

**7. ISOMETRUM** Craib, Notes Roy. Bot. Gard. Edinburgh 11: 250. 1919.

金盞苣苔属 *jin zhun ju tai shu*

Herbs, perennial, epipetric or terrestrial, rhizomatous, stemless. Leaves many, basal; leaf blade puberulent to villous, tomentose, or glabrescent, base narrowly cuneate to cordate. Inflorescences cymes, rarely umbel-like, lax or rarely dense, axillary, 2- to many flowered; bracts 2(or 3), opposite, rarely whorled. Calyx actinomorphic, 5-sect from base; segments equal. Corolla white to purple or pink, rarely yellow, zygomorphic, rarely actinomorphic, inside glabrous or sparsely puberulent, rarely pilose on lobes; tube campanulate, cylindric, rarely urceolate or salverform, not swollen, 1–4 × longer than limb, 3–11 mm in diam.; limb slightly 2-lipped; adaxial lip 2-lobed from near middle, shorter than to nearly equalling abaxial lip; abaxial lip 3-sect from base, lobes equal or subequal, apex rounded, sometimes crenulate. Stamens 4, adnate to corolla tube near base, rarely to or above middle, included; anthers basifixed, coherent in pairs, rarely free, thecae divergent at base, not or rarely confluent at apex, dehiscing longitudinally from arcuate slits; connective not projecting; staminode 1, adnate to adaxial side of corolla tube. Disc ringlike. Ovary narrowly oblong to oblong or ovoid, 1-loculed; placentas 2, parietal, projecting inward, 2-cleft. Stigmas 2, equal, oblate, undivided. Capsule straight in relation to pedicel, narrowly oblong to oblanceolate, much longer than calyx, dehiscing loculicidally to base; valves 2, straight, not twisted. Seeds unappendaged.

• Fourteen species: endemic to China.

1a. Corolla tube 1–2 × longer than broad; pistil glabrous.

2a. Corolla puberulent outside; leaf blade adaxially densely brown villous, abaxially densely brown long woolly

..... 2. *I. glandulosum*

2b. Corolla glabrous outside; leaf blade adaxially puberulent, puberulent-strigillose, or sparsely brown villous, abaxially puberulent to pubescent or sparsely villous.

3a. Stamens free, anther thecae confluent; leaf blade margin lobed, lobes triangular, deeply serrate to dentate; lateral veins 7–13 on each side of midrib; bract and sepal margin sparsely dentate .. 1. *I. eximium*

3b. Stamens coherent in pairs, anther thecae not confluent; leaf blade margin serrate, at least near apex; lateral veins 3–5 on each side of midrib; bract and sepal margin entire.

4a. Petiole to 1.5 cm; leaf blade base cuneate; peduncle villous, glabrescent; corolla tube campanulate; pistil 6–7 mm ..... 3. *I. fargesii*

4b. Petiole to 8.3 cm; leaf blade base cordate; peduncle puberulent and glandular puberulent; corolla tube urceolate; pistil 3.8–4 mm ..... 4. *I. nanchuanicum*

1b. Corolla tube 1.5–5 × longer than broad; pistil glabrous or puberulent to pubescent.

5a. Leaf blade margin lobulate.

6b. Corolla tube campanulate-tubular to narrowly campanulate; petiole to 2 cm.

7a. Leaf blade 1–1.8 cm wide; corolla 1–1.5 cm, adaxial lip lobes ca. 2 × 5 mm; stamens 6–8.5 mm, filaments sparsely puberulent to glabrous; pistil glabrous ..... 6. *I. farreri*

7b. Leaf blade 2–3 cm wide; corolla 1.6–2 cm, adaxial lip lobes 4–6 × 3–4 mm; stamens 3–4 mm, filaments glabrous; pistil pubescent ..... 7. *I. giraldii*

6b. Corolla tube nearly cylindric; petiole to 4 cm.

