

9. ELATOSTEMA J. R. Forster & G. Forster, Char. Gen. Pl. 53. 1775, nom. cons.

楼梯草属 lou ti cao shu

Lin Qi (林祁); Ib Friis, C. Melanie Wilmot-Dear

Small shrubs, subshrubs, or herbs, without stinging hairs. Leaves apparently alternate, distichous; nanophylls present or absent, opposite to normal leaves; stipules 2; leaf blade 3-veined, one or both major lateral veins sometimes inserted above the base, or pinnately veined, base asymmetric, cystoliths linear or fusiform. Inflorescences usually pedunculate, mostly many-flowered or rarely 1–3-flowered discoid capitula, capitula usually 2-valved, each valve with several glomerules of several flowers and subtended by a few bracteoles; unisexual (plants monoecious or dioecious); male inflorescences usually with discoid receptacle (pyriform young receptacle in *E. brachydotnum* and *E. ficoides*), rarely cymose; female ones with discoid receptacle and bracteoles along margin. Male flowers: perianth lobes 4 or 5, elliptic, connate at base, usually corniculate or short horned below apex; stamens as many as and opposite to perianth lobes; filaments of stamens inflexed in bud; rudimentary pistil small or absent. Female flowers: perianth lobes 4 or 5, or reduced, less than 1/2 length of ovary, free or connate at base, not corniculate at apex; staminodes 3–5, linear. Ovary straight, ellipsoid; style absent; stigma penicillate; ovule orthotropous. Achenes ovoid or ellipsoid, slightly flattened, mostly longitudinally 6–10-ribbed, rarely smooth or tuberculate.

About 300 species: tropical and subtropical Africa, Asia, and Oceania; 146 species (108 endemic) in China.

- 1a. Male inflorescences branched, receptacle absent; bracts alternate, not connate into an involucre.
 - 2a. Leaf blade without cystoliths 1. *E. brevipedunculatum*
 - 2b. Leaf blade with cystoliths.
 - 3a. Shrubs or subshrubs.
 - 4a. Stems densely hirtellous 4. *E. hirtellum*
 - 4b. Stems glabrous 8. *E. obtusidentatum*
 - 3b. Herbs.
 - 5a. Leaf blade with major lateral veins asymmetric, one inserted above base.
 - 6a. Plants dioecious, glabrous 2. *E. laxicymosum*
 - 6b. Plants monoecious, stems hirtellous or glabrescent 3. *E. hirtellipedunculatum*
 - 5b. Leaf blade pinnately veined.
 - 7a. Stems winged or sharply longitudinally angled 10. *E. angulosum*
 - 7b. Stems rounded or bluntly longitudinally angled.
 - 8a. Leaf blade margin denticulate, denticulations ca. 0.5 mm 6. *E. microdontum*
 - 8b. Leaf blade margin crenate, serrate, or dentate, if denticulate then denticulations more than 1 mm long.
 - 9a. Male inflorescences sessile 5. *E. polystachyoides*
 - 9b. Male inflorescences pedunculate.
 - 10a. Leaf blade margin densely serrate; male inflorescences 4–6 mm in diam. 9. *E. prunifolium*
 - 10b. Leaf blade margin dentate or denticulate; male inflorescences 5–15 mm in diam.
 - 11a. Female inflorescences ca. 2 mm in diam., sessile 7. *E. subtrichotomum*
 - 11b. Female inflorescences 3–9 mm in diam., pedunculate 11. *E. oblongifolium*
 - 1b. Male inflorescences simple, receptacle conspicuous or obscure; bracts connate into an involucre, rarely absent.
 - 12a. Leaf blade margin entire or undulate.
 - 13a. Plants with nanophylls 47. *E. salvinoides*
 - 13b. Plants without nanophyll.
 - 14a. Leaf blade pinnately veined 141. *E. alnifolium*
 - 14b. Leaf blade with major lateral veins either both basal or asymmetric, one inserted above base.
 - 15a. Stems simple.
 - 16a. Leaf blade oblanceolate, with major lateral veins asymmetric, one inserted above base 46. *E. attenuatum*
 - 16b. Leaf blade obliquely elliptic, with both major lateral veins inserted at base 132. *E. petelotii*
 - 15b. Stems branched.
 - 17a. Stipules narrowly lanceolate, 6–10 × 1.5–2 mm 23. *E. integrifolium*
 - 17b. Stipules subulate or narrowly triangular, 0.6–6 × 0.2–0.5 mm.
 - 18a. Leaf blade 1.1–3 × 0.4–0.9 cm 32. *E. glochidioides*
 - 18b. Leaf blade 6.5–16.5 × 2–4.5 cm 92. *E. litseifolium*
 - 12b. Leaf blade margin crenate, denticulate, dentate, or serrate.
 - 19a. Young male receptacles pyriform, bursting open at anthesis.
 - 20a. Stipules linear or lanceolate-linear, 7–10 × 2–3 mm 145. *E. ficoides*
 - 20b. Stipules subulate, 1.5–2.5 × 0.1–0.2 mm 146. *E. brachyodontum*

- 19b. Male receptacles discoid or very small and obscure.
- 21a. Subshrubs.
- 22a. Stems simple 62. *E. crenatum*
- 22b. Stems branched.
- 23a. Leaf blade pinnately veined 25. *E. tenuicaudatoides*
- 23b. Leaf blade with both major lateral veins inserted at base, with major lateral veins either both inserted above base or asymmetric, one inserted at base, the other above.
- 24a. Leaf blade base auriculate on broader outer half.
- 25a. Stems furfuraceous 58. *E. baiseense*
- 25b. Stems not furfuraceous.
- 26a. Leaf blade 14–25 × 6–10 cm 104. *E. platyphyllum*
- 26b. Leaf blade 9–12.5 × 2.5–3.5 cm 112. *E. luxiense*
- 24b. Leaf blade base cuneate, obtuse or rounded on broader outer half.
- 27a. Leaf blade without cystoliths, rarely with cystoliths only along nerves.
- 28a. Stipules subulate, 0.1–0.3 mm wide.
- 29a. Leaf blade cuspidate or acuminate at apex, with major lateral veins either both inserted at base or asymmetric, one inserted at base, the other above 13. *E. acuminatum*
- 29b. Leaf blade caudate or caudate-acuminate at apex, with both major lateral veins inserted at base 15. *E. beibengense*
- 28b. Stipules narrowly triangular or lanceolate, 0.8–1.2 mm wide.
- 30a. Male receptacle absent or very small 12. *E. laevisimum*
- 30b. Male receptacle 2–3.5 mm in diam.
- 31a. Stems glabrous 14. *E. paracuminatum*
- 31b. Stems puberulent 17. *E. lihengianum*
- 27b. Leaf blade with dense cystoliths.
- 32a. Female inflorescences 5–9-clustered 100. *E. macintyreii*
- 32b. Female inflorescences solitary or paired.
- 33a. Stems pubescent or strigose.
- 34a. Leaf blade with both major lateral veins inserted symmetrically at or above base.
- 35a. Plants monoecious; stems pubescent; leaf blade herbaceous 16. *E. tenuicaudatum*
- 35b. Plants dioecious; stems densely strigose; leaf blade papery 78. *E. pergameneum*
- 34b. Leaf blade with major lateral veins asymmetric, one inserted above base.
- 36a. Stems densely strigose; leaf blade herbaceous or papery; male inflorescences sessile ... 20. *E. lineolatum*
- 36b. Stems pubescent; leaf blade papery; male inflorescences pedunculate 24. *E. biglomeratum*
- 33b. Stems glabrous.
- 37a. Leaf blade with both major lateral veins inserted symmetrically at or above base.
- 38a. Stipules subulate, 2–5 × 0.1–0.3 mm 16. *E. tenuicaudatum*
- 38b. Stipules linear-lanceolate, 8–10 × 1–1.2 mm 18. *E. recticaudatum*
- 37b. Leaf blade with major lateral veins asymmetric, one inserted above base.
- 39a. Leaf blade ovate, oblong, rhombic, or lanceolate, 1.3–2.5 cm wide 19. *E. oreocnidoides*
- 39b. Leaf blade obliquely elliptic, up to 5.5 cm wide 22. *E. boehmerioides*
- 21b. Herbs.
- 40a. Plants with nanophylls.
- 41a. Stems glabrous or pilose.
- 42a. Stems furfuraceous 29. *E. monandrum*
- 42b. Stems not furfuraceous.
- 43a. Male inflorescences 5–6 mm in diam.; peduncle 2–4 mm 28. *E. sinense*
- 43b. Male inflorescences ca. 1.5 cm in diam.; peduncle 5–6 cm 108. *E. napoense*
- 41b. Stems pubescent or strigose.
- 44a. Female inflorescences 1.1–1.7 × 0.9–1.2 cm 107. *E. tetratpalum*
- 44b. Female inflorescences 2–6 mm in diam.
- 45a. Male inflorescences 1.1–2.6 × 1–1.5 cm; peduncle 2–5.5 cm 106. *E. papillosum*
- 45b. Male inflorescences 2–8 mm in diam., peduncle 0–2.5 mm .
- 46a. Leaf blade with both major lateral veins inserted at base.
- 47a. Plants 5–45 cm tall; leaf blade margin serrate with 7–20 teeth 26. *E. parvum*
- 47b. Plants 2.5–5 cm tall; leaf blade margin dentate with 2–5 teeth 27. *E. cuneatum*
- 46b. Leaf blade with major lateral veins asymmetric, one inserted above base.
- 48a. Male inflorescences sessile 26. *E. parvum*
- 48b. Male inflorescences pedunculate 28. *E. sinense*

- 40b. Plants without nanophyll.
- 49a. Male receptacle very small, obscure, not discoid.
- 50a. Female inflorescences with 1–20 flowers; receptacle obscure.
- 51a. Female inflorescences with 10–20 flowers 75. *E. medogense*
- 51b. Female inflorescences with 1(or 2) flower(s) 76. *E. obtusum*
- 50b. Female inflorescences with 30 flowers or more; receptacle conspicuous.
- 52a. Leaf blade with major lateral veins either both inserted at base or asymmetric, one inserted at base, the other above.
- 53a. Stems glabrous.
- 54a. Leaf blade leathery, 1.2–2.4 × 0.8–1.1 cm 43. *E. coriaceifolium*
- 54b. Leaf blade membranous, herbaceous, or papery.
- 55a. Male bracts 6, unequal, larger two 1.2–1.5 cm, smaller four 5–7 mm 44. *E. ichangense*
- 55b. Male bracts same or unequal, 1.5–7 mm.
- 56a. Stipules 1.5–3.5 mm wide.
- 57a. Male peduncle 0–0.5 mm 30. *E. pycnodontum*
- 57b. Male peduncle 0.3–6 cm.
- 58a. Male peduncle 0.8–1.2 mm in diam. 49. *E. nasutum*
- 58b. Male peduncle 0.1–0.4 mm in diam. 50. *E. filipes*
- 56b. Stipules 0.1–1 mm wide.
- 59a. Stems furfuraceous.
- 60a. Leaf blade obliquely ovate 31. *E. myrtillos*
- 60b. Leaf blade obliquely linear-oblancheolate 34. *E. imbricans*
- 59b. Stems not furfuraceous.
- 61a. Leaf blade with major lateral veins asymmetric, one inserted above base.
- 62a. Female inflorescences sessile 38. *E. asterocephalum*
- 62b. Female inflorescences pedunculate 48. *E. trichocarpum*
- 61b. Leaf blade with both major lateral veins inserted at base.
- 63a. Male inflorescences sessile or subsessile.
- 64a. Leaf blade obliquely elliptic or oblong 33. *E. shanglinense*
- 64b. Leaf blade falcate 35. *E. hookerianum*
- 63b. Male inflorescences pedunculate.
- 65a. Stems branched.
- 66a. Leaf blade strigose on abaxial surface, with cystoliths only near margins 36. *E. microcephalanthum*
- 66b. Leaf blade glabrous, with dense cystoliths on both surfaces 57. *E. pseudodissectum*
- 65b. Stems simple.
- 67a. Plants dioecious 52. *E. gueilinense*
- 67b. Plants monoecious.
- 68a. Leaf blade margin dentate; female inflorescences 3–4 mm in diam.; receptacle 2–3 mm in diam. 51. *E. yaoshanense*
- 68b. Leaf blade margin serrulate; female inflorescences 1–2 mm in diam.; receptacle obscure 53. *E. rhombiforme*
- 53b. Stems pubescent, puberulent, pilose, villous, or strigose.
- 69a. Leaf blade leathery 42. *E. crassiusculum*
- 69b. Leaf blade herbaceous or papery.
- 70a. Stipules 1.5–5.2 mm wide.
- 71a. Leaf blade with both major lateral veins inserted at base.
- 72a. Plants dioecious. Leaves petiolate 49. *E. nasutum*
- 72b. Plants monoecious. Leaves sessile 59. *E. lasiocephalum*
- 71b. Leaf blade with major lateral veins asymmetric, one inserted above base.
- 73a. Plants monoecious 60. *E. aliferum*
- 73b. Plants dioecious.
- 74a. Stipules 3–5 mm; male peduncle 0–1 mm 45. *E. grandidentatum*
- 74b. Stipules 1.5–2 cm; male peduncle 5–10 mm 61. *E. brunneinerve*
- 70b. Stipules 0.1–1 mm wide.
- 75a. Stems 3- or 4-branched 21. *E. ramosum*
- 75b. Stems simple or 1-branched.
- 76a. Stems furfuraceous.

- 77a. Leaf blade obliquely oblanceolate or narrowly obovate, 2.5–6.5 × 1–2 cm 39. *E. liboense*
77b. Leaf blade obliquely elliptic, ca. 13 × 4.5 cm 56. *E. minutifurfuraceum*
76b. Stems not furfuraceous.
78a. Female peduncle 2–35 mm 48. *E. trichocarpum*
78b. Female peduncle 0–1.5 mm.
79a. Stipules strigillose or hirtellous.
80a. Stems simple, pubescent 40. *E. xichouense*
80b. Stems branched, densely strigillose 41. *E. strigillosum*
79b. Stipules glabrous.
81a. Male inflorescences sessile 37. *E. longibracteatum*
81b. Male inflorescences pedunculate.
82a. Leaf blade base auriculate on broader outer half 54. *E. strigulosum*
82b. Leaf blade base obtuse on broader outer half 55. *E. gungshanense*
52b. Leaf blade pinnately veined.
83a. Female plants with bulbils 63. *E. stewardii*
83b. Plants without bulbil.
84a. Stems glabrous.
85a. Stipules subulate, 1–1.5 × 0.1–0.2 mm 70. *E. youyangense*
85b. Stipules linear or triangular, 3–7 × 1.5–2 mm.
86a. Stipules without cystolith.
87a. Leaves sessile; leaf blade herbaceous 64. *E. bracteosum*
87b. Petiole 2–10 mm; leaf blade papery or nearly leathery 65. *E. subcoriaceum*
86b. Stipules with cystoliths.
88a. Leaf blade 2.5–5 × 1.2–2 cm, obtuse at apex 74. *E. obscurinerve*
88b. Leaf blade 4.5–19 × 2–6 cm, cuspidate, acuminate, or caudate at apex.
89a. Male inflorescences with peduncle (4–)7–20(–32) mm 66. *E. involocratum*
89b. Male inflorescences sessile or subsessile 67. *E. acuteserratum*
84b. Stems pubescent, puberulent, villous, or strigose.
90a. Stipules subulate, 0.1–0.2 mm wide.
91a. Stems puberulent; leaf blade 3.5–5 cm 69. *E. mabienense*
91b. Stems strigose; leaf blade 6–8.5 cm 73. *E. calciferum*
90b. Stipules lanceolate, linear, or triangular, 1.5–2 mm wide.
92a. Stems branched.
93a. Stems glabrous or sparsely puberulent; leaf blade 4.5–16(–19) × 2–4.5(–6) cm 66. *E. involocratum*
93b. Stems densely villous; leaf blade 2–5.5 × 0.7–2.2 cm 71. *E. villosum*
92b. Stems simple.
94a. Stipules without cystolith 68. *E. tenuicornutum*
94b. Stipules with cystoliths.
95a. Leaf blade obliquely oblanceolate-oblong or oblong, 4.5–19 × 2–6 cm; male bracts glabrous 66. *E. involocratum*
95b. Leaf blade obliquely oblanceolate or linear-oblanceolate, 6–10.5 × 1.2–2.8 cm; male bracts villous 72. *E. sublineare*
49b. Male receptacle discoid or pyriform.
96a. Leaf blade pinnately veined.
97a. Stems pubescent, pilose, or strigose.
98a. Stems branched.
99a. Male inflorescences without bracts 138. *E. tenuifolium*
99b. Male inflorescences with bracts 144. *E. albopilosum*
98b. Stems simple.
100a. Leaf blade brown-black after drying 139. *E. nanchuanense*
100b. Leaf blade green after drying.
101a. Leaf blade 1.5–5.5 × 0.5–2 cm 117. *E. hypoglaucum*
101b. Leaf blade 10–27 × 3.5–7.5 cm 140. *E. pseudoficoides*
97b. Stems glabrous.
102a. Plants monoecious.
103a. Stems simple 140. *E. pseudoficoides*
103b. Stems branched.
104a. Male peduncle 1–3 mm; female inflorescences 5–9 mm in diam. 136. *E. pseudobrachyodontum*
104b. Male peduncle 1.4–1.8 cm; female inflorescences 2–3.5 mm in diam. 142. *E. wenxiense*

- 102b. Plants dioecious.
- 105a. Leaf blade papery; stipules subulate, 0.1–0.2 mm wide; female receptacle 2–3-lobed 134. *E. schizocephalum*
- 105b. Leaf blade herbaceous or papery; stipules narrowly linear or triangular, 0.8–3 mm wide; female receptacle not lobed.
- 106a. Stems simple.
- 107a. Leaf blade herbaceous, puberulent on abaxial surface; cystoliths obscure 133. *E. acutitepalum*
- 107b. Leaf blade papery, glabrous; cystoliths conspicuous 135. *E. xanthophyllum*
- 106b. Stems branched.
- 108a. Leaf blade 17–23 × 4.5–7.5 cm; male peduncle 1–1.5 cm 137. *E. atropurpureum*
- 108b. Leaf blade 7–11 × 2–4 cm; male peduncle 9–10 cm 143. *E. subpenninerve*
- 96b. Leaf blade with both major lateral veins inserted at base, with major lateral veins either both inserted above base or asymmetric, one inserted at base, the other above.
- 109a. Stems furfuraceous.
- 110a. Stipules 0.1–1 mm wide.
- 111a. Male peduncle ca. 2 mm 89. *E. yui*
- 111b. Male peduncle 1.5–8 cm 127. *E. dissectum*
- 110b. Stipules 1.5–6 mm wide.
- 112a. Leaf blade with both major lateral veins inserted at base.
- 113a. Female peduncle 0.5–1 mm 82. *E. pachyceras*
- 113b. Female peduncle 1.2–1.6 cm 131. *E. ferrugineum*
- 112b. Leaf blade with major lateral veins asymmetric, one inserted above base.
- 114a. Male bracts conspicuous, ovate or triangular 83. *E. cuspidatum*
- 114b. Male bracts obscure.
- 115a. Male inflorescences 4–8 mm in diam.; receptacle 2.5–5.5 mm in diam. 88. *E. yangbiense*
- 115b. Male inflorescences 7–15 mm in diam.; receptacle 7–14 mm in diam. 90. *E. platyceras*
- 109b. Stems not furfuraceous.
- 116a. Leaf blade lanceolate or narrowly lanceolate, papery 96. *E. longistipulum*
- 116b. Leaf blade obliquely elliptic, oblong, ovate, or obovate.
- 117a. Leaf blade margin crenulate or crenate.
- 118a. Leaf blade with major lateral veins asymmetric, one inserted above base.
- 119a. Plants dioecious; stems densely strigose 103. *E. wangii*
- 119b. Plants monoecious; stems crispately pubescent 130. *E. crispulum*
- 118b. Leaf blade with both major lateral veins inserted at base.
- 120a. Stems simple 80. *E. setulosum*
- 120b. Stems branched.
- 121a. Male peduncle 6–8 mm 79. *E. breviacuminatum*
- 121b. Male peduncle 2–7 cm 129. *E. manhaoense*
- 117b. Leaf blade margin dentate, denticulate, or serrate.
- 122a. Stipules 0.1–1 mm wide.
- 123a. Stems pilose, puberulent, pubescent, or strigose.
- 124a. Male inflorescences 2–2.8 cm in diam. 94. *E. atroviride*
- 124b. Male inflorescences 6–13 mm in diam.
- 125a. Plants dioecious; male peduncle ca. 6 mm 77. *E. cyrtandrifolium*
- 125b. Plants monoecious; male peduncle up to 4 cm 117. *E. hypoglaucum*
- 123b. Stems glabrous.
- 126a. Plants monoecious.
- 127a. Stems branched 125. *E. hekouense*
- 127b. Stems simple.
- 128a. Leaf blade sparsely strigillose on adaxial surface 121. *E. leucocephalum*
- 128b. Leaf blade glabrous 124. *E. longipes*
- 126b. Plants dioecious.
- 129a. Leaf blade glabrous 91. *E. lungzhouense*
- 129b. Leaf blade sparsely strigillose on adaxial surface.
- 130a. Male peduncle 1.4–4.2 cm 128. *E. dissectoides*
- 130b. Male peduncle 1.8–6 mm .
- 131a. Male inflorescences solitary 77. *E. cyrtandrifolium*
- 131b. Male inflorescences paired 87. *E. tenuireceptaculum*
- 122b. Stipules 1.5–8 mm wide.

- 132a. Stems glabrous.
 - 133a. Leaf blade with both major lateral veins inserted symmetrically at or above base.
 - 134a. Leaf blade base rounded or cuneate on broader outer half.
 - 135a. Male peduncle 0.1–0.2 cm 97. *E. balansae*
 - 135b. Male peduncle 1.3–2.5 cm 126. *E. procridioides*
 - 134b. Leaf blade base auriculate or cordate on broader outer half.
 - 136a. Female inflorescences paired 105. *E. auriculatum*
 - 136b. Female inflorescences solitary.
 - 137a. Stems simple; female inflorescence ca. 3 mm in diam. 81. *E. pseudocuspdatum*
 - 137b. Stems branched; female inflorescence ca. 12 × 8 mm 98. *E. multicanaliculatum*
 - 133b. Leaf blade with major lateral veins asymmetric, one inserted above base.
 - 138a. Male peduncle 0.5–10 mm.
 - 139a. Leaf blade base auriculate on broader outer half 86. *E. yungshunense*
 - 139b. Leaf blade base cuneate or rounded on broader outer half.
 - 140a. Plants monoecious 85. *E. angustitepalum*
 - 140b. Plants dioecious.
 - 141a. Leaves petiolate, petiole 1.5–12 mm 99. *E. megacephalum*
 - 141b. Leaves sessile or subsessile.
 - 142a. Leaf blade glabrous on adaxial surface; stipules 18–20 mm 93. *E. didymocephalum*
 - 142b. Leaf blade sparsely strigillose on adaxial surface; stipules 5–14 mm 97. *E. balansae*
 - 138b. Male peduncle 1.8–12 cm.
 - 143a. Leaf blade 10–13.5 × 4.5–5.5 cm; petiole 5–11 mm 111. *E. laxisericeum*
 - 143b. Leaf blade 4–8 × 1.5–3 cm; petiole 0–2 mm.
 - 144a. Stems branched; male peduncle 3.2–7.5 cm 122. *E. omeiense*
 - 144b. Stems simple; male peduncle 9–12 cm 123. *E. jinpingense*
 - 132b. Stems pubescent, puberulent, hirtellous, hirsute, villosulous, or strigose.
 - 145a. Leaf blade base rounded, obtuse, or cuneate on broader outer half.
 - 146a. Stems densely strigose 101. *E. rupestre*
 - 146b. Stems pubescent or puberulent.
 - 147a. Male peduncle 0.1–0.2 cm 97. *E. balansae*
 - 147b. Male peduncle 1–12.5 cm.
 - 148a. Peduncle as long as staminate inflorescences 110. *E. cuneiforme*
 - 148b. Peduncle 2–10 × as long as staminate inflorescences.
 - 149a. Plants monoecious 116. *E. dulongense*
 - 149b. Plants dioecious.
 - 150a. Peduncle glabrous 119. *E. microtrichum*
 - 150b. Peduncle puberulent.
 - 151a. Male inflorescences 5–7 mm in diam.; peduncle 1–1.3 cm 114. *E. tianlinense*
 - 151b. Male inflorescences 7–13 mm in diam.; peduncle 8–12.5 cm 118. *E. stigmatosum*
 - 145b. Leaf blade base auriculate, cordate, or subcordate on broader outer half.
 - 152a. Plants monoecious 113. *E. pubipes*
 - 152b. Plants dioecious.
 - 153a. Leaf blade with both major lateral veins inserted at base.
 - 154a. Leaf blade obliquely oblong-obovate 105. *E. auriculatum*
 - 154b. Leaf blade obliquely elliptic.
 - 155a. Stems puberulent 109. *E. subcuspidatum*
 - 155b. Stems densely strigose.
 - 156a. Leaf blade 3–7.5 × 1.5–4 cm 95. *E. retrohirtum*
 - 156b. Leaf blade 10–22.5 × 4.5–11 cm 102. *E. eriocephalum*
 - 153b. Leaf blade with major lateral veins asymmetric, one inserted above base.
 - 157a. Stems densely strigose; stipules strigose on abaxial surface 103. *E. wangii*
 - 157b. Stems hirsute, hirtellous, puberulent, or villosulous; stipules glabrous, ciliate, or hirsute.
 - 158a. Plants up to 80 cm tall; stipules 13–17.5 × 2–5 mm 120. *E. rivulare*
 - 158b. Plants 14–40 cm tall; stipules 4–8 × 1.6–2.2 mm.
 - 159a. Male peduncle 1–1.5 mm 84. *E. menglunense*
 - 159b. Male peduncle ca. 4.5 cm 115. *E. goniocephalum*

1. *Elatostema brevipedunculatum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 22. 1980.

短梗楼梯草 duan geng lou ti cao

Herbs perennial, dioecious, 10–25 cm tall, glabrous. Stems ascending, branched. Leaves alternate; nanophylls absent; stipules narrowly linear, 3–5 × 0.6–1 mm, without cystoliths; petiole 0–1 mm; leaf blade oblong-elliptic, 7–13 × 1–3.2 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths absent; base with broader half obtuse, margin dentate, apex acuminate or cuspidate. Male inflorescences ca. 5-clustered, many branched, 2.5–5 mm in diam.; peduncle 1–1.5 mm; receptacle absent; bracts alternate, narrowly oblong or triangular, 0.8–1.2 mm. Male flowers 5-merous. Fl. May.

