

7. ANDROSACE Linnaeus, Sp. Pl. 1: 141. 1753.

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 \pm 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. Style not longer than corolla tube. Capsule subglobose, dehiscent 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*
 - 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 4*

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 \pm caespitose; 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, \pm 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 × 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 caespitose; 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 caespitose, 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*
- 10b. 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 oblanceolate; calyx lobes triangular 51. *A. stenophylla*
- 9b. Leaves subequal or homomorphic.
- 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 69. *A. pomeiensis*
- 28b. Inner leaves with coarse hairs or glabrescent, or only fimbriate-ciliate.
- 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 ciliate 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 caudicules 57. *A. coronata*
 - 44b. Leaves glabrous at least abaxially.
 - 46a. Outer leaves whitish, scariosus when dry; bracts ovate to ovate-oblong, shorter than pedicel 58. *A. brachystegia*
 - 46b. Outer leaves deep reddish brown when dry, not scariosus; bracts elliptic to oblong, longer than pedicel 59. *A. yargongensis*

Key 5

- 1a. Scapes and inflorescences glandular pubescent; corolla lobes 2-lobate 72. *A. aizoon*
- 1b. Scapes and inflorescences hirsute or hirtellous-villous, without glands; corolla lobes entire or slightly emarginate.
 - 2a. Calyx sparsely pilose, smooth; lobes oblong, obtuse to subrounded at apex 70. *A. bulleyana*
 - 2b. Calyx densely bristly, ± furrowed in fruit; lobes triangular, acute at apex 71. *A. integra*

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

腋花点地梅 *ye hua dian di mei*

Androsace rotundifolia Hardwicke var. *axillaris* Franchet, Bull. Soc. Bot. France 32: 10. 1885; *A. geraniifolia* Watt var. *escaposa* Handel-Mazzetti.

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 × as long as leaf blade, retrorse 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, retrorse 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].

2. *Androsace cuscutiformis* Franchet, J. Bot. (Morot) 9: 454. 1895.

细蔓点地梅 *xi man dian di mei*

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 subobtusate. 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.

3. *Androsace geraniifolia* Watt, J. Linn. Soc., Bot. 20: 17. 1882.

掌叶点地梅 *zhang ye dian di mei*

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 mm. Pedicel 5–10 mm, puberulent. Calyx pubescent, 3–3.5 mm, parted to middle; lobes ovate-lanceolate, apex blunt. 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].

4. *Androsace croftii* Watt, J. Linn. Soc., Bot. 20: 17. 1882.

红毛点地梅 hong mao dian di mei

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 oblong-obovate, margin subentire. Fl. May.

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

5. *Androsace rotundifolia* Hardwicke, Asiat. Res. 6: 350. 1799.

叶苞点地梅 ye bao dian di mei

Herbs perennial, pubescent-villous or glandular pubescent. Leaves in a rosette; petiole (1.5–)3–10 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 oblanceolate 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-obovate, 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].

5b. *Androsace rotundifolia* var. *glandulosa* J. D. Hooker, Fl. Brit. India 3: 496. 1882.

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].

5c. *Androsace rotundifolia* var. *thomsonii* Watt, J. Linn. Soc., Bot. 20: 16. 1882.

尖齿叶苞点地梅 jian chi 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].

6. *Androsace medifissa* Chen & Y.C. Yang in C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 216. 1986.

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- or 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).

7. *Androsace elatior* Pax & K. Hoffmann, Repert. Spec. Nov. Regni Veg. 17: 193. 1921.

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 × as tall as leaf rosettes; umbels 10–25-flowered; bracts linear to oblong, 2–2.5 mm, apex acuminate. 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.

8. *Androsace gagnepainiana* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 61: 200. 1924.

披散点地梅 pi san dian di mei

Herbs perennial, forming solitary rosettes or small tufts. Leaves basal; 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-obovate, 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-obovate, ca. 2 mm wide, emarginate. Fl. Jun–Jul.

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

9. *Androsace dissecta* (Franchet) Franchet, J. Bot. (Morot) 9: 454. 1895.

裂叶点地梅 lie ye dian di mei

Androsace rotundifolia Hardwicke var. *dissecta* Franchet, Bull. Soc. Bot. France 32: 10. 1885; *Primula dissecta* (Franchet) Derganc.

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, palmately 5- or 6-lobed to middle, base cordate, sinus penetrating 1/4–1/3 into leaf blade; lobes cuneate-obovate, 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, 1–2 mm wide, emarginate. Fl. Apr–May.

* Open mountain woodlands, glades, rocky banks; 2800–3500 m. SW Sichuan, NW Yunnan.

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

花叶点地梅 hua ye dian di mei

Primula alchemilloides (Franchet) Derganc.

Herbs perennial, pulvinate cespitose. Caudex 1.5–4 cm, branched, encircled with withered remains of leaves. Leaves of current year borne on apex of caudicules, in a rosette; petiole ca. 6 mm, dilated and subvaginate on lower part, margin membranous; leaf blade flabellate, 3–5 mm wide, densely minutely hirtellous, palmately 3-lobed nearly to base, base short attenuate; lobes 3- or 4-divided, segments linear, (0.5–) 1–1.5 mm wide, apex subobtuse. Scapes 1.5–3 cm, hirtellous; umbels 3–8(–12)-flowered; bracts elliptic to oblong-lanceolate, 3–5 mm, abaxially densely hirtellous, adaxially glabrous. Pedicel 5–7 mm, hirtellous. Calyx 3–4 mm, densely hirtellous, parted to middle; lobes ovate, apex subobtuse. Corolla white or pink, 5–7 mm in diam.; lobes oblong to oblong-obovate, ca. 2 mm wide, apex truncate to slightly emarginate. Fl. May–Jun.

