

35. POTENTILLA Linnaeus, Sp. Pl. 1: 495. 1753.

委陵菜属 wei ling cai shu

Li Chaoluan (李朝銮 Li Chao-luang); Hiroshi Ikeda, Hideaki Ohba

Dasiphora Rafinesque; *Pentaphylloides* Duhamel.

Herbs perennial, rarely biennial, annual, or shrubs, if perennial then with ± tufted, scaly rootstock. Stems erect, ascending, or prostrate. Leaves pinnate or palmately compound; stipules ± adnate to petiole. Inflorescence often cymose or cymose-paniculate, or 1-flowered. Flowers usually bisexual. Hypanthium concave, mostly hemispheric. Sepals 5, valvate; epicalyx segments 5, alternating with sepals. Petals 5, often yellow, rarely white or purple. Stamens usually ca. 20 in 3 series of 10, 5, and 5, rarely fewer or more (11–30); anthers 2-loculed. Carpels usually numerous, free, inserted on slightly elevated receptacle; ovule ascending or pendulous, anatropous, amphitropous, or suborthotropous; style subterminal, lateral, or basal. Achenes numerous, inserted on dry receptacle with persistent sepals. Seed testa membranous. $x = 7$.

About 500 species: mostly in temperate, arctic, and alpine zones of the N hemisphere, a few in the S hemisphere; 88 species (24 endemic) in China.

- 1a. Herbs perennial, biennial, or annual; style subterminal, not evenly thickened throughout length; ovary glabrous.
 - 2a. Style conic, thickened at base, gradually attenuate distally 5. *P.* sect. *Conostylae*
 - 2b. Style clavate, thickened at apex, thin proximally 6. *P.* sect. *Potentilla*
- 1b. Shrublets or perennial herbs; style basal, lateral, or subterminal, clavate, filiform, slender, or fusiform; ovary hairy or glabrous.
 - 3a. Shrublets or woody-based perennial herbs; style clavate or filiform; ovary densely hairy, rarely glabrous.
 - 4a. Style basal or lateral, clavate, thickened at apex, thin proximally; ovary densely hairy or only sparsely so at apex or hilum 1. *P.* sect. *Rhopalostylae*
 - 4b. Style basal, lateral, or subterminal, filiform, evenly thickened throughout length; ovary densely villous, very rarely glabrous 2. *P.* sect. *Nematostylae*
 - 3b. Herbs perennial; style slender or fusiform; ovary glabrous, very rarely hairy.
 - 5a. Auricles of stipules of radical leaves borne on adaxial side of petiole; flowering stems arising from axils of radical leaves 4. *P.* sect. *Leptostylae*
 - 5b. Auricles of stipules of radical leaves borne on lateral side of petiole; flowering stem developing as distal part of main stem 3. *P.* sect. *Closterostylae*

1. *Potentilla* sect. *Rhopalostylae* (Th. Wolf) Guşuleac in Savulescu, Fl. Reipubl. Popularis Roman. 4: 601. 1956.

棒状花柱组 bang zhuang hua zhu zu

Potentilla subsect. *Rhopalostylae* Th. Wolf, Biblioth. Bot. 16(Heft 71): 44. 1908.

Shrubs or subshrubs. Basal and cauline leaves pinnate, rarely 3-foliolate; leaflets entire or 2-lobed at apex. Ovary densely hairy or only sparsely so at hilum or apex, rarely glabrous; style sub-basal or lateral, clavate, thin proximally, thickened at apex.

About five species: temperate and subarctic regions of N hemisphere; five species in China.

- 1a. Herbs short or woody based; leaflets usually 2-fid, rarely entire, base not articulate at connection with petiole; ovary pilose around hilum or apex when young, glabrescent at maturity or only sparsely pilose at the apex, glabrous at maturity; style lateral.
 - 2a. Leaflets usually opposite, rarely alternate, both surfaces sparsely pilose or subglabrous 4. *P. bifurca*
 - 2b. Leaflets usually alternate, densely softly gray pubescent 5. *P. imbricata*
- 1b. Shrubs with woody stems above ground; leaflets entire, base articulate at connection with petiole; ovary densely villous; style sub-basal.
 - 3a. Petals white 2. *P. glabra*
 - 3b. Petals yellow.
 - 4a. Leaves pinnate with 2 pairs of leaflets, rarely 3-foliolate, leaflets oblong, obovate-oblong, or ovate-lanceolate, 3–20 × 3–10 mm 1. *P. fruticosa*
 - 4b. Leaves pinnate with 2 or 3 pairs of leaflets, basal 2 pairs usually palmately arranged or appearing whorled, rarely leaves 3-foliolate, leaflets lanceolate, linear-lanceolate, or obovate-lanceolate, 5–10 × 2–5 mm 3. *P. parvifolia*

1. *Potentilla fruticosa* Linnaeus, Sp. Pl. 1: 495. 1753.

金露梅 jin lu mei

Shrubs erect or sometimes prostrate, usually many branched. Branches covered with reddish brown or gray, peeling bark,

villous when young. Stipules broad, thinly membranous, abaxially villous or glabrescent; petiole sericeous or pilose; leaf blade pinnate with 2 pairs of leaflets, rarely 3-foliolate; leaflets oblong, obovate-oblong, or ovate-lanceolate, 0.3–2 × 0.3–1 cm, abaxially ± densely hairy, sometimes sparsely so or glabrescent, adaxially sparsely or rather densely appressed hairy, base cuneate, decurrent and adnate to rachis in apical pair of leaflets, margin entire, flat or often ± revolute, apex usually acute. Inflorescence terminal, laxly racemose or corymbiform, small, 1- to several flowered. Flowers 1–3 cm in diam. Sepals ovate, apex acute to shortly acuminate; epicalyx segments lanceolate to obovate-lanceolate, nearly equaling sepals, sparsely sericeous-villous, apex acute to acuminate. Petals yellow, broadly obovate, nearly equaling sepals, apex rounded. Style sub-basal, clavate, thin proximally, constricted at base of dilated stigma. Achenes brown, subovate, ca. 1.5 mm, abaxially villous. Fl. and fr. Jun–Sep.

Rocks in forests, forest margins, thickets, alpine meadows, dry and grassy mountain slopes, talus slopes; 400–5000 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan [Asia, Europe, North America].

- 1a. Shrubs low, tufted; stems slender 1d. var. *pumila*
- 1b. Shrubs erect; stems robust.
 - 2a. Leaflets adaxially densely silvery tomentose or sericeous 1c. var. *albicans*
 - 2b. Leaflets adaxially sparsely pilose, sericeous, subglabrous, or glabrous.
 - 3a. Leaflets abaxially sparsely pilose or subglabrous, adaxially inconspicuously elevated reticulate veined, margin flat 1a. var. *fruticosa*
 - 3b. Leaflets abaxially densely appressed white villous, adaxially prominently elevated reticulate veined, margin strongly revolute 1b. var. *arbuscula*

1a. *Potentilla fruticosa* var. *fruticosa*

金露梅(原变种) jin lu mei (yuan bian zhong)

Dasiphora fruticosa (Linnaeus) Rydberg; *D. riparia* Rafinesque; *Pentaphylloides fruticosa* (Linnaeus) O. Schwarz; *Potentilla fruticosa* var. *rigida* (Wallich ex Lehmann) Th. Wolf; *Potentilla rigida* Wallich ex Lehmann.

Shrubs erect. Stems robust. Leaflets oblong, obovate, or ovate-lanceolate, 7–20 × 4–10 mm, abaxially sparsely pilose or subglabrous, adaxially sparsely pilose, sericeous, or subglabrous, inconspicuously elevated reticulate veined, margin flat. Inflorescence terminal, laxly racemose or corymbiform, 1- to several flowered. Flowers 2.2–3 cm in diam. Fl. and fr. Jun–Sep.

Forest margins, thickets, grassy mountain slopes, talus slopes; 1000–4000 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan [Asia, Europe, North America].

1b. *Potentilla fruticosa* var. *arbuscula* (D. Don) Maximowicz, Mélanges Biol. Bull. Phys.-Math. Acad. Imp. Sci. Saint-Peters-

bourg 9: 158. 1877.

伏毛金露梅 fu mao jin lu mei

Potentilla arbuscula D. Don, Prodr. Fl. Nepal. 256. 1925; *P. lespedeza* H. Léveillé; *P. rigida* Wallich ex Lehmann, p.p.

Shrubs erect. Stems robust. Leaflets abaxially densely appressed white villous, adaxially sparsely pilose or glabrous, prominently elevated reticulate veined, margin strongly revolute. Fl. and fr. Jul–Aug.

Rocks in forests, thickets, grassy mountain slopes; 2600–4600 m. Sichuan, Xizang, Yunnan [Bhutan, Nepal, Sikkim].

1c. *Potentilla fruticosa* var. *albicans* Rehder & E. H. Wilson in Sargent, Pl. Wilson. 2: 302. 1915.

白毛金露梅 bai mao jin lu mei

Potentilla arbuscula var. *albicans* (Rehder & E. H. Wilson) Handel-Mazzetti; *P. arbuscula* var. *bulleyana* I. B. Balfour ex H. R. Fletcher; *P. fruticosa* var. *vilmoriniana* Komarov.

Shrubs erect. Stems robust. Leaflets abaxially sparsely spreading pilose, adaxially densely silvery tomentose or sericeous, margin flat. Fl. and fr. Jun–Sep.

• Forest margins, thickets, alpine meadows, dry mountain slopes; 400–4600 m. Sichuan, Xinjiang, Xizang, Yunnan.

1d. *Potentilla fruticosa* var. *pumila* J. D. Hooker, Fl. Brit. India 2: 348. 1878.

垫状金露梅 dian zhuang jin lu mei

Potentilla arbuscula var. *pumila* (J. D. Hooker) Handel-Mazzetti.

Shrubs low, tufted. Stems densely fasciculate, slender, 5–10 cm tall. Leaflets elliptic, 3–5 × 3–4 mm, abaxially densely appressed villous, adaxially subglabrous or sparsely pilose, prominently reticulate veined, margin revolute. Flowers solitary, subsessile or shortly pedicellate, 1–1.5 cm in diam. Fl. Jun.

Thickets, alpine meadows, talus slopes; 4200–5000 m. Xizang [Bhutan, Nepal, Sikkim].

2. *Potentilla glabra* Loddiges, Bot. Cab. 10: t. 914. 1824.

银露梅 yin lu mei

Shrubs 0.3–2(–3) m tall. Young branchlets sparsely pubescent, older ones covered with grayish brown, peeling bark. Stipules thinly membranous, sparsely pilose or subglabrous; petiole sparsely pilose; leaf blade pinnate with 2(or 3) pairs of leaflets; leaflets oblong, obovate-elliptic, or ovate-elliptic, 0.5–1.2 cm × 4–8 mm, both surfaces sparsely (rarely densely) pilose, sericeous, or glabrescent, base cuneate or rounded, decurrent and adnate to rachis in apical pair of leaflets, margin entire, flat or slightly revolute, apex obtuse or acute. Flowers 1 to several, terminal on separate branches, 1.5–2.5 cm in diam.; pedicel long, thin, sparsely pilose. Sepals ovate, apex acute or shortly mucronate; epicalyx segments lanceolate, obovate-lanceolate, or ovate, shorter than or nearly equaling sepals, abaxially sparsely pilose. Petals white, obovate, apex rounded. Style sub-basal, clavate, thin at base, constricted at base of dilated stigma. Achenes hairy. Fl. and fr. May–Nov.

Forests, forest margins, thickets, meadows, slopes, alpine talus slopes, ravines, open places, rocky places; 1200–4200 m. Anhui, Gansu, Hebei, Hubei, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Yunnan [Korea, Mongolia, Russia].

- 1a. Leaflets abaxially densely white tomentose or sericeous 2d. var. *mandshurica*
- 1b. Leaflets abaxially sparsely white sericeous or glabrescent.
 - 2a. Leaflets adaxially appressed sericeous; pedicels densely white sericeous-villous 2c. var. *veitchii*
 - 2b. Leaflets adaxially sparsely pilose; pedicels pilose.
 - 3a. Leaflets elliptic, ovate-elliptic, or obovate-elliptic; flowers 1.5–2.5 cm in diam.; sepals ovate, apex acute or acuminate; petals obovate 2a. var. *glabra*
 - 3b. Leaflets lanceolate or oblong-lanceolate; flowers 2.5–3 cm in diam.; sepals lanceolate, apex long acuminate; petals spatulate-obovate-oblong, base tapered into a long claw 2b. var. *longipetala*

2a. *Potentilla glabra* var. *glabra*

银露梅(原变种) yin lu mei (yuan bian zhong)

Potentilla fruticosa Linnaeus var. *dahurica* Seringe; *P. fruticosa* var. *mongolica* Maximowicz; *P. fruticosa* var. *tangutica* Th. Wolf; *P. glabra* var. *rhodocalyx* H. R. Fletcher; *P. glabrata* Willdenow ex Schlechtendal.

Leaflets elliptic, obovate-elliptic, or ovate-elliptic, 0.5–1.2 cm × 4–8 mm, both surfaces sparsely pilose or glabrescent, base cuneate or rounded, margin entire, flat or slightly revolute, apex obtuse or acute. Flowers 1.5–2.5 cm in diam. Sepals ovate, apex acute or shortly mucronate; epicalyx segments lanceolate, obovate-lanceolate, or ovate, shorter than or nearly equaling sepals. Petals white, obovate, apex rounded. Fl. and fr. Jun–Nov.

Forests, thickets, meadows on mountain slopes, among rocks in valleys; 1400–4200 m. Anhui, Gansu, Hebei, Hubei, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Yunnan [Korea, Mongolia, Russia].

2b. *Potentilla glabra* var. *longipetala* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 7. 1980.

长瓣银露梅 chang ban yin lu mei

Leaflets lanceolate or oblong-lanceolate. Flowers 2.5–3 cm in diam. Sepals triangular-lanceolate, apex long acuminate; epicalyx segments lanceolate or linear-lanceolate, nearly equaling sepals, apex acuminate. Petals spatulate-obovate-oblong, base tapered into a long claw, apex obtuse; claw ca. 2 × as long as sepals.

- Alpine talus slopes; ca. 4200 m. NW Yunnan (Weixi Xian).

2c. *Potentilla glabra* var. *veitchii* (E. H. Wilson) Handel-Mazzetti, Acta Horti Gothob. 13: 298. 1939.

伏毛银露梅 fu mao yin lu mei

Potentilla veitchii E. H. Wilson, Gard. Chron., ser. 3, 50: 102. 1911; *Dasiphora fruticosa* (Linnaeus) Rydberg var. *veitchii* (E. H. Wilson) Nakai; *Potentilla davurica* Nestler var. *veitchii* (E. H. Wilson) Jesson; *P. fruticosa* var. *veitchii* (E. H. Wilson) Bean.

Leaflets abaxially sparsely white sericeous or glabrescent, adaxially appressed white sericeous. Pedicels thick, densely white sericeous. Fl. and fr. Jul–Aug.

- Forest margins, alpine meadows, open places, rocky places; 2600–4100 m. Sichuan, Yunnan.

2d. *Potentilla glabra* var. *mandshurica* (Maximowicz) Handel-Mazzetti, Acta Horti Gothob. 13: 297. 1939.

白毛银露梅 bai mao yin lu mei

Potentilla fruticosa var. *mandshurica* Maximowicz, Mélanges Biol. Bull. Phys.-Math. Acad. Imp. Sci. Saint-Petersbourg 9: 158. 1877; *Dasiphora mandshurica* (Maximowicz) Juzepczuk; *P. davurica* var. *mandshurica* (Maximowicz) Th. Wolf; *P. fruticosa* var. *subalbicans* Handel-Mazzetti.

Leaflets abaxially densely white tomentose or sericeous, adaxially ± appressed pilose. Fl. and fr. May–Sep.

Mixed forests, thickets, dry mountain slopes, rocky slopes, ravines; 1200–3400 m. Gansu, Hebei, Hubei, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Yunnan [Korea].

