R. Xu, & F. P. Chen, Acta Phytotax. Sin. 26: 306. 1988.

葶花香草 ting hua xiang cao

Herbs perennial, glabrous. Stems 1–1.5 cm tall. Leaves spirally arranged, ± forming a rosette; petiole 12–20 cm, channelled; leaf blade elliptic to narrowly elliptic, 15–28 × 4.5–9 cm, leathery when dry, base cuneate-attenuate, margin narrowly revolute, apex acute to subacuminate; veins 10–13 pairs, conspicuous abaxially; veinlets obscure. Scapes 14–20 cm; racemes terminal, many flowered; bracts linear-lanceolate, 2–3 mm. Flowers 1–2 cm apart. Pedicel 6–12 mm. Calyx 5–6 mm, sparingly white farinose; lobes lanceolate. Corolla yellow; tube ca. 1 mm; lobes oblong, 9–10 × 3.5–4 mm, apex acute. Filaments connate basally into a ring, fused with corolla, free parts ca. 1 mm; anthers ca. 5 mm, gradually narrowed upward from cordate base, basifixed, opening by lateral slits. Ovary globose; style ca. 6 mm. Capsule unknown. Fl. Apr–May.

* Deep in forests on calcareous formations; ca. 300 m. Guangxi (Ningming Xian).

2. *Lysimachia insignis* Hemsley, Hooker's Icon. Pl. 27: t. 2634. 1900.

三叶香草 san ye xiang cao

Lysimachia insignis Hemsley f. *flaviflora* Lock.

Plants perennial, erect, 25–90 cm tall, glabrous. Stems terete or obscurely quadrangular, woody at base, simple or weakly branched. Lower leaves scalelike, early deciduous. Upper leaves (2 or 3 or 4), in a terminal whorl, subsessile or petiole to 1 cm; leaf blade ovate to ovate-lanceolate, rarely elliptic to oblong-lanceolate, 8–25 × 5–13 cm, base obtuse to subrounded, occasionally cuneate, apex acuminate; veins 6–9 pairs; veinlets prominent. Racemes distributed along stem under leaf whorl, 6–9 cm, 3–10-flowered; bracts narrowly lanceolate, 3–4 mm. Pedicel 0.6–1.5 cm. Calyx lobes ovate, 2–3 × ca. 1.3 mm, minutely glandular, especially inside, apex acuminate. Corolla white to pale yellow, parted nearly to base; lobes narrowly oblong, 5–8 × 2–3 mm, apex obtuse. Filaments connate basally into a ring, fused with corolla, free parts very short; anthers 4–5 mm, basifixed, opening by apical pores. Capsule globose, 5–7.5 mm in diam., indehiscent. Fl. Apr–May.

Open woodlands, streamsides in mountain valleys; 300–1600 m. SW Guangxi, SW Guizhou, SE Yunnan [N Vietnam].

The fleshy roots are used medicinally for rheumatism and injuries.

3. *Lysimachia saxicola* Chun & F.H. Chen in F.H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 26. 1979.

岩居香草 yan ju xiang cao

Herbs perennial, to 18 cm tall. Stems erect or prostrate at base, terete or angular in upper part, usually simple. Lower leaves scalelike. Upper leaves alternate, 3 or 4 crowded at apex of stem in a whorl; petiole 5–8 mm; leaf blade ovate, subleathery, base rounded to broadly cuneate, margin thickened and cartilaginous, apex acute. Racemes in axils of normal leaves, scalelike leaves along stem, 2–4-flowered; rachis 0.5–2 mm; bracts lanceolate to subulate, 2–4 mm. Pedicel 2–5 mm. Calyx ca. 3 mm; lobes ovate, glandular on margin and inside, apex acuminate. Corolla yellow, ca. 7 mm, deeply parted; lobes oblong. Filaments connate basally into a ca. 0.5 mm high ring, fused with corolla, free parts ca. 0.7 mm; anthers ca. 4 mm, basifixed, opening by apical pores. Ovary ovoid; style ca. 4 mm. Capsule unknown.

* On calcareous formations; ca. 2500 m. NW Guangxi.

- 1a. Leaves glabrous 3a. var. *saxicola*
1b. Leaves ± pubescent 3b. var. *minor*

3a. *Lysimachia saxicola* var. *saxicola*

岩居香草 (原变种) *yan ju xiang cao* (*yuan bian zhong*)

Plants 10–18 cm tall. Leaf blade 4.5–6.5 × 3–4.5 cm, glabrous. Fl. Jul.

* On calcareous formations; ca. 2500 m. NW Guangxi (Nandan Xian).

3b. *Lysimachia saxicola* var. *minor* C. F. Liang ex F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 26. 1979.

小岩居香草 *xiao yan ju xiang cao*

Plants 4–8 cm tall. Leaf blade 2–4 × 1.5–3 cm, adaxially setulose near margin.

* On limestone. NW Guangxi (Hechi Xian).

4. *Lysimachia dushanensis* F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 26. 1979.

独山香草 *du shan xiang cao*

Herbs perennial, glabrous, 10–25 cm tall. Stems deep reddish brown, terete or slightly angular in upper part, usually simple. Leaves 2–4, in a subterminal whorl; petiole 5–8 mm, verrucose; leaf blade broadly ovate to ovate-elliptic, 5–11.5 × 2.7–3.8 cm, papery, base rounded to truncate, margin narrowly revolute, apex acute; midvein and 5 or 6 pairs of veins raised abaxially, impressed adaxially, prominently reticulate. Racemes ± umbellate, in axils of leaves, rarely arising from leaf scars on lower part of stem, 2–6-flowered; rachis ca. 2 mm; bracts linear-lanceolate, 1–1.5 mm. Pedicel 1.5–3 cm. Calyx lobes ovate, ca. 2.5 × 1.2 mm, minutely glandular on margin and inside, apex acute. Corolla yellow, deeply parted; lobes ovate-oblong, ca. 7 × 4 mm, apex obtuse. Filaments connate basally into a ring, free parts ca. 1 mm; anthers linear, ca. 4.8 mm, basifixed, opening by apical pores. Capsule globose, ca. 3 mm in diam. Fl. Jul.

* Mountain streamsides and valleys; ca. 900 m. N Guangxi, S Guizhou (Dushan Xian).

5. *Lysimachia linguensis* C. Z. Gao, *Acta Phytotax. Sin.* 19: 359. 1981.

临桂香草 *lin gui xiang cao*

Herbs perennial, glabrous, 20–40 cm tall. Stems terete, finely glandular striate. Lower leaves scalelike. Upper leaves usually 2, unequal, ± at stem apex, subsessile, broadly ovate to ovate-elliptic, larger leaves 14–20 × 9–16 cm, smaller leaves 6–11 × 4–8.5 cm, base cordate, apex acute; basal veins 5–7, prominently reticulate. Racemes in axils of terminal leaves and lower scalelike leaves, 3–17-flowered; rachis 2–6 mm, glandular; bracts linear-triangular, 2–3 mm, minutely glandular, midvein raised abaxially. Pedicel 2.5–4 cm. Calyx lobes ovate, ca. 4 × 2 mm, apex acute. Corolla yellow, deeply parted; lobes oblong, 8–10 × 3–5 mm. Filaments connate basally into a ring, free parts ca. 1 mm; anthers 5–6 mm, basifixed, opening by apical pores. Capsule brown, globose, ca. 3 mm in diam. Fl. Jun–Jul.

* Shaded areas on mountain slopes. NW Guangxi (Lingui Xian).

6. *Lysimachia crassifolia* C. Z. Gao & D. Fang in C. Z. Gao, *Acta Phytotax. Sin.* 19: 360. 1981.

厚叶香草 *hou ye xiang cao*

Herbs perennial, glabrous. Stems erect or ascending, 10–20(–40) cm, quadrangular or narrowly winged. Lower leaves scalelike. Upper leaves 3 or 4 crowded at apex of stem, forming a terminal whorl, subsessile, broadly ovate to elliptic, 7–16 × 5–12.5 cm, papery, faintly whitish farinose, base rounded to broadly cuneate, apex rounded to obtuse; veins 5 or 6 pairs, raised abaxially; veinlets obscure. Racemes in axils of terminal leaves, rarely arising from axils of lower scalelike leaves, abbreviated, many flowered. Pedicel 0.5–2 cm, reddish glandular punctate. Calyx lobes lanceolate, 6–8 × ca. 2 mm, minutely brownish glandular, especially inside. Corolla yellow, ca. as long as to slightly longer than calyx, deeply parted; lobes ovate-oblong, ca. 8 × 2.5–3.5 mm, apex acute. Filaments connate basally into a ring, free parts ca. 1 mm; anthers 4–5 mm, basifixed, opening by apical pores. Style ca. as long as to slightly longer than stamens. Capsule globose, 2–3 mm in diam. Fl. Jun.

* In thickets on calcareous formations. C Guangxi (Xincheng Xian).

7. *Lysimachia filipes* C. Z. Gao & D. Fang in C. Z. Gao, *Acta Phytotax. Sin.* 19: 361. 1981.

纤柄香草 *xian bing xiang cao*

Herbs perennial, glabrous, aromatic when dry. Stems erect, 20–50 cm, quadrangular. Leaves alternate, subsessile; petiole less than 2 mm; leaf blade ovate to ovate-lanceolate, 5–13 × 2–4 cm, base rounded to subcordate, slightly asymmetrical, apex acuminate to long acuminate; veins raised abaxially, slightly impressed adaxially; veinlets prominently reticulate. Racemes terminal and axillary, 4–15-flowered; rachis 5–20 cm; bracts subulate, 2–3 mm. Pedicel 2–3 cm. Calyx lobes ovate-lanceolate, ca. 2 mm, glandular inside. Corolla yellow, deeply parted; lobes reflexed at anthesis, narrowly elliptic, 7–10 × ca. 2 mm. Filaments connate basally into a ring, free parts ca. 1 mm; anthers 4–5 mm, basifixed,

opening by apical pores. Style ca. as long as to slightly longer than stamens. Capsule globose, ca. 3 mm in diam. Fl. Jun.

* In caves within calcareous formations. NW Guangxi (Fengshan Xian).

8. *Lysimachia heterobotrys* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 27. 1979.

邕宁香草 yong ning xiang cao

Herbs perennial, 7–40 cm tall, not aromatic. Stems erect, angular or narrowly winged, ± minutely glandular on young parts. Leaves alternate; petiole 0.5–1.5 cm, glandular; leaf blade elliptic, 6.5–13 × 3–6.5 cm, abaxially whitish farinose, base attenuate, apex acute; veins 6–8 pairs, raised abaxially; veinlets prominently reticulate. Racemes terminal and axillary, 4–9-flowered; rachis 2.5–10 cm, sometimes flowers clustered on lower part of stem; lowest bracts leaflike, to 1.5 cm, gradually reduced upward to ca. 4 × 1 mm. Pedicel 1.3–2.5 cm. Calyx ca. 6 mm, enlarging to 8 mm in fruit; lobes lanceolate, glandular, narrowly hyaline margined, apex subulate. Corolla yellow, deeply parted; lobes lanceolate, ca. 7 × 2.5 cm, apex acute. Filaments connate basally into a ca. 0.3 mm high ring, free parts ca. 1 mm; anthers ca. 4.5 mm, basifixed, opening by apical pores. Capsule globose, ca. 1/2 as long as calyx. Fl. May–Jun.

* Deep in forests, shaded areas on N-facing mountain slopes; ca. 300 m. SW Guangxi.

9. *Lysimachia chapaensis* Merrill, J. Arnold Arbor. 20: 350. 1939.

近总序香草 jin zong xu xiang cao

Lysimachia subracemosa C. Y. Wu.

Herbs perennial, glabrous, 40–70 cm tall. Stems erect from rostrate base, terete or striate, herbaceous. Leaves alternate, ± aggregated toward apex of young shoots; petiole 1.5–3 cm; leaf blade ovate to ovate-elliptic or ovate-lanceolate, 6–11 × 3–6 cm, adaxially with numerous minute sunken dots, base subrounded to broadly cuneate, apex acuminate; veins 4 or 5 pairs, raised abaxially. Racemes terminal and axillary, 2–6-flowered; rachis 0.3–4(–8) cm; bracts leaflike, ovate-lanceolate, 4.5–3 cm, gradually reduced upward to 5 mm. Calyx lobes ovate-lanceolate, ca. 2.5 mm, glandular, margin membranous. Corolla yellow, deeply parted; lobes oblong, ca. 10 × 5 mm, apex obtuse. Filaments connate basally into a ring, free parts very short; anthers ca. 5 mm, basifixed, opening by apical pores, sometimes decurrent into a slit. Style ca. 6 mm. Capsule unknown. Fl. May.

Mixed forests; 1000–1700 m. SE Yunnan [Vietnam].

10. *Lysimachia inaperta* C. M. Hu & F. N. Wei in F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 25. 1979.

长萼香草 chang e xiang cao

Herbs perennial, 40–70 cm tall, ± aromatic when dry. Stems single or several, conspicuously quadrangular; young parts and nodal regions copiously minutely glandular. Leaves alternate; petiole 1–1.5(–2.5) mm, glandular; leaf blade

elliptic, 6–12(–17) × 3–6.8 cm, base cuneate, margin narrowly revolute, apex acute; veins 6–8 pairs. Pedicel 3–8 mm, elongating to 1.2 cm in fruit, glandular. Flowers 2 or 3, crowded on extremely abbreviated (2–5 mm) branches; bracts leaflike, 1.5–3.5 × 0.5–1.5 mm. Calyx lobes lanceolate, 6–9 × ca. 2 mm, copiously minutely glandular, apex acuminate. Immature corolla ca. 5 mm, parted nearly to base; lobes narrowly ovate, apex acute. Filaments connate basally into a ca. 0.3 mm high ring, free parts very short; anthers ca. 4 mm, basifixed, opening by apical pores. Capsule globose, 2.5–3 mm, shorter than calyx.

* Mixed forests. N Guangxi.

11. *Lysimachia aspera* Handel-Mazzetti, Sinensia 5: 5. 1934.

短枝香草 duan zhi xiang cao

Herbs perennial, erect, 20–45 cm tall. Stems 1 to many, quadrangular; branches usually many, short. Leaves alternate; petiole 2–5 mm; leaf blade ovate to rhomboid-ovate, 10–17 × ca. 8 mm, abaxially glabrous, adaxially ± appressed bristly pubescent, especially near margin, base cuneate-attenuate, apex acute to apiculate; veins 2 or 3 pairs; veinlets inconspicuous. Leaves of short branches 3–4 × smaller. Flowers solitary, in axils of branch leaves. Pedicel 3–7 mm. Calyx 3–4 mm; lobes narrowly lanceolate, glandular on margin and inside. Corolla yellow, deeply parted; lobes ovate-lanceolate, ca. 3.5 × 1.1 mm, apex acute. Filaments very short, anthers ca. 2.5 mm, basifixed, apex obtuse, opening by apical pores. Ovary ovoid, style ca. 3.5 mm. Capsule unknown.

* Valleys of mountains, stream banks; ca. 600 m. NW Guangxi.

12. *Lysimachia tianyangensis* D. Fang & C. Z. Gao in C. Z. Gao, Acta Phytotax. Sin. 19: 363. 1981.

田阳香草 tian yang xiang cao

Herbs perennial, to 30 cm tall. Stems 1 to many, erect, much branched and glandular in upper part, finely glandular striate. Leaves alternate; petiole ca. 2 mm; leaf blade elliptic to rhomboid-elliptic, 6–9 × 1.5–3 mm, papery, densely glandular punctate, base cuneate, decurrent, margin narrowly revolute, apex acute; midvein raised abaxially; veinlets obscure. Flowers solitary, axillary. Pedicel 6–12 mm, glandular. Calyx lobes ovate-lanceolate, ca. 3 mm, copiously minutely glandular. Corolla yellow, deeply parted; lobes oblong, ca. 5 × 1.5 mm, dark glandular punctate. Filaments connate basally into a ring, free parts ca. 1 mm; anthers ca. 3 mm, basifixed, opening by apical pores. Style slightly longer than stamens. Capsule globose, ca. 3 mm in diam. Fl. May–Jun.

* On limestone rocks. W Guangxi (Tianyang Xian).

13. *Lysimachia vittiformis* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 27. 1979.

条叶香草 tiao ye xiang cao

Herbs perennial, glabrous, erect, to 40 cm tall. Stems usually numerous, terete or weakly angular, shortly branched, copiously minutely glandular at apex. Leaves spirally

arranged; petiole 2–3 mm; leaf blade linear, 30–85 × 2.5–6 mm, papery, tapering to both ends, margin narrowly revolute, apex often falcate; midvein raised abaxially, slightly impressed adaxially; veinlets obscure. Flowers solitary, axillary. Pedicel filiform, 1–2 cm, elongating to 3 cm in fruit. Calyx lobes ovate, ca. 1.5 mm, glandular on margin and inside, apex acuminate. Corolla yellow, 5–6 mm, deeply parted; lobes nearly linear, 4–5 × ca. 1.5 mm, apex obtuse. Filaments connate basally into a ca. 0.4 mm high ring, fused with corolla, free parts ca. 0.5 mm; anthers ca. 3.2 mm, basifixed, opening by apical pores. Style ca. 4 mm. Capsule globose, ca. 3 mm in diam. Fl. May.

* Shaded areas on mountain slopes. NW Guangxi (Tianlin Xian).

14. *Lysimachia pittosporoides* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 39. 1965.

海桐状香草 hai tong zhuang xiang cao

Plants perennial, glabrous, 50–100 cm tall. Stems erect, woody, quadrangular in upper part, usually much branched. Leaves alternate, crowded toward apex of young shoots, forming many interrupted whorls on stem; petiole 2–4 mm; leaf blade oblanceolate, 2–4 cm × 4–10 mm, subleathery, abaxially ± minutely glandular, adaxially with minute sunken dots, base attenuate, margin narrowly revolute, apex acute; midvein raised abaxially, impressed adaxially; veinlets obscure. Flowers solitary, axillary. Pedicel 1–2 cm. Calyx lobes ovate, ca. 5 mm, glandular on margin and inside, apex caudate-acuminate. Corolla yellow, 6–7 mm, deeply parted; lobes oblong, 5–6 × 3–4 mm, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring, fused with corolla, free parts ca. 0.6 mm; anthers ca. 4 mm, basifixed, opening by apical pores. Style ca. 4 mm. Capsule globose, 3–4 mm in diam., shorter than calyx. Fl. Apr–May.

* Mixed forests and scrub, on calcareous formations; 1400–1800 m. SE Yunnan.

15. *Lysimachia millietii* (H. Léveillé) Handel-Mazzetti, *Symb. Sin.* 7: 731. 1936.

兴义香草 xing yi xiang cao

Andrachne millietii H. Léveillé, *Bull. Acad. Int. Géogr. Bot.* 24: 146. 1914.

Herbs perennial, glabrous, 40–60 cm tall, ± aromatic when dry. Stems erect, terete or angular in upper part, branched from base. Leaves alternate, evenly distributed on stems; petiole 3–5 mm; leaf blade lanceolate, 3–4.5 × 0.5–1.5 cm, subleathery, abaxially glaucous, adaxially dark green, base cuneate, apex acute to subacuminate; veins 2 or 3 pairs; veinlets invisible. Flowers solitary, axillary. Pedicel 2.5–3 cm. Calyx lobes lanceolate, ca. 3 mm, costate. Corolla yellow, ca. 6 mm, deeply parted; lobes narrowly oblong, ca. 5 × 2 mm, apex subobtusely. Filaments connate basally into a ring, free parts ca. 0.5 mm; anthers ca. 3.8 mm, basifixed, opening by apical pores. Capsule subglobose, 3–3.5 mm in diam.

* At margins of mixed forests. W Guizhou.

16. *Lysimachia evalvis* Wallich in Roxburgh, *Fl. Ind.* 2: 27. 1824.

不裂果香草 bu lie guo xiang cao

Herbs perennial, glabrous, 15–60 cm tall. Stems erect, weakly angular, usually simple, minutely brownish glandular at apex. Leaves alternate, evenly distributed on stem; petiole 0.5–1.5 cm, ± decurrent at base; leaf blade ovate to narrowly ovate or elliptic, (2.5–)4–9 × 2.5–3.5 cm, base short attenuate, apex acuminate; veins 4 or 5 pairs, raised abaxially. Flowers solitary, in axils of upper leaves. Pedicel nodding in fruit, ca. as long as to shorter than petioles, ± glandular. Calyx 0.9–1.2 cm; lobes lanceolate, widest at middle, 2.5–3 mm wide, apex acuminate. Corolla yellow, 0.9–1.3(–1.6) cm, ca. as long as to slightly longer than calyx; tube ca. 1 mm; lobes lanceolate to narrowly oblong, 4–6 mm wide. Filaments connate basally into a ca. 1 mm high ring, fused with corolla, free parts ca. 1 mm; anthers ca. 4 mm, basifixed, opening by apical pores. Capsule globose, 6–7 mm in diam. Fl. May–Jun. *2n* = 18, 30.

Trailsides on mountain slopes; ca. 1400 m. SE Xizang [Bhutan, India, Myanmar, Nepal, Sikkim].

17. *Lysimachia navillei* (H. Léveillé) Handel-Mazzetti ex Rehder, *J. Arnold Arbor.* 15: 293. 1934.

木茎香草 mu jing xiang cao

Plants perennial, glabrous, 30–70 cm tall. Stems 1–3, terete or weakly quadrangular, woody, minutely brownish glandular at apex, lower part with only a few leaf scars, middle and upper parts with leaves. Leaves alternate; petiole 1–3 cm; leaf blade ovate to ovate-lanceolate or elliptic to elliptic-lanceolate, 3.5–12.5 × 1–4 cm, base attenuate, margin narrowly revolute, apex acute to acuminate; veins 5–7 pairs; veinlets inconspicuously reticulate. Flowers 1 or 2, in axils of leaves or aggregated at apex of extremely abbreviated twigs and appearing clustered. Pedicel nodding in fruit, 0.7–2 cm. Calyx 2.5–4 mm, enlarging to 6 mm in fruit; lobes ovate, apex acuminate. Corolla yellow, deeply parted; lobes lanceolate to ovate-lanceolate, 8–11 × 2.5–3.5 mm, apex obtuse. Filaments connate basally into a ring, free parts inconspicuous; anthers 7–8 mm, basifixed, opening by apical pores. Ovary ovoid; style 6–8 mm. Capsule globose 4–7 mm in diam., indehiscent.

* Forests; 900–1400 m. NW Guangxi, SW Guizhou, Hainan.

- 1a. Leaf blade ovate to ovate-lanceolate; capsules 6–7 mm in diam. 17a. var. *navillei*
- 1b. Leaf blade elliptic to elliptic-lanceolate; capsules 4–5 mm in diam. 17b. var. *hainanensis*

17a. *Lysimachia navillei* var. *navillei*

木茎香草 (原变种) mu jing xiang cao (yuan bian zhong)

Diospyros navillei H. Léveillé, *Fl. Kouy-Tcheou* 145. 1914; *Lysimachia solanoides* Handel-Mazzetti.

Leaf blade ovate to ovate-lanceolate, 4–12.5 × 1–4 cm. Pedicel 1–2 cm. Capsule 6–7 mm diam. Fl. Jun–Jul.

* Forests; 1000–1400 m. NW Guangxi, SW Guizhou.

17b. *Lysimachia navillei* var. *hainanensis* Chen & C. M. Hu, Fl. Hainan 3: 586. 1974.

海南木茎香草 hai nan mu jing xiang cao

Leaf blade elliptic to elliptic-lanceolate, 3.5–8 × 1.2–4 cm, adaxially often with purple blotches near margin. Pedicel 0.7–1.5 cm. Capsule 4–5 mm in diam.

* Evergreen forests; 900–1200 m. Hainan.

18. *Lysimachia fooningensis* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 36. 1965.

富宁香草 fu ning xiang cao

Ardisia esquirolii H. Léveillé; *Lysimachia esquirolii* (H. Léveillé) Lauener.

Plants perennial, glabrous, 20–50 cm tall, aromatic when dry. Stems erect, woody at base, terete or weakly angular in upper part. Leaves alternate, usually confined to upper 1/2 of stem, ± crowded toward apex; petiole 0.5–1.5 cm; leaf blade elliptic-lanceolate to narrowly lanceolate, 3–11 × 0.7–2.8 cm, abaxially ± glandular, base attenuate, apex acuminate to subacute; veins prominently reticulate. Flowers 1 or 2, in axils of leaves, rarely 3 or 4 flowers crowded at apex of extremely abbreviated branches. Pedicel 1.5–3(–5) cm. Calyx lobes triangular, ca. 2.5 mm. Corolla yellow, 0.9–1.1 cm, deeply parted; lobes linear, 8–10 × 2–3 mm, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring, free parts 1–1.5 mm; anthers 4–5 mm, basifixed, opening by apical pores. Capsule subglobose, ca. 4 mm in diam.

Forests, ravines, calcareous soils; 800–1300 m. NW Guangxi, SW Guizhou, SE Yunnan [Vietnam].

19. *Lysimachia microcarpa* Handel-Mazzetti ex C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 40. 1965.

小果香草 xiao guo xiang cao

Herbs perennial, 10–30 cm tall, aromatic when dry, with creeping stolons. Stems ascending to erect, terete or weakly angular, ca. 1.5 mm in diam. at base, upper part minutely glandular. Lower leaves scalelike. Upper leaves alternate, usually confined to upper 2/3 of stem; petiole 4–8 mm, glandular; leaf blade ovate to rhomboid-ovate or ovate-elliptic, 1.5–3(–6) × 0.7–3 cm, adaxially glabrous or initially ± setulose, base cuneate to broadly cuneate, rarely subrounded, margin obscurely undulate-crenate, apex acuminate; veins prominently reticulate. Flowers solitary, axillary. Pedicel 2–4 cm, sparsely glandular. Calyx lobes ovate, apex acuminate, 3.5–4 mm. Corolla yellow, 7–10 mm, deeply parted; lobes narrowly oblong, 6–9 × 2.7–4 mm, apex obtuse. Filaments connate basally into a ca. 0.8 mm high ring, free parts very short; anthers 3–4 mm, basifixed, opening by apical pores. Style 3.5–5 mm. Capsule 3–4 mm in diam., ca. as long as calyx. Fl. May.

