
PRIMULACEAE

珍珠菜属 zhen zhu cai shu

Herbs perennial or annual, rarely suffruticosic. Leaves alternate, opposite, or whorled, often all basal, simple, entire to lobed. Flowers solitary or in panicles, racemes, or umbels, usually with bracts, perfect, (4 or)5–9-merous, often heterostylous (Primula). Calyx persistent. Corolla gamopetalous, actinomorphic, rarely absent (Glaux). Stamens as many as and opposite corolla lobes, ± epipetalous, occasionally with scalelike staminodes. Filaments free or connate into a tube at base. Ovary superior, rarely semi-inferior (Samolus), unilocular; placation free central. Style simple; stigma inconspicuous, capitate. Fruit a capsule, dehiscing by valves, rarely circumscissile or indehiscent. Seeds few or many; embryo small, straight, surrounded by endosperm.

Twenty-two genera and ca. 1000 species; mainly in temperate and mountainous regions of the northern hemisphere; twelve genera and 528 species (373 endemic) are widely distributed throughout China, but are represented mostly in the S and W regions. The centers of diversity for Primula, Androsace, and Omphalogramma are W Sichuan, E Xizang, and NW Yunnan. Lysimachia is also highly developed in provinces S of the Chang Jiang, while Pomatosace is endemic to a small area of NW Sichuan and Qinghai.

Many species of Primula and Androsace are cultivated for their attractive flowers as pot plants, in rock gardens, or in garden borders. Some species of Lysimachia are used medicinally. Cyclamen persicum Miller is frequently cultivated as a pot plant.


1a. Ovary semi-inferior; bracts inserted on middle of pedicel ......................................................................................... 12. Samolus
1b. Ovary superior.

2a. Corolla lobes contorted in bud, or corolla absent.
  3a. Capsule circumscissile; filaments pubescent ......................................................... 4. Anagallis
  3b. Capsule valvular; filaments glabrous.
    4a. Corolla absent; calyx pink or white ........................................................................ 3. Glaux
    4b. Corolla present; calyx green.
      5a. Flowers 5-merous, or if 6–9-merous then in axillary racemes ............................................ 1. Lysimachia
      5b. Flowers usually 7-merous, solitary in axis of subterminal leaves ................................. 2. Trientalis
  2b. Corolla lobes imbricate or quinuncial in bud.
  6a. Anthers apiculate; filaments connate into a thin membranous ring at base ........................................ 5. Cortusa
  6b. Anthers obtuse; filaments free.
    7a. Capsule circumscissile.
      8a. Corolla 7-lobed; leaves entire; capsules elongated-cylindric ........................................... 10. Bryocarpum
      8b. Corolla 5-lobed; leaves pinnatifid; capsules subglobose .................................................. 11. Pomatosace
    7b. Capsule valvular, rarely forming a calyptra.
      9a. Flowers solitary, in axis of alternate cauline leaves ...................................................... 6. Stimpsonia
      9b. Flowers in umbels, racemes, or spikes, or flowers solitary from leaf rosettes.
        10a. Flowering rosette with a solitary large flower; scapes without bracts; corolla more than 1.5 cm in diam. ................................................................. 9. Omphalogramma
        10b. Flowering rosette with 1 to many scapose inflorescence(s) with bracts, or with a solitary flower with or without bracts; corolla less than 1.5 cm in diam.
          11a. Corolla tube usually shorter than calyx, constricted at throat; flowers homostylous ................................................................ 7. Androsace
          11b. Corolla tube longer than calyx, not constricted at throat; flowers often heterostylous ................................................................. 8. Primula

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

Herbs erect or procumbent, rarely suffruticosic, glabrous or pubescent, often with internal glands appearing as pustulate dots or stripes. Leaves alternate, opposite, or whorled, usually entire. Flowers solitary in axis of upper leaves or in terminal and axillary panicles or racemes, often shortened into capitulate clusters, with bracts. Calyx green, usually 5(or 6–9)-parted. Corolla white or yellow, rarely pink, homomorphic, rarely heteromorphic, subtreate or campanulate, deeply 5(or 6–9)-parted; lobes

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contorted in bud. Filaments glabrous, free or connate into a ring or tube at base and ± adnate to corolla tube; anthers basifixed, dorsifixed, or versatile, opening by apical pores or by lateral slits. Capsule subglobose, usually dehiscing by valves, rarely indehiscent.

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

1a. Flowers usually 6- or 7-merous, in pedunculate, dense capitulate, or spikelike racemes ........................................ 138. L. thyrsiflora

1b. Flowers 5-merous, in terminal racemes, or inflorescences not racemose.

2a. Flowers heteromorphic, with anthers and stigma at 2 levels; corolla tubular, parted scarcely to middle ..................................... 137. L. crispidens

2b. Flowers homomorphic; corolla rotate or campanulate, parted below middle.

3a. Corolla white to pink; filaments free, adnate to middle of corolla ........................................................................ Key 3

3b. Corolla yellow, rarely white; filaments connate into a thin ring or tube, adnate to base of corolla tube.

4a. Anthers longer than filaments, distinctly basifixed, usually opening by apical pores, occasionally by lateral slits; plants not colored glandular punctate or striate ........................................................................ Key 1

4b. Anthers shorter than filaments, ± dorsifixed (rarely indistinctly so) to versatile, opening by lateral slits (except L. albescens); plants often colored glandular punctate or striate ........................................................ Key 2

Key 1

1a. Stems 1–1.5 cm tall; flowers forming terminal racemes on leafless scapes ........................................................ 1. L. scapiflora

1b. Stems more than 20 cm tall; flowers solitary or in racemes on leafy stems.

2a. Leaves terminal.

3a. Flowers in many-flowered racemes, 6–9 cm; capsules indehiscent .................................................. 2. L. insignis

3b. Flowers in clusters or extremely shortened racemes; capsules dehiscing by valves.

4a. Leaf blade rounded to obtuse at apex; calyx lanceolate, 6–8 mm; corolla lobes acute at apex ...... 6. L. crassifolia

4b. Leaf blade acute at apex; calyx ovate, 2–4 mm; corolla lobes obtuse at apex.

5a. Inflorescences distributed along stems under leaf whorls .............................................................. 3. L. saxicola

5b. Inflorescences subterminal.

6a. Leaves nearly equal, rounded at base ............................................................................... 4. L. dashanensis

6b. Leaves unequal, cordate at base ......................................................................................... 5. L. linguimensis

2b. Leaves alternate or opposite, not terminal.

7a. Leaves opposite.

8a. Leaf blade cuneate to rounded at base ................................................................................. 36. L. engleri

8b. Leaf blade cordate at base.

9a. Flowers solitary; leaf blade 1–4 cm .................................................................................. 37. L. cordifolia

9b. Flowers usually in pairs; leaf blade 4.5–8 cm ........................................................................ 38. L. biflora

7b. Leaves alternate.

10a. Anthers conical, less than 3.5 × as long as wide; stems herbaceous.

11a. Flowers in racemes.

12a. Bracts subulate; leaf blade with more than 10 pairs of lateral veins .......... 25. L. physaloides

12b. Bracts leaflike; leaf blade with 5–7 pairs of lateral veins.

13a. Stems not winged; flowers subverticillate .............................................................. 28. L. subverticillata

13b. Stems winged; flowers racemose.

14a. Racemes corymbiform, 2–5-flowered ................................................................. 26. L. wilsonii

14b. Racemes elongated, 5- to many flowered .............................................................. 27. L. nutantiiflora

11b. Flowers solitary, axillary.

15a. Stems ± procumbent at base, upper part erect, rarely branched; leaf blade broadly ovate to elliptic.

16a. Calyx 7–12 mm; corolla 2–3.5 cm in diam.; leaf blade attenuate to cuneate at base ........................................ 29. L. foenum-graecum

16b. Calyx 2.5–6 mm; corolla 1.2–2 cm in diam.; leaf blade rounded or slightly cordate, rarely cuneate at base.

17a. Corolla 1.5–2 cm in diam.; calyx 4–6 mm; plants not aromatic ............. 30. L. trichopoda

17b. Corolla ca. 1.2 cm in diam; calyx ca. 2.5 mm; plants aromatic when dry .............................................. 31. L. pseudotrichopoda

15b. Stems erect or sometimes arcuate at base, usually branched; leaf blade lanceolate to narrowly elliptic or oblong-lanceolate.

18a. Corolla 3–5 mm; calyx lobes narrowly ovate, ca. as long as or slightly
shorter than corolla; capsules 3.5–4 mm in diam. ......................................... 32. *L. brachyandra*

18b. Corolla more than 6 mm; calyx lobes ovate to ovate-elliptic, 1/3 to 1/2 × as long as corolla; capsules more than 5 mm in diam.

19a. Flowers in racemes continuing apically into vegetative shoots .............. 35. *L. cauliflora*
19b. Flowers solitary, in axils of upper leaves.

20a. Corolla 10–15 mm; anthers opening by apical pores .................... 33. *L. grandiflora*
20b. Corolla 6–8 mm; anthers opening by lateral slits ................................... 34. *L. laxa*

10b. Anthers linear, more than 4 × as long as wide; stems subwoody.

21a. Flowers in elongated racemes.

22a. Petiole less than 2 mm; leaf blade rounded or subcordate at base; bracts subulate ........... 7. *L. filipes*
22b. Petiole 5–30 mm; leaf blade subattenuate at base; at least lower bracts leaflike.

23a. Calyx lobes lanceolate .................................................................................... 8. *L. heterobotrys*
23b. Calyx lobes ovate .............................................................................................. 9. *L. chapaensis*

21b. Flowers solitary or 2 to many flowers crowded in leaf axils.

24a. Pedicel 3–10(–12) mm.

25a. Leaf blade 6–12 × 3–7 cm; calyx 6–9 mm .......................................................... 10. *L. inaperta*
25b. Leaf blade 0.6–1.7 × 0.2–0.8 cm; calyx 3–4 mm.

26a. Leaves sparsely setulose adaxially; corolla epunctate .............................. 11. *L. aspera*
26b. Leaves glabrous; corolla glandular punctate ....................................... 12. *L. tianyangensis*

24b. Pedicel usually more than 12 mm.

27a. Leaf blade linear or leathery, veinlets obscure.

28a. Leaf blade linear, subfalcate at apex, herbaceous ................................. 13. *L. vittiformis*
28b. Leaf blade neither linear nor falcate at apex, subleathery.

29a. Leaves oblanceolate, ± crowded in interrupted whorls ................. 14. *L. pittosporoides*
29b. Leaves lanceolate, evenly distributed along stems .............................. 15. *L. millietii*

27b. Leaf blade neither linear nor leathery, veinlets conspicuous.

30a. Calyx ca. as long as to slightly longer than corolla ................................. 16. *L. evalvis*
30b. Calyx shorter than corolla.

31a. Stems conspicuously angular, usually herbaceous.

32a. Calyx 5–6 mm, lobes subulate; leaf blade truncate to subcordate at base ........................................... 22. *L. jingdongensis*
32b. Calyx 2–4 mm, lobes acuminate; leaf blade subattenuate at base.

33a. Stems angular or winged, usually much branched; leaf blade ovate to lanceolate ................................................. 23. *L. capillipes*
33b. Stems angular, usually simple; leaf blade lanceolate ..... 24. *L. lancifolia*

31b. Stems terete, subwoody.

34a. Pedicel ca. as long as to shorter than petiole; capsules indehiscent ........................................................................ 17. *L. navillei*
34b. Pedicel much longer than petiole; capsules dehiscing by valves.

35a. Capsule 3–4 mm.

36a. Leaf blade elliptic-lanceolate to lanceolate; free parts of filaments distinctly longer than sinus of cordate base of anthers .......................................... 18. *L. fooningensis*
36b. Leaf blade ovate to ovate-lanceolate; free parts of filaments ca. as long as sinus of cordate base of anthers ................................................................. 19. *L. microcarpa*

35b. Capsule 5–6 mm.

37a. Leaf blade elliptic to elliptic-lanceolate, 1–3(–4) cm wide ........................................ 20. *L. ardisiodes*
37b. Leaf blade ovate to elliptic or broadly elliptic, 1.3–7(–9) cm wide ................. 21. *L. petelotii*

Key 2

1a. Filaments nearly free, barely connate at base into an indistinct ring; anthers indistinctly dorsifixed to semi-basifixed, erect.

2a. Pedicel 0.5–0.7 cm; leaves and corolla short black glandular striate ....................................................... 39. *L. albescens*
2b. Pedicel 2.5–4.5 cm; plants epunctate ................................................................. 40. L. peduncularis
1b. Filaments connate basally into a distinct ring or tube; anthers distinctly dorsifixed.
   3a. Inflorescences paniculate; calyx lobes black glandular striate at margin.
      4a. Stems pubescent; leaves short petiolate, oblong-lanceolate to ovate-lanceolate, pubescent abaxially; corolla 1.5–2 cm in diam. ................................................................. 41. L. vulgaris
      4b. Stems glabrous on lower part; leaves sessile, broadly or narrowly lanceolate, glabrous; corolla 1.1–1.5 cm in diam. ................................................................. 42. L. davurica
   3b. Inflorescences not paniculate; calyx lobes not glandular striate at margin.
      5a. Stems 1–5 cm; leaves spirally arranged, ± forming a rosette.
         6a. Plants hirsute ......................................................................................... 43. L. alpestris
         6b. Plants glabrous ..................................................................................... 44. L. rupestris
      5b. Stems more than 5 cm; leaves opposite, alternate, or whorled.
         7a. Corolla rotate; filaments connate basally into a ring or thin tube; leaves sessile or ............................................ only lower ones short petiolate (except in white-flowered species).
            8a. Leaf blade lanceolate, tapering toward dilated clasping base ................................................ 49. L. ophelioides
            8b. Leaf blade ovate to ovate-lanceolate, base rounded or cuneate.
               9a. Corolla white; leaf blade cuneate at base ............................................... 48. L. huitsunae
               9b. Corolla yellow; leaf blade rounded at base.
                  10a. Plants less than 10 cm tall; lower leaves short petiolate; upper leaves ca. 1.5 cm; pedicel 0.9–1.6 cm ................................................................. 45. L. stellarioides
                  10b. Plants 15–50 cm tall; lower leaves scalelike; upper leaves 3.5–6.5 cm; pedicel 1–7 cm.
                     11a. Stems usually simple; pedicel usually more than 20 mm; corolla 1.2–2 cm in diam., red or brown glandular punctate .............................................. 46. L. omeiensis
                     11b. Stems usually branched; pedicel 5–10 mm; corolla 1–1.5 cm in diam.,
                         epunctate .................................................................................. 47. L. hypericoides
   7b. Corolla subfunnelform; filaments connate 1/3–1/2 into a tube, or if only forming a ring, then leaves petiolate or corolla black glandular striate.
      12a. Flowers in terminal or axillary racemes; bracts small, not leaflike.
         13a. Leaves petiolate.
            14a. Racemes densely flowered; pedicel 2–5 mm; plants strigillose, epunctate ................................................................. 53. L. otophora
            14b. Racemes sparsely flowered; pedicel 8–20 mm; stems glabrous; leaves and corolla glandular punctate ................................................................. 54. L. nanchuanensis
         13b. Leaves sessile.
            15a. Leaf blade ovate-lanceolate, rounded at base .............................................. 50. L. longipes
            15b. Leaf blade lanceolate, cuneate at base.
               16a. Pedicel 1.5–5 cm; bracts inserted on rachis .............................................. 51. L. fukienensis
               16b. Pedicel 0.2–0.4 cm; bracts adnate to pedicel ........................................ 52. L. rubinervis
      12b. Flowers axillary and solitary or in terminal clusters or umbels; if in racemes, then bracts leaflike.
         17a. Petiole auriculate at base (at least in lower leaves); inflorescences not capitulate.
            18a. Leaf blade connate-perfoliate ............................................................................... 55. L. perfoliata
            18b. Leaf blade not connate-perfoliate.
               19a. Flowers solitary and axillary or in terminal racemes; pedicel 0.4–2 cm; plants strigillose ................................................................. 56. L. melampyroides
               19b. Flowers in terminal umbels; pedicel 1–1.5 cm; plants glabrescent ............ 57. L. brittenii
         17b. Petiole slender or, if auriculate at base, inflorescences subcapitate.
            20a. Flowers solitary and axillary or in lax terminal racemes.
               21a. Plants epunctate or translucent glandular punctate.
                  22a. Flowers in terminal racemes; filaments connate to 1/2 their length into a tube.
                     23a. Flowering Jul–Aug; pedicel usually ascending to erect in fruit;
                        lower leaves ovate or elliptic ......................................................... 61. L. hemsleyi
                     23b. Flowering May–Jun; pedicel recurved in fruit; lowest
                        1 or 2 pairs of leaves rhomboid-ovate to ovate ............. 62. L. pseudohenryi
                  22b. Flowers axillary, solitary; filaments basally connate into
a thin ring.

24a. Roots fasciculate, stringy; stems with 1 or 2 pairs of scalelike leaves near base; upper leaves obtuse at apex, rust-colored pubescent ................................. 58. *L. deltoidea*

24b. Roots fibrous; stems without scalelike leaves; upper leaves acute at apex, grayish pubescent.

25a. Stems erect or ascending-erect, decumbent at base; corolla 1–1.5 cm in diam. ......................................................... 59. *L. remota*

25b. Stems prostrate to decumbent; corolla 0.5–0.8 cm in diam. .................................................................................... 60. *L. japonica*

21b. Plants red to black glandular punctate or striate.

26a. Stems erect.

27a. Leaves and corolla red or dark glandular punctate .......... 63. *L. erosiptetala*

27b. Leaves and corolla black glandular striate ......................... 64. *L. grammica*

26b. Stems prostrate to ascending or arcuate.

28a. Plants purple or black glandular punctate.

29a. Calyx lobes abaxially cristate, glabrous .............................. 88. *L. carinata*

29b. Calyx lobes not cristate, pilose.

30a. Leaves strigillose; pedicel 2–4 mm ................................. 89. *L. debilis*

30b. Leaves setulose or glabrate; pedicel more than 5 mm.

31a. Stems prostrate; plants black or purple glandular, rarely transparent glandular ....... 90. *L. hemsleyana*

31b. Stems prostrate to ascending; plants transparent glandular ............................................... 91. *L. chekiangensis*

28b. Plants purple or black glandular striate.

32a. Calyx lobes not cristate.

33a. Calyx lobes glabrous or pubescent on margin and abaxially; corolla lobes long glandular striate; pedicel ca. as long as to shorter than subtending leaves ................................................................. 96. *L. christiniae*

33b. Calyx lobes pubescent on abaxial surface only, margin glabrous; corolla lobes short glandular striate; pedicel usually longer than subtending leaves ................................................................. 97. *L. drymarifolia*

32b. Calyx lobes cristate abaxially.

34a. Leaf blade lanceolate to ovate-lanceolate, apex acuminate, base rounded; crest of calyx lobes uniform in width or widest below middle.

35a. Leaves and calyx glabrescent; crest of calyx lobes widest below middle .......... 92. *L. pterantha*

35b. Leaves and calyx pubescent; crest of calyx lobes uniform in width .................. 93. *L. baoxingensis*

34b. Leaf blade ovate or rounded, apex acute or obtuse, base cordate; crest of calyx lobes widest above middle.

36a. Leaves densely minutely bristly, transparent purplish glandular striate ....... 94. *L. pteranthoides*

36b. Leaves strigillose or glabrescent, densely black glandular striate and punctate; crest of calyx lobes decurrent forming a spur .............. 95. *L. crista-galli*

20b. Flowers in terminal umbels or capitate clusters.

37a. Leaves verticillate.

38a. Plants rust-colored pilose ............................................................. 67. *L. klattiana*

38b. Plants glabrous.

39a. Umbels sessile ........................................................................ 65. *L. paridiformis*

39b. Umbels pedunculate ................................................................ 66. *L. sciadantha*

37b. Leaves opposite.
40a. Plants colored glandular punctate or striate.

41a. Plants black glandular striate.

42a. Flowers 3–5, crowded at apices of branches, seldom at apex of main axis .................................................. 86. *L. rubiginosa*

42b. Flowers in terminal, abbreviated, subcapitate racemes ....... 87. *L. alfredii*

41b. Plants black or purple punctate.

43a. Glandular dots black, very dense on leaf blade and calyx.

44a. Leaves in 3 to many pairs, nearly equal, ovate to ovate-elliptic, 3.5–8 cm ......................... 78. *L. punctatilimba*

44b. Leaves usually in 2 pairs crowded toward stem apex, elliptic to rhomboid-ovate, 10–18 cm; lower leaves scalelike, reduced.

45a. Stems and pedicels glabrous ................................. 79. *L. fordinii*

45b. Stems and pedicels rust-colored villous ........... 80. *L. miiyensis*

43b. Glandular dots purple or black, sparse or only near leaf margins.

46a. Flowers crowded at stem apex, without bracts ... 81. *L. nanpingensis*

46b. Flowers in terminal, subcapitate clusters, with bracts.

47a. Flowers 2–4, on leafless axillary short branches .................................................. 82. *L. liui*

47b. Flowers usually more than 4, on leafy stems and branches.

48a. Leaves sessile, tapering toward dilated clasping base ....................... 85. *L. lychnoides*

48b. Leaves petiolate, base not clasping.

49a. Stems prostrate, rooting at nodes, upper part ascending; leaf blade ovate to suborbicular .................. 83. *L. congestiflora*

49b. Stems erect; leaf blade lanceolate to ovate-lanceolate .......... 84. *L. kwangtungensis*

40b. Plants epunctate or translucent glandular.

50a. Stems procumbent, elongated; corolla with thick translucent glandular stripes sometimes becoming dark when dry.

51a. Flowers 2–4, crowded at stem apex, without bracts; calyx not keeled .............................................. 76. *L. patungensis*

51b. Flowers many, in terminal, subcapitate clusters, with bracts; calyx keeled abaxially ............................... 77. *L. yingdeensis*

50b. Stems erect or ascending from creeping base; corolla with or without translucent glands.

52a. Leaves glabrous or sparsely pilose on midvein abaxially .... 68. *L. henryi*

52b. Leaves pilose or minutely bristly adaxially.

53a. Leaf blade lanceolate or elliptic-lanceolate, long attenuate at base.

54a. Upper leaves falcate-lanceolate, 4–9 mm wide .................................................. 74. *L. sciadophylla*

54b. Upper leaves lanceolate to elliptic-lanceolate, not falcate, usually wider than 10 mm.

55a. Leaves herbaceous, lateral veins 3–5 pairs .................................................. 75. *L. fistulosa*

55b. Leaves papery, lateral veins invisible .............. 68. *L. henryi*

53b. Leaf blade ovate or ovate-elliptic, if ovate-lanceolate, then broadly cuneate or rounded at base.

56a. Stems with only 3 or 4 pairs of leaves on upper part; petiole 2.5–4 cm; corolla
1.8–2 cm in diam. ........................................... 69. *L. esquirolii*

56b. Stems with evenly distributed leaves; petiole less than 2 cm; corolla 0.8–1.6 cm in diam.

57a. Flowers many, in terminal, subcapitate clusters.

58a. Stems erect; leaves strigillose; flower clusters lax; lowest pedicels recurved in fruit ........ 62. *L. pseudohenryi*

58b. Stems ascending from creeping base; leaves with articulate hairs; flower clusters compact; lowest pedicels ascending-erect in fruit ............................ 70. *L. phylococephala*

57b. Flowers 2–4, in axils of uppermost 1 or 2 leaf pairs.

59a. Stems erect; leaf blade ovate, subacuminate, sparsely bristly; corolla ca. 7.5 mm .................... 71. *L. shimienensis*

59b. Stems ascending from creeping base; leaf blade ovate, with articulate hairs; corolla to 13 mm.

60a. Leaf blade subrounded at base; petiole 2–10 mm .................... 72. *L. tengyuehensis*

60b. Leaf blade broadly cuneate at base; petiole (at least in medial leaves) more than 1 cm .................... 73. *L. siamensis*

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**Key 3**

1a. Calyx parted 1/2–2/3 its length; corolla lobes nearly free ......................................................... 98. *L. pentapetala*

1b. Calyx parted nearly to base; corolla lobes distinctly connate at base.

2a. Style shorter than corolla, usually only reaching middle of corolla lobes, ca. as long as to shorter than capsules.

3a. Leaves opposite, rarely alternate in upper part of stem; anthers with thick red glands or callus at apex.

4a. Leaves petiolate, abaxially very densely, minutely rust-colored glandular punctate ................. 111. *L. circaeoides*

4b. Leaves sessile, base auriculate and clasping, abaxially sparsely thick glandular punctate.

5a. Corolla lobes oblong, obtuse or subacute at apex ................................................................. 112. *L. auriculata*

5b. Corolla lobes suborbicular or subflabellate, erose-denticulate at apex ........................................ 113. *L. glanduliflora*

3b. Leaves alternate, rarely opposite; anthers without red glands at apex.

6a. Calyx lobes lanceolate, only margin membranous and apex without red glands; persistent style usually shorter than capsules; racemes sparsely flowered or flowers solitary in axils of upper leaves.

7a. Flowers solitary, in axils of upper leaves; corolla ca. as long as calyx; filaments longer than anthers ................................................................. 107. *L. chenopodioides*

7b. Flowers in racemes, subtended by subulate bracts; corolla distinctly longer than calyx; filament shorter than anthers.

8a. Corolla 3.5–5 mm, lobes not glandular striate; calyx lobes glandular ciliate ......................... 108. *L. excisa*

8b. Corolla 6–10 mm, lobes brown or black glandular striate; calyx lobes glabrous along margin.

9a. Corolla white, lobes ligulate, reflexed, with many dark glandular tripes; style ca. 1 mm; leaves black glandular punctate near margin ................................. 109. *L. reflexiloba*

9b. Corolla pink, lobes obovate, not reflexed, with 2 red glandular stripes at middle; style ca. 2 mm; leaves black glandular striate near margin ........................................ 110. *L. roseola*

6b. Calyx lobes elliptic or oblong, apex membranous or red glandular; persistent style ca. as long as capsules; racemes densely flowered.

10a. Bracts leaflike; corolla lobes erect; ovary conical; capsules pyriform, ca. 5 mm in diam.;
10b. Bracts subulate; corolla lobes spreading; ovary ovoid; capsules globose, ca. 3 mm in diam.; plants glandular puberulent (at least on inflorescences).

11a. Corolla 5–9 mm, lobes oblong or sublinear; filaments 2–4 mm.

12a. Plants without creeping rhizomes; pedicel shorter than calyx and capsules ... 100. L. jiangxiensis

12b. Plants with creeping rhizomes; pedicel longer than calyx and capsules.

13a. Corolla lobes 3.5–4.5 mm; leaf blade broadly lanceolate to elliptic, black glandular punctate .................................................................................................................. 101. L. clethroides

13b. Corolla lobes 5–8 mm; leaf blade oblanceolate to linear, epunctate ..... 102. L. barystachys

11b. Corolla 3–5 mm, lobes elliptic to ovate-elliptic; filaments 1–1.5 mm.

14a. Pedicel ca. 10 mm; leaves black glandular striate near margin ...................... 103. L. stigmatosa

14b. Pedicel 1–6 mm; leaves glandular punctate.

15a. Corolla lobes acute and red glandular at apex; pedicel 3–6 mm, longer than bracts ............................................................. 104. L. tienmushanensis

15b. Calyx lobes obtuse and membranous at apex; pedicel 1–3 mm, ca. as long as to slightly shorter than bracts.

16a. Plants with creeping rhizomes; stems rarely branched, glabrescent; leaf blade oblong-lanceolate ............................................ 105. L. fortunei

16b. Plants without creeping rhizomes; stems branched, puberulent; leaf blade narrowly lanceolate to linear-lanceolate ..................... 106. L. chikungensis

2b. Style ca. as long as or longer than corolla, longer than capsules (except in L. violascens, corolla ca. 1/3 longer than style).

17a. Anthers linear, 1–1.5 mm, with thick red glands or callus at apex.

18a. Leaves sessile, clasping at base, densely black glandular punctate ....................... 114. L. heterogenea

18b. Leaves usually petiolate, sparsely purple or brown glandular punctate or striate ............. 115. L. stenosepala

17b. Anthers elliptic or ovate, without glands or callus at apex.

19a. Flowers 4–8, near stem apex, in axes of leaves or a capitulate cluster.

20a. Flowers in axils of apical leaves; corolla shorter than pedicel ................................ 135. L. prolifera

20b. Flowers in a terminal, subcapitulate cluster; corolla longer than pedicel .................. 136. L. pumila

19b. Flowers in terminal, many-flowered, elongated racemes.

21a. Corolla parted to ± middle.

22a. Corolla campanulate, ca. 5 mm; leaf blade ovate to ovate-lanceolate ................. 132. L. racemiflora

22b. Corolla narrowly campanulate, 8–10 mm; leaf blade obovate to sublinear.

23a. Stems erect, simple or branched; branches ascending to erect; racemes initially broadly coniform, densely flowered ...................................................... 133. L. candida

23b. Stems ± prostrate, fasciculate, usually much branched; branches elongated flagelliform; racemes slender, sparsely flowered .............................................. 134. L. parvifolia

21b. Corolla parted to 2/3 or below.

24a. Corolla 2.5–5(–6) mm, ca. as long as calyx.

25a. Corolla ca. 6 mm; stamens included or with only apex of anthers exserted .......................................................................................................................... 116. L. silvestrii

25b. Corolla 2.5–4 mm; stamens distinctly exserted.

26a. Corolla slightly longer than or ca. as long as calyx, lobes oblong-spatulate .............................................................. 117. L. decurrens

26b. Corolla shorter than calyx, lobes narrowly oblong ................. 118. L. breviflora

24b. Corolla 6–12 mm, distinctly longer than calyx.

27a. Corolla lobes suborbicular, clawed at base.

28a. Leaves abaxially minutely rust-colored glandular punctate ...................... 119. L. platypetala

28b. Leaves abaxially glaucous.

29a. Corolla pink, epunctate ................................................................ 120. L. glaucina

29b. Corolla white, reddish brown glandular striate near apex .......... 121. L. orbicularis

27b. Corolla lobes elliptic, obovate, or narrowly oblong, not clawed at base.

30a. Corolla lobes elliptic or broadly obovate, rarely elliptic-oblong, wider than 2 mm.

31a. Leaves alternate or occasionally opposite on lower part of stem, lanceolate to ovate-lanceolate.

32a. Corolla 8–12 mm, ca. 2 x as long as calyx, sinus between lobes acute; stamens ca. 2/3 as long as
32b. Corolla 6–7(–8) mm, slightly longer than calyx, sinus between lobes rounded; stamens ca. as long as to longer than corolla .......................... 123. L. lichiangensis

31b. Leaves opposite (at least on branches) or in whorls, linear-lanceolate.

33a. Corolla ca. 5 mm; leaves subleathery ........................................ 126. L. robusta

33b. Corolla 8–10 mm; leaves herbaceous.

34a. Leaves sparsely glandular punctate and striate, usually in whorls of 3 or 4 on main stem .................... 124. L. taliensis

34b. Leaves glandular striate on margin only, subopposite on main stem ................................................. 125. L. tsaii

30b. Corolla lobes narrowly oblong, less than 2 mm wide.

35a. Leaves sessile.

36a. Leaf blade narrowly lanceolate to linear, 0.4–1 cm wide; corolla e-punctate ................................................... 127. L. delavayi

36b. Leaf blade oblanceolate, 1.8–2.6 cm wide; corolla red glandular striate ......................................................... 128. L. medogensis

35b. Leaves petiolate.

37a. Corolla to 10 mm; leaves glaucescent abaxially ............ 131. L. tsarongensis

37b. Corolla 5–7 mm; leaves pale green abaxially.

38a. Stamens ca. as long as corolla .......................... 129. L. chungdienensis

38b. Stamens 1–2 mm longer than corolla ...................... 130. L. lobelioides


艶花香草 ting hua xiang cao

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

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

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

三叶香草 san ye xiang cao

Lysimachia insignis Hemsley f. flaviflora Lock.

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

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

The fleshy roots are used medicinally for rheumatism and injuries.


岩居香草 yan ju xiang cao

Herbs perennial, to 18 cm tall. Stems erect or prostrate at base, terete or angular in upper part, usually simple. Lower leaves scalelike. Upper leaves alternate, 3 or 4 crowded at apex of stem in a whorl; petiole 5–8 mm; leaf blade ovate, subleathery, base rounded to broadly cuneate, margin thickened and cartilaginous, apex acute. Racemes in axils of normal leaves, scalelike leaves along stem, 2–4-flowered; rachis 0.5–2 mm; bracts lanceolate to subulate, 2–4 mm. Pedicel 2–5 mm. Calyx ca. 3 mm; lobes ovate, glandular on margin and inside, apex acuminate. Corolla yellow, ca. 7 mm, deeply parted; lobes oblanceolate. Filaments connate basally into a ca. 0.5 mm high ring, fused with corolla, free parts ca. 0.7 mm; anthers...
Herbs perennial, 20–40 cm tall. Stems erect or ascending, 10–20(–40) cm, quadrangular or narrowly winged. Lower leaves scalelike. Upper leaves ± pubescent. Herbs perennial, glabrous. Stems deep reddish brown, terete or slightly angular in upper part, usually simple. Leaves 2–4, in a subterminal whorl; petiole 5–8 mm, verrucose; blade broadly ovate to ovate-elliptic, 5–11.5 × 2.7–3.8 cm, papery, base rounded to truncate, margin narrowly revolute, apex acute; midvein and 5 or 6 pairs of veins raised abaxially, slightly impressed adaxially, prominently reticulate. Racemes ± umbellate, in axils of leaves, rarely arising from axils of lower scalelike leaves, abbreviated, many flowered. Pedicel 0.5–2 cm, reddish glandular punctate. Calyx lobes lanceolate, 6–8 × ca. 2 mm, minutely brownish glandular, especially inside. Corolla yellow, ca. as long as to slightly longer than calyx, deeply parted; lobes ovate-oblong, ca. 8 × 2.5–3.5 mm, apex acute. Filaments connate basally into a ring, free parts ca. 1 mm; anthers 4–5 mm, basifixed, opening by apical pores. Style ca. as long as to slightly longer than stamens. Capsule globose, 2–3 mm in diam. Fl. Jun.

* In thickets on calcareous formations. C Guangxi (Xincheng Xian).
Herbs perennial, glabrous, 40–70 cm tall. Stems erect from rostrate base, terete or striate, herbaceous. Leaves alternate, ± aggregated toward apex of young shoots; petiole 1.5–3 cm; leaf blade ovate to ovate-lanceolate, 6–11 × 3–6 cm, adaxially with numerous minute sunken dots, base subrounded to broadly cuneate, apex acute; veins 4 or 5 pairs, raised abaxially. Racemes terminal and axillary, 2–6-flowered; rachis 1.3–2.5 cm. Calyx ca. 6 mm, enlarging to 8 mm in fruit; lobes lanceolate, glandular, margin softly impressed adaxially; veinlets obscure. Flowers solitary, axillary. Pedicel 3–8 mm, glandular punctate, base cuneate, decurrent, margin narrowly hyaline margined, apex acute. Filaments connate basally into a ca. 0.4 mm high ring, free parts ca. 1 mm; anthers ca. 3.2 mm, filiform, opening by apical pores. Capsule globose, ca. 1.5 mm in diam. Fl. May–Jun.

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

**10. Lysimachia aspera** C. Y. Wu.

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


**Lysimachia subracemosa** C. Y. Wu.

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

* Mixed forests; N Guangxi.

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


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

**Lysimachia aspera** C. Y. Wu.

**Lysimachia subracemosa** C. Y. Wu.


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

**Lysimachia aspera** C. Y. Wu.

**Lysimachia subracemosa** C. Y. Wu.


basiform, opening by apical pores. Style ca. 4 mm. Capsule globose, ca. 3 mm in diam. Fl. May.

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

14. *Lysimachia pittosporoides* C. Y. Wu, *Yunnan Redai* 1b. Leaf blade elliptic to elliptic-lanceolate; capsules 4–5 mm in diam. ............. 17b. var. *navillei*


Herbs perennial, glabrous, 40–60 cm tall. Stems erect, woody, quadrangular in upper part, usually much branched. Leaves alternate, crowded toward apex of young shoots, forming many interrupted whorls on stem; petiole 2–4 mm; leaf blade oblanceolate, 2–4 cm × 4–10 mm, subleathery, abaxially ± minutely glandular, adaxially with minute sunken dots, base attenuate, margin narrowly revolute, apex acute; midvein raised abaxially, impressed adaxially; veinlets obscure. Flowers solitary, axillary. Pedicel 1–2 cm. Calyx lobes ovate, ca. 5 mm, glandular on margin and inside, apex caudate-acuminate. Corolla yellow, 6–7 mm, deeply parted; free parts inconspicuous; anthers ca. 0.6 mm; style ca. 4 mm, basifixed, opening by apical pores. Style ca. 4 mm. Capsule globose, 3–4 mm in diam., shorter than calyx. Fl. Apr.–May.

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


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

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

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

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

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

未变香草（原变种）mu jing xiang cao (yuan bian zhuo)


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


海南木茎香草 hai nan mu jing xiang cao

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

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

Plants perennial, glabrous, 20–50 cm tall, aromatic when dry. Stems erect, woody at base, terete or weakly angular in upper part. Leaves alternate, usually confined to upper 1/2 of stem, ± crowded toward apex; petiole 0.5–1.5 cm; leaf blade elliptic–lanceolate to narrowly lanceolate, 3–11 × 0.7–2.8 cm, abaxially ± glandular, base attenuate, apex acuminate to subacute; veins prominently reticulate. Flowers 1 or 2, in axis of leaves, rarely 3 or 4 flowers crowded at apex of extremely abbreviated twigs and appearing clustered. Pedicel 1.5–4.5 cm. Calyx lobes ovate, ca. 3 mm. Corolla yellow, 0.9–1.1 cm, deeply parted; lobes oblong, 8–10 × 2–3 mm, apex obtuse. Filaments connate basally into a ca. 0.5 mm high ring, free parts 1–1.5 mm; anthers 4.5–5 mm, basifixed, opening by apical pores. Capsule ivory-white, globose, 5–6 mm in diam.

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


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

Herbs perennial, 10–30 cm tall, aromatic when dry, with creeping stolons. Stems ascending to erect, terete or decumbent at base, apex minutely brownish glandular. Lower leaves scalelike. Upper leaves alternate, ± crowded toward apex of stem; petiole 2–8 mm; leaf blade ovate to elliptic or broadly elliptic, rarely elliptic–lanceolate, 3–14(–18) × 1.3–6.5(–9) cm, papery, base cuneate to subrounded, narrowly revolute, apex acute; veins 5 or 6 pairs, raised abaxially, impressed adaxially. Flowers solitary, axillary or 2–5 in axis of lower leaves. Pedicel 1.5–3 cm, elongating to 6 cm in fruit, glandular. Calyx 4–6(–7) mm; lobes ovate–lanceolate, glandular on margin. Corolla yellow, deeply parted; lobes oblong, 9–13(–20) × 2.5–4.5 mm, apex acute or subobtuse. Filaments connate basally into a 0.8 mm high ring, free parts very short; anthers 5.5–9 mm, apex obtuse, basifixed, opening by apical pores. Ovary ovoid; style 6–9 mm. Capsule subglobose, ca. 4 mm in diam. Fl. May–Jun.

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


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

Herbs perennial, 15–30 cm tall, ± fragrant when dry. Stems of previous year ascending to erect, conspicuously quadrangular or weakly winged. Leaves alternate; petiole 0.8–1.2 cm; leaf blade ovate to broadly ovate, 1.5–3.2 × 1–2.2 cm, abaxially glabrous, adaxially ± bristly, base truncate to subcordate, rarely rounded, margin obscurely undulate, apex acute to apiculate; veins 3 or 4 pairs, lowest pair often basal; veinlets prominently reticulate abaxially. Flowers solitary, axillary. Pedicel ca. 2.5 cm. Calyx lobes lanceolate, 5–6 × 1–1.3 mm, apex acute; veins 1–2 mm, apex obtuse. Filaments connate basally into a 0.5 mm high ring, free parts very short; anthers 4.5–5 mm, basifixed, opening by apical pores. Capsule ivory-white, globose, 5–6 mm in diam.
abaxially costate, apex subulate. Corolla yellow, deeply parted; tube ca. 1 mm; lobes oblong, ca. 9 × 3 mm, apex obtuse. Filaments very short; anthers ca. 3 mm, basifixed, opening by apical pores. Capsule ca. 3 mm in diam., shorter than calyx. Fl. May–Jun.

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

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


**细梗香草**  xi geng xiang cao

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

1a. Stems often winged; calyx lobes usually less than 4 mm, apex acuminate ............................................ 23a. var. capillipes

1b. Stems angular; calyx lobes ca. 4 mm, apex subulate .................................................. 23b. var. cavaleriei

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

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

*Lysimachia Fragrans* Hayata.

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


**石山细梗香草**  shi shan xi geng xiang cao


**长叶香草**  chang ye xiang cao

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


**金平香草**  jin ping xiang cao

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


**川香草**  chuan xiang cao

Herbs perennial, erect, 20–55 cm tall, aromatic when dry. Stems angular, simple or slightly branched in upper part, glandular at apex. Leaves alternate, evenly distributed on stem; petiole to 1.5 cm; leaf blade lanceolate, 2.5–6.5(–8) × 0.7–1.7 cm, adaxially glabrous or sparsely bristly, base attenuate, margin obscurely undulate, apex subulate. Filaments connate basally into a ca. 0.5 mm high ring, fused with corolla, free parts ca. 1.3 mm; anthers 3.5–4 mm, basifixed, opening by apical pores. Style filiform, ca. 4 mm, as long as stamens. Capsule globose, ca. 3 mm in diam., longer than calyx. Fl. May.

* Mixed forests; 1500–2200 m. S Yunnan [N Thailand].
Herbs perennial, erect, 30–70 cm tall. Stems ca. 3 mm in diam. at base, upper part thicker than lower part, triangular or quadrangular to narrowly winged, simple, often branched only in inflorescences, minutely brown glandular at apex. Leaves alternate; petiole 1–2.5 cm, narrowly winged; leaf blade elliptic to elliptic-lanceolate, 6–14 × 3–5.5 cm, membranous when dry, abaxially glabrous and purplish, adaxially ± bristly, base obtuse to cuneate, margin entire or sometimes obscurely undulate, apex acute to short acuminate; veins 5–7 pairs. Racemes axillary, corymbiform, 2–5-flowered; peduncle 2–4 cm, angular; bracts ovate, leaflike, 0.8–2 cm, short-stalked. Pedicel 2–3 cm. Calyx lobes overlapping at base, orbicular to slightly depressed, ca. 3 mm, apex apiculate. Corolla yellow, 8–11 mm, deeply parted; lobes oblong, 7–10 × 4–4.5 mm, apex obtuse. Filaments connate basally into a ca. 1 mm high ring, free parts very short; anthers 3–3.5 mm, basifixed, apex obtuse, opening by apical pores. Ovary ovoid; style ca. 3 mm. Capsule globose, ca. 3 mm in diam. Fl. Jun–Jul.

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


灵香草 ling xiang cao

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

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

Used as a perfume.


蔓延香草 man yan xiang cao

Herbs perennial, 15–30 cm tall, not aromatic. Stems ascending to erect from creeping base, with raised lines descending from base of leaves, uppermost part ± minutely brown glandular. Leaves alternate, ± crowded upward from apex of stem; upper leaves often 1–2 × as large as lower leaves; petiole 4–10 mm, narrowly winged by decurrent blade; leaf blade broadly ovate, 2.5–4.5 × 1.5–3 cm, glabrous or adaxially ± bristly, base rounded to truncate, rarely subcordate, margin obscurely undulate, apex acute to apiculate; veins 3 or 4 pairs; veinlets conspicuous abaxially. Flowers solitary, axillary. Pedicel 2–4.5 cm. Calyx lobes orbicular to lanceolate, 4–6 mm. Corolla yellow, 0.9–1.5 cm, 1.5–2 cm in diam., deeply parted; lobes narrowly oblong, 8–14 × 4–15 mm, apex obtuse. Filaments connate basally into a ca. 0.5 cm high ring, free parts very short; anthers 3.5–4 mm,
basifixed, opening by apical pores. Capsule subglobose, ca. 4.5 mm in diam., indehiscent.

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

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

30a. Lysimachia trichopoda var. trichopoda

Height 2–3 m, tomentose. Leaves alternate, cuneate to subrounded, apex acuminate; veins 7–9. Corolla yellow, 6–8 mm long, 3–4 mm wide, apex obtuse. Filaments connate basally into a ring, free parts very short; anthers ca. 0.8 mm, basifixed, opening by apical pores. Capsule subglobose, 3.5–4 mm in diam., ca. 4 mm long; radicle persistent. Fl. Jun–Jul.

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


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

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

* Forests. NE Yunnan.

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


多枝香草 duo zhi xiang cao

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

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

* Damp areas in open forests and ravines, mixed forests; 1900–2400 m. SE Yunnan (Jinping Xian, Wenshan Xian).


鄂西香草 e xi xiang cao


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

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


短蕊香草 duan rui xiang cao

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

* Mixed forests; 1200–1400 m. S Guizhou.


鄂西香草 (原变种) man yan xiang cao (yuan bian zhong)


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

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


鄂西香草 e xi xiang cao


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

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


鄂西香草 (原变种) man yan xiang cao (yuan bian zhong)


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

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


鄂西香草 e xi xiang cao


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

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

Herbs perennial, 15–180 cm tall or long. Stems single or few, erect to reclined, quadrangular, with short wings on ridges. Leaves opposite, subsessile or petiole to 8 mm; leaf blade elliptic to broadly ovate, 2–10 × 1.2–5 cm, glabrous, base cuneate, margin entire, apex acute to short acuminate; veins 5–7 pairs, basal, prominent. Flowers solitary, axillary. Pedicel 2–2.5 cm in fruit, glandular. Calyx lobes ovate, ca. 4 × 2 mm, margin minutely glandular, apex acute. Fruit borne on naked lower part of branches. Capsule subglobose, ca. 5 mm in diam., 5-valved.

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

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


**思茅香草** (原变种) **思茅香草**

Herbs perennial, 15–180 cm tall or long. Stems single or few, erect to reclined, quadrangular, with short wings on ridges. Leaves opposite, subsessile or petiole to 8 mm; leaf blade elliptic to broadly ovate, 2–10 × 1.2–5 cm, finely papil late, abaxially densely minutely glandular, adaxially glabrous or ± bristly, base subrounded to broadly cuneate, margin obscurely undulate, apex acute; veins 5–7 pairs, raised abaxially. Flowers 1 or 2–4, in axils of medial and upper leaves. Pedicel 2–3.5 cm. Calyx lobes ovate, ca. 6 × 1.8 mm, apex acuminate to subulate, costate. Corolla yellow, ca. 6 mm, deeply parted; tube ca. 1.5 mm; lobes broadly ovate, 4–6.5 mm wide. Filaments connate basally into a ca. 0.5 mm high ring, free parts very short; anthers ca. 2.5 mm, basifixed, opening by short slits. Style ca. 4.7 mm. Capsule subglobose, ca. 4 mm in diam., shorter than calyx.

* In shrubs on mountain slopes; 2000–3000 m. W Yunnan.

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

**思茅香草** (原变种) **思茅香草**

Herbs perennial, 15–180 cm tall or long. Stems single or few, erect to reclined, quadrangular, with short wings on ridges. Leaves opposite, subsessile or petiole to 8 mm; leaf blade elliptic to broadly ovate, 2–10 × 1.2–5 cm, finely papil late, abaxially densely minutely glandular, adaxially glabrous or ± bristly, base subrounded to broadly cuneate, margin obscurely undulate, apex acute; veins 5–7 pairs, raised abaxially. Flowers 1 or 2–4, in axils of medial and upper leaves. Pedicel 2–3.5 cm. Calyx lobes ovate, ca. 6 × 1.8 mm, apex acuminate to subulate, costate. Corolla yellow, ca. 6 mm, deeply parted; tube ca. 1.5 mm; lobes broadly ovate, 4–6.5 mm wide. Filaments connate basally into a ca. 0.5 mm high ring, free parts very short; anthers ca. 2.5 mm, basifixed, opening by short slits. Style ca. 4.7 mm. Capsule subglobose, ca. 4 mm in diam., shorter than calyx.

* In shrubs on mountain slopes; 2000–3000 m. W Yunnan.


**思茅香草** (小思茅香草) **思茅香草**

Herbs perennial, 15–180 cm tall or long. Stems single or few, erect to reclined, quadrangular, with short wings on ridges. Leaves opposite, subsessile or petiole to 8 mm; leaf blade elliptic to broadly ovate, 2–10 × 1.2–5 cm, finely papil late, abaxially densely minutely glandular, adaxially glabrous or ± bristly, base subrounded to broadly cuneate, margin obscurely undulate, apex acute; veins 5–7 pairs, raised abaxially. Flowers 1 or 2–4, in axils of medial and upper leaves. Pedicel 2–3.5 cm. Calyx lobes ovate, ca. 6 × 1.8 mm, apex acuminate to subulate, costate. Corolla yellow, ca. 6 mm, deeply parted; tube ca. 1.5 mm; lobes broadly ovate, 4–6.5 mm wide. Filaments connate basally into a ca. 0.5 mm high ring, free parts very short; anthers ca. 2.5 mm, basifixed, opening by short slits. Style ca. 4.7 mm. Capsule subglobose, ca. 4 mm in diam., shorter than calyx.

* In shrubs on mountain slopes; 2000–3000 m. W Yunnan.


**双花香草** **双花香草**

Herbs perennial, 30–100 cm tall. Stems ascending, arcurately elongate in upper part, 0.5–1.8 m. Leaf blade 4–10 × 2.5–5 cm. Corolla ca. 1 cm, ca. 1.5 × as long as calyx. Fl. Apr–May.

* In shrubs on mountain slopes; 2200–2400 m. SW Sichuan, S and SW Yunnan.
Herbs perennial, 60–120 cm tall. Stems ascending to reclined, usually simple, with brown multicellular hairs. Lower leaves much smaller or scalelike. Upper leaves alternate or occasionally subopposite; petiole ca. 1/3 as long as leaf blade, villous; leaf blade ovate to elliptic-ovate, 2.2–3.2 × 1.5–1.8 (–2.5) cm, pubescent, indistinctly short black glandular striate, base attenuate, apex acute; veins 2–4 pairs. Flowers solitary, axillary. Pedicel 5–7 mm, densely pubescent. Calyx lobes lanceolate, 4.5 × ca. 1.2 mm, costate, sparsely pubescent, short black glandular striate. Corolla yellow, 7–8 mm, deeply parted; lobes ovate, 6–7 × ca. 4.5 mm, densely black glandular striate, apex rounded. Filaments connate basally into a ca. 0.5 mm high ring, opening by lateral slits, ca. 1.5 mm, erect. Ovary ovoid; style ca. 4 mm. Capsule subglobose, ca. as long as calyx. Fl. Jul.

* Dry grassy mountain slopes. C and N Yunnan.


Herbs annual, 5–30 cm tall. Stems erect or arcuate at base, striate or weakly angular; branches usually few, above middle. Leaves spirally arranged, ± crowded toward apex of stem; petiole 5–10 mm; leaf blade lanceolate, 1.5–4.5 cm × 5–10 mm, striigillose adaxially and along midvein abaxially, base cuneate-attenuate, apex acute to short acuminate; veins 5–7 pairs; veinlets invisible. Flowers solitary, axillary, connivent to upper part of plant. Pedicel 2.5–4.5 cm, glabrous. Calyx lobes oblong-lanceolate, 3–5 mm, short acuminate to acute. Corolla pale yellow, 3–4 mm, parted to middle; lobes elliptic, apex acute. Filaments connate basally into a ca. 0.5 mm high ring, free parts 1.5–2.5 mm; anthers indistinctly dorsifixed to nearly basifixed, opening by lateral slits, ca. 1.5 mm, erect. Ovary ovoid; style 4–5 mm. Capsule subglobose, 2–4 mm in diam. Fl. Jun.–Aug. 2n = 24, 42.

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


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

Mountain meadows, woodland margins, in shrubs. Heilongjiang, Jiangsu, Jilin, Liaoning, Nei Mongol, Shandong, Yunnan, Zhejiang [Japan, Korea, Mongolia, Russia].
mm wide, apex rounded, erose. Filaments ca. 3 mm, lower 1/2 connate into a tube; anthers narrowly oblong, dorsifixed, opening by lateral slits, ca. 2 mm. Ovary ovoid; style slightly shorter than stamens. Capsule unknown. Fl. Apr.

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


龙津过路黄 long jin guo lu huang

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

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


茂汶过路黄 mao wen guo lu huang

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

* About 1300 m. W Sichuan (Maowen Qiang). This is a rare species known only from the type collection.


茂汶过路黄 mao wen guo lu huang

Herbs perennial, 6–15 cm tall. Stems erect or arcuate at base, terete, simple or weakly branched, retrorsely appressed pubescent. Lower leaves suborbicular to scalelike, base cuneate, apex obtuse to acute; veins 4 or 5 pairs; veinlets inconspicuous. Flowers solitary, in axils of upper leaves. Pedicel 5–10 mm. Calyx lobes lanceolate, ca. 5 × 1 mm, pubescent, costate. Corolla yellow, rotate, 1–1.5 cm in diam.; tube ca. 1 mm; lobes obovate-elliptic, ca. 5 × 3–4 mm, apex rounded. Filaments connate basally into a ring, free parts ca. 2 mm; anthers linear, dorsifixed, opening by lateral slits, 1–1.5 mm. Ovary sessile; style ca. 3 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

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


巴山过路黄 ba shan guo lu huang

Herbs perennial, 15–30 cm tall. Stems obtusely quadrangular, usually branched above middle, densely brownish pubescent. Lower leaves suborbicular to scalelike, base cuneate, apex obtuse; veins 4 or 5 pairs; veinlets inconspicuous. Flowers solitary, in axils of upper leaves. Pedicel 5–10 mm. Calyx lobes lanceolate, ca. 5 × 1 mm, pubescent, costate. Corolla yellow, rotate, 1–1.5 cm in diam.; tube ca. 1 mm; lobes obovate-elliptic, ca. 5 × 3–4 mm, apex rounded. Filaments connate basally into a ring, free parts ca. 2 mm; anthers linear, dorsifixed, opening by lateral slits, 1–1.5 mm. Ovary ovoid; style ca. 3 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

Herbs annual, erect, 35–75 cm tall, glabrous throughout. Leaves opposite, sessile or subsessile, ovoid-subglobose, 3–3.5 mm in diam. Fl. May–Jun.

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


琴叶过路黄 qin ye guo lu huang

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

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


紫脉过路黄 zi mai guo lu huang

Herbs perennial, to 45 cm tall, glabrous throughout. Stems erect, often branched above middle, sparsely black glandular punctate and striate. Branches usually shorter than leaves, leafy only at apex. Leaves opposite, sessile or petiole 2–4 mm; leaf blade lanceolate, 6–8 × 1.5–2.2 cm, densely dark glandular punctate, especially near margin, base cuneate, margin entire or obscurely repand, apex acuminate; midvein reddish, keeled abaxially; veins 5 or 6 pairs, prominent. Racemes terminal, compact, 4- to many flowered; peduncle 0.5–1.5 cm, glandular; bracts ovate, ca. 9 mm, adnate to upper part of pedicel. Pedicel 2–4 mm, glandular. Calyx lobes lanceolate, ca. 9 × 15 mm, black glandular punctate near apex, apex acuminat-subulate. Corolla yellow; tube 1.5–2 mm; lobes elliptic, 8–8.5 × ca. 5 mm, black glandular stripe, apex obtuse. Filaments connate basally into a ca. 2.5 mm high tube, free parts 2.5–4 mm; anthers oblong, dorsifixed, opening by lateral slits, 1.2–2 mm. Ovary ovoid; style 6–7 mm. Capsule subglobose, 3.5–5 mm in diam., elongate, black glandular. Fl. May.

* Forest margins, streamsides. SE Zhejiang.
slightly longer than calyx, deeply parted; tube 1.5–2 mm; abaxially transparent glandular punctate. Corolla yellow, ca. 6 mm, enlarging to 1 cm in fruit, densely strigillose, style 4.5 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

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


山川过路黄 nan chuan guo lu huang

Herbs perennial. 25–40 cm tall. Stems erect, dull brownish red at base, branched above middle, initially strigillose. Leaves opposite; petiole 1–4 cm; bracts narrowly lanceolate, 4–9.5 × 2–4 cm, abaxially subglabrous, axially densely bristly, becoming glabrescent, base subrounded, ovate acuminate; veins minutely red glandular punctate, 6–9 pairs; veins inconspicuous. Racemes axillary, lax, corymbiform, 2–4–7 mm. Calyx lobes lanceolate, 7–9 mm, glabrous, densely red glandular punctate, midvein distinctly raised axially. Racemes axillary, lax, corymbiform, 2–4–7 mm. Pedicel 0.8–2 cm, sparsely glandular. Calyx lobes lanceolate, 7–9 mm, glabrous, densely red glandular punctate, apex rounded. Filaments connate basally into a 2.5 mm high tube, free parts 2.5–4.5 mm; anthers dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary glabrous; style to 6 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Jul–Aug.

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


贯叶过路黄 guan ye guo lu huang

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

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


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


-shan luo guo lu huang

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

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

1a. Leaf blade 15–25 × 3–6 mm; flowers 5–6 mm .......................... 56c. var. *brunnelloides*

1b. Leaf blade 30–90 × 5–25 mm; flowers 7–9 mm.

2a. Leaves petiolate .......................... 56a. var. *melampyroides*

2b. Leaves sessile, clasper at base .......................... 56b. var. *amplexicaulis*
Plants to 48 cm tall. Leaves sessile, clasping at base, 4–7 ×1–2.5 cm. Corolla 7–9 mm; tube ca. 2 mm; lobes rhomboid-ovate, ca. 6 mm wide, apex acute. Fl. Jun.

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


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

59a. Lysimachia remota var. remota


Lysimachia leveillei Petitmengin.

Lysimachia leveillei Petitmengin.

Herbs perennial, 60–100 cm tall. Stems erect, usually purplish on lower part, subterete, branched at middle, sparsely pubescent, becoming glabrescent. Branches divaricate. Leaves opposite; petiole 2–4 mm; leaf blade lanceolate to linear-lanceolate, 1.5–2.5 cm × 3–6 mm. Corolla 5–6 mm; tube ca. 1 mm; lobes obovate-elliptic, ca. 4 mm wide. Fl. May–Jun.

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


59b. Lysimachia remota var. lushanensis

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

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

1a. Leaves pilose; flowers not crowded;
pedicel 7–17 mm ........................................... 59a. var. remota

1b. Leaves strigillose; flowers crowded;
pedicel 2–4 mm ........................................... 59b. var. lushanensis

58a. Lysimachia brittenii R. Knuth

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

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

Lysimachia deltoidea Wight var. deltoidea (Pax & K. Hoffmann) Handel-Mazzetti.

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

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

Variety deltoides is native to NE India and Sri Lanka.
60. Lysimachia japonica Thunberg, Fl. Jap. 83. 1784.

Herbs perennial. Stems prostrate to decumbent, 7–15 (–30) cm, usually branched from base, with grayish multicellular hairs. Leaves opposite; petiole 2–5 (–10) mm, narrowly winged; leaf blade broadly ovate to suborbicular, 1–2.5 × 0.7–2 cm, pubescent, transparent glandular punctate, base rounded to truncate, apex acute to obtuse; veins 2 or 3 pairs; veinlets inconspicuous. Flowers solitary, axillary. Pedicel recurved in fruit, 3–8 mm. Calyx lobes lanceolate, 3–4 mm, enlarged to 7–8 mm in fruit, pubescent. Corolla yellow, deeply parted, ca. as long as calyx, 5–8 mm in diam.; lobes triangular-ovate, transparent glandular punctate. Filaments connate basally into a tube ca. 3 mm high, free parts 1.5–2 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary and lower part of style pubescent; style 6–8 mm. Capsule subglobose, 3–4 mm in diam., pubescent at apex. Fl. Mar–Apr. 2n = 18, 20, 22.

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


叶苞过路黄 ye bao guo lu huang

Lysimachia ambiguca C. Y Wu; L. bracteata Forrest; L. franchetti R. Knuth; L. longisepala Forrest; L. ovalifolia Pax & K. Hoffmann; L. petitmenginii Bonati.

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

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


疏头过路黄 shu tou guo lu huang

Lysimachia argenteata L. H. Bailey; L. sutchuenensis Bonati.

Herbs perennial, 7–25 (–45) cm tall. Stems erect or arcuate at base, terete or slightly angulate, simple or short branched in upper part, with multicellular hairs. Leaves opposite, upper 2 or 3 pairs usually ± crowded; petiole 3–12 mm, narrowly winged. Lower leaves rhomboid-ovate to ovate, much smaller. Upper leaves ovate, rarely ovate-lanceolate, 2–8 × 0.8–2.5 cm, densely striigillose and sparsely transparent glandular, base subrounded to broadly cuneate, apex acute to subobtuse; veins 2 or 3 pairs; veinlets inconspicuous. Racemes terminal, abbreviated, often nearly capitate. Pedicel recurved in fruit, 4–10 (–18) mm. Calyx lobes lanceolate, 8–11 × 1–1.5 mm, abaxially pubescent, costate. Corolla yellow; tube 3–4 mm; lobes narrowly elliptic to obovate-elliptic, 7–11 × 5–6 mm, transparent glandular, apex acute to obtuse. Filaments connate basally into a 2–3 mm high tube, free parts 3–5 mm; anthers dorsifixed, opening by lateral slits. Ovary and lower part of style pubescent; style 5–6 mm. Capsule subglobose, 3–3.5 mm in diam. Fl. May–Jun.

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

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


尖瓣过路黄 jian ban guo lu huang

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

* Woodland margins, under shrubs; 1900–2300 m. W Sichuan.
Lysimachia grammica var. major Pampanini; L. nigroleuca Hemsley.

Herbs perennial, 13–35 cm tall. Stems arcuate, erect, simple or branched, with black glandular stripes and tangled multicellular hairs. Leaves opposite on lower part, alternate on upper; petiole 4–15 mm, narrowly winged; leaf blade ovate to rhomboid-ovate, 1.3–3.5 × 0.8–2.5 cm, pilose, black glandular striate, base rounded, truncate to short attenuate, apex acute to subobtuse. Flowers solitary, in axils of upper leaves. Pedicel recurved in fruit, 1–3 cm, densely pubescent. Calyx lobes ovate-lanceolate, ca. 7 mm, ciliate, sparsely pubescent, blackish glandular striate, apex long acuminate. Corolla yellow; tube ca. 3 mm; anthers dorsifixed, opening by lateral slits. Ovary glabrous. Style ca. 8.5 mm. Capsule unknown. Fl. May–Jun.

Lysimachia bodinieri Petitmengin; L. paridiformis Franchet var. stenophylla

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

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

Lysimachia trientaloides Hemsley.

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

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


Luo di mei (yan bian zhong)

Lysimachia tridentata Hemsley.

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

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


Luo di mei

L. paridiformis var. stenophylla

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

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


Luo di mei

L. paridiformis var. stenophylla

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

* Shaded dam areas in forests, mountain valleys; 500–1400 m. Guizhou, Hubei, Hunan, Sichuan.
Herbs perennial, 8–30 cm tall. Stems erect or sometimes prostrate, terete, simple or branched, rust-colored pilose. Leaves opposite, uppermost 2 or 3 pairs crowded; petiole 4–10 mm; leaf blade lanceolate to ovate-lanceolate, rarely ovate-elliptic, 1–4.5 × 0.5–1.6 cm, papery, glabrous, pilose or bristly, with many irregularly scattered glandular dots becoming slightly raised when dry, base cuneate-attenuate, rarely broadly cuneate, apex acute to subacute. Inflorescences terminal in capitulate clusters. Pedicel 1–4 mm, pilose. Calyx lobes lanceolate, ca. 8 mm, glabrous or sparsely pubescent near base, densely transparent glandular punctate, apex acuminate. Corolla yellow; tube 3–4.5 mm; lobes obovate-oblong, 4–6 mm, apex rounded. Filaments connate basally into a tube ca. 3 mm high, free parts 3–5 mm; anthers dorsifixed, opening by lateral slits. Ovary ovoid. Style ca. 3 mm. Capsule unknown. Fl. Apr.

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


叶头过路黄 ye tou guo lu huang

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

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

70a. Lysimachia phyllocephala var. phyllocephala

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

Lysimachia cephalantha R. Knuth.

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

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


石棉过路黄 *shi mian guo lu huang*

Herbs perennial, 20–60 cm tall. Stems erect, terete, branched in upper part, rust-colored pilose. Branches usually shorter than subtending leaves, leafy only near apex. Leaves opposite; petiole 0.7–2 cm, narrowly winged, densely pilose; leaf blade ovate, 2.5–5 × 1.4–3 cm, sparsely bristly, densely transparent glandular punctate, base subrounded, apex acute to subacute; veins 5 or 6 pairs. Racemes terminal, abbreviated or capitate, 2–6-flowered; bracts leaflike, ovate. Pedicel 2–4 mm, densely pubescent. Calyx lobes lanceolate, ca. 5.5 × 1 mm, sparsely pubescent, transparent glandular punctate. Corolla yellow; tube ca. 2.5 mm; lobes obovate-oblong, apex acute. Filaments connate basally into a tube ca. 3 mm high, free parts 2–3 mm; anthers dorsifixed, opening by lateral slits, 1.6–1.8 mm. Ovary pubescent apically. Style ca. 5 mm. Capsule globose, shorter than persistent calyx. Fl. Apr–May.

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

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


黔阳过路黄 *qian yang guo lu huang*

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

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


管茎过路黄 *guan jing guo lu huang*

Herbs perennial, 20–35 cm tall. Stems erect or arcuate at base, quadrangular, simple or weakly branched, pubescent or glabrous. Leaves opposite, upper 2 or 3 pairs crowded; petiole...
Herbs perennial, 40–45 cm tall. Stems ascending-erect from prostrate lower part, terete, subfleshy, simple or branched, scurfy glandular on upper parts. Leaves opposite, upper 2 pairs closely crowded; petiole 1–2 cm, narrowly winged; leaf blade ovate to ovate-lanceolate, 2.5–3.5 cm, abaxially glandular and densely minutely black glandular punctate, adaxially sparsely strigillose or glabrescent; base truncate to cordulate, apex obtuse. Filaments connate basally into a tube ca. 2–3 mm high, free parts 3–5 mm; anthers oblong-ovate, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style ca. 6 mm. Capsule subglobose, 4–5 mm in diam. Fl. May–June.


* Open forests, valley trailsides; 500–1000 m. Anhui, Fujian, Guangdong, Hunan, Jiangxi, Zhejiang.


点叶落地梅 dian ye luo di mei

Herbs perennial, to 45 cm tall. Stems ascending-erect from prostrate lower part, terete, subfleshy, simple or branched, scurfy glandular on upper parts. Leaves opposite, upper 2 pairs closely crowded; petiole 1–2 cm, narrowly winged; leaf blade ovate to ovate-lanceolate, 2.5–3.5 cm, abaxially glandular and densely minutely black glandular punctate, adaxially sparsely strigillose or glabrescent, base broadly cuneate to subrounded, apex acute; veins 4–6 pairs, veinlets invisible. Inflorescences terminal, subcapitate, 2–6-flowered; bracts ovate, longer than calyx. Pedicel ca. 3 mm, scurfy glandular. Calyx lobes lanceolate, 0.8–1.3 cm × 2.5–3.5 mm, densely black glandular punctate; veins 3, midvein distinctly raised. Corolla yellow; tube ca. 5 mm; lobes oblong, 1.1–1.3 cm × 3–5 mm, widely oblong-ovate, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary ovoid. Style ca. 7 mm. Capsule subglobose, ca. 7 mm in diam. Fl. May–July.
Lysimachia punctatilimba s disjunct in W Hubei and E Yunnan. In spite of this, the plants from both provinces are similar in all aspects.


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

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


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

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


Herbs perennial, 6–50 cm tall. Stems prostrate, rooting at nodes, upper part and branches ascending, fulvous pilose.

*Dichotomous keys: guang dong lin shi jiu*


**Herbs perennial.** Stems erect, 15–30 cm, simple or often branched above, with reddish multiflora. Leaves opposite; petiole 4–10 mm, narrowly margined, ± clasping; leaf blade ovate-lanceolate to lanceolate, 1.5–7 cm long, ± clasping. Calyx lobes lanceolate, 5–8.5 × 1–1.5 mm, abaxially sparsely pubescent. Filaments connate into a tube ca. 2.5 mm high, free parts 2.5–4.5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary pubescent. Style 5–7 mm. Capsule subglobose, 3–4 mm in diam. Fl. May–Jun. 2n = 48.

***Used for injuries, fractures, contusions, and strains.***


**Lysimachia congestiflora** Hemsley var. kwangtungensis Handel-Mazzetti.

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

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

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

**Herbs perennial,** 6–30(–45) cm tall. Stems erect or prostrate in lower part, simple or branched at base, fulvous pubescent. Leaves opposite, upper 2 pairs closely crowded; petiole 1–2.5 cm, densely pubescent; leaf blade ovate to ovate-lanceolate, ciliate, striigillose, densely black glandular striate and punctate; veins inconspicuous. Racemes terminal, abbreviated, capitulate; rachis to 1 cm; bracts broadly elliptic to

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

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

**Jia qin ye guo lu huang**

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

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**89. Lysimachia xiang bao guo lu huang**

**Lysimachia congestiflora** Hemsley var. kwangtungensis Handel-Mazzetti.

Herbs perennial, 6–30(–45) cm tall. Stems many, terete, simple or with few branches, sparsely pilose. Leaves opposite, sessile, upper 2 pairs crowded, forming a whorl; leaf blade lanceolate, 2–3.5 cm × 4–8 mm, abaxially strigillose on midvein, otherwise glabrescent, adaxially densely bristly, tapered toward dilated, auriculate, semiclasping base, apex acuminate; veins 4 or 5 pairs. Inflorescences terminal, capitulate, 4–8-flowered; bracts ovate, ca. as long as calyx. Pedicel 1–3 mm, densely pubescent. Calyx lobes subulate, ca. 8 mm, pubescent near apex and on midvein. Corolla yellow; tube ca. 3.5 mm; lobes elliptic, 7–8 × 3.5–4 mm, densely red glandular punctate on upper 1/2, apex obtuse. Filaments connate basally into a tube ca. 3 mm high, free parts 2–4 mm; anthers dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style ca. 7 mm. Capsule unknown. Fl. Jun.

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

**Jia qin ye guo lu huang**

**Lysimachia congestiflora** Hemsley var. *glabra* Franchet.

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

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

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

### 1a. Stems usually simple; leaf blade ovate to ovate-lanceolate, apex acute to acuminate ........................................... 87a. var. alfredii

### 1b. Stems usually branched from base; leaf blade ovate to suborbicular, apex obtuse to rounded ........... 87b. var. chrysosplenioides

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

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

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

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


**广西过路黄** xiao guang xi guo lu huang


Stems 5–12 cm tall, usually branched at base. Leaf blade ovate, occasionally suborbicular, 2.5 × 1.3–3.5 cm, reddish when young, apex obtuse to rounded. Fl. May.

* Open forests. Guangxi, Guizhou.


**南亚过路黄** nan ya guo lu huang

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

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


**浙江过路黄** zhe jiang guo lu huang

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

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

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

**南亚过路黄** nan ya guo lu huang

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

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

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

#### 90. *Lysimachia hemsleyana* Maximowicz ex Oliver, Hooker's Icon. Pl. 20: t. 1890. 1891.

**点腺过路黄** dian xian guo lu huang

Herbs perennial. Stems prostrate, to 40 cm, 1.2–1.8 cm; leaf blade ovate to broadly ovate, 1.5–4 1.2–3 cm, abaxially sparsely so or glabrescent, with many scattered brown or occasionally transparent glandular dots, adaxially densely strigillose, base subrounded, truncate to cordulate, apex acute; veins 3 or 4 pairs, veinlets obscure. Flowers solitary, in axils of medial leaves. Pedicel 0.7–1.5 cm, elongated to 2.5 cm and recurved in fruit, densely pubescent. Calyx lobes narrowly lanceolate, 7–8 × 1–1.5 mm, puberulent, costate. Corolla yellow; tube ca. 2 mm; lobes elliptic to elliptic-lanceolate, 4–6 × 3–4 mm, sparsely dull red or brown glandular punctate, apex acute to subobtuse. Filaments connate basally into a tube ca. 2 mm high, free parts 3–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style 6–7 mm. Capsule subglobose, 3.5–4 mm in diam. Fl. Apr-Jun.

* Clearings at edges of mountain woodlands, stream sides; 400–1600 m. Anhui, Fujian, S Henan, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, E Sichuan, Zhejiang.
Herbs perennial, to 30 cm tall. Stems prostrate, ascending, branched in upper part, with dense rust-colored multicellular hairs 0.5–0.8 mm. Leaves opposite; petiole 1/2 to as long as leaf blade; leaf blade broadly ovate, rarely suborbicular, 5–30 × 0.3–2.7 cm, abaxially pilose, sparsely transparent glandular punctate, axadially strigillose, base truncate, occasionally cuneate, apex obtuse to subrounded; veins inconspicuous. Flowers solitary, in axes of upper leaves. Pedicel 3–4 mm, rust-colored pilose. Calyx lobes lanceolate, 4–6 mm, pilose, apex acuminate. Corolla yellow, ca. 1.2 cm in diam.; tube ca. 2 mm; lobes obovate to broadly elliptic, 6–7 × 4–5 mm, transparent glandular punctate, apex rounded. Filaments connate basally into a tube; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.5 mm. Ovary ovoid. Style ca. 4.5 mm, pubescent on lower part. Capsule subglobose, 3–4 mm in diam. Fl. May–Jun.

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


**Chinese**

翅萼过路黄  

Herbs perennial, to 90 cm. Stems erect, later arched to reclined, shortly branched, initially with rust-colored multicellular hairs, glabrescent. Leaves opposite; petiole 3–10 mm, rust-colored pubescent; leaf blade lanceolate, 3–7 × 1–2 cm, abaxially sparsely pubescent, glabrescent, except on veins, obscurely brown or black glandular striate, axadially glabrous, base rounded, apex acute to acuminate; veins 3 or 4 pairs, veinlets inconspicuous. Flowers solitary, axillary. Pedicel 1–1.5 cm, rust-colored pubescent. Calyx lobes lanceolate, 5–6 mm, abaxially cristate; crest widest at base, ca. 2 mm, glabrous, brown glandular striate. Corolla yellow; tube ca. 2 mm; lobes lanceolate, 7–8 × 2.5–3 mm, sparsely brown glandular striate, apex acute. Filaments connate basally into a tube; anthers oblong-basally into a tube, 2 mm high, free parts 4–5 mm; anthers oblong, dorsifixed, opening by lateral slits, ca. 1.2 mm. Ovary glabrous. Style ca. 5 mm. Capsule unknown. Fl. May–Jun.

* Grassy mountain slopes. E Sichuan.


**Chinese**

宝兴过路黄  赤 Eğer guo lu huang

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

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


**Chinese**

川西过路黄  朝 xi guo lu huang

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

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


**Chinese**

距萼过路黄  朱 e guo lu huang

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

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


**Chinese**

过路黄  guo lu huang

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

* Streamsides; 1000–1600 m. NW Hubei, S Shaanxi, E Sichuan.
Lysimachia christiniae var. intermedia Pampanini; L. christiniae var. pubescens Franchet; L. fargesii Franchet; L. glandulosus R. Knuth; L. latronum H. Léveillé & Vaniot; L. legendrei Bonati.

Herbs perennial. Stems procumbent, 20–60 cm, glabrous to sparsely or densely rust-colored pilose, glandular on young parts. Leaves opposite; petiole shorter than to ca. as long as leaf blade; leaf blade ovate to suborbicular or reniform, (1.5–) 6(–8) × 1–4(–6) cm, transparent glandular striate, but stripes becoming black and distinct when dry, glabrous to densely strigillose, base truncate to cordate, apex acute, obtuse, or rounded. Flowers solitary, axillary, pedicel 1–5 cm, usually shorter than subtending leaves, glabrous to densely pilose. Calyx lobes lanceolate, elliptic–lanceolate, to linear or subspatulate, (4–)5–7(–10) mm, glabrous, pubescent, or only margin pubescent, apex acute to subobtuse. Corolla yellow; tube 2–4 mm; lobes narrowly ovate to sub lanceolate, 5–11 mm, long black glandular, margin membranous, apex acute to obtuse, costate. Filaments 6–8 mm, lower 1/2 connate into a tube; anthers ovate, dorsifixed, ca. 0.5 mm; anthers ovate, dorsifixed, ca. 1 mm. Ovary obvoid. Style 6–8 mm. Capsule subglobose, 4–5 mm in diam., sparsely black glandular striate. Fl. May–Jul.

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

Used as a diuretic.


锈毛过路黄 xiù máo guò lù huáng

Lysimachia drymarifolia Franchet var. grandiflora Bonati.

Herbs perennial, 7–35 cm tall. Stems procumbent, simple to weakly branched, with dense rust-colored multicellular hairs. Leaves opposite; petiole 1/2–2/3 as long as leaf blade, rust-colored pilose or glabrescent; leaf blade broadly ovate to suborbicular or reniform, 1.25–2 × 0.8–2.2 cm, sparsely strigillose, densely black glandular striate, base rounded to cordate, apex obtuse to rounded; veins inconspicuous. Flowers solitary, axillary, pedicel 1–4 cm, usually 1–2 x as long as subtending leaves, rust-colored pilose or occasionally glabrescent. Calyx lobes oblong-lanceolate, 5–6 mm, abaxially sparsely pilose, narrowly hyaline margined, glabrous, apex subobtuse. Corolla yellow; tube 1.5–2 mm; lobes ovate to oblong-ovate or obtuse, sparsely black glandular striate. Filaments connate basally into a tube, 1.5–2 mm high, free parts 2–3 mm; anthers ovate, dorsifixed, opening by lateral slits, ca. 1 mm. Ovary glabrous or occasionally pubescent. Style 4–5 mm. Capsule unknown. Fl. Apr–May.

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

Herbs biennial, glabrous, 10–50 cm tall. Stems often many, erect, terete, usually branched in upper part. Leaves alternate; petiole 0.5–2.5 cm or upper leaves sometimes sessile; leaf blade spatulate to obovate or oblong-ovate, 6–12 × 0.5–2.5 cm, sparsely black glandular punctate, tapered at base, margin narrowly revolute, apex obtuse to subrounded. Racemes erect, initially coniform, gradually elongated, 3–12 cm; lower bracts spatulate, leaflike, gradually reduced upward. Pedicel ca. as long as to slightly shorter than bracts. Calyx lobes broadly lanceolate to elliptic, 4–7 mm, black glandular, margin membranous, apex acute to obtuse, costate. Corolla white; tube ca. 2 mm; lobes erect, ligulate-oblong, ca. 7 mm, apex obtuse. Stamens included; filaments adnate to lower part of corolla lobes, free parts ca. 0.5 mm; anthers ovate, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 2 mm. Capsule subglobose, 2–3 mm in diam. Fl. Jul–Aug. 2n = 24.


98. Lysimachia pentapetala (Bunge) Duby; Lysimachia unguiculata Diels.

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

* Damp areas in mountain valley forests, stream sides; less than 100 m. Fujian, Guangdong, Jiangsu, Liaoning, Shandong, Taiwan, Zhejiang [Japan, Korea, Philippines; Indian Ocean Islands (Mauritius, Reunion), Pacific Islands].


滨海珍珠菜 biīn hái zhēn zhu ē cài

Lysimachia lineariloba Hooker & Arnott; L. nebeliana Gilg.

Herbs biennial, glabrous, 10–50 cm tall. Stems often many, erect, terete, usually branched in upper part. Leaves alternate; petiole 0.5–2.5 cm or upper leaves sometimes sessile; leaf blade spatulate to obovate or oblong-ovate, 6–12 × 0.5–2.5 cm, sparsely black glandular punctate, tapered at base, margin narrowly revolute, apex obtuse to subrounded. Racemes erect, initially coniform, gradually elongated, 3–12 cm; lower bracts spatulate, leaflike, gradually reduced upward. Pedicel ca. as long as to slightly shorter than bracts. Calyx lobes broadly lanceolate to elliptic, 4–7 mm, black glandular, margin membranous, apex acute to obtuse, costate. Corolla white; tube ca. 2 mm; lobes erect, ligulate-oblong, ca. 7 mm, apex obtuse. Stamens included; filaments adnate to lower part of corolla lobes, free parts ca. 1.5 mm; anthers oblong, dorsifixed, ca. 1.2 mm. Ovary conical, narrowed upward to style. Capsule pyriform, ca. 5 mm in diam. Fl. May–Jun. 2n = 20*.