* Rocks of grassy slopes; 3000–4000 m. NW Yunnan.

11. *Androsace wilsoniana* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 15: 275. 1927.

岩居点地梅 yan ju dian di mei

Herbs perennial; caudicules 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, palmately 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.

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

12. *Androsace umbellata* (Loureiro) Merrill, Philipp. J. Sci. 15: 237. 1919 [1920].

点地梅 dian di mei

Drosera umbellata Loureiro, Fl. Cochinch. 1: 186. 1790; *Androsace saxifragifolia* Bunge; *Primula minutiflora* Forrest; *P. umbellata* (Loureiro) Bentvelzen.

Herbs annual or biennial, with numerous fibrous roots. Leaves basal; petiole 1–4 cm, pilose; leaf blade suborbicular to ovate, 0.5–2 cm wide, appressed pubescent, base shallowly cordate to subrounded, margin dentate, apex obtuse to rounded. Scapes often many, erect, 4–15 cm, pubescent; umbels 4–15-

flowered; bracts ovate to lanceolate, 3.5–4 mm. 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 obovate-oblong, 2.5–3 × 1.5–2 mm, apex obtuse. Fl. Feb–Apr. $2n = 18^*$.

Open grassy areas, roadsides; 100–1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Heilongjiang, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [India, Japan, Kashmir, Korea, Myanmar, New Guinea, Pakistan, Philippines, E Russia, Sikkim, Vietnam].

13. *Androsace henryi* Oliver, Hooker's Icon. Pl. 20: t. 1973. 1891.

莲叶点地梅 *lian ye dian di mei*

Herbs perennial. Leaves basal; petiole 6–16 cm, spreading white pubescent; leaf blade orbicular to reniform, 1–7 cm wide, strigillose, base cordate, sinus penetrating 1/3 into leaf blade, crenate-lobed; lobes crenate to dentate. Scapes (7–)15–30 cm; umbels 12–40-flowered; bracts linear to elliptic, 3–9 mm. Pedicels subequal, 1–1.8 cm, puberulent. Calyx 3–4 mm, with minute bristlelike hairs, parted to 1/2; lobes triangular to ovate; veins 3–5, distinct. Corolla white, rarely pink, 5–8 mm in diam.; tube ca. as long as calyx; lobes cuneate-oblong to obovate, 2–2.5 × 1.5–2 mm, emarginate.

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, 3–9 mm; calyx 3–4 mm, scarcely enlarged in fruit 13a. subsp. *henryi*
- 1b. Bracts elliptic to obovate-oblong, 4–5 mm; calyx 3.5–4 mm, enlarged to 5–6 mm in fruit 13b. subsp. *simulans*

13a. *Androsace henryi* subsp. *henryi*

莲叶点地梅(原亚种) *lian ye 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 Shaanxi, Sichuan, SE Xizang, Yunnan [Bhutan, Myanmar, Nepal].

13b. *Androsace henryi* subsp. *simulans* C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 218. 1986.

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.

14. *Androsace gmelinii* (Linnaeus) Roemer & Schultes, Syst. Veg. 4: 165. 1819.

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)*

Cortusa gmelinii Linnaeus, Sp. Pl. 1: 144. 1753.

Scapes 3–9 cm. Pedicel 3–15 mm, much shorter than scapes. Fl. May–Jun.

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

14b. *Androsace gmelinii* var. *geophila* Handel-Mazzetti, Acta Horti Gothob. 2: 112. 1926.

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.

15. *Androsace paxiana* R. Knuth in Engler, Pflanzenr. IV. 237(Heft 22): 176. 1905.

娥眉点地梅 *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, abaxially 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 subobtusely;

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, Guanxian Xian).

16. *Androsace gracilis* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 61: 135. 1924.

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, 2–3.8 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 funnellform, 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.

17. *Androsace kouytchensis* Bonati, Bull. Soc. Bot. Genève 5: 297. 1913.

贵州点地梅 gui zhou dian di mei

Androsace refracta Handel-Mazzetti.

Herbs perennial. Leaves in a basal rosette; petiole 1.5–2.5 cm, hirsute, spreading pubescent; leaf blade suborbicular, 1–2.5 cm wide, sparsely rust-colored appressed hirsute, more densely so near margin, basal sinus penetrating 1/5–1/4, irregularly lobulate-crenate, apex rounded. Scapes 2–5 in each rosette, 4–7 cm, initially ascending or erect, becoming diffuse after anthesis; umbels 6–10-flowered, with rust-colored bristlelike spreading hairs, intermixed with minute glands; bracts linear, ca. 2 mm. Pedicel flexuous, reflexed in fruit, 1.5–2 cm, with rust-colored bristlelike spreading hairs, intermixed with minute glands. Calyx ca. 3 mm, densely hirsute, parted to 1/3; lobes ovate, not enlarged in fruit, apex acute. Corolla white; tube ca. 2 mm; lobes oblong, ca. 2 × 1.5 mm, apex truncate. Ovary pubescent. Fl. Sep.

* 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.

18. *Androsace graceae* Forrest, Notes Roy. Bot. Gard. Edinburgh 8: 331. 1915.