8a. Leaf blade oblanceolate, 1.5–5 × 0.8–1.5 cm, margin lobes subentire to shallowly crenulate; lateral veins 3–5 on each side of midrib; peduncle 4–6 cm; bract 1.8–2 mm ..... 14. *I. pinnatilobatum*

8b. Leaf blade narrowly elliptic to ovate or elliptic, 2.7–10.5 × 2.3–5.5 cm, margin lobes crenate-dentate or crenate; lateral veins 5–8 on each side of midrib; peduncle 4–20 cm; bract 3–5 mm.

9a. Corolla tube 2–2.7 mm in diam., adaxial lip ca. 5 mm, abaxial lip ca. 5.5 mm; stamens 3.5–4

mm; pistil glabrous; leaf blade base cuneate ..... 12. *I. primuliflorum*

9b. Corolla tube 3–3.5 mm in diam., adaxial lip ca. 3.5 mm, abaxial lip ca. 3 mm; stamens 5–6

mm; pistil glandular puberulent; leaf blade base narrowly cuneate ..... 13. *I. sichuanicum*

5b. Leaf blade margin subentire or sinuous to coarsely crenate-dentate.

10a. Petiole to 8 cm.

11a. Corolla white, minutely pilose outside; leaf blade 3–4.5 cm ..... 5. *I. leucanthum*

11b. Corolla pink to purple-red or pale purple to purple, glandular puberulent or sparsely glandular pubescent, sometimes only basally; leaf blade (2–)4–14 cm.

- 12a. Petiole densely brown villous to lanate; leaf blade abaxially rust-brown villous, base narrowly cuneate to truncate; lateral veins 6–10 on each side of midrib; pedicel 1–2.2 cm; corolla 0.8–2 cm, tube narrowly urceolate, ca. 3 mm in diam., lobes 1–2 mm; stamens 4–5 mm; pistil glabrous ..... 9. *I. lancifolium*
- 12b. Petiole densely white pubescent; leaf blade abaxially pubescent, base rounded to cordate; lateral veins 4–6 on each side of midrib; pedicel 4–7 mm; corolla 2.3–3.7 cm, tube campanulate-tubular, 7–11 mm in diam.; lobes 4–7(–11) mm; stamens 7–10 mm; pistil sparsely pubescent near apex ..... 11. *I. lungshengense*
- 10b. Leaves sessile or petiole to 2 cm.
- 13a. Calyx segments 4–6 mm; leaf blade base narrowly cuneate to subtruncate ..... 7. *I. giraldii*
- 13b. Calyx segments 2–3.5 mm; leaf blade base narrowly cuneate or cuneate.
- 14a. Leaf blade sessile, 1.5–3.7 × 1–1.8 cm, margin irregularly dentate above middle; pistil ca. 4 mm ..... 10. *I. villosum*
- 14b. Petiole to 2 cm; leaf blade 3–8 × 1.5–3.5 cm, margin crenate to lobulate; pistil 9–10 mm.
- 15a. Petiole to 1 cm; leaf blade both surfaces gray pubescent, veins abaxially brown villous; lateral veins abaxially prominent; peduncle 4–17 cm; bracts 3.5–5 mm; adaxial corolla lobes ca. 2 mm, abaxial lobes ca. 4 mm; stamens 6–8.5 mm; pistil glabrous ..... 6. *I. farreri*
- 15b. Petiole to 2 cm; leaf blade adaxially gray appressed pubescent, abaxially brown villous; lateral veins indistinct; peduncle 5.5–10 cm; bracts ca. 2.5 mm; all corolla lobes 3–5 mm; stamens 3.5–4.5 mm; pistil puberulent to subglabrous 8. *I. crenatum*