Mixed forests and scrub, streamsides; 1500–2200 m. S Yunnan [N Myanmar].

20. *Lysimachia ardisioides* Masamune, J. Soc. Trop. Agric. 4: 302. 1932.

假排草 jia pai cao

Lysimachia simulans Hemsley

Herbs perennial, glabrous, 15–50 cm tall, with creeping stolons. Stems erect, terete, minutely glandular at apex. Leaves alternate, often confined to upper part of stem; petiole 0.5–1.5 cm; leaf blade elliptic to elliptic-lanceolate, rarely ovate, 4–8(–13) × 1–3(–4) cm, papery, abaxially glaucous, often small purplish punctate, adaxially becoming dark brown when dry, base cuneate, rarely subrounded, apex acuminate; veins 4 or 5 pairs; veinlets prominently reticulate. Flowers axillary, solitary, rarely 2 or 3 flowers aggregated at apex of extremely abbreviated twigs and appearing clustered. Pedicel 1.5–4.5 cm. Calyx lobes ovate, ca. 3 mm. Corolla yellow, parted nearly to base; lobes narrowly oblong, 8–15 × ca. 4 mm, apex acute. Filaments connate basally into a ring, fused with corolla, free parts very short; anthers 4.5–5 mm, basifixed, opening by apical pores. Capsule ivory-white, globose, 5–6 mm in diam.

Picea and broad-leaved forests; 1200–2500 m. Taiwan [Philippines].

21. *Lysimachia petelotii* Merrill, J. Arnold Arbor. 19: 61. 1938.

阔叶假排草 kuo ye jia pai cao

Lysimachia confertifolia C. Y. Wu; *L. sikokiana* Miquel subsp. *petelotii* (Merrill) C. M. Hu; *L. similis* W. L. Sha; *L. solaniflora* C. Y. Wu.

Herbs perennial, glabrous, 10–30 cm tall. Stems ascending to erect, terete, arcuate or decumbent at base, apex minutely brownish glandular. Lower leaves scalelike. Upper leaves alternate, ± crowded toward apex of stem; petiole 2–8 mm; leaf blade ovate to elliptic or broadly elliptic, rarely elliptic-lanceolate, 3–14(–18) × 1.3–6.5(–9) cm, papery, base cuneate to subrounded, narrowly revolute, apex acute; veins 5 or 6 pairs, raised abaxially, impressed adaxially. Flowers axillary, solitary or 2–5 in axils of lower leaves. Pedicel 1.5–3 cm, elongating to 6 cm in fruit, glandular. Calyx 4–6 (–7) mm; lobes ovate-lanceolate, glandular on margin. Corolla yellow, deeply parted; lobes oblong, 9–13(–20) × (2.5–)4–5.5 mm, apex acute or subobtuse. Filaments connate basally into a 0.8 mm high ring, free parts very short; anthers 5.5–9 mm, apex obtuse, basifixed, opening by apical pores. Ovary ovoid; style 6–9 mm. Capsule subglobose, ca. 4 mm in diam. Fl. May–Jun.

Open forests on calcareous formations; 600–2100 m. Guangdong, Guangxi, Guizhou, Hunan, Sichuan, Yunnan [N Vietnam].

22. *Lysimachia jingdongensis* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 25. 1979.

景东香草 jing dong xiang cao

Herbs perennial, 15–30 cm tall, ± fragrant when dry. Stems of previous year decumbent, rooting at nodes. Stems of current year ascending to erect, conspicuously quadrangular

or weakly winged. Leaves alternate; petiole 0.8–1.2 cm; leaf blade ovate to broadly ovate, 1.5–3.2 × 1–2.2 cm, abaxially glabrous, adaxially ± bristly, base truncate to subcordate, rarely rounded, margin obscurely undulate, apex acute to apiculate; veins 3 or 4 pairs, lowest pair often basal; veinlets prominently reticulate abaxially. Flowers solitary, axillary. Pedicel ca. 2.5 cm. Calyx lobes lanceolate, 5–6 × 1–1.3 mm, abaxially costate, apex subulate. Corolla yellow, deeply parted; tube ca. 1 mm; lobes oblong, ca. 9 × 3 mm, apex obtuse. Filaments very short; anthers ca. 3 mm, basifixed, opening by apical pores. Capsule ca. 3 mm in diam., shorter than calyx. Fl. May–Jun.

* Mixed forests, streamsides; 2100–2600 m. S Yunnan (Jinghong Xian).

Although superficially resembling *Lysimachia microcarpa*, this species appears to be more closely related to *L. capillipes* Hemsley because of its herbaceous, angular stem and the shape of its leaves.

23. *Lysimachia capillipes* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 48. 1889.

细梗香草 xi geng xiang cao

Herbs perennial, 40–60 cm tall, strongly curry-scented when dry. Stems 2 to many, erect, angular or winged, branched from middle. Leaves alternate; petiole 2–8 mm; leaf blade ovate to lanceolate, 1.5–7 × 1–3 cm, adaxially glabrous or sparsely bristly, base short attenuate to obtuse, rarely subrounded to truncate, often slightly asymmetrical, margin entire or obscurely undulate; veins 4 or 5 pairs; veinlets inconspicuously reticulate. Flowers solitary, axillary. Pedicel 1.5–3.5 cm. Calyx lobes ovate to lanceolate, 2–4 mm, apex acuminate to subulate. Corolla yellow, 6–8 mm, deeply parted; lobes narrowly oblong to linear, 5–7 × 1.8–3 mm, apex subobtusate. Filaments connate basally into a ca. 0.5 mm high ring, fused with corolla, free parts ca. 1.3 mm; anthers 3.5–4 mm, basifixed, opening by apical pores. Style filiform, slightly longer than stamens. Capsule globose, 3–4 mm in diam.

Mixed forests, streamsides, acidic soils, rocky limestone slopes; 300–2000 m. Fujian, Guangdong, Guangxi, Guizhou, S Henan, Hunan, Jiangxi, Sichuan, Taiwan, E Yunnan, Zhejiang [Philippines].

- 1a. Stems often winged; calyx lobes usually less than 4 mm, apex acuminate 23a. var. *capillipes*
1b. Stems angular; calyx lobes ca. 4 mm, apex subulate 23b. var. *cavaleriei*

23a. *Lysimachia capillipes* var. *capillipes*

细梗香草 (原变种) xi geng xiang cao (yuan bian zhong)

Lysimachia fragrans Hayata.

Stems herbaceous, often winged. Calyx lobes ovate to lanceolate, usually less than 4 mm, shorter than capsules, apex acuminate. Fl. Jun–Jul.

Mixed forests, streamsides, acidic soils; 300–2000 m. Fujian, N Guangdong, Guizhou, Hunan, Jiangxi, Sichuan, Taiwan, Zhejiang [Philippines].

23b. *Lysimachia capillipes* var. *cavaleriei* (H. L. 闕eill_) Handel-Mazzetti in Rehder, J. Arnold Arbor. 15: 294. 1934.

石山细梗香草 shi shan xi geng xiang cao

Andrachne cavaleriei H. Léveillé, Repert. Spec. Nov. Regni Veg. 12: 187. 1913; *Lysimachia ovalifolia* W. L. Sha, not Pax & K. Hoffmann.

Stems subwoody, angular. Calyx lobes lanceolate, ca. 4 mm, longer than capsules, apex subulate.

* Rocky limestone slopes; 300–1200 m. NE Guangdong, Guangxi, Guizhou, E Yunnan.

24. *Lysimachia lancifolia* Craib, Bull. Misc. Inform. Kew 1918: 363. 1918.

长叶香草 chang ye xiang cao

Herbs perennial, erect, 20–55 cm tall, aromatic when dry. Stems angular, simple or slightly branched in upper part, glandular at apex. Leaves alternate, evenly distributed on stem; petiole to 1.5 cm; leaf blade lanceolate, 2.5–6.5(–8) × 0.7–1.7 cm, adaxially glabrous or sparsely bristly, base attenuate, margin obscurely undulate, apex acuminate. Flowers solitary, axillary. Pedicel filiform, 2.5–3.5 cm. Calyx lobes ovate, ca. 2.5 mm, copiously minutely glandular inside, apex acuminate. Corolla yellow, deeply parted; lobes narrowly oblong, 4–5 × 1.6–1.8 mm, apex subobtusate. Filaments connate basally into a ca. 0.5 mm high ring, free parts very short; anthers 3–4 mm, basifixed, opening by apical pores. Style filiform, ca. 4 mm, ca. as long as stamens. Capsule globose, ca. 3 mm in diam., longer than calyx. Fl. May.

Mixed forests; 1500–2200 m. S Yunnan [N Thailand].

25. *Lysimachia physaloides* C. Y. Wu & C. Chen ex F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 28. 1979.

金平香草 jin ping xiang cao

Herbs perennial, to 60 cm tall. Stems erect, terete, subfleshy, branched in upper part, minutely glandular when young. Lower leaves scalelike. Upper leaves alternate, ± crowded toward apex of stem; petiole 2.5–7.5 cm, glabrous; leaf blade oblong, 10–18 × 3.5–6 cm, membranous when dry, abaxially glabrescent, adaxially ± bristly to glabrate, base cuneate, apex short acuminate; veins 10–13 pairs, prominent. Racemes axillary, 4- or 5-flowered; peduncle ca. 1 cm, quadrangular; bracts narrowly lanceolate, 1–1.3 cm, subulate, adnate to pedicel at base. Pedicel 1–1.5 cm, subangular, apex thickened. Calyx lobes ovate, 9–10 × ca. 3 mm, apex acuminate to subulate; veins 7–9. Corolla pink; tube 2–2.5 mm; lobes oblong, 9.5–10 × 6–7 mm, apex rounded. Filaments connate basally into a ca. 1 mm high ring, free parts very short; anthers ca. 4.5 mm, basifixed, opening by apical pores. Ovary ovoid; style ca. 6 mm. Capsule unknown. Fl. Apr.

* Shaded areas near water. SE Yunnan (Jinping Xian).

26. *Lysimachia wilsonii* Hemsley, Bull. Misc. Inform. Kew 1906: 161. 1906.

川香草 chuan xiang cao

Herbs perennial, erect, 30–70 cm tall. Stems ca. 3 mm in diam. at base, upper part thicker than lower part, triangular or quadrangular to narrowly winged, simple, often branched only in inflorescences, minutely brown glandular at apex. Leaves alternate; petiole 1–2.5 cm, narrowly winged; leaf blade elliptic to elliptic-lanceolate, 6–14 × 3–5.5 cm, membranous when dry, abaxially glabrous and purplish, adaxially ± bristly, base obtuse to cuneate, margin entire or sometimes obscurely undulate, apex acute to short acuminate; veins 5–7 pairs. Racemes axillary, corymbiform, 2–5-flowered; peduncle 2–4 cm, angular; bracts ovate, leaflike, 0.8–2 cm, short-stalked. Pedicel 2–3 cm. Calyx lobes overlapping at base, orbicular to slightly depressed, ca. 3 mm, apex apiculate. Corolla yellow, 8–11 mm, deeply parted; lobes oblong, 7–10 × 4–4.5 mm, apex obtuse. Filaments connate basally into a ca. 1 mm high ring, free parts very short; anthers 3–3.5 mm, basifixed, apex obtuse, opening by apical pores. Capsule globose, ca. 4.5 mm in diam., with many fine vertical striations. Fl. May–Jun.

* Forest margins, streamsides; ca. 1000 m. Sichuan (Emei Shan), NE Yunnan.

27. *Lysimachia nutantiflora* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 28. 1979.

垂花香草 chui hua xiang cao

Herbs perennial, erect, 30–40 cm tall, with thick horizontal rhizomes. Stems herbaceous, subwoody at base, angular or narrowly winged, minutely brown glandular in upper part. Leaves alternate; petiole 1.3–3 cm, narrowly winged; leaf blade ovate to ovate-elliptic, 6–19 × 3.5–8 cm, membranous when dry, abaxially purplish and scurfy glandular, adaxially dark green and sparsely bristly, base short attenuate to subrounded, margin obscurely undulate, apex short acuminate; veins 6 or 7 pairs. Racemes terminal and axillary, elongate, 9–23 cm, 5- to many flowered; bracts leaflike, elliptic to lanceolate; lowest bracts ca. 2.8 × 1.5 cm, gradually reduced upward to ca. 4 × 1.5 mm. Pedicel ± drooping, 2–3.5 cm. Calyx lobes overlapping at base, suborbicular, ca. 4 mm, apex mucronate. Corolla yellow; tube 1–1.5 mm; lobes oblong, 8.5–9 × 4–5 mm, apex obtuse. Filaments connate basally into a ca. 1 mm high ring, fused with corolla, free parts very short; anthers 3–4 mm, basifixed, opening by apical pores. Ovary ovoid, style ca. 4 mm. Capsule unknown. Fl. May.

* Open forests, calcareous soils; 800–1100 m. SW Guangxi.

28. *Lysimachia subverticillata* C. Y. Wu, Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 42. 1965.

轮花香草 lun hua xiang cao

Herbs perennial, erect, to 50 cm tall. Stems subquadrangular, upper part and inflorescences copiously

minutely brown glandular. Leaves alternate; upper leaves 1–2 × as large as lower leaves; petiole 5–10 mm, weakly winged, glandular; leaf blade oblong to elliptic-lanceolate, 2.5–10 × 0.8–4 cm, abaxially glabrous, minutely glandular, adaxially ± bristly, base cuneate, margin obscurely undulate and sparsely bristly, apex acute; veins 5 or 6 pairs; veinlets obscure. Racemes terminal and axillary, to 12 cm; peduncle 4.5–7 cm; bracts leaflike, lanceolate, subsessile or short-stalked; lowest bracts to ca. 20 × 5 mm, gradually reduced to ca. 5 mm. Flowers subverticillate. Pedicel 0.8–2 cm. Calyx lobes ovate, ca. 3.5 mm, glandular on margin, inside, and outside, apex subulate. Corolla yellow; tube ca. 1 mm; lobes ovate-elliptic, ca. 5 × 3 mm, apex obtuse. Filaments connate basally into a ca. 1 mm high ring, free parts very short; anthers ca. 2 mm, basifixed, opening by apical pores. Ovary ovoid; style ca. 3 mm. Capsule globose, ca. 3 mm in diam. Fl. Jun–Jul.

* Wet areas in woodlands, streamsides; 500–800 m. SW Guizhou, SE Yunnan.

29. *Lysimachia foenum-graecum* Hance, J. Bot. 15: 355. 1877.

灵香草 ling xiang cao

Herbs perennial, 20–60 cm tall, curry-scented when dry. Stems ascending to erect from creeping base, herbaceous, angular or narrowly winged. Leaves alternate; upper leaves often 1–2 × as large as lower leaves; petiole 5–12 mm; leaf blade broadly ovate to elliptic, 4–11 × 2–6 cm, sparsely minutely brown glandular, base attenuate to broadly cuneate, margin obscurely undulate, apex acute to subobtuse and apiculate; veins 3 or 4 pairs; veinlets inconspicuous. Flowers solitary, axillary. Pedicel 2.5–4 cm. Calyx lobes ovate-lanceolate to lanceolate, 7–12 × 2.5–5 mm, ± minutely brown glandular, apex acuminate to subulate. Corolla yellow, 1.2–1.7 cm, 2–3.5 cm in diam., deeply parted; lobes oblong, 11–16 × 6–9 mm, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring, free parts very short; anthers 4–5 mm, basifixed, opening by apical pores. Capsule subglobose, 6–7 mm in diam. Fl. May.

* Wet mixed forests, streams in mountain valleys, humus-rich soils; 800–1700 m. N Guangdong, Guangxi, SW Hunan, SE Yunnan.

Used as a perfume.

30. *Lysimachia trichopoda* Franchet, J. Bot. (Morot) 9: 464. 1895.

蔓延香草 man yan xiang cao

Herbs perennial, 15–30 cm tall, not aromatic. Stems ascending to erect from creeping base, with raised lines descending from base of leaves, uppermost part ± minutely brown glandular. Leaves alternate, ± crowded toward apex of stem; upper leaves often 1–2 × as large as lower leaves; petiole 4–10 mm, narrowly winged by decurrent blade; leaf blade broadly ovate, 2.5–4.5 × 1.5–3 cm, glabrous or adaxially ± bristly, base rounded to truncate, rarely subcordate, margin obscurely undulate, apex acute to apiculate; veins 3 or 4 pairs; veinlets conspicuous abaxially. Flowers solitary, axillary. Pedicel 2–4.5 cm. Calyx lobes orbicular to lanceolate, 4–6 mm. Corolla yellow, 0.9–1.5 cm,

1.5–2 cm in diam., deeply parted; lobes narrowly oblong, 8–14 × 4–15 mm, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring, free parts very short; anthers 3.5–4 mm, basifixed, opening by apical pores. Capsule subglobose, ca. 4.5 mm in diam., indehiscent.

* Damp areas in open forests and ravines, mixed forests; 1200–2400 m. S Guizhou, S Sichuan, Yunnan.

- 1a. Calyx lobes ovate to rhomboid-ovate, apex acute 30a. var. *trichopoda*
1b. Calyx lobes lanceolate to ovate-lanceolate, apex acuminate 30b. var. *sarmentosa*

30a. *Lysimachia trichopoda* var. *trichopoda*

蔓延香草 (原变种) man yan xiang cao (yuan bian zhong)

Calyx lobes ovate to rhomboid-ovate, 3–4 mm, apex acute. Fl. May–Jun.

* Damp areas in open forests and ravines; 1200–1800 m. S Guizhou, S Sichuan, NE Yunnan.

30b. *Lysimachia trichopoda* var. *sarmentosa* (C. Y. Wu) F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 29. 1979.

长萼蔓延香草 chang e man yan xiang cao

Lysimachia sarmentosa C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 38. 1965.

Calyx lobes lanceolate to ovate-lanceolate, 6–8 mm, apex acuminate. Fl. May–Jun.

* Mixed forests; 1900–2400 m. SE Yunnan (Jinping Xian, Wenshan Xian).

31. *Lysimachia pseudotrichopoda* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 71. 1928.

鄂西香草 e xi xiang cao

Herbs perennial, 10–20 cm tall, aromatic when dry. Stems ascending to erect from creeping base, young parts minutely brownish glandular. Leaves alternate, ± crowded toward apex of stem; upper leaves often 2–3 × as large as lower leaves; petiole 4–10 mm; leaf blade broadly ovate to subrhomboid, 2.5–5 × 1–2.5 cm, glabrous, base short attenuate to subrounded or truncate, margin obscurely undulate, apex acute; veins 4 or 5 pairs; veinlets prominent abaxially. Flowers solitary, in axils of upper leaves. Pedicel 1.4–4 cm. Calyx lobes triangular-lanceolate to subulate, ca. 2.5 mm, sparsely glandular on margin. Corolla yellow, ca. 1.2 cm in diam., deeply parted; lobes narrowly oblong, 2–3 mm wide, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring, free parts ca. 1 mm; anthers ca. 2.5 mm, basifixed, opening by apical pores. Style 4–5 mm. Capsule globose, 4–5 mm in diam, indehiscent. Fl. May.

* Forests, grassy slopes; 1100–1400 m. W Hubei, E Sichuan.

32. *Lysimachia brachyandra* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 30. 1979.

短蕊香草 duan rui xiang cao

Herbs perennial, to 30 cm tall. Stems erect to arcuate at base, quadrangular or narrowly winged, usually branched from middle. Leaves alternate; petiole 0.8–2.5 cm, narrowly winged by decurrent blade; leaf blade lanceolate, 4–7 × 0.6–1.5 cm, abaxially glabrous, adaxially sparsely bristly or glabrate, minutely glandular, base attenuate, margin finely papillate, apex acuminate; veins 4 or 5 pairs; veinlets inconspicuous. Flowers solitary, axillary. Pedicel 2–2.5 cm, elongating to 3 cm in fruit. Calyx lobes narrowly ovate, ca. 4 mm, apex acuminate to subulate. Corolla yellow, deeply parted; lobes broadly elliptic, 3–5 mm, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring, free parts very short; anthers ca. 1.8 mm, basifixed, opening by apical pores. Style ca. 4 mm. Capsule subglobose, 3.5–4 mm in diam., ca. as long as persistent calyx. Fl. Jun–Jul.

* Grassy slopes, open forests; ca. 1200 m. SW Guizhou.

33. *Lysimachia grandiflora* (Franchet) Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 71. 1928.

大花香草 da hua xiang cao

Lysimachia ramosa Wallich ex Duby var. *grandiflora* Franchet, J. Bot. (Morot) 9: 464. 1895.

Herbs perennial, 18–35 cm tall. Stems erect, angular or short winged in upper part. Leaves alternate; petiole (1–)1.5–2.5 mm; leaf blade ovate-lanceolate, 4–7.5 × 1.5–2.5 cm, abaxially glabrous and glaucous, adaxially ± bristly, base cuneate to subrounded, apex acuminate; veins 4 or 5 pairs. Flowers solitary, in axils of upper leaves. Pedicel 2.5–4 cm, glabrous, apex ± thickened. Calyx lobes orbicular to slightly depressed, ca. 3.5 × 2.5 mm, apex apiculate; veins 6 or 7. Corolla 1–1.5 cm; tube ca. 3.5 mm; lobes oblong, ca. 5.5 mm wide, apex obtuse. Filaments connate basally into a ring, free parts ca. 1 mm; anthers 4.2–4.4 mm, basifixed, opening by apical pores. Capsule subglobose, 5.5–6 mm in diam., with many vertical striations.

* Forests. NE Yunnan.

Lysimachia grandiflora is known only from the type collection. The above description is based on the type specimen in Paris.

34. *Lysimachia laxa* Baudo, Ann. Sci. Nat. Bot., Sér. 2, 20: 347. 1843.

多枝香草 duo zhi xiang cao

Lysimachia ramosa Wallich ex Duby.

Herbs erect, to 60 cm tall, with numerous fibrous roots. Stems distinctly quadrangular, to 7 mm in diam., woody at base, usually many branched. Leaves alternate, subsessile or petiole to 1 cm; leaf blade lanceolate to elliptic-lanceolate, 3–11 × 0.5–2.8 cm, tapering to both ends, becoming yellowish brown when dry, abaxially glabrous, minutely brownish glandular, adaxially ± setulose; midvein and veins prominent; veinlets conspicuously reticulate. Flowers solitary, in axils of medial and upper leaves. Pedicel 2–4 cm. Calyx lobes ovate-elliptic, 3–4 mm, margin submembranous, often stalked glandular, apex acuminate; veins 7–9. Corolla yellow, 6–8 mm, deeply parted; tube ca. 2 mm; lobes elliptic-obovate, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring,

free parts ca. 2.3 mm, flattened; anthers 2.5–3 mm, basifixed, opening by lateral slits. Style ca. 3 mm. Capsule slightly depressed-globose, ca. 5 mm in diam., 5-valved to base.

Mixed forests; 1000–2100 m. S Yunnan [India, Indonesia (Java, Sumatra), Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

35. *Lysimachia cauliflora* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 43. 1965.

茎花香草 jing hua xiang cao

Herbs erect, to 40 cm tall. Stems obtusely quadrangular, ca. 8 mm in diam., woody, branched from middle. Branches slightly angular, minutely dull yellow glandular. Leaves alternate; petiole 1–2 cm; leaf blade elliptic, 6–15 × 2.5–6.3 cm, glabrous, base cuneate, margin entire, apex acute to short acuminate; veins 6–10 pairs, raised abaxially. Inflorescences racemose. Pedicel 2–2.5 cm in fruit, glandular. Calyx lobes narrowly ovate, ca. 4 × 2 mm, margin minutely glandular, apex acute. Fruit borne on naked lower part of branches. Capsule subglobose, ca. 5 mm in diam., 5-valved.

* Shaded forest areas, in shrubs. W Yunnan (Luxi Xian).

This species is known only from the type collection. *Lysimachia cauliflora* is in many ways similar to *Lysimachia laxa* from which it differs by having the flowers borne on naked branches that continue apically into leafy shoots.

36. *Lysimachia engleri* R. Knuth in Engler, *Pflanzenr.* IV. 237(Heft 22): 265. 1905.

思茅香草 si mao xiang cao

Herbs perennial, 15–180 cm tall or long. Stems single or few, erect to reclined, quadrangular, with short wings on ridges. Leaves opposite, subsessile or petiole to 8 mm; leaf blade elliptic to broadly ovate, 2–10 × 1.2–5 cm, finely papillate, abaxially densely minutely glandular, adaxially glabrous or ± bristly, base subrounded to broadly cuneate, margin obscurely undulate, apex acute; veins 5–7 pairs, raised abaxially. Flowers 1 or 2(–4), in axils of medial and upper leaves. Pedicel 2–3.5 cm. Calyx lobes ovate, ca. 6 × 1.8 mm, apex acuminate to subulate, costate. Corolla yellow, ca. 8 mm, deeply parted; lobes broadly obovate, ca. 7 × 5 mm, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring, free parts very short; anthers ca. 2.5 mm, basifixed, opening by short slits. Style ca. 4.7 mm. Capsule subglobose, ca. 4 mm in diam., shorter than calyx.

* In shrubs on mountain slopes, clearings at margins of mountain woodlands; 2200–2400 m. SW Sichuan, S, SW, and W Yunnan.

- 1a. Stems arcuately elongate, reclined,
50–180 cm; corolla ca. 1.5 × as
long as calyx 36a. var. *engleri*
1b. Stems erect or nearly so, 15–30 cm;
corolla ca. as long as to slightly
longer than calyx 36b. var. *glabra*

36a. *Lysimachia engleri* var. *engleri*

思茅香草(原变种) si mao xiang cao (yuan bian zhong)

Stems ascending, arcuately elongate in upper part, 0.5–1.8 m. Leaf blade 4–10 × 2.5–5 cm. Corolla ca. 1 cm, ca. 1.5 × as long as calyx. Fl. Apr–May.