3. *Potentilla parvifolia* Fischer ex Lehmann, Nov. Stirp. Pug. 3: 6. 1831.

小叶金露梅 xiao ye jin lu mei

Shrubs low, prostrate, or often erect, 0.3–1.5 m tall, much branched. Branchlets gray or grayish brown, canescent pilose or sericeous when young, with peeling bark when old. Stipules brown or paler, membranous, sparsely pilose, margin entire; leaf blade pinnate with 2 or 3 pairs of leaflets; basal 2 pairs usually palmately arranged or appearing whorled; leaflets small, lanceolate, linear-lanceolate, or obovate-lanceolate, 5–10 × 2–5 mm, abaxially sericeous, white tomentose, or pilose, adaxially sericeous, base cuneate, margin entire, usually strongly revolute, apex usually acuminate, rarely obtuse. Inflorescence terminal, a few-flowered raceme or a solitary flower. Flowers 1.2–2.2 cm in diam.; pedicel grayish white or sericeous-pilose. Sepals ovate, apex acute; epicalyx segments lanceolate, ovate-lanceolate, or obovate-lanceolate, slightly shorter than or equaling sepals, abaxially sericeous or pilose, apex acute or acuminate. Petals yellow, broadly obovate, 1–2 × as long as sepals, apex emarginate or rounded. Style sub-basal, clavate, thin at base, constricted at base of dilated stigma. Achenes hairy. Fl. and fr. Apr–Sep.

Forests, forest margins, thickets on mountain slopes, rock crevices, steppes; 900–5000 m. Gansu, Heilongjiang, Nei Mongol, Qinghai, Sichuan, Xizang, Yunnan [Mongolia, Russia].

- 1a. Leaflets sericeous on both surfaces, or abaxially glaucous, sometimes sparsely pilose 3a. var. *parvifolia*
- 1b. Leaflets abaxially white tomentose or sericeous, adaxially sericeous-pubescent

..... 3b. var. *hypoleuca*

3a. *Potentilla parvifolia* var. *parvifolia*

小叶金露梅(原变种) xiao ye jin lu mei (yuan bian zhong)

Dasiphora parvifolia (Fischer ex Lehmann) Juzepczuk; *Potentilla fruticosa* Linnaeus var. *grandiflora* C. Marquand; *P. fruticosa* var. *parvifolia* (Fischer ex Lehmann) Th. Wolf; *P. fruticosa* var. *purdonii* Rehder; *P. rehderiana* Handel-Mazzetti.

Leaflets sericeous on both surfaces, or abaxially glaucous, sometimes sparsely pilose. Fl. and fr. Jun–Aug.

Forests, forest margins, rock crevices, steppes; 900–5000 m. Gansu, Heilongjiang, Nei Mongol, Qinghai, Sichuan, Xizang [Mongolia, Russia].

3b. *Potentilla parvifolia* var. *hypoleuca* Handel-Mazzetti, Acta Horti Gothob. 13: 293. 1939.

白毛小叶金露梅 bai mao xiao ye jin lu mei

Leaflets abaxially white tomentose or sericeous, adaxially sericeous-pubescent. Fl. and fr. Apr–Sep.

• Thickets on mountain slopes; 1200–3600 m. Gansu, Qinghai, Sichuan, Yunnan.

4. *Potentilla bifurca* Linnaeus, Sp. Pl. 1: 497. 1753.

二裂委陵菜 er lie wei ling cai

Herbs perennial or low subshrubs, 5–20 cm tall, with partly subterranean stems. Aerial stems usually ascending or prostrate, together with petioles and pedicels ± densely or rarely sparsely covered throughout with spreading or often erect-spreading, rarely ± laxly appressed, rigid hairs. Leaves 3–8 cm including petiole; stipules of lower leaves brown, membranous, abaxially hirtellous, rarely glabrescent, those of upper leaves ovate-elliptic, herbaceous, margin usually entire, rarely serrate; leaf blade pinnate with 3–8 pairs of leaflets; leaflets opposite, rarely alternate, sessile, elliptic or obovate, 0.5–1.5 cm × 4–8 mm, appressed pilose, base cuneate or broadly so, decurrent and adnate to rachis in distal 2 or 3 pairs of leaflets, apex entire, 2- or 3-fid. Inflorescence terminal, laxly corymbose or cymose, or a solitary flower. Flowers 0.7–1.5 cm in diam. Sepals ovate, apex acute; epicalyx segments elliptic, shorter than or nearly equaling sepals, sparsely pilose abaxially, apex obtuse or acute. Petals yellow, obovate, slightly longer than sepals, apex rounded. Ovary adaxially pilose; style lateral, thickened and clavate at apex, slightly constricted under dilated stigma. Achenes smooth. Fl. and fr. May–Oct.

Sparse forests, grassy mountain slopes, loess slopes, sandy river banks, field and road banks, field margins, steppe meadows, semidry desert grasslands, sandy coasts; 400–4000 m. Gansu, Hebei, Heilongjiang, Jilin, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang [Korea, Mongolia, Russia; SW Asia, C and E Europe].

1a. Flowers usually solitary 4b. var. *humilior*

1b. Flowers many per inflorescence.

2a. Flowering stems 5–20 cm tall, together with petioles and pedicels densely villous or hirtellous throughout; leaflets elliptic

or obovate-elliptic, apex 2-fid, rarely 3-fid; inflorescence corymbose;

flowers 0.7–1 cm in diam. 4a. var. *bifurca*

2b. Flowering stems less than 7 cm tall, lower part together with petioles appressed pilose or glabrescent; leaflets linear or long elliptic, apex rounded, obtuse, or 2-fid; inflorescence cymose; flowers 1.2–1.5 cm in diam. 4c. var. *major*

4a. *Potentilla bifurca* var. *bifurca*

二裂委陵菜(原变种) er lie wei ling cai (yuan bian zhong)

Flowering stems 5–20 cm tall, together with petioles and pedicels densely villous or hirtellous throughout. Leaflets elliptic or obovate-elliptic, apex 2-fid, rarely 3-fid. Inflorescence corymbose, many flowered. Flowers 0.7–1 cm in diam. Fl. and fr. May–Sep.

Sparse forests, grassy mountain slopes, loess slopes, field and road banks, semidry desert grasslands, sandy coasts; 800–3600 m. Gansu, Hebei, Heilongjiang, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang [Korea, Mongolia, Russia].

This variety is used medicinally and for forage.

4b. *Potentilla bifurca* var. *humilior* Osten-Sacken & Ruprecht, Sert. Tianschan. 45. 1869.

矮生二裂委陵菜 ai sheng er lie wei ling cai

Potentilla bifurca var. *moorcroftii* (Wallich ex Lehmann) Th. Wolf; *P. moorcroftii* Wallich ex Lehmann.

Flowering stems less than 7 cm tall. Leaflets usually in 3–5 (or 6) pairs, apex usually entire, occasionally 2-fid. Flowers usually solitary. Fl. and fr. May–Oct.

Grassy mountain slopes, sandy river banks, steppe meadows; 1100–4000 m. Gansu, Hebei, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang [Mongolia, Russia].

4c. *Potentilla bifurca* var. *major* Ledebour, Fl. Ross. 2: 43. 1843.

长叶二裂委陵菜 *chang ye er lie wei ling cai*

Potentilla bifurca var. *glabrata* Lehmann; *P. bifurca* subsp. *orientalis* (Juzepczuk) Soják; *P. orientalis* Juzepczuk; *P. semiglabra* Juzepczuk.

Flowering stems less than 7 cm tall, lower part together with petioles appressed pilose or glabrescent. Leaflets linear or long elliptic, apex rounded, obtuse, or 2-fid. Inflorescence cymose, many flowered. Flowers 1.2–1.5 cm in diam. Fl. and fr. May–Oct.

Grassy mountain slopes, sandy river banks, field margins; 400–3200 m. Gansu, Hebei, Heilongjiang, Jilin, Nei Mongol, Shaanxi, Shanxi, Xinjiang [Asia, C and E Europe].

5. *Potentilla imbricata* Karelin & Kirilov, Bull. Soc. Imp. Naturalistes Moscou 14: 416. 1841.

2. *Potentilla* sect. *Nematostylae* (Th. Wolf) Guşuleac in Savulescu, Fl. Reipubl. Popularis Roman. 4: 602. 1956.

线状花柱组 *xian zhuang hua zhu zu*

Potentilla subsect. *Nematostylae* Th. Wolf, Biblioth. Bot. 16(Heft 71): 45. 1908.

Subshrubs or perennial, woody-based herbs. Basal leaves pinnate, palmate, or 3-foliolate; leaflets entire, serrate, or divided at margin. Ovary densely villous, very rarely glabrous; style sub-basal, lateral, or subterminal, filiform, evenly thickened throughout its length.

About 50 species: mainly temperate and subarctic regions of N hemisphere; five species (one endemic) in China.

1a. Leaflet margin entire; style subterminal.

2a. Leaf blade pinnately or subpalmately 5–7-foliolate, leaflets not articulate at base 9. *P. biflora*

2b. Leaf blade 3-foliolate, leaflets articulate at base 10. *P. articulata*

1b. Leaflet margin or apex serrate or lobed; style sub-basal, lateral, or subterminal.

3a. Leaflets 3-serrate at apex; style lateral or sub-basal 6. *P. cuneata*

3b. Leaflets many serrate or distally 5–7-dentate or 2–5-parted at margin; style subterminal.

4a. Flowering stems ascending, rarely erect; rhizome elongate; leaflets distally 5–7-dentate or 2–5-parted at margin 7. *P. eriocarpa*

4b. Flowering stems usually erect; rhizome short; leaflets many serrate at margin 8. *P. ancistrifolia*

6. *Potentilla cuneata* Wallich ex Lehmann, Nov. Stirp. Pug. 3: 34. 1831.

楔叶委陵菜 *xie ye wei ling cai*

Potentilla ambigua Cambessèdes; *P. dolichopogon* H. Léveillé.

Subshrubs low, tufted or perennial herbs. Roots slender, woody. Flowering stems erect or ascending, 4–12 cm tall, woody, together with petioles appressed pilose. Radical leaves 2–3 cm including petiole; stipules brown, membranous, abaxially spreading pilose or glabrescent; leaf blade 3-foliolate; leaflets obovate, elliptic, or long elliptic, 0.6–1.5 cm × 4–8 mm, subleathery, both surfaces sparsely spreading pilose or glabrescent, base cuneate, apex truncate or obtuse and 3-dentate; lateral leaflets sessile, terminal one shortly petiolulate; cauline leaves: stipules green, ovate-lanceolate, herbaceous, margin en-

覆瓦委陵菜 *fu wa wei ling cai*

Potentilla bifurca Linnaeus var. *canescens* Bongard & C. A. Meyer.

Herbs perennial, 10–22 cm tall, evenly and densely grayish tomentose-villous in all green parts. Roots robust, terete, woody. Stems erect, many branched from base. Leaves numerous, 2–6 cm including petiole; leaf blade pinnate with (3–)5–7 pairs of leaflets; leaflets usually alternate, adjacent, imbricate, elliptic or obovate-elliptic, base cuneate or broadly so, decurrent and adnate to rachis in distal 2 or 3 pairs of leaflets, margin entire, apex acute, often 2-fid, rarely entire. Inflorescence terminal, laxly corymbose. Flowers 6–8 mm in diam. Sepals triangular-ovate, apex acute; epicalyx segments elliptic, ca. 1/2 as long as sepals, apex acute. Petals yellow, obovate-elliptic, nearly equaling or slightly longer than sepals, apex rounded. Carpels sparsely pilose around hilum; style sublateral, clavate, slightly attenuate at base, constricted below dilated stigma. Achenes rugose when ripe. Fl. and fr. Aug–Sep.

Shaded grasslands, flood lands, dry calcareous soils; 500–600 m. Xinjiang [Mongolia, Russia].

tire, apex acuminate. Inflorescence terminal, 1- or 2-flowered. Flowers 1.8–2.5 cm in diam.; pedicel 2.5–3 cm, villous. Sepals triangular-ovate, apex acuminate; epicalyx segments oblong-elliptic, slightly shorter than sepals, abaxially spreading pilose, apex acute. Petals yellow, broadly obovate, slightly longer than sepals, apex emarginate. Style sub-basal, filiform; stigma slightly dilated. Achenes slightly longer than persistent sepals, villous. Fl. and fr. Jun–Oct.

Forest margins, thickets, alpine meadows, rock crevices; 2700–3600 m. Sichuan, Xizang, Yunnan [Bhutan, Kashmir, Nepal, Sikkim].

7. *Potentilla eriocarpa* Wallich ex Lehmann, Nov. Stirp. Pug. 3: 35. 1831.

毛果委陵菜 *mao guo wei ling cai*

Subshrubs. Roots robust, terete. Rhizome stout, elongate, woody, densely covered with remains of old stipules. Flowering

stems erect or ascending, 4–12 cm tall, together with petioles sparsely white villous, sometimes glabrescent. Radical leaves 3–7 cm including petiole; stipules brown, membranous, abaxially white villous; leaf blade 3-foliolate; leaflets shortly petiolulate or subsessile, abaxially green, adaxially dark green, obovate-elliptic, obovate-cuneate, or rhombic-elliptic, abaxially sparsely white villous on veins and later glabrescent elsewhere, or densely white villous and later glabrescent, adaxially sparsely pilose or densely white villous, often glabrescent, base cuneate or broadly so, margin proximally entire, distally deeply 5–7-dentate with teeth ovate or elliptic-ovate and apex subrounded to acute, or 2–5-parted with segments broadly fasciated or lanceolate and apex acute or acuminate; cauline leaves: stipules herbaceous, ovate-elliptic, margin entire or slightly serrate, apex acuminate; leaf blade absent, bractlike, or occasionally 3-foliolate. Inflorescence terminal, 1–3-flowered. Flowers 2–2.5 cm in diam.; pedicel 2–2.5 cm, pilose. Sepals triangular-ovate, apex acuminate; epicalyx segments oblong-elliptic or elliptic-lanceolate, nearly equaling sepals, abaxially sparsely pilose or subglabrous, apex acute, rarely 2-fid. Petals yellow, broadly obovate, ca. 2 × as long as sepals, apex emarginate. Carpels densely twisted villous; style subterminal, filiform; stigma dilated. Achenes smooth, villous. Fl. and fr. Jul–Oct.

Sparse forests, alpine meadows, talus slopes, rock crevices; 2700–5000 m. Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, India, Kashmir, Nepal, Sikkim].

- 1a. Leaflets abaxially sparsely white villous on veins, later glabrescent elsewhere, adaxially sparsely pilose or glabrescent, margin distally deeply 5–7-dentate, teeth ovate or elliptic-ovate, apex subrounded to acute 7a. var. *eriocarpa*
- 1b. Leaflets on both surfaces usually densely white villous, later glabrescent, margin distally 2–5-parted, segments broadly fasciated or lanceolate, apex acute or acuminate 7b. var. *tsarongensis*

7a. *Potentilla eriocarpa* var. *eriocarpa*

毛果委陵菜(原变种) mao guo wei ling cai (yuan bian zhong)

Potentilla davidii Franchet; *P. eriocarpa* var. *cathayana* C. K. Schneider; *P. eriocarpoides* var. *glabrescens* J. Krause.

Leaflets abaxially sparsely white villous on veins, later glabrescent elsewhere, adaxially sparsely pilose or glabrescent, margin distally deeply 5–7-dentate, teeth ovate or elliptic-ovate, apex subrounded to acute. Fl. and fr. Jul–Oct.

Sparse forests, alpine meadows, rock crevices; 2700–5000 m. Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, India, Kashmir, Nepal, Sikkim].

7b. *Potentilla eriocarpa* var. *tsarongensis* W. E. Evans, Notes Roy. Bot. Gard. Edinburgh 13: 178. 1921.

裂叶毛果委陵菜 lie ye mao guo wei ling cai

Potentilla eriocarpa var. *dissecta* C. Marquand & Airy Shaw; *P. eriocarpoides* J. Krause.

Leaflets on both surfaces usually densely white villous, later glabrescent, margin distally 2–5-parted, segments broadly fasciated or lanceolate, apex acute or acuminate.