圆叶点地梅 yuan ye dian di 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 minutely cordate, margin entire, narrowly revolute; midvein and veins invisible. Scapes 2–6 mm, rust-colored villous; umbels 6–18-flowered; bracts elliptic to obovate-elliptic, usually with long hairs on margin. Pedicel 2–5 mm, ca. as long as to slightly longer than bracts, pubescent. Calyx 3–3.5 mm, glabrescent, parted to 2/3; lobes

elliptic to ovate-elliptic, ca. 1.5 mm wide, ciliate, apex obtuse. Corolla pink, 6–7 mm in diam.; lobes oblong to obovate-oblong, 2.5–3 × 1.2–2 mm, apex rounded. Fl. Jun–Jul.

* Screes, moraines; 3800–4600 m. SW Sichuan, NW Yunnan.

19. *Androsace mirabilis* Franchet, J. Bot. (Morot) 9: 453. 1895.

大叶点地梅 da ye dian di mei

Herbs perennial. Leaves in a basal rosette; petiole 10–15 cm, fulvous villous, 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).

20. *Androsace runcinata* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 161. 1931.

异叶点地梅 yi ye dian di mei

Androsace diversifolia C. Y. Wu.

Herbs perennial. Leaves basal; petiole to 1/2 as long as leaf blade, glabrescent, narrowly winged; leaf blade elliptic to elliptic-obovate, 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 subrounded; veins inconspicuous. Scapes erect, 10–20 cm, sparsely villous; umbels 8–12-flowered; bracts linear-subulate, 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 oblong, ca. 1.8 mm wide, margin entire or apex slightly emarginate. Fl. Apr–May.

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

21. *Androsace filiformis* Retzius, Observ. Bot. 2: 10. 1781.

东北点地梅 dong bei dian di 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 denticulate, apex obtuse to acute. Scapes 3 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. $2n = 18, 20$.

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

22. *Androsace septentrionalis* Linnaeus, Sp. Pl. 1: 142. 1753.

北点地梅 bei dian di mei

Herbs annual, with a long taproot. Leaves sessile or subsessile, lanceolate to oblong-lanceolate, 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].

- 1a. Scapes 3.5–25 cm, longer than pedicel 22a. var. *septentrionalis*
1b. Scapes 0.8–2.2(–4) cm, usually shorter than pedicel 22b. var. *breviscapa*

22a. *Androsace septentrionalis* var. *septentrionalis*

北点地梅(原变种) bei dian di mei (yuan bian zhong)

Scapes 3.5–25 cm, several × longer than pedicel. Fl. May–Jun.

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].

22b. *Androsace septentrionalis* var. *breviscapa* Krylov, Fl. Altai Government Tomsk 3: 817. 1904.

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].

23. *Androsace maxima* Linnaeus, Sp. Pl. 1: 141. 1753.

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, sparsely villous or glabrescent, apex acute to subobtusate. 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, leaf-like, sparsely villous. Pedicel 1–1.5 cm, pubescent. Calyx 3–4 mm, enlarged to 9 mm in fruit, sparsely 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, Kazakstan, Kyrgyzstan, Mongolia, Russia, Tajikistan, Turkmenistan, Uzbekistan; N and W Africa, SW Asia, C and S Europe.].

24. *Androsace engleri* R. Knuth in Engler, Pflanzenr. IV. 237(Heft 22): 213. 1905.

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.

25. *Androsace spinulifera* (Franchet) R. Knuth in Engler, Pflanzenr. IV. 237(Heft 22): 184. 1905.

刺叶点地梅 ci ye dian di mei

Androsace strigillosa (Franchet) R. Knuth var. *spinulifera* Franchet, Bull. Soc. Bot. France 32: 11. 1885; *A. prattiana* R. Knuth.

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 cartilaginous, 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, sparsely spreading hirsute; umbels many flowered, densely hirsute; 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 obovate, 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.

26. *Androsace graminifolia* C. E. C. Fischer, Hooker's Icon. Pl. 34: t. 3357. 1938.

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 tangled hairs; umbels subcapitate, 5–15-flowered; bracts leaflike, ovate to broadly lanceolate, ca. 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

27. *Androsace mariae* Kanitz, Wiss. Erg. Reise Graften Béla Széchenyi 2: 714. 1891.

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. *trachyloma* Handel-Mazzetti; *A. sempervivoides* 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, hirsute. Pedicel 5–7 mm, elongated to 1.8 cm in fruit, hirsute. Calyx ca. 3 mm, parted to ± middle; lobes triangular, hirsute. Corolla pink, 5–7 mm in diam.; lobes cuneate-obovate, margin obscurely undulate, apex rounded. Fl. Jun.

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

28. *Androsace lehmannii* Wallich ex Duby in A. de Candolle, Prodr. 8: 48. 1844.

钻叶点地梅 zuan ye dian di mei

Androsace nepalensis Derganc.

Herbs perennial, laxly caespitose. Shoots dark brown, glabrous; internodes 7–10(–20) mm proximally, shorter distally. Rosettes 0.8–1.5 cm in diam. Leaves dimorphic, sessile; outer leaves ovate-oblong, ca. 3 mm, slightly incurved, apex rounded, ciliate on distal 1/2; inner leaves linear to subulate-lanceolate, 6–10 × 0.6–1 mm, tapered toward base, abaxially glabrescent or sparsely short pubescent on midvein, adaxially glabrous, margin remotely ciliate near apex, apex acute. Pedicel 5–8(–10) mm, sparsely short spreading pubescent. Flowers 1 or 2, arising from rosettes. Calyx ca. 2 mm, short pubescent on ridges, parted to 1/2; lobes ovate, ciliate, margin submembranous, apex obtuse; veins 5, obscure. Corolla white, 4–4.5 mm in diam.; lobes obovate, margin entire or obscurely undulate, apex rounded. Fl. Jun.