* In shrubs on mountain slopes; 2200–2400 m. SW Sichuan, S and SW Yunnan.

36b. *Lysimachia engleri* var. *glabra* (Bonati) F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 30. 1979.

小思茅香草 xiao si mao xiang cao

Lysimachia deltoidea Wight var. *glabra* Bonati, Bull. Soc. Bot. France 56: 466. 1909; *L. plicata* Franchet ex R. Knuth.

Stems erect, not arcuately elongate, 15–30 cm. Leaf blade 2–4 × 1.2–2 cm. Corolla ca. 7 mm, ca. as long as to slightly longer than calyx. Fl. May.

* Clearings, margins of mountain woodlands; ca. 2400 m. N and W Yunnan.

37. *Lysimachia cordifolia* Handel-Mazzetti, *Notes Roy. Bot. Gard. Edinburgh* 16: 76. 1928.

心叶香草 xin ye xiang cao

Herbs perennial, 30–100 tall. Stems ascending to erect, arcuately elongate in upper part, distinctly quadrangular, with short wings or ridges. Leaves opposite; petiole 4–7 mm, narrowly winged by decurrent leaf blade; leaf blade ovate, 1–4 × 1.2–2.6 cm, abaxially glabrous, adaxially ± bristly, base cordate, margin densely papillate, apex short acuminate; veins 3–5 pairs, basal, prominent. Flowers solitary, axillary. Pedicel filiform, 2.5–4.3 cm. Calyx lobes ovate, 4–6.5 mm, stalked glandular on margin and inside, apex acuminate to subulate. Corolla yellow, ca. 6 mm, deeply parted; tube ca. 1.5 mm; lobes broadly ovate, 4–4.5 mm wide. Filaments connate basally into a ca. 0.8 mm high ring, free parts ca. 0.5 mm; anthers ca. 2.3 mm, basifixed, opening by short slits. Style ca. 4 mm. Capsule subglobose, ca. 4.5 mm in diam. Fl. Jun.

* Mixed woodlands, in shrubs; 2000–3000 m. W Yunnan.

38. *Lysimachia biflora* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 44. 1965.

双花香草 shuang hua xiang cao

Herbs perennial, 30–100 cm tall. Stems arcuately elongate from erect base, quadrangular, ± winged on ridges. Leaves opposite; petiole 0.7–2.5 cm, narrowly winged; leaf blade ovate to ovate-lanceolate, 4.5–8 × 2.5–5.5 cm, glabrescent or adaxially ± strigillose, minutely brown glandular, base cordate, margin obscurely undulate and densely papillate, apex acute; veins 4–6 pairs; veinlets obscure. Inflorescences in axils of leaves. Flowers usually paired. Pedicel arcuate-spreading, 1–2.5 cm, thickened toward apex. Calyx lobes ovate-lanceolate, ca. 6.5 mm, glandular on margin, costate. Corolla cream-yellow, ca. 7 mm, deeply parted; lobes broadly ovate, ca. 6 × 4 mm. Filaments connate basally into a ca. 1.3 mm high ring, free parts ca. 0.8 mm; anthers ca. 2 mm, basifixed, opening by short slits. Capsule

subglobose, 4–4.5 mm in diam., ca. as long as to shorter than calyx. Fl. Mar.

* Mixed woodlands, gullies; 1900–2200 m. W Guizhou, S Yunnan.

39. *Lysimachia albescens* Franchet, J. Bot. (Morot) 9: 460. 1895.

云南过路黄 yun nan guo lu huang

Lysimachia duclouxii Bonati; *L. yunnanensis* Franchet.

Herbs perennial, 25–30 cm tall. Stems ascending-erect to reclined, usually simple, with brown multicellular hairs. Lower leaves much smaller or scalelike. Upper leaves alternate or occasionally subopposite; petiole ca. 1/3 as long as leaf blade, villous; leaf blade ovate to elliptic-ovate, 2.2–3.2 × 1.5–1.8(–2.5) cm, pubescent, indistinctly short black glandular striate, base attenuate, apex acute; veins 2–4 pairs. Flowers solitary, axillary. Pedicel 5–7 mm, densely pubescent. Calyx lobes lanceolate, 4–5 × ca. 1.2 mm, costate, sparsely pubescent, short black glandular striate. Corolla yellow, 7–8 mm, deeply parted; lobes ovate, 6–7 × ca. 4.5 mm, densely black glandular striate, apex rounded. Filaments connate basally into a ca. 0.5 mm high ring, free parts ca. 0.6 mm; anthers triangular-ovate, indistinctly dorsifixed to nearly basifixed, opening by lateral slits, ca. 1.5 mm, erect. Ovary ovoid; style ca. 4 mm. Capsule subglobose, ca. as long as calyx. Fl. Jul.

* Dry grassy mountain slopes. C and N Yunnan.

40. *Lysimachia peduncularis* Wallich ex Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 46: 218. 1877.

假过路黄 jia guo lu huang

Herbs ?annual, 5–30 cm tall. Stems erect or arcuate at base, striate or weakly angular; branches usually few, above middle. Leaves spirally arranged, ± crowded toward apex of stem; petiole 5–10 mm; leaf blade lanceolate, 1.5–4.5 cm × 5–10 mm, strigillose adaxially and along midvein abaxially, base cuneate-attenuate, apex acute to short acuminate; veins 5–7 pairs; veinlets invisible. Flowers solitary, axillary, confined to upper part of plant. Pedicel 2.5–4.5 cm, glabrous. Calyx lobes oblong-lanceolate, 3–5 mm, short acuminate to acute. Corolla pale yellow, 3–4 mm, parted to middle; lobes elliptic, apex acute. Filaments connate basally into a ca. 0.5 mm high ring, free parts 1.5–2.5 mm; anthers indistinctly dorsifixed to nearly basifixed, opening by lateral slits, erect, ca. 0.5 mm. Capsule slightly shorter than calyx, 5-valved. Fl. Aug.

Open forests, on limestone rocks, roadsides. S Yunnan (Menglian Xian) [Cambodia, India, Malaysia, Myanmar, Thailand, Vietnam].

41. *Lysimachia vulgaris* Linnaeus, Sp. Pl. 1: 146. 1753.

毛黄连花 mao huang lian hua

Herbs perennial, 60–120 cm tall, with creeping rhizomes. Stems erect, terete or obtusely quadrangular, simple or paniculately branched, pubescent. Leaves opposite or whorled; petiole 2–10 mm; leaf blade oblong-lanceolate to ovate-lanceolate, 6–17 × 1–5 cm, abaxially glabrescent,

sparsely red or black glandular punctate, abaxially pubescent, base obtuse to subrounded, margin entire or obscurely repand, apex acuminate; veins to more than 10 pairs; veinlets prominent. Panicles terminal and axillary; peduncle 1.5–4.5 cm; bracts linear-subulate, 2–8 mm. Pedicel 3–12 mm. Calyx lobes lanceolate, 3.5–6 × 1–1.5 mm, margin black glandular striate and glandular ciliate. Corolla bright yellow, 8–11 mm, 1.5–2 cm in diam., deeply parted; lobes elliptic, 7–10 × 3.5–6 mm, adaxially densely glandular. Filaments connate basally into a ca. 1.5 mm high ring, free parts ca. 2.5 mm; anthers linear, dorsifixed, opening by lateral slits, ca. 3 mm. Ovary ovoid, style 4–5 mm. Capsule subglobose, 3–4 mm in diam. Fl. Jul–Aug. $2n = 28, 42, 56, 70, 84$ (85, 86).

Gullies, marshes; 500–700 m. W Xinjiang [Kashmir, Kazakstan, Pakistan, Russia; NW Africa, SW Asia, Europe, North America].

42. *Lysimachia davurica* Ledebour, Mém. Acad. Imp. Sci. St. Pétersbourg Hist. Acad. 5: 523. 1812.

黄连花 huang lian hua

Lysimachia vulgaris Linnaeus subsp. *davurica* (Ledebour) Tatewaki; *L. vulgaris* var. *davurica* (Ledebour) R. Knuth.

Herbs perennial, 40–80 cm tall, with creeping rhizomes. Stems erect, stout, simple or weakly branched, glabrous basally, viscid-pubescent apically. Leaves opposite or in whorls of 3 or 4, very short petiolate or sessile, elliptic-lanceolate to linear-lanceolate, 4–12 × 0.5–4 cm, abaxially glabrous except for glandular puberulent midvein, sparsely black glandular punctate, adaxially glabrescent, base obtuse to subrounded, apex acute to acuminate; veins usually more than 10 pairs; veinlets prominent. Panicles terminal and axillary; bracts linear, densely glandular puberulous. Pedicel 7–12 mm. Calyx lobes triangular, ca. 3.5 mm, margin black glandular striate. Corolla bright yellow, ca. 8 mm, deeply parted; lobes oblong, adaxially densely glandular, apex rounded. Filaments connate basally into a ca. 1.5 mm high ring, free parts 2–3 mm, densely glandular; anthers oblong-ovate, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary ovoid; style 4–5 mm. Capsule subglobose, 2–4 mm in diam. Fl. Jun–Aug. $2n = 24, 42$.

Mountain meadows, woodland margins, in shrubs. Heilongjiang, Jiangsu, Jilin, Liaoning, Nei Mongol, Shandong, Yunnan, Zhejiang [Japan, Korea, Mongolia, Russia].

43. *Lysimachia alpestris* Champion ex Bentham, Hooker's J. Bot. Kew Gard. Misc. 4: 299. 1852.

香港过路黄 xiang gang guo lu huang

Herbs perennial, 1–4 cm tall, with dense long coarse grayish hairs throughout. Stolons 4–15 cm, arising from leaf rosette, leafy at apex. Leaves numerous, spirally arranged, ± forming a rosette, subsessile, spatulate to narrowly oblanceolate, 3–6 × 0.6–1.5 cm, tapering toward base, apex rounded and mucronate. Flowers solitary, axillary. Pedicel ca. as long as to slightly longer than leaves. Calyx lobes lanceolate, 5–6 × ca. 2 mm, apex acute. Corolla yellow, deeply parted; tube 1–1.5 mm; lobes obovate-elliptic, 4–15 mm wide, apex rounded, erose. Filaments ca. 3 mm, lower 1/2

connate into a tube; anthers narrowly oblong, dorsifixed, opening by lateral slits, ca. 2 mm. Ovary ovoid; style slightly shorter than stamens. Capsule unknown. Fl. Apr.

* Wet areas in open forests; below 100 m. Guangdong (Xinhui Xian), Hong Kong.

44. *Lysimachia rupestris* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 40. 1979.

龙津过路黄 long jin guo lu huang

Herbs perennial, 2–5 cm tall, glabrous throughout. Stems copiously minutely glandular; stolons 6–17 cm, arising from leaf rosette, leafy at apex. Leaves spirally arranged, ± forming a rosette; petiole 1–2 cm, narrowly winged; leaf blade elliptic-ob lanceolate, 3–6.5 × 1.2–2.2 cm, minutely glandular, base long attenuate, margin narrowly revolute, apex acute to obtuse; veins 3 or 4 pairs, prominent abaxially; veinlets invisible. Flowers solitary, axillary. Pedicel 2.5–3 cm in fruit, glandular. Calyx enlarging to 7 mm in fruit; lobes broadly lanceolate, ca. 2.5 mm wide. Anthers dorsifixed, opening by lateral slits. Capsule subglobose, ca. 4 mm in diam.

* On limestone rocks in forests; 300–500 m. S Guangxi (Longzhou Xian).

45. *Lysimachia stellarioides* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 78. 1928.

茂汶过路黄 mao wen guo lu huang

Herbs perennial, to 10 cm tall, with numerous fibrous roots. Stems erect or arcuate at base, simple or weakly branched from lower part, rust-colored villous, minutely glandular. Lower leaves ± forming a rosette, usually smaller, abaxially with pilose midvein and veins, adaxially glabrous, base rounded, abruptly narrowed into a 2–3 mm petiole. Upper leaves opposite, medial 3 or 4 pairs equally spaced, sessile, ovate to broadly ovate, 0.9–1.5 cm × 5–11 mm. Flowers solitary, in axils of upper leaves. Pedicel filiform, 0.9–1.6 cm, pilose. Calyx lobes subulate-lanceolate, 4–5.5 × ca. 3.3 mm, margin densely papillate, apex long acuminate. Corolla yellow, rotate, 1.1–1.3 cm in diam., epunctate; lobes ovate-lanceolate. Filaments connate basally into a ring, free parts ca. 2 mm; anthers linear, dorsifixed, opening by lateral slits, ca. 2.5 mm. Ovary glabrous; style 4–5 mm. Capsule unknown. Fl. May.

* About 1300 m. W Sichuan (Maowen Qiang).

This is a rare species known only from the type collection.

46. *Lysimachia omeiensis* Hemsley, J. Linn. Soc., Bot. 29: 314. 1892.

娥眉过路黄 e mei guo lu huang

Lysimachia limprichtii Pax & K. Hoffmann; *L. moupinensis* (Franchet) R. Knuth; *L. nemorum* Linnaeus var. *moupinensis* Franchet.

Herbs perennial, 30–60 cm tall. Stems erect from procumbent base, terete, reddish brown, usually simple, with multicellular hairs. Leaves opposite, occasionally alternate in upper part of stem, sessile or subsessile. Lower leaves smaller, ovate to scalelike. Medial and upper leaves ovate-

lanceolate to lanceolate, 4–8 × 1–4 cm, initially sparsely bristly, abaxially sparsely reddish or black glandular punctate and puberulous veined, adaxially becoming glabrescent, base rounded, apex acuminate; veins 3 or 4 pairs; veinlets inconspicuous. Flowers solitary, axillary. Pedicel filiform, 1.5–7 cm, densely pubescent. Calyx lobes linear-lanceolate, 5–7 mm, pubescent, apex acuminate. Corolla yellow, rotate, 1.2–2 cm in diam.; tube ca. 1.5 mm; lobes ovate-elliptic to elliptic-lanceolate, 6–8 × 3.5–6 mm, sparsely red or brown glandular, apex acute. Filaments 3–4 mm, connate basally into a ring; anthers linear, dorsifixed, opening by lateral slits, ca. 2 mm. Ovary glabrous; style ca. 5 mm. Capsule subglobose, ca. 3 mm in diam. Fl. Jun.

* Clearings, at margins of mountain woodlands, mountain stream valleys; 1800–3500 m. W Sichuan, NE Yunnan.

47. *Lysimachia hypericoides* Hemsley, J. Linn. Soc., Bot. 29: 314. 1892.

巴山过路黄 ba shan guo lu huang

Herbs perennial, 15–30 cm tall. Stems obtusely quadrangular, usually branched above middle, densely brownish pubescent. Lower leaves suborbicular to scalelike, base clasping, apex obtuse. Upper leaves opposite, sessile, ovate-elliptic to oblong-lanceolate, 3–6 × 1–1.8 cm, minutely glandular punctate, initially bristly, becoming glabrescent, base rounded to broadly cuneate, apex subobtuse to acute; veins 4 or 5 pairs; veinlets inconspicuous. Flowers solitary, in axils of medial and upper leaves. Pedicel 5–10 mm. Calyx lobes lanceolate, ca. 5 × 1 mm, pubescent, costate. Corolla yellow, rotate, 1–1.5 cm in diam.; tube ca. 1 mm; lobes obovate-elliptic, ca. 5 × 3–4 mm, apex rounded. Filaments connate basally into a ca. 0.5 mm high ring, free parts ca. 2 mm; anthers linear, dorsifixed, opening by lateral slits, 1–1.5 mm. Ovary ovoid; style ca. 3 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

* Grassy mountain slopes; 1700–2200 m. N Guizhou, W Hubei, NE Hunan, E Sichuan.

48. *Lysimachia huitsumae* Chien, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 9: 28. 1933.

白花过路黄 bai hua guo lu huang

Herbs perennial, 6–15 cm tall. Stems erect or arcuate at base, terete, simple or weakly branched, retrosely appressed pubescent. Lower leaves scalelike, closely spaced. Upper leaves opposite or occasionally alternate near apex of stem; petioles of medial and upper leaves 2–4 mm, narrowly winged by decurrent leaf blade; leaf blade ovate to lanceolate, 0.5–2.0 cm × 4–9 mm, abaxially pubescent, sparsely transparent glandular, adaxially glabrous, base cuneate, apex obtuse to subacuminate. Flowers solitary, in axils of upper leaves. Pedicel recurved in fruit, 1.2–3 cm, pubescent. Calyx lobes lanceolate, 5–6 × 1–2 mm, densely transparent glandular punctate, midvein pubescent abaxially. Corolla white, rotate; tube ca. 1 mm; lobes ovate-elliptic to elliptic, 6–7 × 3–4 mm, sparsely transparent glandular, apex obtuse to rounded. Filaments connate basally into a ca. 1 mm high ring, free parts 2–2.5 mm; anthers dorsifixed, opening by lateral slits, ca. 2 mm.

Ovary pubescent at apex; style ca. 5 mm. Capsule unknown. Fl. Jun–Jul.

* Marshes, in damp rock crevices; 1500–1700 m. Anhui (Huang Shan), Guangxi (Xiangzhou Xian), Zhejiang (Longquan Xian).

49. *Lysimachia ophelioides* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 54. 1889.

琴叶过路黄 qin ye guo lu huang

Herbs perennial, 25–40 cm tall. Stems often many, erect, terete, branched above middle, densely puberulous. Leaves opposite, sessile, lanceolate to narrowly lanceolate, 1–6 cm × 4–13 mm, tapering toward auriculate semi-clasping base, abaxially with densely pubescent veins and scattered transparent glands, adaxially glabrous; veins 4 or 5 pairs; veinlets invisible. Flowers solitary, axillary, often with flowers aggregated near apex of branches in a corymblike cluster. Lowest pedicels to 8 mm, gradually reduced upward, pubescent. Calyx lobes lanceolate, 4–5 × ca. 2 mm, apex acuminate-subulate; midvein distinctly raised abaxially. Corolla yellow, 6–7 mm, deeply parted; tube 1–2 mm; lobes elliptic, sparsely transparent glandular. Filaments connate basally into a ring, free parts 2–4 mm; anthers dorsifixed, opening by lateral slits. Ovary glabrous; style ca. 5 mm. Capsule brown, subglobose, ca. 2.5 mm in diam. Fl. Jun.

* Grassy mountain slopes. W Hubei, E Sichuan.

50. *Lysimachia longipes* Hemsley, J. Linn. Soc., Bot. 29: 316. 1892.

长梗过路黄 chang geng guo lu huang

Lysimachia longipes Hemsley f. *simplicicaulis* Chien.

Herbs annual, erect, 35–75 cm tall, glabrous throughout. Stems straw-colored when dry, terete, often branched only in inflorescences. Leaves opposite, sessile or subsessile, ovate-lanceolate, 4–10 × 1.2–3.2 cm, sparsely dark purple or black glandular punctate and striate, especially near margin, base rounded, apex caudate-acuminate; veins 4 or 5 pairs; veinlets inconspicuous. Racemes terminal, laxly axillary, 4–11-flowered; peduncle 6–12 cm; bracts subulate, 3–5 mm. Pedicel filiform, 1–3 cm, usually divaricate. Calyx lobes lanceolate, 5–7 × 1.2–1.5 mm, dark glandular punctate, narrowly hyaline margined. Corolla yellow, 1.2–1.5 cm in diam.; tube 1.5–2 mm; lobes rhomboid-ovate to narrowly oblong, ca. 5 × 3–4 mm, sparsely dark purple glandular striate near apex, apex acute. Filaments connate basally into a 2–2.5 mm high ring, free parts 1.5–3.5 mm; anthers narrowly oblong, dorsifixed, opening by lateral slits, ca. 1.2 mm. Ovary ovoid; style 5–6 mm. Capsule subglobose, 3–3.5 mm in diam. Fl. May–Jun.

* Mountain stream valleys, open forests; 300–800 m. S Anhui, N Fujian, N Jiangxi, Zhejiang.

51. *Lysimachia fukienensis* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 62: 25. 1925.

福建过路黄 fu jian guo lu huang

Lysimachia rosthorniana Handel-Mazzetti.

Herbs glabrous, 20–80 cm tall. Stems 2 to many, erect, terete at base, upper part with raised lines descending from

bases of leaves, sparsely black glandular striate. Lowest leaves usually scalelike. Leaves alternate or subopposite on lower part of stem, occasionally in whorls of 3 or 4, sessile or subsessile, lanceolate to narrowly lanceolate, 4–14 × 0.9–2.3 cm, densely black glandular punctate and striate, base cuneate to subrounded, apex long acuminate; veins ca. 5 pairs. Flowers solitary, in axils of upper leaves, rarely aggregated at apex, racemose from reduction of upper leaves to bractlike leaves; bracts inserted on rachis. Pedicel 1.5–5 cm. Calyx lobes narrowly lanceolate, 7–11 × 1–2 mm, black glandular punctate, narrowly hyaline margined; veins 3–5. Corolla yellow, ca. 1 cm; tube 3–5 mm; lobes broadly ovate, ca. 5 mm wide, black glandular striate. Filaments connate basally into a ca. 2.5 mm high tube, free parts 2.5–4 mm; anthers oblong, dorsifixed, opening by lateral slits, 1.2–2 mm. Ovary ovoid; style 6–7 mm. Capsule subglobose, 3.5–5 mm in diam., elongate, black glandular. Fl. May.

* At margins of mountain woodlands, grassy slopes, mountain stream valleys; 500–1000 m. W Fujian, NE Guangdong, E and S Jiangxi, S Zhejiang.

52. *Lysimachia rubinervis* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 32. 1979.

紫脉过路黄 zi mai guo lu huang

Herbs perennial, to 45 cm tall, glabrous throughout. Stems erect, often branched above middle, sparsely black glandular punctate and striate. Branches usually shorter than leaves, leafy only at apex. Leaves opposite, sessile or petiole 2–4 mm; leaf blade lanceolate, 6–8 × 1.5–2.2 cm, densely dark glandular punctate, especially near margin, base cuneate, margin entire or obscurely repand, apex acuminate; midvein reddish, keeled abaxially; veins 5 or 6 pairs, prominent. Racemes terminal, compact, 4- to many flowered; peduncle 0.5–1.5 cm, glandular; bracts ovate, ca. 9 mm, adnate to upper part of pedicel. Pedicel 2–4 mm, glandular. Calyx lobes lanceolate, ca. 9 × 15 mm, black glandular punctate near apex, apex acuminate-subulate. Corolla yellow; tube 1.5–2 mm; lobes elliptic, 8–8.5 × ca. 5 mm, black glandular striate, apex obtuse. Filaments connate basally into a ca. 2.5 mm high tube, free parts 3–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.7 mm. Ovary glabrous, black glandular punctate; style ca. 6.5 mm. Capsule unknown. Fl. Jun.

* Forest margins, streamsides. SE Zhejiang.

53. *Lysimachia otophora* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 46. 1965.

耳柄过路黄 er bing guo lu huang

Herbs perennial, 20–60 cm tall, rust-colored strigillose throughout. Stems erect, nearly terete in lower part, obtusely quadrangular in upper part, simple or weakly branched. Leaves opposite; petiole 1–3 cm, auriculate and semi-clasping at base; leaf blade elliptic-ovate, 3–7.5 × 1.5–4 cm, base broadly cuneate to subrounded, apex acute; veins 4–6 pairs, slightly raised abaxially; veinlets invisible. Racemes axillary, 4–10-flowered; peduncle 1–4 cm; bracts narrowly lanceolate, 5–8 mm, ± adnate to base of pedicel. Pedicel 2–5

mm. Calyx lobes lanceolate, 5–7.5 × ca. 1.5 mm, costate. Corolla yellow, slightly longer than calyx; tube ca. 1 mm; lobes 6–8 × 3–4 mm, sparsely transparent glandular, apex acute. Filaments connate basally into a 2–2.5 mm high tube, free parts 2–3.5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary sparsely strigillose; style 4–5 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

Mountain valleys, streamsides; 600–1700 m. W Guangxi, SE Yunnan [N Vietnam].

54. *Lysimachia nanchuanensis* C. Y. Wu ex F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 32. 1979.

南川过路黄 *nan chuan guo lu huang*

Herbs perennial, 25–40 cm tall. Stems purplish, procumbent, usually simple; upper part erect, subterete, slightly swollen at nodes, glabrous, young parts densely minutely brown glandular. Leaves opposite; petiole 1.3–2 cm, narrowly winged, base auriculate; leaf blade ovate to ovate-lanceolate, 4–9.5 × 2–4 cm, abaxially subglabrous, adaxially densely bristly, becoming glabrescent, base subrounded, apex acuminate; veins bristly, minutely red glandular punctate, 6–9 pairs; veinlets inconspicuous. Racemes axillary, lax, corymbiform, 2–4-flowered; peduncle 1–4 cm; bracts subulate, 4–7 mm. Pedicel 0.8–2 cm, sparsely glandular. Calyx lobes lanceolate, 7–9 mm, glabrous, densely red glandular punctate, midvein distinctly raised abaxially. Corolla yellow, 8–10(–13) mm; tube ca. 1.7 mm; lobes elliptic, red glandular punctate, apex rounded. Filaments connate basally into a ca. 2.5 mm high tube, free parts 2.5–4.5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary glabrous; style to 6 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Jul–Aug.

* Woodlands; 1600–1900 m. Sichuan (Nanchuan Xian).

55. *Lysimachia perfoliata* Handel-Mazzetti, Oesterr. Bot. Z. 88: 305. 1939.