• Talus slopes, alpine rock crevices; 2800–4300 m. Sichuan, Xizang, Yunnan.

8. *Potentilla ancistrifolia* Bunge, Mém. Acad. Imp. Sci. St.-Petersbourg, Sér. 6, Sci. Math. 2: 99. 1833.

皱叶委陵菜 zhou ye wei ling cai

Herbs perennial. Roots robust, terete, woody. Flowering stems erect, 10–30 cm tall, sparsely pilose, in upper part sometimes mixed with glandular hairs. Radical leaves 5–15 cm including petiole; stipules brown, membranous, abaxially villous; petiole sparsely pilose; leaf blade pinnate with 2–4 pairs of leaflets, sometimes also 3-foliolate; basal pair usually small; leaflets sessile, sometimes apical pair shortly petiolulate, abaxially gray or grayish green, adaxially green or dark green, elliptic, oblong-elliptic, or elliptic-ovate, 1–4 × 0.5–1.5 cm, subleathery, abaxially densely villous, appressed villous on veins, or sparsely pilose or glabrescent, adaxially markedly bullate or not, prominently or inconspicuously reticulate veined, appressed pilose, sparsely pilose, or glabrescent, base cuneate or broadly so, margin acutely and usually roughly serrate, teeth usually triangular-ovate, apex obtuse or acute; cauline leaves 2 or 3; stipules green, ovate-lanceolate or lanceolate, herbaceous, margin 1–3-dentate, rarely entire; leaf blade with 1–3 pairs of leaflets. Inflorescence terminal, laxly corymbiform or cymose. Flowers 8–12 mm in diam.; pedicel 5–10 mm, densely villous and glandular hairy. Sepals triangular-ovate, apex caudate; epicalyx segments usually purplish abaxially, linear-lanceolate, nearly equaling sepals, sparsely pilose, apex acute. Petals yellow, obovate-oblong, 0.5–1 × as long as sepals, apex rounded. Ovary densely villous at hilum; style subterminal, filiform; stigma not dilated. Achenes rugose at maturity, inconspicuously so, or smooth, sometimes villous around hilum. Fl. and fr. May–Sep.

Forests, thickets, meadows, ravines, gravels, rock crevices; 200–2700 m. Anhui, Gansu, Hebei, Heilongjiang, Henan, Hubei, Jilin, Liaoning, Shaanxi, Shanxi, Sichuan [Japan, Korea, Russia].

- 1a. Radical leaves with 2–4 pairs of leaflets, leaflets abaxially densely villous, appressed villous on veins, adaxially usually markedly bullate and prominently reticulate veined, appressed pilose; mature achenes rugose, villous around hilum 8a. var. *ancistrifolia*
- 1b. Radical leaves with 2 or 3 pairs of leaflets, often also 3-foliolate, leaflets on both surfaces sparsely pilose or glabrescent, abaxially inconspicuously reticulate veined, adaxially not bullate; mature achenes smooth or inconspicuously rugose 8b. var. *dickinsii*

8a. *Potentilla ancistrifolia* var. *ancistrifolia*

皱叶委陵菜(原变种) zhou ye wei ling cai (yuan bian zhong)

Potentilla aemulans Juzepczuk; *P. rugulosa* Kitagawa; *P.*

tranzschelii Juzepczuk.

Flowering stems and petioles sparsely pilose, sometimes mixed with glandular hairs. Radical leaves with 2–4 pairs of leaflets; leaflets abaxially densely villous, appressed villous on veins, adaxially usually markedly bullate and prominently reticulate veined, appressed pilose. Achenes rugose at maturity, villous around hilum. Fl. and fr. May–Sep.

Thickets, meadows on mountain slopes, gravels, rock crevices; 300–2400 m. Gansu, Hebei, Heilongjiang, Henan, Hubei, Jilin, Liaoning, Shaanxi, Shanxi, Sichuan [Korea, Russia].

Potentilla ancistrifolia var. *tomentosa* Liou & Y. Y. Li ex C. L. Li was described in FRPS (p. 256), but the name is invalid because no Latin description or diagnosis was provided (St. Louis Code, Art. 36.1). The entity described belongs to var. *ancistrifolia*.

8b. *Potentilla ancistrifolia* var. *dickinsii* (Franchet & Savatier) Koidzumi, Bot. Mag. (Tokyo) 23: 177. 1909.

薄叶皱叶委陵菜 *bo ye zhou ye wei ling cai*

Potentilla dickinsii Franchet & Savatier, Enum. Pl. Jap. 2: 337. 1878.

Radical leaves with 2 or 3 pairs of leaflets, often also 3-foliolate; leaflets on both surfaces sparsely pilose or glabrescent, abaxially inconspicuously reticulate veined, adaxially not bullate. Achenes smooth or inconspicuously rugose at maturity. Fl. and fr. Jun–Sep.

Forests, meadows, ravines, rock crevices on mountain slopes; 200–2700 m. Anhui, Gansu, Hebei, Henan, Liaoning, Shaanxi, Shanxi [Japan, Korea].

9. *Potentilla biflora* Willdenow ex Schlechtendal, Ges. Naturf. Freunde Berlin Mag. Neuesten Entdeck. Gesammten Naturk. 7: 297. 1816.

双花委陵菜 *shuang hua wei ling cai*

Herbs perennial, tufted, pulvinate. Roots stout, terete. Flowering stems erect, 4–12 cm tall, pilose. Radical leaves 2–6 cm including petiole; stipules brown, membranous, abaxially white pilose, later glabrescent; petiole white villous; leaf blade pinnately to palmately 5-foliolate; leaflets adaxially dark green, linear, 0.8–1.7 cm × 1–3 mm, abaxially densely white villous on midvein, adaxially pilose, base decurrent and adnate to rachis in apical pair of leaflets, margin entire and revolute, but in basal pair of leaflets sometimes 2-parted nearly to base, apex acute to acuminate. Flowers 1 or 2 (or 3), 1.2–1.8 cm in diam.; pedicel 1–2 cm, pilose, proximally with linear bract. Sepals triangular-ovate, apex acute; epicalyx segments lanceolate, slightly shorter or longer than sepals, abaxially pilose, apex acuminate. Petals yellow, oblong-obovate, 0.5–1 × as long as sepals, apex emarginate. Style subterminal, filiform; stigma hardly dilated. Achenes smooth, hairy around hilum. Fl. and fr. Jun–Oct.

Alpine meadows, talus slopes, gravels, rock crevices near snow line; 2300–4800 m. Gansu, Sichuan, Xinjiang, Xizang [N Mongolia, Nepal, Russia (Far East, Siberia); C Asia, North America].

- 1a. Basal pair of leaflets of radical leaves usually 2-parted nearly to base, rarely entire; flowers 1.2–1.5 cm in diam. 9a. var. *biflora*
- 1b. Basal pair of leaflets of radical leaves not

2-parted; flowers 1.5–1.8 cm in diam.

..... 9b. var. *lahulensis*

9a. *Potentilla biflora* var. *biflora*

双花委陵菜(原变种) *shuang hua wei ling cai* (yuan bian zhong)

Potentilla inglisii Royle.

Basal pair of leaflets of radical leaves usually 2-parted nearly to base, rarely entire; flowers 1.2–1.5 cm in diam. Fl. and fr. Jul–Oct.

Alpine meadows, gravels, rock crevices near snow line; 2300–3600 m. Xinjiang [N Mongolia, Nepal, Russia (Far East, Siberia); C Asia, North America].

9b. *Potentilla biflora* var. *lahulensis* Th. Wolf, Biblioth. Bot. 16(Heft 71): 72. 1908.

五叶双花委陵菜 *wu ye shuang hua wei ling cai*

Basal pair of leaflets of radical leaves not 2-parted; flowers 1.5–1.8 cm in diam. Fl. and fr. Jun–Aug.

• Alpine meadows, talus slopes, gravelly slopes; 3700–4800 m. Gansu, Sichuan, Xizang.

10. *Potentilla articulata* Franchet, Pl. Delavay. 3: 210. 1890.

关节委陵菜 *guan jie wei ling cai*

Herbs perennial, tufted, pulvinate. Roots stout, terete, woody. Flowering stems 1.5–3 cm tall. Radical leaves: stipules brown, broad, membranous, abaxially sparsely villous, later glabrescent; leaf blade 3-foliolate; leaflets sessile, linear-lanceolate or narrower, 0.5–1.5 cm × ca. 2 mm, adaxially densely villous when young, later both surfaces pilose or glabrescent, base markedly or inconspicuously articulate, margin entire, slightly revolute, apex acute. Flower solitary, to 1.5 cm in diam.; pedicel 1.5–2 cm, densely villous, with linear bract. Sepals triangular-ovate, apex acuminate; epicalyx segments elliptic-lanceolate, nearly equaling or slightly longer than sepals, abaxially sparsely villous, apex acute. Petals yellow, obovate, ca. 1/2 as long as sepals, apex emarginate. Style subterminal, filiform; stigma hardly dilated. Achenes smooth. Fl. and fr. Jun–Sep.

• Alpine meadows, gravels near snow line, bare rocks; 3200–4800 m. SW Sichuan, Xizang, Yunnan.

- 1a. Leaflets linear-lanceolate, base markedly articulate 10a. var. *articulata*

- 1b. Leaflets narrower, base inconspicuously articulate 10b. var. *latipetiolata*

10a. *Potentilla articulata* var. *articulata*

关节委陵菜(原变种) *guan jie wei ling cai* (yuan bian zhong)

Potentilla biflora Willdenow ex Schlechtendal var. *arm-erioides* (J. D. Hooker) Handel-Mazzetti; *P. fruticosa* Linnaeus var. *armerioides* J. D. Hooker; .

Leaflets linear-lanceolate, base markedly articulate. Fl. and fr. Jun–Sep.

- Gravels near snow line; 4200–4800 m. S Sichuan (Muli Xian), SE Xizang (Zayü Xian), NW Yunnan (Lijiang Xian, Zhongdian Xian).

10b. *Potentilla articulata* var. *latipetiolata* (E. C. Fischer) T. T. Yu & C. L. Li in T. T. Yu, Fl. Reipubl. Popularis Sin. 37: 259. 1985.

宽柄关节委陵菜 *kuan bing guan jie wei ling cai*

Potentilla latipetiolata E. C. Fischer, Bull. Misc. Inform. Kew 1940: 294. 1941.

Leaflets narrower, base inconspicuously articulate. Fl. and fr. Jul–Aug.

- Alpine meadows, bare rocks; 3200–4100 m. Xizang, Yunnan.

3. *Potentilla* sect. *Closterostylae* (Th. Wolf) T. T. Yu & C. L. Li in T. T. Yu, Fl. Reipubl. Popularis Sin. 37: 259. 1985.

梭状花柱组 *suo zhuang hua zhu zu*

Potentilla subsect. *Closterostylae* Th. Wolf, Biblioth. Bot. 16(Heft 71): 48. 1908.

Herbs perennial. Basal leaves pinnate, sometimes 3-foliolate. Ovary glabrous; style sub-basal, fusiform, thickened at middle, gradually tapered at both ends.

About 20 species: mainly temperate regions of N hemisphere; one species in China.

11. *Potentilla rupestris* Linnaeus, Sp. Pl. 1: 496. 1753.

石生委陵菜 *shi sheng wei ling cai*

Potentilla inquinans Turczaninow; *P. okubo* Kitagawa.

Herbs perennial. Roots thick, terete. Flowering stems erect, 18–45 cm tall, pilose and glandular hairy. Radical leaves 6–15 cm including petiole; stipules brown, membranous, abaxially pilose and glandular hairy; petiole sparsely pilose and glandular hairy; leaf blade usually with 2 or 3 pairs of leaflets, sometimes 3-foliolate; terminal leaflet shortly petiolulate, lateral ones sessile; leaflets elliptic, obovate-elliptic, or ovate-elliptic, usually 1.5–5 × 1–2.5 cm, apical 3 much larger than others, both surfaces pilose and glandular hairy, adaxially glabrescent,

base cuneate or broadly so, margin doubly incised serrate, apex obtuse or acute; cauline leaves resembling radical ones except upper ones sessile with leaf blade 3-foliolate; stipules green, ovate, herbaceous, margin entire, apex acute, rarely 2-fid. Inflorescence terminal, corymbose. Flowers ca. 2 cm in diam. Sepals triangular-ovate, apex acuminate; epicalyx segments narrowly lanceolate, nearly 1/2 as long as sepals, pilose and glandular hairy abaxially, apex subobtuse or acute. Petals white, obovate, nearly 2 × as long as sepals, apex rounded. Carpels glabrous; style sub-basal, fusiform, thickened at middle, gradually tapered at both ends. Achenes rugose at maturity. Fl. and fr. Jun–Aug.

- Gravelly slopes; 1000–1100 m. Heilongjiang, Nei Mongol [Russia (Siberia); Europe].

4. *Potentilla* sect. *Leptostylae* (Th. Wolf) T. T. Yu & C. L. Li in T. T. Yu, Fl. Reipubl. Popularis Sin. 37: 263. 1985.

枝状花柱组 *zhi zhuang hua zhu zu*

Potentilla subsect. *Leptostylae* Th. Wolf, Biblioth. Bot. 16(Heft 71): 52. 1908.

Herbs perennial. Basal leaves pinnate; leaflets serrate at margin. Ovary glabrous, rarely sparsely hairy; style sub-basal, lateral, or subterminal, not swollen at middle but nearly evenly thickened throughout its length, sometimes distally slightly thickened.

About 40 species: mainly Sino-Himalayan region and Malesian archipelago; 21 species (eight endemic) in China.

1a. Plants with stolons.

2a. Radical leaves more than 10 at flowering.

- 3a. Pedicels with scalelike bracts 30. *P. gombalana*
- 3b. Pedicels without scalelike bracts 29. *P. anserina*

2b. Radical leaves absent or fewer than 4 at flowering.

- 4a. Leaves adaxially sericeous, terminal leaflet elliptic 32. *P. taronensis*
- 4b. Leaves adaxially subglabrous, terminal leaflet rhombic-elliptic 31. *P. smithiana*

1b. Plants without stolons.

5a. Cauline leaves more than 4.

- 6a. Auricles of stipules of radical leaves connate from base to middle 12. *P. festiva*
- 6b. Auricles of stipules of radical leaves free.

- 7a. Peduncle and hypanthium without gland-tipped, multicellular hairs 15. *P. polyphylla*
 7b. Peduncle and hypanthium with gland-tipped, multicellular hairs.
 8a. Stigma not inflated; leaflets abaxially densely silvery sericeous, distal lateral ones cuneate at base 13. *P. lineata*
 8b. Stigma inflated; leaflets abaxially sparsely strigose, distal lateral ones rounded at base.
 9a. Epicalyx segments shorter than sepals, margin subentire; style nearly 2 × as long as ovary 14. *P. fallens*
 9b. Epicalyx segments longer than sepals, margin with 3–7 teeth; style ca. 1.5 × as long as ovary 16. *P. polyphyloides*
- 5b. Cauline leaves 1–3.
 10a. Apical pair of leaflets sessile, but not decurrent at base.
 11a. Smaller leaflets usually present between leaflets 21. *P. turfosa*
 11b. Smaller leaflets usually not present between leaflets.
 12a. Rhizome with a few slender, elongate roots 20. *P. aristata*
 12b. Rhizome without slender, elongate roots.
 13a. Stamens 5–8(–10) 19. *P. glabriuscula*
 13b. Stamens ca. 20.
 14a. Leaflets 2–4 mm 17. *P. microphylla*
 14b. Leaflets 5–15 mm 18. *P. stenophylla*
- 10b. Apical pair of leaflets decurrent at base.
 15a. Inflorescence pseudoumbellate.
 16a. Auricles of stipules of radical leaves 2 27. *P. leuconota*
 16b. Auricle of stipules of radical leaves 1 28. *P. wenchuensis*
- 15b. Inflorescence cymose.
 17a. Rhizome erect.
 18a. Auricles of stipules of radical leaves 2 24. *P. cardotiana*
 18b. Auricle of stipules of radical leaves 1 25. *P. commutata*
- 17b. Rhizome creeping.
 19a. Auricles of stipules of radical leaves 2, apex acute 23. *P. contigua*
 19b. Auricle of stipules of radical leaves 1, apex rounded.
 20a. Flowering stems and petioles sericeous and appressed villous 22. *P. peduncularis*
 20b. Flowering stems and petioles densely canescent tomentose, tomentose-villous, or sericeous-villous 26. *P. tugitakensis*

12. *Potentilla festiva* Soják, *Candollea* 43: 166. 1988.