**1. *Isometrum eximium*** W. Y. Chun ex K. Y. Pan, Acta Phytotax. Sin. 26: 432. 1988.

多裂金盞苣苔 duo lie jin zhan ju tai

Petiole to 6 cm, brownish villous; leaf blade lanceolate to ovate, obovate, or elliptic, 5–16 × 3–5(–7) cm, sparsely brown villous, base cuneate to rounded, margin lobulate, lobes triangular, deeply serrate to dentate, apex acute; lateral veins 7–13 on each side of midrib, distinct. Peduncle 4–15(–25) cm, brown villous; bracts 6–7 mm, sparsely brown villous, margin sparsely dentate. Pedicel 0.5–3 cm. Calyx segments narrowly triangular to lanceolate, 4–6 mm, margin sparsely dentate. Corolla pale yellow to deep orange, 1.4–1.9 cm, outside glabrous; tube narrowly campanulate, sometimes urceolate, 7–8 × 3–5 mm; limb 5-lobed, lobes equal, obovate, 6–7 × 3–4 mm. Stamens 4–6 mm; filaments glabrous to sparsely puberulent; anthers free, thecae confluent; staminode ca. 0.2 mm. Pistil 6–8 mm, glabrous; ovary ca. 4 mm. Capsule 1.2–2.7 cm. Fl. Jun–Aug, fr. Aug.

• Rocks under slope forests; 2800–3000 m. SW Sichuan.

**2. *Isometrum glandulosum*** (Batalin) Craib, Notes Roy. Bot. Gard. Edinburgh 11: 267. 1919.

短檐金盞苣苔 duan yan jin zhan ju tai

*Didissandra glandulosa* Batalin, Trudy Imp. S. Peterburgsk. Bot. Sada 12: 175. 1892.

Petiole to 1 cm, densely brownish woolly; leaf blade lanceolate-ovate, 1.5–4.5 × 1.1–3 cm, adaxially

densely brownish villous, abaxially densely brown long woolly, base cuneate, margin serrate-crenate, apex acute to obtuse; lateral veins 5 or 6 on each side of midrib, obscured by indument. Peduncle ca. 12 cm, brown villous and glandular pubescent; bracts ca. 5 mm, rust-brown villous. Pedicel 1–3.5 cm. Calyx segments lanceolate, entire, ca. 3.5 mm. Corolla pale purple, ca. 1.2 cm, outside glandular pilose; tube tubular to subcampanulate, 8–10 × 3–4.5 mm; limb 5-lobed, lobes subequal, broadly ovate to rounded, 2–4 mm. Stamens 4–5 mm; filaments sparsely glandular pilose; anthers coherent in pairs, thecae confluent; staminode ca. 0.5 mm. Pistil 5–10 mm, glabrous; ovary 3–7 mm. Style 2–3 mm. Capsule ca. 2 cm. Fl. and fr. Aug.

• Gansu, NW Sichuan.

**3. *Isometrum fargesii*** (Franchet) B. L. Burtt, Notes Roy. Bot. Gard. Edinburgh 23: 92. 1960.

城口金盞苣苔 cheng kou jin zhan ju tai

*Didissandra fargesii* Franchet, Bull. Mens. Soc. Linn. Paris, sér. 2, 15: 123. 1899.

Petiole to 1.5 cm, rust-brown villous; leaf blade obovate to narrowly oblong, sometimes oblique, 2–7.2 × 1.2–3 cm, adaxially puberulent-strigillose, abaxially puberulent, brown pubescent along veins, base cuneate, margin serrate near apex, apex rounded to obtuse; lateral veins 4 or 5 on each side of midrib, distinct to indistinct. Peduncle 3.5–10 cm, rust-brown villous, glabrescent; bracts 2–4 mm, rust-brown villous, margin entire. Pedicel 1–3 cm. Calyx segments lanceolate to

triangular, 2.5–3 mm, margin entire. Corolla purple, 5–8 mm, outside glabrous; tube campanulate, 4–7 × 4–6.6 mm; lobes rounded, 1–2 × 3–4 mm. Stamens 3–5 mm; filaments glabrous; anthers coherent in pairs, thecae not confluent; staminode ca. 2 mm. Pistil 6–7 mm, glabrous; ovary 3.5–4 mm. Capsule 1.8–2.3 cm. Fl. Aug.

• Shady, damp rocks; 600–1000 m. Sichuan (Chengkou Xian).