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


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

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


* 矮桃 ai tao

Herbs perennial, 40–100 cm tall, with creeping rhizomes. Stems erect, simple, sparsely pubescent or glabrescent, dull red at base. Leaves alternate, subsessile or petiole 2–10 mm; leaf blade narrowly elliptic to broadly lanceolate, 6–16 × 2–5 cm, ± pubescent, sparsely black glandular punctate, base attenuate, apex acuminate. Racemes densely flowered, ca. 6 cm at anthesis, to 20–40 cm in fruit; rachis densely fulvous pubescent; bracts linear-subulate, slightly longer than pedicels. Flowers usually secund. Pedicel 4–6 mm. Calyx lobes ovate-elliptic, 2.5–3 mm, ciliate, margin membranous, apex rounded. Corolla white; tube ca. 1.5 mm; lobes narrowly oblong, 3.5–4.5 mm, apex obtuse. Stamens included; filaments adnate to corolla tube, free parts ca. 2 mm, glandular; anthers oblong, dorsifixed, ca. 1 mm. Ovary ovoid. Style 3–3.5 mm. Capsule subglobose, 2.5–3 mm in diam. Fl. May-Jul. 2n = 24.

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


* 虎尾草 hu wei cao

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

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


* 大叶珍珠菜 da ye zhen zhu cai

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

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


* 天目珍珠菜 tian mu zhen zhu cai

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

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


* 红根草 hong gen cao

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

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


**短柱珍珠菜 duan zhu zhen zhu cai**

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

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


**折轴珍珠菜 zhe ban zhen zhu cai**

Herbs perennial, 20–50 cm tall, smooth except for sparingly glandular inflorescences. Stems erect to erect-ascending, quadrangular, usually branched at base, dark purple or black glandular striate. Leaves alternate; petiole 1/5–1/3 as long as leaf blade; leaf blade elliptic, 1.5–3.8 × 0.6–1.7 cm, densely dark purple or black glandular punctate, base short attenuate, margin obscurely undulate, apex acute. Racemes 15–50 cm, lax; bracts subulate. Pedicel erect to spreading, ca. 2 mm, slightly shorter than bracts. Calyx lobes oblong, 3.4–5 mm, dark purple or black glandular striate outside, margin membranous, apex obtuse to subacute. Corolla white; tube 2–2.5 mm; lobes reflexed, spatulate, 5–6 × 1.5–2 mm, dark purple striate, apex obtuse. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 1 mm. Capsule globose, 5–6 mm in diam.

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


**粉红珍珠菜 fen hong zhen zhu cai**

Herbs perennial, 30–50 cm tall, without creeping rhizomes. Stems erect, terete, often branched in upper part, densely puberulent and short-stalked glandular. Leaves alternate; petiole indistinct or leaves sessile; leaf blade narrowly lanceolate to linear-lanceolate, 4–6 × 5–(7–9) mm, ± glandular and obscurely punctate, base cuneate, margin narrowly revolute, apex acute; midvein raised abaxially, veins inconspicuous. Racemes to 25 cm in fruit; bracts subulate, 2.5–3.5 mm. Pedicel 1–2 mm. Calyx lobes elliptic, ca. 1.5 mm, glandular ciliate, margin membranous. Corolla white, ca. 3 mm, parted slightly below middle; lobes elliptic to ovate-elliptic, thick black glandular, margin membranous, apex obtuse. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers ovate, dorsifixed, ca. 1 mm. Ovary ovoid. Style ca. 0.8 mm. Capsule subglobose, ca. 2 mm in diam. Fl. Jun–Jul.

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


**藜状珍珠菜 li zhuang zhen zhu cai**

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

Margins of cultivated fields, grassy mountain slopes; 200–3200 m. SE Xizang, C and N Yunnan [Bhutan, India, Kashmir, N Myanmar, Nepal, Pakistan].
Herbs annual, glabrous, to 50 cm tall. Stems erect, obtusely quadrangular, usually simple. Leaves alternate; petiole 0.5–2 cm, narrowly winged; leaf blade lanceolate, 2.5–5.5 × 0.9–1.8 cm, black glandular striate along midvein and margin, base attenuate, apex acuminate; veins 5 or 6 pairs, slightly raised abaxially. Racemes initially coniform, gradually elongated to 15 cm in fruit, densely flowered; bracts linear, 4–7 mm, black striate on margin. Pedicel slightly angular, ca. 5 mm, elongated to 8 mm in fruit. Calyx lobes lanceolate, ca. 3.5 × 0.8 mm, abaxially with 2 vertical glandular stripes, margin membranous, apex subobtuse. Corolla pink; tube ca. 1.5 mm; lobes obovate, 4.5–5.5 × 2.5–3 mm, with 2 parallel red glandular stripes at middle, apex rounded. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers elliptic, dorsifixed, ca. 1 mm. Ovary ovoid. Style ca. 2 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

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


露珠珍珠菜 lu zhu zhen zhu cai

*Lysimachia circaeoides var. lyratifolia* Handel-Mazzetti.

Herbs perennial, glabrous, 45–70 cm tall. Stems erect, obtusely quadrangular, branched in upper part. Leaves opposite, sometimes alternate in upper part of stem; petiole 0.5–1.5 cm, narrowly winged; leaf blade lanceolate to elliptic-lanceolate or elliptic, 5–10 × 1.5–3 cm, abaxially very densely and minutely rust-colored glandular and sparsely dull red or black glandular punctate near margin, base cuneate, apex acute; veins 6 or 7 pairs, veinlets inconspicuous. Racemes 5–15 cm; lanceolate, lower bracts often longer than pedicels, gradually reduced upward to subulate, 2.5–4 mm. Calyx lobes ovate-lanceolate, 3–4 mm, ciliate, abaxially with 2–4 thick glandular stripes, apex acute. Corolla white; tube ca. 2 mm; lobes rhomboid-ovate, 2.5–3.5 mm, brown glandular striate, apex acute. Stamens included; filaments adnate to base of corolla lobes, free parts ca. 1 mm; anthers elliptic, dorsifixed, less than 1 mm, red glandular at apex. Ovary glabrous. Style ca. 2 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May–Jun.

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


耳叶珍珠菜 er ye zhen zhu cai

*Lysimachia paxiana* R. Knuth.

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


遂瓣珍珠菜 sui ban zhen zhu cai

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

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


黑腺珍珠菜 hei xian zhen zhu cai

*Lysimachia paludicola* Hemsley.

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

Herbs perennial, glabrous, 30–65 cm tall. Stems erect, quadrangular and usually branched in upper part. Leaves opposite, often alternate in upper part of stem, sessile or petiole 5–10 mm; leaf blade lanceolate to elliptic-lanceolate or elliptic, 4–10 × 0.8–4 cm, base attenuate, margin obscurely repand, apex acute to acuminate; veins 4–6 pairs, veinlets inconspicuous. Racemes 5–15 cm, bracts linear-lanceolate, 3–5 mm. Pedicel 2–7 mm, elongated slightly in fruit. Calyx lobes linear-lanceolate, ca. 1.5 mm, hyaline margined, apex red glandular. Ovary globose. Style to 5 mm. Capsule subglobose, ca. 3 mm in diam. 2n = 24.

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

1a. Corolla parted below middle; leaves glaucous abaxially .......... 115a. var. stenosepala

1b. Corolla parted to middle; leaves minutely rust-colored glandular abaxially ........................................ 115b. var. flavescens

115a. Lysimachia stenosepala var. stenosepala

115b. Lysimachia stenosepala var. flavescens

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


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

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


Herbs perennial, glabrous, 40–90 cm tall. Stems erect, with raised lines descending from base of leaf petioles, woody at base, usually much branched. Leaves alternate, sometimes subopposite; petiole 1–4 cm, narrowly winged; leaf blade lanceolate to elliptic-lanceolate, 6–13 × 1.5–4 cm, submembranous when dry, sparsely black glandular punctate or striate, especially near margin, base cuneate, apex acute to acuminate. Racemes terminal, 10–25 cm; bracts subulate, 2–3 mm. Pedicel 2–9 mm, elongated to 1–1.8 cm in fruit. Calyx lobes narrowly lanceolate, 3–4 mm, glandular ciliate, abaxially black striate. Corolla white or tinged with purple; tube ca. 1.5 mm; lobes oblong-spatulate, 1–2.5 mm, apex rounded; sinus between lobes subrounded. Stamens long exserted; filaments adnate to base of corolla lobes; anthers ovate, purple, dorsifixed, ca. 1 mm. Ovary ovoid. Style ca. 5 mm. Capsule globose or slightly depressed, 3–4 mm in diam. Fl. Apr–May.
Wastelands near villages, roadsides, open forests near streams. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Taiwan, Yunnan [Bhutan, India, Indonesia, Japan, Laos, Philippines, Sikkim, Thailand, Vietnam, Pacific Islands].


Herbs perennial, to 1 m tall. Stems erect, obtusely quadrangular, branched in upper part, apex and young shoots densely glaucous. Leaves alternate; petiole 1.5–3.5 mm, narrowly winged; leaf blade lanceolate, 5–10 × 0.8–2 cm, glabrous, reddish brown or black glandular punctate or striate near margin, base cuneate-attenuate, margin obscurely undulate, apex acute to subacuminate; veins 4 or 5 pairs, veinlets conspicuous abaxially. Racemes terminal, 8–13 cm; bracts subulate. Pedicel slightly angular, 5–7.5 mm, elongated to 1 cm in fruit. Calyx lobes lanceolate, 4–4.5 mm, with 4 vertical brown glandular stripes outside, margin membranous. Corolla pale purple, ca. 3.5 mm, shorter than calyx; tube ca. 1.5 mm; lobes narrowly oblong, ca. 2 × 0.8 mm, epunctate, apex obtuse, sinus between lobes obtuse. Stamens exerted; filaments adnate to base of corolla lobes, free parts ca. 3.5 mm; anthers ovate, dorsifixed, ca. 0.5 mm. Ovary glabrous. Style to 4 mm. Capsule subglobose, slightly shorter than persistent calyx. Fl. Jun. *Grassy mountain slopes: 1700–1800 m. NW Yunnan (Fugong Xian).


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

Herbs perennial, 30–70 cm tall. Stems erect, terete, usually branched above middle. Leaves alternate, sometimes opposite on lower part of stem; petiole ca. 1 cm; leaf blade lanceolate, 5–8 × 1–1.2 cm, abaxially very densely minutely rust-colored glandular, base attenuate, apex acuminate. Racemes terminal, densely flowered; bracts subulate. Pedicel 5–7 mm, ca. as long as to longer than bracts, densely glandular. Calyx lobes lanceolate, 5–6 mm, abaxially black striate, margin membranous, apex slightly recurved. Corolla white or pink; tube ca. 2 mm; lobes suborbicular, ca. 4 mm, base clawed, occasionally with 2 dark purple glandular stripes at middle, sinus between lobes rounded. Stamens long exerted; filaments adnate to base of corolla lobes, free parts 3–4 mm; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 6 mm. Capsule subglobose, 4–5 mm in diam. Fl. Jun–Jul. *Ravines; ca. 2200 m. SW Sichuan (Dechang Xian).

122. Lysimachia violascens Franchet, J. Bot. (Morot) 9: 459. 1895. 大花珍珠菜 da hua zhen zhu cai

Herbs perennial, glabrous, 45–75 cm tall. Stems erect, terete below, obtusely quadrangular above. Lower leaves opposite; upper leaves alternate or subopposite; leaf blade subsessile, lanceolate, 5–7(–11) × 0.8–1.2(–1.8) cm, abaxially glaucous, with or without few obscurely raised dots, adaxially dark green, tapered to both ends. Racemes terminal; bracts lanceolate. Pedicel 0.8–1.2 cm, slightly longer than bracts. Calyx lobes lanceolate, ca. 4.5 × 1.2 mm, abaxially brown glandular striate, hyaline margined. Corolla pink; tube ca. 2.5 mm; lobes broadly obovate to suborbicular, ca. 3.5 mm, epunctate, base clawed. Stamens exerted; filaments adnate to base of corolla lobes, free parts ca. 4 mm; anthers ovate, dorsifixed, ca. 0.8 mm. Ovary ovoid. Style ca. 4.5 mm. Capsule unknown. Fl. Jul. *Margins of valley woodlands; 2000–2400 m. N Yunnan (Heqing Xian).
vertical brown glandular stripes, margin membranous, apex acute. Corolla pink, 0.8–1.2 cm, parted slightly below middle; lobes obovate, glandular punctate, apex rounded, sinus between lobes acute. Stamens ca. 2/3 as long as corolla lobes; filaments adnate to base of corolla lobes; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 6 mm. Capsule subglobose, ca. 3 mm in diam.

* Mountain slopes. N Yunnan.


丽江珍珠菜 * li jiang zhen zhu cai

Herbs perennial, glabrous, 35–75 cm tall. Stems erect, simple or weakly branched, ± glandular on upper part. Leaves alternate; petiole 3–10 mm, narrowly winged; leaf blade lanceolate, 3–7 × 0.6–1.6 cm, dark glandular punctate especially near margin, base attenuate, obscurely undulate, apex acuminate. Racemes terminal, 3–10 cm, elongated to 20 cm in fruit; bracts linear-lanceolate, 5–8 mm. Pedicel 4–5 mm. Calyx 3.5–6 mm; lobes lanceolate, abaxially glandular striate. Corolla white to pink, 6–7.5 mm, parted slightly below middle; lobes obovate, apex rounded, sinus between lobes rounded. Stamens ca. as long as corolla lobes or longer; filaments adnate to base of corolla lobes; anthers elliptic, dorsifixed, ca. 1 mm. Ovary glabrous. Style ca. 5 mm. Capsule subglobose, 3–4 mm in diam.

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

1a. Calyx 5–6 mm, slightly shorter than corolla; stamens ca. as long as corolla.…………………………………… 123a. var. lichiangensis

1b. Calyx 3.5–4 mm, ca. 1/2 as long as corolla; stamens longer than corolla.…………………………………… 123b. var. xerophylla

123a. Lysimachia lichiangensis var. lichiangensis

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

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

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

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


干生珍珠菜 * gan sheng zhen zhu cai


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


大理珍珠菜 * da li zhen zhu cai

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

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

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

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


波缘珍珠菜 * bo yuan zhen zhu cai

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

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


粗壮珍珠菜 * cu zhuang zhen zhu cai
Herbs perennial, 1–1.5 m tall. Stems erect, quadrangular, usually branched in upper part. Leaves opposite, suberect, sessile; leaf blade linear-lanceolate, 5–11 cm, subleathery, abaxially glaucous, densely minutely dark glandular punctate, base short attenuate, semialate, apex acute. Racemes terminal, initially coniform, gradually elongated to 24 cm; bracts acuminate-subulate, ca. 6.5 × 1 mm, densely glandular punctate. Pedicel spreading, to 1 cm, glandular. Calyx lobes purplish, ovate, ca. 4 × 1.2 mm, sparsely dark glandular striate and punctate near apex, base dark green, margin membranous. Corolla reddish or pale purple; tube ca. 1.5 mm; lobes obovate, ca. 5 × 4 mm, red striate near apex, base slightly clawed, margin crenulate, apex rounded. Stamens exserted, to 8.5 mm; filaments adnate to base of corolla lobes; anthers elliptic, dorsifixed, ca. 1 mm. Ovary ovoid. Style ca. 5–8 mm. Capsule subglobose, ca. 4 mm in diam. Fl. Jul.
* Among shrubs on mountain slopes; 2400–2700 m. SW Yunnan (Tencheng Xian).


金江珍珠菜 jin jiang zhen zhu cai

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

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


墨脱珍珠菜 mo tuo zhen zhu cai

Herbs perennial, 40–80 cm tall. Stems erect, distinctly quadrangular, branched above middle, glabrescent. Leaves alternate or subopposite on lower part of stem, sessile; leaf blade oblanceolate, 7–12 × 1.8–2.6 cm, tapered toward subauriculate-dilated base, glabrescent, red glandular punctate and striate near margin, margin entire or obscurely undulate, apex acute; midvein keeled near base abaxially; veins 6–9 pairs, veinlets inconspicuous. Racemes terminal, to 8 cm in fruit; bracts subulate, 3.5–8 mm. Pedicel angular, 1–1.5 cm in fruit. Calyx lobes lanceolate, ca. 5.5 × 1.7 mm, red glandular striate outside, margin membranous, costate. Corolla pink; tube ca. 3 mm; lobes oblong, ca. 5 × 2 mm, sparsely red glandular striate, apex obtuse, sinus between lobes acute. Stamens ca. as long as corolla lobes, adnate to their bases; anthers oblong, dorsifixed, ca. 1.5 mm. Capsule subglobose, ca. 3 mm in diam.

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


中甸珍珠菜 zhong dian zhen zhu cai

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

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


长蕊珍珠菜 chang rui zhen zhu cai

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

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

**泽珍珠菜** *zé zhēn zū chái*

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

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


**总花珍珠菜** *zǒng huā zhēn zū chái*

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

* Rock crevices of mountain slopes. NE Yunnan.


**泽珍珠菜** *zé zhēn zū chái*

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

Herbs annual or biennial, glabrous, 10–30 cm tall. Stems erect, simple or branched. Basal leaves blade spatulate to oblancoelate, 2.6–6 × 0.5–2 cm, with winged petioles, usually withered before anthesis; stem leaves alternate, rarely opposite, sessile or subsessile; leaf blade obovate to oblancoelate or linear, 1–5 cm × 2–12 mm, sparsely black or reddish glandular punctate, base attenuate, apex acuminate to obtuse. Racemes terminal, initially coniform, to 5–10 cm in fruit; bracts linear, 4–6 mm. Pedicel 0.8–1.2 cm. Calyx lobes lanceolate, 3–5 mm, black glandular striate outside, hyaline margined. Corolla white, narrowly campanulate, 6–12 mm, parted to middle; lobes oblong or oblong-obovate, epunctate, apex rounded. Stamens slightly shorter than corolla lobes; filaments ca. 1.5 mm; anthers sublinear, dorsiﬁxed, ca. 1.5 mm. Ovary glabrous. Style ca. 5 mm. Capsule subglobose, 2–3 mm in diam. Fl. Mar–Jun.

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


**小叶珍珠菜** *xiǎo yè zhēn zū chái*

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

Herbs biennial or perennial, glabrous, 30–50 cm tall. Stems erect or diffuse, usually branched from base; branches flagelliform. Leaves alternate, sessile or subsessile; leaf blade narrowly elliptic to oblanceolate or spatulate, 1.0–4.5 cm × 5–10 mm, sparsely dark purple or black glandular punctate, base cuneate, apex acute to obtuse. Racemes terminal, 4–8 cm; bracts subulate, 5–10 mm. Lowest pedicels to 1.5–2 cm; anthers narrowly oblong, dorsiﬁxed, 1.5–2 mm. Ovary ovoid. Style ca. 6 mm. Capsule subglobose, ca. 3 mm in diam. Fl. Apr–Jun.

* Wet streamside meadows. Anhui, Fujian, Guangdong, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.


**多育星宿菜** *duō yù xīng xiù cài*

Herbs perennial, 10–28 cm tall. Stems often many, ascending to erect, often prostrate at base, ± glandular puberulent. Leaves opposite; petiole narrowly winged by and ca. as long as decurrent leaf blade; leaf blade ovate or obtuse to oblanceolate, 7–12(–20) cm × 6–12(–16) mm, glabrous, sparsely dark glandular striate, base attenuate, apex rounded or apiculate. Flowers 4 or 5, solitary in axils of upper leaves. Pedicel 1–1.5 cm, glandular puberulent. Calyx lobes lanceolate, 4–5 mm, dark purple or black glandular striate outside, apex blunt. Corolla pink or white, narrowly campanulate; tube ca. 4 mm; lobes oblong, 4–5 × 1.5–2 mm, epunctate, apex obtuse. Stamens included; filaments adnate to lower part of corolla lobes, free parts ca. 2 mm; anthers narrowly oblong, dorsiﬁxed, 1.5–2 mm. Ovary ovoid. Style ca. 6 mm. Capsule subglobose, ca. 3 mm in diam. Fl. Apr–Jun.

* Wet streamside meadows, rice paddies. Anhui, Fujian, Guangdong, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.
Ovary ovoid. Style ca. 4 mm. Capsule subglobose, 3–4 mm in diam. Fl. May–Jun. \(2n = 24\).

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


矮星宿菜 ai xing su cai


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

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


异花珍珠菜 yi hua zhen zhu cai

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

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

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


球尾花 qiu wei hua

Naumburgia thyrsiflora (Linnaeus) Reichenbach.

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

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


七瓣莲属 qi ban lian shu


Two species: Europe, Asia and NW North America; one species in China.


七瓣莲 qi ban lian

Plants 5–25 cm tall. Rhizomes creeping, with numerous fibrous roots. Stems usually simple. Lower leaves 1–3 or more; upper leaves 5–10. short petiolate or subsessile; leaf blade obovate-lanceolate to lanceolate, 2–7 × 1–2.5 mm, base cuneate-attenuate, margin entire or minutely dentate, apex short acuminate. Flowers in axils of upper leaves. Pedicel ﬁliform, 2–4 cm. Calyx lobes linear-lanceolate, 4–7 mm. Corolla ca. 2 × as long as calyx, 1.1–1.9 cm in diam.; lobes elliptic to elliptic-lanceolate, apex acute or apiculate. Stamens slightly shorter than corolla lobes; filaments 4–5 mm. Ovary

Mixed forests; 900–1300 m. N Hebei, Heilongjiang, Jilin, E Nei Mongol [Circumboreal].


海乳草属  hai ru cao shu

Herbs perennial, glabrous. Leaves decussate or alternate on upper part of stem, sessile. Flowers solitary, axillary, subsessile or short pedicellate. Calyx petaloid, 5-parted to ± middle. Corolla absent. Stamens 5, attached at base of calyx and alternate with

One species: widely distributed in the N temperate zone.

海乳草  hai ru cao

Plants 3–25 cm tall. Rootstock with scalelike, submembranous leaves. Stems erect or procumbent at base, fleshy, simple or branched. Leaf blade linear to narrowly elliptic-oblong or subspatulate, 4–15 × 1.5–3.5(–5) mm, subfleshy, base cuneate, margin entire, apex obtuse to acute. Flowers in axils of upper leaves. Pedicel 0.1–0.7(–1.5) mm.

Calyx white or pink, 3–5 mm; lobes obovate-oblong, 1.5–2 mm wide, apex rounded. Stamens slightly shorter than calyx lobes. Ovary glandular punctate on upper 1/2. Style ca. as long as stamens. Capsule 2.5–3 mm in diam. Fl. Jun. 2n = 30.

Beaches, muddy shallows, saline soils, inland salt marshes. Anhui, Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Rei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Sichuan, Xinjiang, Xizang [Japan, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan; Europe, North America, temperate and arctic regions of northern hemisphere].

琉璃繁缕属  liu li fan lu shu

Herbs annual, biennial, or perennial, usually glabrous. Stems erect to decumbent. Leaves opposite or alternate, rarely verticillate, short petiolate to sessile, margin entire. Flowers solitary, axillary, 5-merous. Calyx parted nearly to base; lobes spreading. Corolla blue, red, or white, rotate or funnelform; tube very short or obsolete; lobes contorted in bud. Stamens attached at base of corolla; filaments usually pubescent; anthers ellipsoid, apex obtuse, dorsifixed. Ovary ovoid. Style filiform; stigma obtuse. Capsule globose, circumscissile, many seeded.

About 28 species: throughout the temperate zone in Africa, Asia, Europe, North America, and South America; one species in China.

琉璃繁缕  liu li fan lu

Herbs annual or biennial, 10–30 cm tall. Stems quadrangular, short winged on ridges, usually branched at base. Leaves opposite, occasionally in whorls of 3, sessile, ovate to narrowly ovate, 0.7–1.8(–2.5) cm × 3–12(–15) mm, minutely glandular punctate mainly abaxially, base subrounded, margin entire, apex obtuse or acute. Pedicel recurved in fruit, 2–3 cm. Calyx lobes linear-lanceolate, 3.5–6 mm, hyaline margined, apex long acuminate, costate. Corolla blue or red, rotate, 4–6 mm, parted nearly to base; lobes obovate-elliptic, 2.7–3 mm wide, margin entire to denticulate. Stamens 1/3–1/2 as long as corolla; filaments pubescent. Style ca. 1.5 mm. Capsule ca. 3.5 mm in diam. 2n = 22, 28, 40*.

Cultivated areas, wastelands, roadsides. Fujian, Guangdong, Taiwan, Zhejiang [Afghanistan, Bhutan, India, Japan, Kashmir, Kazakhstan, Kyrgyzstan, Nepal, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan; NW Africa, SW Asia, Australia, Europe, North America, South America].

假报春属  jia bao chun shu

Herbs perennial. Leaves basal, long petiolate, cordate-orbicular, palmately lobed; lobes dentate to incised. Inflorescences scapose, umbellate, with bracts. Flowers 5-merous. Calyx deeply parted; lobes lanceolate, persistent. Corolla tube short; limb funnelform, parted to 1/2 or below. Stamens included, attached at base of corolla; filaments dilated, connate basally into a ring; anthers apiculate. Ovary ovoid. Style filiform, exerted; stigma small, capitate. Capsule ovoid to subcylindric, dehiscing by 5 short valves. Seeds numerous, compressed globose.

About 10 species: from C Europe to N Asia; one species in China.

假报春  jia bao chun

Herbs 20–25(–40) cm tall. Petiole 2–3 × as long as leaf blade, rust-colored pubescent; leaf blade suborbicular to reniform, 3.5–8 × 4–8(–9) cm, base cordate, 7–11-lobed; lobes irregularly coarse-dentate, abaxially densely pubescent or glabrescent, axially sparsely pubescent or glabrescent. Scapes erect, usually ca. 2 × as long as leaf rosette, sparsely pubescent or glabrescent; umbel solitary, 5–8(–10)-flowered; bracts narrowly cuneate, apex incised-dentate. Pedicels unequal. Calyx often tinged with violet, 4.5–5 mm, parted to slightly below middle; lobes lanceolate, apex acute. Corolla purple-violet, funnelform, 0.8–1.2 cm, parted to middle; lobes oblong, apex obtuse. Filaments very short; anthers to 3.5 mm, apex apiculate. Style to 1 cm, exerted. Capsule subcylindric, longer than calyx. 2n = 24.

Forests, stream sides, woodland margins, among shrubs; 1500–3000 m. Gansu, Hebei, Rei Mongol, Shaanxi, Shanxi, Xinjiang [Korea, Russia; Europe].

1a. Leaves lobed to 1/4; lobes subobtuse ......................... 1a. subsp. matthioli
1b. Leaves lobed to 1/2–2/3; lobes acute-dentate 1b. subsp. pekinensis

**1a. Cortusa matthioli subsp. matthioli**

假报春（原亚种） jia bao chun (yuan ya zhong)

Leaf blade suborbicular, lobed to 1/4; lobes rounded to triangular, apex subobtuse. Fl. May–Jul.

Shaded areas in *Picea* and *Larix* forests; 1500–3000 m. Nei Mongol, Xinjiang [Russia, Europe].


河北假报春 he bei jia bao chun


Leaf blade reniform to suborbicular, lobed 1/2–2/3; lobes usually oblong, margin acutely-dentate.

Streamsides, woodland margins, among shrubs. 1500–3000 m. Gansu, Hebei, Shaanxi, Shanxi [Korea, Russia].

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假婆婆纳属 jia po po na shu


One species: China, Japan.


假婆婆纳 jia po po na

Herbs pubescent, 6–18 cm tall. Stems erect, simple or slightly branched. Petiole of basal leaves 1–2 cm; leaf blade elliptic to broadly ovate, 0.8–2.5 × 0.7–1.5 cm, base rounded to minutely cordate, margin irregularly dentate, apex obtuse; lowermost stem leaves to 1.5 cm, gradually reduced upward, becoming bractlike; other stem leaves ovate to suborbicular, margin dentate. Flowers in axils of bractlike leaves, appearing as a raceme. Pedicel 2–8 mm. Calyx ca. 2 mm; lobes obtuse or acute at apex. Corolla white or pink; tube ca. 2.5 mm, pubescent around throat; lobes cuneate-obovate, slightly shorter than tube, apex emarginate. Anthers subovoid, ca. 0.3 mm. Style ca. 0.6 mm. Capsule ca. 2.5 mm in diam., shorter than persistent calyx. Fl. Apr–May.

Grassy areas, roadsides, woodland margins on low hills, woodlands on mountain slopes; 100–1000 m. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Taiwan, Zhejiang [Japan].

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点地梅属 dian di mei shu

Herbs perennial, annual, or biennial, acaulescent, rarely with ascending or decumbent shoots from a caudex. Leaves forming a rosette, rarely alternate; rosettes solitary or clustered, forming lax mats or compact cushions. Inflorescences umbellate, rarely a solitary flower, with bracts. Flowers 5-merous, homostylous. Calyx campanulate to subglobose, shallowly to deeply lobed. Corolla white, pink, purple, or dark red, rarely yellow; tube usually ± inflated, ca. as long as to shorter than calyx; throat constricted; lobes entire or emarginate. Stamens included, inserted on corolla tube; filaments very short; anthers ovate, apex obtuse. Ovary globose. Style not longer than corolla tube. Capsule subglobose, dehiscing nearly to base. Seeds few to many.

About 100 species: widely distributed in temperate regions of the northern hemisphere; 73 species in China.

**1a. Leaves homomorphic, distinctly petiolate, dentate or lobed, rarely entire.**

2a. Leaf blade orbicular to reniform, cordate at base ................................................................. **Key 1**

2b. Leaf blade elliptic, rarely orbicular, base rounded to cuneate.

3a. Plants perennial, fulvous pilose; leaves papery or subleathery ............................................. **Key 2**

3b. Plants annual or biennial, puberulent; leaves herbaceous .................................................... **Key 3**

**1b. Leaves heteromorphic or, if homomorphic, sessile, entire.**

4a. Leaves alternate on erect stems .......................................................................................... 73. *A. erecta* 73. 4b. Leaves forming a rosette or overlapping on shoots or small branching caudices.

5a. Plants biennial or annual; leaf rosettes usually solitary .................................................... **Key 5**

5b. Plants perennial, forming dense cushions or lax mats consisting of many leaf rosettes
borne on shoots or branching caudices ..................................................................................................................  

Key 1

1a. Leaves crenate or shallowly lobed.
   2a. Flowers and leaves arising in whorls on elongated stems ................................................................. 1. A. axillaris
   2b. Flowers and leaves not as above.
      3a. Bracts leaflike, often dentate ................................................................. 5. A. rotundifolia
      3b. Bracts not leaflike, margin entire.
         4a. Calyx parted nearly to base ................................................................. 12. A. umbellata
         4b. Calyx parted to middle or above.
            5a. Base of leaf blade deeply cordate, sinus penetrating 1/4–1/2 length of leaves.
               6a. Herbs annual; leaf blade 4–7 mm wide ........................................... 14. A. gmelinii
               6b. Herbs perennial; leaf blade 3–7 cm wide.
                  7a. Plants with reddish hairs; corolla purple ........................................ 4. A. croftii
                  7b. Plants with white hairs; corolla white ........................................... 13. A. henryi
            5b. Base of leaf blade shallowly cordate, sinus penetrating ca. 1/4 or less length of leaves.
               8a. Scapes ca. as long as to slightly longer than leaves; pedicel ca. 1/2 as long as scapes,
                   reflexed in fruit; leaves rust-colored pilose ........................................ 17. A. kouytachensis
               8b. Scapes distinctly longer than leaves; pedicel ca. 1/5 as long as scapes or shorter, not
                   recurved in fruit; leaves minutely strigillose or bristly.
                  9a. Leaf blade orbicular, subleathery; calyx parted to middle ............... 15. A. paxiana
                  9b. Leaf blade ovate, membranous, base cordate; calyx parted below middle .... 16. A. gracilis

1b. Leaves deeply lobed at least 1/2 way to center.
   10a. Plants ± cespitose; caudex with many dwarf shoots, encircled by petioles of old leaves.
      11a. Leaves palmately lobed to base, divided again, segments linear ........................................... 10. A. alchemilloides
      11b. Leaves 3–5-lobed to middle .................................................................................. 11. A. wilsoniana
   10b. Plants solitary or fasciculate, without branched caudex.
      12a. Plants flagellate.
         13a. Stolons much longer than scapes, retrorse pubescent; leaves lobed below middle .... 2. A. cuscutiformis
         13b. Stolons ca. as long as scapes, ± spreading pubescent; leaves lobed to middle ........... 3. A. geraniifolia
      12b. Plants not flagellate.
         14a. Plants (at least petiole) usually with reddish hairs.
            15a. Leaves strigillose, hairs less than 1 mm ............................................... 4. A. croftii
            15b. Leaves hirsute, hairs 1–2 mm .................................................................. 6. A. medifissa
         14b. Plants with white hairs.
            16a. Pedicel shorter than bracts; umbels compact, subcapitate ............................ 9. A. dissecta
            16b. Pedicel longer than bracts; umbels lax.
               17a. Plants strigillose, short appressed pubescent; umbels 10–25-flowered; scapes
                   erect, ca. 2 x as long as leaves ............................................................. 7. A. elatior
               17b. Plants pilose, with spreading long hairs; umbels 3–8-flowered; scapes diffuse,
                   ca. as long as to slightly longer than leaves .................................... 8. A. gagnepainiana

Key 2

1a. Leaf blade orbicular to reniform, 0.5–1.5 cm wide ................................................................. 18. A. graceae
1b. Leaf blade ovate to elliptic, 2–6 cm wide.
   2a. Leaf blade ovate to ovate-elliptic, base truncate to rounded ........................................... 19. A. mirabilis
   2b. Leaf blade elliptic to elliptic-obovate, tapered toward base, pinnately incised .................... 20. A. runcinata

Key 3

1a. Bracts 2–3 mm; calyx 2–2.5 mm, parted scarcely to middle, not enlarged in fruit.
   2a. Calyx cupular, without veins; scape glabrous; plants with numerous fibrous roots; taproot
       inconspicuous ................................................................................................. 21. A. filiformis
   2b. Calyx turbinate, distinctly 5-veined; scapes with branched hairs; taproot conspicuous .......... 22. A. septentrionalis
1b. Bracts 5–7 mm; calyx 3–4 mm, parted to middle or below, enlarged in fruit.
   3a. Scapes villous, with glandular hairs ................................................................. 23. A. maxima
   3b. Scapes puberulent, with simple and branched hairs ................................................... 24. A. engleri
Key 4

1a. Leaves (at least outer) cartilaginous on margin or apex.
   2a. Leaves homomorphic or obscurely heteromorphic.
      3a. Leaf blade of outer leaves ovate to broadly ovate, 2–3.5 mm, apex recurved ......................... 30. A. squarrosula
      3b. Leaf blade linear to broadly lanceolate, 5–50 mm, erect.
         4a. Flowers 4–7(–10) in umbels; scapes 5–10 mm ................................................................. 31. A. longifolia
         4b. Flowers 1 or 2; scapes to 5 mm ......................................................................................... 32. A. alaschanica
   2b. Leaves distinctly dimorphic.
      5a. Outer leaves spiny at apex ..................................................................................................... 25. A. spinulifera
      5b. Outer leaves not spiny.
         6a. Flowers 2 to many, in terminal umbels.
            7a. Bracts leaflike, cartilaginous at margin ........................................................................... 26. A. graminifolia
            7b. Bracts not leaflike, not cartilaginous at margin .......................................................... 27. A. mariae
         6b. Flowers solitary, rarely 2.
            8a. Leaf blade linear to subulate-lanceolate; corolla white ................................................ 28. A. lehmannii
            8b. Leaf blade oblong to sublinear; corolla purple ............................................................ 29. A. cernuiflora
   1b. Leaves not cartilaginous on margin or apex.
      9a. Leaves dimorphic or trimorphic, inner leaves distinctly longer than outer.
         10a. Leaves trimorphic.
            11a. Plants densely cespitose; rosettes solitary or superimposed on old rosettes, without intervals.
               12a. Pedicel ca. 2 × as long as bracts or more ................................................................. 35. A. strigillosa
               12b. Pedicel shorter than bracts.
                  13a. Inner leaves 15–35 mm, hirsute ........................................................................ 33. A. adenocephala
                  13b. Inner leaves 5–15 mm, strigillose ............................................................................ 34. A. cuttingii
            11b. Plants laxly cespitose, with many open rosettes joined by slender shoots.
               14a. Plants densely white sericeous ............................................................... 36. A. nortonii
               14b. Plants sparsely hirsute, pilose, or pubescent.
                  15a. Inner leaves less than 3.5 mm wide, petiole indistinct.
                     16a. Shoots hirsute; outer leaves ovate-lanceolate, sheathlike basal part 2–3 ×
                        as wide as upper part ................................................................................ 40. A. rigida
                     16b. Shoots pilose; outer leaves spatulate, sheathlike basal part only slightly
                        wider than upper part ...................................................................................... 41. A. minor
                  15b. Inner leaves 4–13 mm wide, distinctly petiolate.
                     17a. Inner leaves elliptic to obovate-elliptic, villous ............................................ 39. A. limprichtii
                     17b. Inner leaves ovate to ovate-elliptic or suborbicular, sparsely pubescent.
                        18a. Calyx sparsely pubescent; inner leaves ovate-elliptic to suborbicular,
                            sparsely pubescent ................................................................................ 37. A. hookeriana
                        18b. Calyx glabrescent, except for ciliate margin; inner leaves ovate,
                            densely pubescent ........................................................................................ 38. A. ovalifolia
            11b. Plants laxly cespitose, with many open rosettes joined by slender shoots.
               14a. Plants densely white sericeous ............................................................... 36. A. nortonii
               14b. Plants sparsely hirsute, pilose, or pubescent.
                  15a. Inner leaves less than 3.5 mm wide, petiole indistinct.
                     16a. Shoots hirsute; outer leaves ovate-lanceolate, sheathlike basal part 2–3 ×
                        as wide as upper part ................................................................................ 40. A. rigida
                     16b. Shoots pilose; outer leaves spatulate, sheathlike basal part only slightly
                        wider than upper part ...................................................................................... 41. A. minor
                  15b. Inner leaves 4–13 mm wide, distinctly petiolate.
                     17a. Inner leaves elliptic to obovate-elliptic, villous ............................................ 39. A. limprichtii
                     17b. Inner leaves ovate to ovate-elliptic or suborbicular, sparsely pubescent.
                        18a. Calyx sparsely pubescent; inner leaves ovate-elliptic to suborbicular,
                            sparsely pubescent ................................................................................ 37. A. hookeriana
                        18b. Calyx glabrescent, except for ciliate margin; inner leaves ovate,
                            densely pubescent ........................................................................................ 38. A. ovalifolia
            10a. Leaves dimorphic.
               19a. Leaves white sericeous; stolons 5–8 cm, rust-colored villous ........................................ 42. A. sarmentosa
               19b. Plants tomentose, hirsute, or pubescent, without stolons, usually with shoots.
                  20a. Corolla pale yellow; bracts ligulate-oblong, leaflike ............................................. 43. A. flavescens
                  20b. Corolla pink or purple; bracts not as above.
                     21a. Calyx glabrous except for ciliate margin.
                         22a. Leaf rosette 1 or 2–4 on caudex, without sterile shoots ........................................ 44. A. sublanata
                         22b. Leaf rosette forming lax mats, with sterile shoots from
                             flowering rosette ......................................................................................... 45. A. forrestiana
                     21b. Calyx pubescent.
                        23a. Inner leaves densely hirtellous, hairs very short.
                           24a. Leaves distinctly dimorphic, outer leaves ca. 1/3 as long
                               as inner or shorter, with long white hairs ................................................. 46. A. wardii
                           24b. Leaves obscurely dimorphic, outer leaves slightly smaller
                               than inner, ciliate ........................................................................................ 47. A. zayulensis
                        23b. Inner leaves long white hirsute, at least on margin.
                           25a. Inner leaves glabrous adaxially, margin ciliate, with long and very
short hairs intermixed ................................................................. 48. A. euryantha

25b. Inner leaves pubescent on both surfaces.

26a. Calyx pubescent along veins and near apex of lobes .......... 49. A. mairei
26b. Calyx pubescent throughout.

27a. Inner leaves elliptic to suborbicular; calyx lobes ovate ........ 50. A. laxa
27b. Inner leaves spatulate to ob lanceolate; calyx lobes triangular .................................................. 51. A. stenophylla

9b. Leaves subequal or homomorphi c.

28a. Inner leaves with long soft white hairs, usually very dense and tufted on distal 1/2.

29a. Leaf rosettes 2-3 mm in diam., superimposed, forming columns (leaves dimorphic in A. tapete).
30a. Calyx villous outside .............................................................. 61. A. selago
30b. Calyx villous only on lobe margin ................................................. 62. A. tapete

29b. Leaf rosettes more than 3 mm in diam., not forming columns.

31a. Scapes 1- or 2-flowered, shorter than pedicel; leaf rosettes 4-8 mm in diam. ............... 63. A. globifera
31b. Scapes with an umbel, 2- to many flowered, distinctly longer than pedicel; leaf rosettes more than 10 mm in diam.

32a. Pedicel at most slightly longer than bracts.

33a. Leaf rosettes forming loose tufts, internodes of shoots 1-2 × as long as leaf rosettes; corolla white, becoming pink; bracts elliptic to ovate-lanceolate ............................................................. 64. A. ovczinnikovii
33b. Leaf rosettes forming dense mats; internodes of shoots usually shorter than leaf rosettes; corolla cream-colored with a pale purple or yellow eye; bracts linear to lanceolate ............................................................ 65. A. incana

32b. Pedicel at least 2 × as long as bracts.

34a. Scapes 8-15 cm; pedicel 5-10 × as long as bracts ........................................ 66. A. rockii
34b. Scapes 0.5-5 cm; pedicel 2-3 × as long as bracts.

35a. Leaf rosettes superimposed, without intervals; midvein and margin of leaves ± raised abaxially .............................................................. 67. A. bisulca
35b. Leaf rosettes not superimposed, with intervals between rosettes; midvein and margin of leaves not raised abaxially.

36a. Plants with leaves in tight globose rosettes; scapes long white sericeous ................................................. 68. A. robusta
36b. Plants with leaves in lax rosettes; scapes spreading hirtellous ...

28b. Inner leaves with coarse hairs or glabrescent, or only fimbriate-cili ate.

37a. Flowers solitary.

38a. Leaf blade broadly lanceolate to lanceolate, glabrescent ................. 52. A. tanggulashanensis
38b. Leaf blade liguliform to elliptic, pubescent at least on margin.

39a. Leaf rosettes superimposed without intervals, forming columns, 2.5-4 mm in diam. ................................................................. 53. A. ciliifolia
39b. Leaf rosettes at intervals, not forming columns, 5-8 mm in diam.

40a. Leaf blade obovate, adaxially glabrescent, abaxially fimbriate-ciliate ............... 54. A. delavayi
40b. Leaf blade narrowly obovate to spatulate, inner leaves white villous on both surfaces ................................................. 63. A. globifera

37b. Flowers 2 to many, in umbels.

41a. Leaf rosettes more than 1.5 cm in diam.; inner leaves distinctly longer than outer .... 55. A. lehmanniana
41b. Leaf rosettes less than 1.3 cm in diam., inner leaves ca. as long as outer.

42a. Inner leaves subobovate, 1.5-2.5 mm wide, fimbriate-ciliate at apex.

43a. Inner leaves ± incurved; bracts usually 2, ca. 2 × as long as pedicel ............... 54. A. delavayi
43b. Inner leaves flat; bracts several, shorter than pedicel .......................... 60. A. mollis

42b. Inner leaves linear to oblong or elliptic, 0.6-1.5 mm wide, not fimbriate cili ate at apex.

44a. Leaves hirtellous.

45a. Leaf rosettes globose, on nodes of shoots with internodes .......... 56. A. zambalensis
45b. Leaf rosettes not globose, leaves overlapping on branched caudicles ................................................................. 57. A. coronata

44b. Leaves glabrous at least abaxially.

46a. Outer leaves whitish, scarious when dry; bracts ovate to ovate-oblong, shorter than pedicel ................................................................. 58. A. brachystegia
1. Androsace axillaris (Franchet) Franchet, J. Bot. (Morot) 9: 455. 1895.


Herbs perennial. Stems arising from leaf rosettes, initially erect, gradually elongated to 30 cm, becoming decumbent, grayish pilose, rooting at nodes; internodes 6–14 cm. Basal leaves in a rosette; petiole 2–3 cm as long as leaf blade, retrose hirtellous; leaf blade orbicular to reniform, 1–4 cm wide, strigillose, palmately lobed to 1/3, base deeply cordate; lobes 3-lobed to crenate. Stem leaves 2 or 3 per node, smaller than basal leaves; petiole ca. as long as leaf blade. Pedicel 1–3 cm, retrose hirtellous. Flowers 2 or 3, on nodes of stem; bracts linear, narrowly elliptic or oblanceolate, ca. 3 mm, strigillose. Calyx campanulate, ca. 3 mm, hirtellous, parted to ca. 1/2; lobes triangular, apex acute. Corolla pink or white, ca. 8 mm in diam.; tube shorter than calyx; lobes ovate-oblong, ca. 2.5 mm, emarginate. Fl. Apr.–May.

Damp areas in open woodlands; 1800–3300 m. SW Sichuan, Yunnan [Thailand].


Androsace sutchuenensis Franchet.

Herbs perennial, stoloniferous; stolons filiform, 25–40 (–70) cm, retrorse strigillose. Leaves basal; petiole 6–15 cm; leaf blade reniform to suborbicular, 3–5 cm wide, minutely strigillose, abaxially with slightly longer hairs, palmately deeply 5–7-lobed, base cordate; lobes cuneate-flabellate to 3-lobed; segments oblong, 3-lobulate. Scapes 10–15 cm, retrorse strigillose; umbels 10–15-flowered; bracts lanceolate, 2–3 mm. Pedicel filiform, 2–3.5 cm. Calyx pubescent, 3.5–4 mm, parted slightly below middle; lobes ovate-triangular, apex subobtuse. Corolla white, 6–7 mm in diam.; lobes obovate, ca. 1.5–2 × 2–2.5 mm, emarginate. Fl. Apr.–May.

* Woodlands on mountain slopes; 1500–2000 m. SE Shaanxi, E Sichuan.


Androsace axillaris (Franchet) Franchet, J. Bot. (Morot) 9: 455. 1895.

Androsace sutchuenensis Franchet.

Herbs perennial, stoloniferous; stolons filiform, 10–30 cm, soft, ± spreading pubescent. Leaves in a rosette; petiole (3–)6–15 cm, villous; leaf blade suborbicular to reniform, 2.5–5 cm wide, strigose, palmately 5–7-lobed to middle, base cordate; lobes cuneate-obovate, 3–5-lobulate. Scapes 2 to many, arising from leaf rosettes, usually ca. 2 × as long as leaves; umbels 6–14-flowered; bracts lanceolate, 2.5–5.5 mm. Pedicel 5–10 mm, puberulent. Calyx pubescent, 3–3.5 mm, parted to middle; lobes ovate-lanceolate, apex blurt. Corolla white or pink with a yellow eye, ca. 7 mm in diam.; lobes obovate-oblong, apex rounded. Fl. May–Jun.

Abies forests, grassy mountain slopes; 2700–3000 m. S Xizang [Bhutan, India, Sikkim].


Androsace axillaris (Franchet) Franchet, J. Bot. (Morot) 9: 455. 1895.

Herbs perennial, with reddish multicellular hairs on petioles and scapes. Leaves in a rosette, numerous; petiole 2–6 cm; leaf blade suborbicular to reniform, 0.8–1.8 cm wide, strigillose with hairs less than 1 mm, palmately and deeply 7–9-lobed, base cordate, sinus to 1/3 of a leaf blade; lobes cuneate-obovate, margin crenate. Scapes 2.5–10 cm; umbels 5– to many flowered; bracts oblong-obovate to lanceolate, 2–4 mm. Pedicel initially very short, elongated to 6 mm at end of anthesis, densely appressed pubescent. Calyx 2.5–3 mm, parted to ± middle, spreading pubescent outside. Corolla pale purple with a yellow eye, ca. 4 mm in diam.; lobes ovate-oblong, margin subentire. Fl. May.

Grassy mountain slopes; ca. 2700 m. S Xizang [Nepal, Sikkim].


Androsace axillaris (Franchet) Franchet, J. Bot. (Morot) 9: 455. 1895.

Herbs perennial, pubescent-villosous or glandular pubescent. Leaves in a rosette; petiole (3–)6–15 cm; leaf blade suborbicular to reniform, 0.4–3 × 0.6–4 cm, base cordate, margin crenate to crenate-lobed; lobes crenate-dentate to sharply dentate on margin. Scapes 4–
18 cm; umbels 4–30-flowered; bracts ob lanceolate to obovate-cuneate, rarely elliptic, (2.5–) 4–10(–19) mm, leaflike, margin entire or dentate near apex. Pedicel 0.4–1.5(–4) cm. Calyx campanulate, 4–6 mm, parted to middle or slightly below; lobes ovate to elliptic-ovate, margin entire or dentate near apex. Corolla white to pink or pinkish red, 6.5–10 mm in diam.; lobes cuneate-ovobovate, 3–4 × 2–3.8 mm, apex retuse or deeply emarginate. 2n = 20.

Grassy slopes, Abies and Pinus forests; 800–4000 m. W Xizang [Afghanistan, India, Kashmir, W Nepal, Pakistan].

1a. Leaf blade 4–12 × 6–20 mm, margin sharply dentate; bracts 2.5–5(–6) mm ................................. 5c. var. thomsonii

1b. Leaf blade (6–)12–30 × 12–40 mm, margin crenate to crenate-dentate; bracts more than 6 mm. 2a. Plants pubescent or pubescent-villous; bracts dentate at apex ................................. 5a. var. rotundifolia

2b. Plants glandular pubescent; bracts usually entire ..................... 5b. var. glandulosa

5a. Androsace rotundifolia var. rotundifolia

叶苞点地梅（原变种） ye bao dian di mei (yuan bian zhong)

Plants pubescent or pubescent-villous, sometimes intermixed with glandular hairs. Leaf blade (0.6–)1.2–3× 1.2–4 cm, margin crenate to crenate-dentate. Bracts 6–10(–19) mm, apex 3–5-dentate. Fl. May–Jul.

Grassy slopes, Abies and Pinus forests; 800–3500 m. W Xizang [Afghanistan, India, Kashmir, Pakistan].


腺毛叶苞点地梅 xian mao ye bao dian di mei

Plants glandular pubescent. Leaf blade 0.6–3 × 1.2–4 cm, margin crenate to crenate-dentate. Bracts 6–10(–19) mm, margin usually entire. Fl. May–Jul.

Dry grassy slopes; 2500–4000 m. W Xizang [India, Kashmir, W Nepal].


尖齿叶苞点地梅 jian ch'i ye bao dian di mei

Androsace thomsonii (Watt) Y. Nasir.

Plants glandular pubescent. Leaf blade 4–12 mm × 0.6–2 cm, margin sharply dentate. Bracts 2.5–5(–6) mm, margin entire. Fl. May–Jul.

Dry grassy slopes; 3300–3500 m. W Xizang [India].


梵净山点地梅 fan jing shan dian di mei

Herbs perennial, with simple or weakly branched rhizomes. Leaves in a rosette; petiole 5–7 cm, spreading white pubescent; leaf blade orbicular, 1.3–1.8 cm wide, densely red or white hirsute, hairs 1–2 mm, palmately 7–9-lobed to middle, base deeply cordate, sinus penetrating 1/3–1/2 into leaf blade; lobes oblong, 2–3-toothed. Scapes erect, 9–11 cm, densely villous; umbels 4–6-flowered; bracts linear to narrowly lanceolate, 3–3.5 mm, laxly pilose. Pedicel 1–1.5 cm, strigillose. Calyx ca. 3 mm, sparsely pilose, parted to 1/2; lobes ovate-triangular to narrowly triangular, apex obtuse. Corolla pink, ca. 6 mm in diam.; lobes obovate, apex 2-lobed. Fl. May–Jun.

* Shaded rocks of mountains and ridges; 2300–2600 m. NE Guizhou (Jiangkou Xian).


高葶点地梅 gao ting dian di mei

Herbs perennial. Rootstock with numerous fibrous roots. Leaves basal in a rosette with withered remains of leaves at base; petiole (2–)3–5 mm, densely hirtellous; leaf blade reniform to suborbicular, 1.5–2.5 cm wide, abaxially sparsely strigillose, adaxially strigillose, palmately and deeply 5-lobed, base cordate, sinus penetrating 1/4–1/3 into leaf blade; lobes 3-lobulate, margin of segments entire to dentate. Scapes 1–4, arising from rosette, hirtellous, 2–3 x as tall as leaf rosettes; umbels 10–25-flowered; bracts linear to oblong, 2–2.5 mm, apex acumin ate. Pedicel rigid, 1–1.5 cm, strigillose. Calyx puberulent, ca. 2.5 mm, parted to middle; lobes triangular to ovate-triangular. Corolla white or pink, ca. 4 mm in diam.; lobes obovate-oblong, margin subentire. Fl. Jul.

* Woodlands, among shrubs on N-facing slopes, damp rock crevices; 3500–4200 m. S Qinghai, NW Sichuan, NE Xizang.


披散点地梅 pi san dian di mei

Herbs perennial, forming solitary rosettes or small tufts. Leaves basal in a rosette with withered remains of leaves at base; petiole 4.5–8 cm, pilose, with multicellular hairs; leaf blade reniform to suborbicular, 1–1.6 cm wide, sparsely pilose, base cordate, palmately divided 2/3 to near base; lobes broadly cuneate-ovobovate, 3-lobulate, margin of segments entire or dentate. Scapes diffuse to arcuate spreading, ca. as long as leaves, densely pilose; umbels 3–8-flowered; bracts broadly lanceolate, 3–4 mm, apex obtuse to acuminate. Pedicel divaricate, 5–14 mm, strigillose. Calyx 3–4 mm, parted to 1/2; lobes ovate-lanceolate, strigillose; veins 5, obscure. Corolla white or tinged with red, 6–7 mm in diam.; tube ca. 1 mm; lobes cuneate-ovobovate, ca. 2 mm wide, emarginate. Fl. Jun–Jul.

Shaded rock crevices at woodland margins; 3500–4100 m. NW Yunnan [Myanmar].

**lie dian di mei**


Herbs perennial. Leaves numerous; petiole 2-4 × as long as leaf blade, slightly dilated at base, minutely retrorse pubescent; leaf blade orbicular to reniform, 1-3 cm wide, densely strigillose, palrnately 5- or 6-lobed to middle, base cordate, sinus penetrating 1/4-1/3 into leaf blade; lobes cuneate-ovolate, 3-lobulate, lobules obtuse or 2- or 3-toothed at margin. Scapes 3-15(-30) cm, densely retrorse pubescent; umbels subcapitate, 4-8-flowered; bracts linear, 2-3 mm, pubescent. Pedicel 0.5-2 mm, shorter than bracts. Calyx minutely hirtellous, parted to 1/2; lobes ovate-lanceolate, apex acute to subobtuse. Corolla white or pink, 4-7 mm in diam.; lobes obovate-lanceolate, apex acute to subobtuse. Scapes 1.5-3 cm, hirtellous; umbels 3-8(-12)-flowered; bracts ovate to lanceolate, 3-5 mm, pubescent. Pedicel 1-3 cm, elongated to 6 cm in fruit, pubescent and short-stalked glandular. Calyx 3-4 mm, densely pubescent, parted nearly to base; lobes rhomboid-ovate, enlarged and stellate spreading in fruit, veins 3-6. Corolla white, 4-6 mm in diam., with a yellow eye; tube ca. 2 mm; lobes obovato-oblong, 2.5-3 × 1.5-2 mm, apex obtuse. Fl. Feb-Apr. 2n = 18*.

* Rock crevices; ca. 3000 m. Sichuan (Emei Shan, Wa Shan).

10. **Androsace alchemilloides** Franchet, J. Bot. (Morot) 9: 455. 1895.

**hua ye dian di mei**


Herbs perennial, pulvinate cespitose. Caudex 1.5-4 cm, bracteate; petiole 1 cm, dilated and subvaginate on lower part, margin membranous; leaf blade flabellate, 3-5 mm wide, densely puberulent, apex acute. Corolla white, rarely pink, 7-8 mm in diam.; tube 2-2.5 mm; lobes broadly obovate, 2-3 mm wide, apex truncate to slightly emarginate. Fl. Jul.

* Rock crevices; ca. 3000 m. Sichuan, NW Yunnan.


**yan ju dian di mei**

Herbs perennial; caulicles 3-9 mm, with remains of dead leaves, apex leafy. Leaves in a rosette; petiole 1-1.5 cm, sparsely puberulent; leaf blade reniform, 5-7 mm wide, sparsely minutely strigillose, palrnately 3-5 lobed to 1/2, base shallowly cordate; center lobes subrounded at apex, margin entire or with 1 tooth on each side, lateral lobes usually 2-lobed. Scapes erect, 4-6 cm, minutely appressed pubescent; umbels 2-4-flowered; bracts usually 4, broadly lanceolate to narrowly elliptic, 2-4 × 0.5-1.2 mm. Pedicel 7-9 mm, minutely strigillose. Calyx 2.5-3 mm, parted slightly below 1/2; lobes triangular, sparsely puberulent, apex acute. Corolla white, 7-8 mm in diam.; tube 2-2.5 mm; lobes broadly obovate, 2-3 mm wide, apex truncate to slightly emarginate. Fl. Jul.

* Glades, margins of mountain woods, ravines; 1500-3200 m. W Hubei, S Shaanxi, Sichuan, SE Xizang, Yunnan [Bhutan, Myanmar, Nepal].

1a. Bracts linear to linear-lanceolate,
13a. *Androsace henryi* subsp. *henryi*


callus 3–9 mm; calyx 3–4 mm, scarcely enlarged in fruit .......................... 13a. *subsp. henryi*

1. *Bracts elliptic to obovate-oblong, 4–5 mm; calyx 3.5–4 mm, enlarged to 5–6 mm in fruit .......................... 13b. *subsp. simulans*


*Under shrubs in ravines; 2500–3100 m. W Sichuan.*


小点地梅 (原亚种) lian dian di mei (yuan ya zhong)

*Androsace henryi* var. *crassifolia* Handel-Mazzetti.

Leaf blade 3–7 cm wide. Bracts linear to linear-lanceolate, 3–9 mm. Calyx 3–4 mm, scarcely enlarged in fruit; lobes triangular to narrowly ovate-triangular. Fl. Apr–May.

Glades, margins of mountain woodlands, damp areas in ravines; 1500–3200 m. W Hubei, S Shanxi, Sichuan, SE Xizang, Yunnan [Bhutan, Myanmar, Nepal].


阔苞莲叶点地梅 kuo bao lian ye dian di mei

Leaf blade 1–4.5 cm wide. Bracts elliptic to obovate-oblong, 4–5 mm. Calyx 3.5–4 mm, enlarged to 5–6 mm in fruit; lobes ovate, apex acute.

* Under shrubs in ravines; 2500–3100 m. W Sichuan.


小点地梅 xiao dian di mei

Herbs annual, small. Leaves basal; petiole 2–3 cm, spreading pubescent; leaf blade suborbicular to reniform, 4–7 mm wide, strigillose-villous, 7–9-lobed to crenate-dentate, base cordate. Scapes numerous, inconspicuous to 9 cm, sparsely pilose; umbels 2–or 3(–5)-flowered; bracts lanceolate to ovate-lanceolate, 1–2 mm, apex acute. Pedicel 0.3–2.5 cm, sparsely pubescent. Calyx campanulate, 2.5–3 mm, densely villous, spreading pubescent, parted to middle; lobes slightly spreading to reflexed in fruit, ovate to ovate-triangular, apex acute. Corolla white, ca. as long as to slightly longer than calyx, 2–2.5 mm in diam.; lobes oblong, ca. 1 × 0.5 mm.

Wet areas along river banks, damp meadows, grassy slopes, ravines; 2600–4400 m. Gansu, Nei Mongol, Qinghai, NW Sichuan [Mongolia, Russia].

1a. Scapes 3–9 cm, longer than pedicel .... 14a. var. *gmelinii*

1b. Scapes to 1 cm, shorter than pedicel..... 14b. var. *geophila*

14a. *Androsace gmelinii* var. *gmelinii*

小点地梅 (原变种) xiao dian di mei (yuan bian zhong)


Wet areas along river banks, damp meadows. Nei Mongol, NW Sichuan [Mongolia, Russia].


短葶小点地梅 duan ting xiao dian di mei

*Androsace dielsiana* R. Knuth.

Scapes to 1 cm. Pedicel 0.7–2.5 cm, longer than scapes.

* Grassy slopes, ravines; 2600–4400 m. Gansu, Qinghai, NW Sichuan.


峨眉点地梅 e mei dian di mei

*Androsace henryi* Oliver var. *omeiensis* R. Knuth.

Herbs perennial. Leaves basal; petiole rigid, terete, 1–3 × as long as leaf blade, spreading pubescent; leaf blade orbicular, rarely reniform, 1.5–4 cm wide, subleathery, adaxially densely strigillose with longer hairs, glabrescent, adaxially minutely strigillose, base shallowly cordate, margin undulate-crenate; veins inconspicuous. Scapes erect, usually 2–4 × as long as leaf blade, with antrorse appressed bristlelike hairs; umbels 8–14-flowered; bracts linear, 3–4 mm. Pedicel 0.6–1.5 cm, minutely strigillose. Calyx narrowly campanulate, 2.5–4 mm, sparsely appressed pubescent, parted to ca. 1/2; lobes ovate-triangular, ciliate, apex subobtuse; veins 3–5, distinct. Corolla white or tinged with red, 5–8 mm in diam.; lobes obovate-oblong, emarginate. Fl. Apr–May.

* Glades, margins of mountain woodlands; 1000–1400 m. Sichuan [Emei Shan, Guanzhian Xian].


细弱点地梅 xi ruo dian di mei

Herbs perennial, with minute glands and bristlelike hairs. Leaves basal; petiole 1–2.5 × as long as leaf blade; leaf blade broadly ovate, 2–3 cm wide, densely ciliate, membranous when dry, glabrescent, base cordate, sinus penetrating 1/7–1/5 into leaf blade. margin crenulate to lobulate-crenate, apex rounded; veins 3–5 at base, veinlets prominent abaxially. Scapes erect, 7.5–16 cm; umbels 5–20-flowered; bracts linear-lanceolate, 2.5–4 mm, herbaceous. Pedicels subequal, 1–2.3 cm. Calyx funnel-form, ca. 3 mm, parted to nearly 2/3; lobes narrowly ovate, becoming linear-oblong and enlarged to 5 mm in fruit, apex obtuse. Corolla white or pink; tube shorter than calyx; limb ca. 6 mm in diam.; lobes obcordate, lobules spreading, narrow. Anthers ca. as long as filaments, slightly exerted.

* Damp rocky lowlands. C and NE Yunnan.

**Guan Zhou Dian Mei**

*Androsace kouytchensis* is a species of flowering plant in the family Caryophyllaceae. It is native to China and is found in mountainous areas at elevations of 1000–2000 m. The plant is perennial and grows in rosettes with leaves in a basal rosette; petiole 1.5–2.5 cm, hirsute, spreading pubescent; leaf blade orbicular to reniform, 0.5–1.5 cm wide, leathery, abaxially glabrescent, adaxially sparsely rust-colored pilose, base subrounded to occasionally narrowly cuneate, margin entire, narrowly revolute; midvein and veins invisible. Scapes 2–5 mm, rust-colored pilose, base subrounded to occasionally narrowly cuneate, margin undulate-crenate on distal 1/2, pinnately incised near base, apex obtuse to acute. Ovary pubescent. Fl. May–Jun.

* C Guizhou (Longli Xian).

Both *Androsace kouytchensis* and *A. refracta* have been collected at the same locality. It appears that *A. refracta* is only a depauperate collection of *A. kouytchensis* growing in a dry habitat.


**Yuan Ye Dian Mei**

Herbs perennial. Leaves basal; petiole 2–3 × as long as leaf blade, rust-colored pilose, dilated on proximal 1/2; leaf blade orbicular to reniform, 0.5–1.5 cm wide, leathery, abaxially glabrescent, adaxially sparsely rust-colored pilose, base subrounded to occasionally narrowly cuneate, margin entire, narrowly revolute; midvein and veins invisible. Scapes 2–6 mm, rust-colored pilose, base subrounded to occasionally narrowly cuneate, margin undulate-crenate on distal 1/2, pinnately incised near base, apex obtuse to acute. Ovary pubescent. Fl. Apr–May.

* Limestone rocks in mixed forests, shaded places on limestone hills; 1200–1500 m. Guizhou, W Hunan, SE Yunnan.


**Da Ye Dian Mei**

Herbs perennial. Leaves in a basal rosette; petiole 10–15 cm, fleshy pilose, especially proximally; leaf blade ovate to ovate-elliptic, 5–8(–13) × 3.5–6 cm, papery, abaxially glandular bristly especially on midvein, adaxially glabrous, base rounded to truncate, margin entire to obscurely undulate-crenate, apex obtuse. Scapes erect, 30–40 cm, with dense brown multicellular long glandular hairs; umbel solitary, many flowered; bracts subulate, 8–10 mm. Pedicel 1–1.3 cm, sparsely minutely glandular. Calyx conical-campanulate, 4–5 mm, parted scarcely to 1/2; lobes triangular, mucronulate; veins 5. Corolla pink, ca. 1 cm in diam.; tube shorter than calyx; lobes obovate. Fl. May–Jun.

* Margins of mountain woodlands; ca. 1200 m. E Sichuan (Chengkou Xian).


**Yi Ye Dian Mei**

Herbs perennial. Leaves basal; petiole to 1/2 as long as leaf blade, glabrescent, narrowly winged; leaf blade elliptic to elliptic-ovate, 3–13 × 2–5 cm, papery, abaxially very sparsely minutely bristly or glabrescent except for midvein, adaxially sparsely minutely bristly, base attenuate to rounded, margin undulate-crenate on distal 1/2, pinnately incised near base, apex subacute; veins inconspicuous. Scapes erect, 10–20 cm, sparsely villous; umbels 8–12-flowered; bracts linear-subsulate, 3–6 mm. Pedicel 0.5–2 cm, glabrous. Calyx 4.5–5.5 mm, parted to 1/3; lobes triangular, veins 5, obscure. Corolla pale purple, ca. 5 mm in diam.; tube ca. 2.5 mm; lobes oblanceolate, ca. 1.8 mm wide, margin entire or apex slightly emarginate. Fl. Apr–May.


**Dong Bei Dian Mei**

*Androsace filiformis* var. *glandulosa* Krylov.

Herbs annual, with numerous fibrous roots. Rosettes solitary, 2–8 cm in diam. Leaves basal; petiole ca. as long as to slightly longer than leaf blade; leaf blade elliptic to ovate-oblong, 0.6–2.5 cm × 5–12 mm, glabrous or sparsely glandular pubescent, base short attenuate, margin remotely denticate, apex obtuse to acute. Scapes to many, 2.5–15–20 cm, glabrous or with sparse glandular hairs distally; umbels many flowered; bracts linear-lanceolate, ca. 2 mm. Pedicels un-equal, filiform, 2–7 cm. Calyx cupular, 2–2.5 mm, without veins, parted to middle; lobes triangular, glabrous or occasionally sparsely glandular pubescent, hyaline margined, apex acute. Corolla white, ca. 3 mm in diam.; lobes oblong. Fl. May. Fl. May. 2n = 18, 20.

Damp meadows, river banks, near bogs and gullies, open woodlands; 1000–2000 m. Heilongjiang, Jilin, Nei Mongol, N Xinjiang [Kazakhstan, Korea, Kyrgyzstan, Mongolia, Russia, Tajikistan, Turkmenistan, Uzbekistan; Europe, North America].


**Bei Dian Mei**

Herbs annual, with a long taproot. Leaves sessile or subsessile, lanceolate to oblanceolate, 0.5–3 cm × 1.5–5 mm, tapered toward base, abaxially glabrescent,
adaxially pulverulent, margin remotely denticulate on distal 1/2, apex obtuse to acute. Scapes 1 to many, erect, 1–25 cm, with short branched hairs; umbels many flowered; bracts subulate, 2–3 mm. Pedicels unequal, 1–1.7 cm, elongated after anthesis, 2–6(–10) cm in fruit, short glandular pubescent. Calyx turbinate, ca. 2.5 mm, parted to 1/3; lobes darker than tube, narrowly triangular, apex acute; veins 5, distinct. Corolla white; tube shorter than calyx; lobes oblong, 1–1.2 × 0.6–1 mm. 2n = 20.

Dry meadows, river banks, S-facing slopes of forest-steppe belts: 2000–2600 m. N Hebei, E Nei Mongol, N Xinjiang [Kazakstan, Kyrgyzstan, Mongolia, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan; C and N Europe, North America].

21a. Scapes 3.5–25 cm, longer than pedicel ................................. 21b. Scapes 0.8–2.2(–4) cm, usually shorter than pedicel ..................... 22a. var. septentrionalis

Androsace septentrionalis var. septentrionalis

北点地梅 (原变种) bei dian di mei (yuán biàn zhòng)


Dry meadows, S-facing slopes of forest-steppe belts; ca. 2000 m. N Hebei, E Nei Mongol, N Xinjiang [Kazakstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Uzbekistan; C and N Europe, North America].

22a. Androsace septentrionalis var. brevica
capa

短葶北点地梅 duan ting bei dian di mei

Androsace fedtschenkoi Ovczinnikov.

Scapes 0.8–2.2(–4) cm or absent. Pedicel divaricate, 2–5 cm, usually longer than scapes. 2n = 20.

Dry meadows, river banks; 2500–2600 m. N Xinjiang [Kazakstan, Mongolia, Pakistan, Russia].


大苞点地梅 da bao dian di mei

Androsace turczaninowii Freyn.

Herbs annual, with a slender taproot. Leaves sessile or very short petiolate, elliptic to narrowly obovate or oblanceolate, 0.5–1.5(–3.5) cm × 2–5(–20) mm, narrowed at base, remotely blunt denticulate distally, sparingly villous or glandular, apex acute to subobtuse. Scapes 2 to many, 2–7.5 cm, villous and minutely white glandular pubescent; umbels many flowered; bracts elliptic to obovate, 0.5–1.5 × 1–4.5 mm, leaflike, sparingly villous. Pedicel 1–1.5 cm, pubescent. Calyx 3–4 mm, enlarged to 9 mm in fruit, sparingly villous, parted to 2/3; lobes triangular-lanceolate, apex acuminate. Corolla white or pink, 3–4 mm in diam.; lobes oblong, 1–1.8 mm, apex rounded. Fl. Jun–Jul. 2n = 20, ca. 36–38, 40, 52, 54, 58–60, 80.

Dry meadows, gravelly slopes, sandy steppes; 1500–2700 m. Gansu, Nei Mongol, Ningxia, Shaanxi, Shanxi, N Xinjiang [Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan, Turkmenistan, Uzbekistan; N and W Africa, SW Asia, C and S Europe].


陕西点地梅 shaan xi dian di mei

Herbs perennial. Leaf blade lanceolate to oblong-lanceolate, 0.5–1.5 cm × 1–3 mm, margin dentate, apex acute. Scapes many, ascending, 2–5 cm, puberulent with simple and branched hairs; umbels many flowered; bracts broadly ovate to oblong-ovate, 3–5 mm, with short stellate hairs, finally glabrescent, apex obtuse. Pedicel 1.5–3 × as long as bracts, puberulent. Calyx campanulate, parted to middle or below; lobes triangular, apex acute. Corolla white or pink; tube ca. as long as calyx; limb ca. 3 mm wide; lobes lanceolate-ovate, slightly longer than calyx lobes, apex rounded.

* S Shaanxi (Huxian Xian).

A poorly known species. The type material in the Berlin herbarium was lost during World War II.


刺叶点地梅 ci ye dian di mei


Herbs perennial. Rosettes in 1–3 small clumps. Leaves dimorphic; outer leaves sessile, waxy yellow, ovate to ovate-lanceolate, 5–10(–20) mm, short ciliate, apex carilaginous, acuminate, forming a spinelike acumen; petiole of inner leaves indistinct to 1/5 as long as leaf blade; leaf blade oblanceolate, rarely lanceolate, (1.5–)3–18 × 0.4–2(–2.5) cm, tapered toward base, densely strigillose, apex obtuse, mucronate. Scapes solitary, 7–30(–40) cm, sparingly spreading hisurate; umbels many flowered, densely hisrate; bracts lanceolate to linear, 4–7 mm, slightly gibbous at base. Pedicel 1.5–2.5 cm. Calyx 3.5–4 mm, parted to 1/3; lobes ovate or ovate-triangular to obtuse, densely ciliate. Corolla deep red, 8–10 mm in diam.; lobes obvate, margin entire to obscurely undulate, apex rounded. Fl. Jun–Jul. 2n = 20.

* Dry grasslands, gravelly slopes, open Pinus woodlands; 2900–4500 m. W Sichuan, N Yunnan.


禾叶点地梅 he ye dian di mei

Herbs perennial, forming dense mats. Rosettes borne on branched short caudicles, with dense remains of old leaves at base. Leaves indistinctly dimorphic, sessile; outer leaves linear-lanceolate, 4–7 × 0.4–0.8 mm, long ciliate; inner leaves linear to linear-lanceolate, 1–2.5 cm × 1–1.8 mm, glabrous or minutely strigillose on conspicuously raised midvein abaxially, base
slightly narrowed, margin cartilaginous and semitransparent, apex spinelike. Scapes 1–3 cm, with dense long whitish tanged hairs; umbels subcapitate, 5–15–flowered; bracts leaflike, ovate to broadly lanceolate, 2.5–6 × 1–2.5 mm, sparsely ciliate proximally, margin cartilaginous, apex acute. Pedicel to 3 mm, villous. Calyx 2.5–3 mm, densely hirtellous-pubescent, parted to ± middle; lobes triangular, long ciliate, costate, apex acute to sometimes spinelike. Corolla purplish red, 4–5 mm in diam.; lobes broadly obovate, margin entire to obscurely undulate, apex rounded. Fl. Jun.–Aug.

* Dry meadows, gravelly slopes; 3800–4700 m. S Xizang


西藏点地梅 西藏点地梅 xi zang dian di mei

Androsace longifolia Turczaninow var. decipiens Handel-Mazzetti; A. mariae var. tibetica (Maximowicz) Handel-Mazzetti; A. mariae var. chrychyma Handel-Mazzetti; A. semperviroides Jacquemont var. tibetica Maximowicz; A. tibetica R. Knuth var. mariae (Kanitz) R. Knuth.

Herbs perennial, forming dense mats. Rosettes superimposed, usually without intervals, 1–3(–4) cm in diam. Leaves dimorphic; outer leaves sessile, ligulate to spatulate, 3–5 × 1–1.5 mm, ciliate, apex acute; inner leaves subsessile, spatulate to obovate-elliptic, 0.7–1.5 cm 2–5 mm, tapered toward base, short ciliate or intermixed with long hairs, glabrescent, strigillose or hirsute, margin cartilaginous, apex acute to rounded, mucronate. Scapes solitary, 2–8 cm, moderately to densely hirsute and glandular; umbels 2–7(–10)-flowered; bracts lanceolate to linear, 3–4 mm, margin not cartilaginous, apex acute. Calyx ca. 3 mm, parted middle; lobes triangular, hirsute. Corolla pink, 5–7 mm in diam.; lobes cuneate-ovoblate, margin obscurely undulate, apex rounded. Fl. Jun.

* Dry meadows, gravelly slopes; 1300–4000 m. S Gansu, Nei Mongol, E Qinghai, W Sichuan, E Xizang.


钩叶点地梅 zuan ye dian di mei

Androsace nepalensis Derganc.

Herbs perennial, laxly cespitose. Shoots dark brown, glabrous, internodes 5–10 mm proximally, shorter or without intervals between rosettes distally. Rosettes 3.45 mm in diam. Leaves dimorphic, sessile; outer leaves ovate to broadly ovate, 2.35 × 1.5–2 mm, glabrous, apex acute and ± thickened, recurved from middle; inner leaves lanceolate, 3.5 × 0.8–1 mm, often whitish, subcartilaginous, glabrous or sparsely ciliate, apex acute. Scapes concealed by leaves, rarely to 1 cm; bracts 1, lanceolate to broadly lanceolate, 2 mm. Flowers solitary, subsessile. Calyx ca. 2.5 mm, parted nearly to middle; lobes ovate-elliptic, ciliate, apex obtuse. Corolla white, 6–7 mm in diam.; lobes obovate-oblong, apex rounded. Fl. May–Jun.

* Dry valleys, mountain slopes; 3000–3300 m. SW Xinjiang (Kunlun Shan).


长叶点地梅 chang ye dian di mei

Herbs perennial, densely cespitose, with many dwarf shoots dense remains of old leaves. Leaves sessile, grayish green, linear to linear-lanceolate, 0.7–3(–5) cm 1–2 mm, cartilaginous, tapered to base, glabrous except for ciliate margin when young, erect, apex acute. Scapes to 1 cm, usually hidden in leaves, densely villous; umbels 4–7(–10)-flowered; bracts linear-lanceolate, 3–6 mm, glabrescent. Pedicel 4–10 mm, villous.

Herbs perennial, forming dense cushions from many leaf rosettes superimposed into columns. Leaves sessile; leaf blade linear-lanceolate to subulate, 5–7(–10) × 0.7–2 mm, base slightly dilated, submembranous, leathery, glabrous or sparsely pubescent on margin, margin and acuminate apex, cartilaginous; midvein raised abaxially. Scapes solitary, 1–2-flowered, to 5 mm, hidden in leaves, villous; bracts 1 or 2, linear to lanceolate, ca. 3 mm. Calyx 3–3.5 mm, glabrescent or sparsely pubescent along ridges, parted to ± middle; lobes triangular, ciliolate, apex acute; veins 5, obscure. Corolla white or purple, 6–7 mm in diam.; lobes suborbicular, apex obscurely undulate. Fl. Jun.

32a. Androsace alaschanica var. zadoensis

* Steppes, gravelly slopes, dry sandy soils, shaded cliffs; 1500–4500 m. Gansu, Nei Mongol, Ningxia, S Qinghai.

32b. Androsace alaschanica var. alaschanica

* Steppes, gravelly slopes, dry sandy soils; 1500–2200 m. Gansu, Nei Mongol, Ningxia.


Herbs perennial. Rosettes solitary or several in small tufts; rosettes of current year superimposed on old rosettes. Leaves trimorphic; outer leaves triangular-lanceolate, 5–7 × ca. 2 mm, ± early deciduous, brown, with white margin proximally, apex acute; middle leaves sessile, liguliform, 5–7 mm, white pubescent on distal 1/2, hairs ca. 1 mm, apex rounded; petiolate, inner leaves short, blade obovate-lanceolate to narrowly oblanceolate, 1.5–3.5 cm, hirsute, base narrowed, apex obtuse. Scapes 3–4(–7) mm, spreading pubescent and stalked glandular; umbels subcapitate, 5- or 6-flowered; bracts linear-lanceolate to narrowly elliptic, 4–5 mm, slightly protuberant at base, villous, minutely glandular. Pedicel 2–5(–8) mm. Calyx ca. 2.5 mm, parted to ca. middle; lobes ovate, with sparse long soft and glandular hairs, apex obtuse. Corolla pink, with a yellowish eye, 6–8 mm in diam.; lobes suborbicular, apex obscurely undulate. Fl. May.
Scapes 10–40 cm, sparsely spreading white pilose; umbels many flowered; bracts ovate to lanceolate, 2–5 mm, pubescent. Pedicel 1–5 cm, sparsely minutely glandular pubescent. Calyx 3.5–4 mm, sparsely puberulent, parted to 1/3; lobes broadly ovate to ovate-triangular, minutely ciliate, apex obtuse to subacute. Corolla deep red or pink, 8–9 mm in diam.; lobes broadly obovate, margin subentire. Fl. Jun. 2n = 20.

Moist meadows, larch forests, among shrubs; 3000–4200 m. C and SE Xizang [Bhutan, Nepal, Sikkim].


绢毛点地梅 jian mao dian di mei

Herbs perennial, lax cespitose. Shoots initially deep reddish brown, initially pilose, glabrescent; internodes 0.5–2.5 cm. Rosettes 1–2 cm in diam., with remains of dead leaves at base. Leaves trimorphic; outer leaves brown, linear-oblong, 4–5 cm × 1.5 mm, white sericeous; middle leaves sessile, green, spatulate or linear-oblanceolate, 4–7.5 × 0.8–1.5 mm, densely white sericeous except for narrowed membranous base, hairs 1.5–2.5 mm, early deciduous; base truncate, margin entire or obscurnly denticulate at apex. Fl. Jun.

Stony mountain slopes; 4100–4500 m. S Xizang (Nyalam Xian) [Nepal].