贯叶过路黄 *guan ye guo lu huang*

Herbs perennial, 20–40 cm tall. Stems erect, dull brownish red at base, branched above middle, initially strigillose. Leaves opposite, connate-perfoliate, lanceolate, occasionally ovate on upper part of stem, 2–7.5 × 0.6–2 cm, contracted at lower part and then dilated and connate with opposite leaf base, densely strigillose and transparent glandular punctate; midvein raised abaxially, pilose; veins 3 or 4 pairs. Flowers solitary, in axils of upper leaves. Lowest pedicels recurved in fruit, to 2.5 cm, gradually reduced upward, densely strigillose. Calyx lobes lanceolate, ca. 6 mm, enlarging to 1 cm in fruit, densely strigillose, abaxially transparent glandular punctate. Corolla yellow, slightly longer than calyx, deeply parted; tube 1.5–2 mm; lobes broadly ovate, apex obtuse. Filaments connate basally into a 2–2.5 mm high tube, free parts 4–4.5 mm; anthers dorsifixed, opening by lateral slits. Ovary ovoid; style ca. as long as stamens. Capsule brown, subglobose, 4–5 mm in diam., sparsely strigillose on upper part.

* Mountain valleys, woodlands; 900–1100 m. S Anhui, N Jiangxi.

56. *Lysimachia melampyroides* R. Knuth in Engler, Pflanzenr. IV. 237(Heft 22): 284. 1905.

山萝过路黄 *shan luo guo lu huang*

Herbs perennial, (5–)15–50 cm tall, densely strigillose. Stems erect or ascending, terete, often branched. Leaves opposite, short petiolate or sessile, ovate to linear-lanceolate, 1.5–9 × 0.3–2.5 cm, sparsely transparent glandular, base cuneate, apex acuminate, rarely acute to subobtusate; veins 4 or 5 pairs; veinlets inconspicuous. Flowers solitary, in axils of upper leaves, occasionally flowers ± aggregated toward apex, racemose from reduction of upper leaves to bractlike leaves. Lowest pedicels recurved in fruit, to 2 cm, gradually reduced to 4–7 mm. Calyx lobes lanceolate, 6–8 × 1–1.5 mm, transparent glandular punctate, apex acuminate-subulate, costate. Corolla yellow, 5–9 mm; tube 1–2 mm; lobes obovate-elliptic, apex rounded. Filaments connate basally into a ring or thin tube, free parts 3–5 mm; anthers dorsifixed, opening by lateral slits. Style ca. 6 mm, rust-colored pubescent on lower part and ovary apex. Capsule brown, subglobose, 3–4 mm in diam.

* Forest margins, streamsides, in shrubs, grassy mountain slopes, cliffs; 400–1200 m. SE Gansu, NE Guangxi, NE Guizhou, SW Hubei, Hunan, SW Shanxi, Sichuan.

- 1a. Leaf blade 15–25 × 3–6 mm;
flowers 5–6 mm 56c. var. *brunnelloides*
- 1b. Leaf blade 30–90 × 5–25 mm;
flowers 7–9 mm.
 - 2a. Leaves petiolate 56a. var. *melampyroides*
 - 2b. Leaves sessile, clasping
at base 56b. var. *amplexicaulis*

56a. *Lysimachia melampyroides* var. *melampyroides*

山萝过路黄(原变种) *shan luo guo lu huang* (yuan bian zhong)

Plants 15–50 cm tall. Petiole 2–10 mm, ± dilated and auriculate at base; leaf blade ovate-lanceolate to narrowly lanceolate, 3–9 × 0.5–2.5 cm. Corolla 7–9 mm; tube 1–2 mm; lobes obovate-elliptic, 6–7 × 4–6 mm, apex obtuse. Fl. May–Jun.

* Forest margins, in shrubs; 700–1200 m. NE Guangxi, NE Guizhou, SW Hubei, Hunan, E Sichuan.

56b. *Lysimachia melampyroides* var. *amplexicaulis* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 33. 1979.

抱茎山萝过路黄 *bao jing shan luo guo lu huang*

Plants to 48 cm tall. Leaves sessile, clasping at base, 4–7 × 1–2.5 cm. Corolla 7–9 mm; tube ca. 2 mm; lobes rhomboid-ovate, ca. 6 mm wide, apex acute. Fl. Jun.

* Streamsides, in shrubs; ca. 1000 m. NE Guangxi, W Hunan.

56c. *Lysimachia melampyroides* var. *brunnelloides* (Pax & K. Hoffmann) F. H. Chen & C. M. Hu, Acta. Phytotax. Sin. 17(4): 33. 1979.

小山萝过路黄 *xiao shan luo guo lu huang*

Lysimachia brunnelloides Pax & K. Hoffmann, Repert. Spec. Nov. Regni Veg. 17: 194. 1921; *L. deltoidea* Wight var. *brunnelloides* (Pax & K. Hoffmann) Handel-Mazzetti.

Plants 5–20 cm tall. Petiole 2–4 mm; leaf blade lanceolate to linear-lanceolate, 1.5–2.5 cm × 3–6 mm. Corolla 5–6 mm; tube ca. 1 mm; lobes obovate-elliptic, ca. 4 mm wide. Fl. May–Jun.

* Grassy mountain slopes, cliffs; 400–900 m. SE Gansu, SW Shanxi, N Sichuan.

57. *Lysimachia brittenii* R. Knuth in Engler, Pflanzenr. IV. 237 (Heft 22): 306. 1905.

展枝过路黄 zhan zhi guo lu huang

Herbs perennial, 60–100 cm tall. Stems erect, usually purplish on lower part, subterete, branched at middle, sparsely pubescent, becoming glabrescent. Branches divaricate. Leaves opposite; petiole (0.5–)1–2 cm, narrowly winged, base subauriculate and clasping; leaf blade lanceolate to oblong-lanceolate, 6–12 × 1.5–3.5 cm, abaxially with sparsely pubescent veins, adaxially glabrous, base cuneate, decurrent, apex caudate-acuminate. Umbels terminal, 6- to many flowered. Pedicel 1–1.5 cm, sparsely pubescent, glandular. Calyx 6–7 mm in fruit, parted nearly to base; lobes lanceolate, ca. 1.5 mm wide, apex acuminate-subulate; midvein raised abaxially. Anthers dorsifixed, opening by lateral slits. Capsule subglobose, 3.5–4 mm in diam.

* Grassy mountain slopes, mountain stream valleys. W Hubei, NE Hunan.

58. *Lysimachia deltoidea* Wight var. *cinerascens* Franchet, J. Bot. (Morot) 9: 461. 1895.

小寸金黄 xiao cun jin huang

Lysimachia leveillei Petitmengin.

Herbs perennial, 4–25 cm tall, with numerous stout stringy roots. Stems often many, erect or ascending-erect, simple or branched from base, with dense multicellular hairs. Lower leaves 1 or 2 pairs, scalelike. Upper leaves opposite or alternate; petiole 2–3 mm or subsessile; leaf blade elliptic to suborbicular, 1–2.5 × 0.8–1.8 cm, with multicellular hairs, base cuneate to subrounded, apex subrounded, rarely acute. Flowers solitary, in axils of upper leaves. Pedicel ascending-erect, recurved in fruit, 1–2.5 cm, usually ca. as long as subtending leaves. Calyx lobes lanceolate, 4–5 mm, abaxially pubescent, apex acuminate. Corolla yellow, deeply parted, 5–7.5 mm; tube ca. 1 mm; lobes obovate-elliptic, 4–5 mm wide, transparent glandular, apex rounded. Filaments connate basally into a ca. 1 mm high ring, free parts ca. 2 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary glabrous; style ca. 3.5 mm. Capsule subglobose, ca. 3 mm in diam. Fl. Jun–Aug.

Grassy mountain slopes, under shrubs, in rock crevices; 1000–3000 m. W Guangxi, Guizhou, Sichuan, Yunnan [Laos, Myanmar, Thailand, Vietnam].

Variety *deltoidea* is native to NE India and Sri Lanka.

59. *Lysimachia remota* Petitmengin, Monde Pl. 9: 30. 1907.

疏节过路黄 shu jie guo lu huang

Herbs perennial, 10–30 cm tall. Stems terete, erect or ascending-erect, often branched in upper part, with grayish brown tangled hairs. Leaves opposite; petiole 3–7 mm, narrowly winged. Lower leaves broadly ovate to suborbicular, smaller. Upper leaves broadly ovate to ovate-elliptic, 1.5–3.2 × 0.7–2 cm, sparsely transparent glandular punctate and pubescent, base broadly cuneate to subrounded, apex acute to obtuse. Flowers solitary, in axils of upper leaves, or capitate with flowers aggregated near apex of stems. Pedicel 0.7–1.7 cm. Calyx lobes lanceolate, 4–7.5 × ca. 1.5 mm, abaxially pilose, transparent glandular punctate. Corolla yellow, 5–8 mm, 1–1.5 cm in diam.; tube ca. 1.5 mm; lobes obovate, 4–6 mm wide, erose near rounded apex. Filaments connate basally into a 0.5–1 mm high ring, free parts 1.5–2.5 mm; anthers ovate-oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary puberulous; style ca. 3 mm. Capsule brown, subglobose, ca. 4 mm in diam.

* Grassy banks, in shaded rock crevices, forest margins; 1000–1400 m. Fujian, S Jiangsu, Jiangxi, Taiwan, Zhejiang.

1a. Leaves pilose; flowers not crowded;

pedicel 7–17 mm 59a. var. *remota*

1b. Leaves strigillose; flowers crowded;

pedicel 2–4 mm 59b. var. *lushanensis*

59a. *Lysimachia remota* var. *remota*

疏节过路黄(原变种) shu jie guo lu huang (yuan bian zhong)

Lysimachia cephalantha R. Knuth; *L. deltoidea* Wight var. *typica* R. Knuth; *L. formosana* Honda.

Leaves pilose. Pedicel recurved in fruit, 0.7–1.7 cm. Flowers solitary, in axils of upper leaves. Calyx 6–7.5 mm. Corolla 7–8 mm. Fl. Apr–Jul.

* Grassy banks, in shaded rock crevices. Fujian, S Jiangsu, Jiangxi, Taiwan, Zhejiang.

59b. *Lysimachia remota* var. *lushanensis* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 34. 1979.

庐山疏节过路黄 lu shan shu jie guo lu huang

Leaves strigillose. Inflorescences capitate with crowded flowers near apex of stems and branches. Pedicel erect, 2–4 mm. Calyx ca. 4 mm. Corolla ca. 5 mm. Fl. Jun–Jul.

* Grassy banks, forest margins; 1000–1400 m. N Jiangxi.

60. *Lysimachia japonica* Thunberg, Fl. Jap. 83. 1784.

小茄 xiao jia

Herbs perennial. Stems prostrate to decumbent, 7–15 (–30) cm, usually branched from base, with grayish multicellular hairs. Leaves opposite; petiole 2–5 (–10) mm, narrowly winged; leaf blade broadly ovate to suborbicular, 1–2.5 × 0.7–2 cm, pubescent, transparent glandular punctate, base rounded to subtruncate, apex acute to obtuse; veins 2 or 3 pairs; veinlets inconspicuous. Flowers solitary, axillary. Pedicel recurved in fruit, 3–8 mm. Calyx lobes lanceolate, 3–4 mm, enlarged to 7–8 mm in fruit, pubescent. Corolla

yellow, deeply parted, ca. as long as calyx, 5–8 mm in diam.; lobes triangular-ovate, transparent glandular punctate. Filaments connate basally into a ca. 1 mm high ring, free parts 1–2 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary pubescent; style 2–3 mm. Capsule subglobose, 3–4 mm in diam., pubescent at apex. Fl. Mar–Apr. $2n = 18, 20, 22$.

Grassy banks, ditches, streambanks; 500–800 m. Hainan, Jiangsu, Taiwan, Zhejiang [Bhutan, India (Darjeeling), Indonesia, Japan, Kashmir, Korea].

61. *Lysimachia hemsleyi* Franchet, J. Bot. (Morot) 9: 461. 1895.

叶苞过路黄 ye bao guo lu huang

Lysimachia ambigua C. Y. Wu; *L. bracteata* Forrest; *L. franchetii* R. Knuth; *L. longisepala* Forrest; *L. ovalifolia* Pax & K. Hoffmann; *L. petitmenginii* Bonati.

Herbs perennial, 20–50 cm tall. Stems erect or arcuate at base, terete or obscurely quadrangular in upper part, simple or weakly branched, fulvous pilose. Lowest 1 or 2 pairs of leaves smaller or scalelike. Leaves opposite, occasionally alternate on upper part of stem; petiole 0.5–2 cm, narrowly winged; leaf blade ovate-lanceolate, rarely ovate, 3–7 × 1–3 cm, abaxially sparsely pubescent or glabrescent except on villous veins, minutely glandular punctate, adaxially strigillose, base cuneate-attenuate, rarely subrounded, apex acute to short acuminate. Lowest pedicels ascending in fruit, to 3 cm, gradually reduced upward. Flowers solitary, in axils of apically diminishing leaves, racemose. Calyx lobes lanceolate, 6–8 × 1.2–2 mm, pubescent. Corolla yellow; tube ca. 4 mm; lobes obovate-oblong, 6–8 × 5–6 mm, transparent glandular, apex rounded. Filaments connate basally into a ca. 3 mm high tube, free parts 2–3 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary and lower part of style pubescent; style 5–6 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Jul–Aug.

* Mountain slopes, under shrubs, grassy banks; 1600–2600 m. W Guizhou, SW Sichuan, C and N Yunnan.

62. *Lysimachia pseudohenryi* Pampanini, Nuovo Giorn. Bot. Ital., n.s. 17: 686. 1910.

疏头过路黄 shu tou guo lu huang

Lysimachia argentata L. H. Bailey; *L. sutchuenensis* Bonati.

Herbs perennial, 7–25(–45) cm tall. Stems erect or arcuate at base, terete or slightly angulate, simple or short branched in upper part, with multicellular hairs. Leaves opposite, upper 2 or 3 pairs usually ± crowded; petiole 3–12 mm, narrowly winged. Lower leaves rhomboid-ovate to ovate, much smaller. Upper leaves ovate, rarely ovate-lanceolate, 2–8 × 0.8–2.5 cm, densely strigillose and sparsely transparent glandular, base subrounded to broadly cuneate, apex acute to subobtusate; veins 2 or 3 pairs; veinlets inconspicuous. Racemes terminal, abbreviated, often nearly capitate. Pedicel recurved in fruit, 4–10(–18) mm. Calyx lobes lanceolate, 8–11 × 1–1.5 mm, abaxially pubescent,

costate. Corolla yellow; tube 3–4 mm; lobes narrowly elliptic to obovate-elliptic, 7–11 × 5–6 mm, transparent glandular, apex acute to obtuse. Filaments connate basally into a 2–3 mm high tube, free parts 3–5 mm; anthers dorsifixed, opening by lateral slits. Ovary and lower part of style pubescent; style 5–6 mm. Capsule subglobose, 3–3.5 mm in diam. Fl. May–Jun.

* Woodland margins, under shrubs; 500–1500 m. Anhui, N Guangdong, Henan, Hubei, Hunan, Jiangxi, S Shaanxi, E Sichuan, Zhejiang.

This species is widely distributed and variable in the size of individuals and the density of inflorescences. Robust plants are very similar to *Lysimachia hemsleyi*; however, their distributions and flowering times are different.

63. *Lysimachia erosipetala* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 34. 1979.

尖瓣过路黄 jian ban guo lu huang

Herbs perennial, 25–60 cm tall. Stems erect, terete and sparsely pilose in upper part, usually simple. Leaves opposite; petiole 0.7–1.5 cm, narrowly winged, densely strigillose; leaf blade ovate to ovate-lanceolate, 4–8.5 × 1.8–3.5 cm, sparsely strigillose and densely red or dark glandular punctate, base subrounded to short attenuate, apex acuminate; veins 4 or 5 pairs; veinlets inconspicuous. Lowermost 1 or 2 pairs of leaves smaller, elliptic to obovate. Flowers solitary, in axils of apically diminished leaves, racemose. Pedicel densely rust-colored pubescent; lowest pedicels 1.5–3 cm, gradually reduced upward, recurved in fruit. Calyx lobes lanceolate, 6.5–9 × ca. 1.5 mm, abaxially sparsely pubescent, reddish glandular punctate, especially near margin, costate. Corolla yellow; tube ca. 3 mm; lobes rhomboid-ovate, 7–8 cm, red glandular, margin erose, apex acute to caudate-acuminate. Filaments connate basally into a tube ca. 3 mm high, free parts ca. 3.5 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1.2 mm. Ovary pubescent apically. Style ca. 6.7 mm. Capsule subglobose, sparsely puberulent, ca. 3.5 mm in diam. Fl. Jul.

* Woodland margins, under shrubs; 1900–2300 m. W Sichuan.

64. *Lysimachia grammica* Hance, Ann. Sci. Nat. Bot., Sér. 5, 5: 225. 1866.

金瓜儿 jin zhao er

Lysimachia grammica var. *major* Pampanini; *L. nigro-lineata* Hemsley.

Herbs perennial, 13–35 cm tall. Stems arcuate, erect, simple or branched, with black glandular stripes and tangled multicellular hairs. Leaves opposite on lower part, alternate on upper; petiole 4–15 mm, narrowly winged; leaf blade ovate to rhomboid-ovate, 1.3–3.5 × 0.8–2.5 cm, pilose, black glandular striate, base rounded, truncate to short attenuate, apex acute to subobtusate. Flowers solitary, in axils of upper leaves. Pedicel recurved in fruit, 1–3 cm, densely pubescent. Calyx lobes ovate-lanceolate, ca. 7 mm, ciliate, sparsely pubescent, blackish glandular striate, apex long acuminate. Corolla yellow; tube 0.5–1 mm; lobes ovate or rhomboid-

ovate, 5–8 × 3–5 mm, brown glandular striate. Filaments connate basally into a ring ca. 0.5 mm high, free parts 1.5–2.5 mm; anthers dorsifixed, opening by lateral slits. Ovary pubescent. Style ca. 4.5 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Apr–May.

* Shaded damp areas in open forests, roadsides. Anhui, Henan, Hubei, Jiangsu, Jiangxi, S Shaanxi, Zhejiang.

65. *Lysimachia paridiformis* Franchet, Bull. Mens. Soc. Linn. Paris 1: 433. 1884.

落地梅 *luo di mei*

Herbs perennial, 10–45 cm tall. Rootstock with numerous fibrous roots. Stems erect, slightly swollen at nodes, simple, glabrous. Lower leaves scalelike; upper leaves 4–18, in a terminal whorl, rarely with a second whorl, sessile or subsessile; leaflike ovate to elliptic or lanceolate, 5–17 × 1.2–10 cm, papery, glabrous, with or without black glandular stripes, base cuneate, apex short acuminate; veins 4 or 5 pairs. Umbels terminal, sessile, 6- to many flowered, rarely with few flowers in axils of scalelike leaf pair immediately below the terminal whorl. Pedicel 3–15 mm, glabrous. Calyx lobes lanceolate, glabrous or sparsely ciliate, occasionally black glandular striate, apex acuminate. Corolla yellow; tube ca. 3 mm; lobes oblong, 0.9–1.1 cm × 4–4.5 mm, with or without black glandular stripes, apex obtuse to rounded. Filaments connate basally into a tube ca. 2 mm high, free parts 3–5 mm; anthers elliptic, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary glabrous. Style ca. 8.5 mm. Capsule unknown.

* Damp areas in forests, mountain valleys, wet ravines; 500–1400 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan.

- 1a. Leaves 4(–6) in a whorl, broadly obovate to elliptic 65a. var. *paridiformis*
1b. Leaves 6 to many in a whorl, narrowly elliptic to lanceolate 65b. var. *stenophylla*

65a. *Lysimachia paridiformis* var. *paridiformis*

落地梅(原变种) *luo di mei* (*yuan bian zhong*)

Lysimachia bodinieri Petitmengin; *L. paridiformis* Franchet var. *elliptica* Franchet.

Leaves 4(–6) in a terminal whorl; leaf blade broadly obovate to elliptic, 5–17 × 3–10 cm. Corolla 1.2–1.4 cm, rarely glandular striate. Fl. May–Jun.

* Damp areas in forests, mountain valleys; 500–1400 m. Guizhou, Hubei, Hunan, Sichuan.

65b. *Lysimachia paridiformis* var. *stenophylla* Franchet, Bull. Mens. Soc. Linn. Paris 1: 433. 1884.

狭叶落地梅 *xia ye luo di mei*

Lysimachia trientaloides Hemsley.

Leaves 6 to many in a terminal whorl; leaf blade narrowly elliptic to broadly lanceolate or linear-lanceolate, 4–16 × 1.2–5 cm. Corolla 1.3–1.7 cm, usually black glandular striate. Fl. May–Jun.

* Damp areas in forests, wet ravines. Guangdong, Guangxi, Guizhou, Hunan, Sichuan, Yunnan.

66. *Lysimachia sciadantha* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 53. 1965.

伞花落地梅 *san hua luo di mei*

Herbs perennial, 30–40 cm tall, glabrous except for stems. Stems erect, simple, sparsely rust-colored pilose or glabrescent. Lower leaves scalelike, ovate-lanceolate, ca. 15 × 7 mm, base clasping; upper leaves 4 in a terminal whorl; petiole 5–7 mm; leaf blade elliptic, 10–14 × 6–7.5 cm, papery, glabrous, with slightly raised scattered transparent glandular stripes, base broadly cuneate, apex acute to short acuminate. Umbels terminal, rarely in axils of scalelike leaves immediately below terminal whorl, 3–9-flowered, pedunculate; peduncle 1.8–6 cm, glabrous; bracts lanceolate, 6–12 × 1–3 mm. Pedicel 1.2–2.5 cm. Calyx lobes broadly ovate, ca. 3.5 mm in fruit, margin glandular, apex apiculate. Anthers dorsifixed, opening by lateral slits. Capsule ca. 2.5 mm in diam.

* Shaded areas on mountain slopes, under shrubs. N Guizhou (Xishui Xian).

67. *Lysimachia klattiana* Hance, J. Bot. 16: 236. 1878.

轮叶过路黄 *lun ye guo lu huang*

Herbs perennial, 15–45 cm tall. Stems erect, subterete, usually simple, with dense rust-colored multicellular hairs. Leaves 6 to many per terminal whorl, 3 or 4 per whorl or opposite at lower nodes, rarely alternate, sessile or subsessile, leaf blade lanceolate to narrowly lanceolate, 2–5.5(–11) × 0.5–1.2(–2.5) cm, with multicellular hairs, base cuneate, apex acuminate to subobtusate. Umbels terminal, rarely with flowers in axils of lower leaves. Pedicel recurved in fruit, 7–12 mm, sparsely pubescent. Calyx 9–10 mm; lobes lanceolate, abaxially sparsely pubescent, apex acuminate-subulate, costate. Corolla yellow, 1.1–1.2 cm; tube 2.5–3 mm; lobes narrowly elliptic, ca. 5 mm wide, brown or black glandular striate, apex obtuse. Filaments connate basally into a tube ca. 2.5 mm high, free parts 2–3 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style ca. 5 mm. Capsule subglobose, 3–4 mm in diam. Fl. May–Jul.

* Open forests, forest margins, shaded areas on mountain slopes. Anhui, Henan, Hubei, Jiangsu, Jiangxi, Shandong, Zhejiang.

68. *Lysimachia henryi* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 52. 1889.

宜昌过路黄 *yi chang guo lu huang*

Herbs perennial, 8–30 cm tall. Stems erect or sometimes prostrate, terete, simple or branched, rust-colored pilose. Leaves opposite, uppermost 2 or 3 pairs crowded; petiole 4–10 mm; leaf blade lanceolate to ovate-lanceolate, rarely ovate-elliptic, 1–4.5 × 0.5–1.6 cm, papery, glabrous, pilose or bristly, with many irregularly scattered glandular dots becoming slightly raised when dry, base cuneate-attenuate, rarely broadly cuneate, apex acute to subobtusate. Inflorescences terminal, in capitate clusters. Pedicel 1–4 mm, pilose. Calyx lobes lanceolate, ca. 8 mm, glabrous or sparsely pubescent near base, densely transparent glandular punctate,

apex acuminate. Corolla yellow; tube 3–4.5 mm; lobes ovate-elliptic, 7.5–9 × 4–6 mm, apex rounded. Filaments connate basally into a tube ca. 3 mm high, free parts 3–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary pubescent. Style 5–6 mm. Capsule subglobose, ca. 3 mm in diam., sparsely pubescent. Fl. May–Jul.

* Rock crevices along rivers, thin soil on rocky outcrops of forested slopes; 300–1600 m. NE Guizhou, W Hubei, E Sichuan, NE Yunnan.

- 1a. Leaves glabrous or pilose on midvein abaxially 68a. var. *henryi*
1b. Leaves ± minutely setulose on both surfaces 68b. var. *guizhouensis*

68a. *Lysimachia henryi* var. *henryi*

宜昌过路黄(原变种) *yi chang guo lu huang* (yuan bian zhong)

Lysimachia iteophylla C. Y. Wu; *L. klattiana* Hance var. *pseudoklattiana* Bonati.

Leaves glabrous or pilose along midvein abaxially, glabrous adaxially. Fl. Jun–Jul.

* Rock crevices along the Chang Jiang; 300–1600 m. W Hubei, E Sichuan, NE Yunnan.

68b. *Lysimachia henryi* var. *guizhouensis* C. M. Hu, Novon 4: 103. 1994.

贵州宜昌过路黄 *gui zhou yi chang guo lu huang*

Leaves sparsely or scarcely setulose abaxially, sparsely setulose adaxially. Fl. Jul.

* Thin soil on rocky outcrops of forested slopes, moss-covered crevices along rivers; 700–1100 m. NE Guizhou (Jiangkou Xian).

69. *Lysimachia esquirolii* Bonati, Bull. Soc. Bot. Genève 5: 302. 1913.