**4. *Isometrum nanchuanicum*** K. Y. Pan & Z. Y. Liu, Acta Phytotax. Sin. 33: 100. 1995.

南川金盞苳苔 nan chuan jin zhan ju tai

Petiole to 8.3 cm, brown pubescent; leaf blade ovate, 2.2–6 × 1.2–3.6 cm, adaxially gray puberulent, abaxially brown puberulent, base cordate, margin serrate, apex rounded; lateral veins 3–5 on each side of midrib, distinct. Peduncle 8.8–11.5 cm, brown puberulent and glandular puberulent; bracts 4–5 mm, brown puberulent, margin entire. Pedicel 1.2–3 cm. Calyx segments lanceolate, 3–4 mm, margin entire. Corolla yellow (when dry), 8–9 mm, outside glabrous; tube urceolate, 6–7 × 5–6.5 mm; adaxial lip lobes oblong, ca. 2.2 × 2 mm; abaxial lip lobes broadly ovate, ca. 1.2 × 1.4 mm. Stamens 4–5.5 mm; filaments glabrous; anthers coherent in pairs, thecae not confluent; staminode ca. 0.7 mm. Pistil 3.8–4 mm, glabrous; ovary 2.8–3 mm. Capsule ca. 2.7 cm. Fl. Aug.

• Streamside rocks; 700–800 m. Sichuan (Nanchuan Xian).

**5. *Isometrum leucanthum*** (Diels) B. L. Burt, Notes Roy. Bot. Gard. Edinburgh 23: 92. 1960.

白花金盞苳苔 bai hua jin zhan ju tai

*Didissandra leucantha* Diels, Repert. Spec. Nov. Regni Veg. Beih. 12: 487. 1922.

Petiole to 8 cm, brown villous and white puberulent; leaf blade subovate, 3–4.5 × 2–3.2 cm, appressed pubescent, abaxially brown villous along veins, margin coarsely crenate-dentate. Peduncle 14–18 cm, brown villous and puberulent. Pedicel 2–4 cm. Calyx segments oblong, ca. 4 mm. Corolla white, ca. 2.3 cm, outside minutely pilose; tube ca. 15 × 6–8 mm; lobes triangular-ovate, 5–6 mm. Stamens 4–7 mm; filaments glabrous. Ovary 6–7 mm. Fruit unknown.

• Forests on slopes; ca. 3900 m. W Sichuan (Baiyu Xian, Batang Xian).

We have not seen any specimens of *Isometrum leucanthum*. The above description is adapted from the protologue. This species differs from others in *Isometrum* in its long petiole and white corolla.

**6. *Isometrum farreri*** Craib, Notes Roy. Bot. Gard. Edinburgh 11: 250. 1919.

金盞苳苔 jin zhan ju tai

Petiole to 1 cm, brown hirsute to villous; leaf blade rhombic-ovate to obovate or elliptic, 1.5–3.7 × 1–1.8 cm, gray pubescent, abaxially brown villous along veins, base cuneate, margin crenate to lobulate, apex rounded to acute; lateral veins 4–6 on each side of midrib, abaxially prominent. Peduncle 4–17 cm, rust-brown villous, glabrescent; bracts 3.5–5 mm, brown

villous to pubescent, margin entire. Pedicel 0.5–4 cm. Calyx segments narrowly triangular to oblong, 2–3.5 mm, margin entire to shallowly lobed. Corolla purple-pink to orange-pink, 1–1.5 cm, outside sparsely glandular to sparsely pubescent; tube campanulate-tubular, ca. 9–11 × 3–8 mm; all lobes semiorbicular, adaxial lobes ca. 2 × 5 mm; abaxial lobes ca. 4 × 5 mm. Stamens 6–8.5 mm; filaments sparsely puberulent to glabrous; anthers coherent in pairs, thecae not confluent; staminode 0.5–1 mm. Pistil ca. 9 mm, glabrous; ovary 4–5 mm. Capsule 1.9–2.5 cm. Fl. Aug, fr. Nov.

• Rocks on slopes; ca. 800 m. S Gansu, SW Shaanxi (Mian Xian), N Sichuan (Nanping Xian).

**7. *Isometrum giraldii*** (Diels) B. L. Burt, Notes Roy. Bot. Gard. Edinburgh 23: 92. 1960.

毛蕊金盞苳苔 mao rui jin zhan ju tai

*Didissandra giraldii* Diels, Bot. Jahrb. Syst. 36(Beibl. 82): 98. 1905.