• Evergreen broad-leaved forests on mountain slopes; ca. 2600 m. W Yunnan.

2. *Elatostema laxicosum* W. T. Wang, Acta Phytotax. Sin. 17(1): 106. 1979.

疏伞楼梯草 shu san lou ti cao

Herbs perennial, dioecious, 40–50 cm tall, glabrous. Stems ascending or erect, simple or branched. Leaves alternate; nanophylls absent; stipules subulate, 4–7 × 0.1–0.2 mm, with cystoliths; petiole 0–3 mm; leaf blade obliquely elliptic or obovate-elliptic, 5.5–13 × 2.5–5 cm, herbaceous or papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin serrate, apex acuminate. Male inflorescences solitary, branched, 10–22 mm in diam.; peduncle 30–65 mm; receptacle absent; bracts alternate, narrowly linear, 2.5–4 mm. Female inflorescences solitary, 5–11 × 4–7 mm; peduncle ca. 1.2 mm; receptacle nearly oblong, ca. 8 × 6 mm; bracts linear; bracteoles spatulate-linear. Male flowers 4-merous. Achenes narrowly ovoid, 10-ribbed. Fl. Aug–Dec.

Evergreen broad-leaved forests or lake banks; 600–2200 m. SE Xizang [N India].

3. *Elatostema hirtellipedunculatum* B. L. Shih & Yuen P. Yang, Bot. Bull. Acad. Sin. 36: 160. 1995.

糙梗楼梯草 cao geng lou ti cao

Herbs perennial, monoecious, to 1 m tall. Stems ascending or erect, often simple, hirtellous or glabrescent. Leaves alternate; nanophylls absent; stipules subulate, 2–5 × 0.1–0.2 mm, glabrous; petiole to 2 mm or absent; leaf blade papery, obliquely elliptic to obliquely ovate, ca. 20 × 1.5–7 cm, semi-triple-nerved, cystoliths conspicuous, sparse; base broadly cuneate or rounded, margin dentate or crenate, apex acuminate or caudate. Male inflorescences ellipsoidal, 7–18 × 7–12 mm, branched; peduncle (1–)1.5–4.5(–5) mm; receptacle absent; bracts ovate or elliptic; bracteoles cymbiform. Female inflorescences solitary or paired, ellipsoidal, ca. 8 × 6 mm; peduncle to 2(–8) mm; receptacle elliptic, ca. 8 × 6 mm; bracts ovate or elliptic; bracteoles linear. Male flowers: perianth lobes 5; stamens 5. Achenes ovoid. Fl. Oct.

• Streamsides, ravines, moist forests or rocky places at low to medium elevations. Taiwan.

4. *Elatostema hirtellum* (W. T. Wang) W. T. Wang, Acta Phytotax. Sin. 28: 307. 1990.

硬毛楼梯草 ying mao lou ti cao

Elatostema subtrichotomum var. *hirtellum* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 4. 1982.

Shrubs dioecious, ca. 100 cm tall. Stems erect, branched, densely hirtellous. Leaves alternate; nanophylls absent; stipules subulate, 1.5–2 × 0.1 mm, glabrous; petiole 0.6–1.8 mm; leaf blade obliquely elliptic, 1.8–10 × 1–3.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely strigillose along nerves; cystoliths conspicuous, dense; base with broader half rounded, margin denticulate, apex caudate-acuminate or acuminate. Male inflorescences solitary, branched, 12–14 mm in diam.; peduncle 0.5–1 mm; receptacle absent; bracts alternate, triangular, 0.4–0.6 mm. Male flowers 5-merous. Fl. Jan.

• Dark damp places in ravines; ca. 800 m. NW Guangxi.

5. *Elatostema polystachyoides* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 23. 1980.

多歧楼梯草 duo qi lou ti cao

Herbs perennial, dioecious, 50–70 cm tall. Stems ascending or erect, branched or simple, glabrous. Leaves alternate; nanophylls absent; stipules narrowly lanceolate, 8–12 × 1–2 mm, glabrous, with cystoliths; petiole 1–4 mm; leaf blade obliquely oblong-oblancheolate or oblong, 16–24.5 × 3.5–5.5 cm, herbaceous, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base obliquely cuneate, margin crenate, apex acuminate. Male inflorescences in pairs, branched, 12–20 mm in diam., sessile; receptacle absent; bracts alternate, triangular to lanceolate, 0.5–1.2 mm. Female inflorescences solitary or in pairs, 5–6 mm in diam.; peduncle 0–1 mm; receptacle ca. 5 mm in diam.; bracts triangular; bracteoles narrowly linear. Male flowers 5-merous. Achenes narrowly ellipsoid, 6-ribbed. Fl. Nov–Apr.

• Evergreen broad-leaved forests or forest margins on limestone mountains; 1000–1800 m. SE Yunnan.

6. *Elatostema microdontum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 24. 1980.

微齿楼梯草 wei chi lou ti cao

Herbs perennial, dioecious, 40–50 cm tall. Stems ascending or erect, simple, glabrous. Leaves alternate, glabrous; nanophylls absent; petiole 2–7 mm; leaf blade obliquely oblong, 15–21 × 5.5–7 cm, papery, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base obliquely cuneate, margin denticulate (denticulations ca. 0.5 mm), apex acuminate. Female inflorescences solitary, 4–6 mm in diam., sessile; receptacle 2–4 mm in diam.; bracts alternate, triangular; bracteoles linear. Achenes nearly ellipsoid, 8-ribbed. Fl. May–Jun.

• Tropical rain forests in valleys; 300–400 m. SE Yunnan.

7. *Elatostema subtrichotomum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 25. 1980.

歧序楼梯草 qi xu lou ti cao

Elatostema subtrichotomum var. *corniculatum* W. T. Wang.

Herbs perennial, monoecious or dioecious, ca. 50 cm tall. Stems ascending or erect, simple or branched, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules linear, 3–4 × 0.8–1 mm; petiole 2–14 mm; leaf blade obliquely oblong, 12–17 × 3.5–5 cm, herbaceous or nearly papery, major basal lateral veins ± absent and venation pinnate, cystoliths conspicuous, dense; base with broader half cuneate or nearly rounded, margin denticulate, apex acuminate. Male inflorescences in pairs, branched, ca. 10 mm in diam.; peduncle 2–3 mm; receptacle absent; bracts alternate, narrowly ovate or narrowly triangular, 0.8–1.2 mm. Female inflorescences in pairs, ca. 2 mm in diam., sessile; receptacle ca. 1.2 mm in diam.; bracts narrowly triangular; bracteoles lanceolate-linear. Male flowers 5-merous; perianth lobes with apex corniculate or not. Fl. Apr.

• Valley forests, streamsides, rock crevices; 1700–1900 m. N Guangdong, C Hunan, SE Yunnan.

8. *Elatostema obtusidentatum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 28. 1980.

钝齿楼梯草 dun chi lou ti cao

Subshrubs, dioecious, ca. 30 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate; nanophylls absent; stipules subulate, 1–2 × 0.1–0.2 mm, glabrous; petiole 0–1 mm; leaf blade obliquely oblong or oblong-oblancheolate, 6–12 × 1.5–3 cm, herbaceous or papery, major basal lateral veins absent and venation pinnate, or ± asymmetric with 1 basal and the other arising above base, abaxial surface sparsely strigillose along nerves, adaxial surface sparsely hirtellous, cystoliths conspicuous, dense; base with broader half obtuse, margin obtusely denticulate, apex cuspidate or acuminate. Male inflorescences solitary, branched, 8–10 mm in diam.; peduncle 2–4.5 mm; receptacle absent; bracts alternate, linear-lanceolate, ca. 0.8 mm. Male flowers 4-merous. Fl. Nov.

• Mountain forests. N Guangxi.

9. *Elatostema prunifolium* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 27. 1980.

樱叶楼梯草 ying ye lou ti cao

Elatostema quinquecostatum W. T. Wang.

Herbs perennial, dioecious, 25–35 cm tall. Stems ascending or erect, simple or branched, glabrous. Leaves alternate; nanophylls absent; stipules narrowly ovate to narrowly lanceolate, 4–7 × 1–2.5 mm, glabrous; with cystoliths, petiole absent; leaf blade obliquely oblong, 5–11 × 1.5–4 cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface sparsely strigillose, adaxial surface pilose or glabrescent; cystoliths conspicuous, dense; base with broader half nearly auriculate, margin densely serrate, apex acuminate. Male inflorescences in pairs or solitary, branched, 4–6 mm in diam.;

peduncle 3–6 mm; receptacle absent; bracts alternate, narrowly oblong or linear, 2.5–4 mm. Female inflorescences in pairs or solitary, 3.5–6.5 mm in diam., sessile; receptacle 2.5–5.5 mm in diam. Male flowers 4- or 5-merous. Fl. Apr.

• Mountain forests or streamsides; 700–1900 m. Guizhou, S Sichuan, NE Yunnan.

10. *Elatostema angulosum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 27. 1980.

翅棱楼梯草 chi leng lou ti cao

Herbs perennial, dioecious, 15–20 cm tall. Stems ascending, simple, winged or sharply, longitudinally angled, glabrous. Leaves alternate; nanophylls absent; stipules narrowly linear, ca. 3.5 mm, glabrous; petiole 0–1 mm; leaf blade obliquely elliptic or oblong, 4–8 × 1.5–2.5 cm, herbaceous or papery, major basal lateral veins absent and venation pinnate, abaxial surface glabrous, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half nearly cordate, margin dentate, apex acuminate. Male inflorescences usually in pairs, branched, 5–20 mm in diam.; peduncle 20–50 mm; receptacle absent; bracts alternate, lanceolate-linear, 4–5 mm. Female inflorescences solitary, ca. 4 mm in diam., sessile; receptacle ca. 1.5 mm in diam.; bracts triangular; bracteoles oblong. Male flowers 5-merous. Fl. Jan–Mar.

• Valleys; 900–1400 m. Sichuan (Emei Shan).

11. *Elatostema oblongifolium* Fu ex W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 26. 1980.

长圆楼梯草 chang yuan lou ti cao

Pellionia bodinieri H. Léveillé.

Herbs perennial, monoecious or dioecious, 20–50 cm tall. Stems ascending or erect, branched or simple, glabrous. Leaves alternate; nanophylls absent; stipules narrowly triangular to subulate, 2.5–5 × 0.2–0.5 mm, glabrous, without cystoliths; petiole 0–2 mm; leaf blade obliquely oblong, 6–16 × 1.5–4.5 cm, herbaceous or papery, major basal lateral veins absent and venation pinnate, both surfaces glabrous, or adaxial surface sparsely strigillose; cystoliths conspicuous, dense; base with broader half rounded, margin dentate, apex acuminate. Male inflorescences in pairs or solitary, branched, 5–15 mm in diam.; peduncle 0.5–3 mm; receptacle absent; bracts alternate, ovate to linear, 2–3 mm. Female inflorescences in pairs or solitary, 3–9 mm in diam.; peduncle ca. 1 mm; receptacle obscure; bracts lanceolate to linear; bracteoles lanceolate. Male flowers 5-merous. Achenes ellipsoid or ovoid, 8-ribbed. Fl. Apr–Aug.

• Dark damp places in valleys; 400–900 m. Guizhou, W Hubei, NW Hunan, Sichuan.

12. *Elatostema laevisimum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 29. 1980.

光叶楼梯草 guang ye lou ti cao

Elatostema laevisimum var. *puberulum* W. T. Wang.

Subshrubs monoecious or dioecious, 50–200 cm tall.

Stems erect, branched, glabrous or densely puberulent. Leaves alternate; nanophylls absent; stipules narrowly triangular, 2–5 × 0.8–1 mm, glabrous, without cystoliths; petiole 2–4 mm; leaf blade obliquely elliptic, 5.5–12 × 3–5.5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade or 1 arising above base, abaxial surface glabrous or pilose along nerves, adaxial surface sparsely strigillose, cystoliths absent or only present along primary nerve and secondary nerves; base with broader half rounded, margin crenate, apex acuminate. Male inflorescences usually 2- or 3-clustered, simple, 3–4 mm in diam.; peduncle 1.5–2 mm; receptacle absent or very small; bracts connate, ca. 0.8 mm. Female inflorescences 1.5–2.5 mm in diam.; peduncle 0–1; receptacle absent or very small; bracts broadly ovate; bracteoles oblong or linear. Male flowers 4-merous. Achenes ovoid, 5-ribbed. Fl. Aug–Feb.

Dark damp places or forests in valleys; 1000–2200 m. W Guangxi, Hainan, SE Xizang, Yunnan [N Vietnam].

13. *Elatostema acuminatum* (Poiret) Brongniart in Duperrey, Voy. Monde, 211. 1834.

渐尖楼梯草 jian jian lou ti cao

Subshrubs, monoecious or dioecious, 10–50 cm tall, glabrous. Stems erect, branched. Leaves alternate, glabrous; nanophylls absent; stipules subulate, 1–2.2 × 0.1–0.2 mm, without cystoliths; petiole 0–7 mm; leaf blade obliquely elliptic or oblong, 2–10 × 1–3.5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade or 1 arising above base, cystoliths absent or very small, sparse, only present along nerves; base with broader half cuneate or broadly cuneate, margin dentate, apex cuspidate or acuminate. Male inflorescences 4-clustered, simple, ca. 5 mm in diam., subsessile; receptacle small; bracts connate, 1–1.5 mm. Female inflorescences in pairs, 3–5 mm in diam., sessile; receptacle very small; bracts triangular; bracteoles narrowly linear. Male flowers 5-merous. Achenes ellipsoid, 7–9-ribbed. Fl. Dec–May.

Dense forests in valleys, shaded wet rocks or precipices; 500–1900 m. W Guangdong, Hainan, Yunnan [Bhutan, Indonesia, Malaysia, Myanmar, Nepal, Sikkim, Thailand, Vietnam].

- 1a. Petiole to 2 mm or absent; leaf blade 1–3.5 cm wide, margin 3–7-dentate on broader side of leaf blade; cystoliths absent or obscure 13a. var. *acuminatum*
- 1b. Petiole to 7 mm; leaf blade to 5 cm wide, margin ca. 10-dentate on broader side of leaf blade; cystoliths conspicuous 13b. var. *striolatum*

13a. *Elatostema acuminatum* var. *acuminatum*

渐尖楼梯草(原变种) jian jian lou ti cao (yuan bian zhong)

Procris acuminata Poiret, Encycl. 5: 629. 1804.

Petiole to 2 mm or absent; leaf blade 1–3.5 cm wide, cystoliths absent or obscure, margin of broader side 3–7-dentate. Fl. Dec–May.

Dense forests in valleys; 500–1500 m. W Guangdong, Hainan, Yunnan [Bhutan, Indonesia, Malaysia, Myanmar, Nepal, Sikkim, Thai-

land, Vietnam].

13b. *Elatostema acuminatum* var. *striolatum* W. T. Wang, Acta Bot. Yunnan., Suppl. 5: 1. 1992.

短齿渐尖楼梯草 duan chi jian jian lou ti cao

Petiole to 7 mm; leaf blade to 5 cm wide, cystoliths conspicuous, margin of broader side ca. 10-dentate. Fl. Mar.

• Shaded wet rocks or precipices; ca. 1900 m. NW Yunnan (Gongshan).

14. *Elatostema paracuminatum* W. T. Wang, Acta Bot. Yunnan., Suppl. 5: 3. 1992.

拟渐尖楼梯草 ni jian jian lou ti cao

Subshrubs, dioecious, ca. 100 cm tall. Stems erect, branched, glabrous. Leaves alternate; nanophylls absent; stipules narrowly linear-lanceolate, 8–10 × 1–1.2 mm, sparsely puberulent, without cystoliths; petiole 1.5–5 mm; leaf blade obliquely elliptic, 11–17 × 3.5–5.5 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface sparsely strigillose, adaxial surface sparsely hirtellous, cystolith absent; base obliquely cuneate, margin dentate, apex caudate. Male inflorescences solitary, in pairs, or 2-clustered, simple, ca. 6 mm in diam.; peduncle ca. 3 mm; receptacle ca. 2 mm in diam.; bracts connate, 2–3 mm wide; bracteoles cymbiform-linear or cymbiform-oblong. Male flowers 4-merous. Fl. Mar.

Mountain forests; 1400–1500 m. Yunnan (Gongshan) [Laos].

15. *Elatostema beibengense* W. T. Wang, Acta Phytotax. Sin. 28: 308. 1990.

背崩楼梯草 bei beng lou ti cao

Subshrubs, dioecious, 40–80 cm tall, glabrous. Stems ascending or erect, branched. Leaves alternate, glabrous; nanophylls absent; stipules subulate, 1.5–2.5 × 0.2–0.3 mm, without cystoliths; petiole 0–2.5 mm; leaf blade obliquely elliptic or oblong-rhombic, 3.5–8.5 × 1.5–3 cm, papery, major basal lateral veins both arising at base of leaf blade, cystoliths absent; base with broader half obtuse, margin dentate, apex caudate or caudate-acuminate. Male inflorescences solitary, simple, ca. 4 mm in diam.; peduncle ca. 0.5 mm; receptacle obscure; bracts connate, 2–3 mm; bracteoles cymbiform or linear. Female inflorescences solitary, ca. 4 mm in diam., subsessile; receptacle ca. 2 mm in diam.; bracts spatulate-linear; bracteoles narrowly linear. Male flowers 5-merous. Fl. May.

• Evergreen broad-leaved forests in valleys, *Pinus bhutanica* forests; 1700–2100 m. SE Xizang.

16. *Elatostema tenuicaudatum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 31. 1980.

细尾楼梯草 xi wei lou ti cao

Subshrubs, monoecious or rarely dioecious, 20–100 cm tall. Stems ascending or erect, branched, glabrous or pubescent. Leaves alternate; nanophylls absent; stipules subulate, 2–5 × 0.1–0.3 mm, glabrous, without cystoliths; petiole 0–1 mm; leaf blade obliquely oblanceolate-oblong or oblong, 3–9.5 × 1–2.5 cm, herbaceous, major basal lateral veins both arising at base of

leaf blade, sometimes not extending beyond middle of leaf, both surfaces glabrous, or only abaxial surface pubescent; cystoliths conspicuous, dense, very small; base with broader half obtuse or nearly orbicular, margin dentate, apex cuspidate or caudate-cuspidate. Male inflorescences solitary, simple, 3–5 mm in diam., sessile or subsessile; receptacle nearly absent; bracts broadly lanceolate, 1.2–1.5 mm; bracteoles lanceolate-linear. Female inflorescences solitary, 1–4 mm in diam., sessile; receptacle very small; bracts ovate to triangular; bracteoles lanceolate-linear. Male flowers 4-merous. Achenes ellipsoid, 6-ribbed. Fl. Mar–Apr.

Evergreen broad-leaved forests in valleys, dark damp places in forests, valley streamsides; 300–2200 m. NW Guangxi, S Guizhou, S Yunnan [N Vietnam].

- 1a. Branchlets and leaves glabrous 16a. var. *tenuicaudatum*
1b. Branchlets and abaxial surface of
leaf blade pubescent 16b. var. *lasiocladum*

16a. *Elatostema tenuicaudatum* var. *tenuicaudatum*

细尾楼梯草(原变种) xi wei lou ti cao (yuan bian zhong)

Branchlets and leaves glabrous. Leaf blade glabrous. Fl. Mar–Apr.

Dark damp places in forests, valley streamsides; 300–2200 m. NW Guangxi, S Guizhou, SE Yunnan [N Vietnam].

16b. *Elatostema tenuicaudatum* var. *lasiocladum* W. T. Wang, Bull. Bot. Res., Harbin 9(2): 67. 1989.

毛枝细尾楼梯草 mao zhi xi wei lou ti cao

Branchlets pubescent. Leaf blade abaxial surface pubescent. Fl. Mar.

• Evergreen broad-leaved forests in valleys; 1700–1800 m. S Yunnan.

17. *Elatostema lihengianum* W. T. Wang, Acta Bot. Yunnan., Suppl. 5: 2. 1992.

李恒楼梯草 li heng lou ti cao

Subshrubs dioecious, 50–100 cm tall. Stems erect, branched, puberulent. Leaves alternate; nanophylls absent; stipules narrowly lanceolate, ca. 4.5 × 1 mm, puberulent, without cystoliths; petiole 1.5–3 mm; leaf blade obliquely elliptic, 7–15.5 × 2–4.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely strigillose along veins, adaxial surface sparsely strigillose, cystoliths absent or only present along nerves; base obliquely cuneate, margin dentate, apex cuspidate or caudate. Male inflorescences in pairs or 3- or 4-clustered, simple, 3–4 mm in diam.; peduncle 1.5–2.5 mm; receptacle 3–3.5 mm in diam.; bracts connate, ca. 1.1 mm; bracteoles triangular. Female inflorescences solitary, in pairs, or 2- or 3-clustered, 2–4 mm in diam.; peduncle ca. 0.5 mm; receptacle 1.8–3 mm in diam.; bracts broadly ovate; bracteoles cymbiform-linear or obovate. Fl. Mar–Jun.

• Evergreen broad-leaved forests; 1400–1500 m. SE Xizang, NW Yunnan.

18. *Elatostema recticaudatum* W. T. Wang, Acta Phytotax. Sin. 28: 309. 1990.

直尾楼梯草 zhi wei lou ti cao

Subshrubs monoecious, 25–40 cm tall, glabrous. Stems erect, branched. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 8–10 × 1–1.2 mm, without cystoliths; petiole 0–1 mm; leaf blade narrowly oblong, oblong-oblongate, or narrowly elliptic, 7–15 × 2–4 cm, papery, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, dense; base obliquely cuneate, margin denticulate, apex caudate. Male inflorescences solitary, simple, ca. 7 mm in diam., sessile; receptacle obscure; bracts connate, bracteoles cymbiform-oblong. Female inflorescences solitary, 2–5 mm in diam., sessile; receptacle 2–5 mm in diam.; bracts broadly triangular; bracteoles lanceolate-linear. Male flowers 4-merous; perianth lobes oblong. Achenes ellipsoid, 5-ribbed. Fl. Mar.

• Evergreen broad-leaved forests in valleys; 600–700 m. SE Xizang.

19. *Elatostema oreocnidioides* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 5. 1982.

紫麻楼梯草 zi ma lou ti cao

Subshrubs dioecious, 100–160 cm tall, glabrous. Stems erect, branched. Leaves alternate; nanophylls absent; stipules subulate, ca. 0.6 × 0.1 mm, without cystoliths; petiole 0.5–1 mm; leaf blade obliquely ovate, narrowly rhombic, or broadly lanceolate, 4–8 × 1.5–2.5 cm, leathery, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths obscure, dense; base obliquely cuneate, margin crenate, apex acuminate. Male inflorescences 2- or 3-clustered, simple, 4–5 mm in diam., sessile; receptacle obscure; bracts connate, 1.5–2 mm; bracteoles cymbiform-ovate or narrowly ovate. Fl. Feb.

• Mountain forests; 1500–1600 m. W Yunnan.

20. *Elatostema lineolatum* Wight, Icon. Pl. Ind. Orient. 6: 11, t. 1984. 1853.

狭叶楼梯草 xia ye lou ti cao

Elatostema lineolatum var. *majus* Weddell.

Subshrubs monoecious or dioecious, 50–200 cm tall. Stems ascending or erect, branched, densely strigose. Leaves alternate; nanophylls absent; stipules linear or narrowly triangular, 4–7 × 0.5–1 mm, strigose; without cystoliths, petiole 0–1 mm; leaf blade obliquely obovate-oblong or oblong, 3–15 × 1.2–4 cm, herbaceous or papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, both surfaces strigillose along veins; cystoliths conspicuous or obscure, dense; base obliquely cuneate, margin dentate, apex acuminate or cuspidate. Inflorescences sessile. Male inflorescences solitary, simple, 5–10 mm in diam.; pedunculate, receptacle 1.5–3.5 mm in diam.; bracts connate, bracteoles spatulate-linear or cymbiform. Female inflorescences solitary, 2–4 mm in diam.; receptacle 1–2.5 mm in diam.; bracts triangular; bracteoles narrowly oblanceolate. Male flowers 4-merous. Achenes ellipsoid, 7- or 8-ribbed. Fl. Oct–May.

Mountain streamsides, forest margins, thickets; 200–1800 m. Fujian, Guangdong, Guangxi, Taiwan, SE Xizang, S Yunnan [Bhutan, India, Myanmar, Nepal, Sikkim, Sri Lanka, Thailand].

21. *Elatostema ramosum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 33. 1980.

多枝楼梯草 duo zhi lou ti cao

Elatostema ramosum var. *villosum* W. T. Wang.

Herbs perennial, dioecious, 20–30 cm tall. Stems ascending or erect, 3- or 4-branched; branchlets villous. Leaves alternate; nanophylls absent; stipules triangular to linear, 1–2 × 0.4–0.6 mm, glabrous, with cystoliths; petiole absent; leaf blade obliquely elliptic, 2–3.5 × 0.5–1 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely villous or puberulent only along veins, adaxial surface glabrous or strigillose, cystoliths conspicuous, dense; base with broader half auriculate, margin serrate, apex cuspidate or acuminate. Female inflorescences solitary, 30-flowered or more, ca. 3 mm in diam., sessile; receptacle very small; bracts triangular; bracteoles narrowly lanceolate to linear. Achenes narrowly ovoid, 8-ribbed. Fl. Sep–May.

• Mountain forests, rock crevices; ca. 1500 m. SW Guangxi, SW Guizhou.

22. *Elatostema boehmerioides* W. T. Wang, Acta Phytotax. Sin. 28: 311. 1990.

苎麻楼梯草 zhu ma lou ti cao

Subshrubs dioecious, 25–40 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate; nanophylls absent; stipules subulate, 3–6 × 0.3 mm, glabrous, with cystoliths; petiole 1–7 mm; leaf blade obliquely elliptic, 5–12 × 2.5–5.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely puberulent along veins, adaxial surface glabrous, cystoliths conspicuous, dense; base obliquely cuneate, margin dentate, apex caudate. Male inflorescences solitary or in pairs, simple, ca. 3 mm in diam., sessile; receptacle obscure; bracts connate, ca. 1.2 mm; bracteoles lanceolate. Female inflorescences solitary or in pairs, 3–6 mm in diam., sessile; receptacle 2–2.5 mm in diam.; bracts obscure; bracteoles linear. Achenes ellipsoid, 6-ribbed. Fl. Feb–May.

• Evergreen broad-leaved forests, valleys; 800–900 m. SE Xizang.