贵州过路黄 *gui zhou guo lu huang*

Herbs perennial, 20–35 cm tall. Stems erect or arcuate at base, slightly angulate, usually simple, with multicellular hairs. Leaves opposite, usually 3 or 4 pairs on upper part of stem; petiole 2.5–4 cm, narrowly winged, pilose; leaf blade ovate, 4–7.5 × 1.5–4 cm, abaxially glabrescent except for minutely bristly veins, sparsely transparent glandular, adaxially sparsely bristly, base broadly cuneate to subrounded, apex acute; veins 4 or 5 pairs, veinlets inconspicuous. Inflorescences terminal, capitate, 5- or 6-flowered. Pedicel 1–2 mm, densely pubescent. Calyx lobes lanceolate, 9–10 × ca. 1.5 mm, with sparse multicellular hairs. Corolla yellow, 1.8–2 cm in diam.; tube 4–5 mm; lobes oblong-lanceolate, 1.2–1.5 cm × 4.5–5 mm. Filaments connate basally into a tube ca. 4 mm high, free parts 3–5 mm; anthers dorsifixed, opening by lateral slits. Ovary ovoid. Style ca. 8 mm. Capsule unknown. Fl. Apr.

* Open mountain woodlands, woodland margins; 700–800 m. S Guizhou.

70. *Lysimachia phyllocephala* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 83. 1928.

叶头过路黄 *ye tou guo lu huang*

Herbs perennial, 10–30 cm tall. Stems erect to ascending-erect, often prostrate at base, simple or branched. Leaves opposite, lower much smaller, upper 2 pairs closely crowded; petiole 4–10(–15) mm; leaf blade ovate to ovate-lanceolate, 1.5–8 × 0.8–4 cm, pilose or bristly, base broadly cuneate, apex acute. Inflorescences terminal, capitate, 3- to many flowered. Pedicel ascending-erect in fruit, 1–7 mm. Calyx lobes lanceolate, 6–9 mm, apex acuminate. Corolla yellow; tube 3–4.5 mm; lobes obovate-oblong, sparsely transparent glandular, apex acute to rounded. Filaments connate basally into a tube 3–4 mm high, free parts 2.5–5 mm; anthers ovate-lanceolate, dorsifixed, opening by lateral slits, ca. 2 mm. Ovary apex puberulent. Style to 8 mm. Capsule subglobose, 3.5–4 mm in diam.

* Broad-leaved forests, streamsides, wet forest margins; 600–2600 m. Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang.

- 1a. Leaf blade ovate to ovate-elliptic, both surfaces densely pilose, hairs ca. 1 mm 70a. var. *phyllocephala*
1b. Leaf blade ovate-lanceolate, adaxially bristly, abaxially subglabrous 70b. var. *polycephala*

70a. *Lysimachia phyllocephala* var. *phyllocephala*

叶头过路黄(原变种) *ye tou guo lu huang* (yuan bian zhong)

Lysimachia cephalantha R. Knuth.

Stems with dense multicellular hairs 1–1.5 mm. Leaf blade ovate to ovate-elliptic, rarely ovate-lanceolate, with appressed articulate hairs. Calyx lobes lanceolate, pilose. Corolla 1–1.3 cm; tube ca. 3 mm; lobes obovate-oblong, 4–6 mm wide. Fl. May–Jun.

* Broad-leaved forests, streamsides; 600–2600 m. Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang.

70b. *Lysimachia phyllocephala* var. *polycephala* (Chien) F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 35. 1979.

短毛叶头过路黄 *duan mao ye tou guo lu huang*

Lysimachia polycephala Chien, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 9: 24. 1933.

Stems pubescent or glabrescent. Leaf blade ovate-lanceolate, 4–8.5 × 1.4–3 cm, abaxially glabrescent except for minutely bristly veins, adaxially sparsely bristly. Calyx lobes lanceolate, 7–8 mm, bristly. Corolla yellow, ca. 1.2 cm; tube ca. 4.5 mm; lobes obovate-oblong, apex acute.

* Wet forest margins; 1100–2100 m. E Sichuan.

71. *Lysimachia shimianensis* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 35. 1979.

石棉过路黄 *shi mian guo lu huang*

Herbs perennial, 20–60 cm tall. Stems erect, terete, branched in upper part, rust-colored pilose. Branches usually shorter than subtending leaves, leafy only near apex. Leaves opposite; petiole 0.7–2 cm, narrowly winged, densely pilose;

leaf blade ovate, 2.5–5 × 1.4–3 cm, sparsely bristly, densely transparent glandular punctate, base subrounded, apex acute to short acuminate; veins 5 or 6 pairs. Racemes terminal, abbreviated or capitate, 2–6-flowered; bracts leaflike, ovate. Pedicel 2–4 mm, densely pubescent. Calyx lobes lanceolate, ca. 5.5 × 1 mm, sparsely pubescent, transparent glandular punctate. Corolla yellow; tube ca. 2.5 mm; lobes oblong, ca. 7.5 × 4 mm, sparsely transparent glandular punctate, apex acute to subobtusate. Filaments connate basally into a tube ca. 2 mm high, free parts ca. 3 mm; anthers dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary pubescent apically. Style ca. 5 mm. Capsule globose, ca. 3 mm in diam.

* Grassy banks. W Sichuan (Shimian Xian).

72. *Lysimachia tengyuehensis* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 82. 1928.

腾冲过路黄 *teng chong guo lu huang*

Herbs perennial, 15–50 cm tall. Stems ascending-erect from prostrate base, subterete, branched in upper part, tawny villous. Leaves opposite, rarely in whorls of 3, or alternate in upper part of stem, upper 2 pairs crowded; petiole 2–10 mm; leaf blade ovate, 1.1–3.7 × 0.7–2.5 cm, with appressed articulate hairs, base subrounded, apex acute; veins 2 or 3 pairs, prominent abaxially. Flowers 2 or 3, solitary in axils of aggregated upper leaves, forming a loose terminal capitate cluster. Pedicel 3–8 mm, pubescent. Calyx lobes linear-lanceolate, 7–10 × 1.5–2 mm, abaxially fulvous pilose, transparent glandular punctate. Corolla yellow; tube 3–4 mm; lobes broadly lanceolate, 1–1.1 cm × 5–6 mm, transparent glandular punctate, adaxially dull red at base, apex acute. Filaments connate basally into a tube ca. 2 mm high, free parts ca. 3 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 2 mm. Ovary pubescent. Style ca. 8 mm, sparsely pilose. Capsule subglobose, ca. 4 mm in diam. Fl. May–Jul.

* Under shrubs, streamsides, banks of rice paddies; ca. 2400 m. SW Yunnan (Tengchong Xian).

73. *Lysimachia siamensis* Bonati, Bull. Soc. Bot. Genève 5: 304. 1913.

泰国过路黄 *tai guo guo lu huang*

Herbs perennial, 15–35 cm tall. Stems prostrate, ascending, often branched in upper part, with grayish brown multicellular hairs. Leaves opposite, upper 2 pairs ± crowded; petiole 1/3–1/2 as long as leaf blade, narrowly winged, pilose; leaf blade ovate to elliptic-ovate, 1.5–4 × 1–2.2 cm, with multicellular hairs, base broadly cuneate, apex acute. Inflorescences at apex of stems and branches, in loose or compact capitate clusters, 2–4-flowered. Pedicel 3–8 mm, densely pubescent. Calyx lobes lanceolate, 6–7 mm, abaxially pilose. Corolla yellow; tube ca. 2 mm; lobes elliptic to elliptic-lanceolate, 0.9–1.2 cm, epunctate, apex acute. Filaments connate basally into a tube ca. 2.5 mm high, free parts 2–3 mm; anthers dorsifixed, opening by lateral slits, 1.6–1.8 mm. Ovary pubescent apically. Style ca. 7 mm. Capsule globose, shorter than persistent calyx. Fl. Apr–May.

Grassy mountain slopes; 300–500 m. S Yunnan [Myanmar, Thailand, Vietnam].

Lysimachia siamensis is superficially similar to *L. debilis* Wallich, with which it has been confused. However, it differs by having larger, eglandular corollas, stamens forming a thin tube at base, and ascending fruiting pedicels.

74. *Lysimachia sciadophylla* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 36. 1979.

黔阳过路黄 *qian yang guo lu huang*

Herbs perennial, 18–40 cm tall. Stems erect, simple or weakly branched, glabrous. Branches leafy only at apex. Leaves opposite, upper 3 or 4 pairs compactly crowded; lower leaves smaller; petiole very short, base auriculate, semiclasping; leaf blade narrowly elliptic, 1.8–3 × 0.9–1.2 cm, base attenuate, apex acute. Middle and upper leaves subsessile, narrowly lanceolate, 3.5–7 cm × 4–9 mm, abaxially glabrous or pilose on midvein, densely transparent glandular punctate, adaxially pilose, base attenuate, apex acuminate; veins inconspicuous. Inflorescences terminal, capitate, 4- to many flowered; bracts ovate-lanceolate, longer than calyx, margin rust-colored pubescent. Pedicel 0.5–2.5 mm. Calyx lobes subulate, ca. 8 mm, glabrous, with scattered raised transparent glands. Corolla yellow; tube ca. 4 mm; lobes elliptic-obovate, ca. 8 × 4.5 mm, apex acute. Filaments connate basally into a tube ca. 3 mm high, free parts 2–5 mm; anthers linear, dorsifixed, opening by lateral slits, ca. 2 mm. Ovary glabrous. Style to 1 cm. Capsule unknown. Fl. Apr–May.

* Woodland margins, under shrubs. SW Hunan (Qianyang Xian).

75. *Lysimachia fistulosa* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 84. 1928.

管茎过路黄 *guan jing guo lu huang*

Herbs perennial, 20–35 cm tall. Stems erect or arcuate at base, quadrangular, simple or weakly branched, pubescent or glabrous. Leaves opposite, upper 2 or 3 pairs crowded; petiole indistinct in upper leaves, to 3 cm in lower leaves; leaf blade lanceolate, 4–9 × 1–2.5(–3) cm, abaxially pilose or glabrescent, sparsely transparent glandular punctate, adaxially sparsely bristly, base attenuate, apex acuminate; veins 3–5 pairs, veinlets inconspicuous. Inflorescences terminal, capitate, 6–10-flowered; bracts elliptic to lanceolate, ca. as long as calyx. Pedicel 1–2.5(–5) mm. Calyx lobes lanceolate, 0.9–1.5 cm, apex acuminate-subulate, costate. Corolla yellow, 0.9–1.3 cm; lobes ovate-oblong, transparent glandular punctate, apex rounded to apiculate. Filaments connate basally into a tube 4–5 mm high, free parts 3–5 mm; anthers ovate-lanceolate, dorsifixed, opening by lateral slits, 1.5–2 mm. Ovary ovoid. Style ca. 8.5 mm. Capsule subglobose, 3–3.5 mm in diam.

* Open forests, valley trailsides, damp areas in forests, streamsides; 500–1700 m. N Guangdong, Guangxi, Guizhou, W Hubei, Hunan, S Jiangxi, E Sichuan, NE Yunnan.

- 1a. Stems pubescent; leaves pilose abaxially 75a. var. *fistulosa*
- 1b. Stems glabrous; leaves glabrescent abaxially 75b. var. *wulingensis*

75a. *Lysimachia fistulosa* var. *fistulosa*

管茎过路黄(原变种) guan jing guo lu huang (yuan bian zhong)

Stems obtusely quadrangular, with multicellular hairs 1–1.5 mm. Leaves pilose abaxially, bristly or glabrescent adaxially. Calyx lobes 0.9–1.5 cm, with sparse multicellular hairs. Ovary densely pubescent. Fl. May–Jul.

* Open forests, valley trailsides; 500–1700 m. W Hubei, NW Hunan, E Sichuan.

75b. *Lysimachia fistulosa* var. *wulingensis* F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 35. 1979.

五岭管茎过路黄 wu ling guan jing guo lu huang

Stems quadrangular, glabrous. Leaves glabrescent abaxially, initially sparsely bristly adaxially. Calyx lobes 0.9–1.2 cm, glabrous or sparsely ciliate near apex. Ovary glabrous.

* Damp areas in forests, streamsides; 500–1100 m. N Guangdong, Guangxi, Guizhou, Hunan, S Jiangxi, NE Yunnan.

76. *Lysimachia patungensis* Handel-Mazzetti, *Notes Roy. Bot. Gard. Edinburgh* 16: 97. 1928.

巴东过路黄 ba dong guo lu huang

Herbs perennial, 10–30 cm tall. Stems prostrate, rooting at nodes; branches ascending to 20 cm. Leaves opposite, upper 2 pairs smaller, closely crowded; petiole 1/2 to as long as leaf blade; leaf blade broadly ovate to suborbicular, rarely subelliptic, 1.3–3.8 × 0.8–3 cm, pilose or glabrous, transparent glandular striate near margin, base broadly truncate, rarely cuneate, apex obtuse, rounded, or occasionally slightly emarginate. Flowers 2–4, crowded at apex of stems and branches, without bracts. Pedicel 0.6–2.5 cm, pubescent or glabrous. Calyx lobes lanceolate, 6–7 × 1–1.5 mm, narrowly hyaline margined. Corolla yellow; tube 2–3 mm; lobes oblong, 1–1.1 cm × 3–5 mm, sparsely transparent glandular striate, stripes becoming brownish when dry, adaxially dull red at base, apex obtuse. Filaments connate basally into a tube 2–3 mm high, free parts 4–6 mm; anthers oblong-ovate, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style ca. 6 mm. Capsule subglobose, 4–5 mm in diam. Fl. May–Jun.

* Sparse mixed forests, streamsides; 500–1000 m. Anhui, Fujian, Guangdong, Hubei, Hunan, Jiangxi, Zhejiang.

77. *Lysimachia yingdeensis* F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 38. 1979.

英德过路黄 ying de guo lu huang

Herbs perennial, 30–40 cm tall. Stems prostrate, slightly swollen at nodes; internodes 0.7–1.5 cm, initially sparsely pilose, glabrescent or nearly so. Leaves opposite, upper 2 pairs closely crowded, subverticillate; petiole 2–3.5 cm, narrowly winged, sparsely pilose; leaf blade broadly ovate to triangular-ovate, 3.5–6 × 3–5 mm, abaxially glabrescent except pilose along veins, adaxially sparsely pilose, base truncate to cordulate, apex obtuse. Racemes terminal,

abbreviated, appearing as a subcapitate cluster, 5–15-flowered; rachis 5–8 mm, with bracts. Pedicel 2–3 mm. Calyx lobes lanceolate, ca. 7 mm, keeled abaxially, pilose on ridge, glabrous in fruit, narrowly hyaline margined. Corolla yellow; tube 3–4 mm; lobes oblong, 8–9 × 4–5 mm, apex obtuse. Filaments connate basally into a tube ca. 2.5 mm high, free parts 3–5 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1.3 mm. Ovary glabrous. Style ca. 7 mm. Capsule grayish white, subglobose, ca. 4 mm in diam. Fl. May.

* Forests, streamsides. N Guangdong.

78. *Lysimachia punctatilimba* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 48. 1965.

点叶落地梅 dian ye luo di mei

Herbs perennial, to 45 cm tall. Stems ascending-erect from prostrate lower part, terete, subfleshy, simple or branched, scurfy glandular on upper part. Leaves opposite, upper 2 pairs ± crowded; petiole 1–2 cm, narrowly winged; leaf blade ovate to ovate-elliptic, 3.5–8 × 1.8–5 cm, abaxially glabrous and densely minutely black glandular punctate, adaxially sparsely strigillose or glabrescent, base broadly cuneate to subrounded, apex acute; veins 4–6 pairs, veinlets invisible. Inflorescences terminal, subcapitate, 2–6-flowered; bracts ovate, longer than calyx. Pedicel ca. 3 mm, scurfy glandular. Calyx lobes lanceolate, 0.8–1.3 cm × 2.5–3.5 mm, densely black glandular punctate; veins 3, midvein distinctly raised. Corolla yellow; tube ca. 5 mm; lobes oblong, 8–11 × 3–6 mm, adaxially glandular, apex rounded. Filaments connate basally into a tube ca. 4 mm high, free parts 2–3 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 2 mm. Ovary glabrous. Style 7–8 mm. Capsule subglobose, ca. 7 mm in diam. Fl. May–Jul.

* Dense forests, streamsides; 1300–1900 m. W Hubei, SE Yunnan (Pingbian Xian).

Lysimachia punctatilimba is disjunct in W Hubei and E Yunnan. In spite of this, the plants from both provinces are similar in all aspects.

79. *Lysimachia fordiana* Oliver, *Hooker's Icon. Pl.* 20: t. 1983. 1891.

大叶过路黄 da ye guo lu huang

Herbs perennial, glabrous, 30–50 cm tall. Stems erect, fleshy, usually simple, black glandular punctate. Lower leaves scalelike; upper leaves opposite, uppermost 2 pairs compactly crowded, appearing verticillate; petiole 0.5–2.5 cm; leaf blade elliptic to broadly elliptic or rhomboid-ovate, 6–18 × 3–10(–12.5) cm, densely minutely black glandular punctate, base broadly cuneate, apex acute to short acuminate; veins 4–6 pairs, veinlets inconspicuous. Racemes terminal, abbreviated, subcapitate; bracts ovate-lanceolate to lanceolate, 1–1.5 cm, densely glandular punctate. Pedicel 0.5–6 mm. Calyx lobes oblong-lanceolate, 6–12 × 2–3.5 mm, densely black glandular punctate. Corolla yellow, 1.2–1.9 cm; tube 4–5 mm; lobes oblong to oblong-lanceolate, black glandular punctate, apex obtuse or acute. Filaments connate basally into a tube ca. 3 mm high, free parts 3–4 mm; anthers ovate, dorsifixed,

opening by lateral slits, ca. 1 mm. Ovary glabrous. Style ca. 7 mm. Capsule subglobose, 3–4 mm in diam., black glandular. Fl. May.

* Wet areas in dense forests, ravines; ca. 800 m. Guangdong, Guangxi, SE Yunnan.

80. *Lysimachia miyiensis* Y. I. Fang & C. Z. Cheng ex F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 37. 1979.

米易过路黄 mi yi guo lu huang

Herbs perennial, to 30 cm tall. Stems erect, terete, usually branched from base, densely rust-colored villous. Leaves opposite, upper 2 pairs crowded, forming a whorl; petiole 3–5 mm, narrowly winged by decurrent leaf blade; leaf blade broadly ovate, 2.5–8 × 0.6–6 cm, bristly especially on abaxial veins, densely black glandular punctate, base cuneate to rounded, obscurely repand, apex acute. Racemes terminal, abbreviated, subcapitate; bracts linear, ca. 1.5 cm, black glandular. Pedicel 1–2 mm, densely rust-colored villous. Calyx linear-lanceolate, 9–10 × 1.5–2 mm, with long hairs on midvein and margin. Corolla yellow, deeply parted, ca. 1.5 cm in diam.; lobes oblong, ca. 9 mm, sparsely minutely black glandular punctate, apex rounded. Filaments connate basally into a tube ca. 3 mm high, free parts 3–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary glabrous, black glandular. Capsule unknown.

* W Sichuan (Miyi Xian).

81. *Lysimachia nanpingensis* F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 37. 1979.

南平过路黄 nan ping guo lu huang

Herbs perennial, 5–18 cm tall, stoloniferous. Stems terete, erect or prostrate in lower part, with dense fulvous multicellular hairs. Leaves opposite, lowest 1 or 2 pairs scale-like; petiole 3–12 mm, densely fulvous pubescent; leaf blade elliptic to ovate-elliptic, 3.5–5.5 × 2–4.5 cm, papery, becoming dark brown when dry, abaxially densely bristly, adaxially initially sparsely bristly, glabrescent, indistinctly glandular punctate, base subrounded, rarely broadly cuneate, margin narrowly revolute, apex acute. Flowers 2–6, crowded at stem apex, without bracts. Pedicel recurved in fruit, 4–9 mm, densely fulvous pubescent. Calyx lobes lanceolate, 6–7.5 × 1.2–1.9 mm, pubescent, obscurely glandular punctate. Corolla yellow; tube ca. 3 mm; lobes oblong, 0.9–1.1 cm × 3.5–4 mm, sparsely reddish glandular punctate, apex obtuse or slightly emarginate. Filaments connate basally into a tube ca. 3 mm high, free parts flattened, 3–5 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary densely pubescent. Style ca. 7.5 mm, pubescent on lower part. Capsule subglobose, ca. 4 mm in diam. Fl. Apr–May.

* Mountain woodlands; ca. 700 m. Fujian, W Guangdong.

82. *Lysimachia liui* Chien, *Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot.* 9: 26. 1933.

红头索 hong tou suo

Herbs perennial, to 40 cm tall. Stems prostrate, ascending, subterete, usually branched, rust-colored pilose. Leaves opposite; petiole 1–2 cm, densely pubescent; leaf blade ovate to broadly ovate, rarely suborbicular, 1.5–3.5 × 1.2–2.5 cm, papery, strigillose, sparsely transparent or dark glandular punctate, base subrounded to broadly cuneate, apex rounded to apiculate; veins 3 or 4 pairs, veinlets inconspicuous. Umbels in axils of middle leaves, 2–4-flowered; peduncle 1.8–3.5 cm; bracts ovate to orbicular-ovate, 5–14 × 3–9 mm. Pedicel 2–10 mm, densely rust-colored pubescent. Calyx lobes narrowly lanceolate, 8–9 × 1–1.2 mm, abaxially pubescent, apex acuminate. Corolla yellow; tube 3–4 mm; lobes elliptic, 7–10 × 5–6 mm, sparsely dull red glandular punctate, apex obtuse to apiculate. Filaments connate basally into a tube ca. 3 mm high, free parts 3–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 2 mm. Ovary rust-colored puberulent. Style 5–7 mm. Capsule unknown. Fl. Jul.

* Wet areas in ravines, woodland margins; 1800–3100 m. Sichuan (Emei Shan).

83. *Lysimachia congestiflora* Hemsley in F. B. Forbes & Hemsley, *J. Linn. Soc., Bot.* 26: 50. 1889.

临时救 lin shi jiu

Lysimachia congestiflora Hemsley var. *atronervata* C. C. Wu; *L. gymnocephala* Handel-Mazzetti; *L. hui* Diels ex Handel-Mazzetti; *L. japonica* Thunberg var. *cephalantha* Franchet; *L. nigropunctata* Masamune; *L. rubroglandulosa* C. Y. Wu; *L. smithiana* Craib; *L. taiwaniana* Suzuki ex M. T. Kao.

Herbs perennial, 6–50 cm tall. Stems prostrate, rooting at nodes, upper part and branches ascending, fulvous pilose. Branches often with leaves only at apex. Leaves opposite, upper 2 pairs crowded; petiole 1/3–1/2 × as long as leaf blade, narrowly winged; leaf blade ovate to broadly ovate or suborbicular, (0.7–)1.4–3(–4.5) × (0.6–)1.3–2.2(–3) cm, with appressed articulate hairs, rarely glabrescent, reddish or black glandular punctate mainly near margin, base subrounded to short attenuate, apex acute to obtuse; veins 2–4 pairs, veinlets inconspicuous. Racemes terminal, abbreviated, capitate, 2–4-flowered, rarely with solitary flowers in axils of leaf pairs below inflorescences. Pedicel to 2 mm. Calyx lobes lanceolate, 5–8.5 × 1–1.5 mm, abaxially sparsely pubescent. Corolla yellow; tube 2–3 mm; lobes ovate-elliptic to oblong, 7–8 × 3–6.5 mm, sparsely dull red or black glandular punctate, abaxially dull red at base, apex acute to obtuse. Filaments connate basally into a tube ca. 2.5 mm high, free parts 2.5–4.5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary pubescent. Style 5–7 mm. Capsule subglobose, 3–4 mm in diam. Fl. May–Jun. *2n* = 48.

Ditches, roadsides, banks of rice paddies, damp forest margins; 200–1200 m. Anhui, Fujian, S Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Qinghai, S Shaanxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Bhutan, NE India, Myanmar, Nepal, Sikkim, Thailand, Vietnam].

Used for injuries, fractures, contusions, and strains.

84. *Lysimachia kwangtungensis* (Handel-Mazzetti) C. M. Hu, *Novon* 4: 104. 1994.

广东临时救 *guang dong lin shi jiu*

Lysimachia congestiflora Hemsley var. *kwangtungensis* Handel-Mazzetti, *Notes Roy. Bot. Gard. Edinburgh* 16: 168. 1931.

Herbs perennial. Stems erect, 15–30 cm, simple or often branched above, with reddish multicellular hairs. Leaves opposite; petiole 4–10 mm, narrowly margined, ± clasping; leaf blade ovate-lanceolate to lanceolate, 1.5–7 × 1–2.2 cm, sparsely setulose on both surfaces, rarely glabrescent, translucent glandular punctate throughout and densely so at margin, base narrowly cuneate, apex acuminate; lateral veins 3 pairs, slender, oblique. Flowers 4–10, congested at stem apex; bracts ovate, ciliate. Pedicel ca. 5 mm. Calyx parted nearly to base; lobes lanceolate, 5–6 × 0.6–1 mm, pubescent outside. Corolla yellow; tube ca. 1 mm; lobes glandular red to dark purple, oblong-elliptic, 8–9 × 5–5.5 mm, apex obtuse. Filaments connate into a tube ca. 2 mm high, free parts 2–3 mm; anthers oblong, ca. 1.2 mm. Ovary pilose on upper half. Style 5–6 mm. Capsule brown, subglobose, 3.5–4 mm in diam. Fl. May–Jun.

* Streamsides, on rocks in valleys, roadsides near water, shaded places; 200–700 m. N Guangdong, Hunan.

In its habit and foliage, *Lysimachia kwangtungensis* shows some affinity to *L. hemsleyi* Franchet and *L. fistulosa* Handel-Mazzetti. It is readily distinguished from these by its red or dark purple glandular punctate corolla lobes.

85. *Lysimachia lychnoides* F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 38. 1979.