Grassy slopes; 4400–4800 m. S Xizang [?Bhutan, NE India, Nepal, Sikkim].

29. *Androsace cernuiflora* Y. C. Yang & R. F. Huang in C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 230. 1986.

弯花点地梅 wan hua dian di mei

Herbs perennial, forming dense moundlike cushions consisting of tightly aggregated columns with dense overlapping leaves, 4–5 mm in diam. Leaves 6–6.5 mm, sessile, passing centripetally from oblong to sublinear, margin cartilaginous, short ciliate, apex subobtuse; midvein raised abaxially, recurved from middle, proximally membranous, whitish. Inflorescences with solitary flowers; bract solitary, lanceolate to linear, ca. 4 mm, base membranous and auriculate dilated. Pedicel slightly drooping to recurved, 5.5–6 mm, with multicellular hairs and minute glands. Calyx ca. 4 mm, sparsely pilose, parted to 1/2; lobes triangular, ciliolate, margin submembranous; veins 3, obscure. Corolla purple, ca. 7 mm in diam.; lobes obovate, margin obscurely undulate, apex rounded. Fl. Jun–Jul.

* Rocky mountain slopes; 3700–4000 m. S Qinghai (Yushu Xian).

30. *Androsace squarrosula* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, 32: 504. 1888.

鳞叶点地梅 lin ye dian di mei

Herbs perennial, laxly caespitose. Shoots dark brown, glabrous, internodes 5–10 mm proximally, shorter or without intervals between rosettes distally. Rosettes 3–4.5 mm in diam. Leaves dimorphic, sessile; outer leaves ovate to broadly ovate, 2–3.5 × 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 2, lanceolate to broadly lanceolate, ca. 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).

31. *Androsace longifolia* Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 5: 202. 1832.

长叶点地梅 chang ye dian di mei

Herbs perennial, densely caespitose, 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. Calyx 3.5–4.5 mm, sparsely short pubescent and minutely glandular or glabrescent, parted to middle; lobes triangular, ciliate, apex acute. Corolla white, 5–6 mm in diam.; lobes obovate-elliptic, apex slightly emarginate. Fl. May.

Dry gravelly slopes; 1300–1500 m. Heilongjiang, Nei Mongol, Ningxia, Shaanxi [Mongolia].

32. *Androsace alaschanica* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 32: 503. 1888.

阿拉善点地梅 a la shan dian di mei

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- or 2-flowered, to 5 mm, hidden in leaves, villous; bracts 1 or 2, linear to lanceolate, ca. 3 mm. Pedicel 1–1.5 mm. Calyx 3–3.5 mm, glabrescent or sparsely pubescent along ridges, parted to ca. middle; lobes triangular, ciliate, apex acute; veins 5, obscure. Corolla white or purple, 6–7 mm in diam.; lobes obovate, margin entire or obscurely undulate, apex truncate.

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

- 1a. Leaf blade linear-lanceolate; bracts 2, not dilated at base 32a. var. *alaschanica*
- 1b. Leaf blade subulate; bracts 1, dilated at base 32b. var. *zadoensis*

32a. *Androsace alaschanica* var. *alaschanica*

阿拉善点地梅 (原变种) a la shan dian di mei (yuan bian zhong)

Leaf blade grayish green, linear-lanceolate, 5–7(–10) mm. Bracts usually 2, linear to linear-lanceolate, not dilated at base. Corolla white. Fl. May–Jun.

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

32b. *Androsace alaschanica* var. *zadoensis* Y. C. Yang & R. F. Huang in C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 231. 1986.

扎多点地梅 zha duo dian di mei

Leaf blade green, subulate, 3–5 mm. Bracts 1, lanceolate, auriculate-dilated at base. Corolla purple, rarely white.

* Shaded cliffs; 4400–4500 m. S Qinghai (Zhadoo Xian).

33. *Androsace adenocephala* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 15: 295. 1927.

腺序点地梅 xian xu dian di mei

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) cm, 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. Jun.

* S-facing alpine slopes; ca. 3600 m. E Xizang.

34. *Androsace cuttingii* C. E. C. Fischer, Bull. Misc. Inform. Kew 1937: 99. 1937.

江孜点地梅 jiang zi dian di mei

Herbs perennial, with a woody taproot. Caudex many branched, forming dense cushions. Rosettes of current year superimposed on old rosettes, without intervals. Leaves trimorphic; outer leaves usually covered by remains of dead leaves, brownish, ovate to ovate-lanceolate, 3.5–5 mm, early deciduous, glabrescent, sparsely ciliate; middle leaves sessile, oblong-ligulate to linear-spatulate, 3–6 mm, abaxially white villous on distal 1/2, glabrous on proximal 1/2, adaxially pilose near margin; inner leaves short petiolate, blade oblanceolate to obovate-spatulate, 0.5–1.5 cm × 2–4(–5) mm, herbaceous, densely strigillose, base attenuate, apex subobtuse. Scapes erect, 0.5–2 cm, white villous; umbels 3–6(–10)-flowered; bracts linear to linear-spatulate, 3–4 mm, short pubescent, minutely capitate glandular, apex acute to obtuse. Pedicel 1–2(–3) mm, usually shorter than bracts. Calyx 2.5–3 mm, pubescent, parted to ± middle; lobes ovate to ovate-triangular, margin white pubescent, apex obtuse to acute. Corolla white or pink, 5–7 mm in diam.; lobes obovate to broadly obovate, margin subentire. Fl. Apr–Jun.