Petiole to 2 cm, densely rust-brown villous; leaf blade oblong ovate, 3–5.5 × 2–3 cm, gray appressed pubescent and rust-brown villous, abaxially densely rust-brown villous along veins, base narrowly cuneate to subtruncate, margin coarsely dentate-serrate to lobulate, apex acute to rounded; lateral veins 4 or 5 on each side of midrib, abaxially prominent. Peduncle 6–15 cm, glandular pubescent and rust-brown villous; bracts 4–7 mm, brown villous, margin entire. Pedicel 1–3 cm. Calyx segments narrowly triangular to lanceolate, 4–6 mm, margin entire. Corolla purple-red to deep pink, 1.6–2 cm, outside glandular puberulent to pubescent; tube narrowly campanulate, 7–9 × 4–5 mm; all lobes oblong, subequal, 4–6 × 3–4 mm. Stamens 3–4 mm; filaments glabrous; anthers coherent in pairs, thecae not confluent; staminode ca. 0.4 mm. Pistil 3–10 mm, pubescent; ovary 2–8 mm. Capsule 1.5–2.5 cm. Fl. Jul.

• Rocks near roads; ca. 1100 m. S Shaanxi.

**8. *Isometrum crenatum*** K. Y. Pan, Acta Bot. Yunnan. 8: 27. 1986.

圆齿金盞苳苔 yuan chi jin zhan ju tai

Petiole to 2 cm, densely brown villous; leaf blade elliptic, 2–3 × 1–1.6 cm, adaxially gray appressed pubescent, abaxially brown villous, base cuneate, margin crenulate, apex obtuse to rounded; lateral veins 3–4 on each side of midrib, indistinct. Peduncle 5.5–10 cm, brown villous and glandular puberulent; bracts ca. 2.5 mm, brown villous, margin entire. Pedicel ca. 1.5 cm. Calyx segments lanceolate, ca. 3 mm, margin entire. Corolla pale purple-red, ca. 1.4 cm, outside sparsely puberulent; tube campanulate-tubular to urceolate, ca. 9 × 3–3.6 mm; all lobes obovate, 3–5 × 2.5–3 mm.

Stamens 3.5–4.5 mm; filaments glabrous; anthers coherent in pairs, thecae not confluent; staminode ca. 0.3 mm. Pistil ca. 1 cm, puberulent to glabrescent; ovary ca. 5 mm. Fruit unknown. Fl. Jun.

• Rocks; ca. 1300 m. Hubei (Zhuxi Xian).

**9. *Isometrum lancifolium*** (Franchet) K. Y. Pan, Acta Bot. Yunnan. 8: 30. 1986.

紫花金盏苣苔 *zi hua jin zhan ju tai*

Petiole to 8 cm, densely brown villous to woolly; leaf blade oblong to narrowly lanceolate or ovate, 2–14 × 0.9–3.7 cm, adaxially pale brown villous and puberulent to glabrescent, abaxially rust-brown villous, base narrowly cuneate to truncate, margin sinuous to irregularly serrate, dentate, sparsely denticulate, or subentire, apex acute to obtuse; lateral veins 6–10 on each side of midrib, distinct or indistinct. Peduncle 5–22 cm, brown villous or glandular puberulent and villous; bracts 4–12 mm, brown villous to pubescent, margin entire. Pedicel 1–2.2 cm. Calyx segments lanceolate, 2–5 mm, margin entire. Corolla pale purple to purple, 0.8–2 cm, outside glandular pubescent, sometimes only near base; tube narrowly urceolate, 6–11 × ca. 3 mm; adaxial lip lobes oblong, 1–4 × 1.5–2.5 mm; abaxial lip lobes suborbicular, 1.7–4 × 1–2.5 mm. Stamens 4–10 mm; filaments glabrous, rarely pubescent; anthers coherent in pairs, thecae not confluent; staminode ca. 1 mm. Pistil 5–10 mm, glabrous; ovary 3–8 mm. Capsule 1.6–3.5 cm. Fl. Jul–Sep, fr. Sep.