23. *Elatostema integrifolium* (D. Don) Weddell in Candolle, Prodr. 16(1): 179. 1869.

全缘楼梯草 quan yuan lou ti cao

Herbs perennial or subshrubs, monoecious or dioecious, 60–200 cm tall. Stems erect, branched, glabrous or strigillose. Leaves alternate, glabrous; nanophylls absent; stipules narrowly lanceolate, 6–10 × 1.5–2 mm, with cystoliths; petiole 1.5–6(–10) mm; leaf blade obliquely elliptic to obliquely oblanceolate, 5–19 × 2–6 cm, papery or herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base obliquely cuneate, margin entire or ca. 2-crenate, apex acuminate or caudate. Male inflorescences solitary or in pairs, simple, 10–18 × 6–12 mm, sessile; receptacle 4–6 mm in diam.; bracts connate, ca. 1 mm; bracteoles cymbiform. Female inflorescences solitary or in pairs, 5–8 mm in diam.; peduncle 0–1 mm; receptacle very small; bracts

triangular; bracteoles narrowly linear. Male flowers 4-merous. Achenes ellipsoid, 8-ribbed. Fl. Mar–May.

Valley forests, streamsides; below 900 to 1600 m. Hainan, S Yunnan [Bhutan, India, Indonesia, Malaysia, Myanmar, Nepal, Thailand].

1a. Stems glabrous 23a. var. *integrifolium*

1b. Stems strigillose 23b. var. *tomentosum*

23a. *Elatostema integrifolium* var. *integrifolium*

全缘楼梯草(原变种) quan yuan lou ti cao (yuan bian zhong)

Procris integrifolia D. Don, Prodr. Fl. Nepal. 61. 1825; *Elatostema sesquifolium* (Reinwardt ex Blume) Hasskarl; *E. sesquifolium* var. *integrifolium* (D. Don) Weddell; *E. viridicaule* W. T. Wang; *Procris sesquifolia* Reinwardt ex Blume.

Stems glabrous. Fl. Mar–May.

Valley forests, streamsides; 900–1600 m. Hainan, S Yunnan [Bhutan, India, Indonesia, Myanmar, Nepal, Thailand].

23b. *Elatostema integrifolium* var. *tomentosum* (J. D. Hooker) W. T. Wang in W. T. Wang & C. J. Chen, Fl. Reipubl. Popularis Sin. 23(2): 227. 1995.

朴叶楼梯草 po ye lou ti cao

Elatostema sesquifolium var. *tomentosum* J. D. Hooker, Fl. Brit. India 5: 565. 1888.

Stems strigose. Fl. Feb.

Valley forests, streamsides; below 900 m. S Yunnan [India, Malaysia, Thailand].

24. *Elatostema biglomeratum* W. T. Wang, Bull. Bot. Res., Harbin 9(2): 67. 1989.

叉序楼梯草 cha xu lou ti cao

Subshrubs dioecious, ca. 50 cm tall. Stems erect, branched, pubescent. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 3–5 × 0.5–0.8 mm, puberulent, without cystoliths; petiole 0.2–2 mm; leaf blade obliquely elliptic, 5.5–11 × 2.3–4.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, both surfaces sparsely strigillose along nerves; cystoliths conspicuous, dense; base with broader half broadly cuneate, margin dentate, apex caudate-acuminate or acuminate. Male inflorescences solitary or in pairs, simple, 2–3 mm in diam.; peduncle 1.2–2.5 mm; receptacle obscure; bracts connate, 1–1.5 mm; bracteoles cymbiform-linear. Male flowers 4-merous. Fl. Jan.

Valley thickets; ca. 100 m. Yunnan (Hekou) [Bhutan].

25. *Elatostema tenuicaudatoides* W. T. Wang, Acta Phytotax. Sin. 28: 311. 1990.

拟细尾楼梯草 ni xi wei lou ti cao

Subshrubs dioecious, 25–45 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules subulate, ca. 3 × 0.2 mm, without cystoliths; petiole 0–2.5 mm; leaf blade obliquely oblong or oblanceolate-oblong, 5–18 × 1.5–4.5 cm, papery, major basal lateral veins absent and venation pinnate, cystoliths conspicu-

ous or obscure; base obliquely cuneate, margin dentate, apex caudate or caudate-acuminate. Male inflorescences solitary, simple, 4–7 mm in diam.; peduncle ca. 1 mm; receptacle obscure; bracts connate, 1–1.8 mm; bracteoles cymbiform-lanceolate. Female inflorescences solitary, 2.5–5 mm in diam.; peduncle 0–1 mm; receptacle 1.2–2.5 mm in diam.; bracts lanceolate-linear; bracteoles linear. Male flowers 5-merous. Achenes ellipsoid, 4-ribbed. Fl. Oct–Jan.

• Evergreen broad-leaved forests in valleys, shaded wet rocks on precipices; 1300–2400 m. SE Xizang, NW Yunnan.

- 1a. Male tepals with abaxial surface densely pubescent 25a. var. *tenuicaudatoides*
1b. Male tepals glabrous 25b. var. *orientale*

25a. *Elatostema tenuicaudatoides* var. *tenuicaudatoides*

拟细尾楼梯草(原变种) ni xi wei lou ti cao (yuan bian zhong)

Male perianth lobes densely pubescent on abaxial surface. Fl. Oct–Jan, fr. Jun.

• Evergreen broad-leaved forests in valleys; 2100–2400 m. SE Xizang.

25b. *Elatostema tenuicaudatoides* var. *orientale* W. T. Wang, Acta Bot. Yunnan., Suppl. 5: 5. 1992.

钦朗当楼梯草 qin lang dang lou ti cao

Male perianth lobes glabrous. Fl. Dec–Mar.

• Forests near rivers, shaded wet rocks on precipices; 1300–1900 m. NW Yunnan (Gongshan).

26. *Elatostema parvum* (Blume) Miquel in Zollinger, Syst. Verz. 102. 1854.

小叶楼梯草 xiao ye lou ti cao

Herbs perennial, monoecious or dioecious, 5–45 cm tall. Stems ascending or erect, branched or simple, densely retrostrigose. Leaves alternate; nanophylls oblong, 3–9 mm; stipules lanceolate or linear, 4–7 × 1–1.2 mm, glabrous, with cystoliths; petiole 0–1 mm; leaf blade obliquely obovate, obliquely oblanceolate, or oblong, 1.5–8 × 0.5–2.5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade or 1 arising above base, abaxial surface strigillose along veins, adaxial surface sparsely strigillose or glabrescent, cystoliths conspicuous, dense; base with broader half rounded, margin serrate with 7–20 teeth, apex acuminate, acute, or shortly cuspidate. Male inflorescences solitary or in pairs, simple, 3–5 mm in diam., sessile; receptacle obscure; bracts connate, ca. 5 mm; bracteoles narrowly ovate, lanceolate, or linear. Female inflorescences solitary or in pairs, broadly elliptic, 4–6 mm wide, sessile; receptacle small; bracts narrowly lanceolate or subulate. Male flowers 5-merous. Achenes ovoid, ribbed. Fl. Feb–Aug.

Mountain forests and forest margins, rock crevices, streamsides; 500–2800 m. N Guangdong, NW Guangxi, SW Guizhou, S Sichuan, Taiwan, SE Xizang, S Yunnan [Bhutan, India, Indonesia, Myanmar, Nepal, Philippines, Sikkim].

- 1a. Leaf blade apex acuminate or acute 26a. var. *parvum*
1b. Leaf blade apex shortly cuspidate 26b. var. *brevicuspis*

26a. *Elatostema parvum* var. *parvum*

小叶楼梯草(原变种) xiao ye lou ti cao (yuan bian zhong)

Procris parva Blume, Bijdr. Fl. Ned. Ind. 512. 1826; *Elatostema backeri* H. Schroeter; *E. backeri* var. *villosulum* W. T. Wang; *E. merillii* C. B. Robinson; *E. minutum* Hayata; *E. reptans* J. D. Hooker; *E. stracheyanum* Weddell; *Pellionia esquirolii* H. Léveillé.

Leaf blade apex acuminate or acute. Fl. Jul–Aug.

Mountain forests, rock crevices, streamsides; 500–2800 m. N Guangdong, NW Guangxi, SW Guizhou, S Sichuan, Taiwan, S Yunnan [Bhutan, India, Indonesia, Myanmar, Nepal, Philippines, Sikkim].

26b. *Elatostema parvum* var. *brevicuspis* W. T. Wang, Acta Phytotax. Sin. 28: 312. 1990.

骤尖小叶楼梯草 zhou jian xiao ye lou ti cao

Leaf blade apex shortly cuspidate. Fl. Jul.

• Forest margins in mountains; ca. 900 m. SE Xizang.

27. *Elatostema cuneatum* Wight, Icon. Pl. Ind. Orient. 6: 35, t. 2091, f. 3. 1853 [“*cuniata*”].

稀齿楼梯草 xi chi lou ti cao

Elatostema approximatum Weddell; *E. densiflorum* Franquet & Savatier; *E. nipponicum* Makino.

Herbs dioecious, 2.5–5 cm tall. Stems erect, simple, crispately pubescent. Leaves alternate; nanophylls 3–5 mm, stipules narrowly triangular, 1–1.5 × 0.4–0.5 mm, glabrous, without cystoliths; petiole 0–1 mm; leaf blade obliquely rhombic-obovate, 1–3.5 × 0.5–1.5 cm, thinly herbaceous, major basal lateral veins both arising at base of leaf blade, abaxial surface puberulent along nerves, adaxial surface sparsely strigillose, cystoliths conspicuous or obscure, sparse; base with broader half rounded, margin dentate with 2–5 teeth, apex acutate or obtuse. Female inflorescences solitary, 2–4 mm in diam., sessile; receptacle 2.5–4 mm in diam.; bracts triangular; bracteoles spatulate-linear. Achenes ovoid, 8-ribbed. Fl. Jun–Jul.

Valley forests, precipices; 1200–1400 m. S Yunnan [Japan, Korea, India, Indonesia, Laos, Sikkim].

28. *Elatostema sinense* H. Schroeter, Repert. Spec. Nov. Regni Veg. Beih. 83(2): 152. 1936.

对叶楼梯草 dui ye lou ti cao

Herbs perennial, dioecious, 20–60 cm tall. Stems ascending or erect, simple or rarely branched, crispately pubescent. Leaves alternate; nanophylls ovate to elliptic, 3–5 mm; stipules lanceolate, 4–6 × 0.8–1 mm, glabrous or ciliate, with cystoliths; petiole 1–3 mm; leaf blade obliquely elliptic or oblong, 3.5–9.9 × 1.5–3 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely puberulent, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half broadly cuneate or rounded, margin dentate, apex acuminate or caudate-acuminate. Male inflorescences solitary or in pairs, simple, 2–8 mm in diam.; peduncle 1–2.5 mm; receptacle very small or absent; bracts connate, 2–2.5 mm; bracteoles oblong or linear. Female

inflorescences solitary or in pairs, 4–6 mm in diam.; receptacle small; bracts triangular; bracteoles spatulate-linear. Male flowers 5-merous. Achenes ovoid, 5-ribbed. Fl. Feb–Nov.

• Forests, dark damp places in valleys or at streamsides; 400–2800 m. S Anhui, Fujian, Guangxi, Guizhou, W Hubei, Hunan, Jiangxi, Sichuan, N Yunnan.

- 1a. Stems glabrous or pilose 28c. var. *xinningense*
1b. Stems crispately pubescent.
2a. Male bracts not subapically
corniculate 28a. var. *sinense*
2b. Male bracts subapically
corniculate 28b. var. *longecornutum*

28a. *Elatostema sinense* var. *sinense*

对叶楼梯草(原变种) *dui ye lou ti cao* (yuan bian zhong)

Elatostema sinense var. *trilobatum* W. T. Wang.

Bracts of male inflorescences not connate at apex. Fl. Jun–Sep.

• Evergreen broad-leaved forests, dense forests, dark damp places in valleys or at streamsides; 400–2600 m. S Anhui, Fujian, Guangxi, Guizhou, W Hubei, Hunan, Jiangxi, E Sichuan, NE Yunnan.

28b. *Elatostema sinense* var. *longecornutum* (H. Schroeter) W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 37. 1980.

角苞楼梯草 *jiao bao lou ti cao*

Elatostema longecornutum H. Schroeter, Repert. Spec. Nov. Regni Veg. Beih. 83(2): 153. 1936.

Bracts of male inflorescences connate at apex. Fl. Sep.

• Valley forests; 1900–2800 m. Sichuan, N Yunnan.

28c. *Elatostema sinense* var. *xinningense* (W. T. Wang) L. D. Duan & Q. Lin, Acta Phytotax. Sin. 41: 495. 2003.

新宁楼梯草 *xin ning lou ti cao*

Elatostema xinningense W. T. Wang, Guihaia 5: 323. 1985.

Stems glabrous or pilose. Fl. Sep–Oct.

• Valley forests; 900–1100 m. SW Hunan.

29. *Elatostema monandrum* (D. Don) H. Hara, Fl. E. Himal., 3rd. Rep. 21. 1975.

异叶楼梯草 *yi ye lou ti cao*

Procris monandra D. Don, Prodr. Fl. Nepal. 61. 1825; *Elatostema diversifolium* Weddell; *E. monandrum* f. *ciliatum* (J. D. Hooker) Hara; *E. monandrum* f. *pinnatifidum* (J. D. Hooker) Hara; *E. monandrum* var. *ciliatum* (J. D. Hooker) Murti; *E. monandrum* var. *pinnatifidum* (J. D. Hooker) Murti; *E. muscicola* W. T. Wang; *E. surculosum* Wight; *E. surculosum* var. *ciliatum* J. D. Hooker; *E. surculosum* var. *elegans* J. D. Hooker; *E. surculosum* var. *pinnatifidum* J. D. Hooker; *Pellionia mairei* H. Léveillé.

Herbs dioecious, 5–20 cm tall. Stems ascending or erect,

usually simple, pilose, furfuraceous. Leaves usually opposite, glabrous or glabrescent; nanophylls elliptic to lanceolate, 2–6 mm; stipules obscure; petiole 1–2 mm; leaf blade obliquely cuneate, obliquely elliptic, or lanceolate, 0.8–4(–6.5) × 0.4–1.2(–2) cm, herbaceous or membranous, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, sparse or present only along margins; base obliquely cuneate, margin dentate or pinnatifid, apex acute to acuminate. Male inflorescences solitary, simple, 1.5–2 mm in diam.; peduncle 0–1 mm; receptacle obscure; bracts connate, 2–2.5 mm; bracteoles lanceolate to linear. Female inflorescences solitary, 2–5 mm in diam., sessile; receptacle small; bracts broadly ovate; bracteoles spatulate-linear. Male flowers 4-merous. Achenes ellipsoid, 6-ribbed. Fl. Jun–Oct.

Mountain or valley forests, streamsides, dark damp rocks, valley precipices, on tree trunks; 800–3000 m. W Guizhou, SW Shaanxi, SW Sichuan, Xizang, Yunnan [Bhutan, India, N Myanmar, Nepal, Sikkim, Sri Lanka, Thailand].

30. *Elatostema pycnodontum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 36. 1980.

密齿楼梯草 *mi chi lou ti cao*

Herbs perennial, monoecious or dioecious, 10–45 cm. Stems ascending, simple or branched, glabrous. Leaves alternate; nanophylls absent; stipules narrowly ovate or broadly lanceolate, 4–8 × 1.5–3.5 mm, glabrous, without cystoliths; petiole 1–1.5 mm; leaf blade obliquely oblong-lanceolate or rhombic, (1.2–)2.5–6 × 1–2 cm, herbaceous, major basal lateral veins both arising at base of leaf blade, abaxial surface sparsely puberulent along veins, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half broadly cuneate or rounded, margin serrate, apex acuminate. Male inflorescences solitary, simple, 1.2–3 mm in diam.; peduncle 0–0.5 mm; receptacle absent; bracts connate, ca. 2.6 mm; bracteoles linear. Female inflorescences solitary, 30-flowered or more, 2–5 mm in diam.; peduncle 1.5–2 mm; receptacle very small; bracts narrowly triangular or lanceolate-linear; bracteoles linear. Male flowers 5-merous. Achenes ovoid, 5-ribbed. Fl. Aug–Sep.

• Valley streamsides, dark damp places; 800–1100 m. Guizhou, SW Hubei, NW Hunan, NE Yunnan.

31. *Elatostema myrtillus* (H. Léveillé) Handel-Mazzetti, Symb. Sin. 7: 146. 1929.

瘤茎楼梯草 *liu jing lou ti cao*

Pellionia myrtillus H. Léveillé, Repert. Spec. Nov. Regni Veg. 11: 552. 1913.

Herbs perennial, monoecious or dioecious, 25–40 cm tall. Stems ascending or erect, usually branched, ferruginous-furfuraceous, tuberculate, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules subulate, 1–1.5 × 0.1–0.2 mm, without cystoliths; petiole absent; leaf blade obliquely ovate, 1–3 × 0.5–1 cm, herbaceous, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, dense; base with broader half auriculate, margin serrate, apex acuminate. Male

inflorescences solitary, simple, 2–5 mm in diam., sessile; receptacle obscure; bracts connate, ca. 2 mm. Female inflorescences solitary, 30-flowered or more, ca. 2 mm in diam., sessile; receptacle obscure; bracts nearly oblong; bracteoles linear. Male flowers 4- or 5-merous. Achenes narrowly ovoid, ribbed. Fl. May–Oct.

• Limestone valleys, streamside rocks; 300–1500 m. W Guangxi, S Guizhou, SW Hubei, NW Hunan, SE Sichuan, SE Yunnan.

32. *Elatostema glochidioides* W. T. Wang, Acta Phytotax. Sin. 31: 172. 1993.

算盘楼梯草 suan pan lou ti cao

Herbs perennial, dioecious, ca. 25 cm tall. Stems ascending, branched, ferruginous-furfuraceous, glabrous. Leaves alternate; nanophylls absent; stipules narrowly triangular, ca. 0.6×0.2 mm, glabrous; petiole 0–0.8 mm; leaf blade lanceolate, oblong-lanceolate, narrowly ovate, or elliptic, $1.1\text{--}3 \times 0.4\text{--}0.9$ cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface glabrous, adaxial surface strigillose along veins, cystoliths conspicuous, dense; base with broader half rounded or auriculate, margin entire, apex attenuate or acute. Female inflorescences solitary, 2.5–4 mm in diam.; peduncle ca. 0.5 mm; receptacle small, ca. 1.8 mm in diam.; bracts connate, triangular; bracteoles linear-oblongate or linear. Achenes nearly ovoid, 7-ribbed. Fl. Apr.

• Mountain forests; ca. 800 m. Guizhou (Libo).

33. *Elatostema shanglinense* W. T. Wang, Guihaia 2: 118. 1982.

上林楼梯草 shang lin lou ti cao

Herbs perennial, dioecious, ca. 9 cm tall. Stems ascending or erect, simple, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules narrowly lanceolate, $2\text{--}2.2 \times 0.3\text{--}0.7$ mm; petiole 0–1 mm; leaf blade obliquely elliptic or oblong, $1\text{--}4.5 \times 0.5\text{--}1.5$ cm, papery, major basal lateral veins both arising at base of leaf blade, cystoliths obscure, sparse; base with broader half auriculate, margin denticulate, apex caudate-acuminate. Male inflorescences solitary, simple, ca. 3.5 mm in diam., sessile; receptacle obscure; bracts connate, 2–3 mm; bracteoles narrowly linear. Male flowers 4-merous. Fl. Aug.

• Valley streamside, dark damp rocks. Guangxi (Shanglin).

34. *Elatostema imbricans* Dunn, Bull. Misc. Inform. Kew 1920: 209. 1920.

刀叶楼梯草 dao ye lou ti cao

Herbs perennial, dioecious, 11–30 cm tall. Stems ascending or erect, simple or branched, ferruginous-furfuraceous, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules linear-lanceolate, $3\text{--}4.5 \times 0.6\text{--}0.8$ mm, without cystoliths; petiole 0–1 mm; leaf blade obliquely linear-oblongate, $1\text{--}3.2 \times 0.5\text{--}1.2$ cm, papery, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, dense; base with broader half auriculate, margin dentate, apex short cuspidate. Male inflorescences solitary, simple, ca. 3 mm in diam., sessile; receptacle absent; bracts connate, bracteoles ovate. Female in-

florescences solitary, 30-flowered or more, 2.5–5 mm in diam., sessile; receptacle ca. 3 mm in diam.; bracts triangular; bracteoles spatulate-oblongate. Male flowers 4-merous. Achenes ellipsoid, 8-ribbed. Fl. Jun.

Mixed forests in mountains; 2200–2300 m. SE Xizang [Bhutan].

35. *Elatostema hookerianum* Weddell, Arch. Mus. Hist. Nat. 9: 309. 1856.

疏晶楼梯草 shu jing lou ti cao

Elatostema subfalcatum W. T. Wang.

Herbs perennial, dioecious, 20–30 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules linear-lanceolate, $6\text{--}8 \times 0.6\text{--}0.8$ mm, without cystoliths; petiole 0–1 mm; leaf blade falcate, $2.5\text{--}6.5 \times 1.5\text{--}2$ cm, papery, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, only present along margins; base with broader half cordate, margin denticulate, apex acuminate or caudate. Male inflorescences solitary, simple, 3–4 mm in diam., subsessile; receptacle very small; bracts connate, 2.5–4 mm; bracteoles lanceolate or linear. Female inflorescences solitary, 30-flowered or more, 4–9 mm in diam., subsessile; receptacle 3.5–7.5 mm in diam.; bracts oblong or broadly ovate; bracteoles linear or spatulate-linear. Male flowers 4-merous. Achenes ellipsoid, 10-ribbed. Fl. Jan–May.

Streamside rocks, dark damp places, evergreen broad-leaved forests in mountains; 1300–2400 m. S Guangxi, SE Xizang, W Yunnan [Bhutan, NE India, Sikkim, N Vietnam].

36. *Elatostema microcephalanthum* Hayata, Icon. Pl. Formosan. 6: 59. 1916.

微序楼梯草 wei xu lou ti cao

Herbs perennial, monoecious, 10–20 cm tall. Stems ascending, branched, glabrous. Leaves alternate; nanophylls absent; stipules lanceolate or linear, $0.6\text{--}2 \times 0.2\text{--}0.6$ mm, glabrous; petiole 0–1 mm; leaf blade obliquely rhombic-elliptic or nearly rhombic, $1\text{--}6 \times 0.8\text{--}2$ cm, herbaceous or membranous, major basal lateral veins both arising at base of leaf blade, abaxial surface strigillose along veins, adaxial surface glabrous, cystoliths obscure or conspicuous, sparse, only present along margins; base with broader half rounded, margin obtusely serrate, apex obtusely acute to acutely acuminate. Male inflorescences solitary, simple, 4–8 mm in diam., peduncle to 4 cm; receptacle obscure; bracts connate, ca. 4 mm. Female inflorescences solitary, 30-flowered or more, 3–4 mm in diam.; peduncle 0–3 mm; receptacle small; bracts narrowly oblong; bracteoles spatulate or linear. Male flowers 5-merous. Achenes ovoid, 5- or 6-ribbed. Fl. Jun–Jan.

Wet floors in ravines at medium elevations. Taiwan [S Japan].

37. *Elatostema longibracteatum* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 6. 1982.

长苞楼梯草 chang bao lou ti cao

Herbs perennial, monoecious, 20–26 cm tall. Stems ascending or erect, simple, rarely branched at base, pubescent.

Leaves alternate; nanophylls absent; stipules linear, ca. 3×0.8 mm, glabrous; without cystoliths, petiole absent; leaf blade obliquely lanceolate, $1.2-5 \times 0.9-1.5$ cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely puberulent along veins, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half auriculate, margin crenate-denticulate, apex caudate-acuminate. Male inflorescences solitary, simple, $9-12 \times 4-6$ mm, sessile; receptacle obscure; bracts connate, 9-12 mm; bracteoles narrowly triangular or linear-triangular. Female inflorescences solitary, 30-flowered or more, 2-4 mm in diam., sessile; receptacle ca. 2 mm in diam.; bracts triangular; bracteoles linear or cymbiform. Male flowers 5-merous. Fl. Feb.

- Mountain forests; 1200-1300 m. SE Yunnan.

38. *Elatostema asterocephalum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 40. 1980.

星序楼梯草 xing xu lou ti cao

Herbs perennial, monoecious or dioecious, 10-14 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules subulate, $1.5-2 \times 0.1-0.2$ mm, without cystoliths; petiole 0-0.5 mm; leaf blade obliquely elliptic or obovate, $4-8 \times 1.5-3$ cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous or obscure, dense; base with broader half nearly auriculate, margin denticulate, apex cuspidate or acuminate. Male inflorescences solitary, simple, 5-7 mm in diam., sessile; receptacle obscure; bracts connate, 5-7 mm; bracteoles cymbiform-ovate. Female inflorescences solitary, 30-flowered or more, 3-4 mm in diam., sessile; receptacle small; bracts narrowly triangular or linear-lanceolate; bracteoles lanceolate-linear. Male flowers 4- or 5-merous. Fl. Feb-Mar.

- Broad-leaved forests in limestone mountains. SW Guangxi.

39. *Elatostema liboense* W. T. Wang, Acta Phytotax. Sin. 31: 174. 1993.

荔波楼梯草 li bo lou ti cao

Herbs perennial, dioecious, ca. 18 cm tall. Stems ascending or erect, simple, densely ferruginous-furfuraceous, sparsely puberulent. Leaves alternate; nanophylls absent; stipules small, caducous; petiole 0-2 mm; leaf blade obliquely oblanceolate or narrowly obovate, $2.5-6.5 \times 1-2$ cm, papery, major basal lateral veins both arising at base of leaf blade, both surfaces strigillose; cystoliths conspicuous, dense; base with broader half obtuse, margin denticulate, apex acuminate or acute. Female inflorescences solitary, 3-flowered or more, 2.5-4 mm in diam.; peduncle ca. 1.5 mm; receptacle broadly oblong, 2.5-3.5 mm in diam.; bracts connate, triangular; bracteoles linear or oblanceolate-linear. Achenes ellipsoid, 6-ribbed. Fl. Apr.

- Rocks under dense forests; 800-900 m. Guizhou (Libo).

40. *Elatostema xichouense* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 39. 1980.