* Dry sandy slopes; 4000–4500 m. E and S Xizang.

35. *Androsace strigillosa* Franchet, Bull. Soc. Bot. France 32: 10. 1885.

糙伏毛点地梅 cao fu mao dian di mei

Androsace sarmentosa Wallich var. *grandifolia* J. D. Hooker; *A. strigillosa* var. *canescens* C. Marquand.

Herbs perennial. Rosettes usually solitary. Leaves trimorphic; outer leaves ovate to triangular-lanceolate, 6–9 × 3–4 mm, early deciduous, ± pubescent near apex; middle leaves sessile, liguliform to oblanceolate, 0.6–1.5 cm × 1.5–2.5 mm, herbaceous, hirtellous-villous; petiole of inner leaves narrowly winged, ca. as long as to slightly longer than leaf blade; leaf blade elliptic to ovate-elliptic or obovate-oblanceolate, (2.5–)5–16 × 1–3.5 cm, densely strigose or hirsute, base attenuate, sometimes abruptly narrowed, apex acute to subobtuse and apiculate. 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].

36. *Androsace nortonii* Ludlow ex Stearn, Bull. Brit. Mus. (Nat. Hist.), Bot. 5: 285. 1976.

绢毛点地梅 juan mao dian di mei

Herbs perennial, laxly caespitose. Shoots dark 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 × ca. 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, apex obtuse; blade of inner leaves slightly shorter than petiole, elliptic to ovate-elliptic, 0.7–1.5 cm × 2–4 mm, short hirsute, base attenuate, apex obtuse; leaves on sterile shoots ovate, 4–5 mm, pubescent. Scapes 2–6 cm, spreading pubescent; umbels 2–5-flowered; bracts linear, 2–3.5 mm, pilose. Pedicel ca. as long as bract at anthesis, elongated to 9 mm in fruit, pilose. Calyx ca. 3 mm, densely pilose, parted to middle; lobes narrowly ovate, apex subobtuse. Corolla purple, 6–9 mm in diam.; tube 2.5–2.8 mm; lobes broadly obovate, margin entire or obscurely denticulate at apex. Fl. Jun.

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

37. *Androsace hookeriana* Klatt, Linnaea 32: 293. 1863.

亚东点地梅 ya dong dian di mei

Herbs perennial, lax caespitose. Shoots initially deep reddish brown, sparsely pubescent, becoming dark purple, glabrescent, internodes 2–3 cm. Leaves trimorphic; outer leaves sessile, lanceolate, 2.5–4 mm, early deciduous, glabrous; middle leaves yellowish green or brown, ligulate, 3–6

× 1–1.8 mm, thin leathery, ciliate, abaxially sparsely pubescent near apex, adaxially glabrous, apex obtuse; petiole of inner leaves slightly shorter to longer than blade; leaf blade ovate-elliptic to suborbicular, 0.8–3.0 cm × 4–8 mm, sparsely pubescent, base abruptly constricted, apex obtuse to rounded; leaves of sterile rosettes 4 or 5, blade subrounded at apex. Scapes erect, 4–8 cm, sparsely pilose; umbels 4–8-flowered; bracts linear, 3–5 mm. Pedicel 6–10 mm, pubescent. Calyx 2.5–3 mm, sparsely pubescent, parted nearly to middle; lobes ovate, densely ciliate, apex obtuse. Corolla pink, ca. 6 mm in diam.; lobes broadly obovate, margin entire. Fl. Jul. $2n = 20$.

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

38. *Androsace ovalifolia* Y. C. Yang in C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 221. 1986.

卵叶点地梅 luan 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, to 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).

39. *Androsace limprichtii* Pax & K. Hoffmann, Repert. Spec. Nov. Regni Veg. 17: 193. 1921.

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 caespitose. 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, outside 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.

40. *Androsace rigida* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 61: 136. 1924.

硬枝点地梅 ying zhi dian di mei

Herbs perennial, lax caespitose. Shoots much branched, dark brown, densely hirsute with bristlelike 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 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 obtuse. Corolla deep red or pink, 6–10 mm in diam.; lobes broadly obovate. Fl. May–Jul.

* Grassy mountain slopes, rock crevices at forest margins; 2900–3800 m. SW Sichuan, NW Yunnan.

41. *Androsace minor* (Handel-Mazzetti) C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 222. 1986.

小丛点地梅 xiao cong dian di mei

Androsace rigida Handel-Mazzetti var. *minor* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 15: 291. 1927.

Herbs perennial, lax caespitose. 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 × 1–1.8 mm, abaxially glabrous or sparsely hirsute near apex, fimbriate-ciliate, apex rounded, flat or slightly incurved; inner leaves subsessile, oblanceolate, 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. Scapes erect, 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.

铺茎点地梅 pu jing dian di mei

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-oblong, less than 1 cm, white sericeous; inner leaves short petiolate, oblanceolate, 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-oblong, 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 purple or pink, 5–8 mm in diam.; lobes cuneate-obovate, apex subtruncate. Fl. Jun–Jul. $2n = 20$.

Mixed forests, grassy slopes; 2800–4000 m. S Xizang [India, Nepal, Pakistan].

43. *Androsace flavescens* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 32: 506. 1888.

南疆点地梅 nan jiang dian di mei

Herbs perennial, lax caespitose. 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-oblong, 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 oblanceolate, 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 × ca. 2 mm, 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.

44. *Androsace sublanata* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 61: 135. 1924.