• Shady, damp rocks in forests; 1100–2800 m. NW Sichuan.

- 1a. Corolla 1.6–2 cm, adaxial lip nearly as long as abaxial; stamens 8–10 mm; pistil ca. 1 cm; leaf blade adaxially puberulent
- 9c. var. *tsingchengshanicum* W. T. Wang & K. Y. Pan in K. Y. Pan, Acta Bot. Yunnan. 8: 30. 1986.
- 1b. Corolla 0.8–1.2 cm, adaxial lip distinctly longer than abaxial; stamens 4–5 mm; pistil 5–6 mm; leaf blade adaxially pale brown villous and puberulent or sparsely brown villous to glabrescent.

- 2a. Peduncle 5–20 cm; petiole to 8 cm; leaf blade narrowly lanceolate to ovate-elliptic, 3.5–14 × 2–3.7 cm, base cuneate to truncate; lateral veins distinct ..... 9a. var. *lancifolium*
- 2b. Peduncle 6–9 cm; petiole to 2.5 cm; leaf blade oblong to oblanceolate, 2–4 × 0.9–1.5 cm, base narrowly cuneate; lateral veins indistinct .... 9b. var. *mucronatum*

**9a. *Isometrum lancifolium* var. *lancifolium***

紫花金盏苣苔(原变种) *zi hua jin zhan ju tai* (yuan bian zhong)

*Didissandra lancifolia* Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 10: 63. 1887–1888; *Ancylostemon*

*lancifolius* (Franchet) B. L. Burt; *A. purpureus* B. L. Burt & R. Davidson.

Petiole to 8 cm; leaf blade narrowly lanceolate to ovate-elliptic, 3.5–14 × 2–3.7 cm, adaxially pale brown villous and puberulent to glabrescent, abaxially brown villous, base cuneate to truncate, margin sinuous to irregularly serrulate or dentate; lateral veins distinct. Peduncle 5–22 cm, brown villous. Pedicel glandular puberulent and rust-brown villous. Corolla 0.8–1.2 cm; tube 6–8 mm; adaxial lip distinctly longer than abaxial; adaxial lip lobes oblong, 1–1.2 × 1.5–2 mm; abaxial lip lobes suborbicular, 1.7–2 × 1–2 mm. Stamens 4–5 mm; filaments glabrous. Pistil 5–6 mm; ovary 3–4 mm. Fl. Jul–Sep, fr. Sep.

• Shady, damp rocks in forests; 1100–1300 m. W Sichuan.

**9b. *Isometrum lancifolium* var. *mucronatum*** K. Y. Pan, Acta Bot. Yunnan. 8: 30. 1986.

汶川金盏苣苔 *wen chuan jin zhan ju tai*

Petiole to 2.5 cm; leaf blade oblong to oblanceolate, 2–4 × 0.9–1.5 cm, adaxially sparsely brown villous to glabrescent, abaxially densely brown villous, base narrowly cuneate, margin sparsely denticulate; lateral veins indistinct. Peduncle 6–9 cm, densely brown villous. Pedicel glandular puberulent and rust-brown villous. Corolla 0.8–1.2 cm; tube 6–8 mm; adaxial lip distinctly longer than abaxial; adaxial lip lobes oblong, 1–1.2 × 1.5–2 mm; abaxial lip lobes suborbicular, 1.7–2 × 1–2 mm. Stamens 4–5 mm; filaments glabrous. Pistil 5–6 mm; ovary 3–4 mm. Fr. Aug.

• Shady, damp cliffs; 2200–2800 m. Sichuan (Wenchuan Xian).

**9c. *Isometrum lancifolium* var. *tsingchengshanicum*** W. T. Wang & K. Y. Pan in K. Y. Pan, Acta Bot. Yunnan. 8: 30. 1986.