卵叶点地梅 yuan ye dian di mei

Herbs perennial, laxly cespitose. Shoots much branched, dark brown, densely hirsute with bristlelike hairs. Shoots 10–40 cm, sparsely spreading white pilose; umbels many flowered; bracts ovate to lanceolate, 2–5 mm, pubescent. Pedicel 1–5 cm, sparsely minutely glandular pubescent. Calyx 3.5–4 mm, sparsely puberulent, parted to 1/3; lobes broadly ovate to ovate-triangular, minutely ciliate, apex obtuse to subacute. Corolla deep red or pink, 8–9 mm in diam.; lobes broadly obovate, margin subentire. Fl. Jun. 2n = 20.

Rocky woodland margins, streamsides; 3500–4100 m. S Xizang [Bhutan, Nepal, Sikkim].


卵叶点地梅 yuan ye dian di mei

Herbs perennial, forming lax mats of several open rosettes joined by slender shoots. Leaves trimorphic; outer leaves dark brown, ovate-lanceolate, 4–5 mm, membranous, glabrous, margin entire, apex abruptly acuminate; middle leaves sessile, green, oblong, ca. 5 mm, margin with long hairs, apex rounded; blade of inner leaves slightly shorter than petiole, ovate, 1.5–2.5 cm, pubescent, densely ciliate, base truncate, margin entire, apex rounded. Scapes ca. 9 cm, villous; umbels ca. 10-flowered; bracts ca. 4 mm, oblong, narrowly elliptic to linear, abaxially sparsely villous, ciliate, adaxially glabrous. Pedicels unequal, filiform, 7 mm, villous. Calyx 2.5–3 mm, parted to middle; lobes suborbicular, pubescent only on margin. Corolla purple, ca. 7 mm in diam.; lobes obovate, margin entire or undulate. Fl. Jun.

* Damp areas in forests; ca. 3800 m. Xizang (Gyirong Xian).


康定点地梅 kang ding dian di mei

Androsace limprichtii var. laxiflora (Petitmengin) Handel-Mazzetti; A. sarmentosa Wallich var. laxiflora Petitmengin.

Herbs perennial, lax cespitose. Shoots initially white villous, glabrescent, purplish brown; internodes 1–3 cm. Leaves trimorphic; outer leaves ovate to broadly elliptic, 4–6 mm, membranous on proximal 1/2, glabrescent, apex acute, midvein conspicuous; middle leaves numerous, sessile, ligulate-spatulate, 4–7 × 1–1.5 mm, white villous on distal 1/2, with dense hairs tufted near apex; petiole of inner leaves ca. as long as to slightly longer than blade; leaf blade elliptic to obovate-elliptic, 2–7 cm × 5–13 mm, sparsely or densely white villous and short appressed pubescent, base attenuate, apex obtuse; leaves of sterile rosettes similar to and smaller than inner leaves. Scapes erect, 8–15(–23) cm; umbels (3–) 7–17-flowered; bracts elliptic, 2–4 mm. Pedicel 6–12 mm. Calyx ca. 3 mm, parted to middle; lobes narrowly ovate, out-side pubescent, more densely so near apex, ciliate, apex obtuse. Corolla white or pink, 8–9 mm in diam.; lobes obovate, margin entire or nearly so. 2n = 20.

* Mountain slopes; 3800–4100 m. W Sichuan, Yunnan.


硬枝点地梅 ying zhi dian di mei

Herbs perennial, lax cespitose. Shoots initially white villous, glabrescent, purplish brown; internodes 1–3 cm. Leaves trimorphic; outer leaves ovate to broadly elliptic, 4–6 mm, membranous on proximal 1/2, glabrescent, apex acute, midvein conspicuous; middle leaves numerous, sessile, ligulate-spatulate, 4–7 × 1–1.5 mm, white villous on distal 1/2, with dense hairs tufted near apex; petiole of inner leaves ca. as long as to slightly longer than blade; leaf blade elliptic to obovate-elliptic, 2–7 cm × 5–13 mm, sparsely or densely white villous and short appressed pubescent, base attenuate, apex obtuse; leaves of sterile rosettes similar to and smaller than inner leaves. Scapes erect, 8–15(–23) cm; umbels (3–) 7–17-flowered; bracts elliptic, 2–4 mm. Pedicel 6–12 mm. Calyx ca. 3 mm, parted to middle; lobes narrowly ovate, out-side pubescent, more densely so near apex, ciliate, apex obtuse. Corolla white or pink, 8–9 mm in diam.; lobes obovate, margin entire or nearly so. 2n = 20.

* Mountain slopes; 3800–4100 m. W Sichuan, Yunnan.
Brown hairs, internodes 2–4 cm, with old leaf rosettes on nodes. Rosettes of current year borne at shoot apex, 0–8–1.5 cm in diam. Leaves trimorphic; outer leaves deciduous, brown, ovate-lanceolate, 4–6 mm, ciliate, base white, dilated, sheathlike, 2–3 × wider than upper part, apex linear; middle leaves sessile, ligulate-oblong to spatulate, nearly as long as outer leaves, abaxially hirsute, ciliate, adaxially glabrous or nearly so; inner leaves subsessile, elliptic to obovate-elliptic, 6–13 × 2–3.5 mm, ciliate, abaxially with longer hairs, adaxially hirtellous, base attenuate, apex obtuse. Scapes erect, 1.5–4.5 cm, hirsute; umbels 1–7-flowered; bracts linear, ca. 5 mm, base gibbous, apex obtuse. Pedicel ca. as long as to slightly shorter than bracts, densely hirsute. Calyx ca. 3 mm, parted to 1/2; lobes oblong-ovate, densely hirsute, ciliate, apex acute. Corolla deep red or pink, 6–10 mm in diam.; lobes broadly obovate. Fl. May–Jul.

* Grassy mountain slopes, rock crevices at forest margins; 9000–3800 m. SW Sichuan, NW Yunnan.


小丛点地梅


Herbs perennial, lax cespitose. Shoots many branched, initially densely pilose, with soft grayish white hairs, later glabrescent and dark purple; internodes 0.4–4 cm, with old leaf rosettes on nodes. Leaves trimorphic; outer leaves usually withered at anthesis, spatulate to ligulate, 2.5–6 mm, constricted at middle, ciliate, proximal 1/3 sheathlike, pale brown or white, membranous, slightly dilated and scarcely wider than distal part, apex obtuse; middle leaves sessile, spatulate, 2.5–6 × 1.8–1.8 mm, abaxially glabrous or sparsely hirsute near apex, fimbriate-ciliate, apex rounded, flat or slightly incurved; inner leaves subsessile, obovate-elliptic, 5–8 × 1–2 mm, ciliate, midvein sparsely hirsute abaxially, adaxially glabrous, apex obtuse; leaves on sterile shoots elliptic, ciliate, midvein sparsely hirsute abaxially, adaxially glabrous, apex obtuse; leaf blades 0.8–2.3 cm, sparsely villous; umbels 2–4–flowered; bracts linear to linear-lanceolate, 2–4 mm, sparsely villous, apex obtuse. Pedicel 0.5–3 mm, shorter than bracts, sparsely villous. Calyx 2–2.5 mm, sparsely pilose, parted to ca. 1/2; lobes narrowly ovate, ciliate, apex obtuse. Corolla pink, ca. 5 mm in diam., apex rounded. Fl. Jun–Jul.

* Dry meadows, scrub; 3600–4700 m. W Sichuan.

42. Androsace sarmentosa Wallich in Roxburgh, Fl. Ind. 2: 14. 1824.

铺垫点地梅

Herbs perennial. Rosettes solitary or several forming lax mats, 3–5 cm in diam. Stolons 5–8 cm, arising from leaf rosettes, villous with rust-colored tangled hairs, with leaves at apex. Leaves dimorphic; outer leaves sessile, ligulate-oblong to elliptic-ob lanceolate, less than 1 cm, white sericeous; inner leaves short petiolate, obovate-elliptic, 2–5 cm × 4–9 mm, white sericeous, base narrowed, apex obtuse. Scapes 12–22 cm, with sparse long tawny hairs; umbels many flowered; bracts linear to linear-ob lanceolate, 3–5 mm, sericeous and glandular. Pedicel 6–12 mm, densely rust-colored villous. Calyx ca. 3 mm, sparsely white villous, parted to middle; lobes ovate to broadly lanceolate, ciliate, apex obtuse. Corolla deep purple or pink, 5–8 mm in diam.; lobes cuneate-obovate, apex subtruncated. Fl. Jun–Jul. n = 20.

* Herbs perennial, lax cespitose. Shoots usually 3 or 4 from rosettes of current year, 1–2 cm, sparsely pilose near apex, glabrous proximally. Leaves obscurely dimorphic; outer leaves sessile, ligulate-ob lanceolate, 5–10 × 1.5–3 mm, densely hirsute on distal 1/2, base attenuate, apex obtuse; petiole of inner leaves obsolete to 1/3 as long as blade; leaf blade obovate-elliptic, 2–3(–5) × 2.5–4 cm, abaxially sparsely hirsute, adaxially glabrescent, base attenuate, margin with long spreading hairs, apex obtuse to subrounded. Scapes 1–3 in each rosette, 2–7 cm, pilose; umbels 6–10–flowered, densely grayish white villous; bracts ligulate-oblong, leaflike, 5–7 × 2 cm, base slightly gibbous, apex obtuse. Pedicel 1–3 mm. Calyx ca. 3 mm, parted to middle; lobes narrowly ovate, apex obtuse. Corolla pale yellow, 6–9 mm in diam.; lobes broadly obovate, margin slightly undulate. Fl. Jun.

Shaded rock crevices, near water in ravines; 2900–3700 m. S Xinjiang (Kunlun Shan) [Kashmir].

The record in Kashmir is doubtful.


南疆点地梅


Herbs perennial, lax cespitose. Shoots many branched, initially densely pilose, with soft grayish white hairs, later glabrescent and dark purple; internodes 0.4–4 cm, with old leaf rosettes on nodes. Leaves trimorphic; outer leaves early deciduous, brown, ovate-lanceolate, 4–6 mm, ciliate, base white, dilated, sheathlike, 2–3 × wider than upper part, apex linear; middle leaves sessile, ligulate-oblong to spatulate, nearly as long as outer leaves, abaxially hirsute, ciliate, adaxially glabrous or nearly so; inner leaves subsessile, elliptic to obovate-elliptic, 6–13 × 2–3.5 mm, ciliate, abaxially with longer hairs, adaxially hirtellous, base attenuate, apex obtuse. Scapes erect, 1.5–4.5 cm, hirsute; umbels 1–7-flowered; bracts linear, ca. 5 mm, base gibbous, apex obtuse. Pedicel ca. as long as to slightly shorter than bracts, densely hirsute. Calyx ca. 3 mm, parted to 1/2; lobes oblong-ovate, densely hirsute, ciliate, apex acute. Corolla deep red or pink, 6–10 mm in diam.; lobes broadly obovate. Fl. May–Jul.

Mixed forests, grassy slopes; 2800–4000 m. S Xinjiang.


棉毛点地梅


Herbs perennial. Rosettes solitary or 2–4 joined by branched ascending caudicules, without sterile shoots, 1.5–4.5 cm in diam. Leaves dimorphic; outer leaves numerous, sessile, ligulate-oblong, 0.7–1.7 cm, apex obtuse, abaxially ± white lanate, hairs 2–5 mm, adaxially striigillose; inner leaves indistinctly petiolate, obovate to obovate-elliptical, 1–4(–6) × 0.5–1.4 mm, base slightly gibbous, apex obtuse, with white hairs intermixed with glands, hairs 1.5–2 mm. Scapes 9–30 cm, with sparse long spreading hairs; umbels 3–11-flowered; bracts elliptic, 2–5 mm, pubescent on margin and near apex. Pedicel 1–3(–5) cm, glabrescent or minutely glandular. Calyx 3–4 mm, parted to 1/3; lobes ovate to broadly ovate, ciliolate, apex obtuse; veins 3. Corolla pink or purple, 8–9 mm in diam.; lobes broadly obovate, margin entire to obscurely emarginate. Fl. Jun–Jul.

The record in Kashmir is doubtful.
Androsace zayulensis

Herbs perennial, forming compact cushions 10 cm tall. Rosettes many, tightly aggregated, those of current year ca. 1 cm in diam., superimposed on old rosettes or with short intervals in between. Leaves sessile or subsessile, densely minutely hirtellous, obscurely dimorphic; outer leaves ligulate, ca. 3 mm, ciliate, apex obtuse; inner leaves rhomboid to narrowly elliptic, 5–6 × 2–2.5 mm, base slightly dilated, apex obtuse; midvein wide, conspicuously raised. Scapes 5–6 mm; umbels 2–4-flowered, scapes and umbels densely hirtellous; bracts linear-oblong, ca. 3 mm. Pedicel arcuate ascending in fruit, 3–5 mm. Calyx ca. 3 mm, parted slightly below middle; lobes ovate-oblong, apex obtuse. Corolla ?purple, ca. 4 mm in diam.; lobes subrectangular-obovate, slightly emarginate.

Androsace wardii

Herbs perennial, densely cespitose. Shoots suberect, initially hirtellous, minutely glandular, glabrescent, dark brown, internodes 3–10 mm. Rosettes 1–1.5 cm in diam. Leaves dimorphic; outer leaves sessile, ligulate, 1.5–2.5 mm, ciliate, white pubescent near apex; petiole of inner leaves indistinct to nearly as long as leaf blade, densely short pubescent and minutely glandular; leaf blade rhomboid-obovate to elliptic-oblancoate, 3–9 × 2–4 mm, abaxially hirtellous throughout or only on midvein, adaxially glabrous, base short attenuate, margin ciliate with long and very short hairs intermixed, apex obtuse to subrounded. Scapes 0.5–2 cm, white hirtellous, minutely glandular; umbels 3–6-flowered; bracts leaflike, elliptic to narrowly elliptic, 3–4 mm. Pedicel 1.5–4–5 mm. Calyx 2.5–3 mm, parted to middle or below; lobes oblong-ovate, apex obtuse. Corolla deep red, 6–11 mm in diam.; lobes ovate-oblong, apex broadly rounded to obscurely emarginate.

Androsace sarmentosa

Herbs perennial, lax cespitose. Shoots usually solitary, arising from rosettes, 2.5–4.5 cm, initially sparsely pilose, with leaves at apex. Leaves dimorphic; outer leaves sessile, yellowish brown, oblanceolate to oblong-oblancoate, 5–7 × (10) mm, multicellular white hirsute and short-stalked glandular, hairs on margin and apex much longer and denser, apex obtuse; inner leaves indistinctly petiolate, obovate-spatulate to oblanceolate-spatulate, (1–)2–3 cm × 3–6 mm, multicellular white hirsute and short-stalked glandular, hairs on margin and apex much longer and denser, base narrowed, apex obtuse to acute. Scapes 6–20(–33) cm, sparsely villous; bracts lanceolate to narrowly oblong, 2–3(–5) mm, base slightly gibbous. Pedicel 0.7–1.5(–2) cm, short-stalked glandular. Calyx 2.5–3 mm, parted to 1/2 or below; lobes ovate, margin submembranous and densely ciliolate, apex subrounded; veins 3, indistinct. Corolla pink, 6–8 mm in diam.; lobes elliptic to obovate, slightly emarginate. Fl. Jun–Jul.

Androsace cu mao dian di mei

* Shaded areas near streams; 3000–3600 m. W Sichuan, SE Xizang, NW Yunnan.

Androsace wardii

* Exposed limestone cliffs; 3700–4000 m. E Xizang (Zayü Xian).

Androsace mairei

* Exposed rocks and boulders; 4000–4500 m. N and W Yunnan.

Androsace euryantha

* Dry meadows, Rhododendron thickets; 3400–4600 m. SW Sichuan, SE Xizang, NW Yunnan.
flowered; bracts linear, 4–4.5 × 1–1.4 mm, sparsely pilose, base slightly gibbous. Pedicel 3–4 mm. Calyx ca. 3 mm, pubescent only along veins, parted to ± middle; lobes triangular, ciliate, apex obtuse, veins 5. Corolla pink, ca. 5 mm in diam.; lobes obovate-oblong, apex subrounded. Fl. Jun.

* Mountain slopes; ca. 3100 m. E and N Yunnan (Qiaojia Xian).


秦巴点地梅  qin ba dian di mei

* Herbs perennial, lax cespitose. Shoots purplish brown, sparsely villous, internodes 0.8–2 cm, with old rosettes on nodes. Leaves dimorphic, outer leaves sessile, spatulate to oblanceolate, 3.5–6 1.5–2 mm, ciliate, abaxially pubescent; petiole of inner leaves 3–7 mm, narrowly winged by decurrent leaf blade; leaf blade elliptic to suborbicular, 0.6–1.6 cm 2.5–7 mm, sparsely villous, base short attenuate, apex obtuse to subrounded. Scapes 1.5–5.5 cm, spreading white villous; umbels 3–6(–8)-flowered; bracts lanceolate to narrowly oblong, 2–3.5 mm, sparsely pilose, ciliate, base slightly gibbous, apex acute to subobtuse. Pedicel 2.5–5 mm, elongated to 8 mm in fruit, sparsely villous. Calyx ca. 2.5 mm, sparsely pubescent, parted to middle; lobes narrowly ovate, densely ciliate, apex obtuse. Corolla pink, 5–6 mm in diam.; lobes ovate, apex subrounded. Fl. Jun–Jul.


狭叶点地梅  xia ye dian di mei


* Herbs perennial. Rosettes 1.5–5.5 cm in diam., with remains of old leaves at base, solitary or several in dense mats. Leaves dimorphic; outer leaves numerous, sessile, narrowly oblong to oblanceolate, 5–12 mm, abaxially villous, adaxially puberulent or glabrescent, margin with spreading long white hairs, apex obtuse or acute; inner leaves spatulate to oblanceolate, 1.5–2.5(–3) cm, striose or short hirsute intermixed with few long hairs, base narrowed into a distinct petiole, margin densely spreading long ciliate, apex acute to subobtuse. Scapes 3–15(–20) cm, sparsely spreading villous; umbels 6–12(–19)-flowered; bracts lanceolate, 2–4.5 mm, hirtellous, base slightly gibbous, apex obtuse. Pedicel inconspicuous at beginning of anthesis, elongated to 2.5 cm in fruit, sparsely pilose. Calyx 2.5–3 mm, densely pubescent, constricted at base, parted to ± middle; lobes narrowly triangular, margin membranous, apex obtuse. Corolla pink, 6–8 mm in diam.; lobes broadly obovate, margin entire to slightly emarginate. Fl. Jun–Jul.

* S-facing grassy slopes, dry meadows, open forests; 2900–4200 m. W Sichuan, E Xizang.


唐古拉点地梅  tang gu la dian di mei

* Herbs perennial, forming dense moundlike cushions of tightly aggregated columns with dense overlapping leaves, 3–4 mm in diam. Leaves sessile, obscurely dimorphic; outer leaves grayish brown, broadly lanceolate to lanceolate, 2.5–3 mm, slightly keeled abaxially, glabrous, apex acute to obtuse; inner leaves oblong to broadly linear, 4–6 mm, glabrous or sometimes pubescent or with few scattered longer hairs near apex, apex acute. Scapes solitary, 2–8 mm, spreading pubescent, 1(or 2)-flowered; bracts 2, triangular-lanceolate, 3–4 mm, conduplicate, ciliate, base membranous, apex acute. Pedicel obsolete or inconspicuous. Calyx ca. 4 mm, parted to middle; lobes broadly lanceolate, ciliate, hyaline margined, apex obtuse. Corolla white, ca. 7 mm in diam.; lobes obovate, apex rounded. Fl. Jul.

* Grassy mountain slopes, river banks; 4000–5000 m. SW Qinghai, NE Xizang.


睫毛点地梅  jie mao dian di mei

* Herbs perennial, forming compact moundlike cushions from branched caudex. Shoots columnar, with dense overlapping leaves of superimposed rosettes, 2.5–4 mm in diam. Leaves subequal, sessile, oblong to ligulate, 2–5 1–1.2, glabrous or nearly so, margin incurved and fimbriate-ciliate, apex obtuse to subrounded. Scapes obsolete; bracts 1 or 2, lanceolate, slightly shorter than calyx, short ciliate, hyaline margined. Flowers solitary, in leaf rosettes of current year. Pedicel concealed by leaves. Calyx ca. 2.5 mm, parted to middle or slightly below; lobes lanceolate to oblong, ciliate, apex obtuse. Corolla white, ca. 5 mm in diam.; lobes obovate to broadly obovate, apex rounded. Fl. Jun.

Dry meadows, mountain ridges; 4000–4500 m. S Xizang [Nepal].


滇西北点地梅  dian xi bei dian di mei

* Herbs perennial, forming dense cushions from branched caudex. Rosettes 5–8 mm in diam., superimposed on old rosettes, but sometimes with intervals between them. Leaves obscurely dimorphic, sessile; outer leaves fewer, yellowish brown, more sparsely ciliate; inner leaves grayish green, broadly obovate to ligulate-obovate, 2–4 × 1.5–2 mm, abaxially minutely hirtellous on distal 1/2, fimbriate-ciliate near apex, adaxially glabrescent, margin ± incurved, apex rounded.
Scapes 1–3 cm, sparsely hirtellous, 1 or 2(–4)-flowered, or
sometimes scapes obsolete with a solitary flower
arising from rosette; bracts usually 2, oblong-lanceolate,
conduplicate, sparsely hirtellous on proximal part, densely
hirtellous on distal part, base slightly gibbous. Pedicel 1–2
mm. Calyx ca. 2.5–3 mm, parted scarcely to middle; lobes
ovate-oblong, densely hirtellous, ciliate, apex obtuse to
subrounded. Corolla white or pink; lobes broadly obovate,

Rock crevices, gravelly slopes, dry meadows; 3000–4800 m.
SW Sichuan, SE Xizang, NW Yunnan [Bhutan, NE India, N Myanmar,
Nepal, Sri Lanka].

55. Androsace lehmanniana Sprengel, Isis (Oken) 1: 1289.
1817.
早生点地梅 han sheng dian di mei

Androsace bungeana Schischkin & Bobrov; A. villosa
Linnaeus var. latifolia Bunge.

Herbs perennial, lax cespitose. Shoots with internodes 1–
2 cm, sparsely pilose when young, glabrescent, purplish
brown. Leaves sessile, obscurely dimorphic; outer leaves
ligulate-oblong, 3–6 mm, glabrescent, long ciliate, apex obtuse to
acute; inner leaves elliptic-ovate to elliptic-oblong, 0.5–1 cm
2.5–4 mm, becoming dark brown when dry, abaxially sparsely
hirsute or sometimes glabrescent, long spreading
frimbriate-ciliate, adaxially glabrescent or sparingly pubescent,
base cuneate-attenuate, apex obtuse. Leaves sessile, 2–7 cm, sparsely villous; umbels
3–6-flowered; bracts narrowly elliptic to oblong-lanceolate,
leaflike, often conduplicate, with long whitish hairs.
Pedicel ca. as long as or shorter than bracts. Calyx ca.
3 mm, parted to middle; lobes ovate, white sericeous, apex
subobtuse. Corolla white or pink, 6–9 mm in diam.;
lobes obovate to oblanceolate, margin entire or nearly

Rock crevices, dry stony slopes; 2800–3000 m. N Xinjiang
[Kazakhstan, Mongolia, Russia; W North America].

Androsace lehmanniana is treated in most North American
literature as A. chamaejasme Host subsp. lehmanniana (Sprengel)
Hultén.


高原点地梅 gao yuan dian di mei

Androsace villosa Linnaeus var. zambalensis

Herbs perennial, forming dense cushions. Rosettes of
current year globose, 6–8 mm in diam., superimposed on old
rosettes or with intervals to 7 mm. Leaves sessile, obscurely
dimorphic; outer leaves ligulate-oblong, 3.5–4.5 × ca. 1 mm,
abaxially hirtellous, ciliate, adaxially sparsely pubescent near
apex, apex obtuse. Inner leaves narrowly ligulate to oblanceolate,
5–6 cm, densely whitish hirtellous and long ciliate. Scapes solitary, 1–2 cm; umbels 2–5-
flowered, scapes and umbels with long white hairs; bracts
elliptic-ovate to broadly oblanceolate, usually
duplicate, 5–7 cm, parted to middle; lobes ovate-elliptic, apex obtuse.
Corolla white with a pink eye, 4.5–8 mm in diam.; lobes broadly obovate, margin entire or obscurely

Moist stony meadows, scree; 3600–5000 m. W Sichuan, SE
Xizang, NW Yunnan [India, Nepal, Sri Lanka].

Bot. Z. 79: 37. 1930.
环冠点地梅 huan guan dian di mei

Androsace chamaejasme Host var. coronata Watt, J.

Herbs perennial, forming dense cushions, 1.5–3 cm tall,
from branched caudex. Rosettes of current year superimposed
on old rosettes or with indistinct intervals. Leaves sessile,
overlapping, homomorphic; leaf blade linear, 3.5–5 × 0.6–1 mm,
ciliate, proximal 1/2–2/3 membranous and
glabrous, distal 1/3–1/2 hirtellous and green,
base slightly narrowed, apex obtuse. Scapes 1.5–
2.5 cm, white hirtellous; bracts oblong, ca. 4
mm, conduplicate, villous. Pedicel 1.5–3 mm,
white hirtellous, base slightly narrowed, apex obtuse. Pedicel 2.5–9 mm.
Corolla pink, with a prominent ring at mouth; tube ca.
2.2 mm; limb ca. 6 mm wide; lobes obovate, 2.2–2.5 × 1.8–2 mm, margin entire, apex
rounded.

* 4800–5100 m. W Xizang.

58. Androsace brachystegia Handel-Mazzetti, Notes Roy.
玉门点地梅 yu men dian di mei

Herbs perennial, lax cespitose. Shoots deep reddish brown,
glabrous or sparsely short whitish pubescent, internodes 0.4–2
cm. Rosettes 7–10 mm in diam. Leaves sessile, obscurely
dimorphic; outer leaves narrowly ligulate, 2–3 × 1–1.5 mm,
ciliate, scarious and whitish when dry, apex obtuse to
acute; inner leaves elliptic to elliptic-oblong, 2.5–8 × 1.5–2
mm, long ciliate, abaxially glabrous, axially pubescent near apex,
axially glabrous, margin slightly thickened, apex obtuse. Scapes solitary, 0.4–4 cm;
umbels 1–3-flowered, scapes and umbels sparsely
white hirtellous and minutely glandular; bracts ovate
or ovate-oblong, ca. 3 mm, ciliate, base slightly gibbous, apex
obtuse. Pedicel 2.5–9 mm. Calyx 3–3.5 mm, parted to middle or
slightly below; lobes usually purplish, ovate to broadly
ovate, densely ciliate, apex obtuse. Corolla white or pink,
6–9 mm in diam.; lobes obovate, margin entire or obscurely

* Shaded grassy slopes; 4000–4600 m. Gansu, Qinghai, NW
Sichuan.

雅江点地梅 ya jiang dian di mei


Herbs perennial, forming dense cushions from regularly branched shoots and crowded rosettes. Shoots 2–4, arising from rosettes of current year, sparsely pilose when young, glabrescent and purplish brown later, with leaves at apex, internodes 0.5–1–1.5 cm. Rosettes 3–13 mm in diam. Leaves sessile, only obscurely dimorphic; outer leaves withered, becoming deep reddish brown at anthesis, linear to ligulate-oblong, (2–)3–5 1–1.5 mm, glabrous, margin remotely ciliate, apex obtuse; inner leaves spatulate-oblanceolate to oblanceolate-spatulate, 5–9 × 1–1.5 mm, glabrous or sparsely hirtellous along abaxially raised midvein, pectinate-ciliate, apex obtuse to acute. Scapes solitary, 0.5–2.5 cm, with spreading or slightly tangled long white hairs and minute glands; umbels 5– or 6-flowered; bracts sometimes purplish, elliptic to oblong, 5–6 × 1.5–2.8 mm, usually conduplicate, sparsely villous and long ciliate. Pedicel 1–3 mm. Calyx ca. 3 mm, parted to middle; lobes ovate to ovate-triangular, sparsely villous and ciliate, apex obtuse. Corolla white or pink, 6–8 mm in diam.; lobes broadly ovate, margin entire or obscurely undulate, apex rounded. Fl. Jun–Jul.

* Moist meadows, grassy gravelly slopes; 3600–4800 m. Gansu, Qinghai, W Sichuan.


柔弱点地梅 rou ruo dian di mei


Herbs perennial, lax cespitose. Shoots sparsely villous when young, glabrescent and dark purple later, internodes 0.4–3.5 cm. Leaf rosettes 0.8–1.3 cm in diam. Leaves dimorphic; outer leaves sessile, obovate-ligulate, 2.5–5 × 1.5–2.2 mm, abaxially sparsely white villous on distal 1/2, adaxially glabrescent, margin with long spreading hairs, more densely so at apex, apex rounded; petiole of inner leaves indistinct to 1/2 as long as leaf blade; leaf blade obovate to oblanceolate, 3–13 2–2.5(–4) mm, tapered toward base, abaxially sparsely white villous on distal 1/2, adaxially glabrescent, margin spreading pubescent, more densely so at apex, apex obtuse to rounded. Scapes solitary, 0.5–3.5(–5) cm, sparsely villous; bracts several, linear to linear-spatulate, 3–4.5 × 0.5–1 mm, sparsely hirtellous and ciliate, base saccate, apex rounded. Pedicel 1–6 mm, sparsely pubescent. Calyx 2.5–3 mm, parted to middle; tube sparsely pubescent; lobes ovate to ovate-oblong, more densely pubescent than tube, ciliate, apex obtuse. Corolla pink, 5–8 mm in diam.; lobes broadly obovate, margin entire to obscurely undulate, apex rounded. Fl. Jun–Jul.

* Moist meadows, *Rhododendron* thickets; 3200–4500 m. W Sichuan, SE Xizang, NW Yunnan.

61. **Androsace selago** J. D. Hooker & Thomson ex Klatt, Linnaea 32: 292. 1863.  

紫花点地梅 zhi hua dian di mei

Plants perennial, forming compact moundlike cushions. Shoots columnar, tightly packed, densely and uniformly with overlapping leaves, ca. 3 mm in diam. Leaves sessile, subequal, linear to cuneate-obovate, 2–3 × 0.8–1.2 mm, membranous and glabrous on proximal 1/2, thickened and sericeous on distal 1/2, apex ± incurved, acute to subacuminate. Scapes solitary, 2.5–7 mm, sparsely villous, 1- or 2-flowered; bracts linear, slightly shorter than flowers, inserted slightly below calyx. Flowers sessile. Calyx 2.5–3 mm, parted below middle; lobes oblong, villous outside, apex obtuse. Corolla purple, 2–3 mm in diam.; lobes obovate-oblong, apex obtuse. Fl. Jun.

Dry mountain slopes; 3600–5000 m. Xizang [Bhutan, India, Sikkim].


热状点地梅 zhi zhuang dian di mei

*Androsace densa* Pax & K. Hoffmann; *A. gustavii* R. Knuth; *A. sessiliflora* Turrill.

Herbs perennial, forming compact moundlike cushions. Shoots tightly packed, with rosettes superimposed into columns, usually without intervals, 2–3 mm in diam. Leaves sessile, dimorphic; outer leaves dark brown, ligulate to oblong-elliptic, 2–3 mm, glabrescent, apex obtuse to acute; inner leaves linear to narrowly oblanceolate, 2–3 mm, abaxially densely white tufted villous on distal 1/2 and on margin, adaxially glabrescent. Flowers solitary, subsessile, hidden in leaf rosettes, with only corolla limb exserted; bracts linear, membranous. Calyx cylindric, 2.5–3 mm, parted to 1/3 or below; lobes triangular, margin with long hairs, apex obtuse. Corolla pink, ca. 3 mm in diam.; lobes broadly obovate, margin entire to obscurely undulate, apex rounded. Fl. Jun–Jul.

Dry meadows, gravelly mountain slopes; 3500–5000 m. S Gansu, Qinghai, W Sichuan, S Xinjiang, Xizang [Bhutan, Nepal, Sikkim].

63. **Androsace globifera** Duby in A. de Candolle, Prodr. 8: 1844.  

球形点地梅 qiu xing dian di mei

Herbs perennial, forming small lax mats. Shoots dark brown, internodes 3–8(–10) mm. Rosettes oblongose, 4–8 mm in diam. Leaves sessile, densely overlapping; outer leaves brown, elliptic-oblong to subobovate, 2.5–3.5 1.5–2 mm, glabrescent or with few long hairs near apex; midvein ± raised abaxially; inner leaves spatulate to linear,
4–5 × 0.8–1.5 mm, densely white villous on distal part of both surfaces, apex obtuse to acute. Scapes 2–3 mm, 1- or 2-flowered; bracts oblong, ca. 1 mm. Pedicel 4–10 mm, spreading pubescent. Calyx ca. 3 mm, parted to 1/3; lobes broadly ovate, apex rounded to obtuse. Corolla pinkish, 6–8 mm in diam.; lobes broadly obovate, ca. 3 mm, apex rounded. Fl. Jun–Jul. 2n = 36.

Dry meadows; 3600–4700 m. SW Xizang (Zanda Xian) [Bhutan, India, Nepal, Sikkim].

64. Androsace ovczinnikovii Schischkin & Bobrov in Komarov, Fl. URSS 18: 729. 1952.

天山点地梅 tian shan dian di mei

Herbs perennial, forming lax mats. Shoots sparsely white villous, glabrescent and dark purplish brown, internodes 1.5–3 cm. Rosettes grayish green, 1.5–2.5 cm in diam. Leaves sessile, obscurely dimorphic; outer leaves yellowish brown, linear to narrowly ligulate, 3–6 × 1–1.5 mm; inner leaves linear to linear-lanceolate, 7–12 × 1.5–2.5 mm, ± white villous near apex; leaves of sterile shoots lanceolate, 4–7 × 1–2 mm, glabrescent or sparsely pubescent near apex, margin revolute. Scapes 1.5–4(–10) cm, scapes and inflorescences densely white villous; umbels 3–5–flowered; bracts elliptic to ovate-lanceolate, 3–5 mm. Pedicel 5–8 mm. Calyx 2.5–3 cm, parted to middle; lobes ovate, apex obtuse. Corolla white, becoming pink, 4.5–6 mm in diam.; lobes obovate to oblong-ovate, margin entire to slightly emarginate, apex rounded. Fl. Jun.

Dry meadows, open woodlands; 2500–3100 m. W Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan, Turkmenistan, Uzbekistan].


白花点地梅 bai hua dian di mei

*Androsace hopeiensis* Nakai; *A. villosa* Linnaeus var. *incana* (Lamarck) Duby.

Herbs perennial, densely cespitose. Shoots dark brown, sparsely pilose, glabrescent, internodes inconspicuous to 1.3 cm. Rosettes 6–10 mm in diam., with remains of old leaves at base. Leaves sessile, subequall or inner longer than outer, lanceolate to ligulate or narrowly oblanceolate, 3–9 × 0.8–2 mm, abaxially densely long white sericeous, adaxially long white sericeous on distal part, apex acute to subobtuse. Scapes solitary, to 2(–5) cm, scapes and inflorescences densely white villous; umbels 3–5(–8)-flowered; bracts lanceolate to broadly linear, 3–5 mm, base slightly gibbous. Pedicel 1.5–2.5 cm, parted to middle; lobes ovate, apex obtuse. Corolla pinkish, with a yellow eye, 5–8 mm in diam.; lobes broadly obovate, margin entire or obscurely crenate, apex rounded. Fl. May–Jun. 2n = 20.

Open grassy slopes; 2000–3500 m. N Hebei, Nei Mongol, Shanxi, N Xinjiang [Kazakhstan, Mongolia, Russia].


密毛点地梅 mi mao dian di mei

Herbs perennial, densely cespitose. Shoots purplish brown, sparsely white villous, internodes 0.8–1.5 cm. Rosettes 3–4 mm in diam. Leaves sessile, subequal, oblong-ligulate to oblanceolate, ca. 0.8–1.5 × 2–3 mm, white sericeous, more densely so near apex, hairs ca. 3 mm, apex obtuse to acute. Scapes solitary, 8–16 cm, scapes and inflorescences minutely glandular; umbels 3–6–flowered; bracts broadly elliptic, ca. 3 mm, base slightly gibbous. Pedicel 1–2.5 cm. Calyx ca. 3 mm, parted to 1/3; lobes broadly ovate, ciliate, apex subrounded; veins 3, obscure. Corolla pink, 8–10 mm in diam.; lobes obovate-oblong, margin entire to obscurely emarginate, apex subtruncate. Fl. Jun.

* Rocky areas; ca. 2000 m. NW Yunnan.


昌都点地梅 chang du dian di mei

Herbs perennial, forming dense moundlike cushions from branched caudex. Shoots very short, without internodes. Rosettes of current year 1–2.5 cm in diam., superimposed on old ones. Leaves obscurely dimorphic, sessile; outer leaves smaller than inner, tufted villous near apex; inner leaves linear-lanceolate, 4–12 × 0.8–1.8 mm, with scattered long hairs on margin and sometimes also distally, margin slightly thickened, apex acute; midvein prominent and raised abaxially. Scapes 1.5–2(–4) cm, with bracts; umbels 2–8-flowered; bracts narrowly lanceolate to linear, 3–4 mm, base slightly gibbous. Pedicel 1.5–7 mm, 1–2 as long as bracts, with few spreading long white hairs as in calyx. Calyx ca. 3 mm, parted to middle; lobes ovate, long ciliate, apex acute. Corolla white to pink or yellow, 4–5 mm in diam.; lobes obovate-oblong, margin entire, apex rounded.

Dry meadows, forest margins, open grassy slopes; 3100–4500 m. Sichuan, E Xizang.

1a. Corolla white or pink ......................... 67a. var. *bisulca*  
1b. Corolla yellow ................................. 67b. var. *aurata*

67a. Androsace bisulca var. *bisulca*

昌都点地梅 (原变种) chang du dian di mei (yuan bian zhong)


Corolla white or pink, with a yellow eye. Fl. May–Jun.

* Dry meadows, forest margins; 3100–4200 m. W Sichuan, E Xizang.

黄花昌都点地梅 huang hua chang du di mei

*Gullies of S-facing mountain slopes: 3000–3500 m. E Xizang (Bomi Xian).


景天点地梅 jing tian di mei

Androsace bulleyana Forrest var. coccinea Franchet.

Herbs biennial or annual. Rosettes usually solitary, 2.5–6 cm in diam. Leaves sessile, spatulate, 1.5–4 mm, 3–7 mm wide distally, tapered to base, glabrous, margin cartilaginous and pectinately-ciliate, apex rounded and mucronate. Scapes to many, 10–28 cm, fulvous spreading hispate; umbels many flowered; bracts broadly lanceolate to linear-lanceolate, 4–9 mm, densely ciliate. Pedicel slightly longer than bracts at anthesis, elongated to 2.8 cm in fruit, densely hirtellous. Calyx 4.5–5.5 mm, sparsely pilose, base subacute, parted to 1/2 or below; lobes oblong, long ciliate, apex obtuse to subrounded. Corolla purple, with a dark eye, 8–10 mm in diam.; lobes cuneate-obovate, apex slightly emarginate to irregularly denticulate. Fl. Jun–Jul.

* Gravelly slopes, valleys: 1800–3200 m. NW Yunnan.


石莲叶点地梅 shi lian ye di mei


Herbs biennial or annual. Rosettes usually solitary, 2.5–6 cm in diam. Leaves sessile, spatulate, 1.5–4 mm, 3–7 mm wide distally, tapered to base, initially ± strigillose, glabrescent, margin cartilaginous and pectinately-ciliate, apex rounded and mucronate. Scapes to many, (3–)10–15 cm, hirtellous-villous; umbels many flowered; bracts lanceolate to linear-lanceolate, rarely narrowly elliptic, 4–6 mm, sparsely hispate and ciliate. Pedicels unequal, 4–7 mm at anthesis, elongated to 3 cm in fruit, with dense tangled hairs. Calyx 4–4.5 mm, densely short bristly, ± furrowed in fruit, parted nearly to middle; lobes triangular, densely ciliate, apex acute; midvein slightly raised. Corolla purple or pink, ca. 6 mm in diam.; lobes obovate-oblong, margin entire or slightly emarginate, apex rounded. Fl. Apr–Jun.

* Open dry mountain slopes, gravelly sites, open woodlands; 2500–3000 m. SE Qinghai, W Sichuan, NE Xizang, NW Yunnan.

72. Androsace aizoon Duby in A. de Candolle, Prodr. 8: 50. 1844.

莲座点地梅 lian zuo di mei

Androsace aizoon Duby var. aizoon Duby in A. de Candolle, Prodr. 8: 50. 1844.
Androsace aizoon Duby var. himalaica R. Knuth.

Herbs biennial or annual. Rosettes 2.5–8 cm in diam. Leaves sessile, spatulate, 1.5–3.2(–4) cm x 4–7 mm, tapered to base, minutely ciliolate, margin subcartilaginous, apex subrounded and mucronate. Scapes 4 to many, 10–35 cm, sparsely glandular pubescent; umbels (5–)10–25-flowered; bracts oblong-lanceolate, 2.5–4 x 1–1.8 mm, densely glandular pubescent. Pedicels unequal, 0.4–3.5(–4) cm, sparsely glandular pubescent. Calyx campanulate, ca. 3.5 mm, parted to ± middle; lobes ovate, glandular pubescent, ciliolate, apex obtuse; veins 3 or 4. Corolla pinkish red; lobes obovate, ca. 3.5 mm, apex 2-lobed. Fl. Jun–Jul. 2n = 20.

Rocky and grassy slopes; 2300–3500 m. W Xizang [India, Kashmir, Pakistan].


直立点地梅 zhi li dian di mei


报春花属 bao chun hua shu

Herbs perennial, rarely annual, glabrous or pubescent, often farinose. Leaves simple, forming a rosette. Flowers usually heterostylos with pin (long-styled) and thrum (short-styled) flowers; sometimes homostylos, in umbellate, racemose, subcapitate, or spicate inflorescences on scapes, with bracts; rarely solitary and scapes undeveloped. Calyx campanulate or cylindric, sometimes leaflike, 5-toothed. Corolla tube cylindric, not constricted at throat; limb 5-lobed, spreading or campanulate; lobes narrowly triangular, with scattered short-stalked glands, apex apiculate; veins 3, obscure. Corolla white or pink, 2.5–4 mm in diam.; lobes oblong, 0.8–1.2 mm wide. Fl. Apr–Jun.

Grassy mountain slopes, dry banks, open woodlands; 2400–3400 m. Gansu, Qinghai, Sichuan, Xizang, Yunnan [Nepal].
8b. Corolla pink to violet; calyx shorter than corolla tube.

Key 1

1a. Racemes abbreviated, ± umbellate, less than 1.5 cm, densely flowered.
   2a. Leaf blade acute or acuminate at apex.
      3a. Leaf blade rounded or cuneate at base; calyx ca. 3 mm ........................................ 55, *P. henryi*
      3b. Leaf blade cordate at base; calyx 7–10 mm .......................................................... 56, *P. chapaensis*
   2b. Leaf blade obtuse or rounded at apex.
      4a. Leaf blade suborbicular or ovate-rounded, 10–15 cm wide, cordate at base ..................... 57, *P. partschiana*
      4b. Leaf blade oblong to obovate, 2–5 cm wide, broadly cuneate to subrounded at base ............. 58, *P. rugosa*

1b. Racemes much longer than 1.5 cm or only to 5-flowered.
   5a. Calyx lobes not leaflike, glabrous inside .......................................................... 24, *P. pauliana*
   5b. Calyx lobes leaflike, pubescent on both sides.

Key 2

1a. Inflorescences subcapitate, short pedicellate; calyx actinomorphic.
   2a. Bracts broadly ovate to elliptic, leaflike; leaf blade broadly elliptic to suborbicular, base truncate or
      slightly cordate, evergreen .............................................................. 266, *P. dryadifolia*
   2b. Bracts lanceolate to ovate-lanceolate; leaf blade not as above.
3a. Flowers spreading or ± nodding; bracts and flower buds overlapping, forming a tuft or crown at apex ................................................................................................................................................... 276. *P. capitata*

3b. Flowers erect; bracts not forming a crown at apex.
   4a. Plants with basal bud scales at anthesis.
      5a. Leaves puberulent or glabrescent; corolla annulate ......................................................... 269. *P. denticulata*
      5b. Leaves glabrous; corolla annulate ......................................................................................... 270. *P. monticola*
   4b. Plants without basal bud scales at anthesis.
      6a. Leaves pubescent.
         7a. Inflorescences loose; pedicel 2–5 mm; leaves pilose ...................................................... 273. *P. laxiuscula*
         7b. Inflorescences compact; pedicel less than 2 mm; leaves sepal or scabrous glandular pubescent.
            8a. Flowering scapes (1–)4–8(–15) cm; leaves with fine scabrous glandular hairs ..... 271. *P. atrodentata*
            8b. Flowering scapes (6–)10–30 cm; leaves with white sepal hairs ......................... 272. *P. erythrocarpa*
      6b. Leaves glabrous.
         9a. Calyx parted below middle, lobes acute .......................................................................... 275. *P. glomerata*
         9b. Calyx parted only to middle, lobes obtuse.
            10a. Inflorescences 2–4 cm in diam.; flowering scapes to 35 cm .............................. 274. *P. pseudodenticulata*
            10b. Inflorescences 1–1.5 cm in diam.; flowering scapes to 11 cm.
                11a. Leaves conspicuously denticulate; bracts not concealing pedicels ...................... 197. *P. glabra*
                11b. Leaves entire or obscurely denticulate; bracts concealing pedicels, ca.
                    1/2 as long as calyx.
                       12a. Leaves densely glandular; calyx and bracts often tinged with purple .......................................................... 198. *P. kongboensis*
                       12b. Leaves sparsely glandular; calyx and bracts green, puberulent ..... 199. *P. pseudoglabra*
   1b. Inflorescences capitule or spicate; flowers sessile, reflexed; calyx ± zygomorphic.
      13a. Corolla tube 1.8–4 cm, limb 2–3 cm wide ............................................................................................. 294. *P. sherriffiae*
      13b. Corolla tube and limb usually less than 1.1 cm.
      14a. Corolla lobes acute at apex.
         15a. Bracts and calyx crimson; scapes glabrous ................................................................. 278. *P. vialii*
         15b. Bracts and calyx green or tinged with purple; scapes sparsely pilose .............................. 279. *P. gracilenta*
      14b. Corolla lobes rounded, truncate, or lobed at apex.
         16a. Leaves scabrous-pubescent ..................................................................................................... 280. *P. violacea*
         16b. Leaves with long multicellular hairs or subglabrous.
            17a. Corolla tube only slightly longer than calyx; limb subglobose ................................. 281. *P. concholoba*
            17b. Corolla tube at least 2 x as long as calyx, limb funnelform.
                18a. Style of thrum flower reaching middle of corolla tube.
                   19a. Corolla deep indigo-purple; lobes nearly quadratge, apex truncate or
                       obscurely emarginate ........................................................... 282. *P. watsonii*
                   19b. Corolla bluish violet to pale purple; lobes ovate to suborbicular, margin entire .......................................................... 283. *P. giraldiana*
                18b. Style of thrum flower approaching base of corolla tube.
                   20a. Leaf blade obvate to oblanceolate, entire to repand-crenulate, subsessile .... 284. *P. cernua*
                   20b. Leaf blade usually elliptic to lanceolate, crenate, dentate, or lobed, distinctly petiolate.
                       21a. Inflorescences ± white farinose ................................................................. 285. *P. bellidifolia*
                       21b. Inflorescences efarinose or yellow farinose.
                          22a. Corolla lobes spreading .......................................................... 286. *P. aerinantha*
                          22b. Corolla lobes ± erect.
                             23a. Scapes pilose or subglabrous ................................................................. 287. *P. deflexa*
                             23b. Scapes glabrous.
                                24a. Leaf blade crenate-dentate; corolla lobes truncate
to emarginate at apex ............................................................. 288. *P. muscarioides*
                                24b. Leaf blade deeply incised-lobulate or pinnatifid
or very coarsely dentate; corolla lobes rounded
or nearly so at apex ............................................................. 289. *P. pinnatifida*
1b. Calyx lobes not leaflike, glabrous inside.
   2a. Flowers 4–7 mm in diam.; leaf blade ca. 1 cm.
      3a. Scapes glandular; leaves coarsely pinnatifid-dentate, with obtuse teeth ........................................ 291. *P. sapphirina*
      3b. Scapes glabrous; leaves sharply dentate on distal 1/2 ................................................................. 292. *P. flabellifera*
   2b. Flowers at least 10 mm in diam.; leaf blade usually more than 1 cm.
      4a. Corolla white or yellow.
         5a. Corolla white; bracts lanceolate, 2–6 mm .................................................................................................. 293. *P. eburnea*
         5b. Corolla yellow; bracts ovate to ovate-oblong, 6–15 mm ........................................................................ 135. *P. faberi*
      4b. Corolla purple or violet.
         6a. Inflorescences short spike-like; corolla tube ca. 2 × as long as calyx.
            7a. Spikes compact, flowers contiguous .................................................................................................. 295. *P. flaccida*
            7b. Spikes lax, flowers 0.5–1.5(–3) cm apart .................................................................................... 296. *P. spicata*
      6b. Inflorescences capitulate; corolla tube nearly as long as calyx.
         8a. Corolla narrowly campanulate; lobes narrowly oblong, with 2 or 3 linear-triangular lobules ................................................................. 297. *P. cawdoriana*
         8b. Corolla broadly campanulate or widely funnelform, lobes orbicular to broadly obovate or broadly ovate.
            9a. Corolla broadly campanulate, lobes emarginate or erase-denticulate at apex ............................. 299. *P. sandemaniana*
            9b. Corolla campanulate, lobes entire ............................................................................................... 300. *P. wollastonii*

Key 4

1a. Leaves pinnately compound or pinnately lobed to midvein.
   2a. Plants pubescent ................................................................................................................................. 48. *P. filchnerae*
   2b. Plants glabrous.
      3a. Pinnae (1 or)2–6 pairs, with 2–4 teeth on each side; corolla pink or pale lilac, limb 4–8 mm wide ......................................................................................................................... 52. *P. cicutariifolia*
      3b. Pinnae 7–9 pairs, pinnatifid or pinnately dentate; corolla white or tinged with lilac, limb 10–12 mm wide ......................................................................................................................... 53. *P. merrilliana*
   1b. Leaves pinnately or palmately lobed, lobes not reaching midvein.
      4a. Calyx inflated at base.
         5a. Leaf rosette with wiry petioles of withered leaves at base; calyx 8–10 mm in fruit ........................................ 49. *P. rupestris*
         5b. Leaf rosette without remains of old leaves at base; calyx 15–20 mm in fruit ........................................ 50. *P. sinensis*
      4b. Calyx not inflated at base.
         6a. Lateral veins of leaves pinnate; calyx many veined.
            7a. Capsule ellipsoid, ca. as long as calyx ............................................................................................... 30. *P. polyneura*
            7b. Capsule oblong, slightly longer than calyx ........................................................................................ 31. *P. saxatilis*
      6b. Lateral veins of leaves mostly branched from base; calyx few veined.
         8a. Petiole vaginate at base; leaves glabrescent abaxially ........................................................................ 33. *P. vaginata*
         8b. Petiole not vaginate at base; leaves pubescent along veins abaxially.
            9a. Leaf blade palmately lobed 1/3–1/2 its width, lobules with obtuse teeth ........................................ 34. *P. latisecta*
            9b. Leaf blade palmately lobed nearly to base, lobules with acute teeth ........................................ 35. *P. palma*

Key 5

1a. Calyx lobes leaflike, pubescent on both sides ....................................................................................... 45. *P. malvacea*
1b. Calyx lobes not leaflike, glabrous inside.
   2a. Corolla yellow, in compact umbels ...................................................................................................... 14. *P. ambita*
   2b. Corolla rose to purple, in lax umbels.
      3a. Calyx lobes ovate, deeply emarginate, margin denticulate ................................................................. 15. *P. oreodoxa*
      3b. Calyx lobes triangular to ovate-triangular, margin entire.
         4a. Leaf blade suborbicular to reniform, as wide as long or nearly so.
            5a. Scapes and petioles with tawny long hairs.
               6a. Leaves pilose; flowers homostylous or heterostylous ........................................................................ 20. *P. obconica*
               6b. Leaves strigillose; flowers heterostylous ...................................................................................... 21. *P. rubifolia*
            5b. Scapes and petioles sparsely pubescent or subglabrous; leaves glabrous or nearly so abaxially.
               7a. Corolla limb 1.5–2.5 mm wide, lobes at least 5 mm wide ......................................................... 22. *P. sinolisteri*
               7b. Corolla limb 5–8 mm wide, lobes 1.5–2 mm wide ........................................................................... 23. *P. asarifolia*
4b. Leaf blade ovate to elliptic or oblong, conspicuously longer than wide.
   8a. Leaf blade 11–13-lobulate; flowers homostylous .......................................................... 16. *P. dunicola*
   8b. Leaf blade sinuate-dentate; flowers heterostylous.
      9a. Scapes shorter than leaf rosette, only slightly longer than pedicel .......................... 17. *P. barbicalyx*
      9b. Scapes longer than leaf rosette, much longer than pedicel.
         10a. Leaf blade 0.8–2 cm wide; calyx 2.8–4 mm, parted nearly to middle .................. 18. *P. densa*
         10b. Leaf blade at least 3 cm wide; calyx 5–10 mm, parted scarcely to 1/3.
            11a. Reticulate veins of leaf blade markedly elevated abaxially; corolla limb
                5–8 mm wide ............................................................................................... 19. *P. vilmoriniana*
            11b. Reticulate veins of leaf blade smooth or only slightly raised abaxially;
                corolla limb 15–25 mm wide ................................................................. 20. *P. obconica*

Key 6

1a. Plants with woody rhizomes; capsule valved.
   2a. Scapes robust, more than 4 cm; inflorescences many flowered.
      3a. Scapes ± yellow farinose toward apex, glabrous .................................................... 63. *P. bullata*
      3b. Scapes with tawny glandular hairs; calyx efarinose except inside near base, pubescent ........ 64. *P. forrestii*
   2b. Scapes slender, usually shorter than leaf rosette; inflorescences few flowered.
      4a. Leaf blade much longer than wide, base attenuate; petiole ca. as long as leaf blade .......... 65. *P. bracteata*
      4b. Leaf blade nearly as long as wide, base truncate to shallowly cordate; petiole distinctly longer
          than leaf blade .................................................................................................................. 66. *P. rockii*
1b. Plants with small membranous bud scales at base; capsule crumbling irregularly.
   5a. Scapes absent.
      6a. Pedicel densely pilose; calyx 7–9 mm ............................................................................. 100. *P. exscapa*
      6b. Pedicel sparsely pilose; calyx 5–6.5 mm ........................................................................ 101. *P. praeflorens*
   5b. Scapes present.
      7a. Scape 1–3-flowered; bracts usually 2 ................................................................................ 102. *P. coerulea*
      7b. Scape (2 or)3- to many flowered; bracts several.
         8a. Leaf blade oblong-obovate to oblanceolate, base attenuate; petiole very short or nearly
             obsolete.
            9a. Flowers homostylous; corolla lobes entire ............................................................. 112. *P. klaveriana*
            9b. Flowers heterostylous; corolla lobes ± emarginate at apex.
               10a. Leaf blade neither bullate nor alveolate; corolla lobes cuneate-oblong .................. 115. *P. hylobia*
               10b. Leaf blade bullate adaxially, alveolate abaxially; corolla lobes broadly obovate.
                  11a. Leaf blade sharply erose-dentate; pedicel hirtellous-pilose ............................ 113. *P. davidii*
                  11b. Leaf blade remotely hydathode-denticulate; pedicel pubescent .................................. 114. *P. fagosa*
9b. Leaf blade oblong to elliptic or broadly obovate, base rounded or short attenuate, distinctly
    petiolate.
   12a. Leaf blade irregularly hydathode-dentate; scape arising from leaf rosette of previous
        year ................................................................................................................................. 106. *P. breviscapa*
   12b. Leaf blade obscurely crenulate or denticulate; scape arising from leaf rosette of current
        year.
      13a. Leaves glabrous except for veins pubescent abaxially .................................................. 107. *P. tardiflora*
      13b. Leaves pilose or pubescent at least on entire abaxial surface.
         14a. Leaves thin papery, base subcuneate, not alveolate abaxially ......................... 110. *P. leptophylla*
         14b. Leaves firm papery or subleathery, base rounded or obtuse, prominently
              alveolate abaxially.
            15a. Leaves subglabrous adaxially; corolla limb 1.5–2.5 cm wide .................. 108. *P. ovalifolia*
            15b. Leaves pilose adaxially; corolla limb ca. 1.5 cm wide ................................. 109. *P. crassa*

Key 7

1a. Leaf blade cordate at base; calyx longer than corolla ......................................................... 51. *P. pycnoloba*
1b. Leaf blade attenuate at base; calyx ca. as long as corolla tube ........................................... 54. *P. veris*

Key 8

1a. Leaf blade acute or acuminate at apex.
   2a. Leaf blade cuneate or rounded at base; calyx ca. 3 mm .............................................. 55. *P. henryi*
   2b. Leaf blade cordate at base; calyx 7–10 mm ........................................................................ 56. *P. chapaensis*
1b. Leaf blade obtuse or rounded at apex.
3b. Leaves glabrous; inflorescences abbreviated racemes.
   4a. Leaf blade oblong to suborbicular or ovate-rounded, 10–15 cm wide, base cordate .......... 57. P. partschiana
   4b. Leaf blade oblong to oblong-ovate, 2–5 cm wide, broadly cuneate to subrounded at base .......... 58. P. rugosa
3b. Leaves pubescent at least on margin; inflorescences umbellate.
   5a. Pedicel and calyx glabrous; leaves densely pilose on both surfaces ........................................ 59. P. levicalyx
   5b. Pedicel and calyx fulvous pilose; leaves pubescent on margin and abaxially.
      6a. Leaf blade subcordate at base; calyx 4.5–7.5 mm, parted to middle ....................................... 62. P. wangii
      6b. Leaf blade cuneate or rounded at base.
         7a. Calyx 3–4 mm, parted to 2/3 ........................................................................................................ 60. P. kwangchouensis
         7b. Calyx 6–7 mm, parted to 1/3 ........................................................................................................ 61. P. kwangtungensis

Key 9

1a. Some leaf bases attenuate.
   2a. Flowers usually solitary.
      3a. Leaf blade 3–4 mm wide, 3-lobed ............................................................................................... 268. P. triloba
      3b. Leaf blade 4–8 mm wide, incised-dentate .................................................................................. 298. P. klattii
   2b. Flowers (2 or)3 to many, in umbels.
      4a. Corolla lobes entire, tube pilose inside ...................................................................................... 70. P. comata
      4b. Corolla lobes 3-toothed, tube glabrous inside .............................................................................. 71. P. taliensis
1b. Leaf bases cordate or rounded.
   5a. Leaf blade suborbicular to reniform, margin obscurely undulate to subentire.
      6a. Abaxial surface of leaves and inflorescences farinose ............................................................... 10. P. interjacens
      6b. Plants efarinose throughout.
         7a. Petioles, scapes, abaxial surface of leaves woolly .................................................................... 13. P. tsiangii
         7b. Petioles and scapes with rust-colored multicellular hairs; leaves sparsely pilose.
            8a. Calyx 3–4 mm, parted to ± middle ....................................................................................... 11. P. cavaleriei
            8b. Calyx 7–10 mm, parted to 1/3 .................................................................................................. 12. P. lithophila
   5b. Leaf blade oblong or margin distinctly dentate or lobed.
      9a. Scapes shorter than leaf rosette; pedicel often ca. as long as scape.
         10a. Inflorescences and abaxial surface of leaves ± farinose.
            11a. Calyx parted below middle, lobes lanceolate to linear-lanceolate; fl. Mar–Apr .......... 1. P. duclouxii
         10b. Plants efarinose throughout.
            12a. Plants sparsely pilose; scapes with small leaves at apex; calyx 2–3 mm .......................... 3. P. divaricata
            12b. Plants densely rust-colored pilose, scapes without leaves at apex; calyx ca. 4 mm ........... 4. P. epilithica
   9b. Scapes longer than leaf rosette, many times longer than pedicel.
      13a. Plants efarinose throughout.
         14a. Scapes usually with many umbels; corolla tube 4–6 mm .................................................. 8. P. malacoides
         14b. Scapes with 1 or 2 umbels; corolla tube 8–9 mm ............................................................... 9. P. pellucida
      13b. Plants ± farinose.
         15a. Leaves glabrous, copiously white farinose abaxially ............................................................. 5. P. hypoleuca
         15b. Leaves ± pubescent, efarinose or nearly so.
            16a. Pin flower style ca. as long as corolla tube; stamens inserted at upper part of
                 corolla tube in thrum flowers ......................................................................................... 8. P. malacoides
            16b. Pin flower style ca. 1/2 as long as corolla tube; stamens inserted near middle of
                 corolla tube in thrum flowers.
               17a. Plants biennial, with numerous fibrous roots; corolla tube 4.5–5.5 mm ............... 6. P. forbesii
               17b. Plants perennial, with a short rhizome; corolla tube 7–8 mm .................................. 7. P. effusa

Key 10

1a. Lateral veins of leaves branched from base; calyx few veined.
   2a. Petiole vaginate at base; leaves glabrescent abaxially ............................................................ 33. P. vaginata
   2b. Petiole not vaginate at base; leaves pubescent along veins abaxially.
      3a. Flowers homostylous .................................................................................................................. 36. P. septemloba
      3b. Flowers heterostylos.
         4a. Scapes usually with 2 superimposed umbels; leaf blade coarsely dentate-lobulate .......... 37. P. loeseneri
         4b. Scapes usually with 1 umbel; leaf blade palmately 5–9-lobed.
5a. Leaf blade lobed to 2/5, lobules subrotund or broadly triangular with crenate or obtuse teeth .......................................................... 38. P. heucherifolia

5b. Leaf blade lobed 1/3–1/2, lobules triangular to ovate-triangular with acute teeth.

6a. Plants stoloniferous; umbels 2- or 3-flowered ...................................................... 39. P. alsophila

6b. Plants occasionally producing stolons; umbels usually many flowered ................. 40. P. geraniifolia

1b. Lateral veins of leaves pinnate; calyx many veined.

7a. Leaf blade ovate to oblong, at least 2 × as long as wide.

8a. Leaf blade lobed 1/3–1/2, lobules incised-dentate ................................................. 31. P. saxatilis

8b. Leaf blade lobed to 1/4, lobules crenulate ............................................................. 32. P. sieboldii

7b. Leaf blade suborbicular, slightly longer than wide.

9a. Leaf blade distinctly palmately or pinnately lobed.

10a. Calyx and corolla tube pubescent to glabrous .................................................... 30. P. polyneura

10b. Calyx and corolla tube subglabrous ................................................................. 31. P. saxatilis

9b. Leaf blade shallowly crenate or dentate-lobulate.

11a. Scapes with 3–10 superimposed umbels; calyx parted to middle.

12a. Calyx 8–11 mm, lobes ovate to ovate-lanceolate ............................................... 25. P. mollis

12b. Calyx 5–6.5 mm, lobes narrowly lanceolate ......................................................... 26. P. sinomollis

11b. Scapes with 1 or 2 superimposed umbels; calyx parted usually below middle.

13a. Calyx lobes oblong to oblong-lanceolate, herbaceous, ciliate ............................... 27. P. neurocalyx

13b. Calyx lobes lanceolate, subleathery, sparsely pubescent or glabrescent.

14a. Leaf blade sinuate, lobules subrotund; calyx 4.5–7 mm; corolla tube 6.5–8 mm ................................................................. 28. P. cinerascens

14b. Leaf blade coarsely dentate-lobulate, lobules triangular, apex acute; calyx 7–12 mm; corolla tube 10–13.5 mm ................................................................. 29. P. violaris

Key 11

1a. Flowers homostylos; leaf rosettes 1–2 cm tall ..................................................... 260. P. homogama

1b. Flowers heterostylos; leaf rosettes more than 2 cm tall.

2a. Corolla lobes entire ......................................................................................... 261. P. humilis

2b. Corolla lobes distinctly emarginate to 2-lobed.

3a. Leaf blade oblanceolate to obovate or spatulate, attenuate at base.

4a. Inflorescences compact; pedicel 1–5 mm; calyx lobes ovate to ovate-oblung .................. 262. P. aliciae

4b. Inflorescences lax; pedicel usually more than 5 mm; calyx lobes lanceolate to narrowly oblong .................................................................................. 263. P. rupicola

3b. Leaf blade broadly ovate to oblong, base shallowly cordate to truncate or very short attenuate.

5a. Calyx parted to middle or above; leaf blade irregularly crenate ................................ 264. P. souliei

5b. Calyx parted below middle; leaf blade deeply incised to pinnatifid .......................... 265. P. blinii

Key 12

1a. Corolla campanulate, exannulate.

2a. Corolla rose-lavender or rose-purple; calyx lobes oblong-lanceolate to lanceolate, apex subacute; capsule ca. 2 × as long as calyx ......................................................... 187. P. boreiocalliantha

2b. Corolla yellow or white; calyx lobes oblong, apex rounded or obtuse; capsule usually ca. as long as calyx.

3a. Leaf blade laciniate-dentate ............................................................................... 188. P. agleniana

3b. Leaf blade regularly serrate or crenulate.

4a. Scapes robust, 5- or 6-flowered ...................................................................... 189. P. obliqua

4b. Scapes slender, 1- or 2-flowered.

5a. Leaf blade linear-lanceolate, 5–10 mm wide, base attenuate .............................. 190. P. falcifolia

5b. Leaf blade ovate to ovate-lanceolate, 15–25 mm wide, base cordate to rounded or cuneate ................................................................. 191. P. elizabethae

1b. Corolla funnelform, usually annulate.

6a. Calyx campanulate; corolla lobes dentate or lobed; capsule globose, submembranous, crumbled irregularly.

7a. Corolla yellow.

8a. Leaf blade attenuate at base.

9a. Leaf blade crenate to denticulate; calyx lobes ovate to ovate-oblung, apex obtuse ........ 86. P. strumosa

9b. Leaf blade coarsely dentate or pinnatifid; calyx lobes ovate to lanceolate, apex acute or dentate.
10a. Leaf blade incised to pinnately lobed; pin flower style exserted from corolla tube .......... 87. *P. chionata*
10b. Leaf blade irregularly coarse dentate; pin flower style slightly exserted .......... 88. *P. chionogenes*

8b. Leaves efarinose, with scattered minute reddish brown or blackish glands abaxially ........ 85. *P. calthifolia*

11b. Leaf blade rounded to cordate or short decurrent at base.
11a. Leaves efarinose, with scattered minute reddish brown or blackish glands abaxially .......... 85. *P. calthifolia*
11b. Leaf blade rounded to cordate or short decurrent at base.
11a. Leaves densely yellow farinose abaxially.
12a. Calyx 9–10 mm, parted to 2/3 ................................................................. 83. *P. jucunda*
12b. Calyx 5–7.5 mm, parted to middle.
13a. Scapes 3–10 cm, usually shorter than leaf rosette; pin flower style ca. as long as corolla tube ......................................................... 84. *P. hilaris*
13b. Scapes 7–18(–35) cm, longer than leaf rosette; pin flower style exserted from corolla tube ........................................... 86. *P. strumosa*

7b. Corolla lilac, rose-purple, or white.
14a. At least some leaf blades cordate to truncate at base.
15b. Leaves efarinose, with scattered minute reddish brown or blackish glands abaxially ........ 85. *P. calthifolia*
14b. Leaves densely yellow farinose abaxially.
16a. Calyx parted to 1/3, lobes triangular to subrectangular .............................................. 89. *P. griffithii*
16b. Calyx parted below middle, lobes lanceolate ........................................................... 90. *P. tanneri*

14a. Leaf blade obtuse at apex, regularly crenulate; calyx efarinose, glandular .................. 91. *P. tsariensis*
14b. Leaf blade attenuate at base.
17a. Pedicel 1–3 mm.
18a. Flowers homostylous; stamens inserted at middle of corolla tube ................................. 98. *P. hookeri*
18b. Flowers heterostylous; stamens in thrum flowers inserted toward apex of corolla tube .......................................................... 99. *P. bomiensis*
17b. Pedicel at least 5 mm.
19a. Corolla lobes efarinose, glandular ............................................................. 96. *P. sonchifolia*
19b. Corolla lobes emarginate.
20a. Leaf blade irregularly lobulate to pinnatifid, lobules denticulate; calyx parted to 1/3 ................................................................. 96. *P. sonchifolia*
20b. Leaf blade crenulate or dentate; calyx lobes entire.
21a. Calyx lobes lanceolate to sublinear; corolla lobes with 4–6 teeth at apex .............. 176. *P. elongata*
21b. Calyx lobes elliptic to oblong-lanceolate or lanceolate; corolla lobes entire ............... 177. *P. orbicularis*

6b. Calyx tubular or narrowly campanulate; corolla lobes entire (lobed or dentate in *P. calliantha*, *P. elongata*, *P. farreriana*, *P. macrophylla*, *P. megalocarpa*); capsule oblong, opening by short teeth.
25a. Corolla yellow.
26a. Corolla lobes emarginate at apex ................................................................. 173. *P. calliantha*
26b. Corolla lobes entire or crenate.
27a. Plants small, scapes less than 10 cm; leaf blade linear-lanceolate, white farinose ...... 175. *P. crocifolia*
27b. Plants more robust, scapes to 20 cm; leaf blade not as above.
28a. Calyx lobes lanceolate to sublinear, white farinose, corolla lobes with 4–6 teeth at apex ................................. 176. *P. elongata*
28b. Calyx lobes elliptic to oblong-lanceolate or lanceolate, corolla lobes entire ............... 177. *P. orbicularis*

25b. Corolla lilac or violet.
29a. Corolla lobes deeply emarginate at apex.
30a. Plants white farinose; calyx lobes lanceolate, apex acute.
31a. Bracts leaflike; leaf blade lanceolate to oblanceolate, entire to denticulate ...... 165. *P. macrophylla*
31b. Bracts not leaflike; leaf blade elliptic to oblanceolate, distinctly denticulate ....... 171. *P. farreriana*
30b. Plants yellow farinose; calyx lobes oblong, apex acute to subobtuse.
32a. Leaf blade lanceolate to linear-lanceolate, finely denticulate, apex acute to subobtuse; calyx lobes oblong-oblanceolate; capsules 1.5–3 cm ............................. 172. *P. megalocarpa*
32b. Leaf blade narrowly ovate to ovate-oblong or oblong-lanceolate, crenulate, apex rounded to obtuse; calyx lobes narrowly oblong; capsules 1–1.3 cm ...... 173. *P. calliantha*
29b. Corolla lobes entire.
33a. Leaves efarinose at anthesis.
   34a. Leaf blade elliptic to oblong-ovate or oblong-lanceolate, ± regularly blunt
denticulate ................................................................. 159. P. nivalis
   34b. Leaf blade lanceolate to oblong-lanceolate, subentire or obscurely denticulate.
      35a. Corolla limb 1–1.3 cm in diam., lobes puberulent on both sides ........... 160. P. melanantha
      35b. Corolla limb 1.6–3 cm in diam., lobes glabrous.
         36a. Corolla lobes lanceolate to narrowly oblong, paler in color than
tube .............................................................................. 161. P. woodwardii
         36b. Corolla lobes oblong, same color as or darker than tube .............. 162. P. purdomii
33b. Leaves conspicuously farinose at anthesis.
   37a. Farina yellow.
      38a. Calyx parted to base, lobes lanceolate .................................................. 168. P. ninguida
      38b. Calyx parted to 2/3, lobes narrowly oblong to lanceolate.
         39a. Farina bright yellow; pin flower style or thrum flower stamens
             reaching mouth of corolla tube ........................................ 169. P. chionantha
         39b. Farina pale yellow; pin flower style or thrum flower stamens
             reaching middle of corolla tube.
            40a. Calyx lobes oblong to lanceolate, apex subacute; corolla
                 lobes oblong-elliptic ....................................... 170. P. sinoplantaginea
            40b. Calyx lobes lanceolate to oblong, apex subobtuse; corolla
                 lobes suborbicular to obovate .................................. 165. P. macrophylla
   37b. Farina white.
      41a. Calyx parted to near middle.
         42a. Leaf blade elliptic to oblong-ovate or oblong-lanceolate, ± regularly
              denticulate ................................................................. 159. P. nivalis
         42b. Leaf blade lanceolate to oblong-lanceolate, entire or obscurely denticulate.
            43a. Pin flower style or thrum flower stamens reaching mouth of
corolla tube ........................................................................ 163. P. melanops
            43b. Pin flower style or thrum flower stamens slightly longer than
calyx .............................................................................. 162. P. purdomii
      41b. Calyx parted below middle.
         44a. Leaf blade linear, 2–4(–6) mm wide .............................................. 164. P. graminifolia
         44b. Leaf blade not linear, at least 1 cm wide.
            45a. Leaf blade lanceolate to oblong-lanceolate, apex acute to obtuse;
capsules longer than calyx ............................................... 165. P. macrophylla
            45b. Leaf blade (at least of outer leaves) elliptic to oblong, apex
                 subrounded; capsules ca. as long as calyx.
                46a. Calyx parted to base, lobes spreading, lanceolate .......... 166. P. youngersiana

Key 13

1a. Plants efarinose.
   2a. Corolla 4–7 mm in diam.; leaves not cartilaginous on margin.
      3a. Scapes glandular; leaf blade coarsely pinnatifid-dentate with obtuse teeth ................. 291. P. sapphirina
      3b. Scapes without glands; leaf blade sharply dentate on upper 1/2 of margin ................... 292. P. flabellifera
   2b. Corolla more than 1 cm in diam.; leaves cartilaginous on margin.
      4a. Umbels compact; pedicel 1–2 mm, concealed in bracts .............................................. 135. P. faberi
      4b. Umbels lax; pedicel usually more than 3 mm, distinctly longer than bracts.
         5a. Leaf blade coarse dentate ................................................................. 137. P. odontica
         5b. Leaf blade denticulate or subentire.
            6a. Leaf blade lanceolate to elliptic-lanceolate, apex acute; corolla lobes narrowly oblong ....... 138. P. virginis
            6b. Leaf blade obovate to oblong-lanceolate; corolla lobes suborbicular to elliptic.
               7a. Leaf blade rounded or obtuse at apex.
                  8a. Plants delicate; corolla 0.8–1.2 cm ..................................................... 139. P. silaensis
                  8b. Plants robust; corolla 1.2–1.6 cm .................................................... 140. P. amethystina
               7b. Leaf blade acute at apex.
                  9a. Calyx 3.5–5 mm; corolla broadly campanulate, pubescent inside .................... 141. P. valentiniana
9b. Calyx 6–8 mm; corolla narrowly campanulate, glabrous inside ........................................ 142. *P. kingii*

1b. Plants farinose, sometimes only sparsely so on calyx.

10a. Plants dwarf, less than 5 cm tall ......................................................................................................... 227. *P. nutantiflora*

10b. Plants robust, more than 5 cm tall.

11a. Corolla red to purple.

12a. Leaf blade rounded to truncate at base ................................................................. 145. *P. alpicola*

12b. Leaf blade attenuate at base.

13a. Calyx with vertical stripes of farina ................................................................. 116. *P. secundiflora*

13b. Calyx without vertical stripes of farina.

14a. Corolla limb 0.6–1.3(–1.8) cm wide, shorter than tube; leaf blade erose-dentate ........................................ 149. *P. waltonii*

14b. Corolla limb 2–2.5 cm wide, longer than tube; leaf blade incised-dentate ............... 150. *P. ioessa*

11b. Corolla yellow or white.

15a. Leaf blade attenuate at base.

16a. Leaves thin papery or submembranous, reticulate veins prominent abaxially ............ 143. *P. sikkimensis*

16b. Leaves firm papery or subleathery, reticulate veins obscure abaxially ....................... 144. *P. chumbiensis*

15b. Leaf blade cordate, truncate, or rounded at base.

17a. Leaf blade broadly ovate to ovate-oblong or suborbicular, slightly longer than wide or nearly as long as wide.

18a. Scapes slender, 10–40 cm; umbels 2–8-flowered .................................................. 147. *P. firmipes*

18b. Scapes robust, 30–120 cm; umbels (10–)15–30(–80)-flowered ........................... 148. *P. florindae*

17b. Leaf blade elliptic to oblanceolate, usually at least 2 x as long as wide.

19a. Bracts linear-lanceolate to subulate; calyx parted to near middle; leaves firmly papery or subleathery ................................................................. 144. *P. chumbiensis*

19b. Bracts lanceolate to ovate; calyx usually parted to 1/3; leaves thinly papery or submembranous.

20a. Calyx campanulate to tubular-campanulate, lobes triangular to triangular-lanceolate; stamens in pin flowers inserted near base of corolla tube ................................................................. 145. *P. alpicola*

20b. Calyx tubular-campanulate, lobes lanceolate; stamens in pin flowers inserted at middle of corolla tube ................................................................. 146. *P. reticulata*

**Key 14**

1a. Plants with woody rhizomes; leaf blade usually less than 1.3 cm wide, evergreen.

2a. Leaves farinose abaxially; corolla throat without projecting tuft of hairs ........................................ 266. *P. dryadifolia*

2b. Leaves efarinose; corolla throat with projecting tuft of hairs ..................................................... 267. *P. tsongpenii*

1b. Plants without woody rhizomes; leaf blade usually more than 2 cm wide, withering in winter.

3a. Plants farinose.

4a. Corolla yellow ............................................................................................................................... 215. *P. qinghaiensis*

4b. Corolla lilac or violet.

5a. Corolla lobes deeply emarginate.

6a. Calyx broadly campanulate, obscurely veined, farinose or farinose at base .......................... 217. *P. tenuipes*

6b. Calyx subtubular, distinctly 5-veined, farinose on both sides ............................................. 194. *P. baileyana*

5b. Corolla lobes entire or crenulate.

7a. Lateral veins of leaves subpinnate; farina yellow; capsule at least 1.5 x as long as calyx ................................................................. 195. *P. rotundifolia*

7b. Lateral veins of leaves subbasal; farina white, capsule slightly shorter than calyx ............ 193. *P. littledalei*

3b. Plants efarinose.

8a. Leaves papery or subleathery; calyx lobes subobtuse at apex.

9a. Corolla lobes emarginate at apex, lobules entire ...................................................................... 67. *P. chartacea*

9b. Corolla lobes 2-cleft at apex, lobules dentate or lacerate.

10a. Umbels with bracts and small petiolate leaves; corolla tube 1.1–1.3 cm, pilose inside .......... 68. *P. lacerata*

10b. Umbels with simple bracts only; corolla tube 0.7–1(–1.2) cm, puberulent inside ............ 69. *P. veitchiana*

8b. Leaves herbaceous or membranous; calyx lobes acute at apex.

11a. Corolla yellow, lobes strongly reflexed ............................................................................. 185. *P. tzetsouensis*

11b. Corolla lilac or violet, lobes spreading.

12a. Leaf blade ovate to suborbicular, margin distinctly dentate ........................................ 196. *P. gambeliana*

12b. Leaf blade elliptic to oblanceolate, margin obscurely blunt dentate ................................ 105. *P. chienii*
Key 15

1a. Leaf blade pinnately lobulate.
2a. Corolla rose to purple; leaf blade lobed to near midvein .................................................. 151. *P. lungchiensis*
2b. Corolla white; leaf blade lobed to 1/4 .................................................................................. 152. *P. lactucooides*

1b. Leaf blade entire or denticulate.
3a. Corolla yellow.

4a. Corolla lobes linear, 1–2 mm wide ...................................................................................... 182. *P. tangutica*
4b. Corolla lobes oblong to suborbicular, 3–6 mm wide.

5a. Plants glandular puberulent; leaf blade 2–2.5 cm ................................................................. 174. *P. cerina*
5b. Plants glabrous; leaf blade much more than 2.5 cm.

6a. Leaf blade short attenuate at base, shorter than petiole ............................................. 186. *P. handeliana*
6b. Leaf blade long attenuate at base, longer than petiole.

7a. Corolla lobes broadly elliptic to suborbicular, 6–8 mm wide.
8a. Scapes with 2 umbels; pedicel puberulent ................................................................. 178. *P. reflexa*
8b. Scapes with 1 umbel; pedicel glabrous ........................................................................ 179. *P. soongii*
7b. Corolla lobes strongly reflexed, lying against tube .................................................. 183. *P. szechuanica*
9a. Corolla lobes ± spreading, not lying against tube.

10a. Plants efarinose; corolla pale yellow ............................................................... 184. *P. aemula*
10b. Plants ± farinose; corolla purplish or yellow ...................................................... 181. *P. advena*

3b. Corolla rose-purple or lilac, rarely white.