棉毛点地梅 mian mao dian di mei

Herbs perennial. Rosettes solitary or 2–4 joined by branched ascending caudicles, 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 2–2.5 mm, adaxially strigillose; inner leaves indistinctly petiolate, obovate to oblanceolate, 1–4(–6) × 0.5–1.4 cm, base narrowed, 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(–4) 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.

* Grassy mountain slopes, open woodlands, *Rhododendron* thickets; 3000–4000 m. SW Sichuan, NW Yunnan.

45. *Androsace forrestiana* Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 15: 293. 1927.

滇藏点地梅 dian zang dian di mei

Herbs perennial, lax caespitose. 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-oblanceolate, 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.

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

46. *Androsace wardii* W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 129. 1913.

粗毛点地梅 cu mao dian di mei

Androsace sarmentosa Wallich var. *thibetensis* Petitmengin.

Herbs perennial, lax caespitose. Shoot internodes 0.8–1.7 cm. Rosettes 1.5–5.5 cm in diam. with remains of old leaves at base. Leaves dimorphic; outer leaves sessile, ligulate to ovate, 3–4 × 1–1.2 mm, abaxially with long white hairs, adaxially glabrescent or sparsely short strigillose, apex obtuse; petiole of inner leaves very short to nearly as long as leaf blade; leaf blade obovate to oblanceolate, 0.5–1.5(–2) cm × 2.5–4 mm, with dense minute bristlelike hairs intermixed with short-stalked glands, ciliolate, base long attenuate, apex obtuse. Scapes 2–4 cm, sparsely spreading white hirtellous; umbels 3–6-flowered; bracts oblong to narrowly elliptic, 2–4 mm, pilose. Pedicel 4–8(–10) mm, densely white hirtellous. Calyx ca. 3 mm, parted to middle; lobes ovate-triangular, densely white hirtellous, apex obtuse. Corolla deep red, 6–8 mm in diam.; lobes broadly obovate, ca. 4 mm wide, slightly emarginate. Fl. Jun–Jul.

* Dry meadows, *Rhododendron* thickets; 3400–4600 m. SW Sichuan, SE Xizang, NW Yunnan.

47. *Androsace zayulensis* Handel-Mazzetti, J. Bot. 76: 282. 1938.

察隅点地梅 cha yu dian di mei

Herbs perennial, forming compact cushions ca. 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.

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

48. *Androsace euryantha* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 61: 137. 1924.

大花点地梅 da hua dian di mei

Herbs perennial, densely caespitose. 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-oblanceolate, 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 oblong, 3–4 mm. Pedicel 1.5–4 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 obovate, apex broadly rounded to obscurely emarginate.

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

49. *Androsace mairei* H. Lévillé, Bull. Acad. Int. Géogr. Bot. 25: 40. 1915.

绿棱点地梅 lu ling dian di mei

Androsace hookeriana Klatt var. *mairei* (H. Lévillé) Yang & Huang.

Herbs perennial, lax caespitose. Shoots dark brown, initially densely white villous, glabrescent, internodes 1.5–4 cm. Leaves dimorphic; outer leaves sessile, ligulate to ligulate-spatulate, 4–5 × 1–1.5 mm, sparsely hirtellous-pilose distally, apex obtuse; petiole of inner leaves ca. 1/2 as long as leaf blade; leaf blade oblanceolate to rhomboid-spatulate or elliptic, 0.6–1.6 cm × 1.5–3 mm, sparsely pilose, base attenuate, margin with long white hairs, apex acute. Scapes 2–3 cm, sparsely spreading white villous; umbels 5- or 6-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 \pm 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).

50. *Androsace laxa* C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 224. 1986.

秦巴点地梅 qin ba dian di mei

Herbs perennial, lax caespitose. 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 \times 1.5–2 mm, ciliate, abaxially \pm pubescent; petiole of inner leaves 3–7 mm, narrowly winged by decurrent leaf blade; leaf blade elliptic to suborbicular, 0.6–1.6 cm \times 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 obovate, apex subrounded. Fl. Jun–Jul.

* Rocky mountain slopes, woodland margins; 2700–3600 m. W Hubei, S Shanxi, E Sichuan.

51. *Androsace stenophylla* (Petitmengin) Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 16: 165. 1931.

狭叶点地梅 xia ye dian di mei

Androsace sarmentosa Wallich var. *stenophylla* Petitmengin, Bull. Acad. Int. Géogr. Bot. 18: 337. 1908.

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 oblanceolate to spatulate, 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, strigose 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 \pm 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.

52. *Androsace tanggulashanensis* Y. C. Yang & R. F. Huang in C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 226. 1986.

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.

53. *Androsace ciliifolia* Ludlow, Bull. Brit. Mus. (Nat. Hist.), Bot. 2: 76. 1956.

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 \times 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].

54. *Androsace delavayi* Franchet, J. Bot. (Morot) 9: 456. 1895.

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 \times 1.5–2 mm, abaxially minutely hirtellous on distal 1/2, fimbriate-ciliate near apex, adaxially glabrescent, margin \pm 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, apex rounded to obscurely emarginate. Fl. Jun–Jul.

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

55. *Androsace lehmanniana* Sprengel, Isis (Oken) 1: 1289. 1817.

旱生点地梅 han sheng dian di mei

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

Herbs perennial, lax caespitose. 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-obovate to elliptic-oblan-ceolate, 0.5–1.5 cm × 2.5–4 mm, becoming dark brown when dry, abaxially sparsely hirsute or sometimes glabrescent, long spreading fimbriate-ciliate, adaxially glabrous or sparsely pubescent, base cuneate-attenuate, apex obtuse. Scapes solitary, 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 to 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 oblong obovate, margin entire or nearly so. Fl. Jun–Jul. $2n = 20$.