西畴楼梯草 xi chou lou ti cao

Herbs perennial, dioecious, 13-30 cm tall. Stems ascend-

ing or erect, simple, pubescent. Leaves alternate; nanophylls absent; stipules broadly lanceolate, $2.5-3 \times 0.5-1$ mm, strigillose along midvein; without cystoliths, petiole 0-1 mm; leaf blade obliquely oblong-obovate or elliptic, $3-7.5 \times 1.5-2$ cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent along nerves, adaxial surface sparsely strigillose, cystoliths obscure, dense; base with broader half auriculate, margin denticulate, apex caudate. Female inflorescences solitary, 30-flowered or more, 2.5-5 mm in diam.; peduncle 0-1.5 mm; receptacle 2-3 mm in diam.; bracts connate, narrowly lanceolate; bracteoles spatulate-linear. Achenes ovoid or ellipsoid, 6-ribbed. Fl. May.

- Evergreen broad-leaved forests in limestone mountains; 1300-1400 m. SE Yunnan.

41. *Elatostema strigillosum* B. L. Shih & Yuen P. Yang, Bot. Bull. Acad. Sin. 36: 272. 1995.

微粗毛楼梯草 wei cu mao lou ti cao

Herbs perennial, dioecious, less than 20 cm. Stems prostrate, branched, densely strigillose. Leaves alternate; nanophyll absent; stipules narrowly triangular, ca. 1.5 mm, hirtellous on abaxial surface; petiole 0-1 mm; leaf blade obliquely obovate to oblong-obovate, $0.9-2.5 \times 0.5-1.1$ cm, thickly papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base with broader half obtuse, margin serrate, apex acute. Female inflorescences solitary, ca. 3.5×2.5 mm, sessile or subsessile; receptacle obscure; bracts connate into a narrow-elliptic involucre, up to 3×1 mm; bracteoles narrowly oblong-cymbiform. Achenes ovoid, ca. 8-ribbed. Fl. Jun-Oct.

- Ravines. Taiwan (Taidong).

42. *Elatostema crassiusculum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 43. 1980.

厚叶楼梯草 hou ye lou ti cao

Herbs perennial, dioecious, 4.5-24 cm tall. Stems erect, simple, pilose. Leaves alternate; nanophylls absent; stipules lanceolate, $3.5-5 \times 1-1.5$ mm, glabrous, with cystoliths; petiole 0-1 mm; leaf blade obliquely elliptic or obliquely obovate-oblong, $1.5-4.5 \times 1-2$ cm, leathery, major basal lateral veins both arising at base of leaf blade or 1 arising above base, abaxial surface glabrous, adaxial surface sparsely strigillose along veins, cystoliths conspicuous, dense; base with broader half broadly cuneate or rounded, margin crenate, apex acuminate or acutate. Inflorescences sessile. Male inflorescences solitary, simple, 3-5 mm in diam.; receptacle absent; bracts connate, 3-8 mm; bracteoles linear or spatulate-linear. Female inflorescences solitary, 30-flowered or more, 2-2.5 mm in diam.; receptacle obscure; bracts ovate-triangular; bracteoles linear. Male flowers 4-merous. Achenes narrowly ellipsoid, 5-ribbed. Fl. Feb-May.

- Damp rocks in forests; 400-700 m. SE Yunnan.

43. *Elatostema coriaceifolium* W. T. Wang, Acta Phytotax. Sin. 31: 170. 1993.

革叶楼梯草 ge ye lou ti cao

Herbs perennial, dioecious, 14–18.5 cm tall. Stems erect, simple, furfuraceous, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules linear-lanceolate, 1–1.6 × 0.2–0.3 mm, without cystoliths; petiole 0–0.5 mm; leaf blade obliquely elliptic or rhombic-elliptic, 1.2–2.4 × 0.8–1.1 cm, leathery, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; basiscopic half obliquely cuneate or auriculate, margin denticulate, apex acute. Female inflorescences solitary, 30-flowered or more, 3–4 mm in diam.; peduncle ca. 1 mm; receptacle nearly orbicular or broadly oblong, ca. 2 mm in diam.; bracts triangular; bracteoles linear or narrowly linear. Fl. Apr–May.

• Rocks under dense forests, wet places in valleys, caverns in limestone hills; 500–900 m. Guangxi (Leye), Guizhou (Libo).

44. *Elatostema ichangense* H. Schroeter, Repert. Spec. Nov. Regni Veg. 47: 220. 1939.

宜昌楼梯草 yi chang lou ti cao

Herbs perennial, monoecious or dioecious, 20–50 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules linear or oblong, 2–3.5 × 0.5 mm, without cystoliths; petiole 0–1.5 mm; leaf blade obliquely obovate-oblong or obliquely oblong, 6–12.5 × 2–3 cm, herbaceous or papery, major basal lateral veins both arising at base of leaf blade or 1 arising above base, cystoliths conspicuous, dense; base with broader half obtuse or rounded, margin crenate, apex caudate-acuminate. Male inflorescences solitary or rarely in pairs, simple, 3–6 mm in diam.; peduncle 0–1 mm; receptacle very small; bracts 6, connate, ovate, unequal, 2 outer ones 1.2–1.5 cm, 4 inner ones 5–7 mm; bracteoles spatulate or cymbiform-linear. Female inflorescences solitary or rarely in pairs, 30-flowered or more, 6–10 × 3–7 mm; peduncle 2–4 mm; receptacle oblong, 3–8 × 3–6 mm; bracts triangular; bracteoles spatulate-linear. Male flowers 5-merous. Achenes ellipsoid, 8-ribbed. Fl. Aug–Sep.

• Evergreen broad-leaved forests in mountains, rocks; 300–1100 m. N Guangxi, Guizhou, W Hubei, NW Hunan, SE Sichuan.

45. *Elatostema grandidentatum* W. T. Wang, Acta Phytotax. Sin. 17(1): 107. 1979.

粗齿楼梯草 cu chi lou ti cao

Herbs perennial, dioecious, 40–50 cm tall. Stems ascending or erect, simple, sparsely puberulent. Leaves alternate; nanophylls absent; stipules linear-lanceolate, ca. 3.5 × 1.5–2 mm, puberulent on abaxial surface along costa; with cystoliths, petiole 0–2 mm; leaf blade obliquely elliptic, 6–12 × 2.5–5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely puberulent, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half auriculate, margin dentate, apex cuspidate. Male inflorescences solitary, simple, ca. 5 mm in diam.; peduncle ca. 1 mm; receptacle very small; bracts connate, ca. 3 mm; bracteoles oblong. Male flowers 4-merous. Fl. Jul.

Mountain forests; 2400–3100 m. Xizang [Bhutan].

46. *Elatostema attenuatum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 44. 1980.

渐狭楼梯草 jian xia lou ti cao

Herbs perennial, monoecious, 20–25 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules lanceolate, 5–15 × 3–4 mm, with cystoliths; petiole absent; leaf blade oblanceolate, 9–15 × 2–4 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base attenuate, margin entire, apex acuminate. Male inflorescences solitary, in pairs, or 2-clustered, simple, 5–6 mm in diam.; peduncle 1–2 mm; receptacle 4–5 mm in diam.; bracts connate, ca. 2.5 mm; bracteoles cymbiform-oblanceolate. Female inflorescences solitary, in pairs, or 2-clustered, 4–8 mm in diam.; peduncle ca. 1 mm; receptacle 4–7 mm in diam.; bracts triangular; bracteoles linear. Male flowers 4-merous. Fl. May–Jun.

• Dense forests in valleys; 400–800 m. SE Yunnan.

47. *Elatostema salvinioides* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 45. 1980.

迭叶楼梯草 die ye lou ti cao

Elatostema salvinioides var. *angustus* W. T. Wang; *E. salvinioides* var. *robustum* W. T. Wang.

Herbs perennial, dioecious, 12–17 cm tall. Stems erect, simple, pilose. Leaves alternate, glabrous; nanophylls narrowly obovate-oblong, 4–6 × 1.2–1.6 mm; stipules cordate, triangular, or lanceolate, 1–4 × 0.5–4 mm, without cystoliths; petiole 0.2–1.2 mm; leaf blade obliquely oblong or elliptic, 1–2.6 × 0.4–1 cm, herbaceous, veins obscure, cystoliths conspicuous, sparse; base obliquely cordate, margin entire or 1–2-crenate, apex obtuse or rounded. Male inflorescences solitary, simple, 0.5–1 mm in diam., sessile; receptacle obscure; bracts connate, ca. 2 mm; bracteoles broadly linear. Female inflorescences solitary, ca. 1 mm in diam., sessile; receptacle obscure; bracts oblong-lanceolate; bracteoles narrowly linear. Achene ellipsoid, ribbed. Fl. Apr–Aug.

Valley forests, rocks; 700–1600 m. Yunnan [Laos, Myanmar, N Thailand].

48. *Elatostema trichocarpum* Handel-Mazzetti, Symb. Sin. 7: 148. 1929.

疣果楼梯草 liu guo lou ti cao

Herbs perennial, monoecious or dioecious, 15–50 cm tall. Stems ascending or erect, simple or 1-branched, glabrous or pilose. Leaves alternate; nanophylls absent; stipules subulate, 0.6–1 × 0.1 mm, glabrous, without cystoliths; petiole 0.5–2 mm; leaf blade obliquely elliptic-ovate or elliptic, 2–5 × 1.2–2 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface glabrous, adaxial surface sparsely strigose, cystoliths obscure, sparse; base with broader half cordate or nearly auriculate, margin denticulate, apex acute or nearly obtuse. Male inflorescences solitary, simple, 5–10 mm in diam., sessile; receptacle obscure; bracts connate, to 5 mm. Female inflorescences solitary, 30-flowered or more, 2–5 mm in diam.; peduncle 2–12(–35) mm; receptacle small; bracts connate, narrowly ovate or narrowly lanceolate;

bracteoles lanceolate-linear. Male flowers 4-merous. Achenes narrowly ovoid, ribbed, tuberculate. Fl. May–Aug.

• Dark damp places in mountains; 1000–1800 m. Guizhou, SW Hubei, NW Hunan, Sichuan, NE Yunnan.

49. *Elatostema nasutum* J. D. Hooker, Fl. Brit. India 5: 571. 1888.

托叶楼梯草 *tuo ye lou ti cao*

Herbs perennial, dioecious, 15–45 cm tall. Stems ascending or erect, simple or branched, glabrous or puberulent. Leaves alternate; nanophylls absent; stipules narrowly ovate or linear, 9–18 × 1.5–4.5 mm, glabrous, without cystoliths; petiole 1–4 mm; leaf blade obliquely elliptic or elliptic-ovate, 3–9(–18) × 2–3.5(–6.5) cm, herbaceous, major basal lateral veins both arising at base of leaf blade, rarely 1 arising above base, both surfaces glabrous, or adaxial surface sparsely strigillose; cystoliths obscure, sparse; base with broader half cordate, margin dentate, apex acuminate. Male inflorescences solitary, simple, 4–14 mm in diam.; peduncle 3–60 mm, 0.8–1.2 mm in diam.; receptacle 2–6 mm in diam.; bracts 6, in 1 whorl, connate, cymbiform-ovate, equal, 2–5 mm; bracteoles linear. Female inflorescences solitary, 30-flowered or more, 3–9 mm in diam.; peduncle 0–1 mm; receptacle 2–5 mm in diam.; bracts triangular; bracteoles narrowly oblong. Male flowers 4-merous. Achenes ellipsoid, 10-ribbed. Fl. May–Oct.

Mountain forests, sparse forests, shaded areas on grassy slopes or in valleys; 400–2400 m. N and W Guangdong, N Guangxi, Guizhou, Hainan, Hubei, Hunan, W Jiangxi, Sichuan, SE Xizang, Yunnan [Bhutan, India, Sikkim, Nepal, Thailand].

- 1a. Stems and male peduncles glabrous 49a. var. *nasutum*
- 1b. Stems and male peduncles puberulent 49b. var. *puberulum*

49a. *Elatostema nasutum* var. *nasutum*

托叶楼梯草(原变种) *tuo ye lou ti cao* (*yuan bian zhong*)

Elatostema hainanense W. T. Wang; *E. stipulosum* Handel-Mazzetti.

Stems and peduncles of male inflorescences glabrous. Fl. Jul–Oct.

Mountain forests, shaded areas on grassy slopes; 400–2400 m. N Guangdong, N Guangxi, Guizhou, Hainan, Hubei, Hunan, W Jiangxi, Sichuan, SE Xizang, Yunnan [Bhutan, Nepal].

49b. *Elatostema nasutum* var. *puberulum* (W. T. Wang) W. T. Wang, Bull. Bot. Res., Harbin 12: 207. 1992.

短毛楼梯草 *duan mao lou ti cao*

Elatostema stipulosum var. *puberulum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 48. 1980.

Stems and peduncles of male inflorescences puberulent. Fl. May–Jul.

• Shaded wet areas in valleys, sparse forests; 600–700 m. W Guangdong, N Guangxi, W Jiangxi, SE Yunnan.

50. *Elatostema filipes* W. T. Wang, Bull. Bot. Lab. N. E.

Forest. Inst., Harbin 7: 49. 1980.

丝梗楼梯草 *si geng lou ti cao*

Herbs perennial, dioecious, 11–25 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules lanceolate, 4–9 × 1.5–2 mm, with cystoliths; petiole absent; leaf blade obliquely oblong or oblong-lanceolate, (2–) 6–11 × 1.4–3 cm, herbaceous or papery, major basal lateral veins both arising at base of leaf blade, cystoliths obscure; base with broader half auriculate, margin dentate, apex acuminate. Male inflorescences solitary, simple, 3–9 mm in diam.; peduncle 1–3 cm, 0.1–0.4 mm in diam.; receptacle 1–1.5 mm in diam.; bracts connate, ca. 2.5 mm; bracteoles broadly linear. Female inflorescences solitary, 30-flowered or more, ca. 5.5 mm in diam.; peduncle ca. 1 mm; receptacle ca. 2 mm in diam.; bracts triangular; bracteoles spatulate or spatulate-linear. Male flowers 4-merous. Achenes ellipsoid, 10-ribbed. Fl. Jun–Oct.

• Streamside rocks in mountains; 900–1200 m. Guangxi.

- 1a. Staminate inflorescences 3–5 mm in diam. 50a. var. *filipes*
- 1b. Staminate inflorescences 6–9 mm in diam. 50b. var. *floribundum*

50a. *Elatostema filipes* var. *filipes*

丝梗楼梯草(原变种) *si geng lou ti cao* (*yuan bian zhong*)

Male inflorescences 3–5 mm in diam. Fl. Jun.

• Streamside rocks in mountains; 900–1200 m. N Guangxi.

50b. *Elatostema filipes* var. *floribundum* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 7. 1982.

多花丝梗楼梯草 *duo hua si geng lou ti cao*

Male inflorescences 6–9 mm in diam. Fl. Oct.

• S Guangxi.

51. *Elatostema yaoshanense* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 51. 1980.

瑶山楼梯草 *yao shan lou ti cao*

Herbs perennial, monoecious, 10–16 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules lanceolate-linear, 2–4 × 0.5–1 mm; petiole absent; leaf blade obliquely elliptic or rhombic-elliptic, 1.5–4.5 × 1–1.5 cm, herbaceous or membranous, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, slightly dense; base obliquely cuneate, margin dentate, apex cuspidate. Male inflorescences solitary, simple, ca. 3 mm in diam.; peduncle 0.8–2 cm; receptacle absent; bracts connate, ca. 2.5 mm; bracteoles cymbiform. Female inflorescences solitary, 30-flowered or more, 3–4 mm in diam., sessile; receptacle 2–3 mm in diam.; bracts triangular; bracteoles linear or narrowly ovate. Male flowers 4-merous. Achenes ellipsoid, 10-ribbed. Fl. Jun.

• N Guangxi.

52. *Elatostema gueilinense* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 50. 1980.

桂林楼梯草 *gui lin lou ti cao*

Herbs perennial, dioecious, 14–20 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 1.2–3 × 0.4–0.9 mm, ciliate; petiole absent; leaf blade obliquely elliptic, 2.5–4 × 0.7–1.2 cm, herbaceous or membranous, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, slightly sparse; base obliquely cuneate, margin denticulate, apex acuminate. Male inflorescences solitary, simple, ca. 3.5 mm in diam.; peduncle 4–6 mm; receptacle very small; bracts connate, 1.5–2 mm; bracteoles narrowly lanceolate. Male flowers 4-merous. Fl. Jul.

- Streamside rocks. Guangxi (Lingchuan).

53. *Elatostema rhombiforme* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 50. 1980.

菱叶楼梯草 *ling ye lou ti cao*

Elatostema caveanum Grierson & Long.

Herbs perennial, monoecious, 11–16 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules lanceolate-linear or subulate, 3–5 × 0.3–0.5 mm, without cystoliths; petiole absent; leaf blade obliquely rhombic, 2–4.5 × 0.5–1.5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, dense; base obliquely cuneate, margin serrulate, apex acuminate. Male inflorescences solitary, simple, ca. 8 mm in diam.; peduncle 15–17 mm; receptacle very small; bracts connate, 2–2.5 mm; bracteoles linear. Female inflorescences solitary, 30-flowered or more, 1–2 mm in diam.; peduncle 0–1 mm; receptacle very small, obscure; bracts narrowly lanceolate. Male flowers 4-merous. Fl. Dec.

Mixed forests in mountains; 1300–1500 m. SE Yunnan [Bhutan, Sikkim].

54. *Elatostema strigulosum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 52. 1980.

伏毛楼梯草 *fu mao lou ti cao*

Elatostema strigulosum var. *semitriplinerve* W. T. Wang.

Herbs perennial, monoecious or dioecious, 7–30 cm tall. Stems ascending or erect, usually simple, crispately strigose. Leaves alternate; nanophylls absent; stipules narrowly triangular or subulate, ca. 1.5 × 0.1 mm, glabrous, without cystoliths; petiole 0–0.8 mm; leaf blade obliquely elliptic, 1.5–5.5 × 0.5–2.5 cm, papery, major basal lateral veins both arising at base of leaf blade or 1 arising above base, abaxial surface sparsely puberulent or glabrescent along veins, adaxial surface glabrous or sparsely strigillose, cystoliths conspicuous, dense; base with broader half auriculate, margin denticulate, apex acute or acuminate. Male inflorescences solitary, simple, 2–5 mm in diam.; peduncle 10–35 mm; receptacle very small; bracts connate, 1.5–3 mm; bracteoles narrowly lanceolate. Female inflorescences solitary, 30-flowered or more, 1.8 mm in diam., sessile; receptacle very small; bracts triangular; bracteoles cymbiform-linear. Male flowers 5-merous. Fl. Feb–Sep.

• Mountain thickets, wet places along streamsides; 600–1000 m. NW Guizhou, Sichuan, SE Yunnan.

55. *Elatostema gungshanense* W. T. Wang, Acta Bot. Yunnan. 10: 344. 1988.

贡山楼梯草 *gong shan lou ti cao*

Herbs perennial, monoecious or dioecious, 12–15 cm tall. Stems ascending or erect, simple or 1-branched, pubescent. Leaves alternate; nanophylls absent; stipules linear, ca. 2 × 0.4 mm, glabrous, with cystoliths; petiole 0–0.8 mm; leaf blade obliquely elliptic, 2–4.5 × 0.5–2 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface strigillose, adaxial surface sparsely strigose, cystoliths conspicuous, sparse; base with broader half obtuse, margin denticulate, apex caudate-acuminate. Male inflorescences solitary, simple, 2–3 mm in diam.; peduncle 20–23 mm; receptacle obscure; bracts connate, ca. 2.8 mm; bracteoles linear. Female inflorescences solitary, 30-flowered or more, 2–3 mm in diam.; peduncle 0–0.3 mm; receptacle 0.8–2 mm in diam.; bracts triangular; bracteoles broadly linear or linear-spatulate. Male flowers 4-merous. Fl. Jun.

• Evergreen broad-leaved forests, rocks; 2400–2600 m. E Xizang, NW Yunnan.

56. *Elatostema minutifurfuraceum* W. T. Wang, Acta Bot. Yunnan. 7: 293. 1985.

微鳞楼梯草 *wei lin lou ti cao*

Herbs perennial, dioecious, ca. 28 cm tall. Stems ascending or erect, simple, ferruginous-furfuraceous or sparsely pubescent. Leaves alternate; nanophylls absent; stipules linear, 1–1.2 × 0.3 cm, puberulent on abaxial surface along costa; petiole absent; leaf blade obliquely elliptic, ca. 13 × 4.5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade, both surfaces glabrous; cystoliths conspicuous, dense; base with broader half nearly auriculate, margin dentate, apex caudate-acuminate. Male inflorescences solitary, simple, 4–7 mm in diam.; peduncle 8–15 mm; receptacle obscure; bracts connate, 5–7 mm; bracteoles broadly linear. Male flowers 4-merous. Fl. Jun.

- Dark damp places in forests; 1600–1700 m. SE Yunnan.

57. *Elatostema pseudodissectum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 55. 1980.

滇桂楼梯草 *dian gui lou ti cao*

Herbs perennial, monoecious, 20–40 cm tall, glabrous. Stems ascending or erect, branched. Leaves alternate; nanophylls absent; stipules narrowly triangular, 0.7–1.5 × 0.2–0.4 mm, without cystoliths; petiole 1–3 mm; leaf blade obliquely ovate or elliptic-ovate, 4–11 × 1.5–4 cm, membranous or herbaceous, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, dense; base obliquely cuneate, margin denticulate, apex acuminate or cuspidate. Male inflorescences solitary, simple, 4–7 mm in diam.; peduncle 12–40 mm; receptacle small; bracts connate, broadly ovate. Female inflorescences solitary, 30-flowered or more, 3–6 mm in diam., sessile; receptacle 3–5 mm in diam.; bracts narrowly ovate; bracteoles spatulate-linear. Male flowers 4-merous. Achenes ellipsoid, smooth. Fl. Sep–Oct.

• Rocks in valley forests, precipices; 1100–2200 m. Guangxi, SW Guizhou, SE Yunnan.

58. *Elatostema baiseense* W. T. Wang, Acta Phytotax. Sin. 31: 175. 1993.

百色楼梯草 bai se lou ti cao

Subshrubs dioecious, 40–50 cm tall. Stems erect, branched, ferruginous-furfuraceous, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules subulate or narrowly linear, 2–6 × 0.2–0.5 mm, without cystoliths; petiole 2–4 mm; leaf blade obliquely elliptic, 3.5–10 × 1.5–4 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base with broader half auriculate, margin denticulate, apex acuminate. Male inflorescences solitary, simple, 4–6 mm in diam.; peduncle 5–10 mm; receptacle 1–1.5 mm in diam.; bracts connate, 3–4 mm; bracteoles ovate or cymbiform-linear. Male flowers 5-merous. Fl. Jun.

• Evergreen forests; ca. 300 m. Guangxi (Bose).

59. *Elatostema lasiocephalum* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 7. 1982.

毛序楼梯草 mao xu lou ti cao

Herbs perennial, monoecious, 17–40 cm tall. Stems ascending or erect, simple or branched, pubescent. Leaves alternate; nanophylls absent; stipules lanceolate-linear, 5 × 1.5–2 mm, puberulent along costa; petiole absent; leaf blade obliquely elliptic, 6–8 × 1.5–3.5 cm, thinly herbaceous, major basal lateral veins both arising at base of leaf blade, abaxial surface puberulent, adaxial surface strigose, cystoliths conspicuous or obscure, slightly sparse; base with broader half auriculate, margin dentate, apex caudate-acuminate. Male inflorescences solitary, simple, 5–11 mm in diam.; peduncle 15–50 mm; receptacle small; bracts connate, 1.5–2.8 mm; bracteoles subulate. Female inflorescences solitary, 30-flowered or more, 4–7 mm in diam., sessile; receptacle 3–5 mm in diam.; bracts triangular or narrowly triangular; bracteoles linear. Male flowers 3- or 4-merous. Achenes narrowly ovoid, 10-ribbed. Fl. Jun–Jul.

• Dense mountain forests. NW Guangxi.

60. *Elatostema aliferum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 57. 1980.

翅苞楼梯草 chi bao lou ti cao

Herbs perennial, monoecious, 10–25 cm. Stems prostrate, branched, strigose. Leaves alternate; nanophylls absent; stipules lanceolate to linear, 5–7 × 1.8–2.5 mm, strigillose, with cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic, 1–4.5 × 0.6–2.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent, adaxial surface sparsely strigose, cystoliths conspicuous or obscure, dense; base with broader half auriculate, margin denticulate-serrate, apex acutate. Male inflorescences solitary, simple, 3–10 mm in diam.; peduncle 4–30 mm; receptacle small; bracts connate, ca. 3.5 mm; bracteoles spatulate-linear. Female inflorescences solitary, 30-flowered or more, 1.5–2.5 mm in diam.; peduncle 0–1 mm; receptacle small; bracts triangular; bracteoles linear-oblong. Male flowers 5-merous. Fl.

May–Jun.

• Valley forests; 2100–2500 m. SE Xizang, W Yunnan.

61. *Elatostema brunneinerve* W. T. Wang, Bull. Bot. Res., Harbin 3(3): 64. 1983.

褐脉楼梯草 he mai lou ti cao

Herbs perennial, dioecious, ca. 65 cm. Stems ascending, branched, villous. Leaves alternate; nanophylls absent; stipules broadly lanceolate, 15–20 × 4.5–5.2 mm, glabrous, with cystoliths; petiole 1.5–2 mm; leaf blade obliquely obovate or broadly oblanceolate, 6.5–9 × 2.5–4 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent, adaxial surface sparsely strigose, cystoliths obscure, sparse; base with broader half auriculate, margin denticulate or dentate, apex acuminate or cuspidate. Male inflorescences solitary, simple, ca. 5 mm in diam.; peduncle 5–10 mm; receptacle obscure; bracts connate, 3–6 mm; bracteoles oblong or linear-cymbiform. Male flowers 4-merous. Fl. Jun.

• Forests on limestone slopes; ca. 1300 m. W Guangxi.

62. *Elatostema crenatum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 58. 1980.

浅齿楼梯草 qian chi lou ti cao

Subshrubs dioecious, 30–50 cm tall, glabrous. Stems erect, simple. Leaves alternate; nanophylls absent; stipules broadly lanceolate or narrowly lanceolate, 10–12 × 3–4 mm, with cystoliths; petiole 4–11 mm; leaf blade obliquely oblong, 10.5–18 × 4–7.5 cm, papery, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base with broader half broadly cuneate or rounded, margin crenate, apex acuminate. Male inflorescences solitary, simple, 15–18 mm in diam.; peduncle ca. 1.5 mm; receptacle obscure; bracts connate, 7–9 mm; bracteoles cymbiform-linear or spatulate-linear. Male flowers 5-merous. Fl. Jun–Sep.