11a. Corolla lobes narrowly oblong to linear.
12a. Corolla lobes linear, 1–2 mm wide .................................................................................. 182. *P. tangutica*
12b. Corolla lobes oblong, 2.5–3 mm wide.

13a. Calyx parted to 1/3 .................................................................................................. 180. *P. maximowiczii*
13b. Calyx parted to middle ................................................................................................. 181. *P. advena*

11b. Corolla lobes elliptic to oblong.

14a. Pin flower style or thrum stamens reaching mouth of corolla tube.
15a. Leaf blade elliptic to oblong-elliptic, base short attenuate ............................................. 158. *P. hoii*
15b. Leaf blade obovate to oblongate or spatulate, base long attenuate.

16a. Calyx parted to middle or slightly below, lobes oblong-lanceolate, pedicel efarinose ...................................................................................................................... 156. *P. optata*
16b. Calyx parted to below middle, lobes lanceolate, pedicel farinose ................................ 157. *P. limbata*

14b. Pin flower style or thrum stamens reaching middle of corolla tube, slightly longer than calyx.

17a. Leaf blade ovate, obtuse to subrounded at base; petiole 2–3 × as long as blade ............................................................................................................. 153. *P. woonyoungiana*
17b. Leaf blade obovate to spatulate, tapering at base; petiole seldom ca. 2 × as long as leaf blade.

18a. Leaf rosette at least 10 cm tall, base with few triangular bud scales; leaves efarinose or nearly so at anthesis ................................................................. 156. *P. optata*
18b. Leaf rosette 2–8 cm tall, without basal bud scales but with old curling petioles;

19a. Outer leaves oblong-spatulate to lanceolate, inner leaves narrowly oblongate; corolla tube ca. 1.5 × as long as calyx ........................................ 154. *P. diantha*
19b. Leaves spatulate to oblong-spatulate or oblongate; corolla tube at least 2 × as long as calyx.............................................................................................. 155. *P. minor*

Key 16

1a. Leaves papery to subleathery, ± bullate adaxially.
2a. Scapes less than 1 cm at anthesis .................................................................................. 103. *P. esquirolii*
2b. Scapes at least 3.5 cm at anthesis.

3a. Calyx parted to middle, lobes entire .................................................................................. 111. *P. epilosa*
3b. Calyx parted to ca. 1/3, lobes 3-toothed ........................................................................ 104. *P. tridentifera*

1b. Leaves membranous, not bullate.

4a. Scapes absent.
5a. Corolla lobes 3-toothed; inner leaves with long slender petioles ........................................ 72. *P. gracilipes*

5b. Corolla lobes emarginate, lobules entire; leaves with broadly winged petioles.

6a. Plants ± farinose; calyx tubular-campanulate, 4–6 mm, lobes acute to subacuminate .......... 73. *P. cunninghamii*

6b. Plants efarinose; calyx tubular, 7–12 mm, lobes acuminate-subulate, ± recurved at apex ...... 74. *P. hoffmanniana*

4b. Scapes present.

7a. Leaves distinctly dimorphic, base attenuate in outer leaves or truncate to cordate in inner leaves.

8a. Corolla lobes deeply emarginate; calyx lobes acute to obtuse .......................................... 78. *P. moupinensis*

8b. Corolla lobes 2- to several toothed; calyx lobes acuminate.

9a. Calyx lobes ovate-triangular, acuminate-subulate ............................................................... 75. *P. scapigera*

9b. Calyx lobes ovate to ovate-oblong, subacuminate ............................................................. 76. *P. bracteosa*

7b. Leaves monomorphic, base attenuate, rarely subrounded.

10a. Plants ± farinose.

11a. Scapes obsolete; corolla lobes 2-cleft, lobules irregularly denticulate .............................. 77. *P. prevernalis*

11b. Scapes more than 2 cm at anthesis; corolla lobes deeply emarginate, lobules entire. ....... 78. *P. moupinensis*

10b. Plants efarinose.

12a. Petiole slender, ca. as long as leaf blade in flowering plants.

13a. Leaf blade irregularly sinuate-dentate; calyx lobes obtuse ............................................. 81. *P. sinuata*

13b. Leaf blade dentate; calyx lobes acute ............................................................................... 82. *P. wenshanensis*

12b. Petioles broadly winged, obsolete to 1/2 as long as blade in flowering plants.

14a. Corolla exannulate; stamens of pin flowers inserted at lower 1/2 of corolla tube; thrum flower style ca. 1/2 as long as calyx .............................................................. 80. *P. euosma*

14b. Corolla annulate; stamens of pin flowers inserted at middle of corolla tube; thrum flower style ca. as long as calyx.

15a. Bracts triangular to ovate-triangular; umbels (2–)4- to many flowered; scapes robust ......... 81. *P. loeseliana*

15b. Bracts linear-lanceolate; umbels (1–)3–8-flowered; scapes slender .............................. 79. *P. odontocalyx*

Key 17

1a. Corolla rose to purple or, if white, flowers heterostylos.

2a. Plants farinose at least inside of calyx.

3a. Corolla tube gradually widened from base; calyx yellow farinose inside .......................... 117. *P. miyabeana*

3b. Corolla tube cylindric, widened near mouth; calyx farinose on both sides.

4a. Leaf blade elliptic to elliptic-oblancoolate; lateral veins nearly at right angles to midvein, corolla eye red or purple ................................................................. 118. *P. pulverulenta*

4b. Leaf blade narrowly oblong-oblancoolate to obovate-oblancoolate; lateral veins at acute angles to midvein; corolla eye yellow ......................................................... 119. *P. beesiana*

2b. Plants efarinose throughout.

5a. Calyx parted at least to middle, lobes lanceolate.

6a. Calyx 5–6 mm; leaf blade oblancoolate to obovate-elliptic, ± regularly denticulate .......... 120. *P. stenodonta*

6b. Calyx 10–14 mm; leaf blade oblong to obovate-oblong, erose-denticulate .................. 121. *P. mallophylla*

5b. Calyx parted scarcely to middle, lobes triangular.

7a. Corolla dark purple when young, limb 1–1.5 cm wide, lobes 3–4(–5) mm ...................... 122. *P. anisodora*

7b. Corolla red to pale purple, limb usually more than 1.5 cm wide, lobes usually more than 5 mm.

8a. Corolla lobes oblong, emarginate, crenate-serrate at apex ............................................. 117. *P. miyabeana*

8b. Corolla lobes broadly oblancoolate to suboblicular, emarginate to 2-cleft at apex.

9a. Corolla limb 1–1.5 cm wide, lobes ca. 1/2 as long as tube; plants aromatic when live ................................................................. 123. *P. wilsonii*

9b. Corolla limb 1.8–3 cm wide, lobes slightly shorter than tube; plants not aromatic .......... 124. *P. poissonii*

1b. Corolla yellow or orange or, if white, flowers homostylos.

10a. Scapes and inflorescences farinose.

11a. Calyx lobes lanceolate ............................................................................................................. 125. *P. bulleyana*

11b. Calyx lobes triangular.

12a. Corolla yellow; flowers heterostylos.

13a. Corolla tube 0.8–1.1 cm, ca. 2 × as long as calyx, limb 1–1.5 cm wide ..................... 126. *P. smithiana*

13b. Corolla tube 1.2–1.8 cm, ca. 3 × as long as calyx, limb ca. 2.5 cm wide .................. 127. *P. helodoxa*

12b. Corolla orange; flowers homostylos or heterostylos.

14a. Corolla orange or tinged with red; leaf blade subrounded to broadly cuneate at
1b. Plants completely efarinose.

15a. Calyx tubular-campanulate, parted below middle, lobes lanceolate ............................................. 130. *P. aurantiaca*

15b. Calyx campanulate, parted scarcely to middle, lobes triangular.

16a. Flowers homostylous; corolla limb 0.6–1(–1.2) cm wide ..................................................... 131. *P. prenantha*

16b. Flowers heterostylous; corolla limb usually more than 1.2 cm wide.

17a. Scapes with 3 or 4 superimposed umbels; corolla tube cylindric, enlarged near mouth .......................................................... 132. *P. chrysochlora*

17b. Scapes with 1–3 superimposed umbels; corolla tube gradually amplified upward from base.

18a. Leaf blade 3–5 cm, margin densely fine denticulate; pin flower style or thrum flower stamens slightly exceeding middle of corolla tube .......... 133. *P. melanodonta*

18b. Leaf blade 6–12 cm, margin denticulate; pin flower style or thrum flower stamens exerted from corolla tube ........................................ 134. *P. serratifolia*

**Key 18**

1a. Corolla throat with a projecting tuft of hairs.

2a. Leaves scabrous, with short hairs or glands.

3a. Bracts ovate to linear-lanceolate; corolla tube pubescent outside ............................................. 255. *P. primulina*

3b. Bracts broadly ovate; corolla tube glabrous outside ................................................................. 256. *P. occlusa*

2b. Leaves glabrous and smooth.

4a. Corolla throat with a purple tuft of hairs ................................................................. 257. *P. barbatula*

4b. Corolla throat with a white tuft of hairs.

5a. Plants yellow farinose or efarinose; stolons very short or absent ................................................. 258. *P. bella*

5b. Plants white farinose; stolons flagellate .................................................................................. 259. *P. moschophora*

1b. Corolla throat without a projecting tuft of hairs.

6a. Plants completely efarinose; leaves entire except sometimes remotely dentate in *P. dickieana*, or bracts auriculate at base.

7a. Leaf blade linear to subulate, ca. 1 mm wide, sessile or nearly so ............................................. 243. *P. subularia*

7b. Leaf blade not linear, more than 1 mm wide, petiolate.

8a. Bracts much shorter than calyx.

9a. Plants 1–3 cm high; scapes shorter than leaf rosette; corolla 4–7 mm in diam.

10a. Leaf blade spatulate to oblanceolate, 5–12 × 1–2 mm; calyx 2–2.5 mm, not veined ............................................................... 244. *P. praetermissa*

10b. Leaf blade elliptic to obovate-elliptic or subrhomboid, 3–15 × 2–5 mm; calyx ca. 4 mm, 5-veined ................................................................. 236. *P. pumilio*

9b. Plants usually more than 4 cm high; scapes longer than leaf rosette; corolla 20–25 mm in diam.

11a. Leaf blade broadly ovate to ovate-lanceolate; scape 1-flowered; bracts reduced, scalelike; corolla lavender blue to purplish ..................................................... 237. *P. oxygraphidifolia*

11b. Leaf blade elliptic-obovate to oblanceolate; umbel 1–6-flowered; bracts linear; corolla yellow, white, or purple ................................................. 136. *P. dickieana*

8b. Bracts at least as long as calyx.

12a. Bracts linear, not auriculate at base ................................................................. 239. *P. fasciculata*

12b. Bracts oblong, auriculate at base.

13a. Auricles of bracts 4–7 mm ................................................................. 240. *P. involucrata*

13b. Auricles of bracts 1–1.5 mm.

14a. Calyx densely glandular ciliolate on margin; scapes longer than pedicel ............... 241. *P. nutans*

14b. Calyx glabrous on margin; scapes often shorter than pedicel ........................................ 242. *P. tibetica*

6b. Plants conspicuously farinose or leaves distinctly dentate or lobed.

15a. Flowering scapes 1–3(–5) cm, 1- or 2-., rarely few flowered.

16a. Leaves farinose.

17a. Leaves densely short glandular pubescent and minutely glandular, scabrous.

18a. Scapes shorter than leaf rosette; calyx tubular, glandular pubescent ........................................ 250. *P. walshii*

18b. Scapes longer than leaf rosette; calyx campanulate, short-stalked glandular.

19a. Flowers homostylous; corolla limb ca. 8 mm wide ..................................................... 248. *P. annulata*
19b. Flowers heterostylous; corolla limb ca. 15 mm wide .............................. 249. *P. rubicunda*

17b. Leaves glabrous, rarely sparsely puberulent.

20a. Leaf blade pinnately 5–11-lobed ........................................................... 238. *P. urticifolia*

20b. Leaf blade dentate or incised-lobulate.

21a. Corolla tube ca. 5 mm; leaf blade oblong-cuneate to obovate, leaf apex subtruncate, with 3–7 sharp teeth ........................................... 245. *P. muscoides*

21b. Corolla tube 8–10 mm; leaf blade spatulate, apex rounded.

22a. Leaves minutely glandular, margin dentate near apex; corolla tube glabrous outside ................................................................. 246. *P. waddelli*

22b. Leaves glabrous, margin dentate from base to apex; corolla tube pubescent outside ......................................................... 247. *P. temuiliba*

16b. Leaves conspicuously farinose.

23a. Corolla tube ca. as long as to slightly longer than calyx.

24a. Calyx parted nearly to middle; lobes linear, ovate-triangular, or lanceolate.

25a. Leaf blade entire or crenulate above middle; calyx 3–5 mm, lobes lanceolate to broadly linear ...................................................... 200. *P. concinna*

25b. Leaf blade denticulate to dentate; calyx 5–7 mm, lobes ovate-triangular ................................................................. 201. *P. rhodochroa*

24b. Calyx parted below middle; lobes lanceolate.

26a. Leaves densely glandular puberulent adaxially, white farinose abaxially; corolla lobes entire to erose-crenulate ............................................. 192. *P. caveana*

26b. Leaves glabrous; corolla lobes emarginate.

27a. Flowers homostylous; leaves white farinose .................................. 202. *P. meiotera*

27b. Flowers heterostylous; leaves yellow farinose ................................. 230. *P. kialensis*

23b. Corolla tube 2–3 × as long as calyx.

28a. Flowers subsessile; bracts inserted immediately below calyx.

29a. Farina white; corolla limb to 2.5 cm wide ........................................... 251. *P. tenella*

29b. Farina yellow; corolla limb to 1 cm wide ............................................. 254. *P. minutissima*

28b. Flowers conspicuously pedicellate; bracts inserted at base of pedicel.

30a. Scapes obsolete; bracts 1 ...................................................................... 229. *P. socialis*

30b. Scapes well developed; bracts 2 to many.

31a. Farina white or light cream-yellow.

32a. Flowers homostylous; calyx 8–10 mm, parted to middle or slightly below ................................................................. 211. *P. clutterbuckii*

32b. Flowers heterostylous; calyx 6.5–7 mm, parted to below middle ................................................................. 253. *P. candidans*

31b. Farina bright yellow.

33a. Corolla tube 3–4 × as long as calyx; leaf blade membranous ................................................................. 228. *P. membranifolia*

33b. Corolla tube ca. 2 × as long as calyx; leaf blade not membranous.

34a. Scapes 1–1.5 × as long as pedicel ......................................................... 230. *P. kialensis*

34b. Scapes at least 3 × as long as pedicel.

35a. Calyx 5-veined, parted to ± middle ................................................. 231. *P. yunnanensis*

35b. Calyx not veined, parted to below middle .................................. 252. *P. rimicola*

15b. Flowering scapes usually more than 5 cm, 3- to many flowered.

36a. Corolla tube ca. as long as to slightly longer than calyx.

37a. Plants conspicuously farinose.

38a. Bracts reflexed after anthesis ................................................................ 203. *P. algida*

38b. Bracts sub erect, not reflexed.

39a. Calyx 5-veined, nearly efarinose.

40a. Calyx campanulate, 4–6 mm, lobes ovate-oblong to triangular ........... 204. *P. farinosa*

40b. Calyx tubular, 6–10 mm, lobes oblong to lanceolate ............................ 205. *P. stenocalyx*

39b. Calyx smooth, ± white farinose.

41a. Leaves white farinose; calyx ca. 4.5 mm, lobes lanceolate; plants stoloniferous ................................................................. 206. *P. caldaria*

41b. Leaves efarinose; calyx 6–7.5 mm, lobes oblong; plants without stolons  ................................................................. 207. *P. fangingensis*
37b. Plants efarinose or nearly so.
   42a. Bracts reflexed after anthesis .................................................. 203. P. algida
   42b. Bracts suberect, not reflexed.
      43a. Calyx 5-veined.
         44a. Calyx campanulate, 4–6 mm, lobes triangular ...................... 204. P. farinosa
         44b. Calyx tubular, 6–10 mm, lobes oblong to lanceolate .............. 205. P. stenocalyx
      43b. Calyx without veins.
         45a. Calyx lobes triangular or lanceolate, apex acute.
            46a. Umbels (1 or)2–8-flowered; bracts 1.5–2 mm .................. 210. P. erraticus
            46b. Umbels 10- to many flowered; bracts 3–10 mm.
               47a. Bracts oblong-ovate; scapes fistular, constricted below
                  inflorescences .............................................................. 208. P. fistulosa
               47b. Bracts lanceolate; scapes neither fistular nor constricted
                  below inflorescences .................................................. 209. P. longiscapa
         45b. Calyx lobes campanulate, parted to middle or below; bracts
               slightly saccate at base .............................................. 211. P. ericata
         48a. Calyx tubular to tubular-campanulate, parted to 1/3; bracts
               not saccate at base.
         48b. Calyx campanulate, parted to middle or below; bracts not
               saccate at base.
            49a. Leaves membranous when dry, puberulent
                adaxially ................................................................. 212. P. huashanensis
            49b. Leaves papery when dry, glabrous, sometimes
                sparsely glandular.
               50a. Pedicel and calyx smooth; leaf blade ovate
                    to oblong, not well developed in flowering plants ......... 213. P. obsessa
               50b. Pedicel and calyx minutely glandular; leaf blade
                    oblong, well developed in flowering plants ........ 214. P. sertulums
      36b. Corolla tube 2–3 x as long as calyx.
        51a. Corolla yellow.
           52a. Leaf blade spatulate to linear-lanceolate or linear-oblongate;
                  farina bright yellow .................................................. 226. P. pratii
           52b. Leaf blade broadly ovate to elliptic or suborbicular; farina white .............. 216. P. flava
        51b. Corolla rose-purple or violet.
           53a. Calyx tubular, 6–12 mm, 5-veined.
              54a. Leaf blade subentire, crenulate, to dentate; pin flower style ca. as long as
                  calyx, thrum flower style 2–3 mm .................................. 205. P. stenocalyx
              54b. Leaf blade irregularly dentate; pin flower style ca. as long as corolla tube,
                  thrum flower style slightly shorter than calyx ..................... 218. P. jaffreyana
           53b. Calyx campanulate, 4–6 mm or, if more than 7 mm, without veins.
              55a. Leaves efarinose.
                 56a. Leaf blade pinnatifid-incised, lobules dentate .................. 235. P. laciniata
                 56b. Leaf blade denticulate.
                    57a. Calyx 3.5–5.5 mm; corolla limb 1–1.5 cm wide ............ 233. P. conspersa
                    57b. Calyx (5–)6–10 mm; corolla limb 1.5–2.5 cm wide .......... 234. P. gemmifera
              55b. Leaves conspicuously farinose.
                 58a. Calyx usually parted to 1/3; leaves yellow farinose.
                    59a. Corolla tube 10–13 mm; pin flower style reaching middle of
                        tube ................................................................. 219. P. fernaldiana
                    59b. Corolla tube 8–10 mm; pin flower style ca. as long as tube ........ 220. P. fangii
                 58b. Calyx parted to middle or below.
                    60a. Leaves white farinose or light cream-yellow farinose.
                       61a. Calyx lobes triangular, midvein obscure; pin flower style
                           slightly exceeding middle of corolla tube .................... 224. P. knuthiana
                       61b. Calyx lobes lanceolate, midvein conspicuous; pin flower
                           style nearly as long as corolla tube.
                          62a. Corolla tube 1.1–1.2 cm; thrum flower style or pin
                               flower stamens reaching middle of corolla tube ...... 222. P. tayloriana
62b. Corolla tube 1.2–1.5 cm; thrum flower style or
pin flower stamens reaching basal 1/4 of corolla
tube ................................................................. 223. *P. scopulorum*

60b. Leaves densely bright yellow farinose abaxially.

63a. Plants robust, with a tuft of thick stringy roots; scapes
more than 8 cm; capsule slightly longer to 2 × as long
as calyx ........................................................................ 225. *P. pulchella*

63b. Plants dwarf, with fibrous roots; scape usually less than
8 cm; capsule shorter than calyx.

64a. Corolla tube 3–4 × as long as calyx; leaves
membranous .......................................................... 228. *P. membranifolia*

64b. Corolla tube 2–3 × as long as calyx; leaves not
membranous.

65a. Leaf blade obscurely crenate; calyx lobes
subobtuse; corolla tube not cylindric,
gradually widened from middle upward ....... 232. *P. maikhaensis*

65b. Leaf blade conspicuously dentate or
serrate on distal 1/2; calyx lobes acute;
corolla tube cylindric, widened near mouth.

66a. Leaf rosettes 5–6 cm; leaf blade 1–2.3
cm wide; corolla tube of thrum flowers
1.4–1.5 cm ...................................................... 223. *P. scopulorum*

66b. Leaf rosettes 1–3 cm; leaf blade less
than 1 cm wide; corolla tube of
thrum flowers 1–1.3 cm.

67a. Scapes 1–1.5 × as long as
pedicel; calyx 5–8 mm ..................... 230. *P. kialensis*

67b. Scapes at least 3 × as long as pedicel;
calyx (2–)4–5(–7) mm ................ 231. *P. yunnanensis*

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曲柄报春 qu bing bao chun

*Primula forbesii* Franchet var. *brevipes*
Bonati; *P. forbesii* subsp. *duclouxii* (Petitmengin)
W. W. Smith & Forrest; *P. refracta* Handel-Mazzetti.

Herbs perennial, sparingly pilose. Rhizomes to
3 cm, with numerous reddish brown fibrous roots.
Leaves in a rosette; petiole 1–5 cm, nearly as
long as leaf blade; leaf blade oblong to ovate,1.5–4.5 – 1–3.5 cm, abaxially initially cream-
yellow farinose, becoming efarinose or nearly so,
base rounded to shallowly cordate, irregularly
shallowly lobed; lobes in 4–6 pairs, margin
sharply dentate, apex obtuse. Scapes 1–6 cm;
umbels 1 or 2(or 3), superimposed, 3–10-
flowered; bracts subulate, 3–9 mm, sometimes
yellow farinose at base and abaxially. Flowers
heterostylos. Pedicel reflexed after anthesis, 1–3
cm, white farinose. Calyx campanulate, 4–6 mm,

farinose, finely glandular, parted slightly
below middle; lobes lanceolate to linear-
lanceolate. Corolla rose; tube 6–8 mm; limb 1.2–
1.7 cm wide; lobes obcordate, deeply emarginate.

Pin flowers: stamens inserted ca. 2 mm above base
of corolla tube; style ca. 5 mm. Thrum flowers
with positions reciprocal. Capsule globose, 3–3.5
mm in diam., included in calyx. Fl. Mar-Apr, fr.
Apr–May.

* Shaded moist limestone rock crevices; 2200–2300 m.
Yunnan (Fumin Xian, Kunming Shi).


饰岩报春 shi yan bao chun

Herbs perennial, pilose or glabrous. Rhizomes
producing 1 or 2 leaf rosettes. Leaves in a
rosette; petiole 1–2.5(–6) cm, narrowly winged,
yellow farinose near base; leaf blade oblong, 1.5–
3(–6) 1–2(–4.5) cm, abaxially cream-white
farinose, especially along midvein, base shallowly
cordate, margin irregularly crenate-dentate to
lobulate; lobes hydathode-denticulate, apex
rounded. Scapes 2–8 cm; umbels 1 or 2, superimposed, 2–10-flowered; bracts linear to
lanceolate, 3–6 mm. Flowers heterostylos. Pedicel
divaricate after anthesis, 2–4 cm. Calyx
campanulate, 3.5–6 mm, parted to middle; lobes
densely pubescent, triangular to narrowly
triangular, apex acute. Corolla rose-purple; limb
1.5–2 cm wide; lobes obovate, ca. 4.8 5.2 mm,
2-cleft at apex. Pin flowers: corolla tube 6–7
Leaves in a rosette; petiole slender, slightly

4. Primula epilithica Chen & C. M. Hu, Fl.

Apr, fr. Apr
3 mm in diam., slightly shorter than calyx. Fl.
3 mm wide; lobes obovate, 2-cleft. Pin flowers: stamens
campanulate, 2.5–3.5 cm, usually with small petiolate leaves at
each side, rarely entire, apex acute. Scapes 2 –3.5 (–8) cm; umbels
1 or 2, superimposed, 4 –10-flowered. Fl. Jul.

2b. Primula petrocallis var. glabrata C. M. Hu in

(Handel-Mazzetti) W. W. Smith & Forrest.

3. Primula divaricata Chen & C. M. Hu, Fl.


叉梗报春 cha geng bao chun

Herbs perennial, sparsely pilose. Leaves in
a rosette; petiole slender, 0.6–2.5 cm, narrowly
winged; leaf blade ovate-elliptic to oblong, 0.5–1.5 cm
4.8–12 mm, base truncate to shallowly
cordate, 7–9-lobulate; lobes oblong to broadly
triangular, 2–4 mm, margin with 1 or 2 teeth on
each side, rarely entire, apex acute. Scapes 1.8–3.5 cm, usually with small petiolate leaves at
umbels 1, 2–4-flowered; bracts linear, 2–3 mm, glandular. Flowers heterostyloous. Pedicel 6–13 mm. Calyx campanulate, 2–3 mm, enlarged to 4.5 mm in fruit, sparsely pubescent and glandular, parted to middle; lobes triangular, apex acute. Corolla rose-purple; tube ca. 5 mm; limb ca. 1 cm
wide; lobes 2-cleft, cuneate-obovate. Pin flowers: stamens ca. 2 mm above base of corolla
tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule subglobose, ca.
3 mm in diam., slightly shorter than calyx. Fl. Apr, fr. Apr–May.

* Rocks, trailsides; 1800–2700 m. Yunnan (Jingdong Xian).

4. Primula epilithica Chen & C. M. Hu, Fl.


石面报春 shi mian bao chun

Herbs perennial, densely rust-colored pilose.
Leaves in a rosette; petiole slender, slightly
longer than leaf blade; leaf blade ovate to
elliptic, 0.8–2.4 cm; base cordate, 8–10-lobulate, apex rounded; lobes broadly triangular, margin with 1 or 2 teeth, apex acute. Scapes shorter than leaves, 1–2.5 cm; umbels 1, 2–6-flowered; bracts linear-lanceolate, 2–3 mm. Pedicel divaricate after anthesis, 0.8–2.5 cm. Flowers heterostyloous. Calyx campanulate, ca. 4 mm, parted to middle; lobes ovate-triangular, apex acute. Corolla pink; tube 6–7 mm; limb 0.8–1.5 cm wide; lobes obovate, 2-cleft. Pin flowers: stamens near base of corolla tube; style slightly shorter than tube. Thrum flowers: stamens toward apex of
corolla tube; style ca. 1 mm. Capsule globose, ca.

* Rocky areas; 2300-2500 m. Yunnan (Jingdong Xian).

5. Primula hypoleuca Handel-Mazzetti, Kaiserl.
238. 1920.

白背报春 bai bei bao chun

Primula forbesii Franchet subsp. hypoleuca
(Handel-Mazzetti) W. W. Smith & Forrest.

Herbs perennial, farinose, glabrous. Rhizomes
produce a rosette or rarely a very short stem.
Leaves in a rosette; petiole narrowly winged, 1.5–
6 cm, usually slightly longer than leaf blade; leaf blade oblong to elliptic, 1.5–4.5 cm, abaxially densely white farinose, base subtruncate to cordulate, margin crenate-
lobulate; lobes obtuse, 1–3 mm, apex rounded. Scapes 10–25 cm; umbels 1–3, superimposed, 4–10-flowered; bracts lanceolate, 4–7 mm, initially white farinose. Flowers heterostyloous. Pedicel 0.8–2.4 cm, glandular. Calyx broadly campanulate, 3.5–4.5 mm, slightly enlarged in fruit, white farinose, parted to middle; lobes triangular, apex acute. Corolla pink; tube 4–6 mm; limb 0.8–1.5 cm wide; lobes broadly obovate, emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. 3 mm. Thrum flowers: stamens slightly above middle of corolla
tube; style ca. 1 mm. Capsule unknown. Fl. Apr.

* Wet lakeshores, reeds; ca. 1900 m. Yunnan
(Kuming Shi).

France 33: 64. 1886.

小报春 xiao bao chun

Primula androsacea Pax; P. barbeyana
Petitmengin; P. forbesii subsp. androsacea (Pax)
W. W. Smith & Forrest; P. multicaulis Petitmengin;
P. willmottiae Petitmengin.

Herbs biennial, with numerous fibrous roots.
Leaves usually numerous; petiole 1–3 (–5) cm.
narrowly winged, with multicellular white hairs; leaf blade oblong to elliptic or ovate-elliptic, 1–3.5 0.5–2.5 cm, abaxially sparsely minutely glandular and pubescent mainly along veins, adaxially sparingly pilose, base truncate to shallowly cordate, margin crenate-lobulate, apex rounded; lobes denticate. Scapes to many, 6–13 cm, sparingly pilose or glabrescent, farinose toward apex; umbels 1 or 2(–4), superimposed, 4–8-flowered; bracts lanceolate, 2.5–5.5 mm, farinose, apex acute. Flowers heterostyous. Pedicel 0.6–2 cm, elongated to 3 cm in fruit, glandular. Calyx campanulate, 3–4.5 mm, olive-green or yellowish green farinose, parted to middle; lobes triangular, apex acute. Corolla pink, rarely white; tube 4.5–5.5 mm; limb ca. 1 cm wide; lobes broadly obovate, emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. 3 mm. Thrum flowers: stamens ca. 3 mm above base of corolla tube; style ca. 1 mm. Capsule globose, ca. 3 mm in diam. Fl. Feb–Mar, fr. Mar–Apr. 2n = 18*, 24*.

* Margins of rice paddies, low hills: 1500–2000 m. SW Sichuan, C and NE Yunnan.


散花报春 san hua bao chun

Herbs perennial, with a short rhizome. Leaves in a rosette; petiole 3–12(–16) cm, usually glabrous, farinose or slightly white farinose toward apex; leaf blade rounded-ovate to subreniform, 1.5–4.5(–7) cm and ca. as wide, initially finely glandular pubescent, glabrescent, base cordate, margin obscurely undulate-lobulate, irregularly dentate, with broad triangular teeth, often toothed again, apex rounded. Umbels 1–3(–5), superimposed, 5–16-flowered; bracts linear-lanceolate, 3–6 mm, glabrous, occasionally farinose. Flowers heterostyous. Pedicel slender, 2–5 cm, glabrous or nearly so, sometimes farinose. Calyx campanulate, 3.5–4.5 mm, farinose, parted to middle; lobes lanceolate, apex acute. Corolla pink or lavender-rose, with a white eye; tube yellow or orange, 7–8 mm; limb ca. 1.3 cm wide; lobes obcordate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style reaching middle of tube. Thrum flowers: stamens near middle of corolla tube; style ca. 1 mm. Capsule globose, 3–4 mm in diam. Fl. May–Aug. 2n = 18*.

* Shaded moist areas near cultivated fields, along irrigation ditches: 1400–2600 m. C and N Yunnan.


报春花 bao chun hua

Primula delicata Petitmengin; P. forbesii Franchet subsp. delicata (Petitmengin) W. W. Smith & Forrest; P. malacoides subsp. pseudomalacoides (L. B. Stewart) W. W. Smith & Forrest; P. pseudomalacoides L. B. Stewart.

Herbs biennial, usually farinose. Leaves numerous; petiole 2–15 cm, pilose, succulent; leaf blade ovate to elliptic or oblong-elliptic, 3–10 2–8 cm, abaxially pubescent along veins or subglabrous, farinose or sometimes sprinkled with white farina, adaxially sparsely pilose or subglabrous, base cordate to truncate, margin crenate-lobulate with 6–8 pairs of denticulate lobules, apex rounded. Scapes 1 to many, 10–40 cm, pilose or glabrescent, farinose or slightly white farinose; umbels (1 or)2–6, superimposed, 4–20-flowered; bracts linear to linear-lanceolate, 3–8 mm, farinose or farinose. Flowers heterostylos. Pedicel 1.5–4 cm. Calyx campanulate, 3–7 mm, slightly enlarged in fruit, usually cream-white farinose, parted to middle; lobes triangular, apex acute. Corolla rose or lavender; tube 4–6 mm; limb 0.5–1.5 cm wide; lobes broadly obovate, deeply 2-lobed. Pin flowers: corolla tube ca. as long as calyx; stamens 1.5–2 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube ca. 1.5 as long as calyx; stamens slightly above middle of corolla tube; style ca. 1 mm. Capsule globose, ca. 3 mm in diam. Fl. Feb–May, fr. Mar–Jun. 2n = 18*, 22*, 24*, 36*, 66*.

* Wet areas near cultivated fields, ditches, forest margins; 1800–3000 m. W Guangxi, Guizhou, Yunnan.

This species is widely cultivated as a beautiful potted plant. It was introduced to Europe in 1896 and since then, many horticultural forms have been produced.


钻齿报春 zuan chi bao chun

Primula debilis Bonati; P. speluncicola Petitmengin.

Herbs biennial, farinose. Leaves in a rosette; petiole 1–3 cm, narrowly winged, sparingly pilose; leaf blade ovate to oblong, 1.5–3.5 1.5–2.5 cm, sparingly pilose mainly along veins abaxially, base cordate, margin crenate-dentate with acute or subobtuse teeth and sometimes toothed again, apex rounded. Scapes slender, 3–13 cm, sparingly pilose; umbels 1 or 2, superimposed, 2–6-flowered; bracts subulate, 2–4 mm, apex acute. Flowers heterostylos. Pedicel glabrous, 1.5–2.5 cm. Calyx broadly campanulate, 3–5 mm, glabrous or nearly so, parted to ± middle; lobes triangular to ovate-lanceolate, apex sometimes slightly recurved, acute. Corolla rose to lavender with a yellow eye; tube 8–9 mm; limb 1–1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens 2–2.5 mm
above base of corolla tube; style nearly as long as tube. Thrum flowers: stamens at middle of corolla tube; style nearly as long as tube. Thrum flowers: stamens ca. 2.5 mm above base of corolla tube; style nearly as long as tube. Thrum flowers: stamens ca. 2 mm above base of corolla tube; style as long as tube. Thrum flowers: stamens toward apex of corolla tube; style slightly shorter than calyx. Capsule globose, ca. as long as calyx.

* Moist rocks, bamboo forests; ca. 2000 m. Sichuan, NE Yunnan.


**景东报春 jìng dōng bào chūn**

Herbs perennial, pilose or glabrous. Rhizomes stout, woody, with withered remains of old foliage. Leaves in a rosette; petiole 3–8 cm, narrowly winged, vaginate at base; leaf blade broadly ovate to suborbicular, 2–5.5 cm, abaxially densely fagacious cream-yellow farinose, base cordate, margin undulate to broadly crenate, apex rounded. Leaves of previous year papery, bullate. Scapes purplish brown, 8–14 cm; umbels in 1 or 2 whorls, 3–8-flowered, sparsely farinose; bracts lanceolate to oblanceolate, 4–7 mm, apex acute. Flowers heterostylos. Pedicel 1.5–3.5 cm. Calyx campanulate, ca. 5 mm, parted to middle; lobes ovate to ovate-triangular, apex acute. Corolla rose, initially yellow farinose outside; tube 9–10 mm; limb ca. 2 cm wide; lobes broadly ovate and deeply 2-cleft. Pin flowers: stamens ca. 2.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens ca. 8 mm above base of corolla tube; style ca. 2 mm. Capsule globose, ca. as long as calyx.

* Rocks; ca. 2200 m. Yunnan (Jingdong Xian).

**1a. Plants pubescent** ...... **10a. var. interjacens**

**1b. Plants glabrous** ...... **10b. var. epilosa**

**10a. Primula interjacens var. interjacens**

**景东报春 (原变种) jìng dōng bào chūn (yuán biàn zhòng)**


* Rocks; ca. 2200 m. Yunnan (Jingdong Xian).


**光叶景东报春 guāng yè jìng dōng bào chūn**


* Moist rocks; ca. 2200 m. Yunnan (Jingdong Xian).


**黔西报春 qí xī bào chūn**

Herbs perennial, efarinose. Rhizomes to 4 cm, with numerous purplish brown roots, with dense coarse tawny hairs at apex. Leaves in a rosette; petiole 3–10 cm, narrowly winged, densely rust-colored pilose; leaf blade suborbicular to broadly ovate, 2.5–6 cm wide, membranous when dry, pilose, base cordate, margin obscurely remote crenate or subentire, apex rounded. Scapes 9–15 cm, pilose; umbels 1–3, superimposed, 2–6-flowered; bracts linear, 5–9 mm, pilose. Flowers heterostylos. Pedicel 0.5–1.5 cm, pilose. Calyx narrowly campanulate, 7–10 mm, with multicellular hairs, more densely pubescent near base, parted ca. to upper 1/3; lobes ovate-triangular, 2–3 mm, apex acute or subobtuse. Corolla rose; tube cylindric, ca. 1.1 cm; limb 5.6–8 mm wide; lobes obovate, ca. 3 1.8 mm, emarginate. Pin flowers: stamens near base of corolla tube; style ca. 9 mm. Thrum flowers: stamens at middle of corolla tube; style ca. 2 mm. Capsule cylindric, ca. as long as calyx. Fl. Jul–Aug, fr. Sep.

* Moist rocks in ravines. NW Guizhou (Xishui Xian).


**绒毛报春 róng mao bào chūn**

Herbs perennial, with long thin rhizomes and numerous fibrous roots. Leaves in a rosette; petiole 2.5–8.5 cm, densely fulvous tomentose; leaf blade suborbicular to reniform, 2.4–5 2.5–5 cm, abaxially with thick tawny wool, detachable in flecks, adaxially with pale tawny appressed.
multicellular hairs, base cordate, margin entire or obscurely sinuate, apex rounded. Scapes 8–17 cm, densely fulvous tomentose; umbels 1 or 2, superimposed, 2–10-flowered, densely tomentose; bracts linear, 3–4 mm. Pedicel 0.8–2 cm. Flowers heterostylos. Calyx campanulate, 4–5 mm, tomentose, parted to middle; lobes broadly ovate, apex acute. Corolla bluish; tube ca. 3 cm long as calyx; limb 7–10 mm wide; lobes obovate, emarginate. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube. Capsule globose, 3.5–4 mm in diam., slightly shorter than calyx. Fl. Mar–Apr, fr. May.

* Moist cliffs; ca. 500 m. Guizhou (Tongzi Xian).


迎阳报春 ying yang bao chun

*Primula flavicans* Handel-Mazzetti.

Herbs perennial. Rhizomes woody, with 1 to several leaf rosettes. Leaves in a rosette; petiole ca. as long as leaf blade, 3–12 cm, with dense tangled hairs, vaginate at base; leaf blade broadly ovate to reniform or oblong-rotund, 2–10 cm wide, abaxially spreading pubescent along veins, adaxially sparsely pilose, base cordate, sinuate to sublobulate, apex rounded; lobules broadly denticulate, ciliate. Scapes 6–10 cm, with dense multicellular hairs; umbels compact, many flowered; bracts linear to obovate, 4–10 mm wide; lobes oblanceolate, emarginate. Pin flowers: stamens at middle of corolla tube; style nearly as long as tube. Thrum flowers with positions reciprocal. Capsule globose, included in calyx. Fl. Apr–May.

* Moist glades, margins of mixed woodlands, streamsides; 1200–2500 m. W Sichuan.


灌丛报春 guan cong bao chun

*Primula obconica* Hance subsp. *barbicalyx* (C. H. Wright) W. W. Smith

Herbs perennial. Rhizomes subwoody, with numerous fibrous roots. Leaves in a rosette; petiole ca. as long as leaf blade, densely pilose; leaf blade ovate-oblong to oblong, 2–5 cm wide, with multicellular white hairs, base shallowly cordate to subtruncate, apex rounded, 11–13-lobulate; lobes broadly triangular, margin irregularly incised-dentate. Scapes 6–30 cm, pilose; umbels 1 or 2, superimposed, 6–10-flowered; bracts linear to linear-lanceolate, 4–7 mm, white pilose. Flowers homostylos. Pedicel 0.8–1.5 cm, pubescent. Calyx broadly campanulate, 4–5 mm, enlarged to 8 mm in fruit, with long white hairs, parted to 1/4–1/3, usually 5-veined; lobes triangular, apex acute. Corolla rose; tube ca. 6 mm; limb 5–8 mm wide; lobes obovate, emarginate. Stamens near middle of corolla tube. Style ca. 4 mm, reaching stamens. Capsule globose, included in calyx. Fl. Jun–Jul.

* Granite rocks along rivulets, mixed forests; 2400–3000 m. E Xizang, NW Yunnan.


毛萼报春 mao e bao chun

*Primula oboconica* Hance subsp. *barbicalyx* (C. H. Wright) W. W. Smith

Herbs perennial. Leaves in a rosette; petiole 1.5–7 cm, with dense tawny multicellular hairs; leaf blade ovate-elliptic to oblong, (1.5–)2–10 cm wide, abaxially sparsely pilose along veins, adaxially pubescent or glabrescent, base cordate or sometimes subrounded to truncate, margin 4–6-repand-dentate, apex subrounded. Scapes shorter than leaf rosette, 0.5–3 cm, densely pilose; umbels 1, 2–8-flowered; bracts linear–lanceolate, 2–5 mm, pubescent. Flowers heterostylos. Pedicel 0.5–2(–3) cm, pilose. Calyx broadly campanulate,
4–7 mm, parted to 1/3, base densely pilose; lobes triangular to ovate-triangular, apex acute. Corolla rose to nearly white; tube 0.9–1.1 cm; limb 1–1.5 cm; lobes obovate, emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens near apex of tube; style near base of tube. Capsule unknown.

* Limestone rock crevices; 1500–2900 m. SE Yunnan (Guang-nan Xian, Mengzi Xian).


**Primula obconica** Hance subsp. densa (I. B. Balfour) W. W. Smith & Forrest.

Herbs perennial. Leaves in a rosette; petiole 1–2 cm, to 4 cm at fruiting, with dense multicellular white hairs; leaf blade broadly ovate to ovate-oblong, 1–2 0.8–2 cm at anthesis, to 4 3.5 cm at fruiting, abaxially sparsely minutely glandular, pilose along veins, adaxially glabrous or puberulent, base cordate or sometimes slightly cuneate, margin crenulate-lobulate, apex rounded. Scapes 3–13 cm, sparsely pilose and glandular; umbels 1 or 2, superimposed, 2–10-flowered; bracts linear to narrowly oblong, 2–4 mm, pubescent, apex acute, sometimes with small petiolate leaves arising from axils of bracts. Flowers heterostylous. Pedicel 0.3–2 cm, with dense minute glands intermixed with few multicellular hairs. Calyx broadly campanulate, 2.8–4 mm, glabrous or pilose, parted nearly to middle; lobes triangular to ovate-triangular, apex acute. Corolla pink to lavender-rose, with a yellow eye; limb 1–1.5 cm wide; lobes obovate, emarginate. Pin flowers: corolla tube 6–7 mm; stamens 3–3.5 mm above base of corolla tube; style ca. 4.5 mm. Thrum flowers: corolla 7.5–8 mm; stamens near tube apex; style ca. 2.5 mm. Capsule unknown. Fl. Apr.

Shaded limestone rock crevices, damp moss on limestone cliffs; 2300–2700 m. W Yunnan (Pianna Xian) [N Myanmar].


**Primula obconica** Hance subsp. vilmoriniana (Petitmengin) W. W. Smith & Forrest; **P. subtropica** Handel-Mazzetti.

Herbs perennial. Leaves in a rosette; petiole 2–6 cm, usually 1/3–1/2 as long as leaf blade, with dense tangled fulvous hairs; leaf blade oblong-elliptic to orbicular, 4–11 4–8 cm, abaxially with multicellular fulvous hairs along veins, adaxially densely strigose-pubescent, base shallowly cordate, slightly repand, margin obscurely denticulate to subentire; style nearly reaching tube mouth. Thrum flowers: stamens near tube apex; style nearly reaching tube. Capsule unknown. Fl. Jun–Jul.


**Primula obconica** Hance subsp. densa (I. B. Balfour) W. W. Smith & Forrest; **P. subtropica** Handel-Mazzetti.

Herbs perennial. Leaves in a rosette; petiole 1.5–14 cm, with white or fulvous multicellular hairs; leaf blade ovate-rotund to elliptic or oblong, (1.5–)3–14(–17) × (1–)2.5–11 cm, abaxially glabrous or sparsely pilose, especially along veins, axially glabrescent, puberulent or short pilose, base cordate or occasionally rounded, margin subentire, repand or sinuate-lobulate, apex rounded. Scapes longer or shorter than leaf rosette, with white or tawny, multicellular hairs; umbels 1, 2–13-flowered; bracts linear to linear-lanceolate, 3–10 mm. Flowers heterostylous or homostylous. Pedicel (1.5–)5–20 (–25) mm, pubescent. Calyx cupular to broadly campanulate, puberulent or short pilose, parted to 1/4–1/3; lobes broadly triangular, ciliate, apex hyathodode-apiculate. Corolla pink to lavender-rose, rarely white; tube ca. 2 as long as calyx; limb 1.5–2.5 cm wide; lobes broadly obovate, emarginate. Pin flowers: stamens near base of corolla tube; style near apex; style nearly reaching tube, repand; style nearly reaching tube. Thrum flowers: stamens at middle of tube; style 2–2.5 mm. Homostylous flowers with stamens near tube apex; style nearly reaching stamens. Capsule unknown. 2n = 22*.

* Thickets, forests, rocks in mountain woods, dry limestone cliffs; 500–3300 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.
repand ............... 20a. subsp. obconica
2b. Leaves membranous when dry, margin sinuate-lobulate

20b. subsp. werringtonensis

1b. Leaf blade ovate-rotund to sub-orbicular, ca. as long as wide or slightly longer than wide.

3a. Scapes shorter than leaf rosette and only slightly longer than pedicel ............... 20e. subsp. parva
3b. Scapes longer than leaf rosette and many longer than pedicel.
4a. Leaves densely black punctate abaxially .......... 20c. subsp. nigroglandulosa
4b. Leaves epunctate 20d. subsp. begoniiformis

20a. Primula obconica subsp. obconica
鄂报春 (原亚种) e bao chun (yuan ya zhong)
Primula bonatii R. Knuth; P. obconica subsp. petitmenginii (Bonati) W. W. Smith & Forrest; P. obconica var. glabrescens Franchet, p.p.; P. obconica var. hispida Franchet; P. petitmenginii Bonati; P. poculiformis J. D. Hooker.

Leaf blade ovate-elliptic to oblong, thin papery when dry, margin subentire, denticulate or repand. Fl. Mar–Jun.

* Shaded wet areas in thickets and forests; 500–2200 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.

波叶鄂报春 bo ye e bao chun

Leaf blade broadly ovate to ovate-elliptic, membranous when dry, margin usually sinuate-lobulate. Fl. May–Jun. 2n = 24*.

* Streamside thickets, open forests; 3000–3300 m. W Sichuan, W Yunnan.

黑腺鄂报春 hei xian e bao chun

Leaf blade suborbicular, axially densely minutely black glandular punctate.

* W Yunnan (Lushui Xian, Tengchong Xian).

海棠叶鄂报春 hai tang ye e bao chun

Pettiole slender, wiry; leaf blade ovate-rotund to suborbicular, ca. as long as wide, margin crenate-lobulate.

* Rocks in mountain woodlands; 1600–2200 m. SW Sichuan, W Yunnan.

This variety closely resembles Primula sinolisteri I. B. Balfour var. sinolisteri but differs by having pilose petioles.

小型鄂报春 xiao xing e bao chun

Leaf blade broadly ovate to suborbicular, 1.5–5 cm, margin repand to sinuate. Scapes 1–4 cm, shorter than leaves.

* Dry limestone cliffs; 1800–2000 m. C Yunnan (Huize Xian, Kunming Shi).

莓叶报春 mei ye bao chun
Herbs perennial. Rhizomes comparatively stout, woody, with remains of old foliage. Leaves in a rosette; petiole (3–)5–17 cm, densely fulvous pilose; leaf blade broadly ovate to suborbicular, 3–8.5 2.5–9.5 cm, axially pubescent mainly along veins, adaxially sparsely strigillose or glabrescent, base deeply cordate, 7–9–lobulate, apex rounded to obtuse; lobules broadly ovate or subrounded, margin remotely hydathode-denticate; lateral veins 3 or 4 pairs, proximal 1 or 2 pairs basal. Scapes 5–17 cm, elongated to 23 cm in fruit, densely fulvous pilose; umbels 1(or 2), superimposed, 4–10-flowered; bracts linear, 3–7 mm, pilose. Flowers heterostylous. Pedicel 1–2 cm, fulvous pilose. Calyx broadly campanulate, 5–8.5 mm, pubescent, parted to ca. 1/4; lobes broadly triangular to subrotund, ciliate, apex apiculate. Corolla pale rose, with fulvous hairs outside; tube 1.1–1.3 cm; limb 1.2–2 cm wide; lobes obovate,
emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule globose, ca. 3 mm in diam. Fl. Mar–Jun.

* Rocks in mixed forests: 1600–2900 m. Yunnan (Jingdong Xian).


铁梗报春 tie geng bao chun

Herbs perennial. Rhizomes comparatively stout, woody, with remains of old foliage. Leaves in a rosette; petiole wiry, 3–13 cm, vaginate and usually tinged with red at base; leaf blade broadly ovate to suborbicular, 2–8.5 × 2–7 cm, glabrous or sparsely puberulent, base cordate, margin undulate-lorate, apex rounded to obutose, sometimes acute; lobules broadly triangular to suborbicular, margin remotely hydathode-denticulate; veins 3 or 4 pairs, proximal 1 or 2 pairs basal. Scapes 5–20 cm; umbels 1, 2–8-flowered; bracts linear to lanceolate, 3–8 cm, pubescent. Flowers heterostylous or homostylous. Pedicel 7–12(–20) mm. Calyx broadly campanulate, 4–10 mm, short pubescent, parted to 1/3; lobes broadly triangular, apex acute to apiculate. Corolla white or rose; limb 1.5–2.5 cm wide; lobes obovate, 2–lobed. Capsule globose, included in calyx. 2n = 24*.

* Stony grassy slopes, open forests, rocks and mossy banks of shaded slopes bordering valleys; 2300–3300 m. C and W Yunnan.

1a. Flowers heterostylous: petiole and scapes puberulent or short pubescent ............. 22a. var. sinolisteri
1b. Flowers homostylous: petiole and scapes pilose ............. 22b. var. aspera

22a. Primula sinolisteri var. sinolisteri

铁梗报春（原变种）tie geng bao chun (yuan bian zhong)


Scapes and petiole pilose, with multicellular hairs. Flowers homostylous. Calyx to 1 cm. Corolla rose-lavender or dark purplish rose; stamens and style located in upper portion of tube.

* Rocks and mossy banks of shaded slopes bordering valleys: 3000–3300 m. SW Yunnan (Tengchong Xian).


糙叶铁梗报春 cao ye tie geng bao chun

Scapes and petiole pilose, with multicellular hairs. Flowers homostylous. Calyx to 1 cm. Corolla rose-lavender or dark purplish rose; stamens and style located in upper portion of tube.

* Rocks in mixed forests: 1600–2900 m. SW Yunnan (Zhenkang Xian).


细辛叶报春 xi xin ye bao chun

Herbs perennial. Rhizomes short, with withered leaves at apex. Leaves in a rosette; petiole (2–)4–12 cm, pubescent, vaginate at base; leaf blade ovate-rounded to reniform, 2–5.5 cm wide, adaxially initially sparsely pubescent, soon glabrescent except near margin, base deeply cordate, margin obscurely 5–7-lobulate, apex obtuse; lobes broadly triangular, ciliate, margin remotely hydathode-denticulate; veins 3 or 4 pairs, proximal 2 pairs basal. Scapes 10–22 cm, pubescent or glabrescent on lower part; umbels 4–8-flowered, short pubescent; bracts lanceolate to linear–lanceolate, 3–7 mm. Flowers heterostylous. Pedicel 5–10 mm. Calyx broadly campanulate, 5–6 mm, short pubescent, parted to ca. 1/3; lobes triangular, short ciliate, apex acute. Corolla purple, pubescent outside; tube ca. 1.3 cm; limb 5–8 mm wide; lobes obovate-cuneate, ca. 3 × 1.5–2 mm, apex 2-cleft. Pin flowers: stamens in lower 1/2 of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style ca. 4 mm. Capsule unknown.

* Mixed forests: 1600–2900 m. SW Yunnan (Zhenkang Xian).


总序报春 zong xu bao chun

Herbs perennial. Leaves in a rosette; petiole 7–18 cm, sparsely pilose; leaf blade suborbicular to broadly ovate, 3–10 cm wide, abaxially pubescent along veins, adaxially sparsely pilose or subglabrous, base deeply cordate, margin palmately 7-lobulate; lobules triangular, margin irregularly dentate, ciliate; veins 2 or 3 pairs, proximal 1 or 2 pairs basal. Scapes 15–45 cm, pilose; inflorescences racemose, 10–30-flowered; bracts linear to linear–lanceolate, 3–7 mm. Flowers heterostylous. Pedicel 5–10 mm, densely short glandular pubescent. Calyx narrowly campanulate, 5–6 mm, glandular pubescent outside,
of corolla tube; style slightly shorter than tube, ca. 1 mm. Capsule ellipsoid, slightly shorter than calyx. 2n = 24.

Broad-leaved forests; 2400–2700 m. W Yunnan (Pianma Xian, Tengchong Xian) [Bhutan, N Myanmar].


Herbs perennial, with numerous fibrous roots. Leaves in a rosette; petiole 5–15 cm, densely rust-colored pilose; leaf blade broadly elliptic to suborbicular, 3–14 3–8–(12) cm, abaxially with longer hairs along veins, adaxially with appressed multicellular hairs, base cordate, margin sinuate-lobulate, apex rounded; lobules with broad triangular teeth; veins 6–8 pairs. Scapes 10–30 cm, fulvous villous; umbels 3–10, superimposed, 3–9–flowered, sometimes with flowers not in regular whorls and racemose; bracts linear to linear-lanceolate, 6–8 mm, pubescent. Flowers heterostylous. Pedicel 0.7–1.5 cm, fulvous pilose. Calyx narrowly campanulate, 5–6.5 mm, parted to middle, 5–veined; lobes narrowly lanceolate, sparsely pilose, apex acute. Corolla bright rose to deep purplish rose; limb ca. 1.5 cm wide; lobes obovate, 6–9 mm, deeply emarginate. Pin flowers: corolla tube 7–8 mm, slightly longer than calyx; stamens ca. 3 mm above base of corolla tube; style ca. 5 mm. Thrum flowers: corolla tube 9–10 mm; stamens ca. 3 mm below mouth of corolla tube; style reaching middle of tube. Capsule ellipsoid, slightly shorter than calyx. Fl. Apr.

* Open forests; 1800–2700 m. W Yunnan (Longling Xian, Tengchong Xian).


Primula baokongensis Chen & C. M. Hu; P. malvacea subsp. rosthornii (Diels) W. W. Smith & Forrest; P. rosthornii Diels.

Herbs perennial. Leaves in a rosette; petiole 3–7 cm, with dense tangled tawny hairs; leaf blade suborbicular to broadly ovate, 3–7 cm wide, abaxially with longer hairs along veins, adaxially sparsely pilose, base deeply cordate, margin sinuate-lobulate; lobules broadly triangular, margin irregularly dentate, apex

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glabrous inside, parted to middle, distinctly 5-veined; lobes narrowly triangular. Corolla pale yellow or rose-purple; tube ca. 1.1 cm; limb 1.5–2 cm; lobes obovate, 6–7 ca. 5 mm, emarginate. Pin flowers: stamens near base of corolla tube; style ca. as long as tube. Thrum flowers: stamens near apex of corolla tube; style ca. 1.5 mm. Capsule oblong, 1–1.5 cm, 2–3 longer than calyx. 2n = 24.

* Open meadows, thicket margins, moist rock crevices, wet areas in mountain valley woodlands; 2500–3000 m. Sichuan, N Yunnan.

24a. Primula pauliana var. pauliana

1a. Corolla pale yellow...... 24a. var. pauliana
1b. Corolla rose-purple...... 24b. var. huiliensis


会理总序报春 hui li zong xu bao chun


* Open meadows, thicket margins, moist rock crevices; 2500–3000 m. SW Sichuan, N Yunnan.


灰毛报春 hui mao bao chun


Herbs perennial. In a rosette. Leaves in a rosette; petiole 5–20 cm, densely pilose; leaf blade suborbicular to reniform, 4–18 cm wide, abaxially with scattered, black or reddish, minute glands and multicellular hairs along veins, adaxially densely pilose, base deeply cordate, margin sinuate-lobulate and denticulate-crenulate. Scapes 10–60 cm, with multicellular hairs; umbels 3–10, superimposed, 4–10–flowered; bracts narrowly lanceolate, 0.5–1.5 cm, with long hairs. Flowers heterostylous or homostylous. Pedicel 1–3 cm, sparsely pilose. Calyx narrowly campanulate, 8–11 mm, pubescent, often tinged with purple, parted to middle; lobes ovate to ovate-lanceolate; veins 3–5. Corolla dark rose to deep crimson; tube ca. 1.2 cm; limb 1–2 cm wide; lobes obovate-ovate, ca. 7 mm, emarginate. Homostylos flowers with stamens near middle of corolla tube; style reaching stamens. Pin flowers: stamens at middle

* Open forests; 2400–2700 m. W Yunnan (Pianma Xian, Tengchong Xian) [Bhutan, N Myanmar].


华柔毛报春 hua rou mao bao chun


Herbs perennial, with numerous fibrous roots. Leaves in a rosette; petiole 5–15 cm, densely rust-colored pilose; leaf blade broadly elliptic to suborbicular, 3–14 3–8–(12) cm, abaxially with longer hairs along veins, adaxially with appressed multicellular hairs, base cordate, margin sinuate-lobulate, apex rounded; lobules with broad triangular teeth; veins 6–8 pairs. Scapes 10–30 cm, fulvous villous; umbels 3–10, superimposed, 3–9–flowered, sometimes with flowers not in regular whorls and racemose; bracts linear to linear-lanceolate, 6–8 mm, pubescent. Flowers heterostylous. Pedicel 0.7–1.5 cm, fulvous pilose. Calyx narrowly campanulate, 5–6.5 mm, parted to middle, 5–veined; lobes narrowly lanceolate, sparsely pilose, apex acute. Corolla bright rose to deep purplish rose; limb ca. 1.5 cm wide; lobes obovate, 6–9 mm, deeply emarginate. Pin flowers: corolla tube 7–8 mm, slightly longer than calyx; stamens ca. 3 mm above base of corolla tube; style ca. 5 mm. Thrum flowers: corolla tube 9–10 mm; stamens ca. 3 mm below mouth of corolla tube; style reaching middle of tube. Capsule ellipsoid, slightly shorter than calyx. Fl. Apr.

* Open meadows, thicket margins, moist rock crevices; 2500–3000 m. Sichuan, N Yunnan (Huili Xian).


灰毛报春 hui mao bao chun


Herbs perennial. Leaves in a rosette; petiole 5–20 cm, densely pilose; leaf blade suborbicular to reniform, 4–18 cm wide, abaxially with scattered, black or reddish, minute glands and multicellular hairs along veins, adaxially densely pilose, base deeply cordate, margin sinuate-lobulate and denticulate-crenulate. Scapes 10–60 cm, with multicellular hairs; umbels 3–10, superimposed, 4–10–flowered; bracts narrowly lanceolate, 0.5–1.5 cm, with long hairs. Flowers heterostylous or homostylous. Pedicel 1–3 cm, sparsely pilose. Calyx narrowly campanulate, 8–11 mm, pubescent, often tinged with purple, parted to middle; lobes ovate to ovate-lanceolate; veins 3–5. Corolla dark rose to deep crimson; tube ca. 1.2 cm; limb 1–2 cm wide; lobes obovate-ovate, ca. 7 mm, emarginate. Homostylos flowers with stamens near middle of corolla tube; style reaching stamens. Pin flowers: stamens at middle
obtuse. Scapes 4–18 cm, with dense tangled tawny hairs; umbels 1 or 2, superimposed, 3–7-flowered; bracts linear–lanceolate, ca. 6 mm, pubescent. Flowers homostylous. Pedicel 0.8–1.5 cm, densely pilose. Calyx narrowly campanulate, 7–9 mm, sparsely pilose, parted to middle or slightly below; lobes oblong to oblong–lanceolate, 1.5–3 mm wide, herbaceous, ciliate. Corolla purplish rose; tube 7–8 mm, ca. as long as calyx; limb 1–1.2 cm wide; lobes obovate emarginate. Stamens at upper part of corolla tube. Style reaching stamens. Capsule unknown. Fl. May–Jul.

* Grassly slopes in mountain valleys; 1300–1600 m. NW Hubei, SE Gansu, E Sichuan.

**Primula neurocalyx** was erroneously reduced to *P. malvacea* by W. W. Smith and H. R. Fletcher. More recent additional material shows that the two species can easily be separated by the shape of the calyx lobes, which are oblong to oblong-lanceolate in *P. neurocalyx* and broadly ovate to elliptic in *P. malvacea*.


**多脉报春**

*Primula cinerascens* subsp. violodora (Dunn) W. W. Smith & Forrest; *P. neurocalyx* Franchet subsp. riparia (I. B. Balfour & Farrer) W. W. Smith & Forrest; *P. riparia* I. B. Balfour & Farrer; *P. virodora* Dunn.

Herbs perennial. Leaves in a rosette; petiole 2–9 cm, with spreading long hairs; leaf blade broadly ovate to suborbicular, 1.5–6(–9) cm, axially densely pubescent, base cordate, margin obscurely sinuate–lobulate, apex rounded; lobules subrounded, margin minutely denticate. Scapes 8–25 cm, lanate basally, becoming puberulent apically; umbels 1(or 2), superimposed, 3–8(–10)-flowered; bracts linear–lanceolate, 3–6 mm. Flowers heterostylous. Pedicel 0.6–2.5 cm, glabrescent. Calyx narrowly campanulate, 4.5–7 mm, pubescent to subglabrous, parted to middle or slightly below; lobes lanceolate; veins 3. Corolla rose-purple to pink; tube 6.5–8 mm; limb 1.2–1.8 cm wide; lobes obovate, 6–9 mm, apex 2-cleft. Pin flowers: stamens near middle of corolla tube; style reaching top of tube. Thrum flowers with positions reciprocal. Capsule ovoid, shorter than calyx. Fl. Apr–May.

* Shaded moist areas on mountain slopes and in forests; 1500–2800 m. SE Gansu, NW Hubei, E Sichuan.


*堇菜报春*


Herbs perennial. Leaves in a rosette; petiole 5–18 cm, densely fulvous pilose; leaf blade orbicular to broadly cordate or reniform, 4–13 cm wide, abaxially pilose along veins, otherwise subglabrous, adaxially pubescent, base deeply cordate, margin dentate–lobulate, apex rounded; lobules broadly triangular, margin denticate. Scapes 20–40 cm, densely fulvous pilose; umbels 1 or 2, superimposed, 3–12-flowered; bracts linear to linear–lanceolate, 3–10 mm. Flowers heterostylous. Pedicel 1.5–2.5 cm, elongated to 3(?–5) cm in fruit, sparsely pilose or glabrescent. Calyx narrowly campanulate, 7–12 mm, glabrous or nearly so, parted to slightly below middle; lobes lanceolate; veins 3–5. Corolla rose-lilac to purple; tube 1–1.4 cm; limb 1.5–2 cm wide; lobes obovate, emarginate. Pin flowers: stamens near middle of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule globose, included in calyx. Fl. May–Jun.

* Mountain forests; 1000–1500 m. NW Hubei, SW Shaanxi.


**多脉报春**

*Primula polyneura* Franchet, J. Bot. (Morot) 9: 448. 1895.


Herbs perennial, densely or sparsely pilose, sometimes glabrous. Leaves in a rosette; petiole 5–10 cm; leaf blade broadly ovate to suborbicular, 2–10 cm, usually slightly wider than long, base cordate, palmately lobed to 1/4–1/2 its width; lobes broadly ovate to oblanceolate, rarely subentire, apex rounded. Scapes 1–3.5(–10) cm; umbels 1 or 2, superimposed, 3–9(–12)-flowered; bracts lanceolate, 5–10 mm. Flowers heterostylous. Pedicel 0.5–2.5 cm. Calyx pale rose to crimson, pubescent; tube 1–
Flowers heterostylous. Pedicel 0.4–1.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens near middle of corolla tube; style ca. as long as tube or slightly exserted. Thrum flowers with positions reciprocal. Capsule ellipsoid, ca. as long as calyx. Fl. May–Jun. Fr. Jul–Aug. 2n = 24#.

* Woodland margins, along valley streams; 2000–4000 m. SE Gansu, W Sichuan, SE Xizang, NW Yunnan.

Indumentum density is extremely variable in this species.


岩生报春 yan sheng bao chun

Herbs perennial. Leaves in a rosette; petiole 5–9(15) cm, pilose; leaf blade broadly ovate to oblong-ovate, 2.5–8 2.5–6 cm, pubescent, base cordate, margin incised or pinnately lobulate, apex obtuse; lobules with triangular teeth. Scapes 10–25 cm, pilose or sometimes glabrescent toward apex; umbels 1 or 2, superimposed, 3–9(15)–flowered; bracts linear to oblong–lanceolate, 3–8 mm, sparsely pubescent. Flowers heterostylosous. Pedicel 1–4 cm, pilose or pubescent. Calyx tubular–campanulate, 5–6 mm, sparsely pubescent or glabrous, parted to middle; lobes erect, lanceolate to oblong–lanceolate, conspicuously costate. Corolla rose-purple; tube 1.2–1.3 cm; limb 1.3–2.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens near middle of corolla tube; style exserted beyond annulus. Thrum flowers: stamens slightly below annulus; style reaching middle of corolla tube. Capsule oblong, slightly longer than calyx. Fl. May–Jun. 2n = 24#.

* Rock crevices, forests. Hebei, Heilongjiang, Shanxi.

32. Primula sieboldii E. Morren, Belgique Hort. 23: 97. 1873.

樱草 ying cao

Primula patens Turczaninow; P. patens var. genuina Skvortsov; P. patens var. munsurica Skvortsov; P. sieboldii E. Morren f. patens (Turczaninow) Kitagawa.

Herbs perennial. Leaves in a rosette; petiole 4–12(18) cm, densely pilose; leaf blade ovate-oblong to oblong, 4–10 (2)–3–7 cm, with grayish multicellular hairs, base cordate, rarely subrounded to truncate, margin crenate-lobulate, apex rounded; lobules crenulate-dentate. Scapes 12–25(30) cm, pubescent; umbels 1, 5–15-flowered; bracts linear–lanceolate, 4–10 mm. Flowers heterostylosous. Pedicel 0.4–3 cm, sparsely pubescent or glabrescent. Calyx campanulate, 6–8 mm, enlarged to 1.5 cm in fruit, parted to middle or above; lobes spreading, lanceolate to ovate-lanceolate, pubescent or glabrous. Corolla rose to lilac-purple, rarely white; tube 0.9–1.3 cm; limb 1–2(3) cm wide; lobes obovate, apex 2-cleft. Pin flowers: stamens slightly below middle of corolla tube; style ca. as long as tube. Thrum flowers: stamens near apex of corolla tube; style near middle of corolla tube. Capsule subglobose, ca. 1/2 as long as calyx. Fl. May, fr. Jun. 2n = 22, 24, 26, 29, 36.

Wet areas in forests. Heilongjiang, Jilin, Liaoning, E Nei Mongol [Japan, Korea, Russia].


鞘柄掌叶报春 qiao bing zhang ye bao chun

Herbs perennial. Rhizomes creeping, comparatively thin, often with remains of old foliage. Leaves in a rosette; petiole 1–10(18) cm, glabrous or puberulent, vaginate at base; leaf blade suborbicular, 1–5(8) cm wide, abaxially glabrous or nearly so, adaxially pubescent or scabrous-puberulent, base deeply cordate, palmately divided 1/3–1/2 its width into 7–9 lobes; lobes deeply dentate. Scapes 3–12 (30) cm, puberulent; umbels 1, 2–12-flowered; bracts linear lanceolate to elliptic, 3–7(14) mm. Flowers heterostylosous. Pedicel 5–10 mm, puberulent. Calyx campanulate, 3–5(8) mm, puberulent or glabrous, parted to middle; lobes obovate to ovate–lanceolate, apex acute to obtuse, with 1 main vein. Corolla purplish pink; tube slightly longer to 2 as long as calyx; limb 1–1.5 cm wide; lobes obovate, 2–lobed, lobules usually 2-toothed. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule globose, ca. as long as calyx. Fl. Jun.

Moist rock crevices, forests, stream sides, moist meadows, on rocks; 2200–5000 m. Xizang, Yunnan [Bhutan, India, N Myanmar, Sikkim].

1a. Umbels compact, sometimes subcapitate; scapes 12–30 cm 33c. subsp. normaniana
1b. Umbels lax; scapes 3–12 cm.
2a. Scapes 2–9-flowered; corolla limb ca. 1 cm wide . 33a. subsp. vaginata
2b. Scapes 1– or 2(or 3)–flowered; corolla limb 1–1.8 cm wide 33b. subsp. eucyclia

33a. Primula vaginata subsp. vaginata

鞘柄掌叶报春(原亚种) qiao bing zhang ye bao chun (yuan ya zhong)
Scapes 6–12 cm, usually much taller than leaf rosette; umbels 1, 2–9-flowered. Pedicel 5–10 mm. Corolla limb ca. 1 cm wide.

Moist rock crevices, forests, streamsides; ca. 3300 m. S Xizang [NE India].


圆叶报春 yuan ye bao chun


Scapes 3–6 cm, ca. as long as to slightly taller than leaf rosette, 1– or 2 (or 3)–flowered. Pedicel 5–10 mm. Corolla limb 1–1.5 cm wide.

Moist meadows, on rocks; 3300–5000 m. SE Xizang, NW Yunnan [N Myanmar].


短梗鞘柄报春 duan geng qiao bing bao chun


Scapes 12–30 cm, much taller than leaf rosette; umbels compact, sometimes capitulate, 4–12-flowered. Pedicel 3–6 mm. Corolla limb 1–1.5 cm wide.

Forests, streamsides; 2200–4000 m. SE Xizang [India].


宽裂掌叶报春 kuan lie zhang ye bao chun

Herbs perennial, with slender creeping rhizomes. Leaves in a rosette; petiole 4–15 cm, with dense fulvous multicellular hairs; leaf blade suborbicular, 4–8 cm wide, abaxially sparsely minutely glandular and pubescent mainly along veins, adaxially pilose, base deeply cordate, palmately 7–lobed to middle; lobes obovate, 3–lobulate, coarsely obtuse dentate. Scapes 7–20 cm, sparsely pilose; umbels 1, 2–4–flowered; bracts lanceolate, 4–8 mm. Flowers heterostylos. Pedicel 1–1.5 cm, pilose. Calyx campanulate, 6.5–8.5 mm, sparsely pubescent, parted slightly below middle; lobes lanceolate, with midvein and 2 lateral veins. Corolla rose to purplish; tube 0.9–1.1 cm; limb 1.5–2 cm wide; lobes obovate, ca. 7 6 mm, emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style slightly exserted from tube. Thrum flowers: stamens slightly below annulus; style 2–3 mm. Capsule ellipsoid, ca. as long as calyx. Fl. May–Jun, fr. Sep. 2n = 22*.

* Picea and Quercus forests; 3100–3500 m. S Xizang.


掌叶报春 zhang ye bao chun

Herbs perennial, stoloniferous, with creeping rhizomes; stolons to 10 cm, internodes 1–5 cm, rooting at apex. Leaves in a rosette; petiole 2–19 cm, with fulvous long hairs; leaf blade suborbicular, 1.5–8 cm wide, abaxially pilose along veins, adaxially with multicellular hairs, base cordate, palmately lobed to 3/4 its width or more into 5–7 lobes; lobes 3–lobulate, segments with 1–3 acute teeth. Scapes slender, 4.5–17 cm, sparsely pilose; umbels 1, 1–4–flowered; bracts linear–lanceolate, 5–8 mm. Flowers heterostylos. Pedicel 0.7–2.5 cm, sparsely pubescent. Calyx campanulate, 5–7 mm, pilose, parted to 2/3; lobes lanceolate, 3–veined. Corolla rose or purplish; tube 8.5–11 mm; limb 1.5–2 cm wide; lobes broadly obovate, 5–8 mm wide, 2 lobules crenulate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style as long as tube. Thrum flowers with positions reciprocal. Capsule unknown. Fl. May–Jun.

* Woodland margins; 3000–3800 m. W Sichuan.


七指报春 qi zhi bao chun

Herbs perennial. Rhizomes with numerous fibrous roots. Leaves in a rosette; petiole 4–15 cm, densely fulvous pilose; leaf blade suborbicular, 5–10(–15) cm wide, abaxially with grayish long spreading hairs along veins, adaxially sparsely pilose, base deeply cordate, palmately lobed to 1/3 its width; lobes 7–9, broadly triangular, margin incised–dentate and irregularly denticulate, apex obtuse. Scapes 10–30(–50) cm, densely fulvous pilose; umbels 1(–3), superimposed, 3–6–flowered; bracts linear–lanceolate to narrowly oblong, 5–10 mm. Flowers drooping, homostylos. Pedicel 0.5–2 cm, densely glandular pubescent. Calyx usually tinged with purple, 5.5–8 mm, sparsely glandular pubescent or glabrescent, parted to middle or slightly below; lobes lanceolate, costate. Corolla deep purplish rose; tube 0.8–1.2 cm; limb 6–12 mm wide; lobes obovate–obovate, 4–5 2–4 mm, emarginate. Capsule elliptic, ca. as long as calyx. 2n = 24*.

* Woodlands, streamsides; 2400–4000 m. SW Sichuan, S Xizang, NW Yunnan.

1a. Stamens and stigma located
36a. Primula septemloba var. septemloba

七指报春 (原变种) qi zhi bao chun (yuan bian zhong)

Calyx 5.5–8 mm. Corolla tube 1–1.2 cm. Stamens and style located at lower 1/2 of corolla tube. Fl. May–Jun.

36b. Primula septemloba var. minor

小七指报春 xiao qi zhi bao chun

Calyx ca. 6 mm. Corolla tube ca. 8 mm. Stamens and style located at lower 1/2 of corolla tube. Fl. Jun.

37. Primula loeseneri

肾叶报春 shen ye bao chun

Primula tyoseniana Nakai ex Kitagawa.

Herbs perennial. Leaves in a rosette; petiole 8–25(-30) cm, sparsely pilose; leaf blade reniform to suborbicular, 5–10(-15) × 5.5–13(-20) cm, sparsely pubescent or glabrous, or pubescent along veins only, base cordate, 7–9-lobulate, apex acutely dentate; lobules triangular. Scapes 25–50(-70) cm, sparsely pilose; umbels (1 or)2–4, superimposed, 2–8-flowered; bracts lanceolate–lanceolate, 4–9 mm. Flowers heterostylos. Pedicel 3–12 mm, elongated to 2 cm in fruit, pubescent. Calyx campanulate, 6–10 mm, puberulent, parted to middle or below; lobes lanceolate, apex apiculate. Corolla rose-purple; tube 1.2–1.3 cm; limb 1–1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style ca. 8 mm, reaching mouth of corolla tube. Thrum flowers: stamens toward apex of corolla tube; style ca. 4 mm. Capsule ellipsoid, shorter than calyx. Fl. May.

38. Primula heucherifolia

* Herbs perennial, stoloniferous. Rhizomes creeping. Leaves forming a rosette; petiole 3–15 cm, with dense fulvous multicellular hairs; leaf blade suborbicular, 2.5–9 cm wide or slightly wider than long, abaxially with long spreading hairs along veins, adaxially sparsely pilose, base deeply cordate, palmately lobed to 2/5, apex obtuse; lobes 7–11, ovate-deltoid, margin irregularly blunt dentate. Scapes 10–22(-30) cm, with dense fulvous multicellular hairs; umbels 1, 3–6–(9)-flowered; bracts linear–lanceolate, 3–8 mm, puberulent. Flowers heterostylos. Pedicel 1–2.5 mm, pubescent. Calyx campanulate, 5–7–(8) mm, puberulent or with few long hairs, parted to middle or below; lobes lanceolate to deltoid-ovate, with a conspicuous midvein and 2 lateral veins. Corolla mauve-pink to deep purple; tube 1–1.3 cm; limb 1.2–2 cm wide; lobes obovate, emarginate. Pin flowers: stamens near base of corolla tube; style slightly exserted from tube. Thrum flowers: stamens toward apex of corolla tube; style ca. 3 mm. Capsule subglobose, shorter than calyx. 2n = 22*.

* Rocks of forest understory; 3100–3400 m. S Xizang.

39. Primula alsophila

蔓茎报春 man jing bao chun

Herbs perennial, stoloniferous. Rhizomes creeping, slender. Leaves 1–3, in a loose rosette; petiole 5–9(-11) cm, sparsely pilose; leaf blade suborbicular, 2–4–6 × 2.5–5–8 cm, abaxially with multicellular hairs along veins, ciliate, adaxially sparsely pilose, base deeply cordate, palmately lobed to 1/3 its width; lobes 5–7, margin usually acutely 3-toothed. Scapes 10–16 cm, sparsely pubescent; umbels 1, 2–3-flowered; bracts linear, 4–6 mm, pubescent. Flowers heterostylos. Pedicel 1–2.5 mm, pubescent. Calyx campanulate, 5–7 mm, glabrous or slightly puberulent, 5-veined; lobes spreading, lanceolate, 3–4 mm. Corolla lilac–rose to reddish purple; tube ca. 9 mm; limb 1–1.8 cm wide; lobes obovate, 6–8 × 5–6.5 mm, deeply emarginate. Pin flowers: stamens ca. 2.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule subglobose, shorter than calyx. Fl. Jun–Jul.

* Margins of mountain woodlands; 2300–3300 m. SE Gansu, NW Sichuan.
Primula heucherafolia Franchet subsp. humicola

Herbs perennial, occasionally with stolons in leaf axils. Leaves 2-4, in a loose rosette petiole 4-13 cm, densely fulvous pilose; leaf blade orbicular, 3-8 cm wide, abaxially with spreading long hairs along veins, adaxially sparsely pilose, base deeply cordate, palmately lobed to 1/3-1/2 its width; lobes 7-9, 3-lobulate to 3-toothed, margin denticulate, apex acute. Scapes 10-30 cm, densely fulvous pilose; umbels 1, or occasionally 2, superimposed, 3-12-flowered; bracts linear-lanceolate to narrowly oblong, 5-8 mm. Flowers heterostylos. Pedicel 0.5-1.5 cm, elongated to 4 cm in fruit, puberulent. Calyx often tinged with reddish brown, campanulate, 5-10 mm, parted to middle; lobes lanceolate, with a prominent midvein and 2 lateral veins. Corolla rose to purple; tube 1.1-1.3 cm; limb 1-2 cm wide; lobes ovate, 6-8 ca. 5 mm, emarginate. Pin flowers: stamens near base of corolla tube; style reaching annulus. Thrum flowers: stamens 8 ca. 5 mm, with reddish brown, campanulate, 5-8 mm, with white multicellular hairs. Racemes 5, 10-flowered: bracts lanceolate, 5-8 mm, pubescent. Flowers heterostylos. Pedicel 5-10 mm, densely pubescent. Calyx widely campanulate, 8-10 mm, pilose, glandular, parted nearly to middle; lobes ovate to triangular. Corolla bright yellow; tube ca. 1.4 cm; limb 2-2.5 cm wide; lobes ovate, emarginate. Pin flowers: stamens at middle of corolla tube; style reaching annulus. Thrum flowers: stamens 8-9 mm above base of corolla tube; style ca. 5 mm. Capsule subglobose, slightly shorter than calyx, 5-7 mm in diam. Fl. Jul.

* Mixed forests, grassy slopes; 2100-4000 m. W Sichuan.


Primula cinnamomea Bonati; P. stephanocalyx Handel-Mazzetti.

Herbs perennial. Leaves in a rosette; petiole 2-5.5 cm, with white multicellular hairs, ovate to elliptic, leaf blade ovate-oblong to broadly ovate or suborbicular, 1.5-4 1.3-3.5 cm, membranous when dry, abaxially pubescent along veins, adaxially glabrous or sparsely pilose, base shortly cordate to truncate, 7-11-lobulate, apex rounded; lobules usually with 1 or 2 acute teeth. Scapes 5-12 cm, sparsely pilose; racemes 1, lax, 1-5-flowered; bracts linear, 5-7 mm, pubescent. Flowers heterostylos. Pedicel less than 2 mm. Calyx broadly campanulate, 4-6 mm, glandular pubescent outside, parted nearly to base; lobes lanceolate to oblong, leaflike, apex acute to obtuse. Corolla rose to pale bluish pink; tube yellow, 1.2-1.5 cm; limb 1.4-1.8 cm wide; lobes ovate, emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style nearly as long as tube. Thrum flowers: stamens ca. 9 mm above base of corolla tube; style ca. 2 mm. Capsule subglobose, ca. 3 mm in diam. Fl. Jul–Aug.
1.5 to dark rose, rarely white; tube 1 prominent midvein and lateral veins. Corolla pale elliptic, leaflike, margin entire to dentate, with 1/3–2/3 cm, enlarged to 2 cm in fruit, pubescent, parted pubescent. Calyx broadly campanulate, 0.8–1.2 cm; limb 1–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens in upper 1/2 of corolla tube; style ca. 1/3 as long as tube. Capsule globose, 3–6 mm in diam., shorter than calyx. Fl. Jul.