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.

56. *Androsace zambalensis* (Petitmengin) Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 15: 283. 1927.

高原点地梅 gao yuan dian di mei

Androsace villosa Linnaeus var. *zambalensis* Petitmengin, Bull. Herb. Boissier, Sér. 2, 8: 368. 1908.

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 × ca. 1 mm, densely whitish hirtellous and long ciliate. Scapes solitary, 1–2 cm; umbels 2–5-flowered, scapes and umbels with long white hairs; bracts elliptic-obovate to broadly oblanceolate, usually conduplicate, 5–7 × 1.5–2.2 mm, apex obtuse. Pedicel 2–4 mm. Calyx 2.5–3 mm, parted to ± middle; lobes ovate-triangular, apex subobtuse. Corolla white with a pink eye, 4.5–8 mm in diam.; lobes broadly obovate, margin entire or obscurely emarginate. Fl. Jun–Jul.

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

57. *Androsace coronata* (Watt) Handel-Mazzetti, Oesterr. Bot. Z. 79: 37. 1930.

环冠点地梅 huan guan dian di mei

Androsace chamaejasme Host var. *coronata* Watt, J. Linn. Soc., Bot. 20: 17. 1882.

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, villous. Calyx cupular, ca. 1.5 mm, sparsely villous, parted to ± middle; lobes triangular. 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. Bot. Gard. Edinburgh 15: 285. 1927.

玉门点地梅 yu men dian di mei

Herbs perennial, lax caespitose. 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-oblan-ceolate, 2.5–8 × 1–1.5(–2) mm, long ciliate, abaxially glabrous or sparsely pubescent near apex, adaxially 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 undulate, apex rounded. Fl. Jun.

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

59. *Androsace yargongensis* Petitmengin, Bull. Herb. Boissier, Sér. 2, 8: 367. 1908.

雅江点地梅 ya jiang dian di mei

Androsace mucronifolia Forrest var. *stenophylla* Handel-Mazzetti; *A. mucronifolia* var. *typica* R. Knuth; *A. yargongensis* var. *stenophylla* (Handel-Mazzetti) Handel-Mazzetti.

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-oblong to oblong-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 obovate, margin entire or obscurely undulate, apex rounded. Fl. Jun–Jul.

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

60. *Androsace mollis* Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 61: 136. 1924.

柔弱点地梅 rou ruo dian di mei

Androsace sarmentosa Wallich var. *yunnanensis* R. Knuth.

Herbs perennial, lax caespitose. 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.

* Alpine 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 zi 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].

62. *Androsace tapete* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 32: 505. 1888.

垫状点地梅 dian zhuang dian di mei

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

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 exerted; bracts linear, membranous. Calyx cylindrical, 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: 48. 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 globose, 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 white villous; umbels 3–5(–8)-flowered; bracts elliptic to ovate-lanceolate, 3–5 mm. Pedicel 5–8 mm. Calyx 2.5–3 mm, parted to ± middle; lobes ovate, apex obtuse. Corolla white, becoming pink, 4.5–6 mm in diam.; lobes obovate to oblong-obovate, margin entire to slightly emarginate, apex rounded. Fl. Jun.

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

65. *Androsace incana* Lamarck, Tabl. Encycl. 1: 432. 1792.

白花点地梅 bai hua dian di mei

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

Herbs perennial, densely caespitose. 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, subequal or inner slightly 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 1–3(or 4)-flowered; bracts lanceolate to broadly linear, 3–5 mm, base slightly gibbous. Pedicel shorter than to sometimes ca. as long as bracts. Calyx ca. 3.5 mm, parted to middle; lobes triangular, apex acute to subobtuse. Corolla cream colored, with a pale purple or 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 [Kazakstan, Mongolia, Russia].

66. *Androsace rockii* W. E. Evans, Notes Roy. Bot. Gard. Edinburgh 15: 130. 1926.

密毛点地梅 mi mao dian di mei

Herbs perennial, densely caespitose. Shoots purplish brown, sparsely white villous, internodes 0.8–1.5 cm. Rosettes 3–4 mm in diam. Leaves sessile, subequal, oblong-spatulate to spatulate, 0.8–1.5 cm × 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.

67. *Androsace bisulca* Bureau & Franchet, J. Bot. (Morot) 5: 103. 1891.

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)

Androsace brahmaputrae Handel-Mazzetti; *A. villosa* Linnaeus var. *bisulca* (Bureau & Franchet) R. Knuth.

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

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

67b. *Androsace bisulca* var. *aurata* (Petitmengin) Y. C. Yang & R. F. Huang, Acta Phytotax. Sin. 24: 228. 1986.

黄花昌都点地梅 huang hua chang du dian di mei

Androsace aurata Petitmengin, Bull. Soc. Sci. Nancy, Sér. 3, 8: 18. 1907; *A. villosa* Linnaeus var. *aurata* (Petitmengin) Petitmengin.

Corolla yellow. Fl. Jun.

* Open grassy slopes; 3800–4500 m. SW Sichuan.

68. *Androsace robusta* (R. Knuth) Handel-Mazzetti, Notes Roy. Bot. Gard. Edinburgh 15: 279. 1927.

雪球点地梅 xue qiu dian di mei

Androsace villosa Linnaeus var. *robusta* R. Knuth in Engler, Pflanzenr. IV. 237(Heft 22): 192. 1905; *A. muscoidea* Duby f. *longiscapa* (R. Knuth) Handel-Mazzetti; *A. villosa* var. *robusta* f. *longiscapa* R. Knuth.