合耳委陵菜 he er wei ling cai

Herbs perennial. Flowering stems 5–25 cm tall, together with petioles densely spreading villous and pubescent. Radical leaves 4–15 cm including petiole; auricles of stipules of radical leaves connate from base to middle, apex acute; leaf blade interrupted pinnate with 5–15 pairs of leaflets; terminal leaflet oblong to narrowly obovate, 1–3 × 0.5–1.2 cm, abaxially densely white sericeous or tomentose, adaxially appressed pilose, margin sharply serrate; cauline leaves: auricles of stipules herbaceous, abaxially white sericeous, adaxially villous; leaf blade resembling that of radical leaves but pairs of leaflets fewer higher up stem. Inflorescence corymbose-cymose. Flowers 0.7–1.2 cm in diam.; pedicel with unicellular hairs. Sepals triangular-ovate, apex acute; epicalyx segments elliptic, margin entire or with 3 teeth. Petals yellow, 5–7 × 4–5.5 mm, apex rounded. Style lateral. Achenes not seen. Fl. and fr. Jun–Oct. $2n = 28$.

Forests, forest margins, thickets, grassy mountain slopes, open grassy places by roads; 2000–3800 m. Sichuan, Xizang, Yunnan [Bhutan, India, Myanmar, Nepal, Sikkim].

13. *Potentilla lineata* Treviranus, *Index Seminum Hort. Vratislav.* 1822, 1822.

西南委陵菜 xi nan wei ling cai

Potentilla fulgens Lehmann; *P. fulgens* var. *acutiserrata* (T. T. Yu & C. L. Li) T. T. Yu & C. L. Li; *P. fulgens* var. *macrophylla* Cardot; *P. martini* H. Léveillé; *P. siemersiana* Lehmann, nom. illeg. (included *P. lineata*); *P. siemersiana* var. *acutiserrata* T. T. Yu & C. L. Li; *P. splendens* Buchanan-Hamilton ex Treviranus (1823), not Candolle (1805).

Herbs perennial. Flowering stems 5–40 cm tall, together with petioles densely spreading villous and pubescent. Radical leaves 4–30 cm including petiole; auricles of stipules free, apex acute; leaf blade interrupted pinnate with 5–13 pairs of leaflets; terminal leaflet oblong or broadly obovate, 1.5–4 × 0.8–1.5 cm, abaxially densely white sericeous or tomentose, adaxially appressed pilose, margin sharply serrate; cauline leaves: auricles of stipules herbaceous, abaxially white sericeous; leaf blade resembling that of radical leaves but pairs of leaflets fewer higher up stem. Inflorescence corymbose-cymose. Flowers 1–1.5 cm in diam.; pedicel 2–4 cm, with gland-tipped, multicellular hairs and unicellular hairs. Sepals entire at margin; epicalyx segments entire at margin or with 3–6 teeth. Petals yellow, obovate to broadly so, apex rounded. Style sub-basal. Achenes not seen. Fl. and fr. Jun–Oct. $2n = 14$.

Forests, forest margins, thickets, grassy mountain slopes, open grassy places by roads; 1500–3800 m. Guizhou, Hubei, Sichuan, Xi-

zang, Yunnan [Bhutan, India, Laos, Myanmar, Nepal, Sikkim, N Vietnam].

Various names has been used for this species, including *Potentilla fulgens*, *P. lineata*, *P. siemersiana*, and *P. splendens*. The earliest legitimate name is *P. lineata*.

Potentilla festiva and *P. lineata* are similar in external appearance, and were treated as conspecific for a long time. The auricles of the stipules of the radical leaves of *P. festiva* are connate from the base to the middle, whereas those of *P. lineata* are free. Moreover, *P. lineata* has gland-tipped, multicellular hairs as well as unicellular ones on the pedicels and abaxially on the hypanthium, whereas *P. festiva* has only unicellular hairs.

14. *Potentilla fallens* Cardot, Notul. Syst. (Paris) 3: 232. 1916.

川滇委陵菜 chuan dian wei ling cai

Potentilla rockiana Melchior.

Herbs perennial. Flowering stems 5–35 cm tall, densely yellow pubescent and yellow villous. Radical leaves 4–20 cm including petiole; auricles of stipules free, apex acute; petiole densely pubescent and villous; leaf blade interrupted pinnate, rarely non-interrupted, with 8–15 pairs of leaflets; leaflets elliptic or obovate, 0.8–1.7 × 0.5–1.2 cm, abaxially densely pubescent, sericeous on veins, margin subobtusely or acutely serrate; cauline leaves 2 or 3; auricles of stipules herbaceous; leaf blade resembling radical ones but pairs of leaflets fewer higher up stem. Inflorescence cymose. Flowers 1–1.8 cm in diam.; pedicel densely villous and glandular hairy. Sepals abaxially villous and glandular hairy; epicalyx segments shorter than sepals, margin entire or shallowly 2- or 3-serrate. Petals yellow, broadly obovate, apex rounded or emarginate. Style lateral, nearly 2 × as long as ovary; stigma slightly dilated. Achenes slightly rugose. Fl. and fr. May–Aug. $2n = 28^*$.

• Forests, grassy mountain slopes; 2800–3900 m. Sichuan, Yunnan.

15. *Potentilla polyphylla* Wallich ex Lehmann, Nov. Stirp. Pug. 3: 13. 1831.

多叶委陵菜 duo ye wei ling cai

Herbs perennial. Flowering stems 5–40 cm tall, spreading villous. Radical leaves 4–30 cm including petiole; auricles of stipules free, apex acute to acuminate; petiole spreading, slightly rigid villous; leaf blade interrupted pinnate with 5–12 pairs of leaflets; leaflets obovate to broadly ovate or broadly linear to lanceolate, 1–5 × 0.8–1.6 cm, abaxially strigose or villous, margin roughly serrate; cauline leaves: auricles of stipules herbaceous, margin serrate; leaf blade resembling that of radical leaves but pairs of leaflets fewer higher up stem. Inflorescence cymose, few flowered. Flowers 1–2 cm in diam. Sepals triangular-elliptic, abaxially villous; epicalyx segments oblong to obovate, broader and slightly shorter than sepals, abaxially pilose, apex 2–5-serrate, rarely entire. Petals yellow, obovate to broadly so, apex rounded. Carpels glabrous; style sub-basal, fusiform. Achenes smooth. Fl. and fr. Jul–Sep. $2n = 28$.

Forests, forest margins, meadows on mountain slopes; 2500–4500 m. Sichuan, Yunnan [Bhutan, India, Indonesia (Java), Myanmar, Nepal, Pakistan, Sikkim, Sri Lanka].

- 1a. Radical leaves 4–20(–25) cm including petiole; leaflets obovate to broadly ovate, abaxially strigose; flowers 1–1.5 cm in diam. 15a. var. *polyphylla*
1b. Radical leaves 16–30 cm including petiole; leaflets broadly linear to lanceolate, abaxially villous; flowers 1.5–2 cm in diam. 15b. var. *interrupta*

15a. *Potentilla polyphylla* var. *polyphylla*

多叶委陵菜(原变种) duo ye wei ling cai (yuan bian zhong)

Potentilla sordida Klotzsch.

Radical leaves 4–20(–25) cm including petiole; leaflets obovate to broadly ovate, abaxially strigose. Flowers 1–1.5 cm in diam. Fl. and fr. Jul–Sep. $2n = 28$.

Forests, forest margins, meadows on mountain slopes; 2500–4200 m. Yunnan [Bhutan, India, Indonesia (Java), Myanmar, Nepal, Pakistan, Sikkim, Sri Lanka].

15b. *Potentilla polyphylla* var. *interrupta* (T. T. Yu & C. L. Li) H. Ikeda & H. Ohba, Bot. J. Linn. Soc. 112: 179. 1992.

间断委陵菜 jian duan wei ling cai

Potentilla interrupta T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 8. 1980.

Radical leaves 16–30 cm including petiole; leaflets broadly linear to lanceolate, abaxially villous. Flowers 1.5–2 cm in diam. Fl. and fr. Jul–Sep. $2n = 28$.

Forests, forest margins, meadows on mountain slopes; 2900–4500 m. Sichuan, Yunnan [Bhutan, Nepal, Sikkim].

16. *Potentilla polyphyloides* H. Ikeda & H. Ohba, Novon 12: 53. 2002.

似多叶委陵菜 si duo ye wei ling cai

Herbs perennial. Flowering stems ascending or prostrate, 17–60 cm tall, appressed or ascending unicellular hairy, occasionally rooting from nodes in lower part. Radical leaves 8–20 cm including petiole; auricles of stipules free; petiole 0.8–3.5 cm, ascending or spreading unicellular hairy; leaf blade interrupted pinnate with 10–15 pairs of leaflets; leaflets abaxially glandular multicellular hairy and ascending unicellular hairy, adaxially appressed or ascending unicellular hairy, margin serrate; terminal leaflet oblong to obovate, 1.2–2.4 × 0.7–1.4 cm, larger than lateral leaflets; cauline leaves: auricles of stipules entire at margin, or those on lower part of stem with a few teeth and those on upper part with 10–20 teeth; leaf blade 3-foliolate or pinnate with 2–8 pairs of leaflets, sometimes interrupted pinnate. Flowers 1.1–1.5 cm in diam.; pedicel 1.2–3.8 cm, glandular multicellular hairy. Sepals elliptic to ovate, 2.5–4 × 1.8–4 mm, margin entire, apex obtuse to acute; epicalyx segments oblong to broadly obovate, 2.5–5.5 × 2–4.5 mm, abaxially glandular multicellular hairy, margin usually serrate, apex acute. Petals obovate to broadly so, 5–6.5 × 3.5–7 mm, apex retuse or rounded. Stamens ca. 20, in 3 whorls, 1.2–2.2 mm; anthers sub-basal, globose, 4-loculed. Ovary ellipsoid, smooth; placenta adaxial-lateral near style base; style sub-basal, 0.8–0.9 mm.

Achenes many, borne on dome-shaped receptacle, obliquely ellipsoid, 1.2–1.4 mm, smooth. Fl. and fr. Jul–Sep. $2n = 42^*$.

• Mountain meadows; 3200–3500 m. NW Yunnan (Dali Xian, Yangbi Xian).

Potentilla polyphylloides differs from *P. polyphylla* in having flowering stems occasionally rooting from the nodes in the lower part, and leaflets abaxially, pedicels, and epicalyx segments abaxially with glandular, multicellular hairs. *Potentilla fallens* differs from *P. polyphylloides* in having epicalyx segments shorter than the sepals, subentire at the margin or shallowly 2- or 3-serrate, and a style nearly $2 \times$ as long as the ovary.

17. *Potentilla microphylla* D. Don, Prodr. Fl. Nepal. 231. 1825.

小叶委陵菜 xiao ye wei ling cai

Herbs perennial, low, usually tufted and pulvinate. Flowering stems erect, 2–3 cm tall, appressed white pilose. Radical leaves 0.5–6 cm including petiole, crowded or not; auricles of stipules free; petiole short, appressed pilose; leaf blade pinnate with 2–9 pairs of leaflets; leaflets elliptic or obovate, $2-4 \times 1.5-2.5$ mm, abaxially sericeous-pilose, later glabrescent, adaxially glabrescent, or both surfaces glabrous, margin pinnately lobed or parted, apex obtuse or acute; lobes or segments lanceolate; cauline leaf 1, small, margin entire or parted. Flower 1(or 2), 1–1.5 cm in diam.; pedicel 2–12 mm, appressed pilose. Sepals triangular-ovate, apex obtuse or acute; epicalyx segments lanceolate or elliptic-lanceolate, margin entire or 2-lobed. Petals yellow, elliptic to obovate, apex rounded. Style lateral; stigma slightly dilated. Achenes rugose. Fl. and fr. Jun–Aug.

Alpine meadows and rocky places; 3400–5200 m. Sichuan, Xizang, Yunnan [Bhutan, NW India, Nepal, Sikkim].

- 1a. Leaves 0.5–1 cm, crowded, with 2 or 3(–5) pairs of leaflets 17c. var. *tapetodes*
- 1b. Leaves 1–6 cm, not crowded, with 7–9 pairs of leaflets.
 - 2a. Leaflets parted almost to midvein, apex acute 17a. var. *microphylla*
 - 2b. Leaflets lobed ca. 1/2 way to midvein, apex obtuse 17b. var. *luteopilosa*

17a. *Potentilla microphylla* var. *microphylla*

小叶委陵菜(原变种) xiao ye wei ling cai (yuan bian zhong)

Potentilla microphylla var. *depressa* Wallich ex Lehmann; *P. microphylla* var. *glabriuscula* Wallich ex Lehmann; *P. tapetodes* Soják var. *decidua* Soják.

Leaves 1–6 cm, not crowded, with 7–9 pairs of leaflets; leaflets parted almost to midvein, apex acute. Fl. and fr. Jun–Aug. $2n = 28$.

Alpine or rocky meadows; 3400–4900 m. Xizang [Bhutan, NW India, Nepal, Sikkim].

17b. *Potentilla microphylla* var. *luteopilosa* (T. T. Yu & C. L. Li) H. Ikeda & H. Ohba in H. Ohba, Himal. Pl. 3: 48. 1999.

黄毛小叶委陵菜 huang mao xiao ye wei ling cai

Potentilla luteopilosa T. T. Yu & C. L. Li, Acta Phytotax.

Sin. 18: 9. 1980.

Leaves 1–6 cm, not crowded, with 7–9 pairs of leaflets; leaflets lobed ca. 1/2 way to midvein, apex obtuse. Fl. and fr. Jun–Aug.

• Alpine rocks; 3800–4200 m. Sichuan, Xizang, Yunnan.

17c. *Potentilla microphylla* var. *tapetodes* (Soják) H. Ikeda & H. Ohba in H. Ohba, Himal. Pl. 3: 49. 1999.

丛生小叶委陵菜 cong sheng xiao ye wei ling cai

Potentilla tapetodes Soják, Čas. Nár. Mus., Odd. Přír. 152: 160. 1983.

Leaves 0.5–1 cm, crowded, with 2 or 3(–5) pairs of leaflets. Fl. and fr. Jun–Sep.

Rocks on mountain slopes; 3500–5200 m. Xizang [Bhutan, Sikkim].

Potentilla microphylla var. *caespitosa* T. T. Yu & C. L. Li was described in FRPS (p. 274), but the name is invalid because no Latin description or diagnosis was provided (St. Louis Code, Art. 36.1). The entity described belongs to var. *tapetodes*.

The rootstock branches of var. *tapetodes* are surrounded by many old leaves to form towerlike structures that cluster together to form a large cushion.

18. *Potentilla stenophylla* (Franchet) Diels, Notes Roy. Bot. Gard. Edinburgh 5: 271. 1912.

狭叶委陵菜 xia ye wei ling cai

Herbs perennial. Flowering stems 3–25 cm tall, together with petioles appressed sericeous-pilose. Radical leaves 2.5–23 cm including petiole; auricles of stipules free, apex acute to acuminate; leaf blade pinnate with 5–25 pairs of leaflets; leaflets oblong, $0.3-1.5$ cm \times $2-8$ mm, becoming gradually smaller toward base of leaf, abaxially densely appressed villous on veins, becoming glabrescent or sericeous-villous, adaxially sparsely villous or glabrescent, or both surfaces glabrous except for tufts of hairs on apices of teeth, margin 3–15-serrate; cauline leaves: auricles of stipules lanceolate to ovate, herbaceous, margin entire, apex acuminate; leaf blade leafletlike, margin entire. Inflorescence cymose. Flowers 1.5–2.5 cm in diam.; pedicel 1–4 cm, appressed villous. Sepals elliptic to ovate; epicalyx segments lanceolate to elliptic, apex obtuse or acute. Petals yellow, oblong to obovate, $3-7 \times 2.5-5.5$ cm, apex rounded. Style lateral; stigma slightly dilated. Achenes smooth or rugose. Fl. and fr. Jul–Sep.