Herbs perennial. Leaves in a rosette; petiole winged, ca. as long as leaf blade, with white multicellular hairs; leaf blade elliptic to oblanceolate, 5–10 cm, membranous when dry, abaxially sparsely pilose along midvein, adaxially glabrous, base attenuate, irregularly pinnate lobulate, apex suborbicular, leaflike, oblong to oblanceolate, 5–10 mm. Flowers heterostylos. Pedicel 1–4 mm. Calyx campanulate, 4–6 mm, parted nearly to base; lobes ovate-lanceolate to linear, herbaceous, apex obtuse, subcuneate or subcordate, margin repand to crenate-lobulate with denticulate lobules, apex rounded. Scapes 10–55 mm, sparsely pilose; racemes 1, many flowered; bracts lanceolate, 4–10 mm, enlarged to 1.5 cm in fruit. Flowers heterostylos. Pedicel initially 4–8 mm, elongated to 1.5 cm in fruit, densely short hirsute. Calyx widely campanulate, 0.8–1.5 cm, slightly enlarged in fruit, parted to middle; lobes triangular to broadly ovate, leaflike, ciliate, pubescent, margin sometimes denticulate. Corolla pale or dark lavender-rose; tube 1–1.2 cm; limb 1.5–2.5 mm wide; lobes broadly obovate, 8–10 mm, deeply 2-lobed. Pin flowers: stamens ca. 5 mm above base of corolla tube; style slightly exserted. Thrum flowers: stamens near apex of corolla tube; style ca. 4 mm. Capsule globose, 5–7 mm in diam., shorter than calyx. Fl. Jul.

* Rocks in mountain woodlands: 3100–3200 m. N Yunnan (Zhongdian Xian).


Herbs perennial. Rhizomes with several fleshy roots. Leaves in a rosette; petiole 1–22 cm, with dense white or fulvous multicellular hairs; leaf blade suborbicular to broadly ovate, 2.5–12 cm wide, abaxially pilose along veins, adaxially pubescent intermixed with long hairs, base cordate, margin crenate or crenate-lobulate, apex rounded; lobes irregularly denticate. Scapes 3–40 cm, pilose. Inflorescences terminal, usually in 1–8 superimposed whorls, sometimes in pseudowhors or a raceme; bracts leaflike, oblanceolate to broadly ovate, 0.5–2 cm. Flowers heterostylos. Pedicel 0.5–3.5 cm, copiously pubescent. Calyx broadly campanulate, 0.8–1.5 cm, enlarged to 2 cm in fruit, pubescent, parted to 1/3–2/3; lobes green, broadly ovate to elliptic, leaflike, margin entire to denticate, with prominent midvein and lateral veins. Corolla pale to dark rose, rarely white; tube 1–1.3 cm; limb 1.5–2.5 cm wide; lobes obovate, apex 2-cleft. Pin flowers: stamens at middle of corolla tube; style ca. 2/3 as long as tube. Thrum flowers: stamens in upper 1/2 of corolla tube; style ca. 1/3 as long as tube. Capsule globose, 3–6 mm in diam., shorter than calyx. Fl. Jul.

* Calcareous rocks of open slopes, forest margins; 2300–3700 m. NW Sichuan, N Yunnan.


Herbs perennial. Leaves in a rosette; petiole 0.6–6 cm, with dense long white hairs; leaf blade elliptic to obovate-elliptic, 2.5–14 cm, abaxially with white multicellular hairs along veins, adaxially pubescent to short pilose, base obtuse, subcuneate or subcordate, margin repand to crenate-lobulate with denticulate lobules, apex rounded. Scapes 10–55 mm, sparsely pilose; racemes 1, many flowered; bracts lanceolate, 4–10 mm, enlarged to 1.5 cm in fruit. Flowers heterostylos. Pedicel initially 4–8 mm, elongated to 1.5 cm in fruit, densely short hirsute. Calyx widely campanulate, 0.8–1.5 cm, slightly enlarged in fruit, parted to middle; lobes triangular to broadly ovate, leaflike, ciliate, pubescent, margin sometimes denticulate. Corolla pale or dark lavender-rose; tube 1–1.2 cm; limb 1.5–2.5 mm wide; lobes broadly obovate, 8–10 mm, deeply 2-lobed. Pin flowers: stamens ca. 5 mm above base of corolla tube; style slightly exserted. Thrum flowers: stamens near apex of corolla tube; style ca. 4 mm. Capsule globose, 5–7 mm in diam., shorter than calyx. Fl. Jul.

* Limestone rock crevices; 2800–3300 m. NW Yunnan.


Herbs perennial. Leaves in a rosette; petiole winged, ca. as long as leaf blade, with white multicellular hairs; leaf blade elliptic to oblong-oblanceolate, 5–10 cm, membranous when dry, abaxially sparsely pilose along midvein, adaxially glabrous, base attenuate, irregularly pinnate lobulate, apex suborbicular, leaflike, oblong to oblong-oblanceolate, 5–10 mm. Calyx broadly campanulate, 0.8–1.2 cm; limb 1–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens in upper 1/2 of corolla tube; style ca. 1/3 as long as tube. Capsule globose, 3–6 mm in diam., shorter than calyx. Fl. Jul.


Herbs perennial. Leaves in a rosette; petiole 1–22 cm, with dense white or fulvous multicellular hairs; leaf blade suborbicular to broadly ovate, 2.5–12 cm wide, abaxially pilose along veins, adaxially pubescent intermixed with long hairs, base cordate, margin crenate or crenate-lobulate, apex rounded; lobes irregularly denticate. Scapes 3–40 cm, pilose. Inflorescences terminal, usually in 1–8 superimposed whorls, sometimes in pseudowhors or a raceme; bracts leaflike, oblanceolate to broadly ovate, 0.5–2 cm. Flowers heterostylos. Pedicel 0.5–3.5 cm, copiously pubescent. Calyx broadly campanulate, 0.8–1.5 cm, enlarged to 2 cm in fruit, pubescent, parted to 1/3–2/3; lobes green, broadly ovate to elliptic, leaflike, margin entire to denticate, with prominent midvein and lateral veins. Corolla pale to dark rose, rarely white; tube 1–1.3 cm; limb 1.5–2.5 cm wide; lobes obovate, apex 2-cleft. Pin flowers: stamens at middle of corolla tube; style ca. 2/3 as long as tube. Thrum flowers: stamens in upper 1/2 of corolla tube; style ca. 1/3 as long as tube. Capsule globose, 3–6 mm in diam., shorter than calyx. Fl. Jul.

* Thickets, margins of mountain woodlands; 2000–3700 m. SW Sichuan, N and W Yunnan.


Herbs perennial. Leaves in a rosette; petiole 0.6–6 cm, with dense long white hairs; leaf blade elliptic to obovate-elliptic, 2.5–14 cm, abaxially with white multicellular hairs along veins, adaxially pubescent to short pilose, base obtuse, subcuneate or subcordate, margin repand to crenate-lobulate with denticulate lobules, apex rounded. Scapes 10–55 cm, sparsely pilose; racemes 1, many flowered; bracts lanceolate, 4–10 mm, enlarged to 1.5 cm in fruit. Flowers heterostylos. Pedicel initially 4–8 mm, elongated to 1.5 cm in fruit, densely short hirsute. Calyx widely campanulate, 0.8–1.5 cm, slightly enlarged in fruit, parted to middle; lobes triangular to broadly ovate, leaflike, ciliate, pubescent, margin sometimes denticulate. Corolla pale or dark lavender-rose; tube 1–1.2 cm; limb 1.5–2.5 mm wide; lobes broadly obovate, 8–10 mm, deeply 2-lobed. Pin flowers: stamens ca. 5 mm above base of corolla tube; style slightly exserted. Thrum flowers: stamens near apex of corolla tube; style ca. 4 mm. Capsule globose, 5–7 mm in diam., shorter than calyx. Fl. Jul.

* Rocks in mountain woodlands; 3100–3200 m. N Yunnan (Zhongdian Xian).

49. Primula racemosa H. L閚eill.

Herbs perennial. Leaves in a rosette; petiole 4–15 cm, densely short hirsute and short-stalked glandular; leaf blade oblong to oblong-elliptic, 4–10 cm, abaxially copiously fulvous short hirsute, adaxially short hirsute intermixed with long white hairs, base cordate to subcordate, margin repand to crenate with obscure denticulate crenations, apex rounded to obtuse; reticulate veins elevated abaxially. Scapes 30–40 cm, densely
short hirsute and short-stalked glandular; racemes 1, elongated many flowered; bracts linear to lanceolate or oblanceolate, 4–6 mm, enlarged to 1.2 cm in fruit, glandular pubescent. Flowers heterostylos. Pedicel 0.7–1.5 cm, elongated to 2 cm in fruit, densely scurfy short pubescent. Calyx broadly campanulate, 7–8 mm, enlarged to 2 cm in fruit, densely short hirsute, glandular, parted to middle; lobes broadly triangular to ovate, leaflike, with elevated veins. Corolla violet; tube ca. 1.2 cm, short glandular pubescent outside; limb 1.3–2.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style 7–8 mm. Capsule subglobose, 4–5 mm in diam. Fl. May.

* Mountains, rock crevices; 600–2500 m. SW Sichuan, NE Yunnan.


**Primula filchnerae** was collected only once by Filchner. The type material in the Berlin Herbarium was lost during the Second World War. A cultivated plant that matches this species in all respects was recently found in Sichuan; the calyx is campanulate, but the base is inflated after anthesis. There is no doubt of its affinity with *Primula sinensis* Sabine ex Lindley. Fl. Feb–Mar. 2n = 24*.

* Dry limestone cliffs; ca. 500 m. W Hubei, S Shaanxi.


**Primula sinensis** Sabine ex Lindley, Coll. Bot. t. 7. 1821.

**Auganthus praenitens** Link; **Oscaria chinensis** Lilja; **Primula mandarina** Hoffmannsegg; **P. praenitens** (Link) Ker Gawler; **P. semperflorens** Loiseleur-Deslongchamps ex Steudel; **P. sertulosa** J. Kickx; **Primulidium sinense** (Sabine ex Lindley) Spach.

**Auganthus praenitens** Link; **Oscaria chinensis** Lilja; **Primula mandarina** Hoffmannsegg; **P. praenitens** (Link) Ker Gawler; **P. semperflorens** Loiseleur-Deslongchamps ex Steudel; **P. sertulosa** J. Kickx; **Primulidium sinense** (Sabine ex Lindley) Spach.

**Auganthus praenitens** Link; **Oscaria chinensis** Lilja; **Primula mandarina** Hoffmannsegg; **P. praenitens** (Link) Ker Gawler; **P. semperflorens** Loiseleur-Deslongchamps ex Steudel; **P. sertulosa** J. Kickx; **Primulidium sinense** (Sabine ex Lindley) Spach.

**Auganthus praenitens** Link; **Oscaria chinensis** Lilja; **Primula mandarina** Hoffmannsegg; **P. praenitens** (Link) Ker Gawler; **P. semperflorens** Loiseleur-Deslongchamps ex Steudel; **P. sertulosa** J. Kickx; **Primulidium sinense** (Sabine ex Lindley) Spach.

**Auganthus praenitens** Link; **Oscaria chinensis** Lilja; **Primula mandarina** Hoffmannsegg; **P. praenitens** (Link) Ker Gawler; **P. semperflorens** Loiseleur-Deslongchamps ex Steudel; **P. sertulosa** J. Kickx; **Primulidium sinense** (Sabine ex Lindley) Spach.

**Auganthus praenitens** Link; **Oscaria chinensis** Lilja; **Primula mandarina** Hoffmannsegg; **P. praenitens** (Link) Ker Gawler; **P. semperflorens** Loiseleur-Deslongchamps ex Steudel; **P. sertulosa** J. Kickx; **Primulidium sinense** (Sabine ex Lindley) Spach.

**Auganthus praenitens** Link; **Oscaria chinensis** Lilja; **Primula mandarina** Hoffmannsegg; **P. praenitens** (Link) Ker Gawler; **P. semperflorens** Loiseleur-Deslongchamps ex Steudel; **P. sertulosa** J. Kickx; **Primulidium sinense** (Sabine ex Lindley) Spach.

**Auganthus praenitens** Link; **Oscaria chinensis** Lilja; **Primula mandarina** Hoffmannsegg; **P. praenitens** (Link) Ker Gawler; **P. semperflorens** Loiseleur-Deslongchamps ex Steudel; **P. sertulosa** J. Kickx; **Primulidium sinense** (Sabine ex Lindley) Spach.

密裂报春 *mi lie bao chun*

Herbs perennial. Rhizomes with numerous fibrous roots. Leaves in a rosette; petiole slightly shorter to ca. as long as leaf blade, densely white or brownish lanate; leaf blade broadly ovate to suborbicular, 4-15 cm wide, abaxially with multicellular hairs along veins, adaxially appressed pilose, base shallowly to deeply cordate, margin crenate or sinuate-lobulate with irregularly denticulate lobules, apex rounded. Scapes 7-18(-20) cm, densely white or brownish lanate, with a short raceme; bracts lanceolate to oblanceolate, 0.7-2 cm 3-5 mm. Flowers heterostylous. Pedicel 0.5-1.5 cm, villous. Calyx campanulate to narrowly campanulate, 1.5-2.5 cm, villous, parted to middle; lobes lanceolate, ciliate, apex acute. Scapes 12-18 cm, short pubescent; umbels 1, 3-5 cm, 2- or 3-flowered; bracts linear to lanceolate, 0.4-6.5 mm. Flowers homostylous. Pedicel 0.7-3 cm, sparingly glandular. Calyx campanulate, 3-4.5 mm, glandular, parted below middle into lanceolate lobes. Corolla pink or pale lilac; tube ca. as long as blade; style 2 mm. Capsule subglobose, ca. 5 mm in diam. Fl. Mar-Apr, fr. Apr-May.

* Grassly slopes, margins of mountain woodlands; 1000-2000 m. W Sichuan.


毛蕊叶报春 *mao gen ye bao chun*

*Primula erodioides* Schlechter; *P. ranunculoides* Chen; *P. ranunculoides* var. minor Chen.

Herbs perennial, delicate, glabrous, with a taproot and numerous fibrous roots. Leaves dimorphic; outer leaves withered at anthesis, long petiolate, ovate, 3-8 3-7 mm, margin entire to dentate; petiole of inner leaves 0.6-2 cm; leaf blade elliptic to oblong, 1.5-10 cm; pinnatisect; pinnae (1 or)2-6 pairs, proximal pair very small, 3-13 2.5-12 mm, 2-4-toothed on each side, terminal pair larger, elliptic to broadly ovate, usually 3-lobed. Scapes 1-5 cm; umbels 1, (1 or)2-4-flowered; bracts linear, 1.5-3 mm. Flowers homostylous or heterostyly. Pedicel 0.7-3 cm, sparingly glandular. Calyx campanulate, 3-4.5 mm, glandular, parted below middle into lanceolate lobes. Corolla pink or pale lilac; tube 4.5-6.5 mm; limb 4-8 mm wide; lobes cuneate-oblong, apex sub truncate or slightly emarginate. Pin flowers unknown. Thrum flowers: stamens near apex of corolla tube; style ca. 1/2 as long as tube. Homostylous flowers with stamens and style near apex of corolla tube. Capsule subglobose, ca. 2.5 mm in diam. Fl. Mar-Apr, fr. Apr-May.

* Grassly slopes in ravines; 800-1100 m. S Anhui (Huang Shan, Shexian Xian).


安徽羽叶报春 *an hui yu ye bao chun*

Herbs perennial, dwarf, glabrous. Leaves 10-20, in an open rosette; petiole slightly flattened, 0.5-2.5(-3) cm; leaf blade pinnatisect, 2-6 0.7-1.5 cm; pinnae 7-9 pairs, oblong, 3-9 mm, margin pinnatifid or pinnately dentate; segments linear, 0.4-0.8 mm wide, apex acute. Scapes 3-7 cm; umbels 1 or 2, superimposed, 2- or 3-flowered; bracts linear to narrowly triangular, 1.5-3.5 mm, tapered from a wide base. Flowers heterostylous. Pedicel 1.5-3 cm. Calyx campanulate, ca. 4.5 mm, sparingly glandular, parted to middle; lobes ovate-lanceolate, apex acute; veins 3. Corolla white or tinged with lilac; tube 5-6.5 mm; limb 1-1.2 cm wide; lobes ovobovate-elliptic to ovobovate-oblong, ca. 7 4 mm, margin entire, apex rounded. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style ca. 2 mm. Capsule subglobose, ca. 3 mm in diam. Fl. May, fr. May-Jun.

* Grassly areas in ravines; 800-1100 m. S Anhui (Huang Shan, Shexian Xian).


硕萼报春 *shuo e bao chun*


Herbs perennial. Leaves in a rosette; petiole winged, usually 1/3-1/2 or rarely ca. as long as leaf blade; leaf blade ovate-oblong to oblong, 11-14 2-2.7 cm, to 20 cm at fruiting, abaxially densely short pubescent, adaxially sparsely stigmatic, base attenuate, margin irregularly crenate to dentate, apex rounded to obtuse. Scape 12-35 cm, short pubescent; umbels 1, 3-5-flowered; bracts linear-elliptic, 4-10 mm. Flowers heterostylous. Pedicel 0.4-2 cm, elongated to 2.6 cm in fruit, densely pubescent. Calyx tubular-campanulate, 0.5-2 cm, copiously pubescent, parted to 1/3, 5-veined; lobes triangular, apex acute or subacute. Corolla yellow; tube ca. as long as calyx; limb 1.8-2.8 cm
Herbs perennial. Rhizomes to 2 cm in diam., with fibrous roots. Leaves 2 or 3 per rosette; petiole 10–18 cm; leaf blade broadly ovate to ovate-lanceolate or ovate-elliptic, 10–20 × 3.5–12 cm, subleathery when dry, base rounded or subcuneate, margin spiny dentate, often with 1 or 2 lobules toward apex, apex acuminate. Scapes 15–21 cm; racemes abbreviated, 10–25-flowered; axis initially very short, to 1–1.5 cm in fruit; bracts linear, 3–5 mm. Flowers second. Pedicel erect, 5–10 mm. Calyx campanulate, ca. 3 mm, parted to 1/3; lobes triangular, apex acute. Corolla ?pink; tube ca. 7 mm; limb 1–1.2 × 10 mm wide; lobes oblong-obovate, 4–4.5 × 3 mm, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style exerted. Thrum flowers unknown. Capsule ellipsoid, slightly longer than calyx, narrowed toward apex into a beak.

Wet areas in broad-leaved evergreen forests: 1600–1700 m. SE Yunnan (Malipo Xian, Pingbian Xian) [N Vietnam].


Herbs perennial. Rhizomes creeping, to 4 cm, with a tuft of long roots. Leaves 2 or 3 per rosette; petiole 15–20 cm, initially rust-colored glandular pubescent, glabrescent; leaf blade oblong to suborbicular or ovate-rotund, 11–20 × 10–15 cm, papery when dry, abaxially pubescent along veins or glabrescent, adaxially glabrous, base deeply cordate, margin obscurely repand and spiny-denticulate, apex rounded or short obtuse. Scapes 10–20 cm, rust-colored tomentose especially at base, axis 3–10 mm initially, elongated to 5 cm in fruit. Racemes abbreviated, umbellate, 8–15-flowered; bracts linear to linear-lanceolate, 6–10 mm. Flowers heterostylos. Pedicel 7–10 mm, elongated slightly in fruit. Calyx tinged with red, campanulate, 4.5–5 mm, glabrous or very sparsely puberulent, parted to middle, sinus between lobes rounded, obscurely 5-veined; lobes lanceolate, apex acute. Corolla rose; tube 1–1.2 cm; limb 1–1.5 cm wide; lobes obovate, emarginate. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule ellipsoid, slightly longer than calyx. Fl. Mar–Apr.

* Broad-leaved forests: 2300–2400 m. SE Yunnan (Jinping Xian).

Herbs perennial. Rhizomes short, with numerous fibrous roots. Leaves 3–6 per plant; petiole 0.5–5 cm, narrowly winged, sparsely pubescent.
initially, glabrescent; leaf blade oblong to oblong-obovate, 4-10(14) 2-5 cm, papery, base broadly cuneate to subrounded, rarely shallow cordate, margin repand-crenate, apex rounded; reticulate veins elevated, especially adaxially. Scapes 5-18 cm, initially scurfy-pubescent, later with hairs only at base and toward apex. Racemes abbreviated, umbellate, 8-12-flowered; bracts linear to narrowly lanceolate, 3-5 mm. Flowers heterostylos. Pedicel 5-10 mm, glabrous. Calyx campanulate, 3-4 mm, parted to middle, 5-veined; lobes narrowly triangular, apex acute. Corolla rose; tube 6-8 mm; limb 1-1.2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule obovoid, operculate. Fl. Mar-Apr.


Herbs perennial. Rhizomes short, with a tuft of fibrous roots. Leaves in a rosette; petiole 2-5 cm, usually longer than leaf blade, densely pilose; leaf blade oblong to broadly ovate, 1.5-3.5 0.8-2.5 cm, papery when dry, abaxially copiously short glandular pilose, adaxially pilose, base cordate, rarely subrounded, margin remotely hydathode-denticulate, apex rounded. Scapes 2.5-5.5 cm, sparsely pilose; umbels 1, 2-flowered; bracts linear-lanceolate, 2-3 mm. Flowers heterostylos. Pedicel 4-10 mm, sparsely short-stalked glandular. Calyx campanulate, 3-5 mm, glandular, parted to middle; lobes narrowly triangular, margin hydathode-apiculate, with a prominent midvein and 2 lateral veins. Corolla rose; tube ca. 8 mm; limb 1-1.2 cm wide; lobes obovate, deeply emarginate. Pin flowers unknown. Thrum flowers: stamens in upper 1/3 of corolla tube; style ca. 3 mm. Capsule obovoid, operculate. Fl. Apr.

* Limestone rock crevices; ca. 900 m. S Guizhou (Libo Xian).


Herbs perennial. Leaves in a rosette; petiole 0.5-2.5 cm, rust-colored pilose; leaf blade broadly obovate to oblong or elliptic, 5-11.5 3-7.5 cm, long ciliate, thin papery, abaxially with rust-colored multicellular hairs along veins, abaxially pubescent along midvein when young, soon glabrescent, base broadly cuneate to subrounded, margin subentire to remotely denticulate, apex rounded. Scapes 3-12 cm, rust-colored pilose; umbels 1 or 2, superimposed, 3-9-flowered; bracts lanceolate to oblong-lanceolate, 4-5 mm, pubescent. Flowers heterostylos. Pedicel 1-1.5 mm, rust-colored pilose. Calyx campanulate, 6-7 mm, pubescent or subglabrous, parted to 1/3; lobes triangular, apex acute. Corolla rose or purplish blue; tube 1.1-1.3 cm; limb ca. 1.5 cm wide; lobes obovate, 6-8 mm, deeply emarginate. Fin flowers: stamens near

* Limestone rocks and cliffs. Guizhou (Xingyi Xian).

60a. Primula kweichouensis var. kweichouensis

Petiole 0.5-2.5 cm; leaf blade much longer than petiole, abaxially densely pilose. Fl. Apr.

* Limestone rocks. W Guizhou (Xingyi Xian).

60b. Primula kweichouensis var. venulosa

Herbs perennial. Leaves in a rosette; petiole 0.5-2.5 cm, densely rust-colored pilose; leaf blade broadly ovate to elliptic, 5-11.5 3-7.5 cm, long ciliate, thin papery, abaxially with rust-colored multicellular hairs along veins, abaxially pubescent along midvein when young, soon glabrescent, base broadly cuneate to subrounded, margin subentire to remotely denticulate, apex rounded. Scapes 3-12 cm, rust-colored pilose; umbels 1 or 2, superimposed, 3-9-flowered; bracts lanceolate to oblong-lanceolate, 4-5 mm, pubescent. Flowers heterostylos. Pedicel 1-1.5 mm, rust-colored pilose. Calyx campanulate, 6-7 mm, pubescent or subglabrous, parted to 1/3; lobes triangular, apex acute. Corolla rose or purplish blue; tube 1.1-1.3 cm; limb ca. 1.5 cm wide; lobes obovate, 6-8 mm, deeply emarginate. Pin flowers: stamens near

* Limestone rocks. N Guizhou (Suiyang Xian).


Herbs perennial. Leaves in a rosette; petiole 0.5-3 cm, densely rust-colored pilose; leaf blade broadly ovate to oblong or elliptic, 5-11.5 3-7.5 cm, long ciliate, thin papery, abaxially with rust-colored multicellular hairs along veins, abaxially pubescent along midvein when young, soon glabrescent, base broadly cuneate to subrounded, margin subentire to remotely denticulate, apex rounded. Scapes 3-12 cm, rust-colored pilose; umbels 1 or 2, superimposed, 3-9-flowered; bracts lanceolate to oblong-lanceolate, 4-5 mm, pubescent. Flowers heterostylos. Pedicel 1-1.5 mm, rust-colored pilose. Calyx campanulate, 6-7 mm, pubescent or subglabrous, parted to 1/3; lobes triangular, apex acute. Corolla rose or purplish blue; tube 1.1-1.3 cm; limb ca. 1.5 cm wide; lobes obovate, 6-8 mm, deeply emarginate. Pin flowers: stamens near

* Limestone rocks. N Guizhou (Suiyang Xian).
middle of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule ellipsoid, slightly shorter than calyx. Fl. Feb–Mar.

* Wet rocks in woodlands; ca. 200 m. N Guangdong (Lechang Xian, Baying Xian).


广南报春 guang nan bao chun

Herbs perennial. Leaves in a rosette; petiole 2.5–8 cm, usually ca. as long as leaf blade, densely rust-colored pilose; leaf blade broadly oblong to suborbicular, 3–6.5 × 2.5–5 cm, long ciliate, papery, abaxially rust-colored pubescent along veins, axially glabrous or sparingly pubescent along impressed midvein, base cordate to orbicular, slightly asymmetrical, margin entire to obscurely repand and remotely hyathodoe-denticate, apex rounded, sometimes slightly emarginate. Scapes 2.5–8 cm, elongated to 12 cm in fruit, densely rust-colored pilose; umbels 1, 3–5-flowered; bracts linear-lanceolate, 2–3 mm, pubescent. Flowers heterostylous. Pedicel (0.5–)1–2.5 cm, rust-colored pilose. Calyx campanulate, 4.5–7.5 mm, sparingly pubescent, parted to middle; lobes lanceolate, sparingly ciliate, with a prominent midvein. Corolla rose; tube ca. 2 cm; limb 1–1.5 cm wide; lobes ovate, apex 2-cleft. Thrum flowers: stamens 7 mm above base of corolla tube; style ca. 9 mm. Thrum flowers: stamens toward apex of corolla tube; style less than 1/2 as long as tube. Capsule subglobose, shorter than calyx. Fl. May–Jun, fr. Jul–Aug.

* Pinus and Quercus forests; ca. 3000 m. Yunnan (Eryuan Xian, Heqiang Xian).


灰岩皱叶报春 hui yan zhou ye bao chun


Herbs perennial. Rhizomes woody, with remains of old leaves at apex. Leaves in a rosette; petiole 2–10 cm, fulvous pilose; leaf blade ovate-elliptic to elliptic-oblong, 3–8 × 2–5 cm, occasionally to 12 × 6 cm at fruiting, fulvous pilose, base broadly cuneate to obscurely cordate, margin crenate to blunt dentate, apex rounded to obtuse; leaves of previous year thicker, bullate, abaxially yellow farinose. Scapes 7–25 cm, glandular tawny pubescent. Inflorescences umbellate, fulvous pilose, 7–18–25-flowered; bracts broadly lanceolate, 1–3 cm, leafy-like. Flowers heterostylous. Pedicel initially slightly shorter than bracts, elongated to 4 cm in fruit. Calyx subtubular, 1.2–1.5 cm, pilose, farinose near base of interior, parted to ca. 1/3; lobes ovate-oblong, apex subrotund, mostly shorter than calyx. Fl. Apr–May. 2n = 24*.

* Open mountain forests, limestone rock crevices; 3000–3200 m. N and W Yunnan.


皱叶报春 zhou ye bao chun

Herbs perennial. Rhizomes woody, simple or with 1 or 2 branches, with remains of old foliage at apex. Leaves in a rosette; petiole 1–8 (–10) mm, pubescent; leaf blade elliptic-oblongate to oblongate, 3–10 (–15) × 1–4.2 cm, base cuneate-attenuate, margin repand-crenate, apex subrotund. Leaves of current year thin papery, puberulent, usually efarinose. Leaves of previous year thicker, bullate, abaxially densely yellow farinose. Scapes 4–20 cm, yellow farinose toward apex; umbels 1, 6–15 (–20)–flowered; bracts lanceolate, 0.8–1.5 cm × 1–3 mm, leafy-like. Flowers heterostylous. Pedicel 1–2 cm, yellow farinose. Calyx tubular-campanulate, 8–10 mm, yellow farinose, parted 1/3–1/2; lobes lanceolate to ovate-oblong, apex acute to obtuse. Corolla deep yellow; tube slightly longer than calyx; limb 1.2–1.8 cm wide; lobes obovate to suborbicular, apex 2-cleft. Pin flowers: stamens 4–5 mm above base of corolla tube; style ca. 9 mm. Thrum flowers: stamens toward apex of corolla tube; style less than 1/2 as long as tube. Capsule ovoid, shorter than calyx. Fl. Apr–May. 2n = 24*.

* Open mountain forests, limestone rock crevices; 3000–3200 m. N and W Yunnan.

Xiao bao bao chun xiao bao bao chun


Herbs perennial, cespitose. Rhizomes woody, to 15 cm, often branched, with remains of old leaves at apex. Leaves in a rosette; petiole ca. as long as
as leaf blade, pilose; leaf blade elliptic to narrowly oblong or orbilanceolate, 1-7 0.5-3 cm, abaxially with multigeneric hairs, efarinose or yellow or cream farinose, adaxially glandular pubescent, base attenuate, margin obscurely crenate, apex rounded to obtuse. Scapes to 5 cm, pilose; umbels 2-10-flowered, if scapes obsolete then 1-flowered; bracts lanceolate to linear, 0.5-1.5(-2) cm, apex acute. Flower heterostylous. Pedicel divaricate, 0.8-2.5 cm. Calyx campanulate, 5-14 mm, glandular pubescent, efarinose or farinose, parted to middle or slightly below; lobes ovate-oblong to lanceolate, apex acute to obtuse. Corolla yellow, white, or pale purple; tube 1.5-2 as long as calyx; limb 1-2 cm wide; lobes obovate, emarginate or 2-cleft at apex. Pin flowers: stamens in upper 1/3 of corolla tube; style ca. 3/4 as long as tube. Thrum flowers: stamens inserted 7-9 mm above base of corolla tube; style ca. 3 mm. Capsule subglobose, included in calyx. Fl. Mar.-May.


纤柄皱叶报春 xian bing zhou ye bao chun

Herbs perennial. Rhizomes woody, with brownish scales and remains of old leaves at apex. Leaves in a rosette; petiole 1-7 cm, pilose; leaf blade broadly ovate to ovate-oblong, 1-3(-4) 0.5-2.5(-3) cm, ciliate, abaxially with dense multicellular hairs, adaxially less densely so, base truncate to shallowly cordate, incised-lobiluate, apex subrounded to obtuse; lobes with 1 or 2 blunt teeth on each side. Scapes inconspicuous or to 2.5 cm, pilose; umbels 1, 2-6-flowered; bracts lanceolate, 7.5-10 mm. Flowers heterostylous. Pedicel 2-4 cm, glandular tawny pubescent. Calyx tubular to campanulate, 7-10 mm, glandular pubescent, parted to middle; lobes lanceolate, apex acute to obtuse. Corolla yellow, pubescent outside; tube ca. 1.5 as long as calyx; limb ca. 1.5 cm wide; lobes obcordate to subrounded, 2-cleft or irregularly crenate at apex. Pin flowers: stamens ca. 3.5 mm above base of corolla tube; style ca. 6 mm. Thrum flowers: stamens in upper 1/3 of corolla tube; style ca. 1.5 mm. Capsule globose, shorter than calyx. Fl. Jun.

* Rock crevices; 2500-3500 m. SW Sichuan, E Xizang, N and W Yunnan.


革叶报春 ge ye bao chun

Herbs perennial, efarinose. Leaves in a rosette; petiole narrowly winged, ca. as long as to shorter than leaf blade; leaf blade ovate to broadly elliptic or suborbicular, 2.5-5 2-4.5 cm, glabrescent, firm papery or subleathery, abaxially glaucous, base rounded to cordulate, margin subentire to obscurely crenulate, apex rounded, initially puberulous along veins. Scapes 5-14 cm, puberulent on upper part; umbels 1, 2-6-flowered; bracts lanceolate to narrowly oblong, 4-7 mm. Flowers heterostylous. Pedicel 0.5-1.5 cm, puberulent. Calyx narrowly campanulate, 5-8 mm, puberulent, parted to middle; lobes oblong, apex rounded to obtuse. Corolla rose-lilac or rose-purple; tube 9-10 mm, puberulent inside; limb 1-1.5 mm wide; lobes broadly obovate, emarginate; lobules entire. Pin flowers: stamens at middle of corolla tube; style slightly exserted. Thrum flowers: stamens toward apex of corolla tube; style ca. 3 mm. Capsule included in calyx, disintegrated at maturity. Fl. Apr.-May.

* Margins of mixed forests; ca. 1800 m. N Yunnan (Daguan Xian, Yanjin Xian).


遂瓣报春 sui ban cui shuo bao chun

Herbs perennial, efarinose. Leaves in a rosette; petiole 1-2 as long as leaf blade, puberulent; leaf blade ovate-rounded to suborbicular, 2-6 2-5 cm, firm papery, glabrous, abaxially glaucous, base shallowly cordate, margin obscurely crenulate, apex rounded to obtuse. Scapes 8-18 cm, puberulent; umbels 1, 3-7-flowered; bracts lanceolate, 3-7 mm, axils with small petiolate leaves at fruiting. Flowers heterostylous. Pedicel 0.5-1.5 cm, elongated to 3 cm in fruit, fulvous pubescent. Calyx campanulate to tubular-campanulate, 6-7 mm, puberulent, parted to middle, 5-veined; lobes ovate, apex acute to obtuse. Corolla lavender-blue to bright pink; tube 1.1-1.3 cm, pilose inside; limb 1.5-2.5 cm wide; lobes obovate, apex 2-cleft; lobules lacerate. Pin flowers: stamens at middle of corolla tube; style exserted. Thrum flowers: stamens toward apex of corolla tube; style ca. 7 mm. Capsule included in calyx, disintegrated at maturity. Fl. Apr.

* Rocky mountain slopes, mixed forests; ca. 2500 m. E Xizang [NW Myanmar].

69. **Primula veitchiana** Petitmengin, Monde Pl. 9: 14. 1907.

川西遂瓣报春 chuan xi sui ban bao chun

Primula pirolifolia H. L. 関 ei11

Herbs perennial, efarinose. Leaves in a rosette; petiole 2-4 × as long as leaf blade,
copiously minutely glandular when young; leaf blade suborbicular to depressed orbicular, rarely broadly elliptic, 1.5–3(–5) cm wide, subleathery when dry, abaxially grayish green, glabrous, adaxially dark green, base rounded to shallowly cordate, margin remotely dentate to crenate. Scapes 6–15 cm, elongated to 20 cm in fruit, sparsely glandular; umbels 1, 2–6-flowered; bracts lanceolate, 3–7 mm. Flowers heterostylyous. Pedicel 1–2.5 cm, short-stalked glandular. Calyx campanulate to tubular campanulate, 4–6 mm, sparsely short-stalked glandular, parted to middle; lobes ovate to ovate-oblong, glandular ciliate, apex obtuse to rounded. Corolla rose-purple; tube 7–10(–12) mm, sparsely puberulent inside; limb 1.5–2.5 cm wide; lobes obovate, 2–lobulate, margin denticulate to lacerate. Pin flowers: stamens at middle of corolla tube; style nearly as long as tube. Thrum flowers: stamens 3–4 mm above base of corolla tube; style nearly as long as tube. Thrum flowers with positions reciprocal. Capsule subglobose, included in calyx, disintegrated at maturity. Fl. Apr.


镇康报春 zhen kang bao chun

Herbs perennial, fulvous, pilose, lacking basal bud scales at anthesis. Leaves spatulate to obovate-oblong, 3–5 1–1.5 (–2) cm, base attenuate to a petiole, less than 5 mm, margin irregularly dentate, apex obtuse; petiole of inner leaves slightly longer than leaf blade; leaf blade sometimes elliptic, base broadly cuneate to subrounded. Scapes 2–3 cm; umbels 1, 3–12-flowered; bracts ovate-lanceolate, ca. 8 mm. Flowers heterostylyous. Pedicel 1–1.5 cm. Calyx campanulate, 7–8 mm, parted to middle; lobes ovate, apex acute. Corolla blue to deep violet; tube 9–10 mm, pilose inside; limb 1.5–2 cm wide; lobes obovate, margin entire. Pin flowers: stamens ca. 4 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule disintegrated at maturity. Fl. Mar.

* Rocks in forests; 1600–2600 m. W Sichuan, E Yunnan.


大理报春 da li bao chun

Herbs perennial, farinose or efarinose. Leaves variable, 2–10 1–4 cm, enlarged to 20 cm at fruiting; outer leaves spatulate to obovate-spatulate, base tapered broadly winged petiole, short appressed pubescent, margin crenate to dentate, apex rounded; petiole of inner leaves 1–2 as long as leaf blade; leaf blade ovate-rounded to reniform, 1.5–4 cm wide, base short cuneate to rounded or cordate, margin deeply dentate to dentate-laciniate. Scapes 1–6 cm, ca. as long as to longer than leaf rosette at fruiting, copiously pilose; umbels 1, 2– to many flowered; bracts lanceolate, 3–7 mm. Flowers heterostylyous. Pedicel 1–3 cm, pilose. Calyx campanulate, 5–9 mm, pilose, parted to 1/3; lobes ovate to broadly lanceolate, margin occasionally denticulate, apex subacuminate to acute. Corolla white or purplish rose to purple-blue; tube 0.9–1.1 cm, sparingly pubescent outside, glabrous inside; limb 1.5–2 cm wide; lobes broadly obovate, 3-toothed. Pin flowers: stamens 3–4 mm above base of corolla tube; style nearly as long as tube. Thrum flowers with positions reciprocal. Capsule subglobose, included in calyx, disintegrated at maturity.

Grassy slopes, open forests, Tsuga forests; 2200–3300 m. W Yunnan [N Myanmar].

1a. Plants completely efarinose

71a. var. taliensis

* Rocks in forests; 1600–2600 m. W Sichuan, E Yunnan.


71a. Primula taliensis var. taliensis

大理报春(原变种) da li bao chun (yuan bian zhong)

Primula euosma Craib var. puralba W. W. Smith; P. praticola Craib.


Grassy slopes, open forests; 2200–3300 m. W Yunnan [N Myanmar].


金粉大理报春 jin fen da li bao chun

Abaxial surface of outer leaves and calyx golden yellow farinose. Fl. Apr.

* Tsuga forests; ca. 3300 m. W Yunnan (Bijiang Xian).


纤柄脆朔报春 xian bing cui shuo bao chun

Herbs perennial, without basal bud scales at anthesis. Leaves in a rosette; petiole very short or nearly obsolete in outer leaves, ca. as long as to longer than leaf blade in inner leaves; leaf blade elliptic to obovate-elliptic or oblong-spatulate, 3–7 1–3.5 cm, sparsely minutely glandular, abaxially occasionally cream-colored farinose, base cuneate to subrounded, margin erose-denticulate, apex rounded. Scapes not developed; inflorescences arising from leaf
rosette, many flowered. Flowers heterostylos. Pedicel 1-6 cm, glandular. Calyx campanulate to tubular campanulate, 5-9 mm, cream-yellow farinose or glandular, parted to middle; lobes oblong to ovate-oblong, apex acuminate to subobtuse. Corolla pink-purple; limb 1.5-3 cm wide; lobes broadly obovate, usually 3-toothed. Pin flowers: corolla tube ca. 1.1 cm; stamens ca. 5 mm above tube base; style ca. as long as to slightly longer than tube. Thrum flowers: corolla tube 1.2-1.3 cm; stamens toward tube apex; style slightly longer than calyx. Capsule subglobose, shorter than calyx, disintegrated at maturity. Fl. May-Jun. 2n = 22, 36.

Forests; 3500-4000 m. S Xizang [Bhutan, NE India, Nepal, Sikkim].

It is extremely difficult to distinguish Primula gracilipes from the earlier published P. petiolaris Wallich, which was described from Nepal. It remains to be determined whether they are conspecific or not.


小脆朔报春 xiao cui shuo bao chun

Herbs perennial, without basal bud scales at anthesis. Leaves numerous, 1.5-11 × 1-4 cm; petiole obsolete to some-times nearly as long as leaf blade in outer leaves; leaf blade oblong-spatulate to oblong-ovate, copiously sprinkled with whitish farina, abaxially minutely glandular, base attenuate, margin erose-denticulate, apex rounded. Scapes not developed; inflorescences arising from leaf rosette, many flowered. Flowers heterostylos. Pedicel 3-10 mm. Calyx tubular-campanulate, 4-6 mm, glandular, parted to middle or below; lobes ovate to lanceolate, ciliolate, apex acute to subacuminate. Corolla purplish pink, puberulent; tube 8-10 mm; limb 1-1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 1 mm above base of corolla tube; style 4-6 mm. Thrum flowers: stamens near middle of corolla tube; style 1-1.5 mm. Capsule unknown.

Rock crevices, Rhododendron thickets; 3300-4300 m. S Xizang [Sikkim].


川北脆朔报春 chuan bei cui shuo bao chun

Primula petiolaris Wallich var. setschwiana Pax & K. Hoffmann.

Herbs perennial. Basal bud scales absent or inconspicuous at anthesis. Leaves dimorphic; outer leaves oblong-spatulate to obovate-spatulate, 2-6 cm, base tapered into a short-winged petiole, apex rounded. Petiole of inner leaves 3-6 cm; leaf blade ovate to oblong-ovate, 3-6 × 2-5 cm, sparsely farinose, base truncate to cordate, margin irregularly dentate, apex rounded. Scapes
0.5-2 cm, elongated to 25 cm in fruit, farinose toward apex; umbels 1, few or many flowered; bracts linear-lanceolate, 3-10 mm, glandular ciliate, occasionally axils of bracts with stalked leaves, 0.6-2.5 cm wide. Flowers heterostylos. Pedicel 1.5-4.5 cm, farinose. Calyx campanulate, 7-10 mm, farinose, parted to middle; lobes ovate to ovate-oblong, apex acuminate. Corolla pinkish lilac; tube 1.2-1.3 cm, glandular pubescent; limb 2.5-3 cm wide; lobes broadly obovate, apex dentate. Pin flowers: stamens near middle of corolla tube; style ca. as long as tube. Thrum flowers: stamens on upper 1/3 of corolla tube; style 7-10 mm. Capsule disintegrated at maturity. Fl. Apr.


云龙报春 yun long bao chun

Herbs perennial, without basal bud scales at anthesis. Leaves numerous, subsessile, obovate-elliptic to oblong-spatulate, 3-7 2-3 cm, tapered to base, glabrous, minutely glandular, margin irregularly hydathode-denticulate, apex rounded. Scapes less than 5 mm; umbels 1, 10-20-flowered; bracts linear to lanceolate, 4-6 mm, yellow farinose. Flowers heterostylos. Pedicel 0.5-1.5 cm, copiously bright yellow farinose. Calyx campanulate, 7-8 mm, minutely glandular and yellow farinose, parted to 2/3; lobes ovate to oblong-spatulate, glandular ciliate, apex subacuminate. Corolla purple; tube 1.2-1.3 cm, puberulent around mouth; limb 1.5-2.5 cm wide; lobes broadly obovate, apex 2-cleft; lobules irregularly denticulate. Thrum flowers: stamens ca. 8 mm above base of corolla tube; style ca. 2 mm. Capsule disintegrated at maturity. Fl. Feb.

* Mixed forests; ca. 2800 m. SW Yunnan (Yunlong Xian).


宝兴报春 bao xing bao chun

Herbs perennial. Basal bud scales inconspicuous at anthesis. Leaves 4-10 1-3 cm at anthesis, to 6-17 4-7.5 cm at fruiting; petiole to 1/2 of blade; leaf blade at anthesis oblong-obovate to obovate, base tapered into a short-winged petiole, margin irregularly sharp dentate, apex rounded; leaf blade at fruiting obovate-elliptic to oblong and dentate-lobulate. Scapes ca. as long as petiole at anthesis, elongating to 29 cm in fruit; umbels 1, (2-4) 4- to many flowered; bracts triangular to ovate-triangular, 3-6(-8) mm. Flowers heterostylos. Pedicel 1.5-2.5 cm, elongated to 3 cm in fruit, glandular or sparsely farinose. Calyx campanulate, 6-7 mm, glandular or pale yellow farinose, parted to middle; lobes ovate to triangular, apex acute to obtuse. Corolla bluish purple; tube 1.1-1.3 cm; limb 1.5-2.5 cm wide; lobes broadly obovate, deeply emarginate; lobules entire. Pin flowers: stamens near middle of corolla tube; style slightly exserted. Thrum flowers: stamens at upper 1/3 of corolla tube; style 5-6 mm. Capsule subglobose, 4-5 mm in diam., included in calyx, disintegrated at maturity.

* Shaded wet areas in ravines and forests, streamside; 2000-3400 m. Sichuan.

78a. Primula moupinensis subsp. moupinensis

宝兴报春（原亚种）bao xing bao chun (yuan ya zhong)

Petiole of inner leaves inconspicuous to 1/2 as long as leaf blade; leaf blade obovate to obovate-elliptic, base attenuate. Corolla 1.5-2 cm in diam. Fl. Apr., fr. May.

78b. Primula moupinensis subsp. barkamensis

马尔康报春 ma er kang bao chun

Petiole of inner leaves usually ca. as long as leaf blade; leaf blade oblong, base rounded to shallowly cordate. Corolla to 2.5 cm in diam. Fl. Apr., fr. May-Jun.

* Streamside, wet areas in forests; 2600-3400 m. NW Sichuan (Barkam Xian).


齿萼报春 chi e bao chun


Herbs perennial, usually without basal bud scales at anthesis. Leaves subsessile to short petiolate, distinctly petiolate at fruiting; leaf blade oblong to ovate-spatulate, 2-5 0.8-1.6 cm, to 8 4 cm, tapered to base, sparsely minutely glandular, margin irregularly sharp denticulate, apex rounded. Scapes 0.5-4 cm at anthesis, elongated to 8 cm in fruit; umbels 1, (1)-3-8-flowered; bracts linear-lanceolate, 3-8 mm. Flowers heterostylos. Pedicel 0.5-2 cm,
sparsely glandular. Calyx campanulate, 7–8 mm, glandular puberulent, parted to middle or slightly below, 5-veined; lobes ovate to ovate-triangular, occasionally with 1 or 2 teeth, apex acute to acuminate. Corolla pink or lilac-rose; tube 8–11 mm; limb 1.5–2(–2.5) cm wide; lobes obovoate to oblong-obovate, emarginate. Pin flowers: stamens near middle of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style 7–8 mm. Capsule depressed globose, ca. 4 mm in diam., disintegrated at maturity. Fl. Mar–May, fr. Jun–Jul.

* Thickets, forest margins; 900–3400 m. S Gansu, W Henan, W Hubei, S Shaanxi, Sichuan.


Herbs perennial, without basal bud scales at anthesis. Leaves 2–8 1–3 cm; petiole nearly obsolete to occasionally ca. as long as leaf blade in inner leaves; leaf blade elliptic to obovate, glabrous, glandular, base attenuate, margin denticulate, apex rounded. Scapes 1–8 cm, elongated to 15 cm in fruit, sparingly minutely glandular toward apex; umbels 1, 2–10-flowered; bracts narrowly lanceolate, 5–8 mm. Flowers heterostylos. Pedicel 0.5–2 cm, sparsely glandular. Calyx broadly campanulate, 7–8 mm, sparingly glandular, parted slightly below middle; lobes spreading, ovate to oblong-ovate, glandular ciliate, apex acute. Corolla purple-pink rose to deep blue-purple, exannulate, puberulent outside; limb 2–2.5 cm wide; lobes broadly obovate, emarginate; lobules entire to crenulate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule globose, included in calyx, disintegrated at maturity. Fl. Apr–Jul.

Wet meadows, shaded moist areas near streams; 3000–4700 m. W Yunnan [N Myanmar].


Herbs perennial, efarinose, without basal bud scales at anthesis. Leaves in a rosette; petiole narrowly winged, 1.5–3.5 cm; leaf blade elliptic to obovate-elliptic or suborbicular, 2–7.8 1.5–3.5 mm, papery when dry, glabrous, base obtuse to subround, margin dentate, apex rounded; lateral veins 6–9 pairs, nearly at 90 angles to midvein. Scapes 5–9 cm, glandular; umbels 1, 2–7-flowered; bracts lanceolate, 4–6 mm, apex acute. Flowers heterostylos. Pedicel 3–5 mm, elongated to 1–1.5 cm in fruit, minutely brownish glandular. Calyx narrowly campanulate, 5–7 mm, parted to 1/3, 5-veined; lobes triangular, apex acute. Corolla deep violet; limb ca. 1.5 cm wide; lobes triangular, apex acute; 2-lobed; lobules dentate. Pin flowers: tube 5.5–7 mm; style slightly exserted; stamens at middle of tube. Thrum flowers: tube ca. 9 mm; stamens near tube apex; style reaching middle of tube. Capsule globose, ca. 4 mm in diam., disintegrated at maturity. Fl. Feb.

* Broad-leaved evergreen forests; ca. 1700 m. SW Sichuan, NE to CW Yunnan.

84. Primula candidissima W. W. Smith & Forrest; P. nemorsalis I. B. Balfour; P. plebeia I. B. Balfour; P. ragotiana H. L. Li, eill.

Herbs perennial, without basal bud scales at anthesis. Pediole indistinct to slightly longer than leaf blade, narrowly winged; leaf blade ovate-oblong to oblongate, 3–12 1–4 cm, sparingly minutely glandular, base attenuate to broadly cuneate, margin irregularly sinuate-dentate to lobulate, apex rounded. Scapes 2–10(–14) cm, puberulent, glabrescent; umbels 1, 3–9-flowered; bracts lanceolate to oblong-lanceolate, 4–7 mm, enlarged to 1.1 cm in fruit. Flowers heterostylos. Pedicel 0.5–1.5 cm, short-stalked glandular. Calyx campanulate, 5–8 mm, parted 1/3–1/2, 5-veined; lobes ovate to triangular, apex obtuse. Corolla white, rose, or violet; tube ca. 9.5 mm; limb 1–2 cm wide; lobes obovate, apex 2-cleft; lobules entire to obscurely dentate. Pin flowers: stamens at middle of corolla tube; style slightly exserted. Thrum flowers: stamens toward apex of corolla tube; style ca. 1/2 as long as tube. Capsule disintegrated at maturity. Fl. Mar–Apr.

* Mixed forests; ca. 2000 m. SE Yunnan (Wenshan Xian).

85. Primula wenshanensis var. ponticula W. W. Smith.

Primula jucunda var. ponticula W. W. Smith.

Herbs perennial. Basal bud scales broadly ovate, 3–4 cm, densely white farinose. Leaves in a rosette; petiole ca. as long as leaf blade, narrowly winged, vaginate at base; leaf blade broadly elliptic, 3–5 2–3 cm, abaxially densely white or cream-yellow farinose, base rounded to subcordate, occasionally slightly decurrent, margin crenate, apex rounded. Scapes 8–15 cm,
farinose toward apex; umbels 5–7-flowered; bracts linear to linear-lanceolate, 7–10 mm, farinose. Flowers heterostylous. Pedicel ca. 5 mm, densely farinose. Calyx tubular, 9–10 mm, farinose, parted to 2/3; lobes linear-lanceolate, with prominent midvein. Corolla golden yellow; tube 1.4–1.5 cm; limb 1.5–2 cm wide; lobes elliptic to narrowly obovate, slightly emarginate. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers: stamens in upper 1/3 of corolla tube; style ca. 5 mm. Capsule disintegrated at maturity. Fl. Jul.

* Alpine meadows; ca. 3700 m. SE Xizang.


大花脆朔报春 da hua cui shuo bao chun

Herbs perennial. Basal bud scales narrowly oblong, 3–7 cm, purplish red, farinose. Leaves in a rosette; petiole slightly longer to 2 as long as leaf blade, broadly winged; leaf blade elliptic to sometimes suborbicular, 2–8 1.5–4 cm, abaxially densely cream-yellow farinose, base rounded, subcoritate to short attenuate, margin crenate, apex rounded. Scapes 3–10 cm, usually shorter than leaves, farinose toward apex; umbels 3–6-flowered; bracts linear-lanceolate, 0.7–1.5 cm. Flowers heterostylous. Pedicel 1.5–2.5 cm, farinose. Calyx campanulate, 6.5–7 mm, farinose, parted to middle, 5-ribbed; lobes ovate, apex acute. Corolla pale yellow; tube ca. 1.6 cm; limb 3–4 cm wide; lobes broadly obovate to suborbicular, apex emarginate to fimbriate. Pin flowers: stamens near middle of corolla tube; style ca. 2/3 as long as tube. Thrum flowers with positions reciprocal. Capsule disintegrated at maturity. Fl. Jul.

* Rocks, cliffs, steep open hillsides; 4000–5000 m. SE Xizang.


驴蹄草叶报春 lu ti cao ye bao chun

Herbs perennial, farinose. Basal bud scales reddish brown, oblong, 2–7 cm. Leaves not well developed at anthesis, enlarged to 10–20 cm; petiole narrowly winged, 1.5–2 as long as leaf blade; leaf blade suborbicular to broadly ovate, 3–7 cm, abaxially minutely reddish brown or blackish glandular, base rounded to subcoritate, margin irregularly coarse dentate, apex rounded. Scapes 5–12 cm, elongated to 20 cm; umbels 3–7-flowered; bracts linear-lanceolate, 3–7 mm. Flowers heterostylous. Pedicel 1–3 cm, glandular. Calyx reddish, campanulate, 6.5–7.5 mm, parted to middle; lobes broadly ovate, glandular ciliate, margin entire to obscurely dentate, apex obtuse to acute. Corolla bright yellow; limb 1.5–2 cm wide; lobes oblong to obovate, emarginate. Pin flowers: corolla tube ca. 1.2 cm; stamens ca. 5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube 1.4–1.5 cm; stamens toward apex of tube; style slightly shorter than calyx. Capsule disintegrated at maturity. Fl. Jun.

Alpine meadows, Abies and Rhododendron forests, margins of Abies forests; 3500–4300 m. S Xizang [Bhutan, Nepal].


金黄脆朔报春 jin huang cui shuo bao chun

Herbs perennial. Basal bud scales ovate to ovate-oblong, to 5 cm, yellow farinose. Petiole broadly winged, concealed by basal bud scales at anthesis, becoming diffuse, ca. as long as leaf blade; leaf blade oblanceolate to obovate or oblong, 5–20 1–2.5 cm at anthesis, to 30 cm at fruiting, farinose or yellow farinose abaxially, base attenuate to obtuse or shallowly cordate, margin crenate to denticulate, apex obtuse to acute. Scapes 7–18 cm at anthesis, elongated to 35 cm in fruit, yellow farinose distally, umbels 6–to many flowered; bracts lanceolate, 3–10 mm. Flowers heterostylous. Pedicel 1–2 cm, farinose. Calyx campanulate, 5–7.5 mm, densely yellow farinose, parted to middle; lobes ovate to ovate-oblong, margins overlapping, apex obtuse. Corolla yellow; tube 1.1–1.3 cm; limb 1.5–2.5 cm wide; lobes suborbicular, margin crenate to emarginate. Pin flowers: stamens at middle of corolla tube; style slightly exserted. Thrum flowers: stamens toward apex of corolla tube; style slightly longer than calyx. Capsule disintegrated at maturity.

Alpine meadows, Abies and Rhododendron forests, margins of Abies forests; 3500–4300 m. S Xizang [Bhutan, Nepal].

**Primula strumosa** was treated by Richards (J. Scot. Rock Gard. Club 15: 211. 1977) as a subspecies of *P. calderiana* I. B. Balfour & Cooper because the plants hybridize freely in cultivation. However, both maintain their integrity in geographic isolation, and they are sufficiently distinct to justify their recognition at the species level.

1a. Leaf blade attenuate at base 86a. subsp. strumosa
1b. Leaf blade obtuse to cordate

at base ................. 86b. subsp. tenuipes

86a. **Primula strumosa** subsp. strumosa

金黄脆朔报春 (原亚种) jin huang cui shuo bao chun (yuan ya zhong)


Alpine meadows, Abies and Rhododendron forests; 3600–4300 m. S Xizang [Bhutan, Nepal].

This is treated as *Primula calderiana* subsp. *strumosa* in the Flora of Bhutan.


矩圆金黄报春 ju yuan jin huang bao chun


* Margins of Abies forests; 3500–4300 m. S Xizang (Dinggy Xian, Gyirong Xian).


裂叶脆朔报春 lie ye cui shuo bao chun

Herbs perennial, efarinose. Basal bud scales ovate-oblong, 1–3 cm, fleshy. Leaves in a rosette; petiole concealed by basal scales at anthesis, to 10 cm at fruiting; leaf blade ovate to broadly elliptic, 1.5–4 1.5–2.5 cm, glabrous, minutely glandular, base short attenuate to obtuse or subcordate, margin irregularly coarse dentate, apex rounded. Scapes obsolete or 5–7 mm, concealed in leaf rosette; umbels 2–6-flowered; bracts linear-lanceolate, 3–4 mm. Flowers heterostylous. Pedicel 6–8 cm, sparsely glandular. Calyx campanulate, 8–10–13 mm, sparsely glandular, parted slightly below middle; lobes ovate to ovate-lanceolate, margin hydathode-denticulate. Corolla yellow; limb 1.5–2.5–3 cm wide, emarginate; lobules usually dentate. Pin flowers: corolla tube 1.1–1.3 cm; stamens ca. 4 mm above base of corolla tube; style slightly exserted. Thrum flowers: corolla tube ca. 1.5 cm; stamens slightly above middle of corolla tube; style ca. 4 mm. Capsule disintegrated at maturity. Fl. May–Jun.

* Open hillsides, below cliffs; 3300–3700 m. SE Xizang.


高葶脆朔报春 gao ting cui shuo bao chun

* Grassly alpine slopes; 3800–4400 m. S Xizang (Mainling Xian).


蓝花裂叶报春 lan hua lie ye bao chun


* Wet meadows, near water; ca. 4200 m. S Xizang (Mainling Xian).


粗齿脆朔报春 cu chi cui shuo bao chun

Herbs perennial, efarinose. Basal bud scales ovate-oblong, 1–3 cm, fleshy. Leaves in a rosette; petiole concealed by basal scales at anthesis, to 10 cm at fruiting; leaf blade ovate to broadly elliptic, 1.5–4 1.5–2.5 cm, glabrous, minutely glandular, base short attenuate to obtuse or subcordate, margin irregularly coarse dentate, apex rounded. Scapes obsolete or 5–7 mm, concealed in leaf rosette; umbels 2–6-flowered; bracts linear-lanceolate, 3–4 mm. Flowers heterostylous. Pedicel 2–6 cm, sparsely glandular. Calyx campanulate, 7–10 mm, sparsely glandular, parted slightly below middle; lobes ovate to ovate-lanceolate, margin hydathode-denticulate. Corolla yellow; limb 1.5–2.5–3 cm wide, emarginate; lobules usually dentate. Pin flowers: corolla tube 1.1–1.3 cm; stamens ca. 4 mm above base of corolla tube; style slightly exserted. Thrum flowers: corolla tube ca. 1.5 cm; stamens slightly above middle of corolla tube; style ca. 4 mm. Capsule disintegrated at maturity. Fl. May–Jun.

* Grassly alpine slopes; 3800–4400 m. S Xizang (Mainling Xian).

87a. *Primula chionata* var. *chionata*

裂叶脆朔报春(yuan zhong)

Pedicel 1–2 cm, yellow farinose. Calyx campanulate, 4–5 mm, densely farinose, parted to 1/3; lobes triangular to subrectangular, apex acute to obtuse. Corolla deep purple; limb 2–2.5 cm wide; lobes obovate, glandular ciliate, emarginate. Pin flowers: corolla tube 1–1.1 cm; stamens ca. 4.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style slightly longer than calyx. Capsule disintegrated at maturity. Fl. May–Jun.

Woodland margins, meadows; 3100–4000 m. S Xizang (Yadong Xian) [Bhutan, NE India].


心叶脆朔报春 xin ye cui shuo bao chun

Herbs perennial. Basal bud scales ovate to oblong, 2–5 cm, efarinose. Leaves in a rosette; petiole winged, 1–3 as long as leaf blade; leaf blade ovate-deltoid, 2–10 2–7 cm, efarinose, sometimes puberulent abaxially, base cordate to subsagittate, margin irregularly coarse dentate, apex acute. Scapes 10–20 cm, elongated to 45 cm in fruit, scarcely farinose toward apex; umbels 2–12-flowered; bracts acuminate-subulate from broad base, 5–10 mm. Flowers heterostyIous. Pedicel 1–3 cm, scarcely farinose. Calyx tubular-campanulate, 7–10 mm, scarcely farinose, parted slightly below middle to 2/3, 5-ribbed; lobes lanceolate, apex acute. Corolla light purple to deep purple, sometimes pale blue or white; tube 1–1.3 cm; limb 2–2.5 cm wide; lobes obovate-oblong, emarginate. Pin flowers: stamens near middle of corolla tube; style ca. as long as tube or slightly exserted. Thrum flowers: stamens toward apex of corolla tube; style ca. as long as calyx. Capsule discoid, shorter than calyx, disintegrated at maturity. Fl. May–Jun.

Grassy slopes, woodlands; ca. 3600 m. S Xizang (Yadong Xian) [Bhutan, NE India, Nepal].


察日脆朔报春 cha ri cui shuo bao chun

Herbs perennial. Basal bud scales ovate to oblong, 2–3 cm, reddish, efarinose. Petiole enveloped by basal scales, usually ca. as long as leaf blade, narrowly winged, vaginate at base; leaf blade elliptic to ovate-lanceolate, 3–8(–20) 1.5–2(–8) cm, glabrous, base broadly cuneate, rounded to subcordate, margin regularly crenulate, apex obtuse. Scapes 2–33 cm, efarinose or scarcely farinose toward apex; umbels (1 or) 2–8(–15)–flowered; bracts often tinged with purple, linear, 0.6–1.5(–2) cm, with a wide base. Flowers heterostyIous. Pedicel 0.5–2 cm, brownish short-stalked glandular. Calyx campanulate, 0.8–1.2 cm, minutely glandular, parted to middle; lobes ovate to ovate-lanceolate, ciliate, margin entire to dentate at apex, apex obtuse to acute. Corolla pink-purple to blue-purple, sometimes yellow, rarely white; tube ca. 1 cm; limb 1.5–3 cm wide; lobes broadly obovate to subrectangular, deeply emarginate. Pin flowers: stamens ca. 4 mm above corolla tube; style slightly exserted. Thrum flowers: stamens toward apex of corolla tube; style ca. 6.5 mm. Capsule discoid, shorter than calyx, disintegrated at maturity.

Wet meadows, streamsides, bogs in Abies forests; 3500–5000 m. SE Xizang [Bhutan].

91a. Primula tsariensis var. tsariensis

察日脆朔报春(原变种) cha ri cui shuo bao chun (yuanchu)

Primula tanneri King subsp. tsariensis (W. W. Smith) A. J. Richards.


Primula tanneri King subsp. tsariensis (W. W. Smith) A. J. Richards.


大察日报春 da cha ri bao chun

Leaf blade to 20 cm. Scapes to 33 cm, 10–15-flowered. Calyx 0.9–1.2 cm. Corolla lobes subrectangular. Fl. Jul–Aug.

* SE Xizang.


暗紫脆朔报春 an zi cui shuo bao chun


Herbs perennial, strongly scented. Basal bud scales ovate to ovate-lanceolate, to 4 cm, yellow farinose. Petiole broadly winged, nearly as long as leaf blade; leaf blade oblong to subspatulate or oblanceolate, 5–20(–30) 1–3, 5(–6) cm, efarinose or sparsely pale yellow farinose abaxially, base attenuate, margin crenate, apex obtuse to rounded. Scapes 5–30 cm, farinose toward apex; umbels 4–10-flowered; bracts lanceolate, 5–10 mm, ± farinose. Flowers
heterostylos. Pedicel 0.5–3.5 cm, sparsely cream-yellow farinose or glandular. Calyx often tinged with purple, campanulate, 5–8 mm, glandular, parted to middle; lobes ovate to ovate-oblong, margin farinose, apex obtuse to acute. Corolla dark purple to rich maroon, rarely white; tube 1–1.4 cm; limb 1.5–3.5 cm wide; lobes broadly obovate to suborbicular, slightly emarginate. Pin flowers: stamens near middle of corolla tube; style exerted. Thrum flowers: stamens toward apex of corolla tube; style ca. as long as calyx. Capsule disintegrated at maturity. Fl. Jul–Aug.

Stony mountain slopes, open banks; 4000–5000 m. SE Xizang, NW Yunnan [N Myanmar].

95. **Primula tongolensis** Franchet, J. Bot. (Morot) 9: 453. 1895.

**Primula tongolensis**

Herbs perennial. Basal bud scales oblong to lanceolate, 1–1.5 cm. Petiole nearly as long as leaf blade, narrowly winged; leaf blade broadly spatulate, 1–4 cm 5–10 mm, tapered to base, fleshy but thin and translucent when dry, margin entire or nearly so, apex rounded. Scapes obsolete; inflorescences 1–4-flowered. Flowers heterostylos. Pedicel 1–1.5 cm. Calyx slightly tinged with red, campanulate, 8–9 mm, glandular, parted to middle; lobes ovate to ovate-lanceolate, margin entire, apex rounded to obtuse. Corolla bluish purple, annulate; tube ca. 1 cm; limb 3–3.5 cm wide; lobes obovate to obovate-oblong, deeply emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. as long as calyx. Thrum flowers: stamens at middle of corolla tube; style ca. 4 mm. Capsule disintegrated at maturity. Fl. Jul.

* Alpine meadows; 4700–5000 m. S Xizang.


**Primula chaemadon**

Herbs perennial. Basal bud scales ovate to oblong, to 2.5 cm, reddish. Petiole broadly winged, nearly as long as leaf blade, mostly enveloped by basal scales; leaf blade elliptic to oblong, 2–4 cm 5–10 mm, minutely glandular, base cuneate or subrounded, margin crenate-dentate, apex obtuse to rounded. Scapes nearly obsolete to 1.5 cm, sparsely glandular, 1-flowered; bracts usually 2 or 3, linear, 4–15 mm. Flower heterostylos. Pedicel 1–1.5 cm. Calyx slightly tinged with red, campanulate, 8–9 mm, glandular, parted to middle; lobes ovate to ovate-lanceolate, margin entire, apex rounded to obtuse. Corolla bluish purple, annulate; tube ca. 1 cm; limb 3–3.5 cm wide; lobes obovate to obovate-oblong, deeply emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. as long as calyx. Thrum flowers: stamens at middle of corolla tube; style ca. 4 mm. Capsule disintegrated at maturity. Fl. Jul.

* Wet meadows; 4700–5000 m. S Xizang.


**Primula sonchifolia**

Herbs perennial, base with overlapping farinose bud scales appearing bulblike. Petiole initially indistinct, to 1/2 as long as leaf blade at fruiting; leaf blade oblong to obovate-oblong, tapered to base, irregularly lobulate to pinnatifid, not well developed at anthesis, 3–10(–15) cm, enlarged to 35–12 cm; apex rounded to subacute; lobules irregularly denticulate, usually farinose. Scapes usually ca. as long as leaves at anthesis, elongated to 30 cm in fruit; umbels 3–to many flowered; bracts ovate-triangular to ovate-lanceolate, 2.5–6 mm. Flowers heterostylos. Pedicel 0.6–2.5 cm. Calyx campanulate, 4–6 mm, slightly enlarged, poculiform in fruit, parted to 1/3; lobes ovate to subrectangular, margin entire to dentate, apex obtuse. Corolla lavender-blue to purplish blue, rarely white; limb 1.5–2.5 cm wide. Pin flowers: corolla tube 9–10 mm; stamens at middle of corolla tube; style ca. as long as tube or slightly exerted. Thrum flowers: corolla tube 1.1–1.3 cm; stamens toward apex of corolla tube; style
slightly longer than calyx. Capsule globose, ca. 4.5 mm in diam., disintegrated at maturity.

Meadows, forest margins; 2300–4600 m. Sichuan, NW Yunnan [N Myanmar].

1a. Leaf blade divided to 1/3 from margin .... 96a. subsp. sonchifolia
1b. Leaf blade divided to 2/3 from margin ...... 96b. subsp. emeiensis

96a. Primula sonchifolia subsp. sonchifolia
苣叶报春 (原亚种) ju ye bao chun (yuan ya zhong)

Primula drymophila Craib; P. gratissima Forrest; P. sonchifolia var. atrocoerulea Forrest; P. taraxacoides I. B. Balfour.


Meadows, forest margins; 3000–4600 m. W Sichuan, NW Yunnan [N Myanmar].

娥眉苣叶报春 e mei ju ye bao chun

Leaf blade deeply pinnatifid, divided to 2/3 from margin. Scapes and inflorescences efarinose. Corolla lobes obovate-oblong to elliptic, margin entire. Fl. May.

* Margins of mixed forests and Abies forests; 2300–3000 m. Sichuan (Emei Shan).

春花脆朔报春 juan lin cui shuo bao chun

Primula bhutanica H. R. Fletcher.

Herbs perennial, base with many farinose overlapping bud scales. Petiole initially indistinct, nearly as long as leaf blade in fruit; leaf blade elliptic to oblong-elliptic or spatulate, tapered to base, 2–10 1–3 cm at anthesis, enlarged to 30 7 cm, scarcely glandular farinose, margin erose-denticulate, apex rounded to obtuse. Scapes 1–2 cm, elongated to 30 cm, farinose; umbels 3– to many flowered; bracts linear to linear-lanceolate, 0.8–1.5 cm. Flowers heterostylos. Pedicel 2–5 cm, farinose or glandular. Calyx campanulate, 7–10 mm, pale yellow farinose or minutely glandular, parted to middle; lobes ovate to ovate-oblong, margin dentate or occasionally entire. Corolla blue to pale bluish violet; limb 2.5–3.5 cm wide; lobes broadly obovate, apex 3-toothed to crenate. Pin flowers: corolla tube ca. 1.2 cm; stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube ca. 1.7 cm; stamens toward apex of corolla tube; style ca. 1/2 as long as tube. Capsule shorter than calyx, disintegrated at maturity. Fl. Mar.

Alpine meadows, rocky slopes, forests, gravelly avalanche deposits; 3900–5000 m. SE Xizang, NW Yunnan [Bhutan, NE India, Myanmar, Nepal].

1a. Corolla white............... 98a. var. hookeri
1b. Corolla bluish violet..... 98b. var. violacea

春花脆朔报春 chun hua cui shuo bao chun

Herbs perennial, base with overlapping, reddish, ovate to oblong scales, 0.5–2 cm. Leaves subsessile, 1.5–4 0.6–1.5 cm, slightly emergent from basal scales at anthesis, to 15 5 cm and distinctly petiolate at fruiting; leaf blade oblong-ovate to spatulate, tapered to base, apex rounded to obtuse. Scapes less than 3 mm, included in leaves, elongated to 30 cm in fruit, sparsely glandular; umbels (1–3)-flowered; bracts linear to subulate, 5–7 mm. Flowers homostylos. Pedicel 1–2 mm, glandular. Calyx broadly campanulate or poculiform, 5–8 mm, minutely glandular, parted nearly to middle; lobes suborbicular to rectangular, glandular ciliate, margin denticulate. Corolla white or blue-violet; tube 7–8 mm; limb 7–10 mm wide; lobes oblong, suberect, subtruncate or slightly emarginate at apex. Stamens inserted at middle of corolla tube. Style slightly longer than anthers. Capsule disintegrated at maturity.

Alpine meadows, rocky slopes, forests, gravelly avalanche deposits; 3900–5000 m. SE Xizang, NW Yunnan [Bhutan, NE India, Myanmar, Nepal].

98a. Primula hookeri var. hookeri
春花脆朔报春 (原变种) chun hua cui shuo bao chun (yuan bian zhong)

Primula vernicosa Kingdon-Ward.


Alpine meadows, rocky slopes, forests; 4000–5000 m. SE Xizang, NW Yunnan [Bhutan, NE India, Myanmar, Sikkim].


蓝春花报春 lan chun hua bao chun


波密脆朔报春 *bo mi cui shuo bao chun*

Herbs perennial, base with overlapping bud scales. Leaves 2-3.5 cm. ca. 1 cm, obscurely petiolate at anthesis, to 10-4.5 cm and with a petiole 1/3-1/2 as long as blade at fruiting; leaf blade oblong to obovate, tapered to base, margin irregularly hydathode-denticulate, apex subrounded. Flowering scapes 1.5-3 cm, densely glandular pubescent, elongated to 20 cm in fruit; umbels 2- or 3-flowered; bracts 2-4, linear-acuminate from wider base, 5-6 mm. Flowers heterostylos. Pedicel ca. 3 mm, elongated to 1.5 cm in fruit, densely glandular pubescent. Calyx tubular-campanulate, 8-9 mm, sparsely glandular, parted to middle; lobes ovate, ciliolate, apex acute to subobtuse. Corolla pale rose-purple; tube ca. as long as calyx; limb 8-10 mm wide; lobes ovate to ovate-oblong, ciliolate, overlapping at base. Flowers heterostylous. Pedicel 5-18 cm, sparsely pilose. Calyx tubular campanulate, 5-6.5 mm, sparsely glandular, parted to middle; lobes ovate-triangular, ciliolate, apex acuminate. Corolla rose; tube 8-9 mm; limb 1.2-1.8 cm wide; lobes obovate-oblong, emarginate. Pin flowers: stamens 2.5-3 mm above base of corolla tube; style ca. as long as tube. Capsule disintegrated at maturity. Fl. Dec.

* Abies forests; ca. 3700 m. E Xizang (Bomi Xian).


无葶脆朔报春 *wu ting cui shuo bao chun*

Herbs perennial, efarinose, with small membranous basal bud scales at anthesis. Leaves in a rosette; petiole 2-4.5 cm, densely fulvous pilose; leaf blade elliptic to oblong or oblong-ovate, 2.5-7 1.5-3.5 cm, enlarged to 12-6.5 cm at fruiting, firm papery, abaxially with tawny multicellular hairs along midvein and lateral veins, otherwise glabrous, axially fulvous pilose along midvein, otherwise glabrous or sparsely pubescent, base obtuse to broadly cuneate, margin obscurely crenate, apex rounded. Scapes obsolete; inflorescences 1-3-flowered from leaf rosette. Flowers heterostylos. Pedicel 1.5-4 cm, elongated slightly in fruit, densely fulvous pilose. Calyx campanulate, 7-9 mm, sparsely pilose on proximal 1/2, parted to middle; lobes ovate-lanceolate to lanceolate, ciliolate. Corolla purple; tube ca. 1.1 cm; limb 1.5-1.8 mm wide; lobes narrowly obovate, emarginate. Pin flowers: stamens ca. 4 mm above base of corolla tube; style slightly exerted. Thrum flowers: stamens toward apex of corolla tube; style 3-4 mm. Capsule disintegrated at maturity. Fl. Mar-Apr.

* Abies forests; ca. 3700 m. E Xizang (Bomi Xian).


早花脆朔报春 *zao hua cui shuo bao chun*

Herbs perennial, evergreen; resting buds with small membranous scales. Leaves usually numerous; petiole 0.5-2 cm, fulvous pilose; leaf blade elliptic to oblanceolate, 1.5-5.5 0.8-2.8 cm, ciliate, abaxially sparsely fulvous pilose along midvein and lateral veins, axially sparsely pubescent along midvein, base broadly cuneate to obtuse, margin obscurely dentate to crenate, apex rounded. Scapes obsolete; inflorescences 1-3-flowered from leaf rosette, without bracts. Flowers heterostylous. Pedicel 5-18 cm, sparsely pilose. Calyx tubular campanulate, 5-6.5 mm, sparsely glandular, parted nearly to middle; lobes ovate-triangular, ciliolate, apex acuminate. Corolla rose; tube 9-9 mm; limb 1.2-1.8 cm wide; lobes obovate-oblong, emarginate. Pin flowers: stamens 2.5-3 mm above base of corolla tube; style ca. as long as tube. Capsule disintegrated at maturity. Fl. Dec.

* Abies forests, gravelly avalanche deposits; 2200-4000 m. Yunnan (Dali Xian, Yangbi Xian).


蓝花大叶报春 *lan hua da ye bao chun*

Herbs perennial, with few small membranous basal bud scales. Leaves of current year not well developed at anthesis; leaves of previous year firm papery; petiole 1-7 cm, with long dense multicellular hairs; leaf blade elliptic to oblong-oblancoate, 3.5-10 2-4.5 cm, abaxially with multicellular hairs along veins, adaxially bullate, glabrous except for a few long hairs on midvein, base obtuse to rounded, margin sinuate-denticulate, apex rounded. Scapes 2-7 cm, with dense long multicellular hairs, 1-3-flowered; bracts usually 2, alternate or opposite, linear-lanceolate, 2-5 mm. Flowers heterostylos. Pedicel 2-10 mm, pilose. Calyx campanulate, 0.8-1.3 cm, pubescent, parted slightly below middle; lobes ovate to ovate-lanceolate, ciliolate, overlapping at base. Corolla purplish blue; limb 2.5-3.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: corolla tube 1.2-1.3 cm; stamens ca. 5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube 1.4-1.7 cm; stamens 1.2-1.3 cm above base of corolla tube; style ca. 6 mm. Capsule disoid, operculate, disintegrated at maturity. Fl. Mar-Apr.

* Abies forests; 2500-4000 m. Yunnan (Jingdong Xian).

**Guzhoun luan ye bao chun**

Herbs perennial, with small membranous basal bud scales. Leaves in a rosette; petiole nearly obsolete, rarely to 1.5 cm; leaf blade elliptic-obovate to obovate-oblanco, 5-13 1.5-5 cm, subleathery, abaxially densely short glandular pubescent along veins, adaxially bullate, sparsely glandular, base attenuate, margin sinuate-dentate to denticulate, apex rounded; veins distinctly raised. Scapes less than 1 cm at anthesis, sparsely glandular; umbels 1, 4- to many flowered; bracts linear-lanceolate, 3-7 mm. Flowers homostylyl. Pedicel 1-2 cm, glandular. Calyx campanulate, 5-7 mm, sparsely glandular, parted nearly to middle; lobes triangular-lanceolate. Corolla pale blue or rose; tube 1.5-1.6 cm; limb 1.5-2 cm wide; lobes obovate, emarginate. Stamens toward apex of corolla tube. Style 1.1-1.2 cm, reaching base of anthers. Capsule discoid, disintegrated at maturity. Fl. Mar.

* Limestone cliffs. W Guizhou (Pingba Xian).


**San chi ye bao chun**

Herbs perennial, with overlapping small membranous basal bud scales. Petiole nearly obsolete; leaf blade obovate to obovate-oblong, 4.5-10 2.5-5.2 cm, tapered to base, subleathery, abaxially white farinose, adaxially bullate, white farinose or glandular, margin dentate-lobulate, apex rounded; veins distinctly raised and alveolate abaxially. Scapes 9-12 cm, glandular; umbels 1, 5-9-flowered; bracts lanceolate, 6-9 mm. Flowers heterostylyl. Pedicel 1-1.5 cm, sparsely glandular. Calyx campanulate, 0.9-1.1 cm, sparsely glandular, parted to ca. 1/3; lobes ovate to ovate-oblong, margin 3-toothed at apex; veins 3, distinct. Corolla purple; tube ca. as long as calyx; limb ca. 2 cm wide; lobes obovate, apex 2-cleft. Pin flowers: stamens near middle of corolla tube; style ca. as long as tube. Capsule discoid, disintegrated at maturity. Fl. May.