• Valley forests, streamsides; 200–300 m. Yunnan (Hekou).

63. *Elatostema stewardii* Merrill, Philipp. J. Sci. 27: 161. 1925.

庐山楼梯草 lu shan lou ti cao

Herbs perennial, dioecious, 24–70 cm tall, usually with bulbils. Stems ascending or erect, simple or rarely branched, glabrous. Leaves alternate; nanophylls absent; stipules triangular or subulate, 4 × 0.3–0.4 mm, glabrous, with cystoliths; petiole 1–4 mm; leaf blade obliquely elliptic-obovate or oblong, 7–16 × 2.5–4.5 cm, herbaceous or papery, major basal lateral veins absent and venation pinnate, both surfaces glabrous or adaxial surface hirtellous; cystoliths conspicuous, dense; base with broader half auriculate or rounded, margin dentate, apex cuspidate. Male inflorescences solitary, simple, 7–10 mm in diam.; peduncle 1.5–3 mm; receptacle small; bracts connate, bracteoles linear. Female inflorescences solitary, 30-flowered or more, 5–12 × 4–8 mm in diam., sessile; receptacle ca. 3 mm in diam.; bracts triangular; bracteoles spatulate or oblanceolate. Male flowers 5-merous. Achenes ovoid, obscurely ribbed. Fl. Jul–Sep.

• Streamsides in ravines, forests; 400–1500 m. S Anhui, N Fujian, S Gansu, SE Henan, W Hubei, NW Hunan, N Jiangxi, S Shaanxi, E Sichuan, NW Zhejiang.

This species is used medicinally, known as 白龙骨 (bai long gu).

64. *Elatostema bracteosum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 59. 1980.

显苞楼梯草 xian bao lou ti cao

Herbs perennial, dioecious, ca. 26 cm tall. Stems ascending or erect, simple, glabrous. Leaves alternate; nanophylls absent; stipules linear, 6–7 × 1.5–2 mm, glabrous, without cystoliths; petiole absent; leaf blade obliquely elliptic or obovate-elliptic, 5–15 × 2.5–5.5 cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface sparsely puberulent along veins, adaxial surface sparsely strigillose, cystoliths obscure, dense; base with broader half nearly cordate, margin densely dentate, apex cuspidate or caudate-acuminate. Female inflorescences solitary or in pairs, 30-flowered or more, 3–5 mm in diam.; peduncle ca. 1 mm; receptacle small; bracts narrowly triangular or linear; bracteoles linear. Achenes ellipsoid, 4-ribbed. Fl. May.

• Dark damp places in valleys; 400–500 m. N Guizhou.

65. *Elatostema subcoriaceum* B. L. Shih & Yuen P. Yang, Bot. Bull. Acad. Sin. 36: 272. 1995.

近革叶楼梯草 jin ge ye lou ti cao

Herbs perennial, monoecious, up to 70 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate; nanophyll absent; stipules lanceolate, triangular or narrowly elliptic, up to 14 × 3 mm, without cystolith, glabrous; petiole 2–10 mm; leaf blade obliquely elliptic, 6–24 × 3–8 cm, thickly papery to nearly leathery, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base with broader half rounded, margin dentate or crenate, apex acuminate or caudate. Male inflorescences solitary, simple, up to 1.8 × 1.6 cm, peduncle 2–10 mm; receptacle usually obscure; bracts connate into an oblong involucre, up to 1.6 × 0.6 cm; bracteoles cymbiform. Female inflorescences solitary, up to 12 × 6 mm, sessile or subsessile; receptacle obscure; bracts connate into an oblong involucre, up to 1.6 × 0.6 cm; bracteoles lanceolate. Male flowers 5-merous. Achenes ellipsoidal, ca. 6-ribbed. Fl. Jul–Oct.

• Ravines, moist forests at low elevations. Taiwan (Lan Yu).

66. *Elatostema involucratum* Franchet & Savatier, Enum. Pl. Jap. 1: 439. 1875.

楼梯草 lou ti cao

Elatostema bijiangense W. T. Wang; *E. umbellatum* (Siebold & Zuccarini) Blume var. *majus* Maximowicz.

Herbs perennial, monoecious or dioecious, 20–60 cm tall. Stems ascending or erect, usually simple, glabrous or sparsely puberulent. Leaves alternate; nanophylls absent; stipules narrowly linear or narrowly triangular, 3–5 × 1.5–2 mm, glabrous, with cystoliths; petiole 0–2 mm; leaf blade obliquely oblan-

ceolate-oblong or oblong, 4.5–16(–19) × 2–4.5(–6) cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface glabrous or sparsely puberulent along nerves, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half rounded, margin dentate, apex cuspidate. Male inflorescences solitary or in pairs, simple, 3–9 mm in diam.; peduncle (4–)7–20(–32) mm; receptacle obscure; bracts connate, ca. 2 mm, glabrous; bracteoles linear. Female inflorescences solitary or in pairs, 30-flowered or more, 1.5–4(–14) mm in diam.; peduncle 0–1 mm; receptacle 0.5–2(–5) mm in diam.; bracts ovate or triangular; bracteoles linear. Male flowers 5-merous. Achenes ovoid, ribbed. Fl. May–Oct.

Rocks along valley streamsides, forests, thickets; 200–3200 m. S Anhui, Fujian, S Gansu, N Guangdong, W Guangxi, Guizhou, SW Henan, W Hubei, Hunan, S Jiangsu, Jiangxi, S Shaanxi, Sichuan, NE Yunnan, Zhejiang [Japan, S Korea].

This whole plant is used medicinally, known as 赤车使者 (chi che shi zhe).

67. *Elatostema acuteserratum* B. L. Shih & Yuen P. Yang, Bot. Bull. Acad. Sin. 36: 260. 1995.

台湾楼梯草 tai wan lou ti cao

Herbs perennial, monoecious or dioecious, up to 80 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate; nanophyll absent; stipules narrowly triangular, 1.5–2.3 mm, with cystoliths, nearly glabrous; petiole 0–3 mm; leaf blade lanceolate or narrowly elliptic to elliptic, to 18 × 5 cm, membranous to very thickly papery, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin sharply serrate to dentate, apex acuminate or caudate. Male inflorescences solitary, simple, ca. 12 mm in diam., sessile or subsessile. Receptacle obscure; bracts ovate-cymbiform; bracteoles cymbiform. Female inflorescences ca. 7 mm in diam.; receptacle obscure; bracts narrowly triangular; bracteoles linear-lanceolate. Male flowers 5-merous. Achenes ellipsoidal, ca. 12-ribbed. Fl. spring-autumn.

• Ravines, moist shady forests. Taiwan (Lan Yu).

68. *Elatostema tenuicornutum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 60. 1980.

细角楼梯草 xi jiao lou ti cao

Herbs perennial, dioecious, 20–50 cm tall. Stems erect, simple, densely pubescent. Leaves alternate; nanophylls absent; stipules narrowly linear, 7–11 × 1.5–2 mm, sparsely puberulent, without cystoliths; petiole 2–5 mm; leaf blade obliquely oblong or obovate-oblong, 7–11.5 × 2.5–4 cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface puberulent, adaxial surface sparsely strigillose; cystoliths obscure, dense; base with broader half auriculate, margin densely dentate, apex acuminate or caudate. Male inflorescences solitary, simple, 6–8 mm in diam.; peduncle 6–12 mm; receptacle obscure; bracts connate, 4.5–7.5 mm; bracteoles lanceolate-linear. Female inflorescences solitary, 30-flowered or more, 3–6 mm in diam.; peduncle 0–1 mm; receptacle 2–4 mm in diam.;

bracts broadly ovate; bracteoles spatulate-linear. Male flowers 5-merous. Achenes ellipsoid, ribbed. Fl. Apr–Jun.

- Valley thickets, forests, on rocks; 1100–2200 m. W Sichuan.

69. *Elatostema mabienense* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 63. 1980.

马边楼梯草 *ma bian lou ti cao*

Herbs perennial, dioecious, 14–24 cm tall. Stems ascending or erect, simple or branched, puberulent. Leaves alternate; nanophylls absent; stipules subulate, ca. 1×0.2 mm, glabrous, without cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic, $3.5\text{--}5 \times 1.5\text{--}2$ cm, herbaceous, major basal lateral veins absent and venation pinnate, both surfaces glabrous or strigose; cystoliths conspicuous or obscure, dense; base with broader half auriculate, margin crenate, apex acuminate or cuspidate. Male inflorescences solitary, simple, ca. 4 mm in diam.; peduncle 2–9.5 mm; receptacle absent; bracts connate, 2.5–3 mm; bracteoles linear-lanceolate. Male flowers 5-merous. Fl. Nov–Feb.

- Mountain forests or slopes; 1500–1600 m. W Sichuan, SE Yunnan.

- 1a. Leaf blade glabrous; male peduncle 2–6 mm; bracts ca. 2 69a. var. *mabienense*
1b. Leaf blade strigose; male peduncle ca. 9.5 mm; bracts 6 69b. var. *sexbracteatum*

69a. *Elatostema mabienense* var. *mabienense*

马边楼梯草(原变种) *ma bian lou ti cao (yuan bian zhong)*

Leaf blade with both surfaces glabrous. Peduncles of male inflorescences 2–6 mm; bracts 2. Fl. Nov.

- Mountain forests; ca. 1600 m. W Sichuan.

69b. *Elatostema mabienense* var. *sexbracteatum* W. T. Wang, Bull. Bot. Res., Harbin 9(2): 69. 1989.

六苞楼梯草 *liu bao lou ti cao*

Leaf blade with both surfaces strigose. Peduncles of male inflorescences ca. 9.5 mm; bracts 6. Fl. Feb.

- Mountain slopes; ca. 1500 m. SE Yunnan.

70. *Elatostema youyangense* W. T. Wang, Bull. Bot. Res., Harbin 4(3): 113. 1984.

酉阳楼梯草 *you yang lou ti cao*

Herbs perennial, monoecious, ca. 20 cm tall, glabrous. Stems ascending or erect, simple, glabrous. Leaves alternate; nanophylls absent; stipules subulate, $1\text{--}1.5 \times 0.1\text{--}0.2$ mm, without cystoliths; petiole absent; leaf blade oblong-lanceolate, $4.5\text{--}7 \times 1.5\text{--}2$ cm, papery, major basal lateral veins absent and venation pinnate, cystoliths obscure, dense; base with broader half cordate, margin dentate, apex caudate. Male inflorescences solitary, simple, 2–6 mm in diam.; peduncle 3–15 mm; receptacle very small; bracts connate, ca. 2 mm; bracteoles lanceolate-linear. Female inflorescences solitary, 30-flowered or more, 1–1.6 mm in diam.; peduncle ca. 0.5 mm; receptacle small; bracts broadly ovate; bracteoles cymbiform. Male flow-

ers 5-merous. Fl. Apr.

- Mountains; ca. 1300 m. Chongqing (Youyang).

71. *Elatostema villosum* B. L. Shih & Yuen P. Yang, Bot. Bull. Acad. Sin. 36: 277. 1995.

柔毛楼梯草 *rou mao lou ti cao*

Herbs perennial, dioecious, up to 45 cm. Stems aggregated, ascending or suspending, branched, densely villous. Leaves alternate; nanophyll absent; stipules narrowly triangular, 3–5.5 mm, hirsute on abaxial surface; petiole 0–1 mm; leaf blade obliquely obovate-oblongate, $2\text{--}5.5 \times 0.7\text{--}2.2$ cm, thickly papery, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base with broader half cordate, margin serrate, apex cuspidate. Female inflorescences solitary, ca. 4.5 mm in diam.; peduncle to 1 mm or absent; receptacle ca. 3×3 mm in diam.; bracts connate into a subquadrate involucre; bracteoles narrowly lanceolate. Achenes ovoid, ca. 12-ribbed. Fl. Jun.

- Ravines, moist forests at low to medium elevations. S Taiwan.

72. *Elatostema sublineare* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 61. 1980.

条叶楼梯草 *tiao ye lou ti cao*

Herbs perennial, monoecious or dioecious, 15–40 cm tall. Stems ascending or erect, simple, villous, brown furfuraceous. Leaves alternate; nanophylls absent; stipules lanceolate or linear-lanceolate, $6\text{--}9 \times 1.5\text{--}2$ mm, glabrous or sparsely puberulent, with cystoliths; petiole absent; leaf blade obliquely oblongate or linear-oblongate, $6\text{--}10.5 \times 1.2\text{--}2.2\text{--}(2.8)$ cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface villous along veins, adaxial surface sparsely pubescent, cystoliths conspicuous, dense; base with broader half cordate, margin denticulate, apex acuminate. Male inflorescences solitary, simple, ca. 9 mm in diam.; peduncle 6–10 mm; receptacle obscure; bracts connate, 3–6 mm, villous; bracteoles absent. Female inflorescences solitary or in pairs, 30-flowered or more, 2–8 mm in diam.; peduncle 1–3.5 mm; receptacle 2–7 mm in diam.; bracts triangular; bracteoles spatulate-linear. Male flowers 4- or 5-merous. Achenes ovoid, 8-ribbed. Fl. Mar–May.

Dark damp rocks along valley streamsides, forests; 400–1000 m. Guangxi, Guizhou, SW Hubei, Hunan, SE Sichuan [N Vietnam].

73. *Elatostema calciferum* W. T. Wang, Keys Vasc. Pl. Wuling Mts. 577. 1995.

具钙楼梯草 *ju gai lou ti cao*

Herbs perennial, dioecious, ca. 27 cm tall. Stems ascending or erect, simple, strigose. Leaves alternate; nanophylls absent; stipules subulate, ca. 4×0.5 mm, hirtellous, without cystoliths; petiole 0–1.5 mm; leaf blade obovate-oblong or broadly oblongate, $6\text{--}8.5 \times 1.5\text{--}3$ cm, papery, major basal lateral veins absent and venation pinnate, abaxial surface pilose along nerves, adaxial surface strigose, cystoliths obscure, sparse; base cuneate, margin dentate or denticulate, apex acuminate. Female inflorescences solitary, 30-flowered or more, 4–

5 mm in diam.; peduncle 0–1.5 mm; receptacle elliptic, 3–4 mm in diam.; bracts narrowly triangular; bracteoles spatulate. Achenes narrowly ovoid, 7-ribbed. Fl. Jun.

- Woodland margins on mountain slopes; ca. 200 m. NW Hunan.

74. *Elatostema obscurinerve* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 63. 1980.

隐脉楼梯草 yin mai lou ti cao

Herbs perennial, dioecious, ca. 28 cm tall, glabrous. Stems ascending or erect, branched. Leaves alternate; nanophylls absent; stipules ovate-linear, 4–5 × 2 mm, with cystoliths; petiole absent; leaf blade obliquely rhombic-obovate or rhombic-oblong, 2.5–5 × 1.2–2 cm, herbaceous or membranous, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base obliquely cuneate, margin denticulate or crenate, apex obtuse. Male inflorescences solitary, simple, ca. 5 mm in diam.; peduncle 4–6.5 mm; receptacle obscure; bracts connate, ca. 3 mm; bracteoles narrowly ovate or linear. Male flowers 5-merous. Fl. Jul.

- Shaded wet areas along rocks in mountains. Guangxi (Fengshan).

75. *Elatostema medogense* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 10. 1982.

墨脱楼梯草 mo tuo lou ti cao

Elatostema medogense var. *oblongum* W. T. Wang; *E. shuzhii* W. T. Wang.

Herbs perennial, monoecious or dioecious, 7–20 cm tall. Stems ascending or erect, simple or branched, puberulent. Leaves alternate; nanophylls absent; stipules narrowly linear, 1.5–2 × 0.2–0.3 mm, glabrous, without cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic or oblong, 1–3 × 0.5–1.5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade, abaxial surface sparsely strigillose along nerves, adaxial surface glabrous, cystoliths conspicuous or obscure, sparse; base with broader half auriculate, margin crenate-dentate, apex acute. Male inflorescences solitary, simple, 3–7 mm in diam.; peduncle 2–5 cm; receptacle elliptic, 1.5–3.5 mm; bracts connate, 2.5–3.5 mm; bracteoles linear. Female inflorescences solitary, 10–20-flowered, 2–6 mm in diam.; peduncle ca. 1 mm; receptacle 1.5–3.5 mm in diam.; bracts triangular; bracteoles narrowly linear. Male flowers 4-merous. Achenes ovoid, smooth. Fl. May–Aug.

Mountain forests or evergreen broad-leaved forests in valleys; 1600–2600 m. SE Xizang [India].

76. *Elatostema obtusum* Weddell, Ann. Sci. Nat., Bot., sér. 4, 1: 190. 1854.

钝叶楼梯草 dun ye lou ti cao

Herbs perennial, dioecious, 10–50 cm tall. Stems ascending or creeping, branched or simple, nearly glabrous, very sparsely retrorse-hirtellous, or crispately strigose. Leaves alternate; nanophylls absent; stipules lanceolate-linear, 2–3 ×

0.1–0.2 mm, glabrous, without cystoliths; petiole 0–1.5 mm; leaf blade obliquely obovate, obliquely obovate-elliptic, or oblong-obovate, 0.5–1.5(–3) × 0.5–1.2(–1.6) cm, herbaceous, major basal lateral veins both arising at base of leaf blade, both surfaces glabrous or adaxial surface sparsely strigillose; cystoliths conspicuous or obscure, dense; base with broader half cordate, margin dentate, apex obtuse or rounded. Male inflorescences solitary, simple, 4–7 mm in diam.; peduncle 0.2–2(–6.5) cm; receptacle very small; bracts connate, ca. 2.5 mm; bracteoles absent. Female inflorescences solitary, 1(or 2)-flowered, 2–3 mm in diam., sessile; receptacle absent; bracts lanceolate; bracteoles absent. Male flowers 4-merous. Achenes narrowly ovoid, smooth. Fl. Jun–Sep.

Forests, streamsides, rocks; 700–3000 m. Fujian, S Gansu, N Guangdong, N Guangxi, SE Guizhou, W Hubei, NW and SE Hunan, W Jiangxi, S Shaanxi, Sichuan, Taiwan, SE Xizang, Yunnan, S Zhejiang [Bhutan, NE India, Nepal, Philippines, Sikkim, Thailand].

- 1a. Stems crispately strigose 76a. var. *obtusum*
- 1b. Stems nearly glabrous or very sparsely retrorse-hirtellous 76b. var. *trilobulatum*

76a. *Elatostema obtusum* var. *obtusum*

钝叶楼梯草(原变种) dun ye lou ti cao (yuan bian zhong)

Stems crispately strigose. Fl. Jun–Sep.

Mountain forests, streamsides, rocks; 1500–3000 m. S Gansu, W Hubei, NW Hunan, S Shaanxi, Sichuan, SE Xizang, Yunnan [Bhutan, NE India, Nepal, Sikkim, Thailand].

76b. *Elatostema obtusum* var. *trilobulatum* (Hayata) W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 66. 1980.

三齿钝叶楼梯草 san chi dun ye lou ti cao

Pellionia trilobulata Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 280. 1911; *Elatostema filicaulum* C. B. Clarke; *E. obtusum* var. *glabrescens* W. T. Wang; *E. trilobulatum* (Hayata) T. Yamazaki.

Stems glabrescent or very sparsely retrorse-hirtellous. Fl. Jun–Sep.

Forests, valley streamsides; 700–1600 m. Fujian, N Guangdong, N Guangxi, SE Guizhou, W Hubei, SE Hunan, W Jiangxi, Taiwan, S Zhejiang [Philippines].

77. *Elatostema cyrtandrifolium* (Zollinger & Moritzi) Miquel, Pl. Jungh. 1: 21. 1851.

锐齿楼梯草 rui chi lou ti cao

Herbs perennial, dioecious, 14–70 cm tall. Stems ascending or erect, branched or rarely simple, glabrous, pilose, or densely pubescent. Leaves alternate; nanophylls absent; stipules narrowly lanceolate or subulate, 3–5 × 0.5–1 mm, glabrous, with cystoliths; petiole 0.5–5 mm; leaf blade obliquely elliptic, 5–15 × 2.2–5 cm, herbaceous or membranous, major basal lateral veins both arising at base of leaf blade or 1 arising above base, abaxial surface sparsely puberulent or glabrescent along veins, adaxial surface sparsely strigillose, cystoliths slightly

conspicuous, dense; base with broader half broadly cuneate or rounded, margin sharply serrate, apex acuminate or short caudate. Male inflorescences solitary, simple, 6–13 mm in diam.; peduncle ca. 6 mm; receptacle 5–11 mm in diam.; bracts connate, ca. 2.5 mm; bracteoles cymbiform. Female inflorescences solitary or in pairs, 3–12 mm in diam.; peduncle 0.5–2 mm; receptacle 2–10 mm in diam.; bracts ovate; bracteoles spatulate or linear-lanceolate. Male flowers 4-merous. Achenes ovoid or ellipsoid, 6–8-ribbed. Fl. Apr–Oct.

Forests, streamsides; 300–1900 m. Fujian, S Gansu, N Guangdong, N and W Guangxi, Guizhou, W Hubei, Hunan, Jiangxi, Sichuan, Taiwan, SE Yunnan [Bhutan, India, Indonesia, Malaysia, Myanmar].

This species is used medicinally.

- 1a. Stems glabrous or pilose; leaf blade apex acuminate 77a. var. *cyrtandrifolium*
1b. Stems densely pubescent; leaf blade apex short caudate 77b. var. *brevicaudatum*

77a. *Elatostema cyrtandrifolium* var. *cyrtandrifolium*

锐齿楼梯草(原变种) rui chi lou ti cao (yuan bian zhong)

Procris cyrtandrifolia Zollinger & Moritz in Moritz et al., Syst. Verz. 74. 1846; *Elatostema herbaceifolium* Hayata; *E. sessile* J. R. Forster & G. Forster var. *cyrtandrifolium* (Zollinger & Moritz) Weddell; *E. sessile* var. *pubescens* J. D. Hooker.

Stems glabrous or pilose. Leaf blade apex acuminate. Fl. Apr–Oct.

Forests, rocks near valley streamsides; 300–1900 m. Fujian, S Gansu, N Guangdong, W Guangxi, Guizhou, W Hubei, Hunan, Jiangxi, Sichuan, Taiwan, SE Yunnan [Bhutan, India, Indonesia, Malaysia, Myanmar].

77b. *Elatostema cyrtandrifolium* var. *brevicaudatum* (W. T. Wang) W. T. Wang in W. T. Wang & C. J. Chen, Fl. Reipubl. Popularis Sin. 23(2): 267. 1995.

短尾楼梯草 duan wei lou ti cao

Elatostema herbaceifolium var. *brevicaudatum* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 13. 1982.

Stems densely pubescent. Leaf blade apex shortly caudate. Fl. Jul–Aug.

- Mountain forests, streamsides. N Guangxi.

78. *Elatostema pergameneum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 67. 1980.

坚纸楼梯草 jian zhi lou ti cao

Subshrubs dioecious, 10–16 cm tall. Stems erect, branched, densely strigose. Leaves alternate; nanophylls absent; stipules lanceolate, 2.5–4 × 0.5–1 mm; petiole 0–0.5 mm; leaf blade obliquely ovate or elliptic-ovate, 2–5 × 1–1.6 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface densely strigillose along nerves, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half broadly cuneate or rounded, margin denticulate, apex acuminate or cuspidate. Female inflorescences solitary, 5–10 mm in diam.;

peduncle 2–2.5 mm; receptacle oblong, 4–7 × 3.5–5 mm; bracts broadly triangular to ovate; bracteoles spatulate-linear. Fl. Jun–Jul.

- Guangxi (Longzhou).

79. *Elatostema breviacuminatum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 71. 1980.

短尖楼梯草 duan jian lou ti cao

Herbs perennial, dioecious, 20–45 cm tall. Stems ascending, branched, retrorsely strigose. Leaves alternate; nanophylls absent; stipules lanceolate, ca. 5 × 2 mm; petiole 1–3 mm; leaf blade obliquely elliptic, 8–16 × 5–8.5 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface sparsely puberulent along veins, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half nearly rounded, margin crenulate, apex short acuminate. Male inflorescences solitary, simple, 13–15 mm in diam.; peduncle 6–8 mm; receptacle elliptic, 12–14 × 8–14 mm; bracts connate, 8–15 mm wide; bracteoles cymbiform-oblong. Male flowers 4-merous. Fl. May.

- Valley forests; 700–800 m. S Yunnan (Jinping).

80. *Elatostema setulosum* W. T. Wang, Guihaia 2: 120. 1982.

刚毛楼梯草 gang mao lou ti cao

Herbs perennial, dioecious, ca. 22 cm tall. Stems ascending or erect, simple, sparsely hispidulous. Leaves alternate; nanophylls absent; stipules lanceolate-linear, ca. 3 × 0.4 mm, glabrous; petiole absent; leaf blade obliquely elliptic, 3.5–9.5 × 2–5 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface glabrous, adaxial surface sparsely setulose, cystoliths obscure, dense; base with broader half auriculate, margin crenate, apex acuminate. Female inflorescences in pairs, 2–4 mm in diam.; peduncle 1–3 mm; receptacle elliptic, 1–3.5 mm; bracts lanceolate-linear; bracteoles narrowly linear. Achenes ellipsoid, 8-ribbed.

- Guangxi (Tianlin).

81. *Elatostema pseudocuspdatum* W. T. Wang, Acta Bot. Yunnan. 10: 345. 1988.

假骤尖楼梯草 jia zhou jian lou ti cao

Herbs perennial, monoecious or dioecious, 30–40 cm tall, glabrous. Stems ascending, usually simple. Leaves alternate; nanophylls absent; stipules lanceolate-linear or triangular, 4–7 × 1.6–3.2 mm, with cystoliths; petiole 0–3 mm; leaf blade obliquely obovate-elliptic or elliptic, 3.5–8.5 × 1.5–3.5 cm, papery, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, dense; base with broader half auriculate, margin denticulate, apex caudate or caudate-acuminate. Male inflorescences solitary, simple, 4–7 mm in diam.; peduncle 2–3 mm; receptacle elliptic, 3.5–6 mm; bracts connate, ca. 1.2 mm; bracteoles oblong. Female inflorescences solitary, ca. 3 mm in diam.; peduncle 0.5–1 mm; receptacle elliptic, ca. 2 mm; bracts broadly ovate; bracteoles obovate-oblong or linear. Male flowers 4-merous. Fl. Mar–Jun.

• Evergreen broad-leaved forests, streamsides in ravines; 1900–2800 m. NW Yunnan.

82. *Elatostema pachyceras* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 70. 1980.

粗角楼梯草 cu jiao lou ti cao

Elatostema longipetiolatum W. T. Wang; *E. pachyceras* var. *majus* W. T. Wang.