狭叶金盏苣苔 *xia ye jin zhan ju tai*

Petiole to 7 cm; leaf blade lanceolate to narrowly oblong, 4–13.5 × 2–4 cm, adaxially puberulent, abaxially rust-brown villous and pubescent, base cuneate to truncate, margin subentire or sinuous to shallowly serrulate or dentate; lateral veins distinct. Peduncle 7–20 cm, glandular puberulent and villous. Pedicel glandular puberulent and villous. Corolla 1.6–2 cm; tube ca. 1.1 cm; adaxial lip nearly as long as abaxial, all lobes oblong, 3–4 × 2–2.5 mm. Stamens 8–10 mm; filaments glabrous to pubescent. Pistil ca. 1 cm; ovary 7–8 mm. Fl. Aug, fr. Nov.

• Steep cliffs; ca. 1200 m. Sichuan (Guan Xian).

**10. *Isometrum villosum*** K. Y. Pan, Acta Bot. Yunnan. 8: 31. 1986.

柔毛金盏苣苔 *rou mao jin zhan ju tai*

Leaves sessile; leaf blade obovate to oblanceolate, 3–8 × 1.5–3.5 cm, adaxially sparsely brown villous to glabrescent, abaxially rust-brown villous, brown villous along veins, base narrowly cuneate, margin irregularly dentate in apical half, apex obtuse; lateral veins 4 or 5 on each side of midrib, indistinct. Peduncle 5–8 cm, rust-brown villous; bracts ca. 3 mm, brownish villous, margin entire. Pedicel 5–8 mm. Calyx segments lanceolate, ca. 3 mm, margin entire. Corolla white to purple, 1.3 (–2) cm, outside glabrescent; tube narrowly urceolate, 8(–14) × ca. 3 mm; adaxial lip 4(–6) mm, lobes orbicular, 1.7(–2.5) × ca. 2 mm; abaxial lip 3.2(–4) mm, lobes oblong, 2.5(–3) × ca. 2 mm. Stamens 4–6 mm; filaments glabrous; anthers coherent in pairs, thecae not confluent; staminode ca. 0.8 mm. Pistil ca. 4 mm, glabrous; ovary ca. 3 mm. Capsule ca. 3.5 cm. Fl. Apr–May.

• Rocks; 600–1600 m. Sichuan (Shizhu Xian).

**11. *Isometrum lungshengense*** (W. T. Wang) W. T. Wang & K. Y. Pan in K. Y. Pan, Fl. Reipubl. Popularis Sin. 69: 187. 1990.

龙胜金盏苣苔 long sheng jin zhan ju tai

*Opithandra lungshengensis* W. T. Wang, Acta Phytotax. Sin. 13: 102. 1975.

Petiole to 8 cm, densely white pubescent; leaf blade elliptic-obovate to ovate, (2–)4–8.7 × (1.2–)3–5.7 cm, adaxially white appressed villous, abaxially pubescent, base rounded to cordate, margin shallowly serrate to serrate, apex obtuse; lateral veins 4–6 on each side of midrib, distinct. Peduncle 4–9 cm, spreading villous; bracts 5–6 mm, white villous, margin entire. Pedicel 4–7 mm. Calyx segments narrowly lanceolate to narrowly triangular, 4–9 mm, margin entire. Corolla pink to purple-red, 2.3–3.7 cm, outside sparsely glandular puberulent; tube campanulate-tubular, 1.8–3 × 0.7–1.1 cm; all lobes suborbicular, 4–7(–11) × ca. 6 mm. Stamens 7–10 mm; filaments glandular puberulent near apex; anthers coherent in pairs, thecae not confluent; staminode 0.4–2 mm. Pistil (1.2–)2.5–3.5 cm, sparsely pubescent near apex; ovary (0.7–)1.3–2.5 cm. Capsule 2.8–4.5 cm. Fl. Sep–Oct.

• Rocks near roads and in forests; 700–1500 m. Guangxi (Longsheng Xian, Lingui Xian).

**12. *Isometrum primuliflorum*** (Batalin) B. L. Burt, Notes Roy. Bot. Gard. Edinburgh 23: 93. 1960.

羽裂金盏苣苔 yu lie jin zhan ju tai

*Didissandra primuliflora* Batalin, Trudy Imp. S. Peterburgsk. Bot. Sada 14: 176. 1895.