Forest margins, alpine meadows; 3200–5800 m. Sichuan, Xizang, Yunnan [Myanmar, Sikkim].

- 1a. Leaflets with 3–5 apical teeth 18a. var. *stenophylla*
- 1b. Leaflets with 5–15 teeth.
 - 2a. Leaflets 0.6–1 cm, with 5–7 teeth 18d. var. *emergens*
 - 2b. Leaflets 0.8–1.5 cm, with 6–15 teeth.
 - 3a. Leaflets hairy on both surfaces 18c. var. *taliensis*
 - 3b. Leaflets glabrous except for tufts of hairs on apices of teeth 18b. var. *cristata*

18a. *Potentilla stenophylla* var. *stenophylla*

狭叶委陵菜(原变种) xia ye wei ling cai (yuan bian zhong)

Potentilla peduncularis D. Don var. *stenophylla* Franchet, Pl. Delavay. 3: 214. 1890; *P. millefolia* H. Léveillé (1914), not Rydberg (1896); *P. stenophylla* var. *millefolia* Soják.

Leaflets with 3–5 teeth at apex. Fl. and fr. Jun–Sep.

• Forest margins, alpine meadows; 3200–5300 m. Sichuan, Xizang, Yunnan.

18b. *Potentilla stenophylla* var. *cristata* (H. R. Fletcher) H. Ikeda & H. Ohba in H. Ohba, Himal. Pl. 3: 52. 1999.

贡山狭叶委陵菜 gong shan xia ye wei ling cai

Potentilla cristata H. R. Fletcher, Notes Roy. Bot. Gard. Edinburgh 20: 218. 1950.

Leaflets 0.8–1.5 cm, with 11–13 teeth, glabrous except for tufts of hairs on apices of teeth. Fl. Jul–Aug.

Alpine meadows; 3500–3700 m. NW Yunnan (Gaoligong Shan) [Myanmar].

18c. *Potentilla stenophylla* var. *taliensis* (W. W. Smith) H. Ikeda & H. Ohba in H. Ohba, Himal. Pl. 3: 52. 1999.

大理委陵菜 da li wei ling cai

Potentilla taliensis W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 7: 199. 1914.

Leaflets 0.8–1.5 cm, with 6–15 teeth, hairy on both surfaces. Fl. and fr. Jul–Oct.

• Forest margins, alpine meadows; 3800–4000 m. NW Yunnan (Dali Xian).

18d. *Potentilla stenophylla* var. *emergens* Cardot, Notul. Syst. (Paris) 3: 241. 1916.

康定委陵菜 kang ding wei ling cai

Potentilla stenophylla var. *compacta* J. Krause; *P. stenophylla* var. *exaltata* Cardot; *P. tatsienluensis* Th. Wolf.

Leaflets 0.6–1 cm, with 5–7 teeth. Fl. and fr. Jun–Oct.

Forest margins, alpine meadows; 3200–5800 m. Sichuan, Xizang [Sikkim].

19. *Potentilla glabriuscula* (T. T. Yu & C. L. Li) Soják, Candollea 43: 453. 1988.

光叶委陵菜 guang ye wei ling cai

Herbs perennial, low. Roots robust, terete; lateral roots filiform. Flowering stems erect, 1–2.5 cm tall, pilose. Radical leaves 1.5–5 cm including petiole; stipules brown, membranous, abaxially subglabrous, auricles connate from base to apex, apex rounded; petiole subglabrous; leaf blade pinnate with 3–7 pairs of leaflets; leaflets shortly petiolulate or subsessile, oblong to narrowly obovate, 3–5 × 2–4 mm, subglabrous, margin 3–7-serrate, apex acute; cauline leaves 1(or 2), or reduced and bractlike. Flower solitary, 6–12 mm in diam. Sepals elliptic to ovate, apex rounded; epicalyx segments oblong-lanceolate, nearly equaling sepals, abaxially sparsely pubescent or

subglabrous, apex obtuse or acute. Petals yellow, oblong to elliptic, 6–8 × 4–5 mm, apex rounded. Stamens 5–10. Style lateral. Achenes not seen. Fl. and fr. Jun–Oct.

Forest margins, alpine meadows; 2500–5500 m. E and S Xizang, NW Yunnan [Bhutan, N Myanmar, E Nepal, Sikkim].

Two varieties occur in China. Two of us (Ohba and Ikeda) believe that var. *majuscula* Soják, described from Sikkim, is synonymous with var. *glabriuscula*, but we have not seen the type.

1a. Stamens ca. 5 19a. var. *glabriuscula*
1b. Stamens 8–10 19b. var. *oligandra*

19a. *Potentilla glabriuscula* var. *glabriuscula*

光叶委陵菜(原变种) guang ye wei ling cai (yuan bian zhong)

Sibaldia glabriuscula T. T. Yu & C. L. Li, Acta Phytotax. Sin. 19: 516. 1981; ?*Potentilla glabriuscula* var. *majuscula* Soják; *P. glabriuscula* var. *namimensis* Soják.

Stamens ca. 5. Fl. and fr. Jun–Oct.

Forest margins, alpine meadows; 2500–5500 m. E and S Xizang, NW Yunnan [Bhutan, N Myanmar, E Nepal, ?Sikkim].

19b. *Potentilla glabriuscula* var. *oligandra* (Soják) Soják, Bot. Jahrb. Syst. 116: 41. 1994.

多蕊光叶委陵菜 duo rui guang ye wei ling cai

Potentilla oligandra Soják, Čas. Nár. Mus., Odd. Přír. 152: 160. 1983.

Stamens 8–10. Fl. and fr. Jun–Oct.

• Alpine meadows; ca. 4000 m. SE Xizang.

20. *Potentilla aristata* Soják, Candollea 43: 159. 1988.

多对小叶委陵菜 duo dui xiao ye wei ling cai

Potentilla microphylla D. Don var. *achilleifolia* J. D. Hooker; *P. microphylla* var. *multijuga* T. T. Yu & C. L. Li.

Herbs perennial, low, often mat forming. Roots several, slender, terete. Flowering stems 2–3 cm tall, appressed white pilose. Radical leaves 1.5–4 cm including petiole; auricles of stipules free, apex acute to acuminate; petiole short, appressed pilose; leaf blade pinnate with 13–16 pairs of leaflets; terminal leaflet oblong to narrowly obovate, ca. 2 × 3 mm, pinnately lobed to parted with 8–12 segments; segments narrowly lanceolate, abaxially sericeous-pilose, later glabrescent, or both surfaces glabrous; cauline leaf 1, small; leaf blade simple or pinnate with 4 or 5(–9) pairs of leaflets. Flower 1(or 2), 1–1.5 mm in diam.; pedicel 5–10 mm, appressed pilose. Sepals triangular-ovate; epicalyx segments lanceolate to oblong, margin entire or deeply 2-lobed. Petals yellow, elliptic to obovate, apex rounded. Style lateral; stigma slightly dilated. Achenes not seen. Fl. and fr. Jun–Aug.

Forest margins, open places in thickets, alpine meadows, rocks on mountain slopes; 3600–4800 m. Xizang, Yunnan [Bhutan, Nepal, Sikkim].

21. *Potentilla turfosa* Handel-Mazzetti, Symb. Sin. 7: 518. 1933.

簇生委陵菜 *cu sheng wei ling cai*

Herbs perennial. Flowering stems 10–30 cm tall, together with petioles appressed pilose or glabrescent. Radical leaves 4–15 cm including petiole; auricles of stipules free, apex acute to acuminate; leaf blade usually interrupted pinnate with 3–11 pairs of leaflets; terminal leaflet ovate or elliptic, 0.3–2 × 0.3–1.5 cm, abaxially densely appressed villous when young, glabrescent or appressed pilose when old, margin acutely incised 5–7-serrate on each side; cauline leaves 1 or 2; auricles of stipules herbaceous, apex acuminate or 2–4-serrate; leaf blade with 1–3 pairs of leaflets. Inflorescence 1–4-flowered. Flowers 0.8–1.5 cm in diam.; pedicel 3–4 cm, appressed pilose. Sepals triangular-ovate; epicalyx segments oblong to obovate, margin entire or 2- or 3-serrate. Petals yellow, elliptic to obovate, apex rounded. Stamens 11–20. Style lateral to sub-basal. Achenes not seen. Fl. and fr. Aug–Sep.

- Alpine meadows; 1300–4200 m. Xizang, Yunnan.

- 1a. Stamens ca. 20 21a. var. *turfosa*
- 1b. Stamens 11–14 21b. var. *gracilescens*

21a. *Potentilla turfosa* var. *turfosa*

簇生委陵菜(原变种) *cu sheng wei ling cai* (*yuan bian zhong*)

Stamens ca. 20. Fl. and fr. Jul–Sep.

- Alpine meadows; 1300–4000 m. Xizang, Yunnan.

21b. *Potentilla turfosa* var. *gracilescens* (Soják) H. Ikeda & H. Ohba in H. Ohba, *Himal. Pl.* 3: 61. 1999.

纤细委陵菜 *xian xi wei ling cai*

Potentilla glabriuscula (T. T. Yu & C. L. Li) Soják var. *gracilescens* Soják, *Bot. Jahrb. Syst.* 116: 41. 1994, based on *P. gracillima* T. T. Yu & C. L. Li, *Acta Phytotax. Sin.* 18: 9. 1980, not Kamelin (1977); *P. turfosa* var. *caudiculata* Soják.

Stamens 11–14. Fl. and fr. Aug–Sep.

- Alpine meadows; 3800–4200 m. Xizang.

22. *Potentilla peduncularis* D. Don, *Prodr. Fl. Nepal.* 230. 1825.

总梗委陵菜 *zong geng wei ling cai*

Herbs perennial, rhizomatous. Rhizomes prostrate, robust, terete. Flowering stems 10–35 cm tall, together with petioles appressed villous or sericeous. Radical leaves 2.5–25 cm including petiole; auricles of stipules membranous, connate from base to rounded apex; leaf blade non-interrupted pinnate with 10–21 pairs of leaflets; terminal leaflet narrowly or broadly ovate, narrowly obovate, ovate-lanceolate, oblong-lanceolate, or oblong, 0.5–3 × 0.3–1.5 cm, both surfaces densely silvery sericeous or adaxially only sparsely so, base decurrent on apical 2 or 3 pairs of leaflets, margin sharply or bluntly serrate or apex dentate; cauline leaves small; auricles of stipules herbaceous, margin incised parted or incised serrate; leaf blade with 1 or 2 pairs of leaflets. Inflorescence corymbose-cymose. Flowers 1–3.5 cm in diam.; pedicel 1–3.5 cm. Sepals triangular-ovate; epi-

calyx segments oblong to elliptic-lanceolate, margin entire or 2–4-parted. Petals yellow, broadly elliptic to obovate, apex rounded or retuse. Style lateral. Achenes not seen. Fl. and fr. May–Oct.

Forests, alpine meadows, gravelly slopes; 3000–4800 m. Sichuan, Xizang, Yunnan [Bhutan, NW India, Nepal, Sikkim].

- 1a. Leaflet margin more than 10-serrate.
 - 2a. Leaflets narrowly ovate, abaxially densely hairy, adaxially sparsely hairy 22a. var. *peduncularis*
 - 2b. Leaflets broadly ovate, both surfaces densely hairy 22b. var. *shweliensis*
- 1b. Leaflet margin 4–9-serrate or apex dentate.
 - 3a. Leaflets narrowly ovate, 1.5–3 cm, margin bluntly 5–9-serrate or apex dentate 22c. var. *vittata*
 - 3b. Leaflets narrowly obovate, 0.5–2 cm, margin 4(or 5)-serrate or apex dentate 22d. var. *curta*

22a. *Potentilla peduncularis* var. *peduncularis*

总梗委陵菜(原变种) *zong geng wei ling cai* (*yuan bian zhong*)

Potentilla peduncularis var. *elongata* T. T. Yu & C. L. Li; *P. remota* Soják.

Leaflets narrowly ovate, abaxially densely hairy, adaxially sparsely hairy, margin more than 10-serrate. Fl. and fr. Jun–Oct. *2n* = 42.

Forests, alpine meadows, gravelly slopes; 3000–4800 m. Sichuan, Xizang, Yunnan [Bhutan, NW India, Nepal, Sikkim].

Potentilla peduncularis var. *abbreviata* T. T. Yu & C. L. Li was described in FRPS (p. 266), but the name is invalid because no Latin description or diagnosis was provided (St. Louis Code, Art. 36.1). The entity described belongs to var. *peduncularis*.

22b. *Potentilla peduncularis* var. *shweliensis* (H. R. Fletcher) H. Ikeda & H. Ohba in H. Ohba, *Himal. Pl.* 3: 66. 1999.

多齿总梗委陵菜 *duo chi zong geng wei ling cai*

Potentilla shweliensis H. R. Fletcher, *Notes Roy. Bot. Gard. Edinburgh* 20: 215. 1950.

Leaflets broadly ovate, both surfaces densely hairy, margin more than 10-serrate. Fl. and fr. Jun–Oct.

- Forests, alpine meadows, gravelly slopes; ca. 3300 m. Yunnan.

22c. *Potentilla peduncularis* var. *vittata* (Soják) H. Ikeda & H. Ohba in H. Ohba, *Himal. Pl.* 3: 67. 1999.

狭叶总梗委陵菜 *xia ye zong geng wei ling cai*

Potentilla vittata Soják, *Candollea* 43: 164. 1988; *P. vittata* var. *abbreviata* Soják; *P. vittata* var. *assidens* Soják; *P. vittata* var. *pluriflora* Soják; *P. oxyodonta* Soják.

Leaflets narrowly ovate, 1.5–3 cm, margin bluntly 5–9-serrate or apex dentate. Fl. and fr. Jun–Oct.

- Alpine meadows, gravelly slopes; 3000–4200 m. Xizang, Yun-

nan.

22d. *Potentilla peduncularis* var. *curta* (Soják) H. Ikeda & H. Ohba in H. Ohba, *Himal. Pl.* 3: 68. 1999.

少齿总梗委陵菜 shao chi zong geng wei ling cai

Potentilla curta Soják, *Bot. Jarhb. Syst.* 116: 215. 1994.

Leaflets narrowly obovate, 0.5–2 cm, margin 4(or 5)-serrate or apex dentate. Fl. and fr. Jun–Oct.

Alpine meadows, gravelly slopes; 3400–4800 m. Xizang [Sikkim].

23. *Potentilla contigua* Soják, *Candollea* 43: 160. 1988.

高山委陵菜 gao shan wei ling cai

Potentilla peduncularis var. *clarkei* J. D. Hooker; *P. peduncularis* var. *glabriuscula* T. T. Yu & C. L. Li.

Herbs perennial, rhizomatous. Rhizomes prostrate, robust, terete. Flowering stems 10–30 cm tall, together with petioles appressed villous or sericeous. Radical leaves 10–20 cm including petiole; auricles of stipules free, apex acute to acuminate; leaf blade non-interrupted pinnate with 13–16 pairs of leaflets; terminal leaflet oblong or narrowly obovate, 1–2 cm × 5–7 mm, abaxially densely or sparsely strigose, base decurrent in apical 2 or 3 pairs of leaflets, margin sharply serrate; cauline leaves: auricles of stipules herbaceous, apex incised parted or incised serrate; leaf blade with 3–5 pairs of leaflets. Inflorescence corymbose-cymose. Flowers 1.5–2.5 cm in diam.; pedicel 1.5–4 cm. Epicalyx segments oblong to elliptic-lanceolate, margin entire or 2–4-parted. Petals yellow, broadly elliptic to obovate, apex rounded or retuse. Style lateral. Achenes not seen. Fl. and fr. May–Oct. $2n = 28$.