* Woodlands, cliffs exposed to running water. 2000-3000 m. W Sichuan (Ebian Xian), NE Yunnan (Daguan Xian).


**Qingcheng bao chun**

Herbs perennial, with few small membranous basal bud scales. Leaves in a rosette; petiole 1/4-1/2 as long as or occasionally nearly as long as leaf blade; leaf blade elliptic to obovate-oblong, 1.5-3-9 1.5-4.8 cm, thin papery when dry, abaxially paler, glabrous, adaxially dark green, base subrounded to broadly cuneate, margin obscurely blunt dentate, apex rounded. Scapes (2-)3.5-12 cm, elongated to 16 cm in fruit, sparsely glandular; umbels 2-8-flowered; bracts lanceolate, 4-8 mm, ciliolate. Flowers heterostylyl. Pedicel 1-1.5(2) cm, sparsely glandular. Calyx campanulate, 8-10 mm, minutely glandular, parted to middle; lobes obovate-lanceolate to lanceolate, ciliolate. Corolla pale purple; limb ca. 2 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: corolla tube 1.2-1.3 cm; stamens at middle of corolla tube; style nearly as long as tube. Thrum flowers: corolla tube 1.6-1.7 cm; stamens toward apex of corolla tube; style slightly shorter than calyx. Capsule discoid, disintegrated at maturity. Fl. Mar.

* Shaded moist areas in mixed forests. 900-1000 m. Sichuan (Guanxian Xian).


**Duan ting bao chun**

Herbs perennial, efarinose. Basal bud scales ovate to obovate-oblong, 8-20 cm, ciliolate, apex acute. Leaves in a rosette; petiole 2-8.5 cm, with multicellular hairs; leaf blade elliptic to oblong, (3-)6-16 2-6.5 cm, thin papery when dry, abaxially with multicellular hairs along midvein and lateral veins, adaxially glabrous, base obtuse to broadly cuneate, margin irregularly hydathode-dentate, apex rounded; lateral veins 10-13 pairs, raised abaxially; reticulate veins inconspicuous. Scapes arising from resting bud, 5-8 cm, elongated to 18 cm in fruit, with tawny multicellular hairs; umbels 2-8-flowered; bracts linear-lanceolate, 4-7 mm. Flowers heterostylyl. Pedicel 6-8 mm, sparsely pilose. Calyx campanulate, ca. 9 mm, sparsely puberulent, parted nearly to middle; lobes obovate-lanceolate, apex acute. Corolla violet; limb 2.5-2.5 mm wide; lobes obovate, deeply emarginate. Pin flowers: corolla tube nearly as long as calyx; stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube ca. 3 mm longer than calyx; stamens toward apex of corolla tube; style 3-4 mm. Capsule discoid, disintegrated at maturity. Fl. May.

* Moist rocks. NE Yunnan (Daguan Xian).

**Primula breviscapa** is known only from Abb Delavay's type collection of 1894.


**Wan hua ye bao chun**

Herbs perennial, with small membranous basal bud scales. Leaves in a rosette; petiole nearly obsolete, rarely to 1.5 cm; leaf blade elliptic-obovate to obovate-oblong, 1.5-3-9 1.5-4.8 cm, thin papery when dry, abaxially paler, glabrous, adaxially dark green, base subrounded to broadly cuneate, margin obscurely blunt dentate, apex rounded. Scapes (2-)3.5-12 cm, elongated to 16 cm in fruit, sparsely glandular; umbels 2-8-flowered; bracts lanceolate, 4-8 mm, ciliolate. Flowers heterostylyl. Pedicel 1-1.5(2) cm, sparsely glandular. Calyx campanulate, 8-10 mm, minutely glandular, parted to middle; lobes obovate-lanceolate to lanceolate, ciliolate. Corolla pale purple; limb ca. 2 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: corolla tube 1.2-1.3 cm; stamens at middle of corolla tube; style nearly as long as tube. Thrum flowers: corolla tube 1.6-1.7 cm; stamens toward apex of corolla tube; style slightly shorter than calyx. Capsule discoid, disintegrated at maturity. Fl. Mar.
Primula ovalifolia Franchet subsp. tardiflora

Herbs perennial, not mealy. Rhizomes short, thick, with ovate to oblong-ovate scales 1–3 cm. Petiole as long as leaf blade or shorter, narrowly margined; leaf blade broadly ovate to broadly elliptic, (3–)5–9 2.5–6 cm, enlarged after anthesis, thin papery, abaxially pubescent along veins, glabrous elsewhere, adaxially glabrous, base attenuate to narrowly decurrent, margin hydathode-dentate, apex rounded; lateral veins 10–12 pairs. Scapes 5–12 cm, to 18 cm in fruit, sparsely brownish pubescent; umbels 1, 3–6-flowered; bracts linear–lanceolate, 3–5 mm. Flowers heterostyloous. Pedicel 7–12 mm, to 2 cm in fruit, sparsely pubescent. Calyx campanulate, 9–10 mm, puberulent outside, parted to middle; lobes lanceolate, apex acute. Corolla pale purple, limb ca. 1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens inserted at middle of corolla tube; style exserted. Thrum flowers: corolla tube ca. 1.5 as long as calyx; stamens toward apex of corolla tube; style 3.5–5 mm. Capsule globose, shorter than calyx. Fl. Mar–Apr, fr. May–Jun.

* Shaded areas in broad-leaved forests; 600–2500 m. Guizhou, Hubei, W Hunan, Sichuan, NE Yunnan.


薄叶长柄报春  bao ye chang bing bao chun

Herbs perennial, efarinose, with small oblong membranous scales at base. Leaves in a rosette; petiole ca. 1/5 to nearly as long as leaf blade; leaf blade elliptic to obovate, 5–10 2–6.5 cm, abaxially with longer hairs along prominently raised midvein and lateral veins, adaxially pilose and bullate, base cuneate-attenuate to subrounded, margin obscurely undulate-crenate, apex rounded. Scapes ca. as long as to slightly longer than leaves, with multicellular hairs; umbels 2–7–flowered; bracts obovate-lanceolate, 4–9 mm. Pedicel 5–12 mm, pilose. Calyx urceolate-turbinate, 7–9 mm, sparsely pilose, parted to middle; lobes obovate to ovate-lanceolate, ciliolate. Corolla rosy violet; tube ca. as long as calyx; limb ca. 1.5 cm wide; lobes obcordate to obovate, deeply emarginate. Capsule globose, included in calyx tube. Fl. Mar–Apr.

* Woodlands, rocky slopes in forests; 2600–2800 m. SW Sichuan.
midvein and lateral veins, adaxially minutely glandular, base subcuneate, margin obscurely crenate to slightly repand, apex rounded. Scapes 9-14 cm, with short glandular hairs intermixed with few long ones; umbels 5-9-flowered; bracts ovate, 5-6 cm, ciliolate. Pedicel 1.5-2 cm, with few short glandular hairs intermixed with few long ones. Calyx campanulate, 8-10 mm, puberulent, parted to middle; lobes ovate, ciliate, apex acute. Corolla and capsules unknown. Fl. early spring.

* Grassy slopes bordering plateaus; ca. 2500 m. Yunnan.


二郎山报春 erlangshanbaochun

Primula cheniana Fang

Herbs perennial, evergreen, with small brown membranous basal bud scales. Leaves in a rosette; petiole 0.5-2.5 cm; leaf blade oblong-obovate to oblanceolate, 5-10 × 2-4 cm, tapered to base, subleathery, abaxially scurfy glandular, adaxially glabrous, bullate, margin hydathode-dentate, apex rounded; veins distinctly raised abaxially. Scapes 3.5-14 cm, sparsely glandular; umbels 1, 2-5-flowered; bracts linear-lanceolate, 3-10 mm. Flowers heterostylos. Pedicel 0.4-2 cm, sparsely glandular. Calyx campanulate, (0.7-)0.9-1.1 cm, minutely glandular, parted to middle; lobes ovate to ovate-lanceolate, ciliolate, apex acute to short acuminate. Corolla rose-purple with a yellow eye; limb ca. 3 mm wide; lobes obovate, emarginate or 2-cleft at apex. Fin flowers: corolla tube ca. 1 cm; stamina ca. 4 mm above base of corolla tube; style slightly exserted. Thrum flowers: corolla tube 1.4-1.7 cm; stamina toward apex of corolla tube; style 4-5.5 mm. Capsule shorter than calyx. Fl. Apr-May.

* Margins of mixed forests, moist rocks; 2000-2900 m. Yunnan (Luding Xian, Tianquan Xian).


云南卵叶报春 yunnanluanyebaochun

Herbs perennial, efarinose, with small brown membranous basal bud scales. Petiole usually indistinct or nearly obsolete; leaf blade oblong to obovate-oblong, (5-)8-18 × 1.5-4 cm, tapered to base, subleathery when dry, abaxially fulvous hirsute along midvein, adaxially glabrous and bullate, margin sharply erose-dentate, apex rounded; veins prominent, subulate. Scapes 8-20 cm, rust-colored pilose; umbels 2-10-flowered; bracts lanceolate, 4-7 mm. Pedicel 1-1.5 cm, sparsely short hirtellous. Calyx campanulate, 9-10 mm, puberulent, parted nearly to middle, 5-veined; lobes ovate to ovate-triangular, apex acute. Corolla pale rose-purple; tube ca. 1.2 cm; limb 2-3 cm wide; lobes broadly obovate, slightly emarginate. Pin flowers: stamens ca. 3.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers unknown. Capsule unknown. Fl. Apr.

* Cliffs exposed to running water; ca. 1000 m. Yunnan (Lushan Xian).


大叶宝兴报春 da ye bao xing baochun

Herbs perennial, efarinose, with small brown membranous basal bud scales. Petiole usually indistinct or nearly obsolete; leaf blade oblong to obovate-oblong, (5-)8-18 × 1.5-4 cm, tapered to base, subleathery when dry, abaxially fulvous hirsute along midvein, adaxially glabrous and bullate, margin sharply erose-dentate, apex rounded; veins prominent, subulate. Scapes 8-20 cm, rust-colored pilose; umbels 2-10-flowered; bracts lanceolate, 4-7 mm. Pedicel 1-1.5 cm, sparsely short hirtellous. Calyx campanulate, 9-10 mm, puberulent, parted nearly to middle, 5-veined; lobes ovate to ovate-triangular, apex acute. Corolla pale rose-purple; tube ca. 1.2 cm; limb 2-3 cm wide; lobes broadly obovate, slightly emarginate. Pin flowers: stamens ca. 3.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers unknown. Capsule unknown. Fl. Apr.

* Cliffs exposed to running water; ca. 1000 m. Yunnan (Lushan Xian).


城口报春 chengkoubaochun

Herbs perennial, efarinose, with small oblong membranous basal bud scales. Petiole less than 1.5 cm; leaf blade obovate-oblong to obovate-oblancoate, 5-15 × 3-7 cm, firm papery when dry, abaxially hirsute along midvein and lateral veins, adaxially glabrescent, strongly bullate, base cuneate-attenuate, margin remotely hydathode-dentulate, apex rounded; veins distinctly raised, alveolate abaxially. Scapes 6-15 cm, sparsely pilose; umbels 2-7-flowered; bracts linear, 4-7 mm. Flowers heterostylos. Pedicel ca. 1.5 cm, pubescent. Calyx campanulate, 8.5-10 mm, pubescent, parted to 1/3 or slightly below; lobes ovate, ciliolate, apex short acuminate. Corolla bluish purple; limb 2-3 cm wide; lobes broadly obovate, emarginate. Pin flowers: corolla tube ca.
1.2 cm; stamens ca. 5 mm above base of corolla tube; style nearly as long as tube. Thrum flowers: corolla tube ca. 1.5 cm; stamens toward apex of corolla tube; style ca. as long as calyx. Capsule shorter than calyx. Fl. May, fr. Jun.

* Mountain glades; ca. 1500 m. E Sichuan, Chengkou Xian.


亮叶报春 liang ye bao chun

Herbs perennial, efarinose, with overlapping small membranous basal bud scales. Petiole to 2 cm; leaf blade obovate to broadly oblong, 1-4 8 cm, tapered to base, papery when dry, abaxially densely minutely glandular hirsute, with multicellular hairs along midvein, adaxially minutely glandular hirsute, margin irregularly crenate to crenulate-lanceolate, apex rounded. Scapes 18-24 cm, pubescent; umbels 6-11-flowered; bracts linear-lanceolate, 3-5 mm. Flowers heterostylous. Pedicel 1.5-2.5 cm, glandular pubescent. Calyx campanulate, 8-9.5 mm, sparsely glandular pubescent, parted nearly to middle; lobes triangular, ciliolate, apex subacuminate. Corolla blue; tube 1.3-1.4 cm, puberulent inside; limb ca. 2 cm wide; lobes cuneate-oblong, apex retuse. Pin flowers: stamens ca. 5 mm above base of corolla tube; style slightly exserted. Thrum flowers unknown. Capsule discoid, shorter than calyx. Fl. Apr.

* Mountain woodlands. Yunnan (Yongsheng Xian).


偏花报春 pian hua bao chun

Primula vittata Bureau & Franchet.

Herbs perennial. Leaves in a rosette; petiole 1/3-1/2 as long as leaf blade, broadly winged; leaf blade obovate to narrowly elliptic to oblong, 10-20 3-5 cm, tapered to base, margin irregularly denticulate, apex rounded. Scapes 20-45 cm, efarinose; umbels 2-4, superimposed, 6-10-flowered; bracts linear, 1-2 cm. Flowers homostylous. Pedicel 1.5-3(-4) cm. Calyx campanulate, 5-7 mm, yellow farinose inside, parted to near middle; lobes triangular, apex acuminate. Corolla purple; tube 9-10 mm; limb ca. 1.5 cm wide; lobes oblong, ca. 5 mm, margin crenate-serrate, apex emarginate. Stamens ca. 7 mm above base of corolla tube; style reach base of anthers. Capsule globose, nearly as long as calyx. Fl. Jun-Jul. 2n = 22/.

* Damp areas in forests; 2500-3500 m. Taiwan.


玉山灯台报春 yu shan deng tai bao chun

Herbs perennial. Leaves in a rosette; petiole 1/3-1/2 as long as leaf blade, broadly winged; leaf blade obovate-elliptic to oblong-campanulate, 10-20 3-5 cm, tapered to base, margin irregularly denticulate, apex rounded. Scapes 20-45 cm, efarinose; umbels 2-4, superimposed, 6-10-flowered; bracts linear, 1-2 cm. Flowers homostylous. Pedicel 1.5-3(-4) cm. Calyx campanulate, 5-7 mm, yellow farinose inside, parted to near middle; lobes triangular, apex acuminate. Corolla purple; tube 9-10 mm; limb ca. 1.5 cm wide; lobes oblong, ca. 5 mm, margin crenate-serrate, apex emarginate. Stamens ca. 7 mm above base of corolla tube; style reach base of anthers. Capsule globose, nearly as long as calyx. Fl. Jun-Jul. 2n = 22/.

* Damp areas in forests; 2500-3500 m. Taiwan.


粉被灯台报春 fen bei deng tai bao chun

Primula japonica f. robusta Hemsley; P. shihmienensis Fang.

Herbs perennial. Leaves in a rosette; petiole 1/3-1/2 as long as leaf blade, broadly winged; leaf blade obovate-elliptic to oblong-campanulate, 7-18 4-8(-10) cm, tapered to base, margin irregularly dentate, apex rounded; scapes 25-50 cm, elongated to 1 m in fruit, farinose on nodes; umbels 3 or 4, superimposed, 4-12-flowered; bracts linear to linear-campanulate, 1.2-1.5 cm. Flowers heterostylous. Pedicel 1-2 cm. Calyx campanulate, 5-8 mm, white or cream-colored farinose, parted nearly to middle; lobes triangular, apex subulate. Corolla rose-purple, with a red or purple eye; limb 2-3 cm wide; lobes obovate, deeply emarginate. Pin flowers: corolla tube ca. 1.3 cm; stamens ca. 7 mm above base of corolla tube; style 1.1-1.2 cm. Thrum flowers: corolla tube 1.4-1.5 cm; stamens 1.1-1.2 cm above base of corolla tube; style ca. 5 mm. Capsule globose, ca. as long as calyx. Fl. May-Jun. 2n = 22/.

霞红灯台报春  *Primula beesiana* I. B. Balfour & Kingdom-Ward; *P. leucantha* I. B. Balfour & Forrest.

Herbs perennial. Leaves in a rosette; petiole 1/4–1/2 as long as leaf blade; leaf blade narrowly oblanceolate to elliptic-ob lanceolate, 8–20 × 2–6 cm, abaxially sparsely glandular, base attenuate, margin denticulate, apex rounded; lateral veins more than 10 pairs, at ca. 45 to midvein. Scapes 20–35 cm, elongated to 50 cm in fruit, efarinose or white farinose on nodes; umbels 2–4(–8), superimposed, 8–16-flowered; bracts linear, to 2.5 cm at lowest umbel, gradually reduced upward and shorter than petiole. Flowers heterostylous. Pedicel 1–2 cm, efarinose or scarcely farinose. Calyx campanulate, 5–8 (–9) mm, densely cream-colored farinose inside, scarcely farinose or efarinose outside, parted to middle or below; lobes lanceolate, apex acuminate. Corolla rose, rarely white, with a yellow eye; tube orange, ca. 1.2 cm; limb ca. 2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 5 mm above base of corolla tube; style ca. 1 cm. Thrum flowers: stamens ca. 8.5 mm above base of corolla tube; style ca. 5 mm. Capsule globose, shorter than calyx. Fl. Jun-Jul. 2n = 22.

* Wet meadows; 2400–2800 m. SW Sichuan, N Yunnan [N Myanmar].


Herbs perennial. Leaves in a rosette; petiole 1/4–1/2 as long as leaf blade; leaf blade narrowly oblanceolate to elliptic-ob lanceolate, 8–20 × 2–6 cm, abaxially sparsely glandular, base attenuate, margin denticulate, apex rounded; lateral veins more than 10 pairs, at ca. 45 to midvein. Scapes 20–45 cm; umbels 3 or 4, superimposed; 5–10-flowered; bracts linear, 5–10 mm. Flowers heterostylous. Pedicel 0.7–1.3 cm. Calyx tubular-campanulate, 5–6 mm, parted to middle; lobes lanceolate, apex acuminate-subulate. Corolla bright red; tube 1.3–1.4 cm; limb 1–1.5 cm wide; lobes obovate, ca. 6 × 5.5 mm, deeply emarginate. Pin flowers: stamens ca. 4.5 mm above base of corolla tube; style 8–9 mm. Thrum flowers: stamens ca. 1 cm above base of corolla tube; style ca. 4.5 mm. Capsule globose, included in calyx. Fl. Jun-Jul. 2n = 22.

* Wet alpine meadows; 3200–3700 m. SW Sichuan, NC to NW Yunnan.


Herbs perennial, efarinose, glabrous. Leaves in a rosette; petiole broadly winged, indistinct to 1/3 as long as leaf blade; leaf blade oblong to oblanceolate, 12–18 × 4–6.5 cm, base attenuate, margin efarinose-denticulate, apex obtuse to rounded. Scapes to 30 cm; umbels 2 or 3, superimposed, 8–15-flowered; bracts 2.5–3 mm, outer narrowly elliptic and leaflike, inner linear to linear-lanceolate. Flowers heterostylous. Pedicel ca. 1.2 cm. Calyx tubular-campanulate, 1–1.4 cm, parted below middle; lobes narrowly lanceolate, 7–10 mm. Corolla pale rose-purple; limb ca. 1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: corolla tube ca. 1.3 cm, slightly longer than calyx; stamens at middle of corolla tube; style exserted. Thrum flowers: corolla tube ca. 2 as long as calyx; stamens near annulus; style ca. 9 mm. Capsule unknown.  * E Sichuan (Chengkou Xian).


Herbs perennial, efarinose, glabrous, aromatic. Leaves in a rosette; petiole broadly winged, indistinct to 1/3 as long as leaf blade; leaf blade obovate-oblong to oblanceolate, 10–18 × 4–6(–8) cm, base attenuate, margin denticulate, apex obtuse to rounded. Scapes 30–60 cm; umbels 3–5, superimposed, 6–10-flowered; bracts linear to linear-lanceolate, 0.5–1.5 cm. Flowers heterostylous. Pedicel 1–1.5 cm. Calyx cupular, 4–6 mm, parted to 1/3; lobes broadly ovate-triangular, apex obtuse to rounded. Corolla dark purple when young; funnelform; tube ca. 9 mm; limb concave, 1–1.5 cm wide; lobes subquadrangular, 3–4(–5) mm, apex subtruncate to slightly emarginate. Pin flowers: stamens 2.5–3 mm above base of corolla tube; style ca. 7 mm. Thrum flowers with positions reciprocal. Capsule ovoid, slightly longer than calyx. Fl. May-Jun. 2n = 22.

* Wet alpine meadows; 3200–3700 m. SW Sichuan, NC to NW Yunnan.

Herbs perennial. Leaves in a rosette; petiole 1/4-1/2 as long as leaf blade, broadly winged; leaf blade elliptic-oblong to oblongate, 10-22(-30) 3-8(-10) cm, tapered to base, margin irregularly denticulate, apex obtuse to rounded; lateral veins more than 15 pairs, at 45 to midvein. Scapes 20-70 cm, cream-yellow farinose toward apex and on nodes; umbels 5-7, superimposed, (4)-6-16-flowered; bracts linear, usually slightly longer than pedicel. Flowers heterostylous. Pedicel 1.3-2.5 cm, scarcely farinose. Calyx campanulate, 5-9.5 mm, scarcely farinose outside, densely cream-yellow farinose inside, parted to middle or slightly below; lobes lanceolate, apex acuminate-subulate. Corolla deep orange; limb ca. 2 cm wide; lobes oblong-obovate, slightly emarginate. Pin flowers: corolla tube 1-1.2 cm; stamens ca. 5 mm above base of corolla tube; style ca. 8.5 mm. Thrum flowers: corolla tube 1.4-1.5 cm; stamens ca. 1 cm above base of corolla tube; style ca. 5 mm. Capsule subglobose, nearly as long as calyx. Fl. Jun-Jul. 2n = 24*.

* Wet meadows; 2600-3200 m. SW Sichuan, NW Yunnan (Lijiang Xian).


亚东灯台报春 ya dong deng tai bao chun

Herbs perennial. Leaves in a rosette; petiole indistinct to 1/3 as long as leaf blade; leaf blade oblong-oblongate to oblongate, 7-10 cm at anthesis, enlarged to 20 5-6.5 cm at fruiting, tapered to base, efarinose or yellow farinose abaxially, margin regularly fine denticulate, apex rounded. Scapes 20-65 cm; umbels 2-5, superimposed, 5-12-flowered; bracts linear-lanceolate, 4-10 mm. Flowers heterostylous. Pedicel ca. 2 as long as bracts, pale yellow farinose. Calyx campanulate, 4-5 mm, copiously yellow farinose outside, parted to 1/3; lobes broadly triangular, apex acute. Corolla pale yellow; tube 8-11 mm; limb 1-1.5 cm wide; lobes obvate to oblong-obovate, ca. 5 4-4.5 mm. Pin flowers: stamens ca. 2 mm above base of corolla tube; style 6-7 mm. Thrum flowers: stamens 8-9.5 mm above base of corolla tube; style ca. 2 mm. Capsule globose, slightly longer than calyx. Fl. Jun-Sep. 2n = 22.

Woodland margins, grasslands in river valleys; 2400-2700 m. S Xizang (Yadong Xian) [Bhutan].


泽地灯台报春 zhe di deng tai bao chun

Herbs perennial. Leaves in a rosette; petiole 1/4-1/2 as long as leaf blade, broadly winged;
leaf blade broadly oblanceolate to obovate-oblong, 10–15 × 2–4 cm, tapered at base, efarinosise or sparsely yellow farinosine abaxially, margin denticulate, apex obtuse to rounded. Scapes 40–90 cm, elongated to 1.2 m in fruit, yellow farinosine on nodes; umbels 4–6, superimposed, 6–12–(20)–flowered; bracts linear to linear-lanceolate, 0.7–1.5–(3) cm. Flowers heterostylous. Pedicel 1.3–2.5–(3.5) cm, yellow farinosine. Calyx campanulate, 3.5–5 mm, copiously yellow farinosine outside, parted to 1/3; lobes triangular, apex hyathode-apiculate. Corolla bright golden yellow; tube 1.2–1.8 cm; limb ca. 2.5 cm wide; lobes obovate, ca. 8 × 6 mm, distinctly emarginate. Pin flowers: corolla tube 1.2–1.3 cm; stamens ca. 2 mm above base of corolla tube; style 1–1.1 cm. Thrum flowers: corolla tube 1.3–1.8 cm; stamens 1.1–1.4 cm above base of corolla tube; style ca. 3 mm. Capsule globose, slightly shorter than calyx. Fl. Mar–May. 2n = 22*.

* Open wet grasslands, stream sides: ca. 2000 m. SW Sichuan, SE Xizang, NW Yunnan.


鹅黄灯台报春 e huang deng tai bao chun

Primula operculata R. Knuth.

Herbs biennial. Leaves in a rosette; petiole usually 1/5–1/2 as long as leaf blade; leaf blade oblong to obovate-oblong, 5–10–(12) 1.6–4.8 cm, abaxially sparsely minutely glandular, base subrounded to broadly cuneate, margin obscurely repand and finely denticulate, apex rounded. Scapes 15–30 cm, elongated to 50 cm in fruit, cream-yellow farinosine on nodes; umbels (1 or)2–4(or 5), superimposed; 3–8–flowered; bracts lanceolate, 3–5 mm, cream-colored farinosine. Flowers homostylous. Pedicel 1–1.5 mm, elongated to 2–3 cm in fruit. Calyx campanulate, ca. 4 mm, parted to 1/3; lobes triangular, copiously cream-yellow farinosine inside, scarcely farinosine outside. Corolla dark orange or tinged with red; tube 1–1.1 cm; limb ca. 1.5 cm wide; lobes obovate-obovate, 5–7 × 3–4.5 mm, emarginate. Stamens ca. 8 mm above base of corolla tube. Style slightly longer than anthers. Capsule oblong, slightly longer than calyx. Fl. Jun–Jul. 2n = 22*.

* Moist meadows, margins of woodlands and thickets; 2900–4200 m. SW Sichuan.


中甸灯台报春 zhong dian deng tai bao chun

Herbs perennial. Leaves in a rosette; petiole to 1/4 as long as leaf blade; leaf blade elliptic to oblong or obovate-oblong, 4.5–15–(20) × 2–5–(8) cm, base cuneate-attenuate, margin obscurely sinuate-lobulate, irregularly denticulate, apex rounded. Scapes 15–20 cm, elongated to 80 cm in fruit, scarcely farinosine at nodes; umbels (1 or)2–5, superimposed, 3–12–flowered; bracts triangular to lanceolate, 1.5–3.5–(5) mm, scarcely farinosine. Pedicel 0.8–1.5 cm, elongated to 2.8 cm in fruit. Flowers mostly homostylous, rarely heterostylous. Calyx campanulate, 3.5–4.5 mm, copiously yellow farinosine inside, efarinosine or scarcely farinosine outside, parted to 1/3 or slightly below; lobes triangular, apex acute. Corolla pale orange; tube 1.1–1.2 cm; limb 1.5–2 cm wide; lobes obovate, slightly emarginate. Stamens ca. 9 mm above base of corolla tube. Style slightly longer than anthers. Capsule ovoid, slightly longer than calyx. Fl. May–Jun. 2n = 22*.

* Mountain glades, marshes: 2900–3200 m. SW Sichuan, SE Xizang, NW Yunnan.


橙红灯台报春 cheng hong deng tai bao chun

Herbs perennial, efarinosine, glabrous. Leaves in a rosette; petiole to 1/3 as long as leaf blade; leaf blade obovate-oblong to oblongate, 4–15 × 1.8–5 cm, base attenuate, decurrent to petiole, margin erose-denticulate, apex rounded. Scapes 4.5–15 cm at anthesis, elongated to 30 cm in fruit; umbels 2–4 (–6), superimposed, 6–12–flowered; bracts linear, 1–2.2 cm. Flowers heterostylous. Pedicel reddish, 3–10 mm. Calyx tubular-campanulate, 7–10 mm, parted slightly below middle; lobes lanceolate. Corolla deep reddish orange; tube 8–10 mm wide; lobes obovate-obovate, emarginate. Pin flowers: corolla tube 8–10 mm; stamens ca. 5.5 mm above base of corolla tube; style ca. 9 mm. Thrum flowers: corolla tube 0.9–1.4 cm; stamens ca. 1.2 cm above base of corolla tube; style ca. 5 mm. Capsule subglobose, ca. 5 mm in diam., ca. as long as calyx. Fl. May. 2n = 22.

* Wet meadows, damp forest margins; 2500–3500 m. SW Sichuan, NW Yunnan.


小花灯台报春 xiao hua deng tai bao chun

Herbs perennial, efarinosine, glabrous. Leaves in a rosette; petiole indistinct to 1/3 as long as leaf blade; leaf blade obovate-oblong to obvolute-elliptic, 3.5–9 × 1.5–3 cm, base attenuate, margin erose-denticulate, apex rounded. Scape 10–15 cm,
131a. Primula prenantha subsp. prenantha

小花灯台报春 (原亚种)  xiao hua deng tai bao chun (yuan ya zhong)

Primula microloma Handel-Mazzetti.

Corolla tube 5–7.5 mm, limb 6–9 mm wide; lobes oblong-ovate, 2–3.5 mm. Stamens ca. 5 mm above base of corolla tube. Style to as long as anthers. Capsule subglobose, ca. 5 mm in diam., as long as calyx. Fl. May–Jun.

131b. Primula prenantha subsp. morsheadiana


芒齿灯台报春 mang chi deng tai bao chun

Herbs perennial, efarinose, glabrous. Leaves in a rosette; petiole indistinct to 1/3 as long as blade; leaf blade oblanceolate to elliptic-ovate, 3–5 1.5–2 cm, base attenuate, margin regularly fine dentate, apex rounded to obtuse. Scapes 14–25 cm; umbels 1 (or 2), superimposed, 2–5-flowered; bracts purplish, linear-lanceolate, 3–5 mm. Flowers heterostylous. Pedicel 5–13 mm, elongated to 2 cm in fruit. Calyx campanulate, 6–7.5 mm, parted to 1/3 or slightly below, 5-veined; lobes purplish, triangular. Corolla yellow; tube 1–1.1 cm; limb to 2 cm wide; lobes broadly obcordate, 5–8 mm. Pin flowers: stamens near base of corolla tube; style ca. as long as calyx. Thrum flowers with positions reciprocal. Capsule globose, included in calyx. Fl. Aug. 2n = 22.

* Woodlands bordering streams, marshes; 1600–1800 m. W Yunnan (Tengchong Xian).


腾冲灯台报春 teng chong deng tai bao chun


Herbs perennial, efarinose, glabrous. Leaves in a rosette; petiole indistinct to 1/4 as long as leaf blade; leaf blade oblanceolate to obovate-elliptic, 6–12 1.8–5 cm, base attenuate, margin irregularly denticulate at base, apex rounded. Scapes 20–65 cm; umbels 3 or 4, superimposed, 9–13-flowered; bracts linear, 7–10–(20) mm. Flowers heterostylous. Pedicel 1–1.3 cm. Calyx campanulate, 4.5–4.8 mm, parted to 1/3; lobes triangular, margin hydathode-apiculate, apex subacuminate. Corolla yellow; tube 9–10.5 mm, cylindric, amplified near mouth; limb 1–1.5 mm wide; lobes obovate-oblong, ca. 5 4.5 mm, slightly emarginate. Pin flowers: stamens ca. 2.5 mm above base of corolla tube; style ca. 9.5 mm. Thrum flowers with positions reciprocal. Capsule globose, included in calyx.
Primula faberi Oliver, Hooker’s Icon. Pl. 18: t. 1789. 1888.


Primula leimonophila I. B. Balfour; P. petrophytes I. B. Balfour.


Herbs perennial, efarinose, glabrous. Bud scales ovate to lanceolate. Leaf blade oblanceolate to elliptic or lanceolate, 5-7 1.5-2.5 cm, base tapered into a short winged petiole, margin irregularly dentate, spreading or slightly runcinate, apex acute to subtruncate. Pedicels 9-12 cm; umbels 3-6(-10)-flowered; bracts linear, 4-10 mm. Flowers heterostylous. Pedicel 1-2 cm. Calyx green but tinged with purple, cupular, 6-7 mm, parted nearly to middle; lobes lanceolate to subtriangular, apex acute. Corolla deep wine red, campanulate, 1.5-1.7 1.5-1.7 cm, with a very short cylindric base and abruptly expanded upper part; lobes oblong, ca. 6 mm, margin entire or slightly emarginate, adaxially puberulent. Pin flowers: stamens 2-3 mm above base of corolla tube; style ca. 5 mm. Capsule ovoid, nearly as long as calyx. Fl. Jun-Jul.

* Open hillsides, steep grassy slopes; 4300-5000 m. SE Xizang.


Herbs perennial, efarinose, glabrous. Bud scales ovate to lanceolate. Leaf blade oblanceolate to elliptic or lanceolate, 5-7 1.5-2.5 cm, base tapered into a short winged petiole, margin irregularly sharp dentate, apex acute to subobtuse. Thrum flowers with positions reciprocal. Capsule ovoid, nearly as long as calyx. Fl. Jun-Jul.

* Wet meadows: 2600-4200 m. SE Xizang, NW Yunnan [N Myanmar].

135. Primula faberi Oliver, Hooker’s Icon. Pl. 18: t. 1789. 1888.


Herbs perennial, efarinose, glabrous. Leaves in a rosette; petiole indistinct to 3 cm, winged with deciduous leaf blade; leaf blade elliptic to oblanceolate, 2-8 0.6-3 cm, base attenuate, margin irregularly sharp dentate, apex acute to subobtuse, sparsely minutely brown punctate. Scapes 5-20 cm, densely glandular toward apex; umbels compact, 2-5 mm, parted to middle, 5 -veined; lobes narrowly oblong, 2-3 mm, leaflike, margin entire or with 1 or 2 teeth. Flowers heterostylous. Pedicel 1-2 mm. Calyx campanulate, 7-10 mm, parted to middle, 5 -veined: lobes oblong, apex acute to subobtuse. Corolla yellow, tubular -campanulate, 1.8-2.5 cm; limb 1.2-1.5 cm wide; lobes erect, oblong, 5-8 4-5.5 mm, apex rounded to apiculate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. 7 mm. Thrum flowers: stamens ca. 5 mm above base of corolla tube; style ca. 1 mm. Capsule oblong, slightly shorter than calyx. Fl. Jun-Jul, fr. Jul-Aug.


Herbs perennial, efarinose, glabrous, base with few lanceolate to linear bud scales. Petiole winged, ca. 1/5 to as long as leaf blade; leaf blade elliptic-obovate to oblanceolate, 1.5-7.5 cm 3-10 mm, tapered at base, margin subentire to remotely denticulate, apex subacute. Scapes 8-20 cm; umbels 1-6-flowered; bracts linear, 1-3.5(-5) mm, often slightly above base of pedicel. Flowers heterostylous. Pedicel 1-7 mm, elongated to 2.5 cm in fruit. Calyx tubular-campanulate, 6.5-8 mm, parted to 1/3 or near middle; lobes triangular, apex subobtuse. Corolla yellow, white, or purple, funnelform; tube 3-4 as long as calyx, pubescent at mouth and inside; limb spreading, 2-3 cm wide; lobes obcordate to oblong, 7-8 mm, 2 -lobulate. Pin flowers with stamens ca. 4 mm above corolla tube. Thrum flowers with positions reciprocal. Capsule ovoid, nearly as long as calyx. Fl. May-Jun.

Herbs perennial, efarinose, glabrous, each forming a dense tuft consisting of many rosettes. Leaves usually 4 or 5 per rosette; petiole 0.5-1.2 cm long, sometimes nearly as long as leaf blade; leaf blade obovate to oblanceolate, rarely mucronate, 1.2 cm wide, base cuneate, margin sharply denticulate, apex rounded. Scapes 5-10 cm, umbels 1-2; bracts linear-lanceolate, 2-4 mm. Flowers heterostylous. Pedicel 2.5-5 mm. Calyx campanulate, ca. 4 × 4 mm, parted nearly to middle; lobes ovate to ovate-lanceolate, apex obtuse to acute. Corolla pale rose-purple to deep blue-purple, campanulate, 0.8-1.2 cm, base cymose, nearly as long as calyx, upper part expanded and campanulate; limb 1-1.3 cm wide; lobes 3-4.5 × 4-5 mm, slightly emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. 1.5 cm. Thrum flowers with stamens ca. 2.5 mm above base of corolla tube; style ca. 4.5 mm. Flowers heterostylous. Pedicel 0.5-1 cm. Calyx campanulate, 1.2-1.5 cm in diam., abruptly dilated upward from short cylindrical base; lobes irregularly lacerate-incised, with teeth more than 1 mm. Fl. Jun-Jul.


Herbs perennial, efarinose, glabrous, each forming a dense tuft consisting of many rosettes. Leaves usually 4 or 5 per rosette; petiole 0.5-1.2 cm long, base cuneate, margin sharply denticulate, apex rounded. Scapes 5-10 cm, umbels 1-2; bracts linear-lanceolate, 2-4 mm. Flowers heterostylous. Pedicel 2.5-5 mm. Calyx campanulate, ca. 4 × 4 mm, parted nearly to middle; lobes ovate to ovate-lanceolate, apex obtuse to acute. Corolla pale rose-purple to deep blue-purple, campanulate, 0.8-1.2 cm, base cymose, nearly as long as calyx, upper part expanded and campanulate; limb 1-1.3 cm wide; lobes 3-4.5 × 4-5 mm, slightly emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. 1.5 cm. Thrum flowers with stamens ca. 4 mm above base of corolla tube; style ca. 1.5 mm. Capsule ovoid, nearly as long as calyx. Fl. Jun-Jul.


Herbs perennial, efarinose, glabrous, each forming a dense tuft consisting of many rosettes. Leaves usually 4 or 5 per rosette; petiole 0.5-1.2 cm long, base cuneate, margin sharply denticulate, apex rounded. Scapes 5-10 cm, umbels 1-2; bracts linear-lanceolate, 2-4 mm. Flowers heterostylous. Pedicel 2.5-5 mm. Calyx campanulate, ca. 4 × 4 mm, parted nearly to middle; lobes ovate to ovate-lanceolate, apex obtuse to acute. Corolla pale rose-purple to deep blue-purple, campanulate, 0.8-1.2 cm, base cymose, nearly as long as calyx, upper part expanded and campanulate; limb 1-1.3 cm wide; lobes 3-4.5 × 4-5 mm, slightly emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. 1.5 cm. Thrum flowers with stamens ca. 4 mm above base of corolla tube; style ca. 1.5 mm. Capsule ovoid, nearly as long as calyx. Fl. Jun-Jul.


Herbs perennial, efarinose, glabrous, each forming a dense tuft consisting of many rosettes. Leaves usually 4 or 5 per rosette; petiole 0.5-1.2 cm long, base cuneate, margin sharply denticulate, apex rounded. Scapes 5-10 cm, umbels 1-2; bracts linear-lanceolate, 2-4 mm. Flowers heterostylous. Pedicel 2.5-5 mm. Calyx campanulate, ca. 4 × 4 mm, parted nearly to middle; lobes ovate to ovate-lanceolate, apex obtuse to acute. Corolla pale rose-purple to deep blue-purple, campanulate, 0.8-1.2 cm, base cymose, nearly as long as calyx, upper part expanded and campanulate; limb 1-1.3 cm wide; lobes 3-4.5 × 4-5 mm, slightly emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. 1.5 cm. Thrum flowers with stamens ca. 4 mm above base of corolla tube; style ca. 1.5 mm. Capsule ovoid, nearly as long as calyx. Fl. Jun-Jul.


Herbs perennial, efarinose, glabrous, each forming a dense tuft consisting of many rosettes. Leaves usually 4 or 5 per rosette; petiole 0.5-1.2 cm long, base cuneate, margin sharply denticulate, apex rounded. Scapes 5-10 cm, umbels 1-2; bracts linear-lanceolate, 2-4 mm. Flowers heterostylous. Pedicel 2.5-5 mm. Calyx campanulate, ca. 4 × 4 mm, parted nearly to middle; lobes ovate to ovate-lanceolate, apex obtuse to acute. Corolla pale rose-purple to deep blue-purple, campanulate, 0.8-1.2 cm, base cymose, nearly as long as calyx, upper part expanded and campanulate; limb 1-1.3 cm wide; lobes 3-4.5 × 4-5 mm, slightly emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. 1.5 cm. Thrum flowers with stamens ca. 4 mm above base of corolla tube; style ca. 1.5 mm. Capsule ovoid, nearly as long as calyx. Fl. Jun-Jul.

* Mossy rocks in damp valleys: 3300–3700 m. NE Yunnan (Qiaojia Xian).

* Mossy rocks in damp valleys: 3300–4800 m. NW Yunnan [NE India, Myanmar].

* Wet meadows on mountain summit: ca. 4000 m. Yunnan (Gang Shan, Dali Xian).

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1.5-3  5-10 cm, base cuneate or slightly subcuneate, margin remotely denticulate, apex acute or occasionally subobtuse and mucronate. Scapes 2.5-7(-10) cm, usually 1- or 2-flowered; bracts usually 2, alternate, 2-8 mm. Flowers secund, heterostyly. Pedicel 2-10 mm. Calyx tinged with purple, pubescent inside, 1.4-1.8 cm, base cylindric, ca. 1 mm, expanded abruptly above; limb 1.4-1.6 cm wide; lobes ca. 6 6 mm, apex rounded, margin entire, undulate to slightly emarginate. Pin flowers: stamens ca. 2.5 mm above base of corolla tube; style 6-7 mm. Thrum flowers: stamens 4-5 mm above base of corolla tube; style 2-3 mm. Capsule ca. as long as to slightly longer than calyx. Fl. Jul-Aug.

Alpine meadows, peat soils; 3800-4200 m. E Xizang, NW Yunnan [Myanmar].


高耸紫晶报春 gao ting zi jing bao chun

Primula dickieana Watt var. gouldii H. R. Fletcher.

Herbs perennial. Leaves in a rosette; petiole obscure or nearly as long as leaf blade; leaf blade elliptic to oblong or oblanceolate, 7-30(-40) 2-7 cm, thin papery or submembranous, base attenuate, rarely obtuse or subrounded, margin crenate-serrate to dentate, apex rounded to occasionally acute; reticulate veins prominent abaxially. Scapes 15-90 cm, yellow farinose toward apex; umbels usually 1(or 2), 2- to many flowered; bracts lanceolate, 0.5-2 cm, base often gibbous, apex acuminate. Flowers heterostyly. Pedicel 1-6(-10) cm, yellow farinose. Calyx campanulate to tubular-campanulate, 7-10(-12) mm, copiously farinose; parted to middle, prominently 5-veined; lobes lanceolate to triangular-oblanceolate, apex acute and slightly recurved. Corolla yellow, rarely cream-white, becoming dark green when dry, 1.5-2.5(-3) cm; tube slightly longer than calyx; limb (1-)1.5-3 cm wide; lobes obvate to obvate-oblanceolate, margin entire to emarginate. Pin flowers: stamens 2-3 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule oblong, nearly as long as calyx. Fl. Jun, fr. Sep-Oct. 2n = 18, 22.

Wet meadows, margins of bogs and wet forests, stream-sides; 3200-4400 m. W Sichuan, Xizang, NW Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].


厚叶钟报春 hou ye zhong bao chun

Herbs perennial. Leaves in a rosette; petiole nearly as long as to 2 as long as leaf blade; leaf blade oblong to ovate-oblong or elliptic, 1-4 1-2 cm, firm papery or subleathery, base short cuneate, rounded, or cordate, margin crenate-serrate, apex rounded; reticulate veins obscure abaxially. Scapes 10-25 cm, scarcely farinose toward apex; umbels 2-7-flowered; bracts linear-lanceolate to subulate, 3-12 mm. Flowers heterostylous. Pedicel 1-4 cm, elongated to 8 cm in fruit, scarcely farinose. Calyx cylindric to tubular-campanulate, 6-9 mm, scarcely farinose, densely reddish striate outside, parted to near middle, prominently 5-veined; lobes triangular-oblanceolate, apex slightly recurved. Corolla yellow; limb 1-1.5 cm wide; lobes suberect, obvate to elliptic, margin entire to obscurely emarginate. Pin flowers: corolla tube 9 mm; stamens ca. 3 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube ca. 1.1 cm; stamens toward apex of corolla tube; style ca. 2 mm. Capsule oblong, nearly as long as calyx. Fl. Aug.
Alpine meadows: 5000–5300 m. S Xizang (Yadong Xian) [Bhutan].


杂色钟报春 za se zhong bao chun


Herbs perennial, efarinose except for inflorescences. Leaves in a rosette; petiole nearly as long as to 2 as long as leaf blade; leaf blade oblong to elliptic, 10–20 × 3–8 cm, thin papery, abaxially minutely glandular, adaxially glabrous, base truncate to rounded, sometimes cordulate to short cuneate, margin denticulate to crenate-dentate, apex rounded. Scapes 15–90 cm, scarcely farinose toward apex; umbels 2–4, superimposed, 5–to many flowered; bracts green or reddish brown, lanceolate to oblong or ovate, 0.6–2 cm 1.5–5(–8) mm, usually farinose. Flowers heterostylous. Pedicel 1–8 cm, pale yellow farinose. Calyx campanulate to tubular-campanulate, 7–10 mm, sparingly farinose, sparsely ciliolate outside, copiously yellow farinose inside, parted to 1/4–1/3, 5–veined; lobes triangular to lanceolate, apex acute and slightly recurved. Corolla yellow, purple, or white; tube 1.1–1.3 cm; limb 1.2–3 cm wide; lobes broadly obovate to suborbicular, emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style ca. 2 mm. Capsule cylindric, ca. as long as to slightly longer than calyx. Fl. Jul. 2n = 22.

Stream sides, thickets, glades: 3000–4600 m. SE Xizang [Bhutan].

146. Primula reticulata Wallich in Roxburgh, Fl. Ind. 2: 21. 1824.

网叶钟报春 wang ye zhong bao chun

Herbs perennial. Leaves in a rosette; petiole 1–3 as long as leaf blade; leaf blade ovate-oblong to oblong, 2–10 × 2–4.5 cm, glabrous or sparsely minutely glandular along veins abaxially, base shallowly cordate to rounded, margin dentate to crenate-dentate, apex rounded. Scapes 18–45 cm, scarcely farinose toward apex; umbels 4–12-flowered; bracts linear-lanceolate to lanceolate, 0.7–2 cm, occasionally dentate. Flowers heterostylous. Pedicel 1.5–5 cm, farinose. Calyx tubular-campanulate, 5–11 mm, sparsely pale yellow farinose outside, more densely so inside, parted to 1/3, prominently 5–veined; lobes slightly recurved, lanceolate, apex acute. Corolla white to cream-white or cream-yellow; tube 1–1.4 cm; limb 1–2 cm wide; lobes obovate to obovate-oblong, margin entire to obscurely emarginate. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube or slightly exserted. Thrum flowers: stamens toward apex of corolla tube; style ca. 2 mm. Capsule cylindric, ca. as long as to slightly longer than calyx. Fl. Jun. 2n = 22.

Thickets on mountain slopes; ca. 3000 m. S Xizang (Nyalam Xian) [Bhutan, NE India, Nepal, Sikkim].


葶立钟报春 ting li zhong bao chun


Herbs perennial. Leaves in a rosette; petiole 2–20 cm, narrowly winged, vaginate at base; leaf blade ovate to ovate-oblong or suborbicular, 1–7 × 1–5 cm, abaxially sparsely minutely glandular, adaxially glabrous, base shallowly cordate, deeply crenate-dentate, apex rounded. Scapes 10–40 cm, scarcely yellow farinose toward apex; umbels 2–8-flowered; bracts lanceolate to ovate-lanceolate, 7–12 mm, margin often dentate. Flowers heterostylous. Pedicel 1–4 cm, glandular, sometimes farinose toward apex. Calyx campanulate, 5–8 mm, glandular, yellow farinose outside, parted to middle, 5-veined; lobes lanceolate to triangular-lanceolate, ciliolate. Corolla yellow; tube ca. 1 cm; limb 1.3–2 cm wide; lobes obovate, 7–9 mm, suberect, emarginate to crenulate at apex. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style ca. 1 mm. Capsule cylindric, ca. as long as to slightly longer than calyx. Fl. May–Jun. 2n = 22.

Wet stony meadows, stream sides, thicket margins; 3000–4500 m. SE Xizang, NE Yunnan [N Myanmar].


巨伞钟报春 ju san zhong bao chun

Herbs perennial, stout. Leaves in a rosette; petiole 3–30 cm; leaf blade broadly ovate-oblong to elliptic, 3–15(–20) × 4–11(–15) cm, thin papery, glabrous, abaxially sparsely minutely glandular, base cordate, margin hyathode-dentate, apex rounded. Scapes robust, 30–120 cm, glabrous or occasionally scarcely farinose toward apex; umbels (10–)15–30–80-flowered; bracts broadly lanceolate to oblong, 1–3 cm, often dentate, gibbous at base. Flowers heterostylous. Pedicel 2–10 cm, yellow farinose. Calyx campanulate, 8–10 mm, copiously yellow farinose, parted to 1/3, obscurely 5-veined;
lobes triangular, apex acute. Corolla yellow, often becoming green when dry, 1.7–2.5 cm; limb 1–2 cm wide; lobes obovate-oblong to broadly obovate, slightly emarginate. Pin flowers: corolla tube slightly longer than calyx; stamens ca. 2.5 mm above base of corolla tube; style ca. as long as tube or slightly exerted. Thrum flowers: corolla tube ca. 2 as long as calyx; stamens toward apex of corolla tube; style ca. 1.5 mm. Capsule cylindric, slightly longer than calyx. Fl. Jun-Jul, fr. Jul-Aug. 2n = 22*.

* Streamsides, bog margins, wet areas in Picea forests; 2600–4000 m. E Xizang.


紫钟报春 zi zhong bao chun


Herbs perennial. Leaves in a rosette; petiole to nearly as long as leaf blade; leaf blade elliptic-oblong to oblanceolate, 3.5–18 cm, 1.2–4–(–7) cm, efarinose, abaxially sparsely minutely glandular, base cuneate-attenuate, margin eros-dentate, apex rounded. Scapes 18–70 cm, scarcely yellow farinose toward apex; umbels 4–to many flowered; bracts often tinged with purple, lanceolate to linear-lanceolate, 0.5–2 cm. Flowers heterostylous. Pedicel 1–7 cm, yellow farinose. Calyx often tinged with purple, campanulate, 5.5–8 mm, sparsely farinose outside, copiously so inside, parted to 1/3–2/5, prominently 5–veined; lobes slightly recurved, triangular to lanceolate, apex acute. Corolla pink to deep wine purple; tube 8–11 mm; limb 6–13 (–18) mm wide; lobes suborbicular to obovate-oblong, 4–5 mm, margin entire or obscurely emarginate. Pin flowers: stamens ca. 2.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style 1–2 mm. Capsule cylindric, ca. as long as calyx. Fl. Jul–Sep. 2n = 22*.

Grassy mountain slopes; ca. 1500 m. W Sichuan (Lixian Xian).


缺叶钟报春 que ye zhong bao chun

Primula sikkimensis J. D. Hooker subsp. subpinnatifida W. W. Smith; P. sikkimensis var. subpinnatifida (W. W. Smith) W. W. Smith.

Herbs perennial. Leaves in a rosette; petiole usually much shorter than or sometimes nearly as long as leaf blade; leaf blade narrowly oblong to oblanceolate, 6–20 cm, 1–2.5 cm wide, base attenuate, margin serrate-dentate to incised-dentate, apex rounded to acute. Scapes 10–30 cm, scarcely farinose toward apex; umbels 2–8-flowered; bracts linear to linear-lanceolate, 0.5–1.5 cm, sparsely yellow farinose, purplish striate. Flowers heterostylous. Pedicel 1–6 cm, yellow farinose. Calyx campanulate to tubular-campanulate, 7–8 mm, scarcely farinose and stained with purple outside, copiously farinose inside, parted to middle, 5–veined; lobes triangular, apex often slightly recurved, acute. Corolla pink to violet, rarely white; tube 0.9–1.1 cm; limb 2–2.5 cm wide; lobes broadly obovate, emarginate to subentire. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule cylindric, ca. as long as calyx. Fl. Jul. 2n = 22*.

* Alpine meadows; 3000–4200 m. SE Xizang.


龙池报春 long chi bao chun

Herbs perennial, without basal bud scales at anthesis. Leaves in a rosette; petiole narrowly winged, nearly as long as leaf blade; leaf blade oblanceolate to spatulate, 2–5 cm, tapered to base, glabrous, sparsely minutely brown glandular, pinnately lobed nearly to midvein, apex rounded to obtuse; lobes lobulate to incised-dentate. Scapes 8–15 cm, glandular toward apex; umbels 4–7-flowered; bracts lanceolate to linear-lanceolate, 4–6 mm. Flowers heterostylous. Pedicel 2–5 mm, glandular. Calyx campanulate, 8–10 mm, parted slightly below middle; flowers lanceolate, copiously white farinose inside and on margin, apex acute. Corolla rose to purple; tube 1.1–1.5 cm; limb 1–1.5 cm wide; lobes oblong, 9–10 mm, margin entire or with 2–4 teeth, apex rounded. Thrum flowers with stamens at middle of corolla tube; style ca. 3 mm. Capsule ellipsoid-cylindric, slightly longer than calyx. Fl. Jun.

* Grassly mountain slopes; ca. 1500 m. W Sichuan (Lixian Xian).


囊谦报春 nang qian bao chun

Herbs perennial, without basal bud scales, with withered petioles at base. Leaves in a rosette; petiole usually 1/2–2/3 as long as leaf blade; leaf blade oblanceolate to oblong-ob lanceolate, 2.4–5 cm, 0.9–1.5 cm, tapered to base, abaxially glabrous, adaxially puberulent, pinnately lobed 1/2 way to midvein, apex rounded; lobes narrowly triangular to sublinear, 2–4 mm, margin entire or with 1 or 2 teeth on each side. Scapes 10–15 cm, puberulent; umbels 3–7-flowered; bracts acuminate-subulate from ovate base, 4–9 mm, puberulent. Flowers heterostylous. Pedicel 0.6–2
cm, densely puberulent. Calyx tubular-campanulate, 8–9 mm, parted slightly below middle; lobes lanceolate, costate. Corolla white; tube 0.9–1.1 cm; limb ca. 1.5 cm wide; lobes ovate, 3.5–4 mm wide, apex rounded. Thrum flowers with stamens toward apex of corolla tube; style reaching middle of tube. Capsule ellipsoid-cylindric, longer than calyx. Fl. Jun.

* Wet rocks in *Picea* forests; ca. 4000 m. S Qinghai (Nang-qian Xian).


焕镛报春 **huán yǒng bào chūn**

Herbs perennial, without basal bud scales at anthesis. Leaves in a rosette; petiole 4–12 cm, narrowly winged; leaf blade ovate, 3–5 2.5–3.5 cm, abaxially cream-yellow farinose, adaxially glabrous, base obtuse to subrounded, margin denticulate to crenulate, apex obtuse to acute. Scapes to 30 cm, scarcely farinose toward apex; umbels usually 2, superimposed, 4–8-flowered; bracts linear-lanceolate, 6–8 mm. Flowers heterostylos. Pedicel 1–3 mm, farinose. Calyx tubular-campanulate, 8–9 mm, parted to 2/3; lobes lanceolate, yellow farinose inside and along margin. Corolla bluish purple; tube ca. 1.3 cm; limb ca. 2 cm wide; lobes broadly obovate to suborbicular, 7–8 ca. 7.5 mm, margin entire. Pin flowers: stamens ca. 5 mm above base of corolla tube; style ca. 7 mm, slightly longer than calyx. Capsule cylindric, longer than calyx. Fl. Jun.

* W Sichuan (Moowen Xian).


双花报春 **shuāng huā bào chūn**


Herbs perennial, without basal bud scales and long overlapping stocks, with remains of old leaves at base. Leaves in a rosette; petiole inconspicuous or nearly as long as leaf blade, narrowly winged and suddenly dilated to a triangular base; leaf blade oblong-spatulate to lanceolate in outer leaves or narrowly obovate to linear-oblongate in inner leaves, 1.5–5 cm 5–10(–18) mm, abaxially white or cream-yellow farinose, base attenuate, margin denticulate to crenulate, often revolute, apex obtuse to rounded. Scapes (1–)2–8(–12) cm, glandular to scarcely farinose toward apex; umbels 2–6(–10)-flowered; bracts often purplish, lanceolate to subulate. Flowers heterostylos. Pedicel 3–10 mm, often shorter than bracts at anthesis. Calyx tubular, 6–10 mm, purplish outside, farinose inside, parted to middle or below; lobes lanceolate to narrowly oblong, apex acute to subobtuse. Corolla bluish purple; tube 1.1–1.4(–1.6) cm; limb 1.5–2 cm wide; lobes elliptic to obovate-oblong, margin entire to obscurely crenate, apex rounded. Pin flowers: stamens 2.5–3.5 mm above base of corolla tube; style slightly longer than calyx. Thrum flowers with positions reciprocal. Capsule cylindric, longer than calyx. Fl. Jun.

* Stony meadows, talus slopes in alpine zone; 4000–4800 m. W Sichuan, E Xizang, NW Yunnan.


雪山小报春 **xuē yān xiǎo bào chūn**

*Primula atuntzuensis* I. B. Balfour & Forrest; *P. helvenacea* I. B. Balfour & Kingdon-Ward; *P. petraea* I. B. Balfour & Forrest.

Herbs perennial, without basal bud scales, petioles not overlapping. Leaves in a rosette; petiole 1–3 as long as leaf blade, narrowly winged and dilated to a triangular base; leaf blade spatulate to oblong-spatulate or obovate, 1.5–3 cm 5–10 mm, abaxially cream-yellow farinose, base cuneate-attenuate, margin regularly blunt denticulate, apex obtuse, rarely acute. Scapes 3.5–7(–17) cm, farinose toward apex; umbels 3–8-flowered; bracts linear-subulate, 5–7(–12) mm, scarcely farinose. Flowers heterostylos. Pedicel 3–15(–30) mm, elongated to 4 cm in fruit, densely farinose. Calyx tubular, farinose inside, parted to middle or below; lobes narrowly oblong, apex acute to obtuse. Corolla lavender-rose or violet, rarely white; limb ca. 2 cm wide; lobes elliptic to obovate, margin entire, rarely crenulate. Pin flowers: calyx 6–10 mm; corolla tube 1.2–1.6 cm; stamens ca. 5 mm above base of corolla tube; style 0.9–1.1 cm. Thrum flowers: calyx 5–7 mm; corolla tube 1.4–1.8 cm; stamens 1–1.1 mm above base of corolla tube; style 3–4.5 mm. Capsule cylindric, 1–1.5(–2) cm. Fl. Jun.

* Stony meadows, cliffs, *Rhododendron* thickets; 4300–5000 m. SE Xizang, NW Yunnan.


心愿报春 **xīn yuán bào chūn**
Primula longipetiolata Pax & K. Hoffmann.

Herbs perennial, with few bud scales at base, petioles and basal bud scales not overlapping. Leaves in a rosette; petiole 1.5-2/2 to rarely nearly as long as leaf blade; leaf blade oblanceolate to oblong-spatulate, 3-7(-10) 1-2.5(-5.5) cm, efarinose or abaxially white farinose when young, base attenuate, margin regularly denticate, apex rounded. Scapes 3-5 cm, elongated to 16 cm; umbels 1 or 2, superimposed, 4-8(-10)-flowered; bracts subulate from a wide base, 5-8 mm. Flowers heterostylos. Pedicel 2-13 mm, efarinose. Calyx tubular-campanulate, (0.7-)0.9-1.1 cm, sparsely glandular outside, usually farinose inside, parted to or slightly below middle; lobes oblong-lanceolate, apex obtuse to acute. Thrum flowers: corolla tube 1.3 cm; stamens slightly above apex of corolla tube; style nearly as long as corolla tube. Pin flowers: corolla tube 1.4 cm; limb ca. 2 cm wide; lobes broadly obovate, margin entire. Pin flowers: stamens 3-4 mm above base of corolla tube; style slightly shorter than calyx. Capsule unknown. Fl. Jun.

* Mois meadows, among rocks, forest margins; 3200-4500 m. S Gansu, E Qinghai, W Sichuan.


匙叶雪山报春 chi ye xue shan bao chun

Primula sinonivalis I. B. Balfour & Forrest.

Herbs perennial, without bud scales at anthesis, with old withered leaves at base. Leaves in a rosette; petiole obscure to 1/2 as long as leaf blade, broadly winged; leaf blade narrowly oblanceolate to oblong-elliptic, 5-12 cm, efarinose or abaxially white farinose along margin when young, base cuneate-attenuate, margin regularly blunt denticate, apex rounded to acute. Scapes 10-20 cm, scarcely white farinose toward apex; umbels 1 or 2, 4-8-flowered; bracts linear, 8-10 mm. Flowers heterostylos. Pedicel 0.5-1.5 cm. Calyx tubular, 0.8-1.2 cm, puberulent outside, densely white farinose inside, parted to below middle; lobes lanceolate, apex acute. Calyx white purple; limb ca. 2 cm wide; lobes elliptic to obovate, margin entire. Pin flowers: corolla tube 1-1.1 cm; stamens 4 mm above base of corolla tube; style slightly exerted. Thrum flowers: corolla tube 1.5 cm; stamens toward apex of corolla tube; style reaching middle of tube. Capsule cylindric, 1.5-2 as long as calyx. Fl. Jun-Jul.

* Stony grassy slopes, wet meadows, streamsides; 3700-4300 m. SE Xizang, NW Yunnan.


单伞长柄报春 dan san chang bing bao chun

Herbs perennial, without basal bud scales and overlapping petioles. Leaves in a rosette; petiole narrowly winged, nearly as long as leaf blade; leaf blade elliptic to oblong-elliptic, 5-10 cm in fruit; umbels 8-20-flowered; bracts narrowly lanceolate, 5-14 mm. Flowers heterostylos. Pedicel 0.7-1.5 cm, elongated to 1.6-3.5 cm in fruit. Calyx tubular, 6-11 mm, parted to middle; lobes lanceolate. Corolla violet to purple; limb 0.8-1.5 cm; stamens 3-4 mm above base of corolla tube; style slightly shorter than calyx. Thrum flowers: stamens attached to apex of calyx; style ca. 2 mm. Capsule oblong, 1-2 mm as long as calyx. 2n = 22.

* Grassy mountain slopes, woodland margins. W Sichuan (Lixian Xian).

159. Primula nivalis Pallas, Reise Russ. Reich. 3: 723. 1776.

雪山报春 xue shan bao chun

Herbs perennial, with long stocks formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole broadly winged, usually slightly shorter than leaf blade; leaf blade elliptic to oblong-ovate or oblong-lanceolate, 6-16 cm, glabrous, efarinose or farinose, base attenuate, margin regularly blunt denticate, apex obtuse to acute. Scapes 10-25 cm, elongated to 35 cm in fruit; umbels 8-20-flowered; bracts narrowly lanceolate, 5-14 mm. Flowers heterostylos. Pedicel 0.7-1.5 cm, elongated to 1.6-3.5 cm in fruit. Calyx tubular, 6-11 mm, parted to middle; lobes lanceolate. Corolla violet to purple; limb 0.8-1.5 cm; stamens 3-4 mm above base of corolla tube; style slightly longer than calyx. Thrum flowers: stamens slightly above apex of calyx; style ca. 2 mm. Capsule oblong, 1-2 mm as long as calyx. 2n = 22.

* Wet meadows, shaded areas in valley marshes; 2100-3000 m. NE and NW Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan, Turkmenistan, Uzbekistan].

1a. Plants efarinose......... 159a. var. nivalis
1b. Leaves and pedicels white
farinose ............... 159b. var. farinosa

159a. Primula nivalis var. nivalis
雪山报春 (原变种) xue shan bao chun (yu an bian zhong)

Wet meadows, shaded areas in valley marshes; 2100–3000 m. NE and NW Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia, Tajikistan, Turkmenistan, Uzbekistan].

准尔报春 zhun ge er bao chun

Primula nivalis var. colorata Regel: P. nivalis var. longifolia Regel; P. nivalis var. turkestanaica Regel; P. turkestanaica (Regel) E. A. White.

Leaves white farinose abaxially, sometimes only along margin. Pedicel white farinose. Fl. Jun.

Wet meadows. NW Xinjiang [Kazakhstan, Kyrgyzstan].

深紫报春 shen zi bao chun

Primula nivalis Pallas var. melanantha Franchet, J. Bot. (Morot) 9: 449. 1895.

Herbs perennial. Rhizomes short, thick, densely covered with persistent overlapping ovate-lanceolate scales, scales 2–6 cm. Leaves in a rosette; petiole broadly winged, usually slightly longer than basal scales at anthesis; leaf blade lanceolate to oblanceolate, 5.5–12 1.5–3 cm, gradually narrowed to base; lobes lanceolate, glandular puberulent outside, usually slightly shorter than leaf blade; lobes lanceolate to narrowly oblong, usually as long as tube. Pin flowers: corolla tube ca. 1 cm; stamens ca. 4 mm above base of corolla tube; style ca. 6 mm. Flowers heterostylous. Pedicel 0.5–2 cm, glandular puberulent. Calyx tubular-campanulate, 7–11 mm, parted slightly below middle; lobes lanceolate, apex acute to obtuse. Corolla deep violet to pale purple; tube darker than lobes; limb 2–3 cm wide; lobes lanceolate to narrowly oblong, usually as long as tube. Pin flowers: corolla tube ca. 1 cm; stamens ca. 4 mm above base of corolla tube; style ca. 6 mm. Thrum flowers: corolla tube 1.2–1.3 cm; stamens ca. 8 mm above base of corolla tube; style ca. 2.5 mm. Capsule cylindric, 0.8–1.5 cm. Fl. Jun-Jul.

* Grassy mountain slopes; ca. 3500 m. W Sichuan (Kanding Xian, Zheduo Shan).

Although originally described as a variety of Primula nivalis Pallas and later associated with P. limbata I. B. Balfour & Forrest and P. russeola I. B. Balfour & Forrest, P. melanantha is much closer to P. purdomii Craib on account of its habit. It differs from all of the above mentioned species by its pubescent leaves and much smaller flowers.

岷山报春 min shan bao chun

Herbs perennial, with a long stock formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole broadly winged, usually slightly shorter than leaf blade, concealed by bud scales; leaf blade lanceolate to oblange-lanceolate or oblanceolate, 6–12 1–3 cm, initially puberulent, glabrescent, efarinose, base attenuate, margin finely crenate to subentire, apex acute to obtuse. Scapes 8–25 cm, minutely pubescent and glandular; umbels 3–15-flowered; bracts linear-lanceolate, 5–8 mm. Flowers heterostylous. Pedicel 0.5–2 cm, glandular puberulent. Calyx tubular-campanulate, 7–11 mm, parted slightly below middle; lobes lanceolate, apex acute to obtuse. Corolla deep violet to pale purple; tube darker than lobes; limb 2–3 cm wide; lobes lanceolate to narrowly oblong, usually as long as tube. Pin flowers: corolla tube ca. 1 cm; stamens ca. 4 mm above base of corolla tube; style ca. 6 mm. Thrum flowers: corolla tube 1.2–1.3 cm; stamens ca. 8 mm above base of corolla tube; style ca. 2.5 mm. Capsule cylindric, 0.8–1.5 cm. Fl. Jun-Jul.

* Wet meadows; 2700–3700 m. S Gansu, E Qinghai, S Shaanxi (Taibai Shan).

紫罗兰报春 zi luo lan bao chun

Herbs perennial, with a long stock formed by overlapping petioles and basal bud scales, with fibrous remains of leaves at base. Leaves in a rosette; petiole usually shorter than leaf blade, concealed by basal bud scales; leaf blade lanceolate to oblong-lanceolate or oblanceolate, 3–12 1–2.5 cm, efarinose to scarcely white farinose, base attenuate, margin subentire to obscurely denticulate, apex acute to obtuse. Scapes 8–20 cm, white farinose toward apex; umbels 8–12 (18)–flowered; bracts linear-lanceolate to subulate, 5–13 mm. Flowers heterostylous. Pedicel 0.5–1.5 cm, elongated to 2–5 cm in fruit, white or cream-yellow farinose. Calyx tubular-campanulate, 6–10 mm, parted to middle; lobes oblong-lanceolate, glandular puberulent outside, usually farinose inside. Corolla bluish purple to pale
purple or nearly white; limb 1.6–2 cm wide; lobes same color as or darker than tube, oblong, 9–10 4–6 mm, margin entire. Pin flowers: corolla tube 1.1–1.3 cm; stamens 3–4 mm above base of corolla tube; style slightly longer than calyx. Thrum flowers: corolla tube 1.2–1.5 cm; stamens at middle of corolla tube; style reaching middle of calyx. Capsule cylindric, ca. 2 cm as long as calyx. Fl. Jun-Jul. 2n = 22*.

* Wet meadows, moist rock crevices, thickets; 3300–4000 m. S Gansu, SE Qinghai, NW Sichuan.


大叶报春 da ye bao chun

Primula leucochnoa Handel-Mazzetti.

Herbs perennial, with a long stock formed by overlapping petioles and basal bud scales, with fibrous remains of leaves. Leaves in a rosette; petiole winged, portion exserted from basal bud scales indistinct, sometimes ca. 1/2 as long as leaf blade; leaf blade lanceolate to narrowly lanceolate, 7–15 1.2–3 cm, abaxially copiously white farinose, becoming nearly efarinose, base attenuate, margin entire to crenulate, usually narrowly revolute, apex acuminate. Scapes 25–35 cm, white farinose toward apex; umbels 1 or 2, superimposed; 5–12-flowered; bracts lanceolate to linear, 1–2.5 cm. Flowers heterostylous. Pedicel 1–4 cm, white farinose. Calyx tubular-campanulate, 0.9–1.2 cm, parted to middle or slightly below; lobes oblong to oblong-lanceolate, white farinose. Corolla deep bluish purple; tube 1.2–1.3 cm; limb ca. 2 cm wide; lobes elliptic-ovate, margin entire. Pin flowers: stamens ca. 3 mm above base of corolla tube; style nearly reaching mouth of corolla tube. Thrum flowers: stamens toward apex of corolla tube; style slightly shorter than calyx. Capsule cylindric, usually ca. 2 cm as long as calyx. Fl. Jun-Jul. 2n = 22*.

* Wet meadows, rocky streamsides; 3900–5000 m. SW Sichuan.


禾叶报春 he ye bao chun


Herbs perennial, with a long stock formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole membranous winged, wider than leaf blade, mostly concealed by basal bud scales; leaf blade linear, 2.5–7 2.4(–6) mm, tapered to base, abaxially white farinose, margin subentire, narrowly revolute, apex blunt. Scapes 3–16 cm, white farinose toward apex; umbels 1 or 2, superimposed, 2–6-flowered; bracts linear-lanceolate, 5–14 mm. Flowers heterostylous. Pedicel 0.5–2 cm, sparsely white farinose. Calyx blackish purple, tubular-campanulate, 8–10(–12) mm, sparsely glandular puberulent outside, farinose inside, parted to 3/4; lobes lanceolate. Corolla purple; tube 1–1.2(–1.4) cm; limb ca. 2.5 cm; lobes oblong to ovate-elliptic, 1–1.3 cm 5–8 mm, margin entire. Pin flowers: stamens 3–4 mm above base of corolla tube; style ca. as long as calyx. Thrum flowers: stamens at middle of corolla tube; style ca. 2 mm. Capsule unknown. Fl. Jun-Jul.

* Grassy slopes; 4000–4800 m. NW Sichuan.


大叶报春 da ye bao chun

Herbs perennial, with a long stock formed by overlapping petioles and basal bud scales, with fibrous remains of leaves at base. Leaves in a rosette; petiole broadly winged, portion exserted from basal bud scales very short to nearly as long as leaf blade; leaf blade lanceolate to narrowly lanceolate, 7–15 1.2–3 cm, usually shorter than pedicel; corolla lobes suborbicular to obovate, margin entire to denticate, usually narrowly revolute, apex acute to obtuse. Scape 10–25 cm, farinose toward apex; umbels 5–to many flowered; bracts lanceolate, 1–3.5 cm. Flowers heterostylous. Pedicel 1–3 cm, farinose. Calyx tubular, 0.8–1.5 cm, parted slightly below middle or to 3/4; lobes lanceolate to oblong, usually stained with purple outside, white farinose inside, apex acute to subobtuse. Corolla purple to purple; limb ca. 2 cm wide; lobes subobtuse to obovate, margin entire to emarginate. Pin flowers: corolla tube slightly longer than calyx; stamens ca. 4 mm above base of corolla tube; style ca. as long as calyx. Thrum flowers: corolla tube ca. 1.5 times as long as calyx; stamens at upper 1/3 of corolla tube; style ca. 1/2 as long as calyx. Capsule cylindric, 1–1.3 cm, ca. 2 as long as calyx. 2n = 22.

Grassy mountain slopes, rock crevices, wet meadows, marshes; 4000–5200 m. SW Xinjiang, Xizang [Afghanistan, Bhutan, India, Kashmir, Nepal, Pakistan, Sikkim].

1a. Leaf blade 4–10 0.5–1.2 cm; scapes 2–8(–20) cm; bracts oblong-lanceolate, leaflike, longer than pedicel; corolla lobes obtusely 2-lobed 165c. var. moorcroftiana

1b. Leaf blade 10–25 1.5–4.5 mm; scapes 15–60 cm; bracts linear-lanceolate, usually shorter than pedicel; corolla lobes entire or only slightly notched.
2a. Leaves abaxially white farinose; calyx lobes lanceolate 165a. var. *macrophylla*

2b. Leaves and inflorescences yellow farinose; calyx lobes oblong 165b. var. *atra*

165a. *Primula macrophylla* var. *macrophylla*

大叶报春（原变种）da ye bao chun (yuan bian zhong)

*Primula nivalis* Pallas var. *macrophylla* (D. Don) Pax; *P. purpurea* Royle; *P. stuartii* Wallich var. *purpurea* (Royle) Watt.

Leaf blade 10–25 1.5–4.5 cm, abaxially white farinose or sometimes nearly efarinose. Scapes 15–60 cm; bracts linear-lanceolate, usually shorter than pedicel. Calyx lobes usually stained with purple outside, lanceolate, apex acute. Corolla lobes entire or only slightly notched. Fl. Jun–Jul.

Grassy mountain slopes, rock crevices; 4500–5200 m. N and W Xizang [Afghanistan, Bhutan, India, Kashmir, Nepal, Sikkim].


黄粉大叶报春 huang fen da ye bao chun


* Wet meadows: 4500–5000 m. S and SE Xizang.


长苞大叶报春 chang bao da ye bao chun


Wet meadows, marshes; 4000–4700 m. SW Xinjiang, W Xizang [India, Kashmir, Nepal, Pakistan, Sikkim].


展萼雪山报春 zhan e xue shan bao chun

Herbs perennial, with a short rootstock, base with few bud scales. Leaves in a rosette; petiole broadly winged, initially indistinct, slightly longer than leaf blade at end of anthesis; leaf blade elliptic to oblong, sometimes lanceolate to oblanceolate, 5–15 1.5–5 cm, abaxially copiously fugacious cream-white farinose, base attenuate, margin finely denticulate and narrowly revolute, apex rounded to obtuse. Scapes (10–)15–30 cm, farinose toward apex; umbels (3–)5–12-flowered; bracts narrowly lanceolate, 1.3–2 cm. Flowers heterostylos. Pedicel initially often shorter than bracts, elongated to 4 cm in fruit, white farinose. Calyx usually blackish purple, tubular-campanulate, 0.9–1.3 cm, copiously white farinose inside and on margin, parted to 2/3 or below; lobes not spreading, oblong-lanceolate, apex obtuse to acute. Corolla deep purplish rose to deep indigo-purple; limb 2–3 cm wide; lobes obovate to suborbicular, margin entire. Pin flowers: corolla tube 1.1–1.3 cm; stamens ca. 5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube 1.3–1.5 cm; stamens toward apex of corolla tube; style 4–5 mm. Capsule cylindric, nearly as long as calyx. Fl. Aug. 2n = 22.*

Primula macrophylla D. Don var. ninguida (W. W. Smith) W. W. Smith & H. R. Fletcher.

Herbs perennial, with a long stock formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole broadly winged, nearly as long as to slightly longer than leaf blade; leaf blade lanceolate to oblanceolate, 3.5–9 × 1.5 cm, abaxially cream-yellow farinose, adaxially puberulent, base attenuate, margin crenulate, apex acute. Scapes ca. 15 cm, scarcely farinose toward apex; umbels 3–15-flowered; bracts narrowly lanceolate, ca. 1 cm. Pedicel 5–10 mm, cream-white farinose. Flowers heterostylous. Calyx tubular, 8–10 mm, parted nearly to base; lobes linear–oblong, ca. 1 cm wide, sparsely puberulent, base attenuate, margin crenulate, apex obtuse to subacuminate. Scapes ca. 15 cm, scarcely farinose toward apex; umbels 1(or 2), 3–10-flowered; bracts narrowly lanceolate, ca. 1 cm long. Pedicel 5–15 mm, parted nearly to base; lobes linear–oblanceolate, ca. 1 cm wide, abaxially fugacious on older leaves, base attenuate, margin crenulate, apex obtuse. Scape (5–)20–40 cm, yellow farinose. Calyx tinged with purple, tubular–campanulate, 8–11 mm, parted nearly to base; lobes linear–oblong, ca. 1 cm wide, abaxially farinose or sometimes efarinose, base attenuate, margin entire to obscurely denticulate, usually narrowly revolute, apex acute. Scape (5–)15–20 cm, farinose toward apex; umbels 1(or 2), (2–)5–10-flowered; bracts linear–oblanceolate, 0.7–1.5 cm. Flowers heterostylous. Pedicel 1–2 cm, elongated to 4 cm in fruit, pale yellow farinose. Calyx tubular–campanulate, 8–11 mm, usually blackish outside, densely farinose inside, parted slightly below middle; lobes narrowly oblong to lanceolate, apex subacute. Calyx deep purple or violet; tube 1.1–1.3 cm; limb 1.5–2 cm wide; lobes oblong–elliptic, 0.8–1.2 cm; 3–5 mm, margin entire. Pin flowers: corolla tube 1.3–1.4 cm; stamens near middle of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube 1.4–1.5 cm; stamens toward apex of corolla tube; style reaching middle of tube. Capsule cylindric, longer than calyx. Fl. Jun.

* Moist meadows, streamside margins of woodlands and thickets; 3900–5000 m, SE Xizang (Mainling Xian, Nyingchi Xian).


紫花雪山报春 zhi hua xue shan bao chun

Primula ingens W. W. Smith & Forrest; P. sinoplantaginea I. B. Balfour ex Hutchinson.

Herbs perennial, with a long stock formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole broadly winged, portion exserted from basal bud scales very short to 1/2 as long as leaf blade at fruiting; leaf blade oblong–ovate to lanceolate, 5–20(–25) × 1–5 cm, abaxially densely bright yellow farinose, often fugacious on older leaves, base attenuate, margin denticulate to subentire, apex acute to obtuse. Scapes (15–)20–50(–70) cm, yellow farinose toward apex; umbels 1–4, superimposed, 3–10-flowered; bracts lanceolate to subulate, 0.5–1.5 cm. Flowers heterostylous. Pedicel 1–2.5 cm, elongated to 6 cm in fruit, densely bright yellow farinose. Calyx tubular–campanulate, 8–10 × 0.6–2 cm; lobes oblong–lanceolate, densely so inside. Corolla purplish violet, rarely white; tube 1.1–1.3 cm; limb 2–3 cm wide; lobes broadly elliptic to subobovate, margin entire. Pin flowers: stamens 5–7 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style ca. 3 mm. Capsule cylindric, ca. 2 cm as long as calyx. Fl. May–Jul. 2n = 22*, 22 + 2–4f*, 44*, 44 + 6–12f*.

* Wet meadows, woodland margins, among Rhododendron; 3000–4400 m, SW Sichuan, E Xizang, N and NW Yunnan.