Herbs perennial, monoecious or dioecious, 20–150 cm tall. Stems ascending or erect, simple or branched, lower stems ferruginous-furfuraceous, glabrous. Leaves alternate; nanophylls absent; stipules lanceolate, 13–17 × 4–6 mm, glabrous, with cystoliths; petiole 2–6(–15) mm; leaf blade obliquely elliptic or oblong, 9–25(–28) × 3.5–9 cm, papery, major basal lateral veins both arising at base of leaf blade, both surfaces glabrous or adaxial surface sparsely puberulent; cystoliths conspicuous, dense; base obliquely cuneate, margin dentate, apex acuminate or caudate-acuminate. Male inflorescences solitary or rarely in pairs, simple, 7–18 × 5–9 mm in diam.; peduncle 1–3 mm; receptacle elliptic, 6–12 × 5–8; bracts connate, 0.5–1 mm; bracteoles linear. Female inflorescences solitary, 9–13 × 6–9 mm in diam.; peduncle 0.5–1 mm; receptacle elliptic, 7–11 × 4–7 mm; bracts broadly ovate; bracteoles spatulate. Male flowers 4-merous. Achenes narrowly ellipsoid, 9-ribbed. Fl. Apr–Jun.

• Valley forests, forest margins; 1100–2400 m. Yunnan.

83. *Elatostema cuspidatum* Wight, Icon. Pl. Ind. Orient. 6: 11, t. 1983, 2091, f. 1. 1853.

骤尖楼梯草 zhou jian lou ti cao

Herbs perennial, monoecious or dioecious, 25–90 cm tall. Stems ascending or erect, simple or rarely branched, lower stems ferruginous-furfuraceous, glabrous. Leaves alternate; nanophylls absent; stipules linear or linear-lanceolate, 5–10(–20) × 2–3 mm, glabrous, with cystoliths; petiole 0–3 mm; leaf blade obliquely elliptic or oblong, 2–13.5(–23) × 1–5(–8) cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, both surfaces glabrous or adaxial surface sparsely strigillose; cystoliths conspicuous, dense; base with broader half broadly cuneate or nearly auriculate, margin dentate, apex cuspidate. Male inflorescences solitary, simple, 6–12 mm in diam.; peduncle 1.5–4 mm; receptacle oblong, 6–11 × 5–7 mm; bracts connate, 0.5–1.6 mm; bracteoles oblong or cymbiform-oblong. Female inflorescences solitary, 3–15 mm in diam.; peduncle 0.5–1 mm; receptacle 2–13 mm in diam.; bracts broadly ovate or triangular; bracteoles narrowly linear. Male flowers 4-merous. Achenes narrowly ellipsoid, 8-ribbed. Fl. May–Oct.

Valley streamsides, rock crevices, forests; 900–2800 m. NW Fujian, W Guangxi, Guizhou, SW Hubei, Hunan, SW Jiangxi, Sichuan, S Xizang, Yunnan [NE India, Myanmar, Nepal].

- 1a. Male bracts with corniculus 0.6–2 mm 83a. var. *cuspidatum*
1b. Male bracts with corniculus 3–5 mm 83b. *dolichoceras*

83a. *Elatostema cuspidatum* var. *cuspidatum*

骤尖楼梯草(原变种) zhou jian lou ti cao (yuan bian zhong)

Elatostema bodinieri H. Léveillé; *Elatostema sessile* J. R. Forster & G. Forster var. *cuspidatum* (Wight) Weddell.

Cornus of bracts of male inflorescences 0.6–2 mm. Fl. May–Oct.

Valley streamsides, rock crevices, forests; 900–2800 m. NW Fujian, W Guangxi, Guizhou, SW Hubei, Hunan, SW Jiangxi, Sichuan, S Xizang, Yunnan [NE India, Myanmar, Nepal].

83b. *Elatostema cuspidatum* var. *dolichoceras* W. T. Wang, Acta Bot. Yunnan. 10: 346. 1988.

长角骤尖楼梯草 chang jiao zhou jian lou ti cao

Cornus of bracts of male inflorescences 3–5 mm. Fl. Jun.

• Wet areas at valley streamsides; ca. 2300 m. SW Yunnan.

84. *Elatostema menglunense* W. T. Wang, Bull. Bot. Res., Harbin 16: 1. 1996.

勐仑楼梯草 meng lun lou ti cao

Herbs perennial, dioecious, 14–18 cm tall. Stems ascending or erect, branched, puberulent or villosulous. Leaves alternate; nanophylls absent; stipules lanceolate to lanceolate-linear, 4–8 × 1.6–2.2 mm, ciliate, without cystoliths; petiole 0.8–4 mm; leaf blade obliquely oblong or elliptic, 2.5–12 × 2–3 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface pubescent along nerves, adaxial surface strigose, cystoliths obscure, sparse; base with broader half subcordate, margin dentate, apex cuspidate or caudate. Male inflorescences solitary, simple, ca. 7 × 4 mm; peduncle 1–1.5 mm; receptacle oblong, ca. 6 × 4 mm; bracts connate, 7–9 mm; bracteoles oblong. Male flowers 4-merous. Fl. Jun.

• Rocks under rain forests in valleys; ca. 700 m. Yunnan (Mengla).

85. *Elatostema angustitepalum* W. T. Wang, Acta Phytotax. Sin. 28: 315. 1990.

狭被楼梯草 xia bei lou ti cao

Herbs perennial, monoecious, 30–40 cm tall. Stems ascending or erect, usually simple, glabrous. Leaves alternate; nanophylls absent; stipules narrowly triangular, 11–18 × 6–8 mm, glabrous, with cystoliths; petiole 0–2 mm; leaf blade obliquely elliptic, 9–13.5 × 4.5–6 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base obliquely cuneate, margin dentate, apex cuspidate. Male inflorescences solitary, simple, 10–15 mm in diam.; peduncle 2–7 mm; receptacle nearly pentagonal, ca. 10 × 15 mm; bracts obscure; bracteoles spatulate-linear. Female inflorescences solitary, oblong, ca. 10 × 7 mm in diam.; peduncle 0.5–1 mm; receptacle oblong, ca. 10 × 7 mm; bracts absent; bracteoles spatulate-linear. Male flowers 4-merous. Achenes ellipsoid, 6-ribbed. Fl. Apr–May.

• Valley forests; 1300–1400 m. SE Xizang.

86. *Elatostema yungshunense* W. T. Wang, *Guihaia* 5: 325. 1985.

永顺楼梯草 *yong shun lou ti cao*

Herbs perennial, dioecious, ca. 35 cm tall. Stems ascending, simple, glabrous. Leaves alternate; nanophylls absent; stipules linear-lanceolate, ca. 7×2 mm, glabrous, without cystoliths; petiole 0.5–2 mm; leaf blade obliquely oblong, 5–13 \times 2.5–4.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface glabrous, adaxial surface sparsely strigillose along veins, cystoliths obscure, slightly dense; base with broader half auriculate (auricle 2–4 mm), margin dentate, apex acuminate. Male inflorescences in pairs, simple, 8–13 mm in diam.; peduncle 3–5 mm; receptacle broadly elliptic, 4–9 \times 3–7 mm; bracts obscure; bracteoles broadly linear or linear. Male flowers 4-merous. Fl. Aug.

- Forests along rivers; ca. 400 m. NW Hunan.

87. *Elatostema tenuireceptaculum* W. T. Wang, *Guihaia* 11: 1. 1991.

薄托楼梯草 *bao tuo lou ti cao*

Herbs perennial, dioecious, ca. 34 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate; nanophylls absent; stipules lanceolate-linear or triangular, 3–5.5 \times 0.8 mm, glabrous, without cystoliths; petiole ca. 1.2 mm; leaf blade obliquely elliptic, 8–11 \times 3–4.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface glabrous, adaxial surface sparsely strigillose, cystoliths obscure, sparse; base with broader half rounded, margin dentate, apex acuminate. Male inflorescences in pairs, simple, ca. 9 \times 5 mm in diam.; peduncle ca. 1.8 mm; receptacle nearly oblong, ca. 5 \times 2.5 mm in diam.; bracts connate, 1.5–2.5 mm; bracteoles linear-lanceolate. Male flowers 4-merous. Fl. Apr.

- Evergreen broad-leaved forests in valleys; 1000–1100 m. Guangxi (Leye).

88. *Elatostema yangbiense* W. T. Wang, *Acta Bot. Yunnan*. 7: 294. 1985.

漾濞楼梯草 *yang bi lou ti cao*

Herbs perennial, dioecious, ca. 33 cm tall. Stems ascending or erect, branched, glabrous, densely ferruginous-furfuraceous. Leaves alternate; nanophylls absent; stipules lanceolate or narrowly ovate, 10–16 \times 4 mm, glabrous, with cystoliths; petiole 1–4 mm; leaf blade obliquely oblong, 3.5–8 \times 1.5–2.5 cm, herbaceous or papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely strigillose along veins, adaxial surface sparsely strigillose, cystoliths conspicuous or obscure, dense; base with broader half nearly rounded, margin dentate or denticulate, apex acuminate. Male inflorescences solitary, simple, 4–8 mm in diam.; peduncle 1–2 mm; receptacle 2.5–5.5 mm in diam.; bracts obscure; bracteoles oblong or linear. Male flowers 4-merous. Fl. Jun.

- Woodland margins in valleys; 2100–2400 m. SW Sichuan, W Yunnan.

89. *Elatostema yui* W. T. Wang, *Bull. Bot. Res.*, Harbin 9(2): 70. 1989.

俞氏楼梯草 *yu shi lou ti cao*

Herbs perennial, dioecious, 23–45 cm tall. Stems ascending or erect, usually simple, densely ferruginous-furfuraceous. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 5–9 \times 0.5–1 mm, glabrous, without cystoliths; petiole 0–2 mm; leaf blade obliquely elliptic or obliquely oblong, 2.5–11 \times 1–3.5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade or 1 arising above base, abaxial surface strigillose along veins, adaxial surface glabrous, cystoliths conspicuous or obscure, dense; base with broader half auriculate, margin dentate, apex acuminate or caudate-acuminate. Male inflorescences in pairs, simple, ca. 5 mm in diam.; peduncle ca. 2 mm; receptacle 3–4 mm in diam.; bracts connate, 2–6.5 mm; bracteoles cymbiform-oblong or linear. Female inflorescences solitary, sessile, 4–7 mm in diam.; receptacle 4–6 mm in diam.; bracts triangular; bracteoles linear. Male flowers 4-merous. Achenes ellipsoid, 6-ribbed. Fl. Jul–Aug.

- Evergreen broad-leaved forests in valleys, *Tsuga chinensis* forests, streamsides; 1900–2800 m. NW Yunnan.

90. *Elatostema platyceras* W. T. Wang, *Acta Bot. Yunnan*. 10: 346. 1988.

宽角楼梯草 *kuan jiao lou ti cao*

Herbs perennial, monoecious or dioecious, 44–80 cm tall. Stems ascending or erect, simple, densely ferruginous-furfuraceous. Leaves alternate; nanophylls absent; stipules linear, 14–17 \times 4–5 mm, ciliolate, without cystoliths; petiole 2–5 mm; leaf blade obliquely elliptic or narrowly ovate, 5–15 \times 2.5–4.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half broadly cuneate or nearly rounded, margin dentate, apex acuminate or caudate. Male inflorescences solitary, simple, 7–15 mm in diam.; peduncle ca. 5 mm; receptacle nearly orbicular, 7–14 mm in diam.; bracts obscure; bracteoles linear. Female inflorescences solitary, 4–6 mm in diam.; peduncle ca. 0.6 mm; receptacle 3–5 mm in diam.; bracts ovate; bracteoles narrowly obovate or linear. Male flowers 4-merous. Fl. Jun.

- Valley streamsides; ca. 1700 m. NW Yunnan.

91. *Elatostema lungzhouense* W. T. Wang, *Bull. Bot. Lab. N. E. Forest. Inst.*, Harbin 7: 68. 1980.

龙州楼梯草 *long zhou lou ti cao*

Herbs perennial, dioecious, ca. 40 cm tall. Stems erect, branched, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules subulate, 2.5–3.2 \times 0.1–0.2 mm; petiole 1–4 mm; leaf blade obliquely elliptic, 7.5–11 \times 3–5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin denticulate, apex acuminate. Female inflorescences solitary, 5–13 \times 4–11 mm; peduncle 1–4 mm; receptacle oblong, 4–11 \times 3–10 mm; bracts obscure or triangular; bracteoles linear. Achenes ellipsoid, 3-ribbed, tuber-

culate. Fl. Jul.

• Valleys in hills, rocks in forests; ca. 400 m. Guangxi (Longzhou).

92. *Elatostema litseifolium* W. T. Wang, Acta Phytotax. Sin. 28: 313. 1990.

木姜楼梯草 mu jiang lou ti cao

Herbs perennial, dioecious, 20–30 cm tall, glabrous. Stems erect, branched. Leaves alternate; nanophylls absent; stipules subulate, 4–6 × 0.3–0.5 mm, without cystoliths; petiole 1–5 mm; leaf blade lanceolate, 6.5–16.5 × 2–4.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base cuneate, margin entire, apex caudate-acuminate. Male inflorescences solitary, simple, 7–10 mm in diam.; peduncle 2–2.5 mm; receptacle ca. 6 mm in diam.; bracts connate, 3–7 mm; bracteoles linear or spatulate-linear. Male flowers 4-merous. Fl. Apr.

• Evergreen broad-leaved forests, rocks in ravines; ca. 1600 m. SE Xizang.

93. *Elatostema didymocephalum* W. T. Wang, Acta Phytotax. Sin. 28: 316. 1990.

双头楼梯草 shuang tou lou ti cao

Herbs perennial, dioecious, 40–50 cm tall. Stems ascending or erect, simple, glabrous. Leaves alternate; nanophylls absent; stipules linear, 18–20 × 2.5–2.8 mm, glabrous, with cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic, 9–17 × 4–8 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely puberulent along veins, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half rounded, margin dentate, apex caudate-acuminate. Male inflorescences solitary, simple, 3–16 mm in diam.; peduncle 2–4.5 mm; receptacle 12–14 mm in diam.; bracts connate, 6–8 mm; bracteoles cymbiform. Male flowers 5-merous. Fl. May–Jun.

• *Ficus* forests in valleys, dark damp places 900–1000 m. SE Xizang.

94. *Elatostema atroviride* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 83. 1980.

深绿楼梯草 shen lü lou ti cao

Elatostema atroviride var. *lobulatum* W. T. Wang; *E. leiocephalum* W. T. Wang; *E. papilionaceum* W. T. Wang.

Herbs perennial, monoecious or dioecious, 20–30 cm tall. Stems ascending or erect, branched, pubescent. Leaves alternate; nanophylls absent; stipules linear or linear-lanceolate, 3–3.5 × 0.5–0.8 mm, strigillose, with cystoliths; petiole 2–4.5 mm; leaf blade obliquely elliptic or obovate, 6–10 × 2.5–5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface densely puberulent along nerves, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base obliquely cuneate, margin dentate, apex cuspidate to short acuminate. Male inflorescences solitary, simple, 20–28 mm in diam.; peduncle ca. 15 mm; receptacle elliptic, ca. 27 × 17 mm; bracts absent; bracteoles linear. Female inflorescences solitary, nearly oblong or papilionaceous,

5–14 × 4–10 mm; peduncle 1.5–2(–9) mm; receptacle oblong, 5–12 × 3–7 mm; bracts triangular; bracteoles spatulate-linear. Male flowers 4-merous. Achenes ellipsoid, ribbed, tuberculate. Fl. Aug–Nov.

Forests on limestone hills, shaded wet areas in mountains; 200–1500 m. SW Guangxi, SW Guizhou [N Vietnam].

95. *Elatostema retrohirtum* Dunn, Bull. Misc. Inform. Kew, Addit. Ser. 10: 249. 1912.

曲毛楼梯草 qu mao lou ti cao

Herbs perennial, dioecious, 15–35 cm tall. Stems ascending or erect, branched, densely retrorse-strigose. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 4–6 × 1.5–2 mm, strigillose, with cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic, 3–7.5 × 1.5–4 cm, herbaceous or papery, major basal lateral veins both arising at base of leaf blade, abaxial surface densely puberulent along nerves, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half nearly auriculate, margin denticulate, apex short acuminate or acute. Female inflorescences solitary, 3.5–6 mm in diam.; peduncle ca. 1 mm; receptacle 3–5.5 mm in diam.; bracts triangular; bracteoles spatulate-linear. Achenes ovoid or ellipsoid, 6-ribbed. Fl. Jun–Sep.

• Hill or valley forests, woodland margins; 600–700 m. N Guangdong, Guangxi, S Sichuan, Yunnan.

96. *Elatostema longistipulum* Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 57: 242. 1920.

显脉楼梯草 xian mai lou ti cao

Herbs perennial, dioecious, 50–70 cm tall. Stems ascending or erect, usually simple, strigose. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 7–11 × 1–1.5 mm, strigillose along costa, with cystoliths; petiole 0–2.5 mm; leaf blade lanceolate or narrowly lanceolate, 7–12 × 1.3–2.5 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface sparsely strigillose along nerves, adaxial surface glabrous, cystoliths conspicuous, dense; base obliquely cuneate, margin denticulate, apex acuminate or caudate-acuminate. Male inflorescences solitary, simple, 6–15 × 5–11 mm; peduncle ca. 2.5 mm; receptacle oblong, ca. 7 × 4 mm; bracts connate, 3–4 mm; bracteoles cymbiform-linear. Female inflorescences solitary, 5–7 mm in diam.; peduncle ca. 1 mm; receptacle 4–6 mm in diam. Male flowers 5-merous. Fl. Nov–Jan.

Valley streamsides, forest margins; 1000–1300 m. W Guangxi, SE Yunnan [N Vietnam].

97. *Elatostema balansae* Gagnepain, Bull. Soc. Bot. France 76: 80. 1929.

华南楼梯草 hua nan lou ti cao

Elatostema platyphyllum var. *balansae* (Gagnepain) Yahara.

Herbs perennial, dioecious, 20–40(–80) cm tall. Stems ascending or erect, simple or branched, glabrous or pubescent. Leaves alternate; nanophylls absent; stipules lanceolate, 5–14 ×

3–4 mm, strigillose, without cystoliths; petiole 0–2 mm; leaf blade obliquely elliptic to oblong, 6–17 × 3–6 cm, herbaceous, major basal lateral veins both arising at base of leaf blade or 1 arising above base, abaxial surface sparsely puberulent or glabrous, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half broadly cuneate or rounded, margin dentate, apex cuspidate or acuminate. Male inflorescences solitary, simple, 8–9 × 4–7 mm; peduncle 1–2 mm; receptacle 6–7 mm in diam.; bracts connate, 2.5–3 mm; bracteoles linear. Female inflorescences solitary or in pairs, 5–10 mm in diam.; peduncle 0–2 mm; receptacle 3–9 mm in diam.; bracts triangular; bracteoles spatulate-linear. Achenes ellipsoid, 8-ribbed. Fl. Apr–Jun.

Valley forests, shaded wet places along streamsides; 300–2400 m. N Guangdong, NW Guangxi, S Guizhou, NW Hunan, SW Sichuan, SE Xizang, SE Yunnan [Malaysia, Thailand, N Vietnam].

98. *Elatostema multicanaliculatum* B. L. Shih & Yuen P. Yang, Bot. Bull. Acad. Sin. 36: 268. 1995.

多沟楼梯草 duo gou lou ti cao

Herbs perennial, dioecious, up to 80 cm. Stems ascending or repent, branched, glabrous. Leaves alternate; nanophyll absent; stipules lanceolate, 5–7 × 2 mm, glabrous; petiole 0–1 mm; leaf blade obliquely elliptic to lanceolate-oblong, 5–14.5 × 2.5–5.5 cm, membranous, major basal lateral veins both arising above base of leaf blade, rarely absent and venation pinnate, nearly glabrous, cystoliths conspicuous, dense; base with broader half cordate, margin serrulate to coarsely serrate, apex acuminate. Female inflorescences solitary, ± 4-sided, ca. 12 × 8 mm, sessile or subsessile; receptacle ca. 10 × 2.5–6 mm; bracts connate into a narrowly oblong or lanceolate involucre; bracteoles narrowly lanceolate. Achenes ovoid, 5–6-ribbed. Fl. Sep–Nov.

- Moist ravines at medium elevations. Taiwan (Taoyuan).

99. *Elatostema megacephalum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 73. 1980.

巨序楼梯草 ju xu lou ti cao

Elatostema mollifolium W. T. Wang.

Herbs perennial, dioecious, 50–100 cm tall. Stems erect, simple, glabrous. Leaves alternate; nanophylls absent; stipules lanceolate or broadly lanceolate, 10–18 × 2.5–3 mm, glabrous, with cystoliths; petiole 1.5–12 mm; leaf blade obliquely elliptic, 9–25 × 3.5–10 cm, nearly papery or herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface glabrous or sparsely puberulent along nerves, adaxial surface sparsely hirtellous, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin denticulate, apex acuminate. Male inflorescences solitary, simple, 10–25 mm in diam.; peduncle 5–7 mm; receptacle 8–23 mm in diam.; bracts connate, ca. 5 mm wide; bracteoles cymbiform-linear. Female inflorescences solitary, 15–25 × 10–20 mm; peduncle ca. 5 mm; receptacle oblong, 14–23 × 9–18 mm; bracts triangular; bracteoles spatulate-linear. Male flowers 4-merous. Achenes ellipsoid, 8-ribbed. Fl. Feb–May.

Evergreen broad-leaved forests in ravines; 1000–2000 m. C and S Yunnan [Malaysia, Thailand].

100. *Elatostema macintyreii* Dunn, Bull. Misc. Inform. Kew 1920: 210. 1920.

多序楼梯草 duo xu lou ti cao

Subshrubs dioecious, 30–120 cm tall. Stems erect, branched, glabrous or sparsely pubescent. Leaves alternate; nanophylls absent; stipules lanceolate, 9–14 × 2–3 mm, glabrous, with cystoliths; petiole 1–5 mm; leaf blade obliquely elliptic or elliptic-obovate, (8–)10–18(–21) × (3.5–)4.5–7.5(–10) cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, both surfaces glabrous or abaxial surface sparsely strigillose along nerves, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin crenate, apex cuspidate or acuminate. Male inflorescences 2–5-clustered, simple, ca. 2 mm in diam.; peduncle 1–2 mm; receptacle very small; bracts connate, broadly ovate. Female inflorescences 5–9-clustered, 4–9 × 3–5 mm; peduncle 2–6 mm; receptacle 2–5 mm in diam.; bracts triangular or ovate; bracteoles spatulate-linear. Male flowers 4-merous. Achenes ellipsoid, 10-ribbed. Fl. Jul–Dec.

Valley forests, dark damp places along streamsides; 200–2000 m. Guangdong, Guangxi, S Guizhou, S Sichuan, SE Xizang, Yunnan [Bhutan, India, Thailand, N Vietnam].

101. *Elatostema rupestre* (Buchanan-Hamilton ex D. Don) Weddell, Arch. Mus. Hist. Nat. 9: 304. 1856.

石生楼梯草 shi sheng lou ti cao

Procris rupestris Buchanan-Hamilton ex D. Don, Prodr. Fl. Nepal. 60. 1825.

Herbs perennial, dioecious, 45–60 cm tall. Stems ascending or erect, simple, densely strigose. Leaves alternate; nanophylls absent; stipules lanceolate, 10–15 × 3–5 mm, sparsely strigillose, with cystoliths; petiole 1.5–5.5 mm; leaf blade obliquely elliptic or obovate-elliptic, 11–16 × 3.5–5.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely strigillose along nerves, adaxial surface sparsely hirtellous, cystoliths conspicuous, dense; base with broader half obtuse, margin dentate, apex acuminate. Female inflorescences solitary, 6–11 mm in diam.; peduncle ca. 1 mm; receptacle nearly quadrate, 5–9 mm; bracts triangular; bracteoles spatulate or linear. Achenes ovoid, 8-ribbed. Fl. May.

Valley forests; ca. 1500 m. S Yunnan [NE India, Nepal].

102. *Elatostema eriocephalum* W. T. Wang, Acta Phytotax. Sin. 28: 317. 1990.

绒序楼梯草 rong xu lou ti cao

Herbs perennial, dioecious, 80–100 cm tall. Stems ascending or erect, branched, densely strigose. Leaves alternate; nanophylls absent; stipules lanceolate, ca. 12 × 3.5 mm, densely pubescent on abaxial surface along costa, with cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic, (5–)10–22.5 × (2.5–)4.5–11 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface densely puberulent along nerves, adaxial surface glabrous or glabrescent, cystoliths conspicuous, dense; base with broader half auriculate (auricle ca. 4 mm), margin denticulate, apex caudate-acuminate. Male inflores-

cences in pairs, simple, 9–11 × 5–7 mm; peduncle 2–3 mm; receptacle oblong, 8–11 × 5–6 mm; bracts obscure; bracteoles cymbiform-oblong or linear. Female inflorescences in pairs, ca. 12 × 8 mm, sessile; receptacle ca. 12 × 8 mm; bracts obscure; bracteoles spatulate or spatulate-linear. Male flowers 4-merous. Fl. Feb–Mar.

• Evergreen broad-leaved forests in valleys; 700–900 m. SE Xizang.

103. *Elatostema wangii* Q. Lin & L. D. Duan, *sp. nov.*

文采楼梯草 *wen cai lou ti cao*

Type: China. Yunnan: Gongshan Xian: Dulongjiang, Qinlangdang, 1240 m, 10 Mar 1991, *Dulongjiang Expedition 4482* (holotype, PE; isotype, KUN).

Proximum *Elatostemo eriocephalo*, *sed a quo differt petiolis 3–20 mm longis, inflorescentiis femineis solitariis, breviter pedunculatis, pedunculis 2–3 mm longis, bracteolis dense villosis, floribus femineis tepalis instructis.*

Herbs perennial, dioecious, 100–150 cm tall. Stems ascending or erect, simple or rarely 1-branched, densely strigose. Leaves alternate; nanophyll absent; stipules lanceolate, 9–17 × 2.5–4.5 mm, with sparse cystoliths only on adaxial surface, strigose on abaxial surface; petiole 3–20 mm, densely strigose; leaf blade obliquely obovate to obliquely ovate, (3–)7–19.5 × (2.7–)4.0–11.7 cm, papery or thickly papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely strigose or densely strigose on veins, adaxial surface glabrescent or pubescent on nerves, cystoliths obscure, sparse, 0.1–0.2 mm; base with broader half auriculate (auricle 5–13 mm), margin crenate or dentate, apex acuminate, cuspidate or caudate. Female inflorescences solitary, papilionaceous, 1.4–1.5 × 0.9–1.1 cm; peduncle 2–3 mm; receptacle papilionaceous, 1.3–1.4 × 0.8–1.0 cm, sparsely puberulent; bracts obscure; bracteoles very many, oblanceolate-linear, densely villous. Achenes ovoid. Fl. Nov–Mar.