假琴叶过路黄 *jia qin ye guo lu huang*

Herbs perennial, to 20 cm tall. Stems many, terete, rigid, simple or with few branches, sparsely pilose. Leaves opposite, sessile, upper 2 pairs crowded, forming a whorl; leaf blade lanceolate, 2–3.5 cm × 4–8 mm, abaxially strigillose on midvein, otherwise glabrescent, adaxially densely bristly, tapered toward dilated, auriculate, semiclasping base, apex acuminate; veins 4 or 5 pairs. Inflorescences terminal, capitate, 4–8-flowered; bracts ovate, ca. as long as calyx. Pedicel 1–3 mm, densely pubescent. Calyx lobes subulate, ca. 8 mm, pubescent near apex and on midvein. Corolla yellow; tube ca. 3.5 mm; lobes elliptic, 7–8 × 3.5–4 mm, densely red glandular punctate on upper 1/2, apex obtuse. Filaments connate basally into a tube ca. 3 mm high, free parts 2–4 mm; anthers dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style ca. 7 mm. Capsule unknown. Fl. Jun.

* Limestone rocks, woodland margins; ca. 800 m. E Guizhou (Kaili Xian).

86. *Lysimachia rubiginosa* Hemsley in F. B. Forbes & Hemsley, *J. Linn. Soc., Bot.* 26: 56. 1889.

显苞过路黄 *xian bao guo lu huang*

Lysimachia involucrata Hemsley; *L. rubiginosa* var. *glabra* Franchet.

Herbs perennial, 30–60(–100) cm tall. Stems erect or prostrate in lower part, ± rust-colored villous. Branches usually shorter than subtending leaves at stem apex. Leaves opposite; petiole 0.8–2 cm, narrowly winged; leaf blade ovate to ovate-lanceolate, 4–9.5 × 2–3.8 cm, ciliate, sparsely strigillose, densely black or brown glandular striate, base subrounded to broadly cuneate, apex acute to short acuminate; veins 4 or 5 pairs, veinlets inconspicuous. Inflorescences subcapitate, terminal on branches, seldom on main axis, 3–5-flowered; bracts leaflike, ovate to suborbicular, 8–12 × 6–10 mm, apex apiculate. Pedicel 1–2 mm. Calyx lobes lanceolate, 8–9 × 1.2–1.5 mm, glabrous or sparsely puberulent, black glandular striate. Corolla yellow; tube 3–4 mm; lobes narrowly oblong, 1–1.1 cm × 3.5–5 mm, black or brown glandular striate, apex obtuse to acute. Filaments connate basally into a tube ca. 3 mm high, free parts 3–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary pubescent on upper part. Style ca. 7 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May.

* Damp areas in forests, streamsides; 1000–1500 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan, NE and SE Yunnan, Zhejiang.

87. *Lysimachia alfredii* Hance, *J. Bot.* 15: 356. 1877.

广西过路黄 *guang xi guo lu huang*

Herbs perennial, 6–30(–45) cm tall. Stems erect or prostrate in lower part, simple or branched at base, fulvous pubescent. Leaves opposite, upper 2 pairs closely crowded; petiole 1–2.5 cm, densely pubescent; leaf blade ovate to ovate-lanceolate, ciliate, strigillose, densely black glandular striate and punctate; veins inconspicuous. Racemes terminal, abbreviated, capitate; rachis to 1 cm; bracts broadly elliptic to broadly obovate, 0.6–2.5 × 0.5–1.4 cm, strigillose. Pedicel 2–3 mm, densely pubescent. Calyx lobes narrowly lanceolate, 6–8 mm, margin membranous, abaxially pubescent, black glandular striate. Corolla yellow; tube 3–5 mm; lobes lanceolate, 7–10 mm, densely black glandular striate, apex obtuse to acute. Filaments connate basally into a tube 2.5–3.5 mm high, free parts 3–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Capsule subglobose, 4–5 mm in diam.

* Wet areas, streamsides, woodlands, under shrubs, open forests; 200–900 m. SW Fujian, Guangdong, Guangxi, Guizhou, S Hunan, S Jiangxi.

- 1a. Stems usually simple; leaf blade ovate to ovate-lanceolate, apex acute to acuminate 87a. var. *alfredii*
- 1b. Stems usually branched from base; leaf blade ovate to suborbicular, apex obtuse to rounded..... 87b. var. *chryso-spleniooides*

87a. *Lysimachia alfredii* var. *alfredii*

广西过路黄(原变种) *guang xi guo lu huang (yuan bian zhong)*

Stems 10–30(–45) cm tall, simple, rarely branched. Leaf blade ovate to ovate-lanceolate, 3.5–11 × 1–5.5 cm, apex acute to acuminate. Fl. Apr–May.

* Wet areas, streamsides, woodlands, under shrubs; 200–900 m. SW Fujian, Guangdong, Guangxi, Guizhou, S Hunan, S Jiangxi.

87b. *Lysimachia alfredii* var. *chrysosplenioides* (Handel-Mazzetti) F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 40. 1979.

小广西过路黄 xiao guang xi guo lu huang

Lysimachia chrysosplenioides Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 62: 24. 1925.

Stems 5–12 cm tall, usually branched at base. Leaf blade ovate, occasionally suborbicular, 2–5 × 1.3–3.5 cm, reddish when young, apex obtuse to rounded. Fl. May.

* Open forests. Guangxi, Guizhou.

88. *Lysimachia carinata* Y. I. Fang & C. Z. Cheng ex F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 39. 1979.

阳朔过路黄 yang shuo guo lu huang

Herbs perennial, becoming black when dry. Stems decumbent, to 45 cm, terete, much branched, glabrous. Leaves opposite; petiole 0.8–1.5 cm; leaf blade broadly ovate to ovate, 1.5–2.5 × 1–2 cm, abaxially glabrous, black glandular punctate near margin, adaxially sparsely bristly, base rounded to truncate, apex acute to obtuse. Flowers solitary or paired in axils of leaves. Pedicel 5–10 mm, densely glandular. Calyx ca. 4 mm, parted nearly to base; lobes linear-lanceolate, abaxially cristate; crest ca. 0.5 mm, glabrous. Corolla ca. 6 mm; tube ca. 2 mm; lobes elliptic, black glandular punctate, sparsely short glandular striate, apex obtuse. Filaments connate basally into a tube ca. 2 mm high, free parts ca. 1 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary globose, glabrous. Style slightly longer than stamens. Capsule unknown. Fl. Apr–May.

* Grassy banks near rice paddies. Guangxi (Yangshuo Xian).

89. *Lysimachia debilis* Wallich in Roxburgh, Fl. Ind. 2: 25. 1824.

南亚过路黄 nan ya guo lu huang

Herbs perennial, 15–30 cm tall. Stems ascending, usually branched from base, with multicellular hairs. Leaves opposite; petiole 4–8 mm, narrowly winged; leaf blade ovate, 1.5–2.8 × 1–1.6 cm, strigillose, minutely reddish glandular punctate, base cuneate to subrounded, apex acute. Flowers solitary, axillary. Pedicel 2–4 mm, densely pubescent. Calyx lobes lanceolate, ca. 7 mm, enlarged to 1 cm in fruit, densely pubescent and reddish glandular punctate, apex acuminate-subulate. Corolla yellow; tube ca. 2 mm; lobes ovate-oblong, ca. 6 × 2.5–3 mm, sparsely red glandular, apex acute. Filaments connate basally into a tube ca. 1 mm high, free parts 2.5–3.5 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary pubescent. Style ca. 4 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Jun. $2n = 84$.

Grassy mountain slopes; ca. 1700 m. S Xizang [India, Myanmar, Nepal, Pakistan, Thailand].

Lysimachia debilis is treated as a synonym of *L. japonica* in Fl. Bhutan.

90. *Lysimachia hemsleyana* Maximowicz ex Oliver, Hooker's Icon. Pl. 20: t. 1980. 1891.

点腺过路黄 dian xian guo lu huang

Herbs perennial. Stems prostrate, to 90 cm, 1.5–2 mm in diam. at base, usually branched, with multicellular hairs. Leaves opposite; petiole 0.5–1.8 cm; leaf blade ovate to broadly ovate, 1.5–4 × 1.2–3 cm, abaxially sparsely so or glabrescent, with many scattered brown or occasionally transparent glandular dots, adaxially densely strigillose, base subrounded, truncate to cordulate, apex acute; veins 3 or 4 pairs, veinlets obscure. Flowers solitary, in axils of medial leaves. Pedicel 0.7–1.5 cm, elongated to 2.5 cm and recurved in fruit, densely pubescent. Calyx lobes narrowly lanceolate, 7–8 × 1–1.5 mm, puberulent, costate. Corolla yellow; tube ca. 2 mm; lobes elliptic to elliptic-lanceolate, 4–6 × 3–4 mm, sparsely dull red or brown glandular punctate, apex acute to subobtuse. Filaments connate basally into a tube ca. 2 mm high, free parts 3–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style 6–7 mm. Capsule subglobose, 3.5–4 mm in diam. Fl. Apr–Jun.

* Clearings at edges of mountain woodlands, streamsides; 400–1600 m. Anhui, Fujian, S Henan, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, E Sichuan, Zhejiang.

91. *Lysimachia chekiangensis* C. C. Wu, Acta Phytotax. Sin. 9: 313. 1964.

浙江过路黄 zhe jiang guo lu huang

Herbs perennial, to 30 cm tall. Stems prostrate, ascending, branched in upper part, with dense rust-colored multicellular hairs 0.5–0.8 mm. Leaves opposite; petiole 1/2 to as long as leaf blade; leaf blade broadly ovate, rarely suborbicular, 5–30 × 0.3–2.7 cm, abaxially pilose, sparsely transparent glandular punctate, adaxially strigillose, base truncate, occasionally cuneate, apex obtuse to subrounded; veins inconspicuous. Flowers solitary, in axils of upper leaves. Pedicel 3–4 mm, rust-colored pilose. Calyx lobes lanceolate, 4–6 mm, pilose, apex acuminate. Corolla yellow, ca. 1.2 cm in diam.; tube ca. 2 mm; lobes obovate to broadly elliptic, 6–7 × 4–5 mm, transparent glandular punctate, apex rounded. Filaments connate basally into a tube ca. 2 mm high, free parts 4–5 mm; anthers ovate-oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style ca. 4.5 mm, pubescent on lower part. Capsule subglobose, 3–4 mm in diam. Fl. May–Jun.

* North-facing mountain slopes, grassy areas, among shrubs; 400–700 m. SW Zhejiang (Longquan Xian).

92. *Lysimachia pterantha* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 56. 1889.

翅萼过路黄 chi e guo lu huang

Herbs perennial, to 90 cm. Stems erect, later arched to reclined, shortly branched, initially with rust-colored multicellular hairs, glabrescent. Leaves opposite; petiole 3–10 mm, rust-colored pubescent; leaf blade lanceolate, 3–7 × 1–2 cm, abaxially sparsely pubescent, glabrescent, except on veins, obscurely brown or black glandular striate, adaxially

glabrous, base rounded, apex acute to acuminate; veins 3 or 4 pairs, veinlets inconspicuous. Flowers solitary, axillary. Pedicel 1–1.5 cm, rust-colored pubescent. Calyx lobes lanceolate, 5–6 mm, abaxially cristate; crest widest at base, ca. 2 mm, glabrous, brown glandular striate. Corolla yellow; tube ca. 2 mm; lobes lanceolate, 7–8 × 2.5–3 mm, sparsely brown glandular striate, apex acute. Filaments connate basally into a tube ca. 2 mm high, free parts 4–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.2 mm. Ovary glabrous. Style ca. 5 mm. Capsule unknown. Fl. May–Jun.

* Grassy mountain slopes. E Sichuan.

93. *Lysimachia baoxingensis* (F. H. Chen & C. M. Hu) C. M. Hu, *Acta Bot. Austro Sin.* 2: 200. 1986.

宝兴过路黄 *bao xing guo lu huang*

Lysimachia pterantha Hemsley var. *baoxingensis* F. H. Chen & C. M. Hu, *Acta Phytotax. Sin.* 17(4): 39. 1979.

Herbs perennial, 40–90 cm tall. Stems erect, later arched to reclined, simple or weakly short branched, rust-colored villous. Leaves opposite, occasionally alternate in upper part of stem; petiole 4–7 mm, densely rust-colored villous; leaf blade ovate-lanceolate to lanceolate, 3–6.5 × 0.8–2 cm, densely strigillose, epunctate, base subrounded, apex acute; veins 4 or 5 pairs, veinlets inconspicuous. Flowers solitary, in axils of middle and upper leaves. Pedicel recurved in fruit, 0.8–1.5 cm, densely rust-colored villous. Calyx lobes lanceolate, 5–6.5 mm, sparsely pubescent, cristate; crest ca. 0.5 mm wide, uniform in width. Corolla yellow; tube ca. 2 mm; lobes elliptic-lanceolate, ca. 8 × 3.5 mm, brown glandular striate. Filaments connate basally into a tube ca. 2 mm high, free parts 2.5–3.5 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1.1 mm. Ovary ovoid. Style ca. 6 mm. Capsule brown, globose, ca. 3.5 mm in diam. Fl. Jun.

* Grassy mountain slopes, roadsides; 1600–2000 m. SW and W Sichuan (Baoping Xian, Jiulong Xian).

94. *Lysimachia pteranthoides* Bonati, *Bull. Soc. Bot. Genève* 5: 301. 1913.

川西过路黄 *chuan xi guo lu huang*

Herbs perennial, 40–80 cm tall. Stems reclined to procumbent, rarely branched. Stems, petioles, and pedicels with dense rust-colored multicellular hairs. Leaves opposite; petiole 0.5–1.5 cm; leaf blade ovate to broadly ovate, rarely suborbicular to ovate-oblong, 1.5–3 × 1–2.2 cm, densely bristly, transparent glandular striate, base cordate to truncate, apex acute to obtuse; abaxially midvein and 3 pairs of lateral veins rust-colored pilose. Flowers solitary, axillary. Pedicel recurved in fruit, 0.6–2 cm. Calyx lobes lanceolate, ca. 5 × 1 mm, pubescent, apex acute, cristate; crest ca. 1 mm wide at upper part. Corolla yellow; tube ca. 2.5 mm; lobes oblong-lanceolate, 7.5–9.5 × 3.5–4 mm, inconspicuously brown glandular striate, apex acute. Filaments connate basally into a tube ca. 3 mm high, free parts 2–4 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.2 mm. Ovary glabrous. Style ca. 6 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Jun.

* Forest margins; ca. 2100 m. W Sichuan, NE Yunnan.

95. *Lysimachia crista-galli* Pampanini ex Handel-Mazzetti, *Notes Roy. Bot. Gard. Edinburgh* 16: 98. 1928.

距萼过路黄 *ju e guo lu huang*

Herbs perennial, 15–45 cm tall. Stems procumbent, simple or branched from base, glabrous or rust-colored pilose. Leaves opposite; petiole 1/5–1/2 as long as leaf blade; leaf blade broadly ovate to suborbicular, 1–3 × 0.9–2.6 cm, strigillose or occasionally glabrescent, densely black glandular striate and punctate, base cordate, apex subacute to obtuse. Flowers solitary, in axils of upper leaves. Pedicel slightly recurved in fruit, 1.5–3 mm, glandular puberulent. Calyx lobes oblong-lanceolate, 4–5 mm, black glandular striate and punctate, decurrent at base, forming a spur ca. 1 mm, hyaline margined, apex obtuse, cristate; crest ca. 1.5 mm wide. Corolla yellow; tube ca. 3 mm; lobes oblong, 7–8 mm, densely black glandular striate, apex obtuse to obscurely emarginate. Filaments 6–7 mm, lower 1/2 connate into a tube; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary glabrous. Style ca. 6 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

* Streamsides; 1000–1600 m. NW Hubei, S Shaanxi, E Sichuan.

96. *Lysimachia christinae* Hance, *J. Bot.* 11: 167. 1873.

过路黄 *guo lu huang*

Lysimachia christinae var. *intermedia* Pampanini; *L. christinae* var. *pubescens* Franchet; *L. fargesii* Franchet; *L. glandulosa* R. Knuth; *L. latronum* H. Léveillé & Vaniot; *L. legendrei* Bonati.

Herbs perennial. Stems procumbent, 20–60 cm, glabrous to sparsely or densely rust-colored pilose, glandular on young parts. Leaves opposite; petiole shorter than to ca. as long as leaf blade; leaf blade ovate to suborbicular or reniform, (1.5–) 6(–8) × 1–4(–6) cm, transparent glandular striate, but stripes becoming black and distinct when dry, glabrous to densely strigillose, base truncate to cordate, apex acute, obtuse, or rounded. Flowers solitary, axillary. Pedicel 1–5 cm, usually shorter than subtending leaves, glabrous to densely pilose. Calyx lobes lanceolate, elliptic-lanceolate, to linear or subspatulate, (4–)5–7(–10) mm, glabrous, pubescent, or only margin pubescent, apex acute to subobtuse. Corolla yellow; tube 2–4 mm; lobes narrowly ovate to sublanceolate, 5–11 mm, long black glandular striate, apex acute to obtuse. Filaments 6–8 mm, lower 1/2 connate into a tube; anthers ovate, dorsifixed, opening by lateral slits, 1–1.5 mm. Ovary ovoid. Style 6–8 mm. Capsule subglobose, 4–5 mm in diam., sparsely black glandular striate. Fl. May–Jul.

* Damp areas along streamsides, open forests, forest margins; 500–2300 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, Sichuan, Yunnan, Zhejiang.

The variation in density of hairs, and size and shape of leaves and calyx lobes is continuous and, therefore, it is difficult to find correlated characters that serve to divide the species.

Used as a diuretic.

97. *Lysimachia drymarifolia* Franchet, J. Bot. (Morot) 9: 462. 1895.

锈毛过路黄 xiu mao guo lu huang

Lysimachia drymarifolia Franchet var. *grandiflora* Bonati.

Herbs perennial, 7–35 cm tall. Stems procumbent, simple to weakly branched, with dense rust-colored multicellular hairs. Leaves opposite; petiole 1/2–2/3 as long as leaf blade, rust-colored pilose or glabrescent; leaf blade broadly ovate to suborbicular or reniform, 1–2.5 × 0.8–2.2 cm, sparsely strigillose, densely black glandular striate, base rounded to cordate, apex obtuse to rounded; veins inconspicuous. Flowers solitary, axillary. Pedicel 1–4 cm, usually 1–2 × as long as subtending leaves, rust-colored pilose or occasionally glabrescent. Calyx lobes oblong-lanceolate, 5–6 mm, abaxially sparsely pilose, narrowly hyaline margined, glabrous, apex subobtuse. Corolla yellow; tube 1.5–2 mm; lobes ovate to oblong-ovate or obtuse, sparsely black glandular striate. Filaments connate basally into a tube, 1.5–2 mm high, free parts 2–3 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary glabrous or occasionally pubescent. Style 4–5 mm. Capsule unknown. Fl. Apr–May.

* Damp areas in mountain valley forests, streamsides; 1400–3500 m. SW Sichuan, C and N Yunnan.

98. *Lysimachia pentapetala* Bunge, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 2: 127. 1835.

狭叶珍珠菜 xia ye zhen zhu cai

Apochoris pentapetala (Bunge) Duby; *Lysimachia unguiculata* Diels.

Herbs annual, 30–60 cm tall, glabrous. Stems erect, terete, much branched, densely minutely brown glandular. Leaves alternate; petiole ca. 0.5 mm; leaf blade narrowly lanceolate to linear, 2–7 cm × 2–8 mm, abaxially glaucous, brown glandular, base cuneate, apex acute. Racemes initially coniform, gradually elongated to 4–13 cm in fruit, densely flowered; bracts subulate, 5–6 mm. Pedicel 5–10 mm. Calyx 2.5–3 mm, parted 1/2–2/3 length; lobes narrowly triangular, hyaline margined. Corolla white; lobes nearly free, spatulate to oblanceolate, ca. 5 mm, apex rounded. Stamens included; filaments adnate nearly to middle of corolla lobes, free parts ca. 0.5 mm; anthers ovate, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 2 mm. Capsule subglobose, 2–3 mm in diam. Fl. Jul–Aug. $2n = 24$.

* Wastelands, roadsides, open forests. Anhui, Gansu, Hebei, Heilongjiang, Henan, Hubei, Nei Mongol, Shaanxi, Shandong, Shanxi.

99. *Lysimachia mauritiana* Lamarck, Encycl. 3: 592. 1792.

滨海珍珠菜 bin hai zhen zhu cai

Lysimachia lineariloba Hooker & Arnott; *L. nebeliana* Gilg.

Herbs biennial, glabrous, 10–50 cm tall. Stems often many, erect, terete, usually branched in upper part. Leaves alternate; petiole 0.5–2.5 cm or upper leaves sometimes

sessile; leaf blade spatulate to obovate or oblong-obovate, 6–12 × 0.5–2.5 cm, sparsely black glandular punctate, tapered at base, margin narrowly revolute, apex obtuse to subrounded. Racemes erect, initially coniform, gradually elongated, 3–12 cm; lower bracts spatulate, leaflike, gradually reduced upward. Pedicel ca. as long as to slightly shorter than bracts. Calyx lobes broadly lanceolate to elliptic, 4–7 mm, black glandular, margin membranous, apex acute to obtuse, costate. Corolla white; tube ca. 2 mm; lobes erect, ligulate-oblong, ca. 7 mm, apex obtuse. Stamens included; filaments adnate to lower part of corolla lobes, free parts ca. 1.5 mm; anthers oblong, dorsifixed, ca. 1.2 mm. Ovary conical, narrowed upward to style. Capsule pyriform, ca. 5 mm in diam. Fl. May–Jun. $2n = 20^*$.

Rock crevices, beaches in coastal regions; less than 100 m. Fujian, Guangdong, Jiangsu, Liaoning, Shandong, Taiwan, Zhejiang [Japan, Korea, Philippines; Indian Ocean Islands (Mauritius, Reunion), Pacific Islands].

100. *Lysimachia jiangxiensis* C. M. Hu, Acta Bot. Austro Sin. 2: 200. 1986.

江西珍珠菜 jiang xi zhen zhu cai

Herbs perennial, to 1 m tall, without creeping rhizomes. Stems erect, to 8 mm in diam. at base, branched in upper part, fulvous pubescent. Leaves alternate; petiole 6–10 mm, pubescent; leaf blade narrowly elliptic to elliptic-lanceolate, 10–16 × 3.5–6 cm, densely puberulent, epunctate, base cuneate-attenuate, apex acuminate; veins 7–9 pairs, veinlets inconspicuous. Racemes to 27 cm in fruit; rachis densely pubescent; bracts linear-lanceolate, 4–5 mm, ciliate. Pedicel 2–2.5 mm, densely pubescent. Calyx lobes elliptic to oblong, ca. 3 mm, glandular ciliate, margin membranous, apex obtuse. Corolla white; tube ca. 1.5 mm; lobes elliptic, ca. 2.5 × 1.2 mm, apex obtuse or acute. Stamens included; filaments adnate to corolla tube, free parts ca. 1 mm; anthers ovate, dorsifixed, ca. 0.7 mm. Ovary glabrous. Style ca. 1 mm. Capsule subglobose, ca. as long as persistent calyx.

* Shrubs on low hills; 300–500 m. NE Jiangxi (Yushan Xian).

101. *Lysimachia clethroides* Duby in A. de Candolle, Prodr. 8: 61. 1844.

矮桃 ai tao

Herbs perennial, 40–100 cm tall, with creeping rhizomes. Stems erect, simple, sparsely pubescent or glabrescent, dull red at base. Leaves alternate, subsessile or petiole 2–10 mm; leaf blade narrowly elliptic to broadly lanceolate, 6–16 × 2–5 cm, ± pubescent, sparsely black glandular punctate, base attenuate, apex acuminate. Racemes densely flowered, ca. 6 cm at anthesis, to 20–40 cm in fruit; rachis densely fulvous pubescent; bracts linear-subulate, slightly longer than pedicels. Flowers usually secund. Pedicel 4–6 mm. Calyx lobes ovate-elliptic, 2.5–3 mm, ciliate, margin membranous, apex rounded. Corolla white; tube ca. 1.5 mm; lobes narrowly oblong, 3.5–4.5 mm, apex obtuse. Stamens included; filaments adnate to corolla tube, free parts ca. 2 mm, glandular; anthers oblong, dorsifixed, ca. 1 mm. Ovary ovoid.

Style 3–3.5 mm. Capsule subglobose, 2.5–3 mm in diam. Fl. May–Jul. $2n = 24$.

Damp woodland margins, wet ravines, grassy mountain slopes; 300–2100 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea, E Russia].

102. *Lysimachia barystachys* Bunge, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 2: 127. 1835.

虎尾草 hu wei cao

Herbs perennial, 30–100 cm tall, with creeping rhizomes. Stems erect, simple or branched in upper part, with dense multicellular tangled hairs. Leaves alternate or subopposite, sessile; leaf blade oblong-lanceolate to oblanceolate or linear, 4–10 × 0.6–2.2 cm, abaxially more densely so, epunctate, adaxially pubescent, tapered at base, apex obtuse to acute. Racemes 4–6 cm, elongated to 30 cm in fruit, densely flowered; bracts linear-subulate, ciliate. Flowers often secund. Pedicel 4–6 mm, usually slightly shorter than bracts, pubescent. Calyx lobes oblong, 3–4 mm, margin membranous, apex rounded. Corolla white; tube ca. 2 mm; lobes oblong-spatulate, 5–8 × ca. 2 mm, often dark purple glandular striate, apex obtuse to slightly emarginate. Stamens included; filaments adnate to corolla tube, free parts ca. 3 mm, glandular puberulent; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style 3–3.5 mm. Capsule subglobose, 2.5–4 mm in diam. Fl. May–Aug. $2n = 24$ *.

Mountain meadows, grassy mountain slopes, among shrubs; 800–2000 m. Fujian, Guizhou, Hebei, Heilongjiang, Jiangsu, Jilin, Liaoning, Nei Mongol, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang [Japan, Korea, E Russia].

103. *Lysimachia stigmatica* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 41. 1979.