Petiole to 4 cm, very densely brown woolly; leaf blade narrowly elliptic to ovate, 5–10.5 × 2.7–5.5 cm, adaxially grayish white pubescent and villous, abaxially

gray pubescent and brown villous, especially along veins, base cuneate, margin lobulate, lobes crenate-dentate, apex acute to obtuse; lateral veins 5 or 6 on each side of midrib, indistinct. Peduncle 4–20 cm, glandular puberulent and brown villous; bracts 3–5 mm, villous, margin entire. Pedicel 0.5–2 cm. Calyx segments narrowly lanceolate, 4–5 mm, margin entire. Corolla pale purple, 0.9–1.4 cm, outside glandular puberulent; tube nearly cylindric, 7–10 × 2–2.7 mm; adaxial lip ca. 5 mm, lobes elliptic, ca. 3 × 1.5–2 mm; abaxial lip ca. 5.5 mm, lobes obovate-spatulate, ca. 5 × 1.5–2 mm. Stamens 3.5–4 mm; filaments glabrous; anthers coherent in pairs, thecae not confluent; staminode ca. 1.1 mm. Pistil 6–7 mm, glabrous; ovary 3.5–4.5 mm. Capsule 1.5–2.2 cm. Fl. Jul.

• Shady, damp rocks; 2000–2800 m. NW Sichuan.

**13. *Isometrum sichuanicum*** K. Y. Pan, Acta Bot. Yunnan. 8: 33. 1986.

四川金盏苣苔 si chuan jin zhan ju tai

Petiole to 4 cm, densely rust-brown villous; leaf blade narrowly elliptic to elliptic, 2.7–10 × 2.3–4.5 cm, adaxially appressed pubescent, abaxially pubescent and rust-brown villous, base narrowly cuneate, margin lobulate, lobes crenate, apex acute; lateral veins 5–8 on each side of midrib, distinct. Peduncle 11–14 cm, rust-brown villous and glandular pubescent; bracts 3.5–4 mm, villous, margin entire. Pedicel 1.2–2.5 cm. Calyx segments narrowly lanceolate, 4–5 mm, margin entire. Corolla purple, ca. 1.3 cm, outside glandular puberulent; tube nearly cylindric, ca. 10 × 3–3.5 mm; adaxial lip ca. 3.5 mm; abaxial lip ca. 3 mm, all lobes suborbicular, 2–2.5 mm. Stamens 5–6 mm; filaments glabrous; anthers coherent in pairs, thecae not confluent; staminode ca. 1 mm. Pistil 5.5–7 mm, glandular puberulent; ovary 3.5–5.5 mm. Capsule ca. 2.5 cm. Fl. Jun.

• Shady, damp streamside rocks; 2200–2500 m. Sichuan (Maowen Xian, Heishui Xian).

**14. *Isometrum pinnatilobatum*** K. Y. Pan, Acta Bot. Yunnan. 8: 34. 1986.

裂叶金盏苣苔 lie ye jin zhan ju tai

Petiole to 3.5 cm, brownish villous; leaf blade oblanceolate, 1.5–5 × 0.8–1.5 cm, adaxially grayish white pubescent, abaxially pale brown pubescent, base cuneate, margin lobulate, lobes subentire to shallowly crenulate, apex acute; lateral veins 3–5 on each side of midrib, distinct. Peduncle 4–6 cm, brown villous and glandular puberulent; bracts 1.8–2 mm, brown villous,

margin entire. Pedicel 0.8–1.2 cm. Calyx segments lanceolate, 2.5–3 mm, margin entire. Corolla blue-purple, 1.2–1.4 cm, outside sparsely pubescent; tube nearly cylindrical, ca.  $8 \times 3$ –4 mm; adaxial lip ca. 5 mm, lobes orbicular, ca. 2.5 mm; abaxial lip ca. 4 mm, lobes orbicular, 3–3.5 mm. Stamens 2.5–3 mm; filaments glabrous; anthers coherent in pairs, thecae not confluent; staminode 0.8–1.2 mm. Pistil ca. 5.5 mm, glabrous; ovary ca. 3 mm. Fruit unknown. Fl. May.

- Stony cliffs near roads; 500–1200 m. SW Hubei, SE Sichuan.