Forest, thickets, alpine meadows, gravelly slopes; 3500–4600 m. Sichuan, Xizang [Bhutan, Nepal, Sikkim].

Potentilla contigua is similar to *P. peduncularis* in habit, but has radical leaf stipules with free auricles, whereas the stipules of *P. peduncularis* have auricles connate from the base to the apex.

24. *Potentilla cardotiana* Handel-Mazzetti, *Acta Horti Gothob.* 13: 322. 1939.

聚伞委陵菜 ju san wei ling cai

Potentilla leuconota D. Don var. *corymbosa* Cardot.

Herbs perennial. Rhizomes short. Flowering stems 10–35 cm tall, together with petioles appressed villous or sericeous. Radical leaves 7–16 cm including petiole; auricles of stipules free, apex acute to acuminate; leaf blade interrupted pinnate with 10–22 pairs of leaflets; terminal leaflet lanceolate to oblong, 1–2 cm × 4–8 mm, abaxially densely silvery or yellowish sericeous, base decurrent in apical 2 or 3 pairs of leaflets, margin sharply serrate; cauline leaves: auricles of stipules herbaceous, apex incised parted or incised serrate; leaf blade with 1–6 pairs of leaflets. Inflorescence corymbose-cymose. Flowers 0.8–1.5 cm in diam.; pedicel 1.5–2 cm. Epicalyx segments oblong to obovate, margin entire or 2–4-parted. Petals yellow, elliptic to obovate, apex rounded or subretuse. Style lateral; stigma slightly dilated. Achenes not seen. Fl. and fr. May–Oct.

Forests, thickets, alpine meadows, gravelly slopes; 3100–4000 m. Yunnan [Myanmar, Nepal].

Potentilla cardotiana is similar to *P. peduncularis* in habit, but has radical leaf stipules with free auricles acute to acuminate at the apex, whereas the stipules of *P. peduncularis* have auricles connate from the base to the rounded apex. Many specimens of *P. cardotiana* collected in China were misidentified as *P. peduncularis*.

25. *Potentilla commutata* Lehmann var. ***polyandra*** Soják, *Bot. Jahrb. Syst.* 116: 38. 1994.

多蕊委陵菜 duo rui wei ling cai

Potentilla decemjuga Soják; *P. mieheorum* Soják.

Herbs perennial. Flowering stems ascending, 3–10 cm tall, together with petioles appressed villous or sericeous. Radical leaves 2–8 cm including petiole; auricles of stipules connate from base to rounded apex; leaf blade non-interrupted pinnate with 5–15 pairs of leaflets; terminal leaflet oblong to narrowly obovate, 3.5–8 × 2–4 mm, abaxially densely silvery sericeous, base decurrent in apical 2 or 3 pairs of leaflets, margin sharply serrate; cauline leaves small; auricles of stipules herbaceous, apex incised parted or incised serrate; leaf blade simple or with 1 pair of leaflets. Inflorescence 1- to several flowered. Flowers 0.5–1.2 cm in diam.; pedicel 0.3–2.5 cm. Epicalyx segments oblong to lanceolate, margin entire or 2–4-parted. Petals yellow, broadly oblong to elliptic, apex rounded or retuse. Stamens ca. 20. Style subterminal; stigma slightly dilated. Achenes not seen. Fl. and fr. Jul–Aug. $2n = 14$.

Alpine meadows, gravelly slopes; 3800–4500 m. Sichuan [Bhutan, NW India, Nepal, Sikkim].

Potentilla commutata var. *commutata* is distributed in NW India, Nepal, and Sikkim.

26. *Potentilla tugitakensis* Masamune, *J. Soc. Trop. Agric.* 4: 77. 1932.

台湾委陵菜 tai wan wei ling cai

Potentilla leuconota D. Don var. *tugitakensis* (Masamune) H. L. Li.

Herbs perennial. Flowering stems 25–30 cm tall, densely canescent tomentose and villous. Radical leaves 10–18 cm including petiole; auricles of stipules connate from base to rounded apex; petiole densely white villous and white tomentose; leaf blade non-interrupted (rarely interrupted) pinnate with usually 19–27 pairs of leaflets; terminal leaflet oblong, 1–2 cm × 4–8 mm, abaxially densely white sericeous-villous on veins, base decurrent in apical 2 or 3 pairs of leaflets, margin regularly sharply many serrate; cauline leaves 1 or 2; auricles of stipules herbaceous, abaxially densely villous, margin entire or 1- or 2-serrate; leaf blade with 3–7 pairs of leaflets. Inflorescence corymbose-cymose. Flowers 2–2.5 cm in diam.; pedicel 3–5 cm, proximally with a serrate bract; bract abaxially densely grayish white tomentose and villous. Epicalyx segments ovate-lanceolate, apex acuminate. Petals yellow. Style lateral. Achenes smooth. Fr. Jul–Aug.

• Alpine meadows; ca. 3400 m. Taiwan.

27. *Potentilla leuconota* D. Don, *Prodr. Fl. Nepal.* 230. 1825.

银叶委陵菜 yin ye wei ling cai

Herbs perennial. Flowering stems 10–45 cm tall, together with petioles appressed or slightly spreading villous. Radical leaves 2.5–25 cm including petiole; auricles of stipules connate from base to middle, apex acute; leaf blade interrupted (rarely non-interrupted) pinnate with 6–18 pairs of leaflets; terminal leaflet ovate to elliptic, or oblong, 0.5–3 × 0.3–1.5 cm, abaxially densely appressed silvery or yellowish sericeous, or sparsely strigose, base decurrent in apical 2 or 3 pairs of leaflets, margin 4- to many serrate, teeth acute or acuminate; cauline leaves 1 or 2, resembling radical ones; auricles of stipules herbaceous, margin lacerate or parted. Inflorescence compactly pseudumbellate, with leaflike involucre. Flowers 5–8 mm in diam.; pedicel 1.5–2 cm, densely appressed white villous. Epicalyx segments lanceolate or oblong-lanceolate, abaxially densely white villous. Petals yellow, obovate, apex rounded. Style lateral. Achenes not seen. Fl. and fr. May–Nov.

Forests, meadows on mountain slopes, stream banks, cliffs; 2200–4600 m. Hubei, Sichuan, Taiwan, Xizang, Yunnan [Bhutan, India, Myanmar, Nepal, Sikkim].

- 1a. Leaflets abaxially sparsely strigose 27c. var. *brachyphyllaria*
- 1b. Leaflets abaxially densely sericeous.
 - 2a. Leaflets abaxially densely appressed silvery sericeous 27a. var. *leuconota*
 - 2b. Leaflets abaxially densely appressed yellowish sericeous 27b. var. *omeiensis*

27a. *Potentilla leuconota* var. *leuconota*

银叶委陵菜(原变种) yin ye wei ling cai (yuan bian zhong)

Potentilla leuconota var. *morrisonicola* Hayata; *P. morrisonicola* (Hayata) Hayata.

Leaflets abaxially densely appressed silvery sericeous. Fl. and fr. Jun–Oct.

Forests, meadows on mountain slopes; 2200–4600 m. Hubei, Sichuan, Taiwan, Xizang, Yunnan [Bhutan, India, Myanmar, Nepal, Sikkim].

This variety is used medicinally.

27b. *Potentilla leuconota* var. *omeiensis* H. Ikeda & H. Ohba in H. Ohba, *Himal. Pl.* 3: 78. 1999.

峨眉银叶委陵菜 e mei yin ye wei ling cai

Leaflets abaxially densely appressed yellowish sericeous. Fl. and fr. May–Aug.

• Forests, meadows on mountain slopes; 3000–3200 m. C Sichuan (Emei Shan).

27c. *Potentilla leuconota* var. *brachyphyllaria* Cardot, *Notul. Syst.* (Paris) 3: 241. 1916.

脱毛银叶委陵菜 tuo mao yin ye wei ling cai

Leaflets abaxially sparsely strigose. Fl. and fr. Jun–Nov.

Alpine meadows, stream banks, cliffs; 3600–4200 m. Sichuan, Xizang, Yunnan [NE India (Assam)].

28. *Potentilla wenchuensis* H. Ikeda & H. Ohba in H. Ohba, *Himal. Pl.* 3: 81. 1999.

汶川委陵菜 wen chuan wei ling cai

Herbs perennial. Flowering stems erect or ascending, 10–15 cm tall, together with petioles appressed villous or sericeous. Radical leaves 10–18 cm including petiole; auricles of stipules connate from base to rounded apex; leaf blade non-interrupted pinnate with 8–10 pairs of leaflets; terminal leaflet lanceolate to narrowly oblong, 5–7 × ca. 2 mm, abaxially densely yellowish sericeous, base decurrent in apical 2 or 3 pairs of leaflets, margin sharply serrate; cauline leaves small; auricles of stipules green, herbaceous, apex incised parted or incised serrate; leaf blade with 1 or 2 pairs of leaflets. Inflorescence compactly pseudumbellate. Flowers 0.8–1.2 cm in diam.; pedicel 1–1.5 cm. Epicalyx segments oblong to obovate, margin entire. Sepals triangular-ovate, apex obtuse or acute. Petals yellow, elliptic to obovate, apex rounded. Style lateral; stigma slightly dilated. Achenes not seen. Fl. and fr. May–Oct.

• Meadows, gravelly slopes; 2000–4000 m. Guizhou, Sichuan.

29. *Potentilla anserina* Linnaeus, *Sp. Pl.* 1: 495. 1753.

蕨麻 jue ma

Potentilla anserina var. *nuda* Gaudin; *P. anserina* var. *sericea* Hayne; *P. anserina* var. *viridis* W. D. J. Koch.

Herbs perennial, stoloniferous. Roots sometimes with fusiform or ellipsoid tubers. Stems prostrate, creeping, together with petioles appressed or subspreading pilose or glabrescent, rooting at nodes and producing plantlets. Radical leaves 2–20 cm including petiole; auricles of stipules connate from base to rounded apex; leaf blade interrupted pinnate with 5–11 pairs of leaflets; terminal leaflet elliptic, obovate-elliptic, or oblong-elliptic, 1–2.5 × 0.5–1 cm, abaxially densely appressed silvery sericeous, rarely glabrescent, base decurrent in apical pair of leaflets, margin sharply many serrate; cauline leaves: auricles of stipules sheathing at base. Flower solitary, 1.5–2.5 cm in diam.; pedicel 2.5–8 cm, pilose. Epicalyx segments elliptic or elliptic-lanceolate, margin usually 2- or 3-fid, rarely entire. Petals yellow, obovate, apex rounded. Style lateral. Achenes not seen. Fl. and fr. Jun–Aug. *2n* = 28, 42.

Meadows, grasslands on mountain slopes, river and ditch banks, wet places, roadsides; 500–4100 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan [Asia, Australia (Tasmania), Europe, North America, Pacific Islands (New Zealand), South America (Chile)].

30. *Potentilla gombalana* Handel-Mazzetti, *Acta Horti Gothob.* 13: 324. 1939.

川边委陵菜 chuan bian wei ling cai

Herbs perennial, stoloniferous. Stems prostrate, together with petioles appressed pilose. Radical leaves 13–25 cm including petiole; auricles of stipules of radical leaves connate from base to rounded apex; leaf blade interrupted pinnate with 9–12 pairs of leaflets; terminal leaflet oblong-elliptic or ovate-lanceolate, 1.5–4 × 0.5–1.5 cm, abaxially densely sericeous, base decurrent in apical pair of leaflets, margin incised serrate, teeth hairy at apex; cauline leaves resembling radical ones but

reduced; auricles of stipules (on prostrate stems) broad, membranous, base sheathing, apex slightly parted or entire; leaf blade 3–5-foliolate. Flowers 1 or 2, ca. 3 cm in diam.; pedicel 5–6 cm, appressed pilose. Sepals broadly triangular-ovate; epicalyx segments narrowly lanceolate, appressed pilose, apex acuminate. Petals yellow, broadly obovate, apex rounded or emarginate. Style lateral; stigma slightly dilated. Achenes not seen. Fl. Jul.

- Forest margins; ca. 3700 m. Sichuan (Kangding Xian, Yulinggong).

31. *Potentilla smithiana* Handel-Mazzetti, Acta Horti Gothob. 13: 325. 1939.

齿萼委陵菜 *chi e wei ling cai*

Herbs perennial, stoloniferous. Stems prostrate, spreading villous or glabrescent, often with adventitious roots at nodes. Radical leaves not present at anthesis; leaves mostly cauline, 4–15 cm including petiole; stipules brown, membranous, abaxially

pilose or glabrescent, margin entire, apex acute or acuminate; petiole spreading villous; leaf blade interrupted pinnate with 3–5 pairs of leaflets; terminal leaflet narrowly obovate or oblong-elliptic, 1–4 × 0.5–2 cm, abaxially densely appressed sericeous, lateral veins prominent, parallel, straight, base decurrent in apical pair of leaflets, margin sharply serrate. Flower solitary, 1.5–2 cm in diam.; pedicel 2–7 cm, appressed pilose. Sepals triangular-ovate, apex acute; epicalyx segments elliptic or oblanceolate, abaxially pilose, 3- or 4-veined, margin 3–7-serrate, apex acute. Petals yellow, obovate, apex rounded. Style lateral; stigma dilated. Achenes not seen. Fl. and fr. May–Aug.

- Grassy mountain slopes; 1000–2900 m. Sichuan.

32. *Potentilla taronensis* C. Y. Wu ex T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 9. 1980.

大果委陵菜 *da guo wei ling cai*

Herbs perennial. Stems spreading, densely spreading yellow villous. Radical leaves 5–10 cm including petiole; auricles of stipules free (also those on lower cauline leaves), apex acute; petiole spreading yellow villous; leaf blade interrupted pinnate usually with 4 or 5 pairs of leaflets (on upper cauline leaves with 1–3 pairs); leaflets elliptic or obovate-oblong, 1–3 × 0.5–1.6 cm, abaxially pilose on veins, margin sharply incised serrate, apex subrounded or obtuse; upper cauline leaves: auricles of stipules green, herbaceous, margin acutely incised many serrate. Flower solitary; pedicel 1.5–4 cm, pilose, with 1–3 bracts. Sepals triangular-ovate, apex acuminate; epicalyx segments obovate, slightly shorter than sepals, margin 2- or 3-parted. Style lateral; stigma not dilated. Achenes ellipsoid, ca. 2 mm in diam., markedly papillate. Fr. Nov.

- Alpine gravelly slopes; 3000–3200 m. NW Yunnan (Gaoligong Shan).

5. *Potentilla* sect. *Conostylae* (Th. Wolf) T. T. Yu & C. L. Li in T. T. Yu, Fl. Reipubl. Popularis Sin. 37: 279. 1985.

锥状花柱组 *zhui zhuang hua zhu zu*

Potentilla subsect. *Conostylae* Th. Wolf, Biblioth. Bot. 16(Heft 71): 48. 1908.

Herbs annual or perennial. Basal leaves pinnate, palmate, or 3-foliolate; leaflets serrate or divided at margin. Ovary glabrous; style subterminal, conic, visibly thickened at base, gradually tapered distally.

About 350 species: mainly temperate and subarctic regions of N hemisphere; 47 species (13 endemic) in China.