大叶珍珠菜 da ye zhen zhu cai

Herbs perennial, glabrous, to 80 cm tall, without creeping rhizomes. Stems erect, terete, sparsely brown glandular striate. Leaves alternate; petiole 1.5–2.5 cm, narrowly winged; leaf blade narrowly elliptic, 11–16 × 4–5 cm, membranous when dry, thinly black glandular striate near margin, base cuneate-attenuate, apex acute; veins 9–11 pairs, veinlets inconspicuous. Racemes 30–35 cm; rachis densely minutely brown glandular; bracts subulate, 2–3 mm, black striate. Pedicel to 1 cm. Calyx lobes elliptic, ca. 2 mm, glandular ciliate, abaxially with 2 vertical glandular stripes, margin and apex membranous, apex obtuse. Corolla white; tube ca. 1 mm; lobes elliptic, ca. 3 × 1.6 mm, apex rounded. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers dorsifixed. Ovary glabrous. Style ca. 1.8 mm. Capsule unknown. Fl. May.

* Damp areas in mixed forests. S Anhui, N Jiangxi.

104. *Lysimachia tienmushanensis* Migo, J. Shanghai Sci. Inst. 4: 153. 1939.

天目珍珠菜 tian mu zhen zhu cai

Herbs perennial, glabrous, 35–80 cm tall, without creeping rhizomes. Stems erect, purplish at base, subterete, simple or branched. Basal leaves early deciduous; leaf blade spatulate to oblanceolate or oblong, 4–10 × 2.5–3.5 cm, base cuneate, apex obtuse to acute; stem leaves alternate, sessile or subsessile, narrowly lanceolate to linear, 6–13 × 0.4–1.7 cm, densely red glandular punctate near margin, base cuneate, apex acute to acuminate. Racemes 10–25 cm; bracts subulate, 3–5 mm. Pedicel 3–6 mm. Calyx lobes ovate-elliptic, ca. 1.7 mm, glandular ciliate, red glandular striate abaxially and at apex, margin membranous, apex acute. Corolla white; tube ca. 1 mm; lobes ovate to ovate-elliptic, ca. 3 × 1.6 mm, red glandular punctate, apex obtuse. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 0.5 mm; anthers dorsifixed. Ovary ovoid. Style ca. 2 mm. Capsule subglobose, 2–3 mm in diam. Fl. May–Jun.

* Streamsides, woodland margins, ravines; 600–1000 m. NW Zhejiang.

105. *Lysimachia fortunei* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 12: 68. 1868.

红根草 hong gen cao

Lysimachia fortunei var. *pubescens* Pampanini.

Herbs perennial, glabrous, 30–70 cm tall. Rhizomes creeping, reddish. Stems erect, terete, usually simple, glabrescent, black glandular punctate. Leaves alternate, subsessile; leaf blade oblong-lanceolate to narrowly elliptic, 4–11 × 1–2.5 cm, with many scattered glandular dots, slightly raised when dry, base attenuate, apex short acuminate. Racemes 10–20 cm; bracts lanceolate, 2–3 mm. Pedicel ca. as long as to slightly shorter than bracts. Calyx lobes ovate-elliptic, ca. 1.5 mm, ciliate, thick black glandular, margin membranous, apex obtuse. Corolla white, ca. 3 mm, parted slightly below middle; lobes elliptic to ovate-elliptic, black glandular punctate, apex rounded. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers ovate, dorsifixed, ca. 0.5 mm. Ovary ovoid. Style ca. 1 mm. Capsule globose, 2–2.5 mm in diam. Fl. Jun–Aug. $2n = 24$.

Wet areas, ditches, banks of rice paddies, roadsides; sea level to 1500 m. Fujian, Guangdong, Guangxi, Hainan, Hunan, Jiangsu, Jiangxi, Taiwan, Zhejiang [Japan, Korea, Vietnam].

106. *Lysimachia chikungensis* L. H. Bailey, Gentes Herb. 1: 40. 1920.

长穗珍珠菜 chang sui zhen zhu cai

Herbs perennial, 30–60 cm tall, without creeping rhizomes. Stems erect, terete, often branched in upper part, densely puberulent and short-stalked glandular. Leaves alternate; petiole indistinct or leaves sessile; leaf blade narrowly lanceolate to linear-lanceolate, 4–6 cm × 5–7(–9) mm, ± glandular and obscurely punctate, base cuneate, margin narrowly revolute, apex acute; midvein raised abaxially, veins inconspicuous. Racemes to 25 cm in fruit; bracts subulate, 2.5–3.5 mm. Pedicel 1–2 mm. Calyx lobes elliptic, ca. 1.5 mm, glandular ciliate, margin membranous. Corolla white, 2–3 mm, parted slightly below middle; lobes

oblong-obovate, apex rounded. Stamens included; filaments adnate to corolla tube, free parts ca. 1 mm; anthers ovate, dorsifixed, ca. 1 mm. Ovary ovoid. Style ca. 0.8 mm. Capsule subglobose, ca. 2 mm in diam. Fl. Jun–Jul.

* Rock crevices, S-facing grassy mountain slopes; 400–500 m. S Henan, N Hubei.

107. *Lysimachia chenopodioides* Watt ex J. D. Hooker, Fl. Brit. India 3: 503. 1882.

藜状珍珠菜 li zhuang zhen zhu cai

Herbs annual, glabrous, 7–50 cm tall. Stems erect or arcuate at base, quadrangular, usually much branched. Leaves alternate, rarely subopposite on lower part of stems; petiole 5–10 mm, narrowly winged; leaf blade ovate to rhomboid-ovate, 0.5–3.5 × 0.5–1.5 cm, sparsely dark purple or brown glandular punctate and striate, base attenuate, apex acuminate to acute. Flowers solitary, in axils of upper leaves. Pedicel 1–2 mm. Calyx lobes lanceolate, 3–4 mm, dark red glandular striate outside except on apex, margin membranous, apex ± recurved. Corolla white or pink; tube ca. 1 mm; lobes oblong-spatulate, 2–3 mm, reddish brown glandular striate, apex obtuse. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers ovate, dorsifixed, ca. 0.5 mm. Ovary glabrous. Style ca. 1.5 mm. Capsule globose, ca. 4 mm in diam. Fl. Jun.

Margins of cultivated fields, grassy mountain slopes; 200–3200 m. SE Xizang, C and N Yunnan [Bhutan, India, Kashmir, N Myanmar, Nepal, Pakistan].

108. *Lysimachia excisa* Handel-Mazzetti, Acta Horti Gothob. 2: 118. 1926.

短柱珍珠菜 duan zhu zhen zhu cai

Herbs annual, glabrous, 30–50 cm tall. Stems erect, angular, branched in upper part. Leaves alternate; petiole 1/3–1/2 as long as leaf blade, narrowly winged; leaf blade ovate-lanceolate to elliptic-lanceolate, 2–6 × 1–2 cm, thick black glandular striate near margin, base cuneate, apex acuminate. Racemes 8–15 cm, lax; bracts subulate-lanceolate, lowest bracts leaflike, gradually reduced upward. Pedicel 1.5–2.5 (–4) mm, slightly shorter than bracts. Calyx lobes lanceolate, ca. 3 mm, glandular ciliate, thick brown glandular striate outside, margin membranous, apex obtuse, costate. Corolla white, 3.5–5 mm, parted to 2/3; lobes elliptic, apex obtuse. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 0.5 mm; anthers dorsifixed. Ovary glabrous. Style ca. 1 mm. Capsule subglobose, 4–5 mm in diam. Fl. Jun–Jul.

* Margins of mountain woodlands, among shrubs; 2400–3500 m. SW Sichuan (Jiulong Xian, Muli Xian), NW Yunnan.

109. *Lysimachia reflexiloba* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 60: 136. 1923.

折瓣珍珠菜 zhe ban zhen zhu cai

Herbs perennial, 20–50 cm tall, smooth except for sparingly glandular inflorescences. Stems erect to erect-ascending, quadrangular, usually branched at base, dark

purple or black glandular striate. Leaves alternate; petiole 1/5–1/3 as long as leaf blade; leaf blade elliptic, 1.5–3.8 × 0.6–1.7 cm, densely dark purple or black glandular punctate, base short attenuate, margin obscurely undulate, apex acute. Racemes 15–50 cm, lax; bracts subulate. Pedicel erect to spreading, ca. 2 mm, slightly shorter than bracts. Calyx lobes oblong, 3–4.5 mm, dark purple or black glandular striate outside, margin membranous, apex obtuse to subacute. Corolla white; tube 2–2.5 mm; lobes reflexed, spatulate, 5–6 × 1.5–2 mm, dark purple striate, apex obtuse. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 1 mm. Capsule globose, 5–6 mm in diam.

* Grassy mountain slopes; 1700–2200 m. SW Sichuan (Muli Xian).

110. *Lysimachia roseola* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 42. 1979.

粉红珍珠菜 fen hong zhen zhu cai

Herbs annual, glabrous, to 50 cm tall. Stems erect, obtusely quadrangular, usually simple. Leaves alternate; petiole 0.5–2 cm, narrowly winged; leaf blade lanceolate, 2.5–5.5 × 0.9–1.8 cm, black glandular striate along midvein and margin, base attenuate, apex acuminate; veins 5 or 6 pairs, slightly raised abaxially. Racemes initially coniform, gradually elongated to 15 cm in fruit, densely flowered; bracts linear, 4–7 mm, black striate on margin. Pedicel slightly angular, ca. 5 mm, elongated to 8 mm in fruit. Calyx lobes lanceolate, ca. 3.5 × 0.8 mm, abaxially with 2 vertical glandular stripes, margin membranous, apex subobtuse. Corolla pink; tube ca. 1.5 mm; lobes obovate, 4.5–5.5 × 2.5–3 mm, with 2 parallel red glandular stripes at middle, apex rounded. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers elliptic, dorsifixed, ca. 1 mm. Ovary ovoid. Style ca. 2 mm. Capsule subglobose, 3–3.5 mm in diam. Fl. May–Jun.

* Grassy mountain slopes, roadsides; ca. 2000 m. SW Sichuan (Jiulong Xian).

111. *Lysimachia circaeoides* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 49. 1889.

露珠珍珠菜 lu zhu zhen zhu cai

Lysimachia circaeoides var. *lyratifolia* Handel-Mazzetti.

Herbs perennial, glabrous, 45–70 cm tall. Stems erect, obtusely quadrangular, branched in upper part. Leaves opposite, sometimes alternate in upper part of stem; petiole 0.5–1.5 cm, narrowly winged; leaf blade lanceolate to elliptic-lanceolate or elliptic, 5–10 × 1.5–3 cm, abaxially very densely and minutely rust-colored glandular and sparsely dull red or black glandular punctate near margin, base cuneate, apex acute; veins 6 or 7 pairs, veinlets inconspicuous. Racemes 5–15 cm; lanceolate, lower bracts often longer than pedicels, gradually reduced upward to subulate, 2.5–4 mm. Calyx lobes ovate-lanceolate, 3–4 mm, ciliate, abaxially with 2–4 thick glandular stripes, apex acute. Corolla white; tube ca. 2 mm; lobes rhomboid-ovate, 2.5–3.5 mm, brown glandular

striate, apex acute. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers ovate, dorsifixed, less than 1 mm, red glandular at apex. Ovary glabrous. Style ca. 2 mm. Capsule globose, ca. 3 mm in diam. Fl. May–Jun.

* Damp areas in mountain stream valleys; 600–1200 m. Guizhou, Hubei, Hunan, Jiangxi, Sichuan.

112. *Lysimachia auriculata* Hemsley in F. B. Forbes & Hemsley, *J. Linn. Soc., Bot.* 26: 47. 1889.

耳叶珍珠菜 er ye zhen zhu cai

Lysimachia paxiana R. Knuth.

Herbs perennial, glabrous, 40–60 cm tall. Stems erect, obtusely quadrangular, usually branched in upper part. Leaves opposite, sometimes alternate in upper part of stem, sessile; leaf blade ovate to ovate-lanceolate or linear, 4–10 × 0.2–2.5 cm, densely dull red glandular punctate near margin, base auriculate and clasping, apex acuminate to acute; veins 6 or 7 pairs, veinlets inconspicuous. Racemes 10–15 cm; bracts subulate. Pedicel 2–4(–6) mm, ca. as long as to slightly longer than bracts. Calyx lobes lanceolate, 3.5–4 mm, ciliate, apex acuminate. Corolla white; tube ca. 1.5 mm; lobes oblong-spatulate, 3.5–4.5 × 1.2–1.5 mm, usually dark purple glandular striate, apex obtuse or subacute. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 0.5 mm; anthers linear, dorsifixed, ca. 1.2 mm, red glandular at apex. Ovary glabrous. Style ca. 2 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

* Shaded areas on mountain slopes; 200–1600 m. S Gansu, W Hubei, S Shaanxi, E Sichuan.

113. *Lysimachia glanduliflora* Hanelt, *Repert. Spec. Nov. Regni Veg.* 64: 231. 1962.

遂瓣珍珠菜 sui ban zhen zhu cai

Herbs perennial, glabrous, 40–70 cm tall. Stems erect, quadrangular, usually simple. Leaves opposite, rarely alternate in upper part of stems; petiole 5–10 mm, narrowly winged; leaf blade ovate to ovate-lanceolate, 8–11 × 2.5–3.5 cm, sparsely dark purple or black glandular punctate and striate near margin, base attenuate, margin obscurely undulate, apex acuminate. Racemes terminal; peduncle and pedicels with scattered raised glands; bracts linear, 3–4.5 mm. Pedicel 7–9 mm, slightly thickened toward apex. Calyx lobes triangular-lanceolate, 3–3.5 mm, ciliolate, brown glandular striate outside, apex subobtuse, ± recurved. Corolla white, 5–5.5 mm, parted ca. to middle; lobes suborbicular to subflabellate, red glandular punctate, apex erose-denticulate. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers elliptic, dorsifixed, 1–1.5 mm, apex red glandular. Ovary glabrous. Style ca. 2 mm. Capsule subglobose, ca. 2.5 mm in diam. Fl. May.

* Damp areas on mountain slopes. S Henan, N Hubei, NW Jiangxi.

114. *Lysimachia heterogenea* Klatt, *Linnaea* 37: 501. 1872.

黑腺珍珠菜 hei xian zhen zhu cai

Lysimachia paludicola Hemsley.

Herbs perennial, glabrous, 40–80 cm tall. Stems erect, quadrangular, winged on ridges, branched in upper part. Basal leaves spatulate, early deciduous. Stem leaves opposite, sessile; leaf blade lanceolate to linear-lanceolate, rarely oblong-lanceolate, 4–13 × 1–3 cm, densely minutely black glandular punctate, base obtuse to auriculate and semiclasping, apex acute to obtuse. Racemes terminal; bracts leaflike. Pedicel 3–5 mm, ca. as long as to shorter than bracts. Calyx lobes linear-lanceolate, 4–5 mm, black glandular punctate and striate outside. Corolla white, ca. 7 mm; tube ca. 2.5 mm; lobes ovate-oblong. Stamens ca. as long as corolla; filaments adnate to middle of corolla, free parts ca. 3 mm; anthers linear, dorsifixed, ca. 1.5 mm, with a callus at apex. Ovary glabrous. Style ca. 6 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jul.

* Near water, gullies. Anhui, Fujian, Guangdong, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Zhejiang.

115. *Lysimachia stenosepala* Hemsley in F. B. Forbes & Hemsley, *J. Linn. Soc., Bot.* 26: 57. 1889.

腺药珍珠菜 xian yao zhen zhu cai

Herbs perennial, glabrous, 30–65 cm tall. Stems erect, quadrangular and usually branched in upper part. Leaves opposite, often alternate in upper part of stem, sessile or petiole 5–10 mm; leaf blade lanceolate to elliptic-lanceolate or elliptic, 4–10 × 0.8–4 cm, base attenuate, margin obscurely repand, apex acute to acuminate; veins 4–6 pairs, veinlets inconspicuous. Racemes 5–15 cm, bracts linear-lanceolate, 3–5 mm. Pedicel 2–7 mm, elongated slightly in fruit. Calyx lobes linear-lanceolate, ca. 5 mm, hyaline margined, apex subulate-acuminate. Corolla white, 4–8 mm, parted 1/2–2/3; lobes ovate-oblong to spatulate or elliptic. Stamens included; filaments adnate to lower part of corolla lobes, free parts 2–2.5 mm; anthers linear, dorsifixed, ca. 1.5 mm, apex red glandular. Ovary glabrous. Style to 5 mm. Capsule subglobose, ca. 3 mm in diam. $2n = 24$.

* Damp woodland margins, streamsides, grassy mountain slopes, scrub; 900–2500 m. Guizhou, Hubei, Hunan, Shaanxi, S Sichuan, Yunnan, Zhejiang.

- 1a. Corolla parted below middle; leaves glaucous abaxially 115a. var. *stenosepala*
- 1b. Corolla parted to middle; leaves minutely rust-colored glandular abaxially 115b. var. *flavescens*

115a. *Lysimachia stenosepala* var. *stenosepala*

腺药珍珠菜(原变种) xian yao zhen zhu cai (yuan bian zhong)

Lysimachia candida Lindley subsp. *oppositifolia* R. Knuth; *L. miltandra* Franchet.

Leaf blade lanceolate to oblong-lanceolate or oblong, abaxially glaucous, sparsely dark purple or black glandular

punctate and striate near margin. Corolla 6–8 mm, deeply parted; lobes ovate-oblong to spatulate, 4–5 × 1.5–2 mm, usually epunctate. Fl. May–Jun.

* Damp woodland margins, streamsides, grassy mountain slopes; 900–2500 m. Guizhou, Hubei, Hunan, Shaanxi, Zhejiang.

115b. *Lysimachia stenosepala* var. *flavescens* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 42. 1979.

云贵腺药珍珠菜 yun gui xian yao zhen zhu cai

Leaf blade usually narrowly lanceolate, very densely minutely rust-colored glandular abaxially. Corolla 4–6 mm, parted to middle; tube 2–3 mm; lobes elliptic to broadly elliptic, 2–3 mm wide, sparsely black glandular striate. Fl. May–Jun.

* Damp streamsides, scrub; 1100–1900 m. Guizhou, S Sichuan, Yunnan.

116. *Lysimachia silvestrii* (Pampanini) Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 113. 1928.

北延叶珍珠菜 bei yan ye zhen zhu cai

Lysimachia circaeoides Hemsley var. *silvestrii* Pampanini, Nuovo Giorn. Bot. Ital., n.s. 17: 684. 1910.

Herbs annual, glabrous, 30–75 cm tall. Stems erect, terete, simple or branched in upper part. Leaves opposite; petiole 1.5–3 cm; leaf blade ovate-lanceolate to elliptic, rarely ovate, 3–7 × 1–3.5 cm, submembranous when dry, dark glandular striate near margin, base attenuate, apex acuminate; veins 4 or 5 pairs, veinlets inconspicuous. Racemes 4–10 cm; lowest bracts leaflike, subulate, ca. 6 mm, smaller above. Pedicel erect to spreading, 1–2 cm. Calyx lobes lanceolate, ca. 6 mm, dark glandular striate outside, more densely so near apex, apex often recurved, acuminate. Corolla white, ca. 6 mm, ca. as long as calyx; tube ca. 2 mm; lobes oblong-ovate, apex obtuse to acute. Stamens included or anther tips exerted from corolla; filaments adnate to base of corolla lobes, free parts ca. 2.5 mm; anthers narrowly elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 4 mm. Capsule subglobose, 3–4 mm in diam. Fl. May–Jul.

* Gullies, open forests, grassy mountain slopes; 1400–3000 m. SE Gansu, Hubei, Hunan, Jiangxi, S Shaanxi, NE Sichuan.

117. *Lysimachia decurrens* G. Forster, Fl. Ins. Austr. 12. 1786.

延叶珍珠菜 yan ye zhen zhu cai

Lysimachia consobrina Hance; *L. decurrens* var. *eudecurrens* R. Knuth; *L. decurrens* var. *recurvata* Matsumura; *L. recurvata* (Matsumura) Masamune; *L. sinica* Miquel.

Herbs perennial, glabrous, 40–90 cm tall. Stems erect, with raised lines descending from base of leaf petioles, woody at base, usually much branched. Leaves alternate, sometimes subopposite; petiole 1–4 cm, narrowly winged; leaf blade lanceolate to elliptic-lanceolate, 6–13 × 1.5–4 cm, submembranous when dry, sparsely black glandular punctate or striate, especially near margin, base cuneate, apex acute to

acuminate. Racemes terminal, 10–25 cm; bracts subulate, 2–3 mm. Pedicel 2–9 mm, elongated to 1–1.8 cm in fruit. Calyx lobes narrowly lanceolate, 3–4 mm, glandular ciliate, abaxially black striate. Corolla white or tinged with purple; tube ca. 1.5 mm; lobes oblong-spatulate, 1–2.5 mm, apex rounded; sinus between lobes subrounded. Stamens long exerted; filaments adnate to base of corolla lobes; anthers ovate, purple, dorsifixed, ca. 1 mm. Ovary ovoid. Style ca. 5 mm. Capsule globose or slightly depressed, 3–4 mm in diam. Fl. Apr–May.

Wastelands near villages, roadsides, open forests near streams. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Taiwan, Yunnan [Bhutan, India, Indonesia, Japan, Laos, Philippines, Sikkim, Thailand, Vietnam; Pacific Islands].

118. *Lysimachia breviflora* C. M. Hu, Acta Bot. Austro Sin. 2: 201. 1986.

短花珍珠菜 duan hua zhen zhu cai

Herbs perennial, to 1 m tall. Stems erect, obtusely quadrangular, branched in upper part, apex and young shoots densely glandular. Leaves alternate; petiole 1.5–3.5 mm, narrowly winged; leaf blade lanceolate, 5–10 × 0.8–2 cm, glabrous, reddish brown or black glandular punctate or striate near margin, base cuneate-attenuate, margin obscurely undulate, apex acute to subacuminate; veins 4 or 5 pairs, veinlets conspicuous abaxially. Racemes terminal, 8–13 cm; bracts subulate. Pedicel slightly angular, 5–7.5 mm, elongated to 1 cm in fruit. Calyx lobes lanceolate, 4–4.5 mm, with 4 vertical brown glandular stripes outside, margin membranous. Corolla pale purple, ca. 3.5 mm, shorter than calyx; tube ca. 1.5 mm; lobes narrowly oblong, ca. 2 × 0.8 mm, epunctate, apex obtuse, sinus between lobes obtuse. Stamens exerted; filaments adnate to base of corolla lobes, free parts ca. 3.5 mm; anthers ovate, dorsifixed, ca. 0.5 mm. Ovary glabrous. Style to 4 mm. Capsule subglobose, slightly shorter than persistent calyx. Fl. Jun.

* Grassy mountain slopes; 1700–1800 m. NW Yunnan (Fugong Xian).

119. *Lysimachia platypetala* Franchet, Nouv. Arch. Mus. Hist. Nat., Sér. 2, 10: 59. 1888.

阔瓣珍珠菜 kuo ban zhen zhu cai

Lysimachia decurrens G. Forster var. *platypetala* (Franchet) R. Knuth.

Herbs perennial, 30–70 cm tall. Stems erect, terete, usually branched above middle. Leaves alternate, sometimes opposite on lower part of stem; petiole ca. 1 cm; leaf blade lanceolate, 5–8 × 1–1.2 cm, abaxially very densely minutely rust-colored glandular, base attenuate, apex acuminate. Racemes terminal, densely flowered; bracts subulate. Pedicel 5–7 mm, ca. as long as to longer than bracts, densely glandular. Calyx lobes lanceolate, 5–6 mm, abaxially black striate, margin membranous, apex slightly recurved. Corolla white or pink; tube ca. 2 mm; lobes suborbicular, ca. 4 mm, base clawed, occasionally with 2 dark purple glandular stripes

at middle, sinus between lobes rounded. Stamens long exserted; filaments adnate to base of corolla lobes, free parts 3–4 mm; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 6 mm. Capsule subglobose, 4–5 mm in diam. Fl. Jun–Jul.

* Streamsides, at margins of valley woodlands; 2000–2500 m. SW Sichuan, C and N Yunnan.

120. *Lysimachia glaucina* Franchet, J. Bot. (Morot) 9: 457. 1895.

灰叶珍珠菜 hui ye zhen zhu cai

Herbs perennial, glabrous, 45–75 cm tall. Stems erect, terete below, obtusely quadrangular above. Lower leaves opposite; upper leaves alternate or subopposite; leaf blade sessile, lanceolate, 5–7(–11) × 0.8–1.2(–1.8) cm, abaxially glaucous, with or without few obscurely raised dots, adaxially dark green, tapered to both ends. Racemes terminal; bracts lanceolate. Pedicel 0.8–1.2 cm, slightly longer than bracts. Calyx lobes lanceolate, ca. 4.5 × 1.2 mm, abaxially brown glandular striate, hyaline margined. Corolla pink; tube ca. 2.5 mm; lobes broadly obovate to suborbicular, ca. 3.5 mm, epunctate, base clawed. Stamens exserted; filaments adnate to base of corolla lobes, free parts ca. 4 mm; anthers ovate, dorsifixed, ca. 0.8 mm. Ovary ovoid. Style ca. 4.5 mm. Capsule unknown. Fl. Jul.

* Margins of valley woodlands; 2000–2400 m. N Yunnan (Heqing Xian).

121. *Lysimachia orbicularis* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 43. 1979.