Herbs perennial, forming dense cushions. Shoots sparsely villous, glabrescent, purplish, 1–1.2 cm, leafy at apex. Rosettes globose, 0.8–1.5 cm in diam. Leaves sessile, tightly overlapping, dimorphic; outer leaves dark brown, ligulate to narrowly elliptic, 4–7 × 1.5–2 mm, both surfaces glabrescent or nearly so, sparsely ciliate, apex obtuse to acute, midvein

raised abaxially; inner leaves numerous, ligulate-oblong to ligulate-oblongate, $5-6 \times 1-1.5$ mm, abaxially densely white lanate on distal 1/2, adaxially glabrescent or pubescent near apex, apex obtuse. Scapes solitary, 1–4 cm, sparsely sericeous; umbels 4–8-flowered, densely long white sericeous; bracts linear to narrowly lanceolate, 3–5 mm. Pedicel ca. as long as to slightly longer than bracts. Calyx ca. 3 mm, parted nearly to middle; lobes ovate-oblong, long ciliate, apex obtuse. Corolla purple, with a yellow eye, 6–8 mm in diam.; lobes obovate-oblong, margin obscurely undulate, apex rounded. Fl. Jun–Jul.

Alpine meadows; 3100–5100 m. S Xizang [India, Nepal, Pakistan].

69. *Androsace pomeiensis* C. M. Hu & Y. C. Yang, Acta Phytotax. Sin. 24: 228. 1986.

波密点地梅 bo mi dian di mei

Herbs perennial, lax caespitose. Shoots dark brown, sparsely hirtellous-pilose, glabrescent, internodes 4–12 mm. Rosettes lax, 1–1.5 cm in diam. Leaves sessile, dimorphic; outer leaves oblanceolate to obovate-oblong, $6-7 \times 2-2.5$ mm, scarious and whitish when dry, glabrescent or sparsely short ciliate on abaxially raised midvein; inner leaves narrowly lanceolate to spatulate, $6-7 \times 1.5-2$ mm, abaxially long white villous on distal part and on margin, adaxially glabrescent, apex obtuse. Scapes solitary, (3–)5–6 cm, scapes and inflorescences sparsely spreading hirtellous; umbels 3–5-flowered; bracts linear, 4–5 mm. Pedicel 8–10 mm. Calyx ca. 3 mm, parted to middle; lobes triangular, long ciliate, apex subobtusate. Corolla pink, ca. 9 mm in diam.; lobes obovate, apex rounded. Fl. Jun.

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

70. *Androsace bulleyana* Forrest, Notes Roy. Bot. Gard. Edinburgh 4: 233. 1908.

景天点地梅 jing tian dian di mei

Androsace aizoon Duby var. *coccinea* Franchet.

Herbs biennial or annual. Rosettes solitary, 5–10 cm in diam. Leaves sessile, spatulate, $2-5 \text{ cm} \times 4-8$ mm, distal end, tapered to base, glabrous, margin cartilaginous and pectinate-ciliate, apex rounded and mucronate. Scapes 1 to many, 10–28 cm, fulvous spreading hirsute; 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 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.

71. *Androsace integra* (Maximowicz) Handel-Mazzetti, Acta Horti Gothob. 2: 112. 1926.

石莲叶点地梅 shi lian ye dian di mei

Androsace aizoon Duby var. *integra* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 32: 501. 1888; *A. aizoon* var. *purpurea* Pax & K. Hoffmann; *A. aizoon* var. *rosea* Pax & K. Hoffmann; *A. bulleyana* Forrest var. *purpurea* (Pax & Hoffmann) Handel-Mazzetti.

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 \pm strigillose, glabrescent, margin cartilaginous and pectinate-ciliate, apex subrounded and mucronate. Scapes 2 to many, (3–)10–15 cm, hirtellous-villous; umbels many flowered; bracts lanceolate to linear-lanceolate, rarely narrowly elliptic, 4–6 mm, sparsely hirsute 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, \pm 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 to obovate-orbicular, 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 dian di mei

Androsace aizoon Duby var. *himalaica* R. Knuth.

Herbs biennial or annual. Rosettes 2.5–8 cm in diam. Leaves sessile, spatulate, $1.5-3.2(-4.4) \text{ cm} \times 4-7$ 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, $2.5-4 \times 1-1.8$ mm, densely glandular pubescent. Pedicels unequal, 0.4–3.5(–4) cm, sparsely glandular pubescent. Calyx campanulate, ca. 3.5 mm, parted to \pm 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].

73. *Androsace erecta* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 27: 499. 1881.

直立点地梅 zhi li dian di mei

Mitrasacme mairei H. Léveillé.

Herbs annual or biennial. Stems erect, (2–)10–35 cm, simple or branched only in inflorescences, sparsely or densely villous. Basal leaves in a rosette 7–10 mm in diam., usually withered at anthesis, oblanceolate; stem leaves alternate, sessile or subsessile, elliptic to ovate-elliptic or ovate, $4-15 \times 1.2-6$ mm, sparsely pubescent, base short attenuate to rounded, margin slightly thickened and cartilaginous, apex acute to subobtusate, mucronate. Umbels terminal and axillary, occasionally with solitary flowers in axils of upper leaves; bracts leaf-

Flora of China 15: 80–99. 1996.

like, ovate to ovate-lanceolate, ca. 3.5 mm. Pedicel 1–3 cm, sparingly glandular. Calyx 3–3.5 mm, parted to 1/2; 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].