- 1a. Radical leaves pinnate (sometimes 3-foliolate in *P. hypargyrea*).
- 2a. Leaves abaxially green or greenish, sericeous, pilose, or glabrescent.
- 3a. Leaflet margin parted to midvein.
 - 4a. Radical leaves 3-foliolate, or terminal leaflets pseudopinnately parted, abaxially white sericeous 63. *P. hypargyrea*
 - 4b. Radical leaves pinnate, abaxially green, pilose or sparsely sericeous.
 - 5a. Leaflets 2-pinnately dissected, ultimate segments ca. 1 mm wide, both surfaces pilose, apex acuminate; stipules proximally adnate to petiole for ca. 3/4 their length; inflorescences 1–3-flowered 62. *P. coriandrifolia*
 - 5b. Leaflets 1-pinnatifid, ultimate segments ca. 2 mm wide, both surfaces pilose and granular sessile glandular, apex obtuse; stipules proximally adnate to petiole for ca. 1/2 their length; inflorescences cymose, many flowered 64. *P. granulosa*
- 3b. Leaflet margin serrate or lobed, but not deeply so to midvein.
 - 6a. Radical leaves with 2 or 3(or 4) pairs of leaflets.
 - 7a. Leaflet margin coarsely acutely or obtusely incised serrate; flowers ca. 2 cm in diam.; epicalyx segments equaling sepals 67. *P. lancinata*
 - 7b. Leaflet margin crenulate; flowers 1.5–1.8 cm in diam.; epicalyx segments shorter than sepals 68. *P. crenulata*

- 6b. Radical leaves with 4–23 pairs of leaflets.
- 8a. Inflorescence lax, many flowered; flowers usually 1–1.5 cm in diam.; epicalyx segments linear-lanceolate, usually shorter than sepals, not enlarged in fruit 65. *P. tanacetifolia*
- 8b. Inflorescence compact, few flowered; flowers 1.5–1.8 cm in diam.; epicalyx segments oblong-lanceolate, nearly equaling or slightly longer than sepals, enlarged in fruit 66. *P. longifolia*
- 2b. Leaves abaxially densely white or yellowish tomentose or sericeous.
- 9a. Radical leaves with 2–4 pairs of leaflets, leaflet margin serrate.
- 10a. Flowering stems and petioles pilose or villous 47. *P. griffithii*
- 10b. Flowering stems and petioles ± interwoven white tomentose and pilose, rarely glabrescent.
- 11a. Leaflets abaxially appressed sericeous on veins; sepals abaxially densely villous or sericeous 46. *P. potaninii*
- 11b. Leaflets abaxially white tomentose on veins; sepals abaxially densely white tomentose.
- 12a. Leaflets in 2–4 pairs, oblong or oblong-lanceolate, margin incised serrate 45. *P. discolor*
- 12b. Leaflets in 2 pairs, oblong to obovate-oblong, margin pectinately lobed 48. *P. hololeuca*
- 9b. Radical leaves with (2 or)3–11 pairs of leaflets, leaflet margin parted or lobed.
- 13a. Flowering stems and petioles ± interwoven white tomentose or downy, rarely glabrescent.
- 14a. Leaflets of radical leaves pinnately or palmately parted nearly to base, thereby appearing verticillate 40. *P. verticillaris*
- 14b. Leaflets of radical leaves not as above, not appearing verticillate.
- 15a. Leaflet margin pectinate, lobes fasciated oblong or oblong-lanceolate 44. *P. strigosa*
- 15b. Leaflet margin not pectinate, lobes often broader.
- 16a. Leaflets in 3–5(–8) pairs, subleathery, abaxially densely white tomentose, margin oblong or triangular lobed 39. *P. sischanensis*
- 16b. Leaflets in 4–8 pairs, thinly papery, abaxially canescent tomentose, margin oblong dentate or triangular lobed 41. *P. limprichtii*
- 13b. Flowering stems and petioles sericeous, villous, floccose, or pubescent, but not tomentose.
- 17a. Leaflets abaxially wholly tomentose or sericeous, sometimes glabrescent.
- 18a. Leaflets abaxially densely appressed sericeous, sometimes glabrescent, margin flat or slightly revolute; stipules of cauline leaves entire; flowering stems and petioles sparsely sericeous or glabrescent 36. *P. multiceps*
- 18b. Leaflets abaxially tomentose or sericeous, margin strongly revolute; stipules of cauline leaves entire or 2-fid; flowering stems and petioles densely spreading white sericeous 38. *P. sericea*
- 17b. Leaflets abaxially tomentose, white sericeous on veins.
- 19a. Leaflets abaxially tomentose and sparsely white villous, adaxially greenish, appressed white villous or sericeous, lobes adjacent.
- 20a. Radical leaves with 3–5 pairs of leaflets; stipules of cauline leaves entire, rarely 2-fid; stems and petioles appressed white villous 35. *P. pamiroalaica*
- 20b. Radical leaves with 6–9 pairs of leaflets; stipules of cauline leaves 2- or 3-fid; stems and petioles spreading white sericeous-villous 37. *P. plumosa*
- 19b. Leaflets abaxially sericeous only on veins, adaxially green, appressed pilose, rarely glabrescent, lobes distant.
- 21a. Flowers usually 1.2–1.5 cm in diam.; sepals erect, enlarged after flowering.
- 22a. Leaflets usually parted almost to midvein, lobes narrow, ± fasciated lanceolate; plants appressed pubescent or recumbent sericeous, rarely glabrescent, hairs to 2 mm 33. *P. multifida*
- 22b. Leaflets usually lobed, but not nearly midvein, lobes triangular-oblong or triangular-lanceolate to fasciated oblong; plants sparsely spreading white villous, hairs 3–4 mm 43. *P. conferta*
- 21b. Flowers usually 0.8–1.2 cm in diam.; sepals adnate to fruit, not enlarged after flowering.
- 23a. Stipules of cauline leaves usually dentately lobed; flowering stems white sericeous 42. *P. chinensis*
- 23b. Stipules of cauline leaves usually entire; flowering stems white villous 34. *P. multicaulis*
- 1b. Radical leaves palmately 3–5-foliolate.
- 24a. Leaves abaxially white tomentose or sericeous.
- 25a. Radical leaves palmately 5-foliolate, rarely 3-foliolate with leaflets pinnately parted, cauline leaves 3 to many; inflorescence corymbose, many flowered.
- 26a. Leaflets of radical leaves 5–8-lobed; flowers 0.8–1 cm in diam. 58. *P. virgata*
- 26b. Leaflets of radical leaves serrate or 1–4-lobed; flowers 1–2 cm in diam.
- 27a. Leaflets abaxially gray pilose or tomentose, margin flat, incised serrate 61. *P. inclinata*
- 27b. Leaflets abaxially densely white tomentose, margin slightly or markedly revolute, irregularly 2–5-dentate distally or 2–4-lobed on each side.
- 28a. Leaflet margin slightly revolute, 2–4-lobed on each side, lobes narrowly fasciated 59. *P. angustiloba*
- 28b. Leaflet margin markedly revolute, entire in proximal 1/2, irregularly 2–5-dentate in distal 1/2 60. *P. argentea*
- 25b. Radical leaves 3(or 5)-foliolate, cauline leaves very few, 1- or 2-foliolate; inflorescence 2- or 3-flowered.
- 29a. Radical leaves 5-foliolate 52. *P. saundersiana*

- 29b. Radical leaves 3-foliolate.
- 30a. Flowering stems and petioles usually white tomentose; leaflets abaxially tomentose on lateral veins.
- 31a. Leaflets lanceolate or ovate-lanceolate, margin pinnately parted 51. *P. zhangbeiensis*
- 31b. Leaflets oblong-lanceolate, elliptic-ovate, or obovate, margin coarsely or sharply serrate.
- 32a. Leaflets oblong-lanceolate, margin coarsely triangular 5–7-serrate; sepals abaxially appressed pilose 49. *P. nivea*
- 32b. Leaflets elliptic-ovate or obovate, margin sharply ovate 3–7-serrate; sepals abaxially white tomentose 50. *P. betonicifolia*
- 30b. Flowering stems and petioles villous or also white tomentose; leaflets abaxially sericeous or pilose.
- 33a. Stipules of cauline leaves broad, fasciated 2–4-lobed; flowers 2–3 cm in diam.; epicalyx segments abaxially silvery tomentose 54. *P. delavayi*
- 33b. Stipules of cauline leaves small, entire, rarely 2-serrate; flowers 1–2 cm in diam.; epicalyx segments abaxially usually green and pilose.
- 34a. Pedicels and sepals abaxially glandular hairy; leaflets abaxially canescent tomentose, glabrescent when old, adaxially pilose and glandular hairy 56. *P. evestita*
- 34b. Pedicels and sepals abaxially not glandular hairy; leaflets abaxially densely persistently tomentose, adaxially appressed sericeous or pilose, rarely glabrescent.
- 35a. Plants gray tomentose; terminal leaflet of radical leaves shortly petiolulate 55. *P. nervosa*
- 35b. Plants white tomentose; leaflets of radical leaves sessile.
- 36a. Leaflets abaxially densely silvery tomentose and appressed silvery sericeous, adaxially appressed silvery sericeous; flowers ca. 2 cm in diam.; petals purplish at base; stamens and styles purple 57. *P. argyrophylla*
- 36b. Leaflets abaxially densely gray or white tomentose, pilose on veins, adaxially green or gray-green, appressed sericeous or pilose; petals yellow; stamens and styles yellow-white.
- 37a. Leaflets adaxially appressed pilose, margin crenate; pedicels erect; flowers 1–1.4 cm in diam. 52. *P. saundersiana*
- 37b. Leaflets adaxially appressed sericeous, margin lobed, lobes fasciated; pedicels nodding; flowers 1.5–2 cm in diam. 53. *P. pendula*
- 24b. Leaves abaxially green, pilose.
- 38a. Radical leaves pinnate 70. *P. supina*
- 38b. Radical leaves 3-foliolate, pedate, or palmate, rarely some leaves pinnate.
- 39a. Radical leaves palmately or pedately 5-foliolate, rarely some leaves 3-foliolate or pinnate.
- 40a. Stems prostrate, stoloniferous; roots slender; flowers 0.5–1 cm in diam. 69. *P. kleiniana*
- 40b. Stems erect or decumbent; roots robust, usually woody; flowers 1.5–2.5 cm in diam.
- 41a. Plants glandular hairy.
- 42a. Plants red stipitate glandular hairy; radical leaves palmately or pedately 5-foliolate 78. *P. desertorum*
- 42b. Plants sessile glandular hairy; radical leaves palmately 5-foliolate, some leaves 3-foliolate, rarely pinnate 79. *P. subdigitata*
- 41b. Plants not glandular hairy.
- 43a. Flowering stems and petioles pubescent, glabrescent; plants with leaf rosettes at anthesis 76. *P. chrysantha*
- 43b. Flowering stems and petioles white villous, hairs basally enlarged; plants without leaf rosettes at anthesis 77. *P. recta*
- 39b. Radical leaves 3-foliolate.
- 44a. Flowering stems prostrate, elongate.
- 45a. Flowers many, in terminal cymes 72. *P. cryptotaeniae*
- 45b. Flower solitary, lateral or terminal.
- 46a. Leaflets sessile, margin deeply serrate, stipules leathery, margin entire 70. *P. supina*
- 46b. Leaflets markedly petiolulate, margin narrowly serrate, stipules membranous, margin entire or serrate 71. *P. centigrana*
- 44b. Flowering stems erect or ascending.
- 47a. Flowers 2.5–4 cm in diam. 74. *P. macrosepala*
- 47b. Flowers not more than 2 cm in diam.
- 48a. Leaflets abaxially and sepals abaxially densely sessile glandular 79. *P. subdigitata*
- 48b. Leaflets abaxially and sepals abaxially not or only inconspicuously glandular.
- 49a. Plants spiny-setose, 10–20 cm tall 73. *P. asperrima*
- 49b. Plants not spiny-setose, more than 20 cm tall.
- 50a. Plants 50–100 cm tall; leaflets usually oblong or oblong-lanceolate, apex prolonged acuminate; stipules of cauline leaves lanceolate or oblong-lanceolate, mostly adnate to petiole 72. *P. cryptotaeniae*

- 50b. Plants 20–50 cm tall; leaflets usually elliptic, obovate, rhombic, or flabellate, apex obtuse or acute; stipules of cauline leaves broadly ovate or ovate-elliptic, free part longer than adnate part.
- 51a. Stems spreading; stipules of cauline leaves submembranous, margin entire or serrate; peduncle leafy; flowers 0.6–0.8 cm in diam. 71. *P. centigrana*
- 51b. Stems erect or ascending; stipules of cauline leaves herbaceous, margin entire; peduncle with minute, leaflike bracts; flowers 1–1.2 cm in diam. 75. *P. xizangensis*

33. *Potentilla multifida* Linnaeus, Sp. Pl. 1: 496. 1753.

多裂委陵菜 duo lie wei ling cai

Herbs perennial. Roots terete, slightly woody. Flowering stems ascending, sometimes spreading near ground, rarely erect, 3–40 cm tall, appressed or spreading pubescent or sericeous. Radical leaves 2.5–17 cm including petiole; stipules brown, membranous, abaxially pilose or glabrescent; petiole appressed or spreading pubescent; leaf blade pinnate with (2 or)3–5(or 6) pairs of leaflets; leaflets opposite, rarely alternate, at intervals of 0.5–2 cm, oblong-elliptic or broadly ovate, 1–5 × 0.8–2 cm, distal leaflets larger than proximal ones, abaxially white tomentose, appressed sericeous-villous on veins, adaxially appressed pubescent, densely appressed villous, or rarely glabrescent, midvein and lateral veins convex, margin revolute, pinnately parted almost to midvein, apex acute or ligulate; segments fasciated, fasciated lanceolate, or ligulate fasciated; cauline leaves 2 or 3; stipules green, ovate or ovate-lanceolate, herbaceous, apex acute or acuminate, 2-fid or entire; leaf blade resembling that of radical leaves but leaflets fewer higher up stem. Inflorescence corymbose-cymose, elongated and lax after flowering. Flowers 1.2–1.5 cm in diam.; pedicel 1.5–2.5 cm, pubescent. Sepals triangular-ovate, apex acute or acuminate; epicalyx segments lanceolate or elliptic-lanceolate, slightly shorter than sepals, appressed villous, apex obtuse or acute. Petals yellow, obovate, equaling sepals, apex emarginate. Style subterminal, conic, base thickened, papillate; stigma slightly enlarged. Achenes smooth or rugose. Fl. and fr. May–Aug.

Forest margins, meadows, grassy mountain slopes, alpine valleys, ravines, sandy river banks; 700–5000 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan [Asia, Europe, North America].

- 1a. Stems spreading near ground, 3–8 cm tall 33c. var. *nubigena*
- 1b. Stems ascending, rarely erect, 12–40 cm tall.
 - 2a. Cauline leaves pinnate with up to 5 pairs of leaflets 33a. var. *multifida*
 - 2b. Cauline leaves pinnate or appearing palmate with 5 pairs of leaflets densely inserted at petiole apex 33b. var. *ornithopoda*

33a. *Potentilla multifida* var. *multifida*

多裂委陵菜(原变种) duo lie wei ling cai (yuan bian zhong)

Potentilla hypoleuca Turczaninow; *P. multifida* var. *angustifolia* Lehmann; *P. multifida* var. *hypoleuca* (Turczaninow) Th. Wolf; *P. plurijuga* Handel-Mazzetti.

Flowering stems ascending, rarely erect, 12–40 cm tall. Cauline leaves pinnate with up to 5 pairs of leaflets. Fl. and fr.

May–Aug.

Forest margins, meadows on mountain slopes, ravines; 1200–4300 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Qinghai, Shaanxi, Sichuan, Xizang, Yunnan [Asia, Europe, North America].

This variety is used medicinally.

33b. *Potentilla multifida* var. *ornithopoda* (Tausch) Th. Wolf, Biblioth. Bot. 16(Heft 71): 156. 1908.

掌叶多裂委陵菜 zhang ye duo lie wei ling cai

Potentilla ornithopoda Tausch, Hort. Canal. t. 10. 1823; *P. multifida* var. *subpalmata* Krylov.

Flowering stems ascending, 12–40 cm tall. Cauline leaves pinnate or appearing palmate with 5 pairs of leaflets densely inserted at petiole apex.

Forest margins, meadows, grassy mountain slopes, ravines, sandy river banks; 700–4800 m. Gansu, Hebei, Heilongjiang, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Xizang [Mongolia, Russia].

33c. *Potentilla multifida* var. *nubigena* Th. Wolf, Biblioth. Bot. 16(Heft 71): 155. 1908.

矮生多裂委陵菜 ai sheng duo lie wei ling cai

Potentilla multifida var. *minor* Ledebour.