车前叶报春 che qian ye bao chun

Herbs perennial, with a long stock formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole broadly winged, usually nearly as long as leaf blade; leaf blade lanceolate, (3–)4–10 × 0.6–1.5 cm, rarely linear and only 3–4 mm wide, sparsely pale yellow farinose or sometimes efarinose, base attenuate, margin entire to obscurely denticulate, usually narrowly revolute, apex acute. Scape (5–)15–20 cm, farinose toward apex; umbels 1(or 2), (2–)5–12-flowered; bracts linear–lanceolate, 0.7–1.5 cm. Flowers heterostylous. Pedicel 1–2 cm, elongated to 4 cm in fruit, pale yellow farinose. Calyx tubular–campanulate, 8–11 mm, usually blackish outside, densely farinose inside, parted slightly below middle; lobes narrowly oblong to lanceolate, apex subacute. Corolla deep purple or violet; tube 1.1–1.3 cm; limb 1.5–2 cm wide; lobes oblong–elliptic, margin entire. Pin flowers: stamens ca. 4 mm above base of corolla tube; style slightly longer than calyx. Thrum flowers: stamens at upper 1/3 of corolla tube; style reaching middle of tube. Capsule cylindric, 1–2 as long as calyx. Fl. May–Jul. 2n = 22*.

* Wet meadows, woodland margins; 3600–4500 m, SW Sichuan, NW Yunnan.


大通报春 da tong bao chun

Herbs perennial, with a stock 3–6 cm formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole winged, nearly as long as leaf blade; leaf blade elliptic to oblong–elliptic, (3–)6–10 × 2–4 cm, abaxially fugacious, white farinose, base short attenuate, margin denticulate, apex obtuse to subacuminate. Scapes 16–24 cm, farinose toward apex; umbels 3–7-flowered; bracts linear, 1–1.5 cm, usually farinose, slightly longer than pedicel. Flowers heterostylous. Pedicel 5–10 mm, copiously farinose. Calyx tinged with purple, tubular–campanulate,
1–1.1 cm, scarcely farinose outside, more densely so inside, parted to 2/3; lobes lanceolate to oblong-lanceolate, apex acute. Corolla pale lavender-blue; tube darker in color, ca. 1.3 cm; limb 2–2.5 cm wide; lobes broadly obovate 9–10 8–9 mm, emarginate. Pin flowers: stamens ca. 5.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens ca. 1.1 cm above base of corolla tube; style slightly exceeding middle of tube. Capsule cylindric, ca. 2 cm as long as calyx. Fl. Jun–Jul.

* Shaded rock crevices: 4000–5000 m. E Qinghai (Datong Xian).


大果报春 da guo bao chun

Primula macrophylla D. Don var. macrocarpa (Watt) W. W. Smith & H. R. Fletcher; P. nivalis var. macrocarpa (Watt) Pax; P. stuartii Wallich var. macrocarpa Watt.

Herbs perennial, with a stock formed by overlapping petioles and basal bud scales to 4 cm. Petiole broadly winged, usually shorter than leaf blade; leaf blade lanceolate to linear-lanceolate, 5–18 0.5–2 cm, abaxially pale yellow farinose, base attenuate, margin finely denticulate, narrowly revolute, apex acute to subobtuse. Scapes 3–12 cm, farinose toward apex; umbels 1-8-flowered; bracts linear-lanceolate, 0.7–2.2 cm, apex obtuse. Flowers heterostylos. Pedicel 0.6–1.8 cm, elongated to 4.5 cm in fruit, farinose. Calyx purplish brown outside, copiously yellow farinose inside, tubular-campanulate, 0.9–1.2 cm, parted to near base; lobes oblong-oblancoate, apex rounded. Corolla rose to purplish rose, rarely white; tube nearly as long as calyx, 1–1.3 cm wide; lobes obovate, 0.8–1.2 0.6–1.4 cm, emarginate. Pin flowers: stamens ca. 4.5 mm above base of corolla tube; style slightly exceeding middle of tube. Capsule cylindric, (1.5–) 1.8–3 cm. Fl. Jun–Jul.

Meadows, gullies: 4000–4600 m. S Xizang [Bhutan, Nepal].


美花报春 mei hua bao chun

Herbs perennial, with a bulblike stock formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole initially inconspicuous, nearly as long as leaf blade at anthesis; leaf blade narrowly ovate to obovate-oblong or oblancoate, 3–9 1.2–3 cm at anthesis, enlarged to 18 cm at fruiting. abaxially copiously greenish yellow farinose, base cuneate-attenuate, margin crenulate, apex rounded to obtuse. Scapes 10–30 cm, elongated to 60 cm in fruit, pale yellow farinose on distal part; umbels 3–10-flowered; bracts lanceolate to subulate, 5–12 mm. Flowers heterostylos. Pedicel slightly shorter than bracts at beginning of anthesis, elongated to 2–3 cm as long as bracts in fruit, copiously farinose. Calyx tubular-campanulate, 6–13(–15) mm, densely yellow farinose inside, parted to middle or below; lobes narrowly oblong, apex obtuse to acute. Corolla purple, rose, or yellow, rarely white; limb 2–3 cm wide; lobes broadly obovate, emarginate. Capsule cylindric, slightly longer than calyx.

Pastures, meadows among Rhododendron, rocks of steep humus-clad slopes; 3700–4500 m. SE Xixang, Yunnan [NE India (Assam), N Myanmar].

1a. Corolla yellow...... 173c. subsp. mishmiensis
1b. Corolla purple, rose, or white.

2a. Corolla tube less than 1.5 cm as long as calyx 173a. subsp. calliantha
2b. Corolla tube ca. 2 cm as long as calyx .......... 173b. subsp. bryophila

173a. Primula calliantha subsp. calliantha

美花报春 (原亚种) mei hua bao chun (yuán yà zhòng)

Leaf blade usually obovate at anthesis. Calyx 1–1.3(–1.5) cm. Pin flowers: corolla tube ca. 1.3 cm, gradually dilated upward; stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube cylindric, ca. 1.4 cm, expanded near insertion of stamens; stamens toward tube apex; style ca. 3 mm. Fl. Apr–Jun, fr. Jul–Aug.

* Pastures; ca. 4000 m. W Yunnan.


黛粉美花报春 dai fen mei hua bao chun


Leaf blade usually obovate at anthesis. Calyx 6–8 (–9) mm. Pin flowers: corolla tube 1.3–1.4 cm; stamens slightly below middle of tube; style reaching annulus. Thrum flowers: tube 1.5–1.7 cm; stamens slightly below tube mouth; style ca. as long as calyx. Fl. Apr–Jun.


Leaf blade narrowly ovate to oblanceolate. Calyx ca. 1 cm. Corolla yellow; tube 1.2–1.5 cm; limb ca. 2.5 cm wide. Pin flowers: stamens below middle of corolla tube; style slightly shorter than tube. Thrum flowers: stamens toward apex of tube; style ca. 3 mm.

Rocks of steep humus-clad slopes, among *Rhododendron*; 3700–4000 m. SE Xizang [NE India (Assam)].


Herbs perennial; rootstock short, base with few bud scales. Leaves in a rosette; petiole initially very short, nearly as long as leaf blade at fruiting; leaf blade obovate to oblanceolate, 5–12 cm wide, enlarged to 15 cm at fruiting, abaxially pale yellow farinose when young, soon efarinose, base attenuate, rounded to cordate, margin denticulate, apex rounded to obtuse. Scape 5–30 cm, sometimes to 40 cm, yellow farinose toward apex; umbels 1 or 2, superimposed, 5–10-flowered; bracts linear, 5–8 mm, densely glandular. Flowers heterostylyous. Pedicel nearly as long as bracts, elongated to 4.5 cm in fruit. Calyx tubular-campanulate, 6–9 mm, minutely glandular, parted to middle or below: lobes lanceolate to sublinear, apex obtuse to acute. Corolla yellow; limb ca. 1.5 cm wide; lobes obovate to suborbicular, with 4–6 teeth at apex. Pin flowers: corolla tube 1.3–1.5 cm; stamens at middle of corolla tube; style nearly as long as tube. Thrum flowers: corolla tube 1.5–1.8 cm; stamens toward apex of corolla tube; style slightly exceeding middle of tube. Capsule cylindric, 2–3 × as long as calyx. 2n = 18, 22.

Woodland margins, wet meadows, *Rhododendron* scrub, coniferous forests; 3800–4300 m. S Xizang [Bhutan, NE India, Sikkim].

1a. All leaf bases attenuate 176a. var. elongata 1b. At least some leaf bases cordate to rounded ... 176b. var. barnardoana

176a. Primula elongata var. elongata


Rhododendron scrub, coniferous forests: 4000–4300 m. S Xizang (Wangxi Xian) [Bhutan].


圆瓣黄花报春 yuan ban huang hua bao chun

Primula ochracea Pax & K. Hoffmann.

Herbs perennial; stock 2–8 cm, formed by overlapping petioles and basal bud scales. Leaves in rosette; petiole broadly winged, nearly as long as leaf blade; leaf blade elliptic in outer leaves, oblong–lanceolate or lanceolate in inner leaves, (3–)5–15 (1–)1.5–3 cm, tapered to base, abaxially cream white farinose, becoming efarinose, margin subentire to finely denticulate, usually narrowly revolute, apex obtuse to acute. Scapes 10–30 (–50) cm, cream-yellow farinose near apex when young; umbels 1–3, superimposed, 4–8–15 cm, white farinose. Bracts lanceolate to subulate, 0.5–1.8 cm, brown punctate, margin denticulate, apex obtuse to acute.

Calyx narrowly campanulate, 7–12 mm, brown punctate, parted to middle; lobes oblong–lanceolate, (3–)5–1.5 cm. Flowers heterostylos. Pedicel 0.5–2 cm, elongated to 7.5 cm in fruit, pale yellow farinose. Calyx campanulate, 7–12 mm, glandular outside, densely farinose inside, parted to middle; lobes oblong–lanceolate. Corolla bright yellow to pale yellow, rarely white; tube 1.2–1.4 cm; limb 1.8–2.5 cm wide; lobes suborbicular to oblong, margin entire. Pin flowers: stamens ca. 4.5 mm above base of corolla tube; style ca. 2/3 as long as tube. Thrum flowers: staminodes at middle of corolla tube; style nearly as long as tube. Capsule unknown. Fl. Jun.

* W Sichuan (Batang Xian).


滋圃报春 zi pu bao chun

Herbs perennial, efarinose, without basal bud scales. Leaves in a rosette; petiole broadly winged, not enveloped at base, nearly as long as to slightly shorter than leaf blade; leaf blade oblong to oblongate, 10–25–(–30) 2–4 cm, glabrous, minutely brownish punctate, base attenuate, margin crenate–dentate, apex obtuse to acute. Scapes 20–38 cm; umbels 1, 6–14–flowered; bracts acuminate–subulate, 0.8–1.5 cm, brown farinose. Bracts acuminate-subulate, 0.8–1.5 cm, base cuneate. Flowers heterostylos. Pedicel 1.5–3 cm. Calyx tubular, 1.2–1.4 cm, brown punctate, parted to middle or slightly below; lobes oblong to lanceolate. Corolla pale yellow; limb 1.5–1.8 cm diam.; lobes oval to suborbicular, 7–9 cm 6 mm, often with reddish blotches, apex rounded.

Pin flowers: corolla tube ca. as long as calyx; stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers: corolla tube slightly longer than calyx; stamens toward apex of corolla tube; style reaching middle of tube. Capsule cylindric, longer than calyx. Fl. Jun.

* Mixed forests, glades; 3200–4000 m. W Sichuan (Baoxing Xian).


胭脂花 yan zhi hua

Herbs perennial, efarinose, without basal bud scales at anthesis. Leaves in a rosette; petiole broadly winged, usually inconspicuous, occasionally nearly as long as leaf blade; leaf blade obovate-elliptic to narrowly elliptic or oblongate, (3–)5–20 (–27) 1.5–3 (–4) cm, tapered at base, margin denticulate, rarely subentire, apex obtuse to acute. Scapes 20–45 (–70) cm; umbels 1–3, superimposed, 6–10 (–20)–flowered; bracts lanceolate, 3–7 mm, connate at base. Flowers heterostylos. Pedicel 1–3 (–4) cm. Calyx tubular–campanulate 6–10 mm, parted to 1/3; lobes triangular, glandular ciliolate. Corolla intense crimson or pale yellow; limb ca. 1.5 cm wide; lobes strongly reflexed, narrowly oblong, 4–8 2.5–3 mm, margin entire. Pin flowers: corolla tube 1.1–1.3 cm; stamens 4–5 mm above base of corolla tube; style nearly as long as tube. Thrum flowers: corolla tube 1.4–1.9 cm; stamens slightly below annulus; style 3–4 mm. Capsule slightly longer than calyx. Fl. May–Jun. 2n = 22*.
Moist areas in woodlands; 1800–2900 m. Beijing Shi, Hebei, Jilin, Nei Mongol, Shanxi, Shannxi [Mongolia].

1a. Corolla intense crimson 180a. var. maximowiczii
1b. Corolla pale yellow 180b. var. flaviflora

180a. Primula maximowiczii var. maximowiczii
胭脂花（原变种）yan zhi hua (yuan bian zhong)

180b. Primula maximowiczii var. flaviflora

黄胭脂花 huang yan zhi hua

* Grassy slopes; ca. 1800 m. Beijing Shi (Baihua Shan).

折瓣雪山报春 zhe ban xue shan bao chun

Herbs perennial, base with bud scales and withered leaves. Leaves in a rosette; petiole broadly winged, usually slightly shorter than leaf blade; leaf blade oblanceolate to obovate, 6–15 2–5 cm, erafinose or farinose along margin abaxially, base attenuate, margin dentate to serrate-dentate, apex acute to obtuse. Scapes 20–60 cm; umbels 1–3, superimposed, 5–9-flowered; bracts linear-lanceolate, 0.5–1.5 cm, margin usually farinose. Flowers heterostylos. Pedicel 1–3(–4) cm, erafinose or occasionally farinose. Calyx green or tinged with purple, tubular-campanulate, 1–1.1 cm, parted to middle; lobes lanceolate, apex acute. Corolla yellow or purple; tube 1.4–1.7 cm; lobes oblong, 7–10 ca. 3 mm, strongly reflexed. Thrum flowers: stamens 1–1.1 cm above base of corolla tube; style ca. 3 mm. Capsule slightly longer than calyx. 2n = 22*.

* Rock crevices, thickets: 4000–4600 m. E Xizang.

1a. Corolla pale yellow or tube tinged with purple 181a. var. advena
1b. Corolla and tube dark purple 181b. var. euprepes

181a. Primula advena var. advena


紫折瓣报春 zi zhe ban bao chun


Corolla uniformly dark purple.

* Damp meadows; 4000–4300 m. E Xizang.

甘青报春 gan qing bao chun

Herbs perennial, erafinose, without basal bud scales at anthesis. Leaves in a rosette; petiole indistinct to 1/2 as long as leaf blade, rarely nearly as long as leaf blade; leaf blade elliptic to elliptic-oblanate or lanceolate, 4–15(–20) 2–3 cm, tapered at base, minutely brown punctate, margin denticulate, rarely subentire, apex obtuse to acute. Scapes to 50 cm; umbels 1–3, superimposed, 5–9-flowered; bracts linear-lanceolate, 6–10(–15) mm. Flowers heterostylous. Pedicel 1–4 cm, puberulent. Calyx tubular, 1–1.3 cm, parted 1/3–1/2; lobes triangular to lanceolate, ciliolate. Corolla intense crimson or yellow; lobes strongly reflexed, linear, 7–10 × 1–2 mm. Pin flowers: corolla tube ca. as long as calyx; stamens ca. 2.5 mm above base of corolla tube; style ca. 3 mm. Thrum flowers: corolla tube ca. 1.5 as long as calyx; stamens at level of calyx; style ca. 2 mm. Capsule 3–5 mm longer than calyx. 2n = 22*.

* Woodlands, streamsides, Picea-Rhododendron forests; 3300–4700 m. S Gansu, E Qinghai, NW Sichuan, E Xizang.

1a. Corolla deep crimson to blackish purple ......... 182a. var. tangutica
1b. Corolla pale yellow or pink 182b. var. flavescens

182a. Primula tangutica var. tangutica

甘青报春（原变种） gan qing bao chun (yuan bian zhong)

Primula silenantha Pax & K. Hoffmann; Primula tangutica var. serrata W. W. Smith & H. R. Fletcher.


* Woodlands, streamsides: 3300–4700 m. S Gansu, E Qinghai, NW Sichuan.

**黄甘青报春 huang gan qing bao chun**


* Damp meadows, *Picea-Rhododendron* forests; 3800–4400 m. W Sichuan, E Xizang.


**四川报春 si chuan bao chun**

*Primula declinis* I. B. Balfour & Forrest; *P. decurva* I. B. Balfour & Forrest; *P. gagnepainiana* Handel-Mazzetti.

Herbs perennial, efarinose, without basal bud scales at anthesis. Leaves in a rosette; petiole usually shorter to occasionally nearly as long as leaf blade; leaf blade ovate to oblong-lanceolate, 5–12 cm × 3.5–7 mm, base attenuate, margin denticulate, apex acute to obtuse. Scapes 35–75 cm; umbels 1 or 2, superimposed, 3–5-flowered; bracts lanceolate, 0.8–1.5 cm, apex acuminate. Flowers heterostylos. Calyx tubular, 8–10 mm, parted to middle; lobes oblong-lanceolate. Corolla pale yellow; tube 1.4–1.5 cm; lobes reflexed, lying against tube, oblong, 6–8 mm. Pin flowers: stamens 6–7 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule cylindrical, nearly 2 as long as calyx. Fl. Jul.

* Open mountain pastures, wet alpine meadows; 4000–4600 m. SW Sichuan, N Yunnan.


**粗葶报春 cu ting bao chun**

Herbs perennial, efarinose, without basal bud scales at anthesis. Leaves in a rosette; petiole broadly winged, indistinct to 1/2 as long as leaf blade; leaf blade obviate-elliptic to oblong-lanceolate at base, 1–2.5 cm × 3.5–7 mm, base long attenuate, margin crenate-denticulate, apex subrounded to slightly pointed. Scapes 35–75 cm; umbels usually 2–4, superimposed, 4–5-flowered; bracts lanceolate, 0.8–1.5 cm, apex acuminate. Flowers heterostylos. Pedicel 1–3.5 cm. Calyx narrowly campanulate, 8–10 mm, parted to middle or below; lobes lanceolate, apex acute to subacuminate. Corolla pale yellow; tube 5–6 mm longer than calyx; limb 1.5–2 cm wide; lobes oblong, 8–10 cm, apex obtuse. Pin flowers: stamens near middle of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule cylindrical, nearly 2 as long as calyx. Fl. Jul.

* Open mountain pastures, wet alpine meadows; 4000–4600 m. SW Sichuan, N Yunnan.


**心叶黄花报春 xin ye huang hua bao chun**

*Primula yuana* Chen.

Herbs perennial, efarinose, with few basal bud scales at anthesis. Leaves in a rosette; petiole 4–10 mm, narrowly winged; leaf blade ovate, 1.5–3.5 cm, base rounded to shallowly cordate, margin denticulate, apex acute. Scapes 16–29 cm; umbels 2–6-flowered; bracts linear-lanceolate, 5–7 mm. Flowers heterostylos. Pedicel 6–10 mm, elongated to 2 cm in fruit. Calyx tubular, 6–8 mm, parted to near middle; lobes lanceolate, apex acute. Corolla cream-yellow; tube 1.2–1.3 cm; lobes usually strongly reflexed, oblong, 5–7 mm. Pin flowers: stamens at middle of corolla tube; style nearly as long as tube. Thrum flowers with positions reciprocal. Capsule unknown. Fl. Jul.

* Shaded areas near rocks; ca. 4000 m. SW Sichuan (Jiulong Xian, Yajiang Xian).


**陕西报春 shaan xi bao chun**

Herbs perennial, efarinose, without basal bud scales at anthesis. Leaves in a rosette; petiole narrowly winged, nearly as long as to longer than leaf blade; leaf blade oblong to elliptic or ovate, rarely lanceolate, 2.5–8 cm, abaxially glaucous, adaxially dark green, base broadly cuneate, rarely subrounded, margin denticulate, apex acute to obtuse. Scapes 16–29 cm; umbels 1 or 2, superimposed, 3–5-flowered; bracts lanceolate, 5–9 mm. Flowers heterostylos. Pedicel 0.5–5 cm. Calyx tubular, 8–10 mm, parted to middle or slightly below; lobes lanceolate to oblong-lanceolate. Corolla yellow; limb 1.5–1.8 cm wide; lobes oblong, 7–9 mm, margin entire. Pin flowers: corolla tube 1.2–1.3 cm; stamens toward middle of tube; style reaching mouth of tube. Thrum flowers: corolla tube 1.4–1.8 cm; stamens toward apex of corolla tube; style ca. 4 mm. Capsule cylindrical, slightly longer than calyx. Fl. Jul.

* Open forests, damp rocks; 2500–3600 m. Shaanxi (Taibai Shan).


Herbs perennial; stock 2-5 cm, formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole broadly winged, initially concealed by bud scales, nearly as long as leaf blade at end of anthesis; leaf blade narrowly oblong-lanceolate, (4-)6-20 cm long, 1.2-4.5 cm at anthesis, abaxially olive-colored farinose, base attenuate, margin regularly blunt dentate, apex acute. Scapes 1-3 cm, scarcely farinose. Calyx (0.8-1.1) cm, parted slightly below middle; lobes oblong-lanceolate to lanceolate, usually farinose inside, apex subacute. Corolla rose-purple or nearly efarinose, base attenuate, margin regularly serrate to crenate, apex obtuse to acute. Scapes 20-45 cm, farinose on upper part; umbels 1, 5-6-flowered; bracts lanceolate to subulate, 6-10 mm. Flowers nodding, heterostylous. Pedicel 1-3 cm, elongated to 5 cm in fruit, yellow farinose. Calyx tubular-campanulate, 8-10(-15) mm, yellow farinose, parted to middle or slightly below; lobes oblong, apex rounded to obtuse. Corolla pale yellow or white, campanulate, exannulate; tube 1.4-1.6 cm; limb 2-3 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens near middle of corolla tube; style nearly reaching mouth. Thrum flowers with positions reciprocal. Capsule cylindrical, ca. as long as to slightly longer than calyx. Fl. Jun-Jul. Zn = 22.

Primula agleniana var. alba Forrest; P. agleniana var. atrocrocea Ward.

Herbs perennial; bulblike stock formed by overlapping basal bud scales. Petiole ca. as long as to slightly shorter than leaf blade, usually longer at fruiting; leaf blade lanceolate to oblanceolate, 10-25 cm long, 2-5 cm, abaxially greenish yellow farinose or nearly efarinose, base attenuate, margin laciniate-dentate, apex acute. Scapes 20-40 cm, sparingly farinose toward apex; umbels 2-5(-8)-flowered; bracts lanceolate, 5-10 mm. Flowers heterostylous. Pedicel 1.5-3(-4) cm, elongated to 6 cm in fruit, densely minutely glandular. Calyx campanulate, 1.1-1.5 cm, glandular, parted to near middle; lobes oblong, apex obtuse to rounded. Corolla pale yellow or cream-white, rarely white or pink, campanulate, ca. 3 cm; exannulate; limb 3-4 cm wide; lobes broadly obovate to orbicular, ca. 1 cm, slightly emarginate. Pin flowers: corolla tube ca. as long as calyx; stamens at middle of tube; style ca. 1 cm. Thrum flowers: corolla tube slightly longer than calyx; stamens at level of calyx; style ca. 2 mm. Capsule cylindrical, ca. as long as to slightly longer than calyx. Fl. May-Jun.

* Damp meadows, woodland margins, Rhododendron thickets; 3600-4000 m. SW Sichuan, NW Yunnan [N Myanmar].


斜花雪山报春 xie hua xue shan bao chun

Herbs perennial; stock 5-7 cm, formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole winged, usually slightly shorter than leaf blade; leaf blade lanceolate to oblanceolate or narrowly obovate, 8-20 cm long, 1.5-4.5 cm, abaxially pale yellow farinose, base attenuate, margin regularly serrate to crenate, apex obtuse to acute. Scapes 20-55 cm, farinose on upper part; umbels 1, 5-6-flowered; bracts lanceolate to subulate, 6-10 mm. Flowers nodding, heterostylous. Pedicel 1-3(-5) cm, elongated to 5 cm in fruit, yellow farinose. Calyx tubular-campanulate, 8-10(-15) mm, yellow farinose, parted to middle or slightly below; lobes oblong, apex rounded to obtuse. Corolla pale yellow or white, campanulate, exannulate; tube 1.4-1.6 cm; limb 2-3 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens near middle of corolla tube; style nearly reaching mouth. Thrum flowers with positions reciprocal. Capsule cylindrical, ca. as long as to slightly longer than calyx. Fl. Jun-Jul. Zn = 22.

* Wet meadows, woodlands; 3000-4100 m. S Xizang [Bhutan, NE India, Nepal, Sikkim].


镰叶雪山报春 lian ye xue shan bao chun

Herbs perennial; stock 2-5 cm long, bulblike, formed by overlapping petioles and basal bud scales. Petiole indistinct to 1/2 as long as leaf blade; leaf blade linear-lanceolate, 5-20 cm at anthesis, elongated to 30 cm at fruiting, 5-10 mm wide, base attenuate, margin serrate, apex acute. Scapes 10-20 cm; umbels 1-2(-4)-flowered; bracts lanceolate, 0.7-1.5 cm. Flowers heterostylous. Pedicel 1.5-2 cm, elongated to 5.5 cm in fruit. Calyx cupular, 5-8 mm, parted to middle; lobes subquadrangular, ca. 2.5 mm wide, apex rounded to truncate. Corolla yellow, exannulate; tube 1.2-1.3 cm; limb 2-3 cm wide; lobes depressed orbicular, ca. 1 cm wide, margin entire. Pin flowers: stamens ca. 4.5 mm above base of corolla tube; style ca. 8 mm. Thrum flowers with positions reciprocal. Capsule slightly longer than calyx.
1. Plants efarinose

1a. Plants in alpine scrub; ca. 3700 m. E Xizang (Mainling Xian, 麦克岭 Xian).

1b. Plants in alpine scrub; ca. 3700 m. E Xizang (Mainling Xian, 麦克岭 Xian).

190a. Primula falcifolia var. falcifolia

镰叶雪山报春 (原变种) lian ye xue shan bao chun (yuan zhong)


190b. Primula falcifolia var. farinifera C. M. Hu

波密镰叶报春 bo mi lian ye bao chun

Abaxial surface of leaves, pedicel, and calyx pale yellow farinose. Fl. Jul.

190c. Primula younsahordiana I. B. Balfour & Cave


Herbs perennial: rhizome short, covered with withered leaves. Leaves in a rosette; petiole nearly as long as to 2-3 as long as leaf blade, dilated and sheathed at base; leaf blade oblong to elliptic or obovate to suboblong, 1-8 1-2.5 cm, abaxially copiously white farinose, adaxially densely glandular puberulent, base truncate or abruptly constricted and short decurrent, deeply dentate, apex rounded. Scape 2.1-2.5 cm, sparsely glandular; umbels 1-9-flowered; bracts linear to linear-lanceolate, 0.7-1.5 cm, farinose. Flowers heterostylous. Pedicel 1-2 cm, elongated to 4 cm in fruit, white farinose. Calyx tubular to tubular-campanulate, (5-)6-11 mm, white farinose, parted to 2/3 or below; lobes linear-lanceolate to narrowly oblong, apex acute to obtuse, rarely dentate. Corolla pale purple; tube (0.7-)0.9-1.3 cm; limb ca. 1.5 cm wide; lobes broadly obovate to suborbicular, margin entire to erose-crenulate. Pin flowers: stamens 3.5-4 mm above base of corolla tube; style ca. as long as tube. Thrum flowers: stamens 7-8 mm above base of corolla tube; style reaching middle of tube. Capsule globose, included in calyx. Fl. Jun.

Shaded rock crevices; 4800-5000 m. S Xizang (Bhutan, NE India, Nepal, Sikkim).

191. Primula littledalei I. B. Balfour & Watt

Primula consocia W. W. Smith.

Herbs perennial, base with withered leaves. Leaves in a rosette; petiole narrowly winged, 2-3 as long as leaf blade; leaf blade ovate to ovate-lanceolate, 2.5-5 1.5-2.5 cm, base cordate to rounded or cuneate, margin denticulate, apex acute. Scape 12-20 cm, 1-3-flowered; bracts linear, 3-8 mm. Flower heterostylous. Pedicel 1-2 cm. Calyx green or tinged with red, cupular, 7-10 mm, parted to middle; lobes subquadrantragular, apex rounded. Corolla yellow, exannulate; limb to 3.5 mm wide; lobes suborbicular, ca. 1.5 cm, wide, slightly emarginate. Pin flowers: corolla tube ca. 1.5 cm; stamens ca. 5 mm above base of corolla tube; style ca. 1.1 cm. Thrum flowers: corolla tube ca. 1.7 cm; stamens toward tube apex; style ca. 5 mm. Capsule cylindrical, ca. as long as calyx. Fl. Jun.

* Meadows: ca. 4500 m. E Xizang (Mainling Xian, 麦克岭 Xian, Nyingchi Xian).

192. Primula caveana W. W. Smith

Herbs perennial; stock 2-5 cm long, bulblike, formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole narrowly winged, 2-3 as long as leaf blade; leaf blade ovate to ovate-lanceolate, 2.5-5 1.5-2.5 cm, base cordate to rounded or cuneate, margin denticulate, apex acute. Scape 12-20 cm, 1-3-flowered; bracts linear, 3-8 mm. Flower heterostylous. Pedicel 1-2 cm. Calyx green or tinged with red, cupular, 7-10 mm, parted to middle; lobes subquadrantragular, apex rounded. Corolla yellow, exannulate; limb to 3.5 mm wide; lobes suborbicular, ca. 1.5 cm, wide, slightly emarginate. Pin flowers: corolla tube ca. 1.5 cm; stamens ca. 5 mm above base of corolla tube; style ca. 1.1 cm. Thrum flowers: corolla tube ca. 1.7 cm; stamens toward tube apex; style ca. 5 mm. Capsule cylindrical, ca. as long as calyx. Fl. Jun.

* Meadows: ca. 4500 m. E Xizang (Mainling Xian, 麦克岭 Xian, Nyingchi Xian).

193. Primula baileyana Kingdon-Ward


卵叶雪山报春 lian ye xue shan bao chun

Herbs perennial; stock 2-5 cm long, bulblike, formed by overlapping petioles and basal bud scales. Leaves in a rosette; petiole narrowly winged, 2-3 as long as leaf blade; leaf blade ovate to ovate-lanceolate, 2.5-5 1.5-2.5 cm, base cordate to rounded or cuneate, margin denticulate, apex acute. Scape 12-20 cm, 1-3-flowered; bracts linear, 3-8 mm. Flower heterostylous. Pedicel 1-2 cm. Calyx green or tinged with red, cupular, 7-10 mm, parted to middle; lobes subquadrantragular, apex rounded. Corolla yellow, exannulate; limb to 3.5 mm wide; lobes suborbicular, ca. 1.5 cm, wide, slightly emarginate. Pin flowers: corolla tube ca. 1.5 cm; stamens ca. 5 mm above base of corolla tube; style ca. 1.1 cm. Thrum flowers: corolla tube ca. 1.7 cm; stamens toward tube apex; style ca. 5 mm. Capsule cylindrical, ca. as long as calyx. Fl. Jun.

* Meadows: ca. 4500 m. E Xizang (Mainling Xian, 麦克岭 Xian, Nyingchi Xian).

194. Primula baileyana Kingdon-Ward

Herbs perennial, with few withered leaves at base. Leaves in a rosette; petiole 1-8 cm; leaf blade suborbicular to reniform, 0.5-4 cm wide, abaxially copiously white farinose, adaxially densely glandular puberulent, base truncate to
obscurely cordate, margin crenate to crenate-dentate, apex rounded. Scapes 3–18 cm, sparsely glandular; umbels 1–7–flowered; bracts linear, 4–12 mm. Flowers heterostylos. Pedicel 0.3–2 cm, white farinose. Calyx tubular to tubular-campanulate, 6–8.5 mm, white farinose, conspicuously 5-veined, parted to middle or below; lobes lanceolate-oblong, apex acute to obtuse. Corolla pale violet to violet; limb 1–2 cm wide; lobes broadly obovate, deeply emarginate; lobules entire to denticulate. Pin flowers: corolla tube ca. 1.1 cm; stamens at middle of tube; style ca. as long as tube. Thrum flowers: corolla tube 1.3–1.5 cm; stamens toward apex of tube; style reaching middle of tube. Capsule ovoid to oblong, ca. as long as calyx. Fl. Jun.

* Rock crevices, Rhododendron scrub in sheltered gullies; 4600–5000 m. SE Xizang.


长朔圆叶报春  chang shuo yuan ye bao chun

Herbs perennial, with overlapping ovate farinose bud scales at base. Leaves in a rosette; petiole usually 3–4 cm as long as leaf blade; leaf blade ovate to suborbicular, 1–10 cm long, 0.5–6 cm wide, abaxially sparsely minutely glandular, base deeply cordate to occasionally truncate, margin dentate to crenate-dentate, apex obtuse to acute. Scapes 3–25 cm, glabrous or sparsely minutely glandular; umbels (1 or)2–8–flowered; bracts linear–lanceolate, 3–7 mm. Flowers heterostylos. Pedicel 2–10 mm, elongated to 2.5 cm in fruit, sparsely glandular. Calyx tubular-campanulate, 5–6.5 mm, parted to 3/5–2/3; lobes lanceolate, finely ciliolate, apex acute. Corolla purple-pink to violet-purple; limb 1.5–2.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: corolla tube ca. 1.1 cm; stamens at middle of tube; style nearly reaching mouth. Thrum flowers: positions reciprocal. Capsule ca. 2 as long as calyx. Fl. Jun. 2n = 22.

Moss-covered crevices of wet cliffs; ca. 4500 m. S Xizang [Bhutan, NE India, Nepal, Sikkim].


**guang ye fen bao chun**

Herbs perennial. Leaves in a compact rosette; petiole usually indistinct or occasionally nearly as long as leaf blade; leaf blade obovate-elliptic to oblanceolate or spatulate, 1–5 cm long, 1–10 mm wide, abaxially sparsely minutely glandular, base attenuate, margin irregularly denticulate, apex rounded to obtuse. Scapes 2–8–(11) cm, farinose, occasionally glandular toward apex; umbels subcapitate to subgibbous at base. Flowers heterostylos. Pedicel 1–2 cm, rarely to 5 mm. Calyx campanulate, 2–5.4 cm, parted to 1/3 or below; lobes oblong, apex rounded. Corolla pinkish purple to bluish violet, rarely white; tube ca. as long as to slightly longer than calyx; limb 4–7 mm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule ca. as long as calyx. 2n = 16.

Peat, grassy hillsides, cliffs, alpine meadows, moist rocks; 4000–5000 m. Xizang [Bhutan, NE India, N Myanmar, Nepal, Sikkim].

1a. Calyx glandular; umbels usually 6–12-flowered ........... 197a. subsp. glabra
1b. Calyx smooth; umbels usually 1–3-flowered ....... 197b. subsp. genestierianna

197a. *Primula glabra* subsp. *glabra*

光叶粉报春(原亚种) guang ye fen bao chun (yuán yà zhòng)

Peat, grassy hillsides, cliffs: 4000–5000 m. SE Xizang [Bhutan, NE India, Nepal, Sikkim].


纤葶粉报春 xian ting fen bao chun


松潘报春 song pan bao chun

Herbs perennial, forming tufts with many rosettes. Leaves in a rosette; petiole indistinct to nearly as long as leaf blade, narrowly winged; leaf blade obovate to obovate-oblong, 0.8–2.5 cm 3–8 mm, sparsely minutely glandular, base attenuate, margin subentire to obscurely denticulate above middle, apex rounded to obtuse. Scapes 1.5–5 cm, densely glandular; umbels capitate, many flowered; bracts green, narrowly oblong, 2.5–3.5 mm, base slightly gibbous, apex obtuse. Flowers heterostylosus. Pedicel 0.5–1 mm. Calyx green, tubular-campanulate, 3–5 mm, densely glandular puberulent, parted to middle; lobes oblong, glandular ciliolate, apex obtuse. Corolla pink to pale bluish purple; tube ca. as long as calyx; limb 5.5–7 mm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens slightly above middle of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule elliptic, ca. as long as calyx. Fl. May.

* Grassy slopes; 3000–3500 m. NW Sichuan (Pingwu Xian, Songpan Xian).


雅洁粉报春 ya jie fen bao chun

Primula farinosa Linnaeus var. concinna (Watt) Pax.

Herbs perennial, usually less than 2.5 cm tall, forming dense cushionlike mats. Leaves in a rosette; petiole usually indistinct, rarely ca. 1/2 as long as leaf blade; leaf blade oblanceolate to spatulate or occasionally obovate, 0.6–2.5 cm 2–6 mm, abaxially densely yellow farinose, adaxially farinose or sometimes scarcely farinose, base attenuate, margin subentire or crenulate above middle, rarely distinctly dentate, apex obtuse to acute. Scapes less than 1 cm, sometimes obsolete, 1–6-flowered; bracts linear to linear-lanceolate, 2–6 mm. Flowers heterostylosus. Pedicel 4–10 mm. Calyx campanulate, 3–5 mm, farinose, parted to middle; lobes lanceolate to broadly linear, apex obtuse to acute. Corolla pale rose-pink or white; tube slightly longer than calyx; limb 7–10 mm wide; lobes obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style reaching annulus. Thrum flowers with positions reciprocal. Capsule oblong, nearly as long as calyx. Fl. Jun.

Damp meadows, moraines; 4000–5000 m. Xizang [Bhutan, NE India, Nepal, Sikkim].


密丛小报春 mi cong xiao bao chun

Herbs perennial, less than 3 cm tall. Leaves in a rosette; petiole usually slightly shorter than leaf blade; leaf blade oblanceolate to narrowly obovate, 0.5–2 cm 3–5 mm, abaxially densely farinose, adaxially sparsely glandular, base short cuneate-attenuate, margin denticulate to dentate, apex obtuse to rounded. Scapes less than 1 cm, usually indistinct, conspicuously farinose, 1–4-flowered; bracts 2 or 3, linear, 4–5
mm, farinose. Flowers heterostylos. Pedicel to 8 mm, farinose. Calyx tubular-campanulate, 5-7 mm, farinose, parted to 1/3, distinctly 5-veined; lobes ovate-triangular, apex acute or subobtuse. Corolla rose-purple, rarely white; tube ca. as long as calyx; limb 0.5-2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens slightly below middle of corolla tube; style reaching annulus. Thrum flowers with positions reciprocal. Capsule oblong, nearly as long as calyx. Fl. Jun.

Moist and moss-covered cliffs, open grassy slopes, *Rhododendron* scrub. 3800–5000 m. E Xizang [N Myanmar].

1a. Farina cream-white; corolla 0.5–1.5 cm in diam.; leaf margin dentate 201a. var. rhodochroa
1b. Farina yellow; corolla 1.5–2 cm in diam.; leaf margin denticulate 201b. var. geraldinae

201a. *Primula rhodochroa* var. rhodochroa

密丛小报春（原变种）mi cong xiao bao chun (yuan bian zhong)

Leaves densely cream-white farinose abaxially, margin with 3 or 4 teeth on each side. Corolla 0.5–1.5 cm in diam. Fl. Jun.

Moss-covered cliffs, open grassy slopes, *Rhododendron* scrub; 4000–5000 m. E Xizang [N Myanmar].


洛拉小报春 lo la xiao bao chun


Leaves yellow farinose abaxially, denticulate. Corolla 1.5–2 cm in diam.

* Moist cliffs: 3800–4600 m. E Xizang.


深齿小报春 shen chi xiao bao chun


Herbs perennial. Petiole obscure; leaf blade spatulate to oblong-lanceolate, 1–3 cm 2–5 mm, abaxially densely white farinose, adaxially sparsely glandular, base cuneate-attenuate, with 3–5 runcinate coarse teeth on each side of margin, apex acute. Scapes 0.3–4 cm, white farinose, 1–2-flowered; bracts linear, to 5 mm. Flowers homostylos. Pedicel 7–10 mm, farinose. Calyx cupular, ca. 4 mm, sparsely white farinose, parted below middle; lobes narrowly lanceolate to oblong-lanceolate, apex acute to subobtuse; sinus between lobes rounded. Corolla bluish purple; tube nearly as long as calyx; limb 4.5–6 mm wide; lobes obovate, emarginate. Stamens toward apex of corolla tube. Style ca. as long as tube. Capsule oblong, ca. as long as calyx. Fl. Jul.

* Among rocks; ca. 4300 m. E Xizang (Mainling Xian).


寒地报春 han di bao chun

Herbs perennial. Leaves in a rosette; petiole usually inconspicuous, rarely ca. 1/2 as long as leaf blade; leaf blade obovate-oblong to oblong-lanceolate, 1.5–5.4 cm 2 mm, usually farinose or scarcely farinose outside, usually farinose inside, parted to middle, 5-ribbed; lobes often tinged with purple, oblong to lanceolate. Corolla violet, rarely white; tube nearly as long as calyx; limb 0.8–1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens in lower 1/2 of corolla tube; style ca. 2/3 as long as tube. Thrum flowers with positions reciprocal. Capsule oblong, slightly longer than calyx. Fl. May–Jun. 2n = 18, 44.

South-facing mountain slopes, wet meadows; 1600–3200 m. NW Xinjiang [Afghanistan, Kazakhstan, Kyrgyzstan, N Mongolia, Russia, Tajikistan, Turkmenistan, Uzbekistan; SW Asia].


粉报春 fen bao chun

Herbs perennial. Leaves numerous, in a dense rosette; petiole to nearly as long as leaf blade; leaf blade oblong-obovate to oblong-lanceolate, 1–7 cm 2–5 mm, farinose or efarinose, base attenuate, margin remotely denticate to subentire, apex subobtuse, umbels 3–10-flowered; bracts strongly reflexed after anthesis, linear to linear-lanceolate, 3–11 mm, base slightly gibbous. Flowers heterostylos. Pedicels 1–2.5 cm, elongated to 1.5 cm in fruit, farinose or efarinose. Calyx campanulate, 6–8–10 cm, efarinose or scarcely farinose outside, usually farinose inside, parted to middle, 5-ribbed; lobes often tinged with purple, oblong to lanceolate. Corolla violet, rarely white; tube nearly as long as calyx; limb 0.8–1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens in lower 1/2 of corolla tube; style ca. 2/3 as long as tube. Thrum flowers with positions reciprocal. Capsule oblong, slightly longer than calyx. Fl. May–Jun. 2n = 18, 44.
Calyx tubular, 6–heterostylous. Pedicel 3–bracts narrowly lanceolate, 5–farinose toward apex; umbels 4
Scapes 1–crenulate to dentate, apex rounded to obtuse. Abaxially, base attenuate, margin subentire, 1.5 cm, efarinose or white or yellow farinose–obovate to oblanceolate or spatulate, 1 slightly shorter than leaf blade; leaf blade petiole usually indistinct or occasionally

W. W. Smith.

Bureau & Franchet; P. stenocalyx var. luteofarinosa Duthie; P. kanseana Pax & K. Hoffmann; P. leptopoda


Primula farinosa var. xanthophylla Trautvetter & C. Meyer.


Xizang, NW Yunnan.

Primula stenocalyx

Primula gigantea Jacquin.


Primula fangingensis


匍枝粉报春 pu zhi fen bao chun

Primula caldaria var. nana W. W. Smith & Forrest.

Flowers heterostylous. Pedicel 5–12 mm, elongated to 2 cm in fruit, usually white farinose. Calyx campanulate, 4.5 mm, farinose, parted to middle; lobes lanceolate, apex acute. Corolla white or violet; tube 6–7 mm; limb 5–7 mm wide; lobes obovate, emarginate. Pin flowers: stamens at middle; lobes lanceolate, apex acute. Corolla white or violet; tube 6–7 mm; limb 5–7 mm wide; lobes obovate, emarginate. Pin flowers: stamens at middle; lobes lanceolate, apex acute. Corolla white or violet; tube 6–7 mm; limb 5–7 mm wide; lobes obovate, emarginate. Pin flowers: stamens at middle; lobes lanceolate, apex acute. Corolla white or violet; tube 6–7 mm; limb 5–7 mm wide; lobes obovate, emarginate. Pin flowers: stamens at middle; lobes lanceolate, apex acute. Corolla white or violet; tube 6–7 mm; limb 5–7 mm wide; lobes obovate, emarginate. Pin flowers:

4–6 mm, usually farinose inside, parted to 1/3–1/2, 5–ribbed; lobes ovate-oblong to triangular, short ciliate. Corolla lilac to purple; tube ca. as long as to slightly longer than calyx; limb 0.8–1 cm wide; lobes cuneate-ovobate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style ca. 3 mm. Thrum flowers: stamens in upper 1/2 of corolla tube; style ca. 1.2 mm. Capsule cylindric, slightly longer than calyx. 2n = 18, 36, 72.

Wet meadows, marshes, valley thickets; ca. 1200 m.

Heilongjiang, Jilin, Nei Mongol [Kazakstan, Mongolia, Russia; Europe].

1a. Plants farinose ......... 204a. var. farinosa

1b. Plants efarinose ........ 204b. var. denudata

204a. Primula farinosa var. farinosa

粉报春 (原变种) fen bao chun (yuán biàn zhòng)

Primula farinosa subsp. xanthophylla (Trautvetter & C. Meyer) Kitagawa; P. farinosa var. xanthophylla Trautvetter & C. Meyer.

Leaves white or yellow farinose abaxially. Fl. May–Jun.

Wet meadows, marshes, valley thickets; ca. 1200 m. Jilin [Kazakstan, Mongolia, Russia; Europe].


裸报春 luo bao chun

Primula gigantea Jacquin.

Leaves glabrous, efarinose abaxially.

Wet meadows; ca. 1200 m. Heilongjiang, Jilin, Nei Mongol [Kazakstan, Mongolia, Russia; Europe].


狭萼报春

Primula biondiana Petitmengin; P. cognata Duthie; P. kanseana Pax & K. Hoffmann; P. leptopoda Bureau & Franchet; P. stenocalyx var. luteofarinosa W. W. Smith.

Herbs perennial. Leaves in a rosette; petiole inconspicuous to nearly as long as leaf blade, narrowly winged; leaf blade obovate to oblong-obovate, 2.5–9(–13) 1–2.5 cm, abaxially sparsely minutely glandular, base attenuate, margin erose-dentate, apex rounded to obtuse. Scapes 10–16 cm, cream-white farinose toward apex; umbels 12–16-flowered; bracts narrowly lanceolate, 5–10(–15) mm. Flowers heterostylosus. Pedicel 3–15 mm, glandular. Calyx tubular, 6–10 mm, parted to 1/3–1/2, 5–ribbed; lobes oblong to lanceolate, ciliolate, apex acute to obtuse. Corolla bluish lavander to pink; tube 0.9–1.5 cm; limb 1.5–2 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style reaching level of calyx. Thrum flowers with positions reciprocal. Capsule oblong, nearly as long as calyx. Fl. May–Jul. 2n = 16*.

* South-facing grassy slopes, gullies, peat: 2700–4300 m. S Gansu, E Qinghai, W Sichuan, NE Xizang.


匍枝粉报春 pu zhi fen bao chun

Primula caldaria var. nana W. W. Smith & Forrest.

Herbs perennial. Stolons 5–20 cm, terminated in a leaf rosette, with alternate leaves on lower part. Petiole narrowly winged, nearly as long as leaf blade; leaf blade oblanceolate, 2–15(–25) 0.6–1.8(–3.5) cm, abaxially white farinose, adaxially glabrous, base long attenuate, margin remotely blunt dentate above middle, apex rounded to obtuse. Scapes (5–) 8–35(–45) cm, farinose toward apex; umbels 10–30-flowered. Flowers heterostylosus. Pedicel 5–12 mm, elongated to 2 cm in fruit, usually white farinose. Calyx campanulate, 4.5 mm, farinose, parted to middle; lobes lanceolate, apex acute. Corolla white or violet; tube 6–7 mm; limb 5–7 mm wide; lobes obovate, emarginate. Pin flowers: stamens at middle of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule globose, nearly as long as calyx. Fl. May. 2n = 16*.

* Gullies, near hot springs: 2200–3000 m. E Xizang, NW Yunnan.


梵净粉报春 fan jing bao chun

Herbs perennial. Leaves in a rosette; petiole usually indistinct or occasionally slightly shorter than leaf blade; leaf blade obovate to oblanceolate or spatulate, 1–5 0.5–1.5 cm, efarinose or white or yellow farinose abaxially, base attenuate, margin subentire, crenulate to dentate, apex rounded to obtuse. Scapes 1–15 cm, glandular or occasionally farinose toward apex; umbels 4–16-flowered; bracts narrowly lanceolate, 5–10(–15) mm. Flowers heterostylosus. Pedicel 3–15 mm, glandular. Calyx tubular, 6–10 mm, parted to 1/3–1/2, 5–
Primula longiscapa Ledebour, M. Mongol [Mongolia, E Russia].


Primula farinosa Linnaeus subsp. fistulosa (Turkevich) W. W. Smith & Forrest.

Herbs perennial. Leaves in a rosette; petiole obsolete or inconspicuous, broadly winged; leaf blade oblong to oblong-oblancoate, 2-10(13) 0.5-1.5 cm, efarinose, base attenuate, margin irregularly dentate, apex acuminate to acute. Scapes 5-20 cm, elongated to 28-49 cm in fruit, fistular, 4-6 mm in diam. at base, constricted below inflorescences; umbels globose, usually many flowered; bracts many, oblong-obvate to ovate-lanceolate, 3-4(6.5) mm, base slightly gibbous, apex acute. Flowers heterostylous. Pedicel usually 0.8-1.5 cm, glandular pubescent. Calyx cupular, 4-5(6) mm, gradually dilated upward from base, parted to 1/3-1/2; lobes oblong-lanceolate, apex acute. Corolla rose-violet; tube 6-7 mm; limb 0.8-1.4 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style reaching mouth. Thrum flowers: stamens ca. 2 mm above as long as calyx. Fl. May. 2n = 18.

Pastures in river valleys; ca. 1200 m. NW Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, E Russia, Tajikistan, Turkmenistan, Uzbekistan].


Primula efarinosa Pax in Engler, Pflanzenr. IV. 237(Heft 22): 79. 1905.


Herbs perennial, occasionally producing short stolons from base. Leaves in a rosette; petiole not well differentiated; leaf blade oblong-lanceolate to narrowly obovate, 1.5-4 cm 5-10 mm, minutely glandular and sometimes sparingly white farinose abaxially, base attenuate, margin sharply dentate, rarely subentire, apex rounded to obtuse. Scapes 3-10 cm, glandular or scarcely farinose toward apex; umbels (1 or)2-8-flowered; bracts ovate to lanceolate, 1.5-2 mm, base slightly gibbous. Flowers heterostylous. Pedicel 3-12 mm, scarcely farinose. Calyx narrowly campanulate, 4-6 mm, sparingly farinose, parted to near middle; lobes lanceolate, apex acute to subobtuse. Corolla rose-purple; tube ca. 7 mm; limb 0.8-1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style gradually shorter than tube. Thrum flowers with positions reciprocal. Capsule subglobose, shorter than calyx. Fl. Mar.

Grassy mountain slopes; 2700-3000 m. S Gansu (Zhouqu Xian), NW Sichuan (Daqin Xian).

Primula efarinosa Pax in Engler, Pflanzenr. IV. 237(Heft 22): 79. 1905.

Herbs perennial. Leaves in a rosette; petiole indistinct to 1/2 as long as leaf blade; leaf blade oblong to narrowly ovate or lanceolate, 2.5-5 0.6-1.6 cm, enlarged to 8 2.8 cm at fruiting, efarinose, abaxially sparsely minutely glandular, base attenuate, margin erose-dentate, apex rounded to obtuse. Scapes 10-12 cm, elongated to 40 cm in fruit, glandular puberulent toward apex; umbels 6-20-flowered; bracts ovate-lanceolate to lanceolate, 5-6 mm, base slightly saccate. Flowers heterostylous. Pedicel 0.8-1.2 cm, elongated to 1.5 cm in fruit, densely glandular puberulent. Calyx tubular to tubular-campanulate, 6-7.5 mm, constricted at base, sparsely minutely glandular, parted to 1/3; lobes ovate to oblong, apex subobtuse. Corolla violet; tube ca. as long as calyx; limb 1.2-1.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style reaching mouth. Thrum flowers: stamens in upper 1/2 of corolla tube; style ca. 1 mm. Capsule oblong, nearly 2 as long as calyx. Fl. May. 2n = 18.


Primula citrina I. B. Balfour & Purdom.

Primula citrina I. B. Balfour & Purdom.

Primula citrina I. B. Balfour & Purdom.
Herbs perennial. Leaves in a rosette; petiole nearly as long as leaf blade, rarely 2-3 as long as leaf blade; leaf blade broadly ovate to elliptic or occasionally suborbicular, 1.5-4 × 1-2.5 mm, membranous when dry, abaxially unevenly fugacious white farinose, adaxially subglabrous or sparsely pubescent, base usually attenuate, occasionally subrounded and abruptly short attenuate, margin bluntly serrate, rarely sharply dentate, apex subrounded. Scapes 2-10 cm, sparsely pubescent; umbels 2-13-flowered; bracts lanceolate, 5-10 mm, glandular puberulent. Flowers heterostylous. Pedicel 0.8-3 cm, glandular puberulent. Calyx campanulate, 4-6 mm, puberulent, white farinose at base, parted to below middle; lobes narrowly oblong to lanceolate, glandular ciliolate, usually farinose inside, apex obtuse to acute. Corolla yellow, becoming green when dry; tube 1.2-1.4 cm; limb 1-1.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule usually slightly shorter than calyx. Fl. May-Aug.

* Damp rocks; 3000-5000 m. S and W Gansu, E Qinghai, N Sichuan.


纤柄报春 xian bing bao chun

Herbs perennial. Leaves in a rosette; petiole ca. 3 as long as leaf blade; leaf blade obovate to suborbicular, 1.5-7 cm wide, abaxially densely minutely glandular and unequally white farinose, adaxially sparingly glandular, base shallowly cordate, margin double-dentate, apex rounded. Scapes 5.5-14 cm, glabrous; umbels 2-8-flowered; bracts lanceolate, short-stalked glandular. Flowers heterostylous. Calyx broadly-campanulate, 5.5-6.5 mm, densely minutely glandular outside, usually white farinose inside, parted to middle or below; lobes obovate, apex obtuse to acute. Corolla rose-purple with a yellow eye; tube 1-1.3 cm; limb ca. 1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule unknown. Fl. May-Aug.

* Damp rocks; 3000-5000 m. S and W Gansu, E Qinghai, N Sichuan.


藏南报春 zang nan bao chun


Herbs perennial. Leaves in a rosette; petiole indistinct to 1/2 as long as leaf blade; leaf blade obovate-elliptic to oblancoceolate, 4-10 1.5-2 cm, enlarged to 20 4 cm at fruiting, abaxially white or cream-white farinose, adaxially densely minutely brownish glandular, base attenuate, margin irregularly dentate to sometimes remotely crenulate, apex rounded to obtuse. Scapes 5-25 cm, farinose toward apex; umbels 3-13-flowered; bracts linear-lanceolate to subulate, 5-10(15) mm, base slightly gibbous. Flowers heterostylous. Pedicel usually 0.5-2 cm, white farinose. Calyx tubular, 7-12 mm, parted to near middle, 5-ribbed; lobes lanceolate, usually farinose inside and on margin, apex acute. Corolla pink to pale bluish purple; tube 1.3-1.5 cm; limb 1.2-2 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style reaching or slightly longer than mouth. Thrum flowers with positions reciprocal. Capsule oblong, ca. as long as to slightly longer than calyx. Fl. Jul-Sep.

* Grassy mountain slopes, rock crevices, Pinus woodlands; 2700-5300 m. S Xizang.


* Grass meadows; 3000-5000 m. SW Sichuan.

雅东粉报春 ya dong fen bao chun

Herbs perennial. Leaves in a rosette; petiole 1/4-1/3 as long as leaf blade; leaf blade elliptic to oblancoceolate to obvate, 5-13 × 1-2.5(3.5) cm, abaxially sparingly pale-yellow farinose, base long attenuate, margin entire or remotely obscure denticulate, apex obtuse. Scape (12-)18-35 cm, farinose; umbels 5-14-flowered; bracts linear-lanceolate, 2.5-4 mm, scarcely farinose. Flowers heterostylous. Pedicel (1.5-)2-4.5 mm. Calyx campanulate, 4-6 mm, sparingly white farinose outside, densely so inside, parted to 1/3; lobes obovate-lanceolate, apex obtuse to acute. Corolla bluish purple; 1.3-1.8 mm in diam.; lobes obovate, 6-7 mm, deeply emarginate. Pin flowers: corolla tube ca. 1 cm; stamens ca. 3 mm above base of corolla tube; style ca. 5 mm. Thrum flowers: corolla tube ca. 1 cm; stamens at middle of corolla tube; style ca. 2 mm. Capsule cylindric, ca. 2 cm long as to slightly longer than calyx. Fl. May-Aug.

* Wet meadows; ca. 4000 m. SW Sichuan.


金川粉报春 jin chuan fen bao chun

Herbs perennial. Leaves in a rosette; petiole indistinct to 1/2 as long as leaf blade; leaf blade elliptic to elliptic-oblanceolate, 2.5-7 cm, enlarged to 14 cm at fruiting, 0.5-2.3 cm wide,
abaxially copiously white farinose, adaxially densely minutely brownish glandular, base attenuate, margin subentire to obscurely crenulate, apex rounded. Scapes (8–)10–25 cm; umbels (3–)5–25-flowered; bracts lanceolate, 4–8 mm, apex acuminate. Flowers heterostylous. Pedicel 1.2–3 cm, elongated to 7 cm in fruit, initially white farinose. Calyx campanulate, 5–6 mm, white farinose outside, cream-yellow farinose inside, parted 1/3–1/2; lobes ovate to narrowly triangular, apex acute. Corolla rose to rose-purple; limb 1.5–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: corolla tube 8–9 mm; stamens ca. 3 mm above base of corolla tube; style nearly reaching mouth. Thrum flowers: corolla tube thinner, ca. 1 cm; stamens in upper 1/2 of corolla tube; style ca. 1.5 mm. Capsule nearly as long as calyx. Fl. May–Jul.


米仓山报春 mi cang shan bao chun

Herbs perennial, with thick stringy roots. Leaves in a rosette; petiole 1/4–1/3 as long as leaf blade; leaf blade elliptic to obovate-elliptic, 2–4.5 × 1–2.3 cm, abaxially densely white farinose becoming cream-yellow when dry, base attenuate, margin irregularly blunt dentate, apex obtuse. Scapes 2.5–6 cm, scarcely farinose near base; umbels (2 or)3–5-flowered; bracts lanceolate, 4–6 mm. Flowers heterostylous. Pedicel 0.8–2 cm, scarcely farinose. Calyx campanulate, 5–7 mm, sparingly farinose outside, densely so inside, parted slightly below middle, 5-ribbed; lobes lanceolate. Corolla rose-purple to pale purple; limb 1.5–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: corolla tube 1.2–1.3 cm; stamens ca. 2 mm above base of corolla tube; style reaching mouth. Thrum flowers: corolla tube 1.4–1.5 cm; stamens 1.1–1.2 cm above base of corolla tube; style 2.5–3.3 cm. Capsule nearly as long as calyx. Fl. Apr–May.

* Shaded moist areas, rock crevices: 1500–3000 m. S Gansu, S Shaanxi, NE Sichuan.


米仓山报春 mi cang shan bao chun

Herbs perennial. Leaves in a rosette; petiole narrowly winged, to nearly as long as leaf blade; leaf blade obovate-oblong, 7–10 mm; limb ca. 1.5 cm wide; lobes spreading, lanceolate, apex acute, with a conspicuous midvein. Corolla bluish purple; tube 1.1–1.2 cm; limb 1.6–2.5 cm wide; lobes obovate, 5–6 mm, deeply emarginate. Pin flowers: stamens reaching middle of corolla tube; style as long as to slightly longer than tube. Thrum flowers with positions reciprocal. Capsule oblong, slightly longer than calyx. Fl. Apr–May.

* Rock crevices; ca. 3000 m. E Xizang.


淡粉报春 dan fen bao chun

Herbs perennial. Leaves in a rosette; petiole not well-differentiated; leaf blade obovate, 2–3 cm; tapered to base, abaxially sparingly cream-yellow farinose, margin denticulate to crenulate, apex rounded. Scapes 4–10 cm, farinose, especially near apex; umbels yellow farinose, 2–8-flowered; bracts linear to linear-lanceolate, 3–7 mm. Flowers heterostylous. Pedicel suberect, 0.5–1.5 cm. Calyx campanulate, 5–7 mm, parted to below middle; lobes spreading, lanceolate, apex acute, with a conspicuous midvein. Corolla bluish purple; tube 1.1–1.2 cm; limb 1.6–2.5 cm wide; lobes obovate, 5–6 mm, deeply emarginate. Pin flowers: stamens reaching middle of corolla tube; style ca. as long as to slightly longer than tube. Thrum flowers with positions reciprocal. Capsule oblong, slightly longer than calyx. Fl. Apr–May.

* Rock crevices; ca. 3000 m. E Xizang.


短茎粉报春 duan jing fen bao chun

Herbs perennial. Stolons 0.5–1.5 cm, terminated in a leaf rosette. Petiole nearly as long as leaf blade; leaf blade spatulate to narrowly obovate, 0.8–2 cm × 6–9 mm, abaxially cream-white or cream-yellow farinose, adaxially scarcely farinose or nearly efarinose, base attenuate, margin sharply incised-serrate, apex subrounded. Scapes 0.8–2.5 cm, farinose, 1- or 2-flowered; bracts usually 2, linear to linear-lanceolate, 5–12 mm. Flowers homostylous. Pedicel 6–9 mm, sparingly farinose. Calyx narrowly campanulate, 8–10 mm, cream-yellow farinose outside, parted to middle or slightly below, 5-veined; lobes lanceolate, apex acute. Corolla deep purple; tube 1.5–1.6 cm; limb 1.5–2.2 cm wide; lobes obovate, emarginate. Stamens toward apex of corolla tube. Style slightly exerted. Capsule oblong, 6–7 mm. Fl. May–Jun.

* Shaded rock crevices of gneiss and granite cliffs; ca. 3600 m. SE Xizang.
farinose, becoming efarinose. Calyx campanulate to heterostylous. Pedicel 0.5–1.2 cm, 4- or 5-flowered; bracts linear to subulate, 1–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style slightly shorter than tube. Thrum flowers with positions reciprocal. Capsule oblong, slightly longer to 2 as long as calyx.

* * Mountain woodlands; 2400–2800 m. Shaanxi (Qinling Xian).


雅砻黄报春 ya long huang bao chun


Herbs perennial. Leaves in a rosette; petiole usually inconspicuous, occasionally to 1/2 as long as leaf blade; leaf blade lanceolate to linear-lanceolate or oblanceolate, 3–15 cm, abaxially very densely bright yellow or cream-yellow farinose, base long attenuate, margin denticulate to occasionally subentire, usually narrowly revolute, apex obtuse or occasionally acute. Scapes 8–30 cm, farinose toward apex; umbels 3–30-flowered; bracts linear to linear-lanceolate, 3–8–(10) mm. Flowers heterostylos. Pedicel 0.5–2.5 cm, sparingly yellow farinose. Calyx campanulate, 4–8(–10) mm, parted to middle, copiously farinose inside and at base of lobes; lobes lanceolate to narrowly lanceolate, apex acute. Corolla violet to deep violet-purple; tube 0.8–1.2 cm; limb 1.5–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule oblong, slightly longer to 2 as long as calyx. Fl. Jun–Jul.

* * Damp meadows, woodland margins; 2000–4500 m. SW Yunnan.


雅香黄报春 ya xiang huang bao chun

Primula sulphurea Pax & K. Hoffmann.

Herbs perennial, with fibrous remains of old leaves at base. Leaves in a rosette; petiole inconspicuous to 1/2 as long as leaf blade, narrowly winged; leaf blade spatulate to narrowly lanceolate or linear-oblanceolate, 1.5–8 cm, abaxially densely yellow farinose, base attenuate, margin crenate and often narrowly revolute, apex subobtuse. Scapes 6–25 cm; umbels 4–12-flowered; bracts lanceolate to linear-lanceolate, 4–10 mm, base slightly gibbous. Flowers heterostylos. Pedicel 0.5–2.5 cm, initially farinose, becoming efarinose. Calyx campanulate to narrowly campanulate, 5–8.5 mm, densely farinose inside, parted to middle or slightly below; lobes narrowly triangular to sublanceolate, apex acute to subacuminate. Corolla bright yellow; tube 1–1.2 cm; limb 1.5–2 cm wide; lobes elliptic, deeply emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style slightly shorter than tube. Thrum flowers with positions reciprocal. Capsule oblong, slightly longer to 2 as long as calyx.

* * Damp meadows; 3000–4300 m. W Sichuan.


细叶粉报春 fu ye fen bao chun

Primula longituba Forrest.

Herbs perennial, forming dense mats of numerous rosettes. Petiole indistinct or to 1/2 as long as leaf blade; leaf blade elliptic to obovate-elliptic or oblanceolate, 1–3–(4) cm, abaxially densely yellow farinose, old leaves adaxially often bullate, base attenuate, margin sharply dentate above middle, apex obtuse to rounded. Scapes 2–5 cm, efarinose or farinose toward apex, 1– or 2(–5)-flowered; bracts linear to subulate, 1–5 mm, farinose. Flowers nodding. Pedicel 4–10 mm, yellow farinose. Calyx campanulate, 4–5(–6) mm, yellow farinose, parted below middle, 5-veined; lobes triangular to lanceolate, apex usually acute. Corolla pale violet or rose, 1.1–1.5 cm; cylindric base of tube ca. 2 mm, gradually dilated above; limb campanulate, 1–1.5 cm wide; lobes erect, oblong, 4–5 mm, deeply emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style 8–9 mm, prominently exserted from short base. Thrum flowers unknown. Capsule shorter than calyx. Fl. May–Jun.

* * Damp rock crevices; 1900–3000 m. N Guizhou, W Hubei, E Sichuan.


薄叶粉报春 bao ye fen bao chun

Primula longituba Forrest.

Herbs perennial. Leaves in a rosette; petiole indistinct to 1/2 as long as leaf blade, rarely nearly as long as leaf blade; leaf blade elliptic to obovate or subspatulate, 1.5–6 cm, membranous when dry, abaxially fugaciously yellow farinose, adaxially efarinose or scarcely farinose, base cuneate-attenuate, crenate-dentate, apex rounded. Scapes (1–)2–5 cm, yellow farinose; umbels 1–6(–9)-flowered; bracts linear to linear-lanceolate, 3–7 mm, farinose, whorled or sometimes spirally arranged and adnate to pedicel. Flowers heterostylos. Pedicel 2–10 mm.
Herbs perennial, forming dense mats of many rosettes. Petiole very short to nearly as long as leaf blade; leaf blade obovate-elliptic to oblanceolate, 1–3 cm 3–8 mm, membranous when dry, abaxially fuscously pale-yellow farinose, adaxially glandular or scarcely farinose, base cuneate-attenuate, margin denticulate to obtuse, leaf obtuse to rounded. Scapes oblong, solitary. Flowers solitary, heterostylous. Pedicel 6–8 mm, white farinose; bract solitary, at base, oblong, 3 mm. Calyx campanulate, 3–4 mm, yellow farinose, parted to middle or below, obscurely 5-veined; lobes narrowly triangular to oblong, 2–8 mm, exserted. Corolla pale rose-purple; limb 1–1.8 cm wide; lobes obovate, 3–6 mm, 2–4 mm. Flowers: corolla tube ca. 1.5 mm above base of corolla tube; style ca. 5 mm. Thrum flowers: corolla tube ca. 7 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens near base of corolla tube; style ca. 2/3 as long as tube to exserted. Thrum flowers: stamens in upper 1/2 of corolla tube; style ca. 2 mm. Capsule elliptic, slightly shorter than calyx.


230a. Primula kialensis subsp. kialensis

等梗报春 (原亚种) deng geng bao chun (yuan ya zhong)

Herbs perennial, forming dense tufts with many rosettes. Petiole usually inconspicuous, rarely as long as leaf blade; leaf blade oblong-ovate to elliptic or subelliptic, 1.5–3.5 cm 5–12 mm, abaxially densely yellow farinose, adaxially effusine or scarcely farinose, base cuneate-attenuate, margin denticulate to irregularly deep dentate, apex obtuse to rounded. Scapes 1.3–5(–4) cm, farinose toward apex; umbels (1 or)2–6-flowered; bracts linear-lanceolate to linear, 3–8 mm, farinose. Flowers heterostylous. Pedicel 1–2.5 cm, ca. as long as to shorter than scape. Calyx campanulate to narrowly campanulate, 5–8 mm, sparsely yellow farinose outside, densely so inside, parted to middle or below, 5-veined; lobes lanceolate, apex acute to acuminate. Corolla rose or pale purple; limb 1.5–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens near base of corolla tube; style ca. 2/3 as long as tube to exserted. Thrum flowers: stamens in upper 1/2 of corolla tube; style ca. 2 mm. Capsule elliptic, slightly shorter than calyx.

* Limestone rocks and cliffs: 1500–2500 m. NW and Sichuan.

1a. Corolla tube 1–1.3 cm, 1.5–2


短梗等梗报春 duan tong deng geng bao chun

Herbs perennial, forming dense tufts with many rosettes. Petiole usually inconspicuous, rarely as long as leaf blade; leaf blade oblong-ovate to elliptic or subelliptic, 0.5–3.5 cm 2–7 mm, abaxially usually densely yellow farinose, adaxially effusine or nearly so, base attenuate, margin crenulate to crenulate-dentate, apex obtuse to acute. Scapes 1.5–6(–8) cm, farinose toward apex, 1–5-flowered; bracts ovate–lanceolate to sublinear, 2–7 mm. Flowers heterostylous. Pedicel 1–10 mm, scarcely farinose. Calyx campanulate, (2–)4–5(–7) mm, farinose or scarcely farinose outside, densely yellow farinose inside, parted to middle, 5-ribbed; lobes lanceolate to triangular, apex acute to subobtuse. Corolla rose-pink to lilac; tube 9–10 mm; limb 1–1.5 cm wide; lobes broadly obovate, deeply emarginate. Pin


云南报春 yun nan bao chun


Herbs perennial, forming dense mats of many rosettes. Petiole usually inconspicuous, rarely as long as leaf blade; leaf blade oblong-ovate to elliptic or subelliptic, 0.5–3.5 cm 2–7 mm, abaxially usually densely yellow farinose, adaxially effusine or nearly so, base attenuate, margin crenulate to crenulate-dentate, apex obtuse to acute. Scapes 1.5–6(–8) cm, farinose toward apex, 1–5-flowered; bracts ovate–lanceolate to sublinear, 2–7 mm. Flowers heterostylous. Pedicel 1–10 mm, scarcely farinose. Calyx campanulate, (2–)4–5(–7) mm, farinose or scarcely farinose outside, densely yellow farinose inside, parted to middle, 5-ribbed; lobes lanceolate to triangular, apex acute to subobtuse. Corolla rose-pink to lilac; tube 9–10 mm; limb 1–1.5 cm wide; lobes broadly obovate, deeply emarginate. Pin
flowers: stamens ca. 2 mm above base of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule elliptic, usually shorter than calyx. Fl. Jun.

* Limestone rocks: 2800–3600 m. SW Sichuan, NW Yunnan.


怒江报春 nu jiang bao chun

Herbs perennial. Leaves in a rosette; petiole indistinct to 1/2 as long as leaf blade, narrowly winged; leaf blade elliptic to ovate-spatulate, 3–10 cm long, 1–2.5(–3) cm wide, abaxially densely yellow farinose, base attenuate, margin obscurely crenate, apex rounded to obtuse. Scapes 3.5–8 cm, farinose toward apex; umbels 2– or 3-flowered; bracts ovate to ovate-lanceolate, 5–10 mm, leaflike. Flowers heterostylous. Pedicel 4–10 mm, farinose. Calyx campanulate, 6–8 mm, parted to middle, 5-veined; lobes oblong-lanceolate to lanceolate, scarcely farinose outside, densely yellow farinose inside, apex subobtuse. Flowers heterostylous. Pedicel 0.6–3.5 cm, minutely glandular. Calyx green or tinged with purple, narrowly campanulate, (5)–6–10 mm, glandular outside, white farinose inside and on margin, parted to middle; lobes lanceolate to triangular, glandular ciliolate. Corolla pink to purple, rarely white, annulate or exannulate; tube 0.8–1.3 cm; limb 1.5–2.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style slightly exerted. Thrum flowers: stamens just below annulus; style ca. as long as calyx. Capsule oblong, slightly longer than calyx. Fl. May–Jul.

* Wet meadows, woodland margins: 2700–3000 m. Gansu, N Henan (Linxian Xian), S Shaanxi, S Shanxi.


苞芽报春 bao ya bao chun

Herbs perennial. Leaves in a rosette; petiole usually nearly as long as leaf blade, inconspicuous to 2 as long as leaf blade; leaf blade oblong to ovate or broadly spatulate, 1–7 cm long, 0.5–2 cm wide, glabrous or sparsely minutely glandular abaxially, base attenuate, margin irregularly remote denticulate, apex obtuse to rounded. Scapes 8–30 cm, efarinose or white farinose toward apex; umbels 3–10-flowered; bracts often tinged with purple, narrowly lanceolate to oblanceolate, 3–10 mm, scarcely farinose, base slightly gibbous. Flowers heterostylous. Pedicel 0.6–3.5 cm, minutely glandular. Calyx green or tinged with purple, narrowly campanulate, (5)–6–10 mm, glandular outside, white farinose inside and on margin, parted to middle; lobes lanceolate to triangular, glandular ciliolate. Corolla pink to purple, rarely white, annulate or exannulate; tube 0.8–1.3 cm; limb 1.5–2.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule elliptic, slightly longer than calyx.

* Wet meadows, woodland margins, streamside: 2700–4300 m. S Gansu, W Sichuan, NE Xizang. NW Yunnan.

1a. Leaves thin textured; corolla annulate ............... 234a. var. gemmifera
1b. Leaves subfleshy; corolla exannulate ............... 234b. var. amoena

234a. Primula gemmifera var. gemmifera

苞芽报春(原变种) bao ya bao chun (yuan bian zhong)


* Wet meadows, woodland margins, streamside: 2700–4300 m. S Gansu, W Sichuan, NE Xizang.


厚叶苞芽报春 hou ye bao ya bao chun


条裂叶报春 tiao lie ye bao chun

Herbs perennial. Leaves in a rosette; petiole ca. as long as to longer than leaf blade; leaf blade narrowly oblong to linear-lanceolate or spatulate, 3-8(-12) 0.5-1.5(-2) cm, glabrous or sparsely minutely glandular, base attenuate, margin pinnatifidly incised, apex obtuse to subrounded; lobes 1-3 mm wide, margin irregularly dentate. Scapes 12-25 cm, 5 as long as leaf blade; leaf blade suborbicular to broadly ovate, 4-10 2.5-7 mm, succulent, glabrous and efarinose, base rounded, truncate to broadly cuneate, apex entire or with few blunt teeth, apex rounded to obtuse. Scapes 2.5-5 cm, 1-flowered; bracts 1 or 2, lanceolate, 1-2 mm, adnate to middle of scape, apex acute. Flower heterostylous. Calyx narrowly campanulate, 5-6 mm, parted to middle; lobes oblong, apex obtuse. Corolla lavender-blue nectariferous. Pedicel 1-4 mm, white efarinose at apex. Calyx campanulate, 5-8 mm, parted to middle or below; lobes narrowly triangular, glandular or scarcely farinose outside, densely white farinose inside and on margin, apex acute to subobtuse. Corolla pinkish mauve; tube 1.1-1.4 cm; limb ca. 2 cm wide; lobes ovate, deeply emarginate. Pin flowers: stamens 3-4 mm above base of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule oblong, 9-10 mm. Fl. Jun-Jul.

* Wet meadows, areas near water; 3900-4200 m. W Sichuan.


柔小粉报春 rou xiao fen bao chun

Primula pygmaeorum I. B. Balfour & W. W. Smith. Herbs perennial, 1-3 cm tall. Leaves in a rosette; petiole membranously winged, ca. as long as to sometimes 2-3 as long as leaf blade; leaf blade elliptic to obovate-elliptic or subrhomboid, 3-15 2-5 mm, sparsely minutely glandular, base cuneate-attenuate, margin entire or obscurely remote denticulate, apex rounded to obtuse. Scapes very short at anthesis, elongated to 2 cm in fruit, 1-6-flowered; bracts ovate-elliptic to elliptic-lanceolate, 0.5-3 mm, sometimes slightly protuberant at base, apex rounded. Flowers heterostylous. Pedicel 2-4 mm. Calyx tubular, ca. 4 mm, parted to middle or above, 5-ribbed; lobes narrowly triangular, glandular. Corolla pink; tube ca. as long as to slightly longer than calyx; limb 5-7 mm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule cylindric, slightly longer than calyx. Fl. May-Jun.

* Damp meadows, woodland margins, stream sides; 3000-4100 m. W Sichuan, NW Yunnan.


雅跖花叶报春 ya zhi hua ye bao chun

Herbs perennial, with old white sponge-like leaves at base. Leaves in a rosette; petiole narrowly winged, nearly as long as to 2 as long as leaf blade; leaf blade broadly ovate to suborbicular or ovate-lanceolate, 4-10 2.5-7 mm, succulent, glabrous and efarinose, base rounded, truncate to broadly cuneate, apex entire or with few blunt teeth, apex rounded to obtuse. Scapes 2.5-5 cm, 1-flowered; bracts 1 or 2, lanceolate, 1-2 mm, adnate to middle of scape, apex acute. Flower heterostylous. Calyx narrowly campanulate, 5-6 mm, parted to middle; lobes oblong, apex obtuse. Corolla lavender-blue to purplish; tube 0.9-1.1 cm; limb 2-2.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens ca. 1.5 mm above base of corolla tube; style slightly longer than calyx. Thrum flowers with positions reciprocal. Capsule unknown. Fl. Jun-Jul.

* Damp stony pastures, moss-covered rock crevices of limestone cliffs; 4000-5000 m. SW Sichuan (Muli Xian).


荨麻叶报春 qian ma ye bao chun

Herbs perennial. Leaves in a lax rosette; petiole 2-5 as long as leaf blade, narrowly winged; leaf blade suborbicular to broadly ovate, 3-7 mm wide, efarinose but sparsely minutely glandular, base cuneate, pinnailed 5-11-lobed, apex rounded; lobules linear-oblong, ca. 1 mm, apex obtuse. Scapes 2-7 cm, 1-3-flowered; bracts subulate, 3-5 mm. Flowers heterostylous. Pedicel 0.5-1.5 cm, sparingly glandular. Calyx narrowly campanulate, 4-5 mm, parted to middle, 5-ribbed; lobes ovate to oblong, apex acute. Corolla rose-pink; tube ca. 2 as long as calyx; limb 1-1.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens near base of corolla tube; style ca. as long as to slightly longer than calyx. Thrum flowers: stamens at middle of corolla tube; style ca. 2 mm. Capsule oblong, slightly shorter than calyx.

* Limestone rock crevices; ca. 4000 m. E Qinghai (Datong Xian, Xining Shi).

Primula reginella I. B. Balfour.

Herbs perennial, efarinose. Leaves in a rosette; petiole ca. as long as leaf blade; leaf blade ovate to oblong or suborbicular, 1-3.5 5-22 cm, subfleshy, sparsely minutely glandular, base cuneate, rounded to slightly cordate, margin entire or remotely obscure denticate, apex obtuse to rounded. Scapes 10-30 cm; umbels 2-6-flowered; bracts oblong to ovate-lanceolate, 0.8-1.5 1.5-4 mm, prolonged below into blunt auricles, 4-7 mm. Flowers heterostylous. Pedicel 1-3.5 cm, elongated to 8 cm in fruit. Calyx narrowly campanulate, 5-10 mm, parted to 1/3 or slightly below, 5-ribbed; lobes lanceolate to triangular, glandular ciliolate, apex acute. Corolla white, pink, or purple; limb 1.5-2 cm wide; lobes obovate, deeply emarginate. Pin flowers: corolla tube 1-1.2 cm; stamens ca. 4 mm above base of corolla tube; style slightly exserted. Thrum flowers: corolla tube 1.2-1.4 cm; stamens toward apex of corolla tube; style slightly shorter than calyx. Capsule oblong, 1.25-1.5 as long as calyx. 2n = 22, 44.

Wet meadows, marshes, glades; 3000-4500 m. S Sichuan, Xizang, NW Yunnan [Bhutan, India, Kashmir, N Myanmar, Nepal, Sikkim].