• Evergreen broad-leaved forests in valleys; 1200–1500 m. NW Yunnan (Dulongjiang).

104. *Elatostema platyphyllum* Weddell, Arch. Mus. Hist. Nat. 9: 301. 1856.

宽叶楼梯草 *kuan ye lou ti cao*

Elatostema ebracteatum W. T. Wang; *E. edule* C. B. Robinson; *E. platyphylloides* B. L. Shih & Yuen P. Yang; *E. platyphyllum* var. *polycepalum* Hara.

Subshrubs dioecious, 100–150 cm tall, glabrous. Stems erect, branched. Leaves alternate; nanophylls absent; stipules lanceolate, 2–4 × 0.2–0.8 cm, with cystoliths; petiole 2–6 mm; leaf blade obliquely elliptic or narrowly elliptic, 14–25 × 6–10 cm, herbaceous, major basal lateral veins both arising at base of leaf blade or 1 arising above base, sometimes not extending beyond middle of leaf blade, cystoliths conspicuous or obscure, dense; base with broader half auriculate (auricle 1–1.4 cm), margin denticulate, apex acuminate or caudate-acuminate. Male inflorescences solitary or in pairs, simple, 10–25 × 7–18 mm; peduncle 0.5–1 mm; receptacle nearly papilionaceous, 10–25 × 7–18 mm; bracts connate, narrowly ovate, obscure; bracteoles

spatulate-oblong. Female inflorescences solitary, nearly oblong, 6–7 × 2–5 mm; peduncle ca. 5 mm; receptacle 6–7 × 2–5 mm; bracts narrowly ovate; bracteoles spatulate. Male flowers 4-merous. Fl. Mar–Oct.

Valley forests, shaded areas along streamsides; 700–1900 m. Hainan, S Sichuan, Taiwan, SE Xizang, Yunnan [Bhutan, S Japan, N India, Nepal, Philippines, Sikkim].

105. *Elatostema auriculatum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 74. 1980.

耳状楼梯草 *er zhuang lou ti cao*

Herbs perennial, dioecious, 60–80 cm tall. Stems ascending or erect, simple, glabrous or strigose. Leaves alternate; nanophylls absent; stipules lanceolate-oblong, 14–16 × 2–3 mm, glabrous, with cystoliths; petiole 0–1.5 mm; leaf blade obliquely oblong-obovate, 15–19 × 4–6.5 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface sparsely puberulent along veins, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half auriculate (auricle ca. 8 mm), margin densely dentate, apex acuminate or caudate. Male inflorescences in pairs, simple, 10–13 mm in diam.; peduncle 2–3.5 mm; receptacle ca. 6.5 mm; bracts obscure; bracteoles cymbiform-lanceolate. Female inflorescences in pairs, 8–12 × 5–9 mm; peduncle 6–10 mm; receptacle oblong, 7–10 × 4–8 mm; bracts nearly absent; bracteoles linear. Male flowers 5-merous. Achenes ovoid, 8-ribbed. Fl. May–Aug.

• Evergreen broad-leaved forests in mountains, forest margins or streamsides in valleys; 800–2200 m. SE Xizang, NW Yunnan.

- 1a. Stems glabrous 105a. var. *auriculatum*
- 1b. Stems strigose 105b. var. *strigosum*

105a. *Elatostema auriculatum* var. *auriculatum*

耳状楼梯草(原变种) *er zhuang lou ti cao (yuan bian zhong)*

Stems glabrous. Fl. May–Jun.

• Evergreen broad-leaved forests in mountains; 800–2200 m. SE Xizang, NW Yunnan.

105b. *Elatostema auriculatum* var. *strigosum* W. T. Wang in C. Y. Wu, Fl. Xizang. 1: 552. 1983.

毛茎耳状楼梯草 *mao jing er zhuang lou ti cao*

Stems strigose. Fl. Aug.

• Forest margins or streamsides in valleys; 800–1800 m. SE Xizang.

106. *Elatostema papillosum* Weddell, Arch. Mus. Hist. Nat. 9: 327. 1856.

微晶楼梯草 *wei jing lou ti cao*

Herbs perennial, monoecious or dioecious, 25–50 cm tall. Stems ascending or erect, simple or branched, crispatly pubescent. Leaves alternate; nanophylls cordate or ovate, 3–10 mm; stipules lanceolate-linear, 5–7 × 0.5–0.8 mm, glabrous, without cystoliths; petiole 1–5 mm; leaf blade obliquely elliptic or obliquely obovate, 4.5–13.5 × 2–5.5 cm, papery, major basal lateral veins both arising at base of leaf blade or 1 arising above

base, not extending beyond middle of leaf blade, abaxial surface puberulent along nerves, adaxial surface glabrous, cystoliths conspicuous or obscure, dense; base with broader half broadly cuneate or nearly auriculate, margin crenate, apex cuspidate or caudate. Male inflorescences solitary, simple, 11–26 × 10–15 mm; peduncle 20–55 mm; receptacle elliptic, 10–25 × 10–14 mm; bracts connate, 5–12 mm wide; bracteoles spatulate-linear. Female inflorescences solitary, 4–6 mm in diam.; peduncle ca. 1 mm; receptacle nearly orbicular, 3–5 mm in diam.; bracts triangular; bracteoles lanceolate-linear. Male flowers 4-merous. Fl. Jun–Jul.

Evergreen broad-leaved forests in valleys, woodland margins; 1100–1300 m. SE Xizang [Bhutan, NE India].

107. *Elatostema tetratpalum* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 25. 1982.

四被楼梯草 si bei lou ti cao

Herbs perennial, dioecious, 50–56 cm tall. Stems ascending or erect, usually simple, strigose. Leaves alternate; nanophylls ovate, 4–5 mm; stipules lanceolate-linear, 14–16 × 2–3 mm, glabrous, with cystoliths; petiole 0–2.5 mm; leaf blade obliquely elliptic or narrowly elliptic, 5.5–20 × 3.5–10.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface strigillose along veins, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half broadly cuneate or nearly auriculate, margin dentate, apex acuminate. Female inflorescences solitary, 11–17 × 9–12 mm, sessile; receptacle nearly elliptic, 10–15 × 10 mm; bracts triangular; bracteoles linear-lanceolate. Achenes ovoid, 6-ribbed. Fl. Jul.

• Mountain forests; ca. 700 m. SE Xizang.

108. *Elatostema napoense* W. T. Wang, Guihaia 2: 121. 1982.

那坡楼梯草 na po lou ti cao

Herbs perennial, monoecious, ca. 45 cm tall, glabrous. Stems ascending or erect, simple, glabrous or pilose, not furfuraceous. Leaves alternate; nanophylls ovate, 0.8–1.2 mm; stipules linear-lanceolate, ca. 7 × 1–2 mm; petiole 1–2 mm; leaf blade obliquely elliptic or oblong, 10.5–15.5 × 4–6 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous or obscure, sparse; base with broader half auriculate, margin crenate or denticulate, apex short caudate. Male inflorescences solitary, simple, ca. 15 mm in diam.; peduncle 50–60 mm; receptacle ca. 14 mm in diam.; bracts connate, ca. 2.5 mm; bracteoles linear. Female inflorescences 2 mm in diam., sessile; receptacle ca. 1.8 mm in diam.; bracts cymbiform-triangular; bracteoles narrowly linear. Male flowers 5-merous. Fl. Oct.

• Shaded wet forests on limestone mountains; ca. 1100 m. Guangxi (Napo).

109. *Elatostema subcuspidatum* W. T. Wang, Bull. Bot. Res., Harbin 4(3): 115. 1984.

拟骤尖楼梯草 ni zhou jian lou ti cao

Herbs perennial, dioecious, 25–60 cm tall. Stems ascend-

ing or erect, usually simple, puberulent. Leaves alternate; nanophylls absent; stipules lanceolate, 10–15 × 4–6 mm, nearly glabrous, without cystoliths; petiole 0–3 mm; leaf blade obliquely elliptic, 7.5–15 × 4–7.5 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface sparsely strigillose along veins, adaxial surface sparsely strigillose, cystoliths obscure, dense; base with broader half auriculate, margin dentate, apex caudate-acuminate or acuminate. Male inflorescences solitary, simple, 9–14 mm in diam.; peduncle 9–15 mm; receptacle elliptic, ca. 9 × 5 mm; bracts connate, ca. 1 mm; bracteoles linear or spatulate-linear. Female inflorescences solitary, 4–5 mm in diam.; peduncle 0.5–1 mm; receptacle nearly orbicular, ca. 4 mm in diam.; bracts lanceolate-linear; bracteoles cymbiform or oblong. Male flowers 4-merous. Fl. Aug.

• Mountain forests; 1600–1900 m. Chongqing (Nanchuan).

110. *Elatostema cuneiforme* W. T. Wang, Acta Phytotax. Sin. 17(1): 107. 1979.

楔苞楼梯草 xie bao lou ti cao

Herbs perennial, monoecious, ca. 100 cm tall. Stems ascending or erect, simple or rarely branched, pubescent. Leaves alternate; nanophylls absent; stipules lanceolate, 10–14 × 3.5–4 mm, glabrous; with cystoliths, petiole 0–7 mm; leaf blade obliquely elliptic, 12–18 × 4–7.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely puberulent along nerves, adaxial surface sparsely puberulent, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin dentate, apex cuspidate. Male inflorescences solitary, simple, 20–30 mm in diam.; peduncle 20–30 mm; receptacle nearly orbicular, 20–30 mm in diam.; bracts connate, ca. 0.8 mm; bracteoles broadly linear or linear. Female inflorescences solitary, oblong, 4–11 × 3–6 mm, sessile; receptacle oblong, 5–12 × 3.5–7 mm; bracts broadly ovate; bracteoles spatulate or linear. Male flowers 4-merous. Fl. Jun–Aug.

• Tropical rain forests, montane broad-leaved forests; 1800–2000 m. SE Xizang.

- 1a. Male peduncles 1.2–2 mm thick;
bracteoles cilioate 110a. var. *cuneiforme*
1b. Male peduncles ca. 0.8 mm thick;
bracteoles glabrous 110b. var. *gracilipes*

110a. *Elatostema cuneiforme* var. *cuneiforme*

楔苞楼梯草(原变种) xie bao lou ti cao (yuan bian zhong)

Peduncles of male inflorescences 1.2–2 mm in diam.; bracteoles cilioate. Fl. Aug.

• Montane broad-leaved forests; ca. 2000 m. SE Xizang.

110b. *Elatostema cuneiforme* var. *gracilipes* W. T. Wang, Acta Phytotax. Sin. 28: 319. 1990.

细梗楔苞楼梯草 xi geng xie bao lou ti cao

Peduncles of male inflorescences 0.8 mm in diam.; bracteoles glabrous. Fl. Jun.

- Tropical rain forests; 1800–1900 m. SE Xizang.

111. *Elatostema laxisericeum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 76. 1980.

绿春楼梯草 *lǜ chūn lóu tí cǎo*

Herbs perennial, monoecious, ca. 80 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 10–12 × 1.5–2.5 mm, glabrous, with cystoliths; petiole 5–11 mm; leaf blade obliquely elliptic, 10–13.5 × 4.5–5.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base with broader half broadly cuneate or rounded, margin denticulate, apex acuminate or short acuminate. Male inflorescences solitary, simple, 1.4–2.6 × 0.9–1.4 mm; peduncle 18–22 mm; receptacle narrowly elliptic, 13–18 × 7–11 mm; bracts connate, ca. 0.8 mm; bracteoles narrowly linear. Female inflorescences solitary or in pairs, 3–4 × 2 mm; peduncle 0.5–1 mm; receptacle 2–3 × 1.5 mm. Male flowers 5-merous. Fl. Sep–Oct.

- Valley forests; 600–700 m. S Yunnan.

112. *Elatostema luxiense* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 18. 1982.

潞西楼梯草 *lù xī lóu tí cǎo*

Subshrubs dioecious, ca. 25 cm tall, glabrous. Stems erect, branched. Leaves alternate; nanophylls absent; stipules subulate, 5–7 × 0.1–0.2 mm, without cystoliths; petiole absent; leaf blade obliquely oblong, 9–12.5 × 2.5–3.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, sparse; base with broader half auriculate, margin denticulate, apex caudate-acuminate. Male inflorescences solitary, simple, 4–10 mm in diam.; peduncle ca. 15 mm; receptacle 3–9 mm in diam.; bracts connate, 1–2.5 mm; bracteoles lanceolate. Fl. Feb.

- Valleys; 1700–1800 m. W Yunnan.

113. *Elatostema pubipes* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 75. 1980.

毛梗楼梯草 *máo gěng lóu tí cǎo*

Herbs perennial, monoecious, 10–16 cm tall. Stems ascending or erect, branched, sparsely pubescent. Leaves alternate; nanophylls absent; stipules linear-lanceolate, ca. 6 × 1.5 mm; petiole absent; leaf blade obliquely elliptic, 3–7.5 × 1.5–3 cm, herbaceous, major basal lateral veins both arising at base of leaf blade, abaxial surface densely puberulent along nerves, adaxial surface sparsely strigillose, cystoliths conspicuous or obscure, dense; base with broader half nearly auriculate, margin dentate, apex cuspidate or short acuminate. Male inflorescences solitary, simple, ca. 6 × 3 mm; peduncle 10–30 mm; receptacle elliptic, ca. 4 × 2.5 mm; bracts connate, ca. 0.5 mm; bracteoles linear. Female inflorescences solitary, ca. 3 mm in diam., sessile; receptacle small; bracts shorter than 0.5 mm; bracteoles linear. Male flowers 4-merous. Fl. May.

- Montane bamboo forests; ca. 2300 m. SE Yunnan.

114. *Elatostema tianlinense* W. T. Wang, Guihaia 11: 2. 1991.

田林楼梯草 *tián lín lóu tí cǎo*

Herbs perennial, dioecious, 40–50 cm tall. Stems ascending or erect, simple, puberulent. Leaves alternate; nanophylls absent; stipules linear-lanceolate or triangular, 7–10 × 2–2.5 mm, pubescent on adaxial surface along costa, with cystoliths; petiole 1.5–3.5 mm; leaf blade oblong-elliptic, 8–12 × 3.5–5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half rounded, margin dentate, apex acuminate. Male inflorescences solitary, simple, 5–7 mm; peduncle 10–13 mm, puberulent; receptacle nearly oblong, ca. 5.5 × 2.5 mm; bracts connate, 1–1.5 mm; bracteoles oblong or cymbiform-linear. Fl. Apr.

- Mountain streamsides; 1000–1100 m. Guangxi (Tianlin).

115. *Elatostema goniocephalum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 77. 1980.

角托楼梯草 *jiǎo tuō lóu tí cǎo*

Herbs perennial, dioecious, 20–40 cm tall. Stems ascending or erect, branched, hirtellous. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 5–7.5 × 1.5–2 mm, glabrous; petiole 0–2 mm; leaf blade obliquely elliptic, 6.5–8 × 3–4 cm, herbaceous or nearly papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface sparsely puberulent along veins, adaxial surface sparsely hirtellous, cystoliths obscure, sparse; base with broader half auriculate, margin dentate, apex short acuminate. Male inflorescences solitary, simple, ca. 11 × 8 mm in diam.; peduncle ca. 45 mm; receptacle oblong, ca. 10 × 7 mm; bracteoles cymbiform-elliptic or obovate. Male flowers 5-merous. Fl. Jun.

- Valley streamsides; ca. 900 m. S Sichuan.

116. *Elatostema dulongense* W. T. Wang, Bull. Bot. Res., Harbin 9(2): 72. 1989.

独龙楼梯草 *dú lóng lóu tí cǎo*

Herbs perennial, monoecious, 30–40 cm tall. Stems ascending or erect, usually simple, pubescent. Leaves alternate; nanophylls absent; stipules linear, 4–6 × 1.5–2 mm, glabrous, without cystoliths; petiole absent; leaf blade obliquely oblong-obovate or oblong, 6.5–11 × 2.3–4 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent along nerves, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half broadly cuneate or rounded, margin dentate, apex caudate. Male inflorescences solitary, simple, 6–12 × 3–9 mm; peduncle 12–25 mm; receptacle elliptic, 5–10 × 2–7 mm; bracts absent; bracteoles oblong or linear. Female inflorescences solitary, 5–7 × 3–4 mm; peduncle 0–1 mm; receptacle oblong, 3.5–5.5 × 2.5–3.5 mm; bracts triangular; bracteoles ovate or linear. Male flowers 4-merous. Fl. Aug.

- Shaded wet areas in evergreen broad-leaved forests; 1300–1400 m. NW Yunnan.

117. *Elatostema hypoglaucum* B. L. Shih & Yuen P. Yang,

Bot. Bull. Acad. Sin. 36: 162. 1995.

白背楼梯草 bai bei lou ti cao

Herbs perennial, monoecious, 15–35 cm tall. Stems ascending, often simple, quadrate with distinct angles, sparsely puberulent. Leaves alternate; nanophyll absent; stipules lanceolate, ca. 2×0.5 mm, glabrous on adaxial surface and minutely puberulent on abaxial surface; petiole 0–1 mm; leaf blade narrowly elliptic, obovate, or oblong, $1.5\text{--}5.5 \times 0.5\text{--}2$ cm, membranous, major basal lateral veins asymmetric, 1 basal, the other arising above base, or both absent and venation pinnate, cystoliths conspicuous, dense; base with broader half rounded, margin dentate, apex acute. Male inflorescences solitary, ca. 7 mm in diam., simple; peduncle up to 4 cm; receptacle ca. 5 mm in diam.; bracteoles cymbiform. Female inflorescences solitary, ca. 4×3 mm; peduncle to 1 mm or absent; receptacle oblong, 3.5×2 mm; bracts completely connate into an unlobed, oblong involucre; bracteoles cymbiform. Male flowers 5-merous. Achenes ovoid or ellipsoidal. Fl. Sep.

• Moist forests along streams and in ravines at medium elevations. Taiwan.

118. *Elatostema stigmatosum* W. T. Wang, Acta Bot. Yunnan. 7: 297. 1985.

显柱楼梯草 xian zhu lou ti cao

Herbs perennial, dioecious, ca. 20 cm tall. Stems ascending or erect, usually simple, pubescent. Leaves alternate; nanophylls absent; stipules linear-lanceolate, ca. 9×2.5 mm, nearly glabrous, with cystoliths; petiole 0–2.5 mm; leaf blade obliquely elliptic, $7\text{--}12 \times 3.5\text{--}4.5$ cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent along nerves, adaxial surface sparsely puberulent, cystoliths conspicuous, dense; base with broader half rounded, margin dentate, apex caudate. Male inflorescences solitary, simple, 7–13 mm in diam.; peduncle 80–125 mm, puberulent; receptacle elliptic, ca. 12×6 mm; bracts connate, 0.5–1 mm; bracteoles cymbiform-linear or linear. Female inflorescences solitary, 5–6 mm in diam.; peduncle 0.5–1 mm; receptacle elliptic, ca. 4×2.5 mm; bracts triangular; bracteoles linear or narrowly oblanceolate. Male flowers 4-merous. Achenes ellipsoid. Fl. Mar–Aug.

• Montane forests; 2400–2500 m. Yunnan (Jingdong).

119. *Elatostema microtrichum* W. T. Wang, Acta Bot. Yunnan. 7: 299. 1985.

微毛楼梯草 wei mao lou ti cao

Herbs perennial, dioecious, ca. 30 cm tall. Stems ascending or erect, branched, puberulent. Leaves alternate; nanophylls absent; stipules lanceolate-linear, $4.5\text{--}5.5 \times 1.5\text{--}2$ mm, glabrous, without cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic, $5.5\text{--}9.5 \times 2.5\text{--}4$ cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent along nerves, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half rounded, margin dentate, apex acuminate or caudate-acuminate. Male inflorescences solitary, simple, 4–8 mm in diam.; pedun-

cle 60–70 mm, glabrous; receptacle broadly elliptic, $4\text{--}7 \times 2.5\text{--}6$ mm; bracts connate, 0.8–1 mm; bracteoles broadly linear or linear. Male flowers 4-merous. Fl. Jun.

• Evergreen broad-leaved forests on mountain slopes; 2100–2200 m. SW Yunnan.

120. *Elatostema rivulare* B. L. Shih & Yuen P. Yang, Bot. Bull. Acad. Sin. 36: 270. 1995.

溪涧楼梯草 xi jian lou ti cao

Herbs perennial, dioecious, up to 80 cm tall. Stems ascending or suberect, branched, sparsely puberulent. Leaves alternate; nanophyll absent; stipules lanceolate-cymbiform or obliquely triangular-lanceolate, $13\text{--}17.5 \times 2\text{--}5$ mm, hirsute on abaxial nerves; petiole 0–2 mm; leaf blade narrowly oblong, narrowly elliptic to elliptic, $4\text{--}16 \times 2\text{--}6.5$ cm, thickly papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base with broader half cordate, margin serrate, apex abruptly caudate. Female inflorescences solitary, up to 12×8 mm, sessile or subsessile; receptacle ca. 10×4 mm; bracts completely connate into an unlobed, narrowly oblong to oblong involucre; bracteoles narrowly oblong. Achenes ellipsoidal, ca. 6-ribbed. Fl. Feb–Jul.

• Ravines, moist forests near ravines; medium elevations. Taiwan.

121. *Elatostema leucocephalum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 78. 1980.

白序楼梯草 bai xu lou ti cao

Herbs perennial, monoecious, 25–80 cm tall. Stems ascending, simple, glabrous. Leaves alternate; nanophylls absent; stipules subulate or narrowly lanceolate, $2\text{--}3 \times 0.2\text{--}0.4$ mm, glabrous, without cystoliths; petiole 1–3 mm; leaf blade obliquely elliptic, $3\text{--}6.5 \times 1\text{--}3$ cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface glabrous, adaxial surface sparsely strigillose, cystoliths obscure, sparse; base with broader half auriculate, margin denticulate, apex short acuminate. Male inflorescences solitary, simple, 7–9 mm in diam.; peduncle ca. 6.5 cm; receptacle ca. 7 mm in diam.; bracts connate, ca. 1.5 mm; bracteoles narrowly linear. Female inflorescences solitary, 2–3 mm in diam.; peduncle ca. 0.5 mm; receptacle oblong, ca. 3×1.5 mm; bracts triangular; bracteoles elliptic or linear. Male flowers 5-merous. Achenes ellipsoid, 5-ribbed. Fl. Jul–Aug.

• Shaded wet areas in montane forests. S Sichuan.

122. *Elatostema omeiense* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 79. 1980.

峨眉楼梯草 e mei lou ti cao

Herbs perennial, dioecious, 10–25 cm tall. Stems prostrate, branched, glabrous. Leaves alternate; nanophylls absent; stipules lanceolate-linear, ca. 10×2 mm, glabrous, without cystoliths; petiole 0–2 mm; leaf blade obliquely elliptic, $4\text{--}8 \times 1.5\text{--}3$ cm, herbaceous, major basal lateral veins 1 or ± 2 , abaxial surface glabrous, adaxial surface sparsely strigillose, cystoliths conspicuous or obscure, dense; base with broader half auriculate, margin denticulate, apex acuminate. Male inflorescences solitary, simple, 6–14 mm in diam.; peduncle 32–75 mm;

receptacle 5–13 mm in diam.; bracts connate, 1.2–2.5 mm; bracteoles lanceolate-linear. Male flowers 5-merous. Fl. Apr.

• Shaded areas along mountain roadsides; ca. 1000 m. Sichuan (Emei Shan).

123. *Elatostema jinpingense* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 80. 1980.

金平楼梯草 jin ping lou ti cao

Herbs perennial, dioecious, ca. 40 cm tall. Stems ascending, simple, glabrous. Leaves alternate; nanophylls absent; stipules narrowly lanceolate, 6–7 × 2–2.5 mm, strigillose on abaxial surface along costa, with cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic, 4–6 × 2–2.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface hispidulous, adaxial surface strigillose, cystoliths conspicuous, dense; base with broader half obtuse, margin denticulate, apex short acuminate. Male inflorescences solitary, simple, 16–19 × 1–120 mm; peduncle 90–120 mm; receptacle elliptic, 14–18 × 9–10 mm; bracts connate, ca. 2 mm; bracteoles oblong or linear. Male flowers 4-merous. Fl. May.

• Dense forests in valleys; ca. 1800 m. S Yunnan.

124. *Elatostema longipes* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 80. 1980.

长梗楼梯草 chang geng lou ti cao

Herbs perennial, monoecious, 30–50 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules lanceolate or subulate, 3–4.5 × 0.3–0.6 mm, with cystoliths; petiole ca. 1 mm; leaf blade obliquely elliptic, 7–13 × 2.5–4.5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, or both absent and venation pinnate, cystoliths conspicuous, dense; base with broader half auriculate, margin dentate, apex acuminate. Male inflorescences solitary, simple, ca. 18 × 12 mm; peduncle 135–155 mm; receptacle elliptic, ca. 17 × 10 mm; bracts obscure; bracteoles narrowly linear. Female inflorescences solitary, 2–5 mm in diam.; peduncle ca. 1 mm; receptacle 2–4 mm in diam.; bracts broadly ovate; bracteoles broadly elliptic. Male flowers 5-merous. Achenes ovoid, 6-ribbed. Fl. Aug.

• Shaded moist rocks in mountains; 1200–1300 m. SE Sichuan.

125. *Elatostema hekouense* W. T. Wang, Acta Bot. Yunnan. 7: 296. 1985.

河口楼梯草 he kou lou ti cao

Herbs perennial, monoecious, ca. 70 cm tall, glabrous. Stems erect, branched. Leaves alternate; nanophylls absent; stipules narrowly triangular-linear or subulate, 3.4–4.5 × 0.3–0.5 mm, without cystoliths; petiole 0–7 mm; leaf blade oblong-obovate, or oblong, 6.5–16.5 × 2–5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous or obscure, dense; base obliquely cuneate, margin obtusely denticulate, apex acuminate. Male inflorescences solitary, simple, ca. 5 × 4.5 mm; peduncle ca. 75 mm; receptacle elliptic, ca. 3 × 2.5 mm; bracts connate, bracteoles broadly linear. Female inflorescences solitary, 1.5–2 mm in diam.; peduncle 0.5–1 mm; receptacle nearly orbicular, 1–1.5

mm in diam.; bracts triangular; bracteoles spatulate. Male flowers 5-merous. Fl. Jun.