圆瓣珍珠菜 yuan ban zhen zhu cai

Herbs perennial, glabrous, to 40 cm tall. Stems erect, branched above middle. Leaves alternate, occasionally subopposite in branches; petiole 3–5 mm; leaf blade ovate-lanceolate, 4–5 × 1.5–2 cm, abaxially glaucous, with or without few obscure dots, adaxially green, brown glandular punctate near margin, base cuneate, obscurely undulate, apex subacuminate. Leaves on branches sessile, smaller. Racemes terminal, 9–12 cm; bracts linear-lanceolate to subulate, slightly shorter than pedicels. Lowest pedicels slightly angular, to 1 cm, gradually reduced upward. Calyx lobes lanceolate, ca. 4.5 mm, reddish brown striate, margin membranous. Corolla white, ca. 6 mm; tube ca. 2.5 mm; lobes suborbicular, ca. 3.5 mm wide, densely reddish brown striate near apex, base clawed, sinus between lobes rounded. Stamens exserted; filaments adnate to base of corolla lobes; anthers ovate, dorsifixed, ca. 1 mm. Ovary glabrous. Style 5.5–6 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Jun–Jul.

* Ravines; ca. 2200 m. SW Sichuan (Dechang Xian).

122. *Lysimachia violascens* Franchet, J. Bot. (Morot) 9: 459. 1895.

大花珍珠菜 da hua zhen zhu cai

Herbs perennial, 30–90 cm tall. Stems erect, slightly angular, usually simple; young parts and inflorescences ± minutely brown glandular. Leaves alternate or sometimes subopposite on lower part of stem, sessile or subsessile, leaf blade lanceolate to linear-lanceolate, 5–10 × 1–2 cm, glabrous, sparsely dark purple or black glandular punctate or striate, base attenuate, margin obscurely undulate, apex acuminate. Racemes terminal, 10–25 cm; bracts linear. Pedicel erect to spreading, 4–13 mm, ca. as long as bracts. Calyx lobes 5–6 mm, abaxially with 4–6 vertical brown glandular stripes, margin membranous, apex acute. Corolla pink, 0.8–1.2 cm, parted slightly below middle; lobes obovate, glandular punctate, apex rounded, sinus between lobes acute. Stamens ca. 2/3 as long as corolla lobes; filaments adnate to base of corolla lobes; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 6 mm. Capsule subglobose, ca. 3 mm in diam.

* Mountain slopes. N Yunnan.

123. *Lysimachia lichiangensis* Forrest, Notes Roy. Bot. Gard. Edinburgh 4: 237. 1908.

丽江珍珠菜 li jiang zhen zhu cai

Herbs perennial, glabrous, 35–75 cm tall. Stems erect, simple or weakly branched, ± glandular on upper part. Leaves alternate; petiole 3–10 mm, narrowly winged; leaf blade lanceolate, 3–7 × 0.6–1.6 cm, dark glandular punctate especially near margin, base attenuate, obscurely undulate, apex acuminate. Racemes terminal, 3–10 cm, elongated to 20 cm in fruit; bracts linear-lanceolate, 5–8 mm. Pedicel 4–5 mm. Calyx 3.5–6 mm; lobes lanceolate, abaxially glandular striate. Corolla white to pink, 6–7(–8) mm, parted slightly below middle; lobes obovate, apex rounded, sinus between lobes rounded. Stamens ca. as long as corolla lobes or longer; filaments adnate to base of corolla lobes; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 5 mm. Capsule subglobose, 3–4 mm in diam.

* Grassy mountain slopes, woodland margins, thickets, river valleys; 500–3200. W Sichuan, N Yunnan.

- 1a. Calyx 5–6 mm, slightly shorter than corolla; stamens ca. as long as corolla 123a. var. *lichiangensis*
1b. Calyx 3.5–4 mm, ca. 1/2 as long as corolla; stamens longer than corolla 123b. var. *xerophylla*

123a. *Lysimachia lichiangensis* var. *lichiangensis*

丽江珍珠菜(原变种) li jiang zhen zhu cai (yuan bian zhong)

Lysimachia lichiangensis var. *robusta* C. Y. Wu.

Calyx 5–6 mm, only slightly shorter than corolla. Stamens ca. as long as corolla lobes. Fl. May–Jun.

* Grassy mountain slopes, woodland margins, thickets; 2900–3200. N Yunnan.

123b. *Lysimachia lichiangensis* var. *xerophylla* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 54. 1965.

干生珍珠菜 gan sheng zhen zhu cai

Calyx 3.5–4 mm, ca. 1/2 as long as corolla. Stamens longer than corolla. Fl. Jun–Jun.

* Grassy slopes, river valleys; 500–1800 m. W Sichuan, N Yunnan.

124. *Lysimachia taliensis* Bonati, Bull. Soc. Bot. Genève 5: 309. 1913.

大理珍珠菜 da li zhen zhu cai

Lysimachia pauciflora C. Y. Wu; *L. taliensis* var. *breviloba* C. Y. Wu.

Herbs perennial, glabrous, 35–80 cm tall. Stems erect, simple or branched in upper part; branches subverticillate. Leaves in whorls of 3 or 4, opposite on branches, subsessile; leaf blade lanceolate to linear, 4–11 × 0.5–1(–2.3) cm, abaxially glaucous, with many scattered dark purple to black glandular dots or stripes, or sometimes obscure and slightly raised, adaxially dark green, base cuneate-attenuate, subauriculate dilated. Racemes terminal, 4–7 cm, elongated to 25 cm in fruit; bracts linear, 3–6(–9) mm. Pedicel 5–7 mm, elongated to 1 cm in fruit. Calyx lobes linear-lanceolate, 4–5(–7) mm, dark purple wide glandular striate outside, hyaline margined, apex acute, costate. Corolla white or pink; tube 2–2.5 mm; lobes obovate to oblong-elliptic, 4–6(–8.5) × 2–4 mm, apex rounded; sinus between lobes obtuse. Stamens ca. as long as to slightly shorter than corolla lobes; filaments adnate to base of corolla lobes, free parts ca. 3 mm; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style 5–6 mm. Capsule subglobose, 4–5 mm in diam. Fl. Apr.

* Grassy mountain slopes, scrub forests; 2600–3800 m. Yunnan.

The corolla lobes in *Lysimachia taliensis* are typically obovate, which make the species distinctive, but when they are oblong and only 2 mm wide, this species is difficult to distinguish from *L. delavayi* Franchet.

125. *Lysimachia tsaii* C. M. Hu, Novon 4: 103. 1994.

波缘珍珠菜 bo yuan zhen zhu cai

Herbs perennial, 30–50 cm tall. Stems erect, obtusely quadrangular, often branched and glandular above. Leaves subopposite; petiole ca. 5 mm, narrowly margined; leaf blade lanceolate to linear-lanceolate, 2.5–7 cm × 3–14(–18) mm, glabrous, paler green abaxially, glandular punctate and striate at margin, green adaxially, base cuneate-attenuate, margin crisped-undulate, apex caudate-acuminate; lateral veins 5 or 6 pairs, midvein elevated abaxially. Racemes terminal, 3–8 cm; bracts subulate-lanceolate, as long as to slightly longer than pedicel. Pedicel 2.5–3.5 mm, to 5 mm in fruit, glandular. Calyx ca. 5 mm, parted to base; lobes linear-lanceolate, dark brown striate. Corolla rose, 7.5–8.5 mm; tube ca. 2 mm; lobes oblong-lanceolate, 3–3.2 mm wide, often glandular striate, apex rounded, sinus between lobes subobtuse. Stamens ca. as long as corolla or slightly longer; filaments adnate to base of corolla lobes, free parts glabrous; anthers elliptic, ca. 1 mm. Ovary glabrous. Style ca. 7 mm. Capsule brown, globose, ca. 2.5 mm in diam. Fl. Jun.

* Streamsides; ca. 3000 m. NW Yunnan (Lanping Xian).

126. *Lysimachia robusta* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 116. 1928.

粗壮珍珠菜 cu zhuang zhen zhu cai

Herbs perennial, 1–1.5 m tall. Stems erect, quadrangular, usually branched in upper part. Leaves opposite, suberect, sessile; leaf blade linear-lanceolate, 5–11 × 1–1.5 cm, subleathery, abaxially glaucous, densely minutely dark glandular punctate, base short attenuate, semiclasping, apex acute. Racemes terminal, initially coniform, gradually elongated to 24 cm; bracts acuminate-subulate, ca. 6.5 × 1 mm, densely glandular punctate. Pedicel spreading, to 1 cm, glandular. Calyx lobes purplish, ovate, ca. 4 × 1.2 mm, sparsely dark glandular striate and punctate near apex, base dark green, margin membranous. Corolla reddish or pale purple; tube ca. 1.5 mm; lobes obovate, ca. 5 × 4 mm, red striate near apex, base slightly clawed, margin crenulate, apex rounded. Stamens exerted, to 8.5 mm; filaments adnate to base of corolla lobes; anthers elliptic, dorsifixed, ca. 1 mm. Ovary ovoid. Style filiform, 5–8 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Jul.

* Among shrubs on mountain slopes; 2400–2700 m. SW Yunnan (Tengchong Xian).

127. *Lysimachia delavayi* Franchet, J. Bot. (Morot) 9: 457. 1895.

金江珍珠菜 jin jiang zhen zhu cai

Herbs perennial, glabrous, 25–50 cm tall. Stems erect, quadrangular, simple or branched. Leaves alternate, rarely subopposite or verticillate, sessile; leaf blade narrowly lanceolate to linear, 6–8 cm × 4–10 mm, tapered to slightly dilated base, abaxially glaucous, with many scattered dark purple glandular dots and stripes, sometimes obscure and slightly raised, apex acute. Racemes terminal, initially coniform, to 13 cm in fruit; bracts subulate. Pedicel ca. 5 mm, elongated to 1 cm in fruit, ca. as long as to slightly shorter than bracts. Calyx lobes narrowly lanceolate, ca. 4 mm, ciliate, with 4 vertical glandular stripes outside, margin membranous, apex acuminate. Corolla pink; tube ca. 2 mm; lobes spatulate-oblong, 4–6 × 1.5–2 mm, epunctate, apex rounded, sinus between lobes acute. Stamens exerted; filaments adnate to lower part of corolla lobes, free parts 4–5 mm; anthers oblong, dorsifixed, ca. 1 mm. Ovary ovoid. Style filiform, to 6.5 mm. Capsule subglobose, 4–5 mm in diam.

* *Pinus* and *Quercus* woodlands, glades; 2100–2900 m. N Yunnan (Heqing Xian).

128. *Lysimachia medogensis* F. H. Chen & C. M. Hu, Acta Phytotax. Sin. 17(4): 44. 1979.

墨脱珍珠菜 mo tuo zhen zhu cai

Herbs perennial, 40–80 cm tall. Stems erect, distinctly quadrangular, branched above middle, glabrescent. Leaves alternate or subopposite on lower part of stem, sessile; leaf blade oblanceolate, 7–12 × 1.8–2.6 cm, tapered toward subauriculate-dilated base, glabrescent, red glandular punctate and striate near margin, margin entire or obscurely undulate, apex acute; midvein keeled near base abaxially; veins 6–9

pairs, veinlets inconspicuous. Racemes terminal, to 8 cm in fruit; bracts subulate, 3.5–8 mm. Pedicel angular, 1–1.5 cm in fruit. Calyx lobes lanceolate, ca. 5.5×1.7 mm, red glandular striate outside, margin membranous, costate. Corolla pink; tube ca. 3 mm; lobes oblong, ca. 5×2 mm, sparsely red glandular striate, apex obtuse, sinus between lobes acute. Stamens ca. as long as corolla lobes, adnate to their bases; anthers oblong, dorsifixed, ca. 1.5 mm. Capsule subglobose, ca. 3 mm in diam.

* Mountain meadows; ca. 3100 m. SE Xizang (Mêdog Xian).

129. *Lysimachia chungdienensis* C. Y. Wu, *Yunnan Redai Yaredai Zhiwu Quxi Yanjiu Baogao* (Rep. Stud. Pl. Trop. Subtrop. Yunnan) 1: 55. 1965.

中甸珍珠菜 zhong dian zhen zhu cai

Herbs perennial, 30–80 cm tall. Stems erect, subterete to slightly angular, \pm glandular on upper part. Leaves opposite; petiole 2–4 mm; leaf blade elliptic to ovate, $1.5\text{--}4.5 \times 0.9\text{--}2$ cm, glabrescent, minutely glandular, base cuneate, apex acute. Racemes terminal, 6–30 cm, glandular; bracts linear. Pedicel 6–10 mm in fruit, ca. $2 \times$ as long as bracts. Calyx lobes lanceolate, ca. 3.5 mm, enlarged to 5 mm in fruit, red glandular striate outside, margin membranous. Corolla ca. 6.5 mm, parted to 2/3; lobes oblong, ca. 1.5 mm wide, sinus between lobes acute. Stamens ca. as long as corolla lobes, adnate to their bases; anthers elliptic, dorsifixed, ca. 1.2 mm. Ovary ovoid. Style ca. 4 mm. Capsule subglobose, 4–5 mm in diam.

* Open woodlands, among shrubs; 2000–3200 m. SW Sichuan, N Yunnan.

130. *Lysimachia lobelioides* Wallich in Roxburgh, *Fl. Ind.* 2: 29. 1824.

长蕊珍珠菜 chang rui zhen zhu cai

Herbs annual, glabrous, 25–50 cm tall. Stems arcuate erect to ascending, obscurely quadrangular, simple or branched from base, sparsely black glandular punctate. Leaves alternate, occasionally opposite at base of stem; petiole 1/4–2/3 as long as leaf blade, narrowly winged; leaf blade ovate to rhomboid-ovate, rarely ovate-lanceolate, $1.5\text{--}5 \times 1\text{--}1.3$ cm, submembranous when dry, sparsely dark purple or black glandular striate near margin or along midvein, base short attenuate to subrounded, rarely cuneate, apex acute. Racemes terminal; bracts subulate, usually 1/2 to rarely as long as pedicel. Pedicel 5–12 mm, elongated slightly in fruit. Calyx lobes ovate-lanceolate, ca. 3 mm, black striate outside, margin membranous, apex acute. Corolla white or pink; tube ca. 2 mm; lobes spatulate to oblong obovate, $4\text{--}4.5 \times 1.6\text{--}2$ mm, apex obtuse. Stamens long exserted; filaments adnate to base of corolla lobes, free parts to 6 mm; anthers ovate, dorsifixed, ca. 1 mm. Ovary sparsely puberulent. Style ca. 7 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Apr–May.

Damp places on grassy mountain slopes, streamsides; 1000–2300 m. W Guangxi, Guizhou, SW Sichuan, Yunnan [Bhutan, India, Laos, Myanmar, Nepal, Thailand].

131. *Lysimachia tsarongensis* Handel-Mazzetti, *Notes Roy. Bot. Gard. Edinburgh* 16: 117. 1928.

藏珍珠菜 zang zhen zhu cai

Herbs biennial or perennial, to 37 cm tall. Stems erect, slightly angular, often branched at base, glandular on upper part. Basal leaves early deciduous; stem leaves alternate; petiole ca. 1 cm, narrowly winged; leaf blade broadly ovate (lower leaves) to ovate-lanceolate (upper leaves), $2\text{--}3 \times 1.4\text{--}1.7$ cm, abaxially glaucescent, glandular pulverulent, sparsely red glandular punctate near margin, base cuneate, apex acute; veins 4 or 5 pairs, veinlets inconspicuous. Racemes terminal, to 9 cm, 2.5–3 cm in diam., apex rounded; bracts subulate-acuminate, ca. 5 mm; margin membranous. Pedicel to 6 mm. Calyx ca. 5 mm; lobes lanceolate, ca. 4×1.2 mm, margin membranous, glandular striate outside, apex long acuminate, \pm blunt. Corolla white or tinged with red, to 1 cm, deeply parted; lobes oblong, ca. 6.5×2 mm, sparsely red striate, sinus between lobes acute. Stamens ca. as long as corolla lobes and adnate to them; anthers dorsifixed. Ovary ovoid, glabrous. Style to 5 mm. Immature capsules subglobose, ca. 3.5 mm in diam. Fl. Aug.

* Wet streamside meadows. SE Xizang (Tsarong Xian).

132. *Lysimachia racemiflora* Bonati, *Bull. Soc. Bot. Genève* 5: 308. 1913.

总花珍珠菜 zong hua zhen zhu cai

Herbs perennial, 15–20 cm tall. Stems ascending to erect, angular, usually branched, densely glandular in upper part. Leaves alternate; petiole 1–1.5 cm, narrowly winged; leaf blade ovate to ovate-lanceolate, $3\text{--}4 \times 1\text{--}1.5$ cm, glabrous, base cuneate-attenuate, apex acute to acuminate; veins 5 or 6 pairs, veinlets inconspicuous. Racemes erect to slightly arcuate, 10–20-flowered; bracts subulate, ca. 3 mm. Pedicel quadrangular, 4–5 mm. Calyx lobes narrowly ovate, ca. 3 mm, dark brown glandular striate outside, margin membranous, apex acute. Corolla white, campanulate, ca. 5 mm, parted to middle; lobes ovate to rhomboid-elliptic, epunctate, apex obtuse to acute. Stamens ca. as long as corolla lobes; filaments adnate to mouth of corolla tube; anthers ovate to apiculate, dorsifixed. Ovary ovoid. Style slightly shorter than corolla. Capsule subglobose, ca. as long as persistent calyx.

* Rock crevices of mountain slopes. NE Yunnan.

133. *Lysimachia candida* Lindley, *J. Hort. Soc. London* 1: 301. 1846.

泽珍珠菜 ze zhen zhu cai

Lysimachia candida var. *depauperata* Merrill; *L. inconspicua* Miquel.

Herbs annual or biennial, glabrous, 10–30 cm tall. Stems erect, simple or branched. Basal leaves blade spatulate to oblanceolate, $2.6\text{--}6 \times 0.5\text{--}2$ cm, with winged petioles, usually withered before anthesis; stem leaves alternate, rarely opposite, sessile or subsessile; leaf blade obovate to oblanceolate or linear, $1\text{--}5 \text{ cm} \times 2\text{--}12$ mm, sparsely black or reddish glandular punctate, base attenuate, apex acuminate to obtuse. Racemes terminal, initially coniform, to 5–10 cm in

fruit; bracts linear, 4–6 mm. Pedicel 0.8–1.2(–1.5) cm. Calyx lobes lanceolate, 3–5 mm, black glandular striate outside, hyaline margined. Corolla white, narrowly campanulate, 6–12 mm, parted to middle; lobes oblong to oblong-obovate, epunctate, apex rounded. Stamens slightly shorter than corolla lobes; filaments ca. 1.5 mm; anthers sublinear, dorsifixed, ca. 1.5 mm. Ovary glabrous. Style ca. 5 mm. Capsule subglobose, 2–3 mm in diam. Fl. Mar–Jun.

Wet areas near cultivated fields, ditches, streamsides, roadsides; 100–2100 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, Shandong, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Japan, Myanmar, Vietnam].

134. *Lysimachia parvifolia* Franchet in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 55. 1889.

小叶珍珠菜 xiao ye zhen zhu cai

Lysimachia candida Lindley var. *microphylla* Franchet; *L. humifusa* R. Knuth; *L. stolonifera* Migo.

Herbs biennial or perennial, glabrous, 30–50 cm tall. Stems erect or diffuse, usually branched from base; branches flagelliform. Leaves alternate, sessile or subsessile; leaf blade narrowly elliptic to oblanceolate or spatulate, 1.0–4.5 cm × 5–10 mm, sparsely dark purple or black glandular punctate, base cuneate, apex acute to obtuse. Racemes terminal, 4–8 cm; bracts subulate, 5–10 mm. Lowest pedicels to 1.5–2 cm, gradually reduced upward. Calyx lobes narrowly lanceolate, ca. 5 mm, abaxially black glandular punctate, hyaline margined. Corolla white, narrowly campanulate; tube ca. 4 mm; lobes oblong, 4–5 × 1.5–2 mm, epunctate, apex obtuse. Stamens included; filaments adnate to lower part of corolla lobes, free parts ca. 2 mm; anthers narrowly oblong, dorsifixed, 1.5–2 mm. Ovary ovoid. Style ca. 6 mm. Capsule subglobose, ca. 3 mm in diam. Fl. Apr–Jun.

* Wet streamsides, ditches, rice paddies. Anhui, Fujian, Guangdong, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.

135. *Lysimachia prolifera* Klatt, Abh. Naturwiss. Naturwiss. Verein Hamburg 4(4): 30. 1866.

多育星宿菜 duo yu xing su cai

Herbs perennial, 10–28 cm tall. Stems often many, ascending to erect, often prostrate at base, ± glandular puberulent. Leaves opposite; petiole narrowly winged by and ca. as long as decurrent leaf blade; leaf blade ovate to oblanceolate or spatulate, 7–12(–20) cm × 6–12(–16) mm, glabrous, sparsely dark glandular punctate and striate, base attenuate, apex rounded or apiculate. Flowers 4 or 5, solitary in axils of upper leaves. Pedicel 1–1.5 cm, glandular puberulent. Calyx lobes lanceolate, 4–5 mm, dark purple or black glandular striate outside, apex blunt. Corolla pink or white, narrowly campanulate; tube ca. 1.5 mm; lobes obovate-spatulate, 4.5–5.5 mm, with or without few reddish glandular stripes, apex rounded. Stamens slightly shorter than corolla lobes and adnate to lower part; anthers elliptic, dorsifixed, ca. 1 mm. Ovary ovoid. Style ca. 4 mm. Capsule subglobose, 3–4 mm in diam. Fl. May–Jun. $2n = 24$.

Wet meadows, wet areas on mountain slopes; 2700–3200 m. W Sichuan, S Xizang, NW Yunnan [Bhutan, India, Myanmar, Nepal, Sikkim].

136. *Lysimachia pumila* (Baudo) Franchet, J. Bot. (Morot) 9: 460. 1895.

矮星宿菜 ai xing su cai

Bernardina pumila Baudo, Ann. Sci. Nat. Bot., Sér. 2, 20: 349. 1843.

Herbs perennial, 3–20 cm tall. Stems many, decumbent or ascending, ± glandular puberulent. Leaves alternate, often opposite in lower part of stem; petiole ca. as long as to shorter than leaf blade, narrowly winged; leaf blade spatulate to obovate or broadly ovate, 5–10(–20) × 3–7 mm, glabrous, sparsely dark purple or black glandular punctate and striate, base attenuate, apex rounded. Inflorescences capitate toward apex, 4–8-flowered; bracts leaflike, ca. 4 mm. Pedicel 1–3 mm, glandular puberulent. Calyx lobes oblong-lanceolate, ca. 3 mm, dark glandular striate outside, apex blunt. Corolla pink; tube ca. 2 mm; lobes spatulate or obovate, ca. 3 mm, epunctate, apex rounded. Stamens exserted; filaments adnate to base of corolla lobes; anthers purple, ovate, dorsifixed, ca. 0.7 mm. Ovary glabrous; style ca. 5 mm. Capsule ovoid, 3–4 mm in diam. Fl. May–Jun.

* Moist meadows, damp woodland margins; 3500–4000 m. W Sichuan, NW and W Yunnan.

137. *Lysimachia crispidens* (Hance) Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 50. 1889.

异花珍珠菜 yi hua zhen zhu cai

Stimpsonia crispidens Hance, J. Bot. 18: 234. 1880; *Lysimachia hupehensis* Pampanini.

Herbs annual, glabrous, 10–14 cm tall. Stems erect, scapiform. Basal leaves forming a rosette; petiole 0.5–1.5 cm, narrowly winged; leaf blade obovate to oblanceolate, 2–6 × 1.5–2.5 cm, base cuneate, apex obtuse to acute; lowest stem leaves 1.5–3 cm, gradually reduced upward and replaced by bracts; stem leaves few, alternate or sometimes subopposite, sessile, ovate to lanceolate, base rounded to cordate, apex acute to obtuse. Racemes terminal, 3–12 cm; bracts ovate to lanceolate, 5–7 mm, sessile. Pedicel 1–2.5 cm. Flowers heteromorphic. Calyx lobes lanceolate, 4–7 mm, apex subacuminate. Corolla pale purple, tubular, 0.8–1.3 cm, parted 1/3–1/2; lobes oblong, epunctate, apex obtuse. Pin flowers: stamens 7–10 mm; filaments connate basally into a ring 1–2 mm high; anthers dorsifixed; style to 8 mm. Thrum flowers: stamens ca. 2 mm; filaments connate basally into a thin ring; anthers dorsifixed; style 1–1.5 mm. Capsule subglobose, ca. 4 mm in diam. Fl. May–Jul.

* Shaded areas on mountain slopes, among sparse shrubs; 100–700 m. W Hubei, E Sichuan.

138. *Lysimachia thyrsoflora* Linnaeus, Sp. Pl. 1: 147. 1753.

球尾花 qiu wei hua

Naumburgia thyrsoflora (Linnaeus) Reichenbach.

Herbs perennial, 30–80 cm tall, with horizontal rhizomes. Stems erect, usually simple, black glandular punctate, glabrous on lower part, puberulent on upper. Lowest leaves scalelike, reduced; leaves opposite, sessile, rarely indistinctly petiolate; leaf blade lanceolate to elliptic-lanceolate, 5–15 × 0.6–2 cm, lower part tapered toward obtuse or semiclasping base, abaxially glabrous except for sparingly villous midvein, sparsely black glandular punctate, adaxially glabrous, apex acute to acuminate. Racemes dense, capitate or spikelike, pedunculate, 1–3 cm, confined in axils of middle and upper leaves; peduncle 1.5–3 cm, glabrous or sparingly villous. Pedicel 1–3 mm, glabrous or sparingly villous. Calyx 2–3.5 mm, parted nearly to base; lobes usually 6 or 7, linear-lanceolate, black glandular punctate. Corolla cream-yellow, parted nearly to base; lobes usually same number as calyx lobes, linear, 5–6 × 0.5–1 mm, black glandular punctate and striate. Stamens ca. as long as to longer than corolla; filaments 4–5 mm, nearly free, adnate to base of corolla; anthers oblong, dorsifixed, ca. 1 mm. Ovary sparingly puberulent. Style 4.5–6 mm. Capsule subglobose, ca. 2.5 mm in diam. Fl. May–Jun. $2n = 20, 40, 42$.

Bog margins, marshes, moist meadows. Heilongjiang, Jilin, Nei Mongol, Shaanxi, Yunnan [Circumboreal].