Primula sibirica Jacquin.

Herbs perennial, efarinose. Leaves in a rosette; petiole nearly as long as leaf blade, occasionally 1-3 as long as leaf blade; leaf blade ovate to oblong or suborbicular, 0.5-2.5(3) 4-1.5 cm, base rounded to cuneate, margin entire to obscurely denticate, apex obtuse. Scapes (2-)10-25 cm, glabrous; umbels 2-6(-10)-flowered; bracts oblong, 5-8 mm, glandular ciliolate, prolonged below into blunt auricles 1-1.5 mm, apex obtuse to apiculate. Flowers heterostylous. Pedicel 5-22(-45) cm. Calyx tubular-campanulate, 5-8 mm, often brownish punctate, slightly constricted at base, parted to 1/3, 5-ribbed; lobes oblong to triangular, densely glandular ciliolate, apex acute to obtuse. Corolla pinkish purple; tube 6-10 mm; limb 1-2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style exserted. Thrum flowers: stamens toward apex of corolla tube; style slightly exceeding middle of tube. Capsule cylindric, 7-8 mm. Fl. May–Jun. 2n = 20, 22, 32, 34.
Herbs perennial, efarinose, less than 1.5 cm tall. Rosettes 1.5 cm in diam., with remains of old leaves at base. Petiole narrowly winged, nearly as long as leaf blade; leaf blade spatulate to oblanceolate, 5–12 × 1–2 mm, tapered to base, glabrous or occasionally sparingly minutely glandular abaxially, margin entire or occasionally with 1–3 small teeth on each side, apex obtuse. Scapes less than 3 mm, 1-flowered; bracts linear, ca. 0.5 mm, inserted 1–2 mm below calyx. Flowers terminal, homostylous. Calyx campanulate, 2–2.5 mm, glabrous, parted to near middle; lobes triangular, apex acute to obtuse. Corolla blue-purple; tube ca. 5 mm; limb 4–5 mm wide; lobes oblong, 2 × 1 mm, emarginate. Stamens at middle of corolla tube. Style ca. 2.5 mm. Capsule cylindric, to 5.5 mm.

* Damp meadows; ca. 4000 m. SE Xizang (Mainling Xian).


Herbs perennial, forming dense small tufts. Rosettes 1–1.5 cm in diam. Leaves sessile, oblanceolate to ovate-oblong; base narrowed to base, subacute, glabrous, efarinose, apex truncate, with 3–7 sharp teeth. Pedicel 2–5 mm, parted slightly below middle; lobes triangular, densely yellow farinose inside and on margin. Corolla rose-purple or pale violet; tube white or nearly so, ca. 5 mm, densely white pubescent around mouth; limb ca. 5 mm wide; lobes suberect, narrowly oblong, deeply emarginate. Stamens just below middle of corolla tube. Style reaching anthers. Capsule subglobose, ca. 3 mm in diam. 2n = 18.

Moss on gravelly slopes; 4600–5300 m. SE Xizang (Bhutan, NE India, Nepal, Sikkim).


Herbs perennial, forming small mats less than 1 cm tall, with remains of old leaves at base. Petiole indistinct to 1/2 as long as leaf blade; leaf blade spatulate to oblanceolate, 4–10 × 2–5 mm, minutely glandular, base attenuate, margin crenulate or denticulate on upper 1/2 or toward apex, apex rounded. Scapes 1.5–4(-10) mm, glandular, 1-flowered; bracts 1 or 2, linear, ca. 1.5 mm,
sparsely glandular ciliolate, apex acute. Flower subsessile, heterostylous. Calyx cupular, 3.5–4.5 mm, parted to middle or below; lobes oblong to oblong-lanceolate, sparsely minutely glandular. Corolla purplish blue or pinkish; tube 7–10 (–12) mm, white tomentose inside; limb 1–1.5 cm wide; lobes narrowly obovate, deeply emarginate; lobules linear, 2.5–3 mm, apex obtuse. Pin flowers: stamens near base of corolla tube; style reaching middle of tube. Thrum flowers with positions reciprocal. Capsule ovoid, slightly shorter than calyx. Fl. Jul.

* Limestone cliffs; ca. 4700 m. NW Yunnan (Dulong Xian, Zongdian Xian).


深红小报春 sheng hong xiao bao chun

Herbs perennial, efarinose, forming small mats, 1.5–2 cm tall. Petiole nearly as long as leaf blade; leaf blade obovate to spatulate, 0.7–1.5 cm 3–5 mm, slightly scabrous from minute short-stalked glands, base attenuate, margin crenate-dentate to dentate, apex rounded. Scapes 1–2 cm, sparsely minutely glandular, 1-flowered; bracts 2, linear, 1–2 mm. Flower heterostylous. Pedicel 2–3 mm. Calyx green, campanulate, 3–4 mm, densely minutely glandular, parted nearly to middle; lobes obvate to lanceolate, apex acute to obtuse. Corolla rose; tube ca. 8 mm; limb ca. 1.5 cm wide; lobes obovate-cuneate, deeply emarginate. Pin flowers: stamens ca. 1.5 mm above base of corolla tube; style reaching annulus. Thrum flowers with positions reciprocal. Capsule cylindric, slightly longer than calyx. Fl. Jul.


腺毛小报春 xian mao xiao bao chun

Herbs perennial, efarinose, to 2 cm tall, with remains of old leaves at base. Petiole narrowly winged, shorter than to slightly longer than leaf blade; leaf blade spatulate, 0.5–2 cm 2–4 mm, base attenuate, margin deeply blunt lobulate-dentate, with oblong teeth, often revolute, apex obtuse to rounded. Scapes rarely to 2 cm, 1-flowered; bracts 1, adnate just below calyx, linear, to 4 mm. Flower subsessile, heterostylous. Calyx narrowly campanulate, 3.5–5 mm, parted to middle; lobes green or tinged purple, oblong to elliptic, apex obtuse or dentate. Corolla bright bluish violet, with a white eye; tube 6–8 mm, white pubescent outside; limb 1.5–2 cm wide; lobes narrowly obovate, deeply 2-lobed; lobules linear, ca. 3.5 1.5 mm. Pin flowers: stamens near base of corolla tube; style reaching middle of tube. Thrum flowers with positions reciprocal. Capsule cylindric, shorter than calyx. Fl. Jul.

* Shallow soil, rock faces; ca. 4800 m. SE Xizang (Yingchi Xian).


单花小报春 dan hua xiao bao chun

Herbs perennial, efarinose. Rhizomes terminated in 1 or 2 leaf rosettes; leaf rosettes 1–1.5 cm in diam, with remains of old leaves at base. Petiole winged, nearly as long as leaf blade; leaf blade obovate-spatulate to oblong-spatulate, 0.7–1.5 cm 3–5 mm, minutely short-stalked glandular, slightly scabrous, base attenuate, margin regularly serrate to serrate-lobulate, apex rounded to obtuse. Scapes 1–4 cm, densely glandular, 1-flowered; bracts 2, subulate or narrowly lanceolate, 1.5–2.5 mm. Flowers terminal, homostylous. Pedicel ca. 2 mm, elongated to 4 mm in fruit, densely glandular. Calyx campanulate, 3.5–4 mm, densely glandular outside, parted to near middle; lobes oblong, margin sometimes slightly dentate, apex obtuse or acute. Corolla violet or rose-pink; tube ca. 5 mm, puberulent inside; limb ca. 8 mm wide; lobes obovate-cuneate, deeply emarginate. Stamens near middle of corolla tube. Style reaching anthers. Capsule cylindric, nearly as long as calyx. Fl. Jul.
above; lobes often slightly reflexed, ovate to lanceolate, apex acute to obtuse. Corolla pink or pale bluish purple; tube 5–6 mm; limb 5–8 mm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens slightly below middle of corolla tube; style ca. 2/3 as long as tube. Thrum flowers with positions reciprocal. Capsule cylindrical, slightly longer than calyx. Fl. Jun–Jul.

Steep grassy slopes, near water: 3800–5400 m. NW and W Sichuan, SE Xizang [Bhutan, NE India, Nepal].


匍茎小报春 pu jing xiao bao chun

Herbs perennial, with old remains of leaves at base, occasionally with short leafy stolons. Leaves in a rosette; petiole usually nearly as long as leaf blade, sometimes indistinct to 3 as long as leaf blade; leaf blade rhomboid to ovate-spatulate, 0.6–1.5 cm 5–8 mm, abaxially copiously white farinose, adaxially densely glandular and sparingly white farinose, base long cuneate-attenuate, margin usually denticulate or crenulate above middle, apex subrotund, rarely acute. Scapes 2–5 cm, scarcely farinose, 1(or 2)-flowered; bracts solitary, linear to subulate, 2–3 mm, inserted slightly below calyx. Flowers sessile, heterostylos. Calyx narrowly campanulate, 4–8 mm, glandular outside, copiously white farinose inside, parted to middle or slightly below, 5-veined; lobes lanceolate, apex acute to subobtuse. Corolla blue-violet; tube 1–1.4 cm; limb 1.5–2.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style reaching mouth. Thrum flowers: stamens at middle of corolla tube; style ca. 3 mm. Capsule subglobose, shorter than calyx. Fl. Sep. 2n = 22*.

Rock crevices: 4700–5000 m. S Xizang [Bhutan].


岩生小报春 yan sheng xiao bao chun

Herbs perennial, with old remains of leaves at base, occasionally with short leafy stolons. Leaves in a rosette; petiole usually nearly as long as leaf blade, sometimes indistinct to 3 as long as leaf blade; leaf blade oblong to oblanceolate or spatulate, 2–3 0.5–1.5 cm, abaxially densely yellow farinose, adaxially sparsely yellow farinose, base attenuate, margin denticulate on upper 1/2, apex rounded or acute. Scapes to 1 cm, farinose, 1–4-flowered; bracts linear to linear-lanceolate, 5–7 mm, farinose. Flowers heterostylos. Pedicel 5–10 mm, elongated slightly in fruit. Calyx narrowly campanulate to tubular, 6.5–7 mm, sparsely farinose outside, parted to below middle; lobes lanceolate, apex acute. Corolla bluish purple, sparsely farinose outside; tube 1.3–1.4 cm; limb 1–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 7 mm above base of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule slightly shorter than calyx. Fl. May.

Rocks: 4100–4200 m. SE Xizang (Bomi Xian).


亮白小报春 liang bai xiao bao chun

Herbs perennial, forming cushions of many leaf rosettes. Petiole narrowly winged, nearly as long as leaf blade; leaf blade obovate to oblanceolate or spatulate, 2–3 0.5–1.5 cm, abaxially densely yellow farinose, adaxially sparsely yellow farinose, base attenuate, margin denticulate on upper 1/2, apex rounded or acute. Scapes to 1 cm, farinose, 1–4-flowered; bracts linear to linear-lanceolate, 5–7 mm, farinose. Flowers heterostylos. Pedicel 5–10 mm, elongated slightly in fruit. Calyx narrowly campanulate to tubular, 6.5–7 mm, sparsely farinose outside, parted to below middle; lobes lanceolate, apex acute. Corolla purple or pink; tube 1.1–1.2 cm; limb ca. 1.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. 7 mm, slightly longer than calyx. Capsule unknown.

* Sheltered crevices of cliffs: ca. 5000 m. S Xizang (Wangog Xian).

254. Primula minutissima Jacqemont ex Duby in A. de Candolle, Prodr. 8: 42. 1844.

高峰小报春 gao feng xiao bao chun

* Primula heydei Watt.

Herbs perennial, forming dense tufts of numerous rosettes, occasionally with short leafy stolons. Petiole indistinct or occasionally nearly as long as leaf blade; leaf blade narrowly oblong to lanceolate or oblong-lanceolate, 5–10 1.5–3 cm, abaxially densely yellow farinose, adaxially sparsely glandular, base attenuate, margin denticulate above middle, apex acute to acuminate. Scapes initially inconspicuous, hidden in leaves, to 2.5–4.5(–6) cm in fruit, 1–3(–8)-flowered; bracts 2 or 3, lanceolate to linear-lanceolate, 2–5 mm, farinose. Flower heterostylos. Pedicel 2–3 mm. Calyx cupular, 6–7 mm, membranous, sparsely yellow farinose outside, densely so inside, parted below middle; lobes lanceolate, glandular ciliate, apex acute. Corolla purplish pink; tube 1.1–1.2 cm; limb ca. 1.5 cm wide; lobes broadly obovate, deeply emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. 7 mm, slightly longer than calyx. Capsule unknown.

Damp meadows; 3700-5200 m. W Xizang (Ngari Xian) [India, Nepal, Pakistan].

Smith and Fletcher (Trans. & Proc. Bot. Soc. Edinburgh 33: 238. 1942) cited all flowering specimens as Primula minutissima and all fruiting ones as P. heydei. There is no doubt that they are the same species in different stages of development.


球毛小报春 qiu mao xiao bao chun

Androsace primulina Sprengel, Syst. Veg. 4(2): 57. 1827; A. primuloides D. Don; Primula pusilla Wallich; P. pusilla var. flabellata W. W. Smith.

Herbs perennial, with remains of old leaves at base. Petiole narrowly winged, usually shorter than leaf blade, occasionally longer; leaf blade spatulate to oblanceolate, 1-3 cm 3-5 mm, abaxially minutely glandular, short pubescent along midvein, adaxially scabrous, short glandular pubescent, base attenuate, margin deeply pinnatifid-dentate with sublinear teeth, apex rounded. Scapes 2-9 cm, sparsely glandular; umbels 2-4-flowered; bracts ovate to linear-lanceolate, 3-4 mm. Flowers subsessile, heterostylous. Calyx campanulate, 3-4 mm, minutely short-stalked glandular outside, parted to middle; lobes triangular to oblong, usually white farinose inside, apex acute to obtuse. Corolla purple or blue-purple, rarely white; tube ca. as long as calyx, pubescent outside, with a tuft of white hairs obscuring throat; limb 8-10 mm wide; lobes obovate, deeply emarginate. Pin flowers: stamens near base of corolla tube; style reaching mouth. Thrum flowers with positions reciprocal. Capsule cylindric, ca. as long as calyx. Fl. Jul.

* Banks, hillsides, grassy cliff edges: ca. 5000 m. SE Xizang.


紫球毛小报春 zi qiu mao xiao bao chun

Herbs perennial, efarinose, glabrous. Rosettes 1.2-2 cm in diam., with remains of withered leaves at base, often with 3-5 mm stolons. Petiole narrowly winged, usually 2-3 as long as leaf blade; leaf blade spatulate, 4-8 1-4 mm, succulent, base cuneate-attenuate, upper 1/2 deeply incised into 3-7 narrowly triangular, blunt teeth, apex rounded. Scapes 4-15 mm, 1-flowered; bracts 1, linear. Flower heterostylous. Pedicel 1-2 mm. Calyx cupular, 2.5-3 mm, parted to middle; lobes lanceolate, apex acute. Corolla pinkish purple to blue-violet; tube 3.5-4 mm; throat obscured by a projecting tuft of purple hairs; limb 6-9 mm wide; lobes obovate, deeply emarginate. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers: stamens toward apex of corolla tube; style ca. 1 mm. Capsule cylindric, ca. as long as calyx. Fl. Jul.

* Open stony hillsides, cliff edges: ca. 5000 m. SE Xizang.


山丽报春 shan li bao chun


Herbs perennial. Leaves in a rosette; petiole narrowly winged, nearly as long as to slightly longer than leaf blade; leaf blade obovate to suborbicular or spatulate, 3-7 3-5 mm, glabrous, abaxially yellow farinose, rarely whitish farinose or nearly efarinose, base

Herbs perennial. Leaves in a rosette; petiole nearly as long as to shorter than leaf blade; leaf blade broadly ovate to oblong, 4–13 cm long, 3.5–10 mm wide, minutely scurfy pubescent, abaxially yellow farinose, base subrounded to truncate, rarely short attenuate, margin irregularly dentate, apex obtuse to rounded. Scapes 1–3 cm, glandular puberulent, 1- or 2-flowered; bracts linear to oblong, (1–)2–4 mm long, farinose, apex acute. Flowers homostylous. Pedicel 4–12 mm, glandular puberulent. Calyx campanulate, 3.5–4.5 mm long, glandular puberulent outside, yellow farinose inside, parted slightly below middle, obscurely 5-ribbed; lobes lanceolate to triangular, apex acute. Corolla pink or violet; tube 6–7 mm long; limb 8–10 mm wide; lobes obovate-cuneate, 3–5 mm deep, emarginate. Stamens near apex of corolla tube. Style reaching anthers. Capsule cylindric, ca. as long as calyx. Fl. Jun–Jul.

* Cliffs: 2100–3000 m. Sichuan (Emei Shan).


Herbs perennial. Leaves in a rosette; petiole nearly as long as to shorter than leaf blade; leaf blade broadly ovate to oblong, 0.7–1.5 cm long, 0.7–1.2 cm wide, abaxially white or pale yellow farinose, adaxially scabrous, minutely appressed pubescent, base truncate to shallowly cordate, margin irregularly incised-dentate to serrate, apex acute to obtuse. Scapes 1.5–5 cm, puberulent; umbels 1–5-flowered; bracts narrowly lanceolate to oblanceolate, 3–10 mm long. Flowers heterostylous. Pedicel 0.5–1.5 cm, puberulent. Calyx campanulate to tubular-campanulate, 6–10 mm long, puberulent outside, densely farinose inside, parted below middle, 5-veined; lobes lanceolate to oblong-lanceolate, apex acute. Corolla rose-blue; tube 1.1–1.2 cm long; limb 1.5–2 cm wide; lobes obovate-oblong to oblong, 6–8 mm long, 5–6 mm wide, margin entire, apex rounded. Pin flowers: stamens ca. 3 mm long, ovate; style ca. as long as calyx. Thrum flowers with positions reciprocal. Capsule oblong, nearly as long as calyx. Fl. Jun.

* Granite rocks, meadows; 4000–4800 m. W Sichuan (Dawu Xian, Xinlong Xian).


Herbs perennial. Leaves in a rosette; petiole short, winged; leaf blade obovate to spatulate, 2–
4. 0.5–1.5 cm, tapered to base, abaxially minutely glandular or pale yellow farinose, pubescent along veins, abaxially scabrous-puberulent, margin irregularly sharp dentate, apex rounded. Scapes 6–18 cm, scarcely farinose toward apex; umbels subcapitate, 2–6-flowered; bracts narrowly lanceolate to oblanceolate or sublinear, 5–12 mm, sparsely farinose. Flowers heterostylos. Pedicel 1–5 mm, yellow farinose. Calyx campanulate, 7–9 mm, yellow farinose, parted to middle or slightly below; lobes ovate to ovate-oblong, margin often dentate, apex rounded to obtuse. Corolla lavender to violet-blue with a rose-purple tube; limb 1.2 cm wide; lobes broadly ovate, deeply emarginate. Pin flowers: corolla tube 9–10 mm; stamens ca. 3.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule oblong, 7–8 mm. Fl. Jul.

* Stony grassy slopes; ca. 4800 m. SE Xizang (Mainling Xian).


**Primula rupicola** var. *albicolor* W. W. Smith & H. R. Fletcher.

Herbs perennial. Leaves in a rosette; petiole 1–3 as long as leaf blade; leaf blade ovate to broadly ovate, 1–2 0.5–1.5 cm, abaxially pale yellow farinose or efarinose, adaxially short scurfy pubescent, appearing scabrous, base truncate to obscurely cordate, margin irregularly crenate-dentate, apex obtuse to rounded. Scapes 4–12 cm, sparsely pubescent; umbels (1 or)2–8-flowered; bracts subulate to linear-lanceolate, 5–9 mm. Flowers heterostylos. Pedicel 0.5–1.5 cm, puberulent, sometimes farinose. Calyx often tinged with purple, tubular-campanulate, 5–8 mm, efarinose or scarcely farinose, parted to middle or above, obscurely 5-ribbed; lobes linear-lanceolate to lanceolate, apex acute to obtuse. Corolla bluish purple; tube 0.9–1.1 cm; limb 1–1.8 cm wide; lobes obovate-cuneate, deeply emarginate. Pin flowers: stamens ca. 2.5 mm above base of corolla tube; style ca. as long as calyx. Thrum flowers: stamens slightly above middle of corolla tube; style ca. 1 mm. Capsule ovate, shorter than calyx. Fl. Jul.

* Rock crevices; ca. 4000 m. W Sichuan.

265. **Primula blinii** H. L. Reilly, Monde Pl. 17: 2. 1915.

**Primula blinii** var. *albicolor* W. W. Smith & Forrest.

Herbs perennial. Leaves in a rosette; petiole 1–3 as long as leaf blade; leaf blade ovate to broadly ovate, 1–2 0.5–1.5 cm, abaxially pale yellow farinose or efarinose, adaxially short scurfy pubescent, appearing scabrous, base truncate to obscurely cordate, margin irregularly crenate-dentate, apex obtuse to rounded. Scapes 4–12 cm, sparsely pubescent; umbels (1 or)2–8-flowered; bracts subulate to linear-lanceolate, 5–9 mm. Flowers heterostylos. Pedicel 0.5–1.5 cm, puberulent, sometimes farinose. Calyx often tinged with purple, tubular-campanulate, 5–8 mm, efarinose or scarcely farinose, parted to middle or above, obscurely 5-ribbed; lobes linear-lanceolate to lanceolate, apex acute to obtuse. Corolla bluish purple; tube 0.9–1.1 cm; limb 1–1.8 cm wide; lobes obovate-cuneate, deeply emarginate. Pin flowers: stamens ca. 2.5 mm above base of corolla tube; style ca. as long as calyx. Thrum flowers: stamens slightly above middle of corolla tube; style ca. 1 mm. Capsule ovate, shorter than calyx. Fl. Jul.

* Stony pastures, rock crevices; 3600–4000 m. W Sichuan, NW Yunnan.

264. **Primula souliei** Franchet, J. Bot. (Morot) 9: 450. 1895.

**Primula legendrei** Bonati; **Primula parvula** Pax & K. Hoffmann; **Primula souliei** var. *legendrei* (Bonati) W. W. Smith & Forrest.

Herbs perennial. Leaves in a rosette; petiole 1–3 as long as leaf blade; leaf blade broadly ovate to oblong, 0.7–3.5 0.5–2.5 cm, abaxially white, rarely yellow farinose or efarinose, adaxially scabrous-puberulent, base short cuneate-attenuate to truncate or cordate, margin incised-dentate to pinnatifid, apex rounded to obtuse. Scapes 4–25 cm, puberulent; umbels 2–8(–10)-flowered; bracts lanceolate to linear-lanceolate, 4–8 1–2 mm, apex acute to obtuse. Flowers heterostylos. Pedicel 2–11 mm, farinose. Calyx campanulate to tubular-campanulate, 4–6.5 mm, white or pale yellow farinose, parted below middle, 5-ribbed; lobes lanceolate, apex acute to obtuse. Corolla purplish rose to bluish purple, rarely white; limb 1–2 cm...
wide; lobes obovate, deeply emarginate. Pin flowers: corolla tube 8–10 mm; stamens ca. 2 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule oblong, shorter than calyx. Fl. Jun–Jul.

* South-facing grassy slopes, woodland margins, alpine Quercus forests; 3000–4500 m. W Sichuan, N and NW Yunnan.


石岩报春 shi yan bao chun

Herbs perennial, evergreen, forming dense cushions. Rhizomes woody, conspicuous, much branched. Leaves evergreen; petiole 1–3 as long as leaf blade, broadly winged, sheathing toward base; leaf blade broadly ovate to broadly elliptic or suborbicular, 3–20 × 3–13 mm, leathery, abaxially densely yellow or white farinose, adaxially sparsely short glandular pubescent or subglabrous, base truncate to cordulate, rarely broadly cuneate, margin crenulate, usually narrowly revolute, apex rounded to obtuse. Scapes 0.4–10 cm, pubescent, 1–5-flowered; bracts often tinged with purple, broadly ovate to elliptic, 5–12 × 3–7 mm, apex obtuse to dentate. Flowers heterostylous. Pedicel nearly obsolete to 2 mm. Calyx broadly campanulate, 5–8(–10) mm, pubescent, farinose at base, parted to middle; lobes ovate to oblong-ovate, apex rounded to obtuse. Corolla purple-rose or yellow; tube 1–1.5 as long as calyx; limb 1.5–2.5 cm; lobes broadly obovate, deeply 2-lobed; lobules entire or 2- or 3-toothed. Pin flowers: stamens in lower 1/2 of corolla tube; style slightly exceeding middle of corolla tube or reaching annulus. Thrum flowers with positions reciprocal. Capsule oblong-ovoid, nearly as long as calyx. Fl. Jun–Jul.

Limestone screes, moss-covered boulders, cliff edges; 4000–5300 m. W Sichuan, SE Xizang, NW Yunnan [Bhutan].

1a. Corolla pale yellow 266c. subsp. chlorodryas
1b. Corolla purplish rose.

2a. Corolla tube glabrous or scarcely puberulent inside .......... 266a. subsp. dryadifolia
2b. Corolla tube distinctly pubescent inside 266b. subsp. jonardunii

**266a. Primula dryadifolia** subsp. dryadifolia

石岩报春 (原亚种) shi yan bao chun (yuan ya zhong)


Scapes usually longer than leaf rosette. Corolla purplish rose; tube glabrous or scarcely puberulent inside.

Limestone screes; 4000–5500 m. W Sichuan, SE Xizang, NW Yunnan [Bhutan].


翅柄岩报春 chi bing yan bao chun


Scapes shorter than leaf rosette. Corolla purplish rose; tube conspicuously pubescent inside.

Moss-covered boulders, cliff ledges; 4000–5300 m. W Sichuan, SE Xizang [Bhutan].


黄花岩报春 huang hua yan bao chun


* Limestone boulders; ca. 4500 m. NW Yunnan.


丛毛岩报春 cong mao yan bao chun

Herbs perennial, evergreen, with comparatively thin, many branched rhizomes, forming dense cushions. Leaves evergreen; petiole winged, nearly as long as leaf blade; leaf blade broadly elliptic to suborbicular, 3–5 mm wide, leathery, abaxially sparsely minutely glandular when young, glabrescent, base rounded to cordulate, margin 10–12-toothed and recurved, apex rounded. Scapes 3–5 mm, 1-flowered; bracts broadly ovate to elliptic, 3–5 mm, ciliolate. Flower heterostylous. Pedicel less than 1 mm, scarcely yellow farinose. Calyx campanulate, ca. 5 mm, farinose at base, parted to middle; lobes broadly ovate to oblong, apex rounded to obtuse. Corolla pink, tinged with purple; tube 7–8 mm, with a projected tuft of hairs at throat; limb 1.3–1.8 cm wide; lobes broadly ovate, deeply 2-lobed; lobules emarginate. Pin flowers: stamens near base of corolla tube; style ca. as long as tube. Thrum flowers: stamens near...
middle of corolla tube; style 1.5 mm above corolla tube; style lobes obovate, deep ly emarginate. Pin flowers:

- stamens 0.8 purple, rarely white, with a yellow eye,
- lanceolate, ciliolate. Corolla purple to pinkish or below; lobes often tinged with purple, oblong-
- farnose or minutely glandular, parted to middle
- slightly gibbous. Flowers heterostylous. Pedicel –
- lanceolate, 5
- 3 mm, elongated to 45 cm in fruit, glabrous or
denticulate, apex rounded to obtuse. Scapes 5
- puberulent or glabrescent, base attenuate, margin
- white or y ellow farinose at fruiting, adaxially
- pubescent along veins or subglabrous, sometimes
- enlarged to 20 cm or longer at fruiting, abaxially
- blade oblong to oblanceolate, 3
- 1.5 mm wide. Scapes indistinct to 3(–
- 1.2 cm; limb 1
- leaf rosette. Corolla usually 1–1.5 cm in diam. Fl.


三裂叶报春 三裂叶报春

Herbs perennial, forming cushions 5–10 cm in diam., consisting of much branched rhizomes and leaf rosettes. Leaves evergreen; petiole 4–5 mm, broadly winged, glabrous or sparsely pubescent toward apex; leaf blade broadly ovate to suborbicular, 3–4 mm wide, palmately 3-lobed to middle, apex obtuse or rounded and recurved; lobes ovate, 1–1.5 mm wide. Scapes indistinct to 3(–5)
- glandular pilose, 1-flowered; bracts 1, linear, 3–4 mm. Flower subsessile, heterostylyous. Calyx campanulate, 5–6 mm, densely fulvous glandular pubescent outside, villous inside; limb 1–1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 1 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule nearly as long as calyx. Fl. Aug.

* Pastures, rock crevices; 3700–5000 m. SE Xizang, NW Yunnan.


球花报春 球花报春

Herbs perennial, encircled at base with broadly ovate, subfleshy bud scales 1.5–4 1–2 cm. Leaves in a rosette; petiole broadly winged, indistinct to nearly as long as leaf blade; leaf blade oblong to oblanceolate, 3–15 1.5–4 cm, enlarged to 20 cm or longer at flowering, abaxially pubescent along veins or subglabrous, sometimes white or yellow farinose at flowering, adaxially puberulent or glabrescent, base attenuate, margin denticulate, apex rounded to obtuse. Scapes 5–30 cm, elongated to 45 cm in fruit, glabrous or puberulent, farinose or farinose in upper 1/2; umbels capitate, many flowered; bracts numerous, lanceolate, 5–10 mm, base overlapping and slightly gibbous. Flowers heterostylyous. Pedicel 1–5 mm. Calyx narrowly campanulate, 5–10 mm, farinose or minutely glandular, parted to middle or below; lobes often tinged with purple, oblong-
lanceolate, ciliolate. Corolla purple to pinkish purple, rarely white, with a yellow eye, exannulate; tube 0.8–1.2 cm; limb 1–2 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style 6–7 mm. Thrum flowers: stamens ca. 6 mm above corolla tube; style 1.5–2 mm. Capsule subglobose, shorter than calyx. 2n = 22, 32, 34, 44, 22 + 5f.

Moist meadows, grassy slopes, among shrubs, open forests; 1500–4100 m. Guizhou, W Sichuan, S Xizang, Yunnan (Afghanistan, Bhutan, India, Kashmir, N Myanmar, Nepal, Pakistan, Sikim).

1a. Flowering scapes 2(–4) 球花报春

Flowering scapes usually 2(–4) as long as leaf rosette. Corolla usually 1–1.5 cm in diam. Fl. Apr–Jun.

1b. Flowering scapes 3–6 球花报春

Flowering scapes usually 3–6 as long as leaf rosette. Corolla usually 1–1.5 cm in diam. Fl. Apr–Jun.

269a. Primula denticulata subsp. denticulata

球花报春 (原亚种) 球花报春 (yuan ya zhong)

Flowering scapes usually 2(–4) as long as leaf rosette. Corolla usually 1–1.5 cm in diam. Fl. Apr–Jun.

三裂叶报春 三裂叶报春

Herbs perennial, forming cushions 5–10 cm in diam., consisting of much branched rhizomes and leaf rosettes. Leaves evergreen; petiole 4–5 mm, broadly winged, glabrous or sparsely pubescent toward apex; leaf blade broadly ovate to suborbicular, 3–4 mm wide, palmately 3-lobed to middle, apex obtuse or rounded and recurved; lobes ovate, 1–1.5 mm wide. Scapes indistinct to 3(–5)
- glandular pilose, 1-flowered; bracts 1, linear, 3–4 mm. Flower subsessile, heterostylyous. Calyx campanulate, 5–6 mm, densely fulvous glandular pubescent outside, villous inside; limb 1–1.5 cm wide; lobes obovate, deeply emarginate. Pin flowers: stamens ca. 1 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule nearly as long as calyx. Fl. Aug.

Pastures, rock crevices; 3700–5000 m. SE Xizang, NW Yunnan.
apex; umbels capitate, many flowered; bracts triangular to lanceolate, 2–5 mm, base gibbous. Flowers heterostylous. Pedicel 1–5 mm, scarcely farinose. Calyx tubular–campanulate, 4–6 mm, farinose, parted to middle; lobes oblong–lanceolate to lanceolate, apex rounded to obtuse. Corolla pink to bluish purple, with a yellow eye, annulate; tube ca. 7 mm; limb 0.8–1.5 cm wide; lobes obovate, deeply 2-lobed. Pin flowers: stamens in lower 1/2 of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule ovoid, nearly as long as calyx. Fl. Apr.

* Pastures near water: 2400–3600 m. SW Sichuan, NW Yunnan.


白心球花报春 bai xin qiu hua bao chun


Herbs perennial, without basal bud scales at anthesis. Leaves in a rosette; petiole nearly obsolete to occasionally nearly as long as leaf blade; leaf blade elliptic to oblong or spatulate, 1.5–6 0.5–2 cm, tapered to base, minutely glandular, abaxially occasionally white or pale yellow farinose, margin denticulate, apex rounded to obtuse. Scapes (1–)4–8(–15) cm, sometimes to 20–30 cm in fruit, yellow farinose toward apex; umbels capitate, many flowered; bracts lanceolate, 3–6 mm, base gibbous, apex acute. Flowers heterostylous. Pedicel nearly obsolete or to 1 mm. Calyx campanulate, 5–7 mm, glandular or scarcely farinose, parted slightly below middle; lobes lanceolate, usually tinged with purple at apex. Corolla mauve or pale blue-violet, with an orange eye; tube ca. 2 as long as calyx; limb 1–1.5 cm long; lobes broadly obovate, deeply 2-lobed. Pin flowers: stamens near base of corolla tube; style ca. 1/2 as long as tube. Thrum flowers with positions reciprocal. Capsule subglobose, slightly shorter than calyx. Fl. May–Jun. 2n = 22, 22 + 5f.

Grassy slopes, near water, open forests; 2900–4300 m. 5 Xizang [Bhutan].


疏序球花报春 shu xu qiu hua bao chun

Herbs perennial, without basal bud scales at anthesis. Leaves in a rosette; petiole nearly obsolete, rarely nearly as long as leaf blade; leaf blade obovate to obvate-spatulate, 2–4 1–2 cm, tapered to base, abaxially with dense multicellular hairs along veins, adaxially with dense multicellular hairs, margin minutely crenate-denticulate or sometimes subentire, apex rounded. Scapes 4–10 cm, farinose toward apex; umbels lax, 2–6-flowered; bracts linear, 4–5 mm, scarcely farinose. Flowers heterostylous. Pedicel 2–5 mm. Calyx campanulate, 5–7 mm, scarcely farinose or sparsely minutely glandular outside, densely farinose inside, parted to middle; lobes lanceolate, apex acute. Corolla pale violet; tube ca. 2 as long as calyx; limb 1–2 cm wide; lobes obovate, deeply 2-lobed. Pin flowers: stamens near base of corolla tube; style ca. 2 mm shorter than tube. Thrum flowers: stamens slightly above middle of corolla tube; style ca. 2 mm. Capsule nearly as long as calyx. Fl. Apr–May.

* Open grassy slopes, near waterfalls; ca. 3000 m. SE Xizang.
subsp. polyphylla (Franchet) W. W. Smith & Forrest; P. stolonifera I. B. Balfour.

Herbs perennial, without basal bud scales, sometimes with stolons from base. Leaves in a rosette; petiole broadly winged, indistinct to nearly as long as leaf blade; leaf blade oblanceolate to narrowly obovate-oblong, 3-10 cm, glabrous, abaxially minutely glandular, base attenuate, margin erose-denticulate, apex rounded or obtuse and obscurely apiculate. Scapes 6-35 cm, pale yellow farinose toward apex; umbels capitate, many flowered; bracts ovate to obovate-lanceolate, 2-5 mm, farinose, base slightly gibbous. Flowers heterostylous. Pedicel 1-10 mm, farinose outside, parted nearly to middle; lobes narrowly ovate to oblong, apex obtuse. Corolla pink to lavender-blue, with a yellow eye; limb 7-12 mm wide; lobes obovate, deeply 2-lobed. Pin flowers: corolla tube nearly as long as calyx; stamens 2 in lower 1/2 of corolla tube; style ca. 1 mm. Capsule ellipsoid, slightly shorter than tube. Thrum flowers with positions reciprocal. Capsule elliptic, nearly as long as calyx. Fl. Dec.-Feb.

* Gullies, near water, wet pastures; 1500-3300 m. SW Sichuan, Yunnan.


立花头序报春 li hua tou xu bao chun


Herbs perennial. Leaves in a rosette; petiole winged, 1-4 cm, base dilated, sheathing; leaf blade oblong to obovate-spatulate, 3-15 cm, tapering to base, abaxially densely minutely glandular, often white farinose when young, adaxially minutely glandular, margin erose-denticulate, apex rounded. Scapes 10-30 cm, glandular or farinose toward apex; umbels capitate, spherical; bracts lanceolate, 4-12 mm, clustered below umbel and not forming tuft at apex. Flowers erect or nearly so, heterostylous. Pedicel 2.5-10 mm. Calyx tubular-campanulate, 5-8 mm, minutely glandular, parted below middle; lobes lanceolate, apex acute. Corolla blue; tube longer than calyx 1-5 mm; limb 6-10 mm wide; lobes obovate, deeply 2-lobed. Pin flowers: stamens near base of corolla tube; style slightly shorter than tube. Thrum flowers with positions reciprocal. Capsule elliptic, slightly shorter than calyx. Fl. Sep. 2n = 18, 44, 44 + 1f.

Grassy mountain slopes; 3300-5700 m. S Xizang [NE India, Nepal, Sikkim].


头序报春 tou xu bao chun

Herbs perennial. Leaves in a rosette; petiole winged by decurrent leaf blade, indistinct to 1/2 as long as leaf blade; leaf blade oblong-oblongate to obovate-spatulate, 2-13 cm, abaxially white or yellow farinose but occasionally only minutely glandular, adaxially minutely glandular, base long attenuate, margin erose-denticulate, apex acute to rounded. Scapes 10-45 cm, farinose at least near apex; umbels capitate, many flowered; bracts ovate to broadly lanceolate, 6-8 mm, clustered below umbel in a tuft or crown at apex. Flowers spreading or nodding, heterostylous. Pedicel 1-2 mm. Calyx often tinged with purple, campanulate, obscurely asymmetrical, 5-8 mm, parted to below middle; lobes broadly ovate to elliptic, rarely lanceolate, apex obtuse to acute. Corolla purple, with a yellow eye; limb 7-10 mm wide; lobes obovate, deeply 2-lobed. Pin flowers: corolla tube 6-7.5 mm; stamens ca. 2 mm above the base of corolla tube; style 3.5-4 mm. Thrum flowers: corolla tube 7-9 mm; stamens 5-7 mm above base of corolla tube; style ca. 1 mm. Capsule subglobose, shorter than calyx. Fl. Sep. 2n = 18.

Mountain woodlands, grassy slopes, meadows, forest margins, glades in Picea forests, streamsides; 2700-5000 m. S Xizang, NW Yunnan [Bhutan, NE India, Sikkim].

1a. Leaves efarinose 276c. subsp. sphaerocephala
1b. Leaves farinose.

2a. Inflorescences discoid;
leaves white farinose 276a. subsp. capitata
2b. Inflorescences globose;
leaves yellow to cream-
yellow farinose 276b. subsp. lacteocapitata

276a. Primula capitata subsp. capitata

头序报春 (原亚种) tou xu bao chun (yuan ya zhong)


Leaves white farinose abaxially. Umbels appearing discoid from undeveloped flowers at apex.

Mountain woodlands, grassy slopes; 2700-5000 m. S Xizang [Bhutan, NE India, Sikkim].


黄粉头序报春 huang fen tou xu bao chun

Leaves cream-yellow or bright yellow farinose abaxially. Umbels spherical.

Meadows, forest margins; 3000–5000 m. S Xizang [NE India, Sikkim].


无粉头序报春 *wu fen tou xu bao chun*


Leaves efarinose. Umbels spherical.

* Glades in *Picea* forests, streamside; 2800–4200 m. SE Xizang, NW Yunnan.


迷离报春 *mi li bao chun*

Herbs perennial, efarinose. Leaves in a rosette; petiole short, broadly winged; leaf blade oblanceolate to obovate, 3–6 cm, parted to base, with multicellular hairs, pinnately lobulate, apex obtuse; lobules irregularly dentate. Scapes to 18 cm, pubescent; racemes 1.5–3 cm, 8–10-flowered; bracts linear-oblong to oblanceolate, to 5 mm. Flowers heterostylosus. Pedicel ca. 2 mm. Calyx tubular-campanulate, ca. 5 mm, glandular, parted below middle; lobes narrowly obovate, apex rounded. Corolla deep bluish violet; tube 1.2 cm; limb 5–6 mm wide; lobes ovate to ovate-lanceolate, apex acute or occasionally dentate. Corolla rose-purple; tube 7–9 mm; limb 5–6 mm wide; lobes ovate to elliptic, 4–5 mm, apex acute. Pin flowers: stamens ca. 1.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule globose, slightly shorter than calyx. Fl. Jul. 2n = 20*.

* Wet meadows, near water in valleys; 2800–4000 m. SW Sichuan, N and NW Yunnan.


长瓣穗花报春 *chang ban sui hua bao chun*

Herbs perennial. Leaves in a rosette; petiole winged, usually 1/5–1/2 as long as leaf blade at fruiting; leaf blade elliptic to oblanceolate, 10–30 cm, abaxially pubescent mainly along veins, adaxially pubescent, base attenuate, margin remotely hyathodox-ducticulate, apex rounded. Scapes (15–)20–45 cm, glabrous, scarcely farinose toward apex; spikes narrowly pyramidal, 2–5 cm at anthesis, elongated to 10–18 cm in fruit, densely flowered; bracts linear-lanceolate, 1–2 mm. Flowers heterostylosus. Calyx bright crimson when young, becoming pink, globose-campanulate, 4–5 mm, parted below middle; lobes ovate to ovate-lanceolate, apex acute or occasionally dentate. Corolla rose-purple; tube 7–9 mm; limb 5–6 mm wide; lobes ovate to elliptic, 4–5 mm, apex acute. Pin flowers: stamens ca. 1.5 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule globose, slightly shorter than calyx. Fl. Jul. 2n = 20*.

* Wet meadows, limestone rock crevices; 3000–4500 m. SW Sichuan, N and NW Yunnan.


紫穗报春 *zi sui bao chun*

Herbs perennial. Leaves in a rosette; petiole winged, 1/5–1/2 as long as leaf blade; leaf blade elliptic to obovate-oblong, 10–30 cm, 3–9 cm, parted to base, scabrous-pubescent, margin subentire or remotely blunt dentate, apex
rounded. Scapes 15–28 cm, glabrous, sparsely glandular or thin white or cream-yellow farinose near apex; spikes 10- to many flowered; bracts narrowly oblong, white farinose. Flowers reflexed, heterostyous. Calyx cupular, 4–5 mm, parted slightly below middle; lobes ovate, sparsely glandular, farinose at base, apex rounded to obscurely emarginate. Pin flowers: stamens ca. 1 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule elliptic, slightly longer than calyx. Fl. Jul.

* Moist meadows, thicket margins; 3600–4300 m. SW Sichuan.


短筒穗花报春 duan tong sui hua bao chun

Herbs perennial. Leaves in a rosette; petiole indistinct or sometimes slightly longer than leaf blade; leaf blade oblanceolate to oblong, 2–8 cm, tapered to base, abaxially sparsely pubescent or with hairs confined to veins, adaxially pubescent, margin irregularly coarse dentate, apex subrounded. Scapes 0.7–2 cm, glabrous, scarcely farinose; inflorescences capitate, globose, ca. 2 cm in diam., 10–20-flowered; bracts linear, to 5 mm, farinose, apex acute. Flowers homostylous. Calyx cupular, 4–5 mm, farinose or efarinose outside, parted to middle; lobes unequal, broadly ovate to suborbicular, glandular ciliolate, margin sometimes irregularly denticulate, apex obtuse to acute. Corolla bright violet, 0.8–1.2 cm; tube slightly longer than calyx, cylindrical for lower 3–4 mm, gradually dilated upward into subglobose-campanulate limb; lobes broadly elliptic to suborbicular, 2–3 mm, apex entire to slightly emarginate. Stamens ca. 4.5 mm above base of corolla tube. Style nearly reaching insertion of stamens. Capsule oblong, ca. 5 mm. Fl. Jun.

Steep grassy slopes, cliff edges, among dwarf Juniperus and Rhododendron; ca. 4000 m. SE Xizang (N Myanmar).


短蓝穗状报春 dian lan sui zhuang bao chun


Herbs perennial. Leaves in a rosette; petiole narrowly winged, shorter than to occasionally nearly as long as leaf blade; leaf blade narrowly oblong to oblanceolate, 5–18 cm; tapered to base, with multicellular white hairs, margin irregularly denticulate, apex rounded or obtuse. Scapes 9–25(–38) cm, glabrous, yellow farinose toward apex; inflorescences short spicate, 10- to many flowered; bracts linear-lanceolate, shorter than calyx. Flowers reflexed, heterostyous. Calyx broadly campanulate, 3–5 mm, farinose at base, parted slightly below middle; lobes ovate to lanceolate, glandular ciliolate, apex acute. Corolla deep indigo-purple; tube 7–10 mm, 2.5 mm in diam.; lobes subquadrate, 1–2 mm, apex truncate to obscurely emarginate. Pin flowers: stamens at middle of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule unknown. Fl. Jul. 2n = 40*.

* Wet shaded areas on slopes, thicket margins; 3000–4000 m. W Sichuan, NW Yunnan.


太白山紫穗报春 tai bai shan zi sui bao chun

Herbs perennial. Leaves in a rosette; petiole narrowly winged, 1/3–1/2 as long as leaf blade; leaf blade narrowly oblong to oblanceolate, 6–13 cm, with multicellular hairs, abaxially sometimes with hairs confined to veins, base cuneate-attenuate, margin irregularly blunt dentate, apex obtuse. Scapes 20–35 cm, glabrous, scarcely farinose toward apex; inflorescence short spicate, 10- or more flowered; bracts lanceolate, 1–2 mm. Flowers reflexed, homostylous. Calyx broadly campanulate, 3–4 mm, parted to middle or below; lobes ovate, ciliolate, apex acute. Corolla bluish violet to pale purple; tube 6–8 mm; limb 5–8 mm wide; lobes slightly spreading, broadly ovate to suborbicular, margin entire. Stamens at middle of corolla tube. Style slightly longer than stamens. Capsule elliptic, slightly longer than calyx. Fl. Jul–Aug.

* Grassy mountain slopes; 3000–3700 m. Shaanxi (Taibai Shan).


垂花穗状报春 chui hua sui zhuang bao chun

Herbs perennial. Leaves in a rosette; petiole nearly obsolete to occasionally 1/2 as long as leaf blade; leaf blade broadly obovate to broadly oblanceolate, 3–12 cm, with multicellular white hairs, base short cuneate-attenuate, margin entire to obscurely repand-crenulate, apex rounded to obtuse. Scapes 5–40 cm, subglabrous, minutely glandular; inflorescences spicate, 0.8–2 cm, elongated to 4 cm in fruit, many flowered; bracts ovate, abaxially sparsely glandular.
Flowers heterostylos. Calyx cupular, 3–4 mm, parted to middle; lobes ovate, glandular outside, apex acute or subrounded and apiculate. Corolla deep bluish purple, glandular outside; tube 8–11 mm; limb 7–10 mm wide; lobes ovate to oblong, ca. 3 mm wide, obliquely emarginate to subentire. Pin flowers: stamens near base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule subglobose, ca. 2.8 mm in diam. Fl. Jul. 2n = 20*, 20 + 3f*.

* Grassy mountain slopes; 2700–3900 m. SE Sichuan, N Yunnan.


菊叶穗花报春 ju ye sui hua bao chun


Herbs perennial. Leaves in a rosette; petiole winged, 1/4–1/2 as long as leaf blade; leaf blade oblanceolate to oblong, 6–18 × 1–2.5 cm, pubescent, efarinose or white farinose abaxially, base attenuate, margin shallowly blunt dentate, apex obtuse to subrounded. Scapes 10–38(–45) cm, glabrous or nearly so, white farinose toward apex; inflorescence capitate or short spicate, 7–15-flowered; bracts small, green or blackish purple. Flowers reflexed, heterostylos. Calyx campanulate, 5–7 mm, white farinose or occasionally nearly efarinose, parted below middle or nearly to base; lobes oblong, glandular ciliate, apex rounded to apiculate. Corolla mauve to pale blue-violet; tube 8–11 mm; limb 4–8 mm wide; lobes ovobovate, emarginate. Pin flowers: stamens 3.5–4 mm above base of corolla tube; style slightly shorter than tube. Thrum flowers: stamens ca. 8 mm above base of corolla tube; style 2.3–5.5 mm. Capsule ovoid, longer than calyx. Fl. Jun. 2n = 20, 40, 20 + 1f*.

Stony slopes, among Rhododendron, Abies forests; 4200–5300 m. S Xizang [Bhutan, NE India, Nepal, Sikkim].


裂瓣穗花报春 lie ban sui zhuang bao chun

Herbs perennial. Leaves in a rosette; petiole narrowly winged, 1/4 to slightly longer than leaf blade; leaf blade oblong to elliptic, 1–6 cm, 0.5–3 cm, sparsely pilose, base short attenuate, margin crenate-dentate, apex rounded to obtuse. Scapes 12–35 cm, sparsely pubescent; inflorescences capitulate or short spicate, 3–15-flowered; bracts green or tinged purple, linear, ca. 1/2 as long as calyx. Flowers heterostylos. Calyx cupular, ca. 3 mm, purplish outside, parted to middle or below; lobes ovate–lanceolate, apex acutangular ciliolate. Corolla bluish purple; tube 8–10 mm; limb 7–10 cm; ca. 10 mm; lobes spreading, ovobovate-oblong, 3–4 ca. 3 mm, slightly emarginate. Pin flowers: stamens 2–3 mm above base of corolla tube; style ca. 5 mm. Thrum flowers: stamens 6–8 mm above base of corolla tube; style ca. 2 mm. Capsule ovoid, slightly longer than calyx. Fl. Jul.

* Limestone rock crevices; 3000–4000 m. S Gansu.


穗花报春 sui hua bao chun


Herbs perennial. Leaves in a rosette; petiole 2–7 cm, narrowly winged; leaf blade oblong to oblanceolate, 5–15 × 1.5–3 cm, base attenuate, margin irregularly denticulate or crenulate and ciliate, apex rounded to obtuse, with multicellular hairs. Scapes 30–60 cm, pilose or subglabrous; inflorescences compact spicate, usually efarinose, many flowered; bracts ligulate to lanceolate, 3–5 mm, ciliolate. Flowers reflexed, heterostylos. Calyx subcampanulate, 4–5 mm, parted slightly below middle; lobes unequal, usually purplish, ovate. Corolla dark blue or rose-purple, tubular-funnelform 1.2–1.5 cm; limb slightly spreading, 6–9 mm wide; lobes subquadrate or subrounded, 2–3 mm wide, emarginate. Pin flowers: stamens 2–3 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule elliptic, slightly longer than calyx. Fl. Jun–Jul. 2n = 40*.

* Wet pastures, woodland margins, moist areas in valleys; 3300–4800 m. W Sichuan, SE Xizang, NW Yunnan.


脣草报春 she cao bao chun

Primula tsarongensis I. B. Balfour & Forrest.

Herbs perennial. Leaves in a rosette; petiole 1/5–1/2 as long as leaf blade; leaf blade obovate-spatulate to oblong-lanceolate, 5–15 × 2–3.5 cm, abaxially subglabrous except sparsely pubescent on midvein, adaxially pilose, base long attenuate, margin crenate-dentate, apex rounded. Scapes 18–40 cm, glabrous; inflorescences compact, short spicate, efarinose or sometimes farinose, many flowered. Flowers reflexed, heterostylos. Calyx subcampanulate, 4–5 mm, parted to middle; lobes unequal, ovate-elliptic:
uppersmost lobe usually tinged with dark purple, 2- or 3-toothed. Corolla deep purplish blue, tubular-funnelform; tube ca. 1.2 cm; limb slightly spreading, 5-7 mm wide; lobes subquadrate, ca. 2 mm, apex truncate or slightly notched. Pin flowers: stamens 2–3 mm above base of corolla tube; style ca. 2 mm long. Thrum flowers: stamens 7–8 mm above base of corolla tube; style ca. 2 mm long. Capsule elliptic, slightly longer than calyx. Fl. Jun-Jul. 2n = 40.

* Moist meadows. SW Sichuan, SE Xizang, NW Yunnan.


羽叶穗花报春 *yu ye sui hua bao chun*


Herbs perennial. Leaves in a rosette; petiole narrowly winged, ca. as long as to slightly shorter than leaf blade; leaf blade elliptic to oblange or spatulate, 2–7(–10) cm long; 1–2(–3) cm wide, sparsely pilose, base attenuate, margin crenate-serrate to coarsely dentate or incised-lobose, apex rounded; lobules suboblong, with 1 or 2 teeth on each side. Scapes (5–)10–25 cm, glabrous or slightly so, pale yellow farinose to apex; inflorescences spicate or subcapitate, usually many flowered. Flowers heterostylos. Calyx often tinged with purple, cupular, 4–5 mm, scarcely farinose, parted below middle; lobes unequal, ovate to oblange, apex obtuse to apiculate; posterior lobe often slightly emarginate. Corolla blue-purple; tube 7–8 mm; limb slightly spreading, 5–10 mm wide; lobes short oblange or subrotund, margin entire to obscurely crenate, apex rounded. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. as long as long. Thrum flowers: stamens with positions reciprocal. Capsule subglobose, nearly as long as calyx. Fl. Jul–Aug. 2n = 20, 40.

* Grassy slopes, rock crevices; 3600–4200 m. SW Sichuan, N Yunnan.


珠峰垂花报春 *zhu feng chui hua bao chun*

Herbs perennial. Leaves in a rosette; petiole winged, ca. 1/2 as long as to nearly as long as leaf blade; leaf blade ovate to oblange-ovate, 1–2.5 cm 4–10 mm, with multicellular hairs, base attenuate, margin irregularly deep crenate-dentate, apex rounded to obtuse. Scapes 3–9(–18) cm, with multicellular white hairs; inflorescences subcapitate, 2–5(–7)-flowered; bracts often tinged with purple, narrowly lanceolate to linear, 2–3 mm, densely pubescent. Flowers heterostylos. Calyx cupular, ca. 6 mm, pubescent outside, parted to middle; lobes slightly unequal, narrowly ovate to lanceolate, apex obtuse to acute. Corolla white or purple, funnelform; tube 6–8 mm, pubescent; limb 1–1.5 cm wide; lobes ovobate, 6–8 mm, deeply emarginate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style ca. 2 mm long. Thrum flowers: stamens ca. 4.5 mm above base of corolla tube; style ca. 2 mm long. Capsule subglobose, nearly as long as calyx. Fl. Jun-Jul. 2n = 20.

Damp meadows near gullies, among rocks on N-facing slopes; 4100–5000 m. S Xizang [Nepal].


小垂花报春 *xiao chui hua bao chun*

Herbs perennial, forming dense mats consisting of many rosettes, base with remains of withered foliage. Petiole indistinct to nearly as long as leaf blade; leaf blade oblangeolate to oblangeovate, 5–10 cm; tube ca. 0.5 mm, tapered to base, abaxially pubescent along midvein, axially short white pubescent or subglabrous, margin coarsely pinnatifid-dentate with obtuse teeth, apex obtuse to rounded. Scapes 1–5 cm, sparsely glandular; inflorescences capitate, 1–4-flowered; bracts usually 2 or 3, lanceolate to narrowly ovate, 1.5–3 mm. Flowers sessile, nodding, heterostylos. Calyx often tinged with dark purple, cupular, 3–3.5 mm, finely glandular, parted to middle or below; lobes oblong to oblange-lanceolate, margin occasionally dentate, apex obtuse to acute. Corolla violet-purple; tube nearly as long as calyx; limb 4–6 mm; lobes subquadrate to oblangeolate, 2–lobed. Pin flowers: stamens ca. 1.5 mm above base of corolla tube; style ca. 3 mm. Thrum flowers: stamens ca. 2.5 mm above base of corolla tube; style ca. 0.5 mm. Capsule subglobose, slightly shorter than calyx. Fl. Jul.

Damp rock crevices, moss-covered rocks; 4000–5000 m. S Xizang [Bhutan, NE India, Nepal, Sikkim].


扇叶垂花报春 *shan ye sui hua bao chun*

Herbs perennial. Rosette 1–1.5 cm in diam., with withered foliage at base. Leaf blade subsessile, flabelliform to oblange-cuneate, 1–1.2 cm × ca. 5 mm, broadly rounded, glabrous, base cuneate-attenuate, margin entire except at apex, apex conspicuously acute triangular-dentate. Scapes 2–4 cm, glabrous; capitula 2–4-flowered; bracts linear to narrowly oblange, 1–2 mm. Flowers nodding.
heterostylos. Calyx green or tinged with purple, cupular, ca. 3 mm, parted slightly below middle; lobes lanceolate to oblong, margin entire or with 2 or 3 teeth at apex. Corolla violet-purple, 7–10 mm; tube slightly longer than calyx; limb 5–7 mm wide; lobes oblong to obovate, ca. 3 1.2–2.5 mm, margin entire to obscurely denticulate at apex. Pin flowers: stamens ca. 2 mm above base of corolla tube; style exserted. Capsule globose, nearly as long as calyx. Fl. Jun–Jul.

* Rocks of grassy slopes; 4700–5000 m. SE Xizang (Nang-xian Xian).


乳白垂花报春 ru bai chui hua bao chun

Primula harroviana I. B. Balfour & R. E. Cooper.

Herbs perennial. Leaves in a rosette; petiole narrowly winged, nearly as long as leaf blade; leaf blade elliptic to oblong or ovate, 3–9 1.5–3.5 cm, copiously minutely glandular, base attenuate, margin dentate to dentate-lobulate, apex rounded. Scapes 10–20 cm, densely minutely glandular; capitula 6–12-flowered; bracts lanceolate, 2–6 mm, forming a crown at apex. Flowers nodding, heterostylos. Calyx cupular, 4.5–5 mm, glandular outside, occasionally farinose inside, parted to 1/3; lobes ovate. Corolla violet, funnelform, 2–3 cm, margin blunt dentate to double serrate-crenate. Pin flowers: stamens ca. 2 mm above base of corolla tube; style nearl y reaching mouth. Thrum flowers: corolla tube ca. 1 cm; stamens ca. 2 mm above base of corolla tube; style nearl y reaching mouth. Flowers nodding, heterostylos. Calyx broadly campanulate, 2–5 cm; limb 2–2.5 cm wide; lobes ovate to suborbicular, short emarginate. Pin flowers: corolla tube ca. 1 cm; stamens ca. 2 mm above base of corolla tube; style nearl y reaching mouth. Thrum flowers: corolla tube ca. 1.2 cm; stamens toward apex of corolla tube; style ca. 2 mm. Capsule subglobose, slightly shorter than calyx. Fl. Jun–Aug. 2n = 20*.

* Stony grassy slopes, Pinus forests; 2700–3600 m. W Guizhou, SW Sichuan, Yunnan.


垂花报春 chui hua bao chun

Primula nutans Delavay ex Franchet (1886), not Georgi (1797); P. penduliflora Franchet ex Petit-mengin (1908), not A. Karn ex Stein (1881).

Herbs perennial. Leaves in a rosette; petiole winged, ca. 1/3–1/2 as long as leaf blade; leaf blade elliptic to broadly obovate-lanceolate, (3–)4–5–15 1.5–4–6–8 cm, abaxially with hairs confined to veins, adaxially strigillose, base attenuate, margin repand-crenate to dentate, apex rounded to obtuse. Scapes 10–50 cm, farinose toward apex; inflorescences capitulate to short spicate, 5–15-flowered; bracts linear to lanceolate, 1–3 mm. Flowers nodding, heterostylos. Calyx broadly campanulate, 5–6 mm, sparsely glandular outside, usually white farinose inside, parted to middle; lobes ovate to triangular-ovate, apex acute to dentate. Corolla violet, funnelform, 2–2.5 cm; limb 2–2.5 cm wide; lobes ovate to suborbicular, short emarginate. Pin flowers: corolla tube ca. 1 cm; stamens ca. 2 mm above base of corolla tube; style nearl y reaching mouth. Thrum flowers: corolla tube ca. 1.2 cm; stamens toward apex of corolla tube; style ca. 2 mm. Capsule subglobose, slightly shorter than calyx. Fl. Jun–Aug. 2n = 20*.

* Stony grassy slopes, Pinus forests; 2700–3600 m. W Guizhou, SW Sichuan, Yunnan.


穗状垂花报春 sui zhuang chui hua bao chun

Primula balfourii H. L関eill ; P. delicata Forrest; P. delicatula Dunn.

Herbs perennial. Leaves in a rosette; petiole 1–3–4(–5) cm; leaf blade oblong-elliptic to obovate-elliptic, 1–5 1.5–2–5 cm, membranous when dry, abaxially with shorter hairs confined to veins, adaxially with multicellular hairs, base attenuate, margin blunt dentate to double serrate-crenate, apex obtuse to rounded. Scapes 5–20 cm, sparsely glandular, scarcely white farinose toward apex; spikes laxly (1 or)2–8-flowered; bracts linear to oblong, 2.5–4 mm. Flowers secund, 0.5–1.5(–3) cm
Calyx dark red, campanulate, 2–4.5 mm, glandular or scarcely white farinose outside, densely white farinose inside, parted to near middle; lobes unequal, ovate, apex acute to dentate. Corolla bright blue, funnelform, 1.5–2 cm; limb to 2 cm wide; lobes ovate to elliptic, deeply emarginate. Pin flowers: corolla tube 7–8 mm; stamens ca. 2 mm above base of corolla tube; style 5–6 mm. Thrum flowers: corolla tube 5–6.5 mm; stamens toward apex of corolla tube; style ca. 1 mm. Capsule subglobose, slightly shorter than calyx. Fl. Jun.

* Stony meadows, banks of rivulets, rocks in forests; 3000–3700 m. Yunnan (Dali Xian).


条裂垂花报春 tiao li chui hua bao chun

Herbs perennial. Leaves in a rosette; petiole winged, ca. 1/2 as long as leaf blade or shorter; leaf blade obovate to oblanceolate or spatulate, 2–4 × 0.5–1.5 cm, abaxially glandular pubescent along veins, adaxially scabrous-striped, base attenuate, margin irregularly deep dentate or serrate, apex obtuse to rounded. Scapes 6–15 cm, scarcely farinose toward apex; calyx cupular, 3–6-flowered; bracts ovate-lanceolate to suborbicular, 5–7 mm, forming crown at apex. Flowers nodding, heterostylos. Calyx green or tinged with purple, puberulent, 6–8 mm, farinose inside, parted to 1/3; lobes oblong to broadly lanceolate, margin entire to dentate, apex obtuse. Corolla violet-mauve with greenish white lower part, narrowly campanulate, (1.7–)2–3 cm, basal cylindric portion of tube 5–8 mm, gradually expanded upward; limb 2–3 cm wide; lobes narrowly oblong, 5–10 mm; lobules 2 or 3, linear-triangular. Pin flowers: stamens ca. 1.8 mm above base of corolla tube; style ca. as long as calyx. Thrum flowers with positions reciprocal. Capsule subglobose, nearly as long as calyx. Fl. May.

* Stony grassy slopes; 4000–4700 m. SE Xizang (Nangxian Xian).


粉萼垂花报春 fen e chui hua bao chun

Herbs perennial. Leaves in a compact rosette; petiole indistinct to 1–2 cm; leaf blade elliptic to oblanceolate, 4–7 × 2–3 cm, tapered to base, fringed with hairs, abaxially with hairs confined to veins, adaxially pilose, margin irregularly remote dentate, apex obtuse to rounded. Scapes 8–11 cm, glabrous, white farinose; calyx cupular, 3–5-flowered; bracts ovate to elliptic, 1–4 mm, farinose. Flowers nodding, heterostylos. Calyx cupular, 7–10 mm, usually farinose, parted to 1/3; lobes subquadrate to suborbicular, margin entire to dentate at apex. Corolla bluish purple, broadly funnelform, 1.8–2.4 cm; tube ca. 1.1 cm; limb 2–3.5 cm wide; lobes orbicular to broadly obovate, narrowly emarginate or erose-denticulate. Pin flowers: stamens ca. 3 mm above base of corolla tube; style ca. as long as tube. Thrum flowers with positions reciprocal. Capsule subglobose, nearly as long as calyx. Fl. May.

* Moist meadows; 3800 m. SE Xizang (Nangxian Xian).


钟状垂花报春 zhong zhuang chui hua bao chun

Herbs perennial. Leaves in a rosette; petiole indistinct or to 1/3 as long as leaf blade, broadly winged; leaf blade obovate to oblong-campanulate, 1.5–5 × 1.5–2.5 cm, with multicellular white hairs, farinose or white farinose abaxially, base attenuate, margin irregularly remote dentate, crenate to subentire, apex rounded. Scapes 9–20 cm, glandular, scarcely farinose toward apex; calyx narrowly campanulate, 2–6-flowered; bracts small, lanceolate. Flowers nodding, heterostylos. Calyx green or dark purple, puberulent, 5–8.5 mm, glandular puberulent or scarcely farinose, parted to middle; lobes ovate, margin apiculate or with 2 or 3 teeth at apex. Corolla campanulate, dark purple to bright blue, 1.8–2.5 cm; basal cylindric portion of tube nearly as long as calyx, abruptly dilated upward;
limb 1.5–2 cm; lobes broadly ovate, margin entire, apex obtuse to acute. Pin flowers: stamens ca. 3 mm above base of corolla tube; style nearly as long as calyx. Thrum flowers: stamens at mouth of basal cylindric portion of tube; style 1–2 mm.

Capsule subglobose, nearly as long as calyx. Fl. Jun. 2n = 20.

Moist meadows, among boulders; 3900–4700 m. S Xizang (Nyalam Xian) [Nepal].


独花报春属 du hua bao chun shu


Herbs perennial, with stout woody rhizomes. Leaves basal, petiolate, usually minutely brown punctate. Scapes solitary in each rosette, without bracts. Flowers terminal, solitary. Calyx 5–7-lobed to base; lobes linear-lanceolate. Corolla funnelform, rarely campanulate to salverform, slightly zygomorphic, 5–7-lobed; lobes entire, emarginate or dentate at margin. Stamens 5–7, inserted on corolla tube; filaments glabrous or pubescent; anthers oblong to ovate, apex obtuse. Ovary ovoid, superior. Capsule oblong to cylindric, dehiscing by short valves.


1a. Corolla salverform, tube cylindric, expanded near apex .......................... 1. O. vinciflorum
1b. Corolla funnelform to campanulate, gradually expanded upward from base.

2a. Corolla campanulate, 1.5–2.5 cm, tube slightly longer than calyx; filaments 1–1.5 mm 2. O. brachysiphon
2b. Corolla funnelform, tube at least 2 as long as calyx filaments 5–8 mm.

3a. Base of leaf blade tapered to a broadly winged petiole.
3b. Base of leaf blade (at least the lower 1 or 2 leaves) rounded or cordate; petiole distinct from leaf blade.

4a. Corolla tube ca. 2.5 cm; style included; filaments glabrous; capsule 1.5–2 cm 8. O. elwesianum
4b. Corolla tube 3–4 cm; style exserted; filaments glandular; capsule 2–3 cm 9. O. souliei

5a. Leaves glabrous adaxially, pilose abaxially .............................. 7. O. forrestii
5b. Leaves pubescent.

6a. Corolla tube 6–9 mm wide at apex, limb 2–3 cm wide ....................... 5. O. minus
6b. Corolla tube more than 10 mm wide, limb usually more than 3 cm wide.

7a. Corolla lobes incised-dentate ...................................... 6. O. delavayi
7b. Corolla lobes emarginate or 2-lobed, lobes entire to obscurely crenulate.

8a. Style glandular pubescent ...................................... 3. O. tibeticum
8b. Style glabrous ................................................... 4. O. elegans


独花报春 du hua bao chun


Plants perennial. Bud scales overlapped, yellowish brown, broadly ovate to oblong. Leaves developed at same time as flowers; petiole winged, not well differentiated or to 2 as long as leaf blade; leaf blade oblanceolate to oblong or obovate, 3–14 1–3(–4) cm, with multicellular hairs, base usually attenuate but occasionally subrounded to cordate, margin entire to very obscurely crenulate, apex obtuse. Scapes 8–10–35 cm, elongated to 80 cm in fruit, spreading pubescent, especially near apex. Calyx 5–10 mm, fulvous pilose outside, parted nearly to base; lobes 6–8, lanceolate to linear-lanceolate, apex obtuse. Corolla deep indigo-blue, salverform; tube cylindric, 2.3–3 cm, brownish glandular pubescent outside; limb 3–4(–5) cm wide, 6–8-lobed; lobes variable, usually obovate to obovate-elliptic, 1–2.5 cm 1 cm, shallowly to deeply emarginate. Filaments 3–5 mm, glabrous; anthers oblong, 1.5–2 mm. Ovary and style glabrous. Capsule ca. 2 cm. Fl. May–Jun.

* Damp meadows, shrubs; 2200–4600 m. S Gansu, N and W Sichuan, E Xizang, NW Yunnan.


钟状独花报春 zhong zhuang du hua bao chun

Plants perennial. Rosette 3–9 cm tall, with membranous overlapping bud scales at base. Petiole nearly as long as leafblade, nearly completely concealed by basal scales; leaf blade oblanceolate, 1.5–5 cm 3–10 mm, tapered to base, glabrous, margin entire or occasionally remotely denticate,
Plants perennial. Stems to 10 cm, with overlapped bud scales at base. Leaves usually developed later than flowers; petiole initially nearly as long as leaf blade, 2-3 as long as leaf blade at flowering; leaf blade ovate to ovate-lanceolate, ca. 6-3 cm in anthesis, enlarged to ca. 10 × 4 cm at fruiting, axially sparsely pilose along midvein and lateral veins, axially with long white multicellular hairs, base cuneate to rounded or cordulate, margin entire, occasionally remotely denticulate, apex obtuse. Scapes to 15 cm, elongated to 75 cm in fruit, initially densely pilose. Calyx 9-10 mm, petaloidly to sublinear, pubescent outside, apex acute. Corolla deep violet, 4-5.6 cm; tube ca. 3 as long as calyx; limb 4-6 mm wide; lobes oblong to broadly ovate or elliptic, 2-lobate, margin entire to denticate. Stamens inserted at middle of corolla tube; filaments 6-10 mm, glabrous; anthers 5-6 mm. Ovary and style glabrous. Capsule 1.8-2 cm. Fl. Jun-Jul.

Margins of woodlands and shrubs, peaty soils; 3200-4700 m. SE Xizang (Tsarong Xian), NW Yunnan [N Myanmar].


**小独花报春** *xia duo hua bao chun*

Plants perennial. Stems to 14 cm. Bud scales overlapped at base, ovate to oblong, membranous. Leaves developed at same time as flowers; petiole initially nearly as long as leaf blade, 2 as long as leaf blade at flowering; leaf blade broadly ovate, 2-3(-6) × 1-2(-3) cm, abaxially pubescent along veins, axially sparsely pilose, base suborbicular, margin entire or nearly so, apex rounded to obtuse. Scapes 5-10(-15) cm, elongated to 10-20(-50) cm in fruit, pilose. Calyx 6-10 mm, petaloidly to sublinear, pilose, apex acute; veins 3. Corolla deep indigo-purple or rose-purple; tube 2-2.5 cm, 6-9 mm wide at apex, uniformly narrow-cylindrical; limb 2-3 cm wide; lobes broadly ovate to oblong, apex incised-denticulate. Stamens inserted slightly above middle of corolla tube; filaments 5-7 mm, glabrous; anthers 3-3.5 mm. Ovary and style glabrous. Capsule 5-10(-15) cm. Fl. Jun-Jul.

* Gravelly grassy slopes, among shrubs; 3500-4000 m. SW Sichuan, E Xizang, NW Yunnan.


**大理独花报春** *da li duo hua bao chun*

Plants perennial. Stock to 10 cm, with overlapping bud scales at base. Leaves with petioles nearly as long as leaf blade, to 3 as long as leaf blade at flowering; leaf blade broadly ovate to oblong or suborbicular, not well developed and partly concealed by basal bud scales at anthesis, 3-7 × 2-5 cm, enlarged to ca. 10 × 7 cm at fruiting, axially with fulvous multicellular hairs along veins and at margin, adaxially
sparsely pubescent along midvein, base cordulate to cordate, margin obscurely repand to crenulate, apex obtuse to rounded. Scapes 6–15 cm, elongated to 20–30 cm in fruit, pilose. Flowers precocious. Calyx broadly campanulate, 1.2–1.5 cm, parted nearly to base; lobes lanceolate, pubescent outside, margin occasionally dentate, apex acute to obtuse; veins 3–5. Corolla rose-purple, funnelform, 4–5 cm, pilose outside; tube 2–3 cm as long as calyx; limb 3–3.5 cm wide; lobes ovate to oblong-ovate, papillose, style exserted. Capsule 2.5–3 cm, elongated to 60 cm in fruit, crimson pubescent toward apex. Calyx 6–12 mm, pubescent outside, parted nearly to base; lobes lanceolate, margin sometimes dentate near apex. Corolla purple, funnelform; tube ca. 2.5 cm, gradually enlarged upward from base, pubescent outside; limb 2–3.5 cm wide; lobes oblanceolate, ciliate, margin emarginate and obscurely dentate at apex. Stamens inserted at middle of corolla tube; filaments ca. 5 mm, pubescent; anthers 3–3.5 mm. Ovary glabrous; style included. Capsule 1.5–2 cm. Fl. Jul. 2n = 96.

* Alpine scrubland, grassy slopes; 3800–4000 m. SE Xizang [Bhutan, India, Nepal, Sikkim].


**zhong dian du hua bao chun**

Plants perennial, base with overlapped bud scales. Leaves developing at same time as flowers; petiole nearly as long as to 2 as long as leaf blade, narrowly winged; leaf blade oblanceolate to oblong-elliptic, 4–10 cm, enlarged after anthesis, glandular ciliate, abaxially pilose along midvein and lateral veins, adaxially glabrous, base subcordulate to rounded or cordulate, margin slightly repand to remotely denticulate, apex obtuse. Scapes 15–25 cm, elongated to 65 cm in fruit, densely pilose toward apex. Calyx 1–1.3 cm, densely pubescent outside; lobes lanceolate, glandular ciliate, apex obtuse; veins 3. Corolla dark purple, funnelform, 5–7 cm, sparsely glandular pubescent; tube ca. 4 cm as long as calyx, gradually enlarged upward from base; limb ca. 5 cm wide; lobes broadly ovate to elliptic or even suborbicular, sparsely ciliate, margin obscurely crenulate, apex 2-lobed. Stamens inserted above middle of corolla tube; filaments 7–7.5 mm, glabrous; anthers 4.2–5.5 mm. Ovary and style glabrous. Capsule to 2 cm. Fl. Jun-Jul.

* Gravelly meadows, *Rhododendron* thickets; 3500–4000 m. SW Sichuan, NW Yunnan.


**guang ye du hua bao chun**

Plants perennial. Stock 4–10 cm. Bud scales overlapped at base, oblong, glabrous, apex brownish. Leaves developed at same time as flowers or shortly thereafter; petiole winged, portion exerted from basal scales very short to 1/3 as long as leaf blade; leaf blade elliptic to oblanceolate, 2–8 cm, with glandular hairs, parted nearly to base; lobes lanceolate, apex acute to obtuse. Corolla deep red to bluish purple; tube 3–4 cm, pilose outside; limb 4–6 cm wide; lobes broadly obovate to oblong, 2-lobed, margin entire, apex rounded to apiculate. Scapes 12–25 cm, elongated to 60 cm in fruit, glandular pilose. Calyx campanulate, 7–12(–16) mm, with glandular hairs, parted nearly to base; lobes lanceolate, apex acute to obtuse. Corolla deep red to bluish purple; tube 3–4 cm, pilose outside; limb 4–6 cm wide; lobes broadly obvate to oblong, 2-lobed, margin entire to incised-dentate. Stamens inserted at middle of corolla tube; filaments to 1 cm, glandular; anthers ca. 5 mm. Ovary glabrous; style exserted. Capsule 2–3 cm. Fl. Jun-Jul.

* Margins of *Pinus* forests and *Rhododendron* thickets; 3300–4500 m. SW Sichuan, E Xizang, NW Yunnan.


**chang zhu du hua bao chun**

Plants perennial. Stock 4–10 cm. Bud scales overlapped at base, oblong, glabrous, apex brownish. Leaves developed at same time as flowers or shortly thereafter; petiole winged, portion exerted from basal scales very short to 1/3 as long as leaf blade; leaf blade elliptic to oblong, 2–8 cm, with glandular hairs, parted nearly to base; lobes lanceolate, apex acute to obtuse. Corolla deep red to bluish purple; tube 3–4 cm, pilose outside; limb 4–6 cm wide; lobes broadly obvate to oblong, 2-lobed, margin entire, apex rounded to apiculate. Scapes 12–25 cm, elongated to 60 cm in fruit, glandular pilose. Calyx campanulate, 7–12(–16) mm, with glandular hairs, parted nearly to base; lobes lanceolate, apex acute to obtuse. Corolla deep red to bluish purple; tube 3–4 cm, pilose outside; limb 4–6 cm wide; lobes broadly obvate to oblong, 2-lobed, margin entire to incised-dentate. Stamens inserted at middle of corolla tube; filaments to 1 cm, glandular; anthers ca. 5 mm. Ovary glabrous; style exserted. Capsule 2–3 cm. Fl. Jun-Jul.

* Margins of *Pinus* forests and *Rhododendron* thickets; 3300–4500 m. SW Sichuan, E Xizang, NW Yunnan.
Herbs perennial. Leaves basal, petiolate. Flowers terminal, solitary, without bracts. Calyx 7-lobed to base; lobes lanceolate. Corolla yellow, funnelform-campanulate, exannulate, 7-lobed to middle; lobes linear, 2-lobed. Stamens 7, inserted toward apex of corolla tube; filaments very short; anthers oblong, apex acuminate. Ovary oblong, apex gradually narrowed into slender style. Stigma capitate. Capsule cylindric, many seeded, dehiscing by a lid at apex.

One species: Bhutan, China, Nepal, Sikkim.


长果报春 chang guo bao chun

Herbs annual or biennial. Leaves basal, pinnatifid. Scapes with umbels. Calyx cupular, 5-lobed, enlarged in fruit. Corolla salverform, slightly shorter than calyx, constricted and annulate at throat; limb 5-lobed. Stamens 5, inserted at upper 1/3 of corolla tube; filaments very short; anthers ovate, apex obtuse. Ovary depressed globose. Style shorter than ovary; stigma capitate. Capsule subglobose, circumscissile.

One species: endemic to W China.


羽叶点地梅 yu ye dian di mei

Herbs annual or biennial. Leaves basal, pinnatifid. Scapes with umbels. Calyx cupular, 5-lobed, enlarged in fruit. Corolla salverform, slightly shorter than calyx, constricted and annulate at throat; limb 5-lobed. Stamens 5, inserted at upper 1/3 of corolla tube; filaments very short; anthers ovate, apex obtuse. Ovary depressed globose. Style shorter than ovary; stigma capitate. Capsule subglobose, circumscissile.

One species: endemic to W China.


水茴草属 shui hui cao shu

Herbs annual or perennial. Stems erect, sometimes woody at base. Leaves alternate or sometimes the basal forming a rosette. Inflorescences terminal, racemose to corymbose. Calyx 5-lobed; tube fused with ovary at base or to middle. Corolla white, campanulate, 5-lobed. Stamens 5, inserted in corolla tube; filaments very short; anthers obtuse or acute at apex; staminodes 5, linear to ligulate, alternating with corolla lobes. Ovary semi-inferior; ovules numerous, semi-anatropous. Style short; stigma obtuse to capitellate. Capsule globose, dehiscing by valves.

About 10 species: mostly maritime countries of the southern hemisphere; 1 species in China


水茴草 shui hui cao

Plants annual, glabrous. Stems erect, 10–30(-40) cm, terete or obscurely angular. Basal leaves obovate to oblom-glovate, 1.2–6.5 × 0.7–3 cm, tapered at base into a short winged petiole, margin entire, apex rounded to obtuse; stem leaves smaller, short petiolate or sessile, apex obtuse to apiculate. Racemes loose, usually 8–20 cm, 10–20-flowered. Pedicel 6–12 mm; bracts lanceolate, ca. 1 mm, adnate to middle
of pedicel. Calyx campanulate, ca. 1 mm, enlarged to 2–2.5 mm in fruit, parted to 1/3; lobes triangular. Corolla white, 2–3 mm in diam.; tube nearly as long as calyx; lobes ovate, apex obtuse. Capsule 2–3 mm in diam. 2\(n\) = 24, 26.

River banks, streamsides, areas near water; 100–1300 m. Guangdong, Guangxi, Guizhou, Hunan, Yunnan [Cosmopolitan].