• Densely forested slopes; 100–200 m. Yunnan (Hekou).

126. *Elatostema procridioides* Weddell in Candolle, Prodr. 16(1): 180. 1869.

渤生楼梯草 bo sheng lou ti cao

Elatostema beshengii W. T. Wang; *E. treutleri* J. D. Hooker.

Herbs perennial, dioecious, 30–80 cm tall, glabrous. Stems ascending or erect, simple. Leaves alternate; nanophylls absent; stipules lanceolate-linear, 14–22 × 2–3.5 mm, with cystoliths; petiole 2–6 mm; leaf blade obliquely oblong or obliquely obovate-oblong, 8–19 × 3–7 cm, papery, major basal lateral veins 2, cystoliths conspicuous, dense; base obliquely cuneate, margin denticulate, apex acuminate. Male inflorescences solitary, simple, 14–17 × 10–12 mm; peduncle 13–25 mm; receptacle oblong or broadly elliptic, 13–15 × 5–8 mm; bracts connate, 6–10 mm; bracteoles linear. Female inflorescences solitary, 7–13 × 4–7 mm; peduncle ca. 4 mm; receptacle elliptic, 7–12 × 4–6 mm; bracts ovate or triangular; bracteoles oblanceolate-linear. Male flowers: perianth lobes 4. Achenes ellipsoid, 6-ribbed. Fl. Jan–Apr.

Evergreen broad-leaved forests in ravines; 600–1300 m. SE Xizang [N India, Sikkim].

127. *Elatostema dissectum* Weddell, Arch. Mus. Hist. Nat. 9: 314. 1856.

盘托楼梯草 pan tuo lou ti cao

Elatostema paragunshanense W. T. Wang.

Herbs perennial, monoecious or dioecious, 30–100 cm tall, glabrous. Stems ascending or erect, simple or rarely branched, lower stems brown furfuraceous. Leaves alternate; nanophylls absent; stipules narrowly linear or subulate, 3–5 × 0.1–0.3 mm, with cystoliths; petiole 0–0.5 mm; leaf blade obliquely oblong or obliquely oblong-lanceolate, (4.5–)8–15 × (1.5–)2.5–5 cm, herbaceous, major basal lateral veins asymmetric, 1 basal, the other arising above base, cystoliths conspicuous, dense; base obliquely cuneate, margin dentate, apex acuminate or cuspidate. Male inflorescences solitary, simple, 10–12 × 8–10 mm; peduncle 15–80 mm; receptacle elliptic or nearly oblong, 4–10 × 3–6 mm; bracts connate, 2–2.5 mm; bracteoles linear. Female inflorescences 5–9 mm in diam.; peduncle 0–1 mm; receptacle 4–8 mm; bracts lanceolate; bracteoles nearly linear. Male flowers 4-merous. Achenes narrowly ovoid, 8-ribbed. Fl. Jan–Jun.

Montane forests, evergreen riverine forests, or valley forests; 500–2100 m. W Guangdong, Guangxi, Yunnan [Bhutan, NE India, Laos, Sikkim, Thailand].

128. *Elatostema dissectoides* W. T. Wang, Acta Bot. Yunnan., Suppl. 5: 1. 1992.

拟盘托楼梯草 ni pan tuo lou ti cao

Herbs perennial, dioecious, ca. 100 cm tall. Stems ascending or erect, simple, glabrous. Leaves alternate; nanophylls

absent; stipules narrowly lanceolate, 10–14 × 2–3 mm, glabrous, with cystoliths; petiole 1–3.5 mm; leaf blade obliquely obovate or elliptic, 6–14.5 × 2–5.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface puberulent along nerves, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base obliquely cuneate, margin dentate, apex cuspidate. Male inflorescences solitary, simple, 14–16 mm in diam.; peduncle 14–42 mm; receptacle oblong, 13–16 × 6–8 mm in diam.; bracts connate, ca. 1 mm; bracteoles linear. Male flowers 4-merous. Fl. Mar.

• Evergreen broad-leaved forests; 1200–1400 m. Yunnan (Gongshan), SE Xizang.

129. *Elatostema manhaoense* W. T. Wang, Bull. Bot. Res., Harbin 16: 247. 1996.

曼耗楼梯草 man hao lou ti cao

Herbs perennial, monoecious or dioecious, 20–35 cm tall. Stems ascending or erect, branched, retrorsely strigose. Leaves alternate; nanophylls absent; stipules lanceolate, 5–9 × 1.3–3.2 mm, glabrous; petiole 1.5–5 mm; leaf blade obliquely elliptic, 7–11.5 × 0.5–6 cm, papery, major basal lateral veins both arising at base of leaf blade, abaxial surface strigillose along veins, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half rounded or nearly auriculate, margin repand-crenate, apex acuminate or nearly caudate. Male inflorescences solitary, simple, 1–1.8 × 0.6–1.2 mm; peduncle 20–70 mm; receptacle oblong, 9–16 × 5–10 mm; bracts connate, 4–6 mm wide; bracteoles cymbiform-linear or linear. Female inflorescences solitary, ca. 2.3 mm in diam.; peduncle ca. 1.2 mm; receptacle nearly quadrate, 2.2 × 2.2 mm; bracts triangular; bracteoles linear. Male flowers 4-merous. Achenes ellipsoid, 7-ribbed. Fl. Aug.

• Streamsides under rain forests; 400–800 m. Yunnan (Gejiu).

130. *Elatostema crispulum* W. T. Wang, Acta Bot. Yunnan. 7: 295. 1985.

弯毛楼梯草 wan mao lou ti cao

Herbs perennial, monoecious, 25–32 cm tall. Stems ascending, branched, crispately pubescent. Leaves alternate; nanophylls absent; stipules narrowly triangular or triangular-linear, 5–9 × 2 mm, glabrous, with cystoliths; petiole 0–3.5 mm; leaf blade obliquely elliptic, 4–10 × 2.5–4.5 cm, papery, major basal lateral veins asymmetric, 1 basal, the other arising above base, abaxial surface crispately strigillose along nerves, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half obtuse, margin crenate, apex obtuse or short acuminate. Male inflorescences solitary, simple, 13–14 mm in diam.; peduncle 50–70 mm; receptacle elliptic, ca. 10 × 5 mm; bracts connate, 2–3 mm; bracteoles cymbiform-linear. Female inflorescences solitary, 3–8 mm in diam.; peduncle 1–8 mm; receptacle broadly linear, ca. 3.5 × 1 mm; bracts triangular; bracteoles linear or oblanceolate-linear. Male flowers 5-merous. Fl. Aug.

• Rain forests in valleys; 300–400 m. W Yunnan.

131. *Elatostema ferrugineum* W. T. Wang, Bull. Bot. Res.,

Harbin 9(2): 73. 1989.

锈茎楼梯草 xiu jing lou ti cao

Herbs perennial, dioecious, 30–45 cm tall. Stems suberect, simple, densely ferruginous-furfuraceous. Leaves alternate; nanophylls absent; stipules linear-lanceolate, 8–14 × 1.5–2.5 mm, glabrous, without cystoliths; petiole 0–1 mm; leaf blade obliquely elliptic, 7–17 × 2–5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade, abaxial surface glabrous, adaxial surface strigillose along veins, cystoliths conspicuous, dense; base obliquely cuneate, margin dentate, apex caudate or caudate-acuminate. Female inflorescences solitary, ca. 8 × 4 mm; peduncle 12–16 mm; receptacle oblong, ca. 5 × 3 mm; bracts triangular; bracteoles narrowly spatulate or linear. Achenes ellipsoid, 5- or 6-ribbed. Fl. Jul–Aug.

• Rocks in evergreen broad-leaved forests; 1300–1400 m. NW Yunnan.

132. *Elatostema petelotii* Gagnepain, Bull. Soc. Bot. France 76: 81. 1929.

樟叶楼梯草 zhang ye lou ti cao

Herbs perennial, monoecious or dioecious, ca. 25 cm tall, glabrous. Stems ascending, simple. Leaves alternate; nanophylls absent; stipules linear, ca. 8 × 1–1.5 mm, without cystoliths; petiole 1–4 mm; leaf blade obliquely elliptic, 5.5–14 × 2.5–5 cm, herbaceous, major basal lateral veins both arising at base of leaf blade, cystoliths conspicuous, dense; base with broader half rounded, margin entire, apex acuminate. Male inflorescences solitary, simple, 8–11 mm in diam.; peduncle 20–35 mm; receptacle 6–9 mm in diam.; bracts connate, bracteoles oblong. Female inflorescences solitary, 4–7 mm in diam.; peduncle 5–40 mm; receptacle nearly orbicular, 3–6 mm in diam.; bracts narrowly triangular; bracteoles lanceolate or spatulate-linear. Male flowers 4-merous. Fl. Jun.

Shaded moist places in ravines; ca. 1000 m. W Guangxi, SE Yunnan [Vietnam].

133. *Elatostema acutitepalum* W. T. Wang, Bull. Bot. Res., Harbin 9(2): 74. 1989.

尖被楼梯草 jian bei lou ti cao

Herbs perennial, dioecious, 50–60 cm tall. Stems ascending or erect, simple, glabrous. Leaves alternate; nanophylls absent; stipules narrowly linear, 5–12 × 1–1.2 mm, glabrous, with cystoliths; petiole 3–5 mm; leaf blade obliquely oblong or obovate-oblong, 8–16 × 3–6 cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface puberulent along nerves, adaxial surface sparsely strigillose or glabrous, cystoliths usually obscure, slightly dense; base with broader half rounded, margin crenate-dentate, apex caudate. Female inflorescences solitary, ca. 7 × 10 mm; peduncle ca. 1 mm; receptacle nearly orbicular, 6–8 mm in diam.; bracts triangular; bracteoles linear. Achenes ellipsoid, striolate. Fl. Aug.

• Evergreen broad-leaved forests on mountain slopes; ca. 1300 m. NE Yunnan.

134. *Elatostema schizocephalum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 82. 1980.

裂序楼梯草 lie xu lou ti cao

Herbs perennial, dioecious, 20–30 cm tall, glabrous. Stems ascending or erect, simple or rarely branched. Leaves alternate; nanophylls absent; stipules subulate, 5 × 0.1–0.2 mm, with cystoliths; petiole 0–2.5 mm; leaf blade obliquely elliptic or elliptic-obovate, 7–13 × 3–5 cm, papery, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin dentate or denticulate, apex acuminate. Female inflorescences in pairs, 4–5 mm in diam.; peduncle 0.5–1 mm; receptacle 2- or 3-lobed, ca. 2 × 1 mm; bracts lanceolate-linear; bracteoles linear. Achenes ovoid, 10-ribbed. Fl. Jan–Feb.

• Forests, streamsides, shaded moist areas; 100–1300 m. E Guangxi, N Guizhou, S Hunan, S Sichuan, SE Yunnan.

This species is used medicinally.

135. *Elatostema xanthophyllum* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 19. 1982.

变黄楼梯草 bian huang lou ti cao

Herbs perennial, dioecious, 30–40 cm tall. Stems ascending or erect, simple, glabrous. Leaves alternate, glabrous; nanophylls absent; stipules lanceolate-triangular, 8–10 × 2–3 mm, with cystoliths; petiole 2–4 mm; leaf blade obliquely elliptic, 7–15.5 × 3–6 cm, papery, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin crenate-denticulate, apex caudate-acuminate. Female inflorescences solitary or in pairs, nearly orbicular, 7–17 mm in diam.; peduncle 0–1 mm; receptacle nearly orbicular, 6–8 mm in diam.; bracts triangular; bracteoles linear. Achenes ovoid, 8-ribbed. Fl. Aug–Dec.

• Rocks in valley forests; 400–500 m. Guangxi (Longzhou).

136. *Elatostema pseudobrachyodontum* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 21. 1982.

隆林楼梯草 long lin lou ti cao

Herbs perennial, monoecious, ca. 40 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate; nanophylls absent; stipules lanceolate-linear, 3–4 mm, ciliolate; petiole 0–5 mm; leaf blade obliquely elliptic or oblong, 5.5–10.5 × 1.5–3.5 cm, herbaceous, major basal lateral veins ± absent and venation pinnate, abaxial surface glabrous, adaxial surface sparsely puberulent or glabrous, cystoliths conspicuous, dense; base obliquely cuneate, margin dentate, apex caudate-acuminate. Male inflorescences solitary, simple, ca. 13 mm in diam.; peduncle 1–3 mm; receptacle ca. 9 mm in diam.; bracts connate, ca. 2 mm; bracteoles spatulate. Female inflorescences solitary, nearly orbicular, 5–9 mm in diam., sessile; receptacle nearly orbicular, 4–8 mm in diam.; bracts triangular; bracteoles cuneate. Male flowers 5-merous. Achenes ellipsoid, 4-ribbed. Fl. Aug.

• Grassy banks along streamsides. Guangxi (Longlin).

137. *Elatostema atropurpureum* Gagnepain in Lecomte, Fl. Indo-Chine 5: 919. 1930.

深紫楼梯草 shen zi lou ti cao

Herbs perennial, dioecious, 70–80 cm tall, glabrous. Stems ascending or erect, branched. Leaves alternate; nanophylls absent; stipules triangular, ca. 2 × 1.5 mm; petiole 5–8 mm; leaf blade elliptic or oblong, 17–23 × 4.5–7.5 cm, herbaceous, major basal lateral veins absent and venation pinnate, cystoliths conspicuous, dense; base obliquely cuneate, margin crenate-dentate, apex caudate-acuminate. Male inflorescences solitary, ca. 2.6 mm in diam.; peduncle 10–15 mm; receptacle ca. 25 mm in diam.; bracteoles linear. Female inflorescences solitary or in pairs, nearly orbicular, 4–9 mm in diam., sessile; receptacle nearly orbicular, 4–7 mm in diam.; bracts triangular; bracteoles subulate. Male flowers 5-merous. Achenes ellipsoid, 8-ribbed. Fl. Apr.

Evergreen broad-leaved forests in ravines; ca. 1400 m. SE Yunnan [N Vietnam].

138. *Elatostema tenuifolium* W. T. Wang, Bull. Bot. Res., Harbin 2(1): 22. 1982.

薄叶楼梯草 bao ye lou ti cao

Herbs perennial, monoecious, 30–60 cm tall. Stems ascending or erect, branched, sparsely pubescent. Leaves alternate; nanophylls absent; stipules linear, 4 × 1.5–2 mm, glabrescent, without cystoliths; petiole 0–1 mm; leaf blade obliquely oblong, 8–18 × 2.5–5 cm, membranous, major basal lateral veins absent and venation pinnate, abaxial surface sparsely puberulent, adaxial surface glabrescent, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin dentate, apex acuminate. Male inflorescences solitary, simple, 14–18 × 11–13 mm; peduncle 3–11 mm; receptacle tetragonal, 14–17 × 10–12 mm; bracts absent; bracteoles spatulate-linear or linear. Female inflorescences solitary, 6–9 × 4–6 mm; peduncle 0–1 mm; receptacle oblong, ca. 7 × 3–5 mm; bracts very small, obscure; bracteoles spatulate. Male flowers 5-merous. Achenes ovoid, 3-ribbed. Fl. Aug–Dec.

• Rocks in montane forests; 1000–1100 m. Guangxi, Guizhou, Yunnan.

139. *Elatostema nanchuanense* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 84. 1980.

南川楼梯草 nan chuan lou ti cao

Herbs perennial, monoecious or dioecious, 25–45 cm tall. Stems erect, simple, sparsely pubescent. Leaves alternate; nanophylls absent; stipules lanceolate, 6–10 × 1.5–2 mm, sparsely strigillose, without cystoliths; petiole 0–1.5 mm; leaf blade brown-black after drying, obliquely oblong, 8–17 × 1.5–4 cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface sparsely strigillose along nerves, adaxial surface sparsely strigose, cystoliths conspicuous, dense; base obliquely cuneate, margin densely dentate or denticulate, apex acuminate to caudate. Male inflorescences solitary or in pairs, simple, 8–12 mm in diam.; peduncle ca. 1.5 mm; receptacle 7–11 mm in diam.; bracts 15, ovate, ca. 2.5 mm wide; bracteoles cymbiform-oblong. Female inflorescences solitary or in pairs,

2–6 mm in diam.; peduncle 0–1 mm; receptacle nearly elliptic, 2–5 mm; bracts connate, triangular or broadly ovate; bracteoles spatulate-linear. Male flowers 5-merous. Achenes narrowly ovoid or ellipsoid, 8-ribbed. Fl. Jun.

• Shaded places in valleys; 600–1200 m. Chongqing, W Hubei, Yunnan.

140. *Elatostema pseudoficoides* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 85. 1980.

多脉楼梯草 duo mai lou ti cao

Elatostema pseudoficoides var. *pubicaule* W. T. Wang.

Herbs perennial, monoecious, 40–100 cm tall. Stems ascending or erect, simple, glabrescent or pilose. Leaves alternate; nanophylls absent; stipules narrowly linear, 4–8 × 0.2–0.3 mm, glabrous, with cystoliths; petiole 0–2.5 mm; leaf blade green after drying, obliquely oblong, 10–27 × 3.5–7.5 cm, thinly herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface sparsely puberulent or glabrescent along veins, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half rounded, margin densely dentate, apex cuspidate. Male inflorescences solitary, simple, 11–22 × 10–15 mm; peduncle 3–4 mm; receptacle nearly elliptic, 10–16 × 9–12 mm; bracts connate, 5–7 mm; bracteoles linear. Female inflorescences solitary or rarely in pairs, 2–5 mm in diam., sessile; receptacle nearly quadrate, ca. 4 × 4 mm; bracts triangular; bracteoles spatulate-linear. Male flowers 5-merous. Fl. Mar–Sep.

• Forests, forest margins or streamsides in valleys; 600–2600 m. W Hubei, NW Hunan, Sichuan, Yunnan.

141. *Elatostema alnifolium* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 86. 1980.

桤叶楼梯草 qi ye lou ti cao

Herbs perennial, dioecious, ca. 36 cm tall. Stems erect, simple or branched, densely strigose. Leaves alternate; nanophylls absent; stipules linear, ca. 10 × 1.5 mm, hirtellous on abaxial surface, with cystoliths on adaxial surface; petiole 1–2 mm; leaf blade obliquely elliptic or obovate, 8–12 × 4.5–7 cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface densely strigillose along nerves, adaxial surface glabrous, cystoliths conspicuous, dense; base with broader half broadly cuneate, margin undulate or rarely entire, apex short acuminate. Male inflorescences in pairs, simple, 12–24 mm in diam.; peduncle 3–4 mm, densely strigillose; receptacle papilionaceous, 12–20 mm; bracts connate, ca. 1.5 mm; bracteoles narrowly linear. Female inflorescences solitary, nearly orbicular, 3.5–7 mm in diam.; peduncle ca. 1 mm, densely strigillose; receptacle 2.5–6 mm in diam. Male flowers 5-merous. Achenes ellipsoid, 5-ribbed. Fl. May–Jul.

• Streamsides; ca. 1200 m. SE Yunnan.

142. *Elatostema wenxienense* W. T. Wang & Z. X. Peng, Bull. Bot. Res., Harbin 2(1): 27. 1982.

文具楼梯草 wen xian lou ti cao

Herbs perennial, monoecious, ca. 55 cm tall. Stems as-

ending or erect, branched, glabrous. Leaves alternate; nanophylls absent; stipules lanceolate-subulate, 2–2.8 × 0.4 mm, glabrous, without cystoliths; petiole 0.5–3 mm; leaf blade obliquely oblong, 4.5–11.5 × 1–3.5 cm, papery, major basal lateral veins absent and venation pinnate, abaxial surface sparsely puberulent, adaxial surface sparsely strigillose, cystoliths conspicuous or obscure, dense; base with broader half rounded, margin dentate, apex acuminate. Male inflorescences solitary, simple, 10–13 mm in diam.; peduncle 14–18 mm; receptacle nearly orbicular, 9–12 mm in diam.; bracts connate, bracteoles cymbiform-linear. Female inflorescences solitary, 2–3.5 mm in diam., sessile; receptacle elliptic, ca. 3 × 2 mm; bracts broadly ovate; bracteoles cymbiform. Male flowers 4-merous. Achenes ellipsoid, 5-ribbed. Fl. Jun–Jul.

• Valley forests. Gansu (Wenxian).

143. *Elatostema subpenninerve* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 87. 1980.

近羽脉楼梯草 jin yu mai lou ti cao

Herbs perennial, dioecious, ca. 42 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate; nanophylls absent; stipules narrowly linear, 3–5 × 0.8–1 mm, glabrous; petiole 0–1 mm; leaf blade obliquely oblong, 7–11 × 2–4 cm, nearly papery, major basal lateral veins ± absent and venation pinnate, abaxial surface glabrous, adaxial surface sparsely puberulent, cystoliths conspicuous or obscure, sparse; base with broader half auriculate, margin dentate, apex acuminate. Male inflorescences solitary, simple; peduncle 90–100 mm; receptacle elliptic; bracts connate, 3–4 mm; bracteoles narrowly linear. Male flowers 5-merous. Fl. Jul.

• Mountain streamsides; ca. 1000 m. S Sichuan.

144. *Elatostema albopilosum* W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 88. 1980.

疏毛楼梯草 shu mao lou ti cao

Herbs perennial, monoecious, 35–75 cm tall. Stems ascending or erect, branched, pilose. Leaves alternate; nanophylls absent; stipules linear or oblong, 4–7 × 1.5–2.8 mm, glabrous, with cystoliths; petiole 0–2.5 mm; leaf blade obliquely oblanceolate-oblong, 12–17 × 3–5 cm, herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface sparsely puberulent along veins, adaxial surface sparsely strigillose, cystoliths conspicuous, dense; base with broader half auriculate, margin dentate, apex cuspidate or caudate. Male inflorescences solitary, simple, 13–28 mm in diam.; peduncle 80–150(–330) mm; receptacle broadly elliptic, 12–22 × 10–18 mm; bracts connate, ca. 3 mm; bracteoles narrowly linear. Female inflorescences solitary, 1.5–5 mm in diam.; peduncle 0–1.5 mm; receptacle nearly oblong, 1–4 mm; bracts triangular; bracteoles spatulate or linear. Male flowers 5-merous. Achenes ellipsoid, 5-ribbed. Fl. Oct.

• Shaded moist areas under valley forests; 1200–2500 m. NW Guangxi, S Sichuan, S Yunnan.

145. *Elatostema ficoides* Weddell, Arch. Mus. Hist. Nat. 9: 306. 1856.

梨序楼梯草 li xu lou ti cao

Herbs perennial, monoecious or dioecious, 45–100 cm tall. Stems ascending or erect, simple or branched, glabrous or puberulent. Leaves alternate; nanophylls absent; stipules linear or lanceolate-linear, 7–10 × 2–3 mm, glabrous, without cystoliths; petiole 2–4 mm; leaf blade obliquely elliptic or oblong, 10–23 × 3.5–8 cm, thinly herbaceous, major basal lateral veins absent and venation pinnate, abaxial surface glabrous or puberulent, adaxial surface sparsely strigillose, cystoliths conspicuous or obscure, dense; base with broader half rounded or auriculate, margin densely dentate, apex acuminate. Male inflorescences solitary, simple, 17–28 × 10–18 mm; peduncle 50–100 mm; receptacle pyriform when young, papilionaceous when mature, 16–27 × 8–15 mm; bracts obscure; bracteoles linear or narrowly linear. Female inflorescences usually 2-clustered, 2–3 mm in diam., sessile; receptacle 1.5–2.5 mm in diam.; bracts triangular; bracteoles linear or spatulate-linear. Male flowers 4- or 5-merous. Fl. Aug–Sep.

Forests, thickets, streamsides, dark damp places or rocks in valleys; 800–2000 m. N Guangxi, Guizhou, W Hunan, Sichuan, NW Yunnan [NE India, Nepal, Sikkim].

- 1a. Stems glabrous; leaf blade glabrous on abaxial surface 145a. var. *ficoides*
1b. Stems puberulent; leaf blade puberulent on abaxial surface 145b. var. *puberulum*

145a. *Elatostema ficoides* var. *ficoides*

梨序楼梯草(原变种) li xu lou ti cao (yuan bian zhong)

Stems glabrous. Leaf blade abaxial surface glabrous. Fl. Aug–Sep.

Forests, thickets, streamsides, dark damp places or rocks in valleys; 900–2000 m. N Guangxi, Guizhou, SW Hunan, Sichuan, NW Yunnan [NE India, Nepal, Sikkim].

145b. *Elatostema ficoides* var. *puberulum* W. T. Wang, Keys Vasc. Pl. Wuling Mts. 578. 1995.

毛茎梨序楼梯草 mao jing li xu lou ti cao

Stems puberulent. Leaf blade abaxial surface puberulent. Fl. Aug.

- Montane forests; ca. 800 m. NW Hunan.

146. *Elatostema brachyodontum* (Handel-Mazzetti) W. T. Wang, Bull. Bot. Lab. N. E. Forest. Inst., Harbin 7: 90. 1980.

短齿楼梯草 duan chi lou ti cao

Elatostema ficoides (Wallich) Weddell var. *brachyodontum* Handel-Mazzetti, Symb. Sin. 7: 147. 1929.

Herbs perennial, monoecious or dioecious, 60–100 cm tall. Stems ascending or erect, branched, glabrous. Leaves alternate; nanophylls absent; stipules subulate, 1.5–2.5 × 0.1–0.2 mm, glabrous, without cystoliths; petiole 1.5–4 mm; leaf blade obliquely oblong, 7–17 × 2.5–5.5 cm, herbaceous or papery, major basal lateral veins absent and venation pinnate, both surfaces glabrous or adaxial surface sparsely puberulent; cystoliths conspicuous, dense; base with broader half cuneate or broadly cuneate, margin crenate-dentate, apex acuminate. Male inflorescences solitary, simple, 2.5–3.5 × 1.7–2.8 mm; peduncle

2.5–6 mm; receptacle pyriform when young, nearly papilionaceous when mature, 12–30 mm in diam.; bracts connate, bracteoles narrowly lanceolate. Female inflorescences solitary, 4–17 mm in diam.; peduncle ca. 1 mm; receptacle nearly square, 3–10 × 3–10 mm; bracts broadly ovate; bracteoles

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obovate. Male flowers 4-merous. Achenes ovoid, 6-ribbed. Fl.
Jun–Sep.

Valley forests or rocks along streamsides; 500–2100 m. NW
Guangxi, Guizhou, W Hubei, NW Hunan, Sichuan, NE Yunnan [N
Vietnam].