Flowering stems spreading near ground, 3–8 cm tall. Radical leaves 2.5–4 cm including petiole; leaf blade with (2 or)3 pairs of leaflets; segments ligulate fasciated, abaxially densely tomentose and sericeous-villous, adaxially densely appressed villous. Inflorescence few flowered. Fl. and fr. May–Jul.

Mountain meadows, alpine valleys; 1300–5000 m. Gansu, Hebei, Nei Mongol, Qinghai, Shaanxi, Xinjiang, Xizang [C and SW Asia].

34. *Potentilla multicaulis* Bunge, Mém. Acad. Imp. Sci. St.-Petersbourg, Sér. 6, Sci. Math. 2: 99. 1833.

多茎委陵菜 duo jing wei ling cai

Potentilla sericea Linnaeus var. *multicaulis* (Bunge) Lehmann.

Herbs perennial. Roots robust, terete. Flowering stems many, tufted, ascending or spreading, usually dark reddish, 7–35 cm tall, white villous or pubescent. Radical leaves 3–10 cm including petiole; stipules brown, membranous, abaxially white villous; petiole dark red, white villous; leaf blade pinnate with 4–6(–8) pairs of leaflets; leaflets opposite, rarely alternate, at intervals of 3–8 mm, sessile, elliptic to obovate, 5–20 × 3–8 mm, distal leaflets much larger than proximal ones, abaxially white tomentose, sparsely white villous on veins, adaxially sparsely appressed pilose, rarely glabrescent, main veins slightly concave, margin flat or slightly revolute, pinnately parted,

apex ligulate; segments fasciated; cauline leaves resembling radical ones but leaflets fewer; stipules green, herbaceous, margin entire, apex acuminate. Inflorescence cymose, many flowered, compact initially, lax after anthesis. Flowers 0.8–1(–1.3) cm in diam. Sepals triangular-ovate, apex acute; epicalyx segments linear-lanceolate, ca. 1/2 as long as sepals, apex rounded. Petals yellow, obovate or suborbicular, slightly longer than to $2 \times$ as long as sepals, apex emarginate. Style subterminal, cylindrical, base thickened. Achenes ovoid, rugose. Fl. and fr. Apr–Sep.

Thinned forests, meadows, shady places in ravines, sunny gravelly slopes, field margins; 200–3800 m. Gansu, Hebei, Henan, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang [Mongolia].

35. *Potentilla pamiroalaica* Juzepczuk in Komarov, Fl. URSS 10: 609. 1941.

高原委陵菜 gao yuan wei ling cai

Herbs perennial. Roots robust, terete. Rhizome usually multicapital, densely covered with brown relics of stipules. Flowering stems usually ascending, rarely erect, 5–22 cm tall, appressed white villous, hairs subspreading in lower part. Radical leaves 3–10 cm including petiole; stipules brown, membranous, abaxially white sericeous, rarely glabrescent; petiole appressed white pilose; leaf blade pinnate, very rarely palmate, with 3–5 pairs of leaflets; leaflets opposite or alternate, at intervals of 3–5 mm, sessile, adaxially green or grayish, ovate or obovate-oblong, 5–13 \times 3–7 mm, distal leaflets larger than proximal ones, abaxially densely white tomentose, densely white sericeous-villous on veins, adaxially densely appressed white villous, margin flat, pinnately parted, apex obtuse; segments oblong-linear; cauline leaves 1 or 2; stipules green, ovate or ovate-lanceolate, herbaceous, margin entire. Inflorescence lax, few flowered. Flowers 1.2–1.5 cm in diam.; pedicel 1.5–3 cm, densely appressed villous. Sepals triangular-lanceolate or ovate-lanceolate, apex acute or acuminate; epicalyx segments lanceolate or elliptic-lanceolate, shorter than or rarely nearly equaling sepals, apex obtuse. Petals yellow, obovate, longer than sepals, apex emarginate. Style subterminal, base slightly thickened. Achenes smooth. Fl. and fr. Jun–Aug.

Mountain slopes, shady places in river valleys; 3300–4700 m. Xinjiang, Xizang [C Asia].

36. *Potentilla multiceps* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 9. 1980.

多头委陵菜 duo tou wei ling cai

Herbs perennial. Roots robust, terete. Rhizome multicapital. Flowering stems densely tufted, erect, ascending, or spreading, 3–7 cm tall, white pilose, sometimes glabrescent. Radical leaves 1.5–3 cm including petiole; stipules brown, membranous, pilose or glabrescent; petiole white pilose; leaf blade pinnate with (3 or) 4 or 5 pairs of leaflets; leaflets opposite or alternate, elliptic or obovate-elliptic, abaxially densely white sericeous or glabrescent, adaxially appressed white pilose or glabrescent, margin flat, pinnately parted almost to midvein, apex obtuse; segments 1–3 on each side of midvein, fasciated ligulate; cauline leaves reduced; stipules green, herbaceous, margin entire; leaf blade palmate or subpinnate; leaflets resem-

bling those of radical leaves. Inflorescence cymose, 1- to several flowered. Flowers 0.7–1.2 cm in diam. Sepals elliptic-lanceolate or triangular-ovate, apex acute or acuminate; epicalyx segments narrowly fasciated, usually ca. 1/2 as long as sepals, abaxially pubescent and sparsely pilose. Petals yellow, obovate, ca. 1/2 as long as sepals, apex emarginate. Stamens ca. 20. Carpels numerous; style subterminal, ca. 1.5 \times as long as ovary, base thickened, papillate; stigma dilated, capitate. Achenes not seen. Fl. Jul.

• Mountain slopes, sandy river banks; 4000–5200 m. Qinghai, Xizang.

37. *Potentilla plumosa* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 10. 1980.

羽毛委陵菜 yu mao wei ling cai

Herbs perennial. Roots robust, terete, woody. Flowering stems spreading or ascending, 4–30 cm tall, spreading white sericeous-villous. Radical leaves 2–7 cm including petiole; stipules brown, membranous, abaxially white villous, rarely glabrescent; petiole white tomentose and white villous; leaf blade pinnate with 6–9 pairs of leaflets; leaflets opposite or alternate, at intervals of 2–4 mm, sessile, elliptic, 3–15 \times 2–8 mm, abaxially white tomentose, sometimes glabrescent, densely appressed white villous on veins, adaxially appressed white pubescent, margin slightly revolute, parted to midvein, apex obtuse; segments 3–5 on each side of midvein, fasciated; cauline leaves resembling radical ones but only with 3–5 pairs of leaflets; stipules green, ovate or ovate-lanceolate, herbaceous, abaxially densely appressed villous, margin 2–4-dentate-lobed or serrate, apex acuminate. Inflorescence densely or laxly corymbose-cymose, 3–10-flowered. Flowers 1–1.5 cm in diam. Sepals ovate or triangular-ovate, apex acute or acuminate; epicalyx segments ovate-lanceolate, slightly shorter than sepals, abaxially densely pubescent or villous, apex obtuse or acute. Petals yellow, obovate, ca. $2 \times$ as long as sepals, apex emarginate. Stamens ca. 20. Carpels numerous; ovary subreniform; style subterminal, base inconspicuously thickened; stigma slightly dilated, capitate. Achenes ovoid-ellipsoid, smooth, abaxially swollen. Fl. and fr. Jun–Aug.

• Open places in forests, meadows, terraces in valleys, grassy alpine slopes; 2500–4000 m. Gansu, Qinghai, Sichuan, Xizang.

38. *Potentilla sericea* Linnaeus, Sp. Pl. 1: 495. 1753.

绢毛委陵菜 juan mao wei ling cai

Herbs perennial. Roots robust, slightly woody. Flowering stems erect or ascending, 5–20 cm tall, together with petioles spreading white sericeous-villous. Radical leaves 3–8 cm including petiole; stipules brown, membranous, abaxially sericeous or villous; leaf blade pinnate with 2–6 pairs of leaflets; leaflets opposite, rarely alternate, at intervals of 3–5 mm or adjacent, sessile, adaxially green, oblong, usually 5–15 \times 3–8 mm, distal leaflets larger than proximal ones, abaxially white tomentose and white sericeous, adaxially appressed sericeous, margin revolute or not, pectinately parted, apex obtuse or acute; segments linear; cauline leaves 1 or 2; stipules green, ovate, herbaceous, abaxially villous, margin acutely serrate, rarely entire, apex acuminate. Inflorescence laxly cymose. Flowers 0.8–2.2

cm in diam.; pedicel 1–2 cm, densely pubescent and villous. Sepals triangular-ovate, apex acute; epicalyx segments lanceolate, slightly shorter than or rarely nearly equaling sepals, apex obtuse or acute. Petals yellow, obovate, slightly longer than sepals, apex emarginate. Style subterminal, base thickened. Achenes brown, cylindrical-ovoid, rugose. Fl. and fr. May–Sep.

Forest margins, grasslands, meadows and rock crevices on mountain slopes, inundated river banks; 600–5200 m. Gansu, Heilongjiang, Jilin, Nei Mongol, Qinghai, Xinjiang, Xizang [NW Himalayas to Kashmir, Mongolia, Russia].

- 1a. Radical leaves with 3–6 pairs of leaflets, leaflets at intervals of 3–5 mm, abaxially white tomentose and white sericeous, margin revolute 38a. var. *sericea*
- 1b. Radical leaves with 2 pairs of leaflets, leaflets adjacent, abaxially densely white tomentose, densely sericeous on veins, margin not revolute 38b. var. *polyschista*

38a. *Potentilla sericea* var. *sericea*

绢毛委陵菜(原变种) juan mao wei ling cai (yuan bian zhong)

Potentilla dasyphylla Bunge; *P. sericea* var. *dasyphylla* (Bunge) Ledebour.

Radical leaves with 3–6 pairs of leaflets; leaflets at intervals of 3–5 mm, abaxially white tomentose and white sericeous, margin revolute. Fl. and fr. May–Sep.

Forest margins, grasslands, meadows on mountain slopes, inundated river banks; 600–4100 m. Gansu, Heilongjiang, Jilin, Nei Mongol, Qinghai, Xinjiang, Xizang [Mongolia, Russia].

38b. *Potentilla sericea* var. *polyschista* (Boissier) Lehmann, Nov. Actorum Acad. Caes. Leop.-Carol. Nat. Cur. 23, Suppl. [Revis. Potentill.]: 34. 1856.

变叶绢毛委陵菜 bian ye juan mao wei ling cai

Potentilla polyschista Boissier, Diagn. Pl. Orient., ser. 1, 10: 6. 1849.

Radical leaves with 2 pairs of leaflets; leaflets adjacent, abaxially densely white tomentose, densely sericeous on veins, margin not revolute.

Alpine meadows, rock crevices on mountain slopes; 4400–5200 m. Xizang [NW Himalayas to Kashmir].

39. *Potentilla sischanensis* Bunge ex Lehmann, Nov. Stirp. Pug. 9: 3. 1851.

西山委陵菜 xi shan wei ling cai

Herbs perennial. Roots robust, terete, woody. Flowering stems tufted or not, erect, ascending, or spreading, 10–30 cm tall, together with petioles white tomentose and sparsely villous, glabrescent when old. Radical leaves 3–25(–30) cm including petiole; stipules brown, membranous, abaxially white villous; leaf blade pinnate with 3–5(–8) pairs of leaflets; leaflets opposite, rarely proximal ones alternate, at intervals of 0.5–1.8 cm, adaxially green, ovate, oblong-elliptic, or lanceolate, 0.5–3 × 0.4–1.5 cm, subleathery, abaxially densely white tomentose, appressed white villous and tomentose on veins, adaxially sparse-

ly villous, margin flat or slightly revolute, pinnately parted or serrate-lobed, apex obtuse or acute; segments oblong-elliptic, lanceolate, or ovate-lanceolate, or lobes triangular or triangular-ovate; cauline leaves absent or undeveloped, bractlike, and palmately or pinnately 3–5-sect; stipules green, ovate-lanceolate, subleathery, abaxially densely white tomentose. Inflorescence laxly cymose. Flowers 0.8–1 cm in diam.; pedicel 1–1.5 cm, sparsely pilose, with small, opposite bracteoles. Sepals ovate-lanceolate or triangular-ovate, apex acuminate; epicalyx segments linear-lanceolate, shorter than or nearly equaling sepals, white tomentose and abaxially sparsely pilose. Petals yellow, obovate, 0.5–1 × as long as sepals, apex rounded or emarginate. Style subterminal, base slightly thickened; stigma slightly dilated. Achenes ovoid, rugose at maturity. Fl. and fr. Apr–Aug.

Thickets, grasslands, grassy or dry mountain slopes, ravines, loess hills, waste places; 200–3600 m. Gansu, Hebei, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan [Mongolia].

- 1a. Flowering stems tufted, erect or ascending; leaflet margin pinnately parted, segments oblong-elliptic, lanceolate, or ovate-lanceolate 39a. var. *sischanensis*
- 1b. Flowering stems ascending or spreading, rarely tufted and erect; leaflet margin serrate-lobed, lobes triangular or triangular-ovate 39b. var. *peterae*

39a. *Potentilla sischanensis* var. *sischanensis*

西山委陵菜(原变种) xi shan wei ling cai (yuan bian zhong)

Potentilla songarica Bunge var. *chinensis* Bunge.

Flowering stems tufted, erect or ascending. Leaflet margin pinnately parted; segments oblong-elliptic, lanceolate, or ovate-lanceolate. Fl. and fr. Apr–Aug.

Thickets, grasslands, dry mountain slopes, loess hills; 200–3600 m. Gansu, Hebei, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi [Mongolia].

39b. *Potentilla sischanensis* var. *peterae* (Handel-Mazzetti) T. T. Yu & C. L. Li in T. T. Yu, Fl. Reipubl. Popularis Sin. 37: 287. 1985.

齿裂西山委陵菜 chi lie xi shan wei ling cai

Potentilla peterae Handel-Mazzetti, Acta Horti Gothob. 13: 317. 1939.

Flowering stems ascending or spreading, rarely tufted and erect. Leaflet margin serrate-lobed; lobes triangular or triangular-ovate. Fl. and fr. May–Aug.

• Grassy mountain slopes, ravines, waste places; 1700–2500 m. Gansu, Nei Mongol, Ningxia, Shaanxi, Shanxi, Sichuan.

40. *Potentilla verticillaris* Stephan ex Willdenow, Sp. Pl. 2: 1096. 1799.

轮叶委陵菜 lun ye wei ling cai

Potentilla verticillaris var. *acutipetala* Lehmann; *P. verticillaris* var. *condensata* Th. Wolf.

Herbs perennial. Roots cylindrical. Flowering stems tufted,

erect, 5–16 cm tall, white tomentose and villous. Radical leaves 3–5; stipules brown, membranous, abaxially densely white villous; leaflets adaxially green, proximal ones slightly shorter than distal ones, usually 0.5–3 cm × 1–3 mm, abaxially white tomentose, sparsely white villous on veins, adaxially pilose or glabrescent, base cuneate, margin revolute, pinnately or palmately parted almost to midvein, apex obtuse or acute; segments linear or narrowly fasciated; cauline leaves 1 or 2; stipules ovate-lanceolate, abaxially densely white tomentose, margin entire; leaf blade palmately 3–5-sect; segments fasciated. Inflorescence laxly cymose, few flowered. Flowers 0.8–1.5 cm in diam.; pedicel 1–1.5 cm, white tomentose. Sepals oblong, apex acuminate; epicalyx segments linear-lanceolate, shorter than or nearly equaling sepals, abaxially white tomentose and villous, apex acute or acuminate. Petals yellow, broadly obovate, slightly longer than to ca. 2 × as long as sepals, apex emarginate. Style subterminal, base thickened; stigma dilated. Achenes smooth. Fl. and fr. May–Aug.

Thickets, grasslands, dry mountain slopes, sandy river banks; 600–1900 m. Hebei, Heilongjiang, Jilin, Nei Mongol [Japan, Korea, Mongolia, Russia (Siberia)].

41. *Potentilla limprichtii* J. Krause, Repert. Spec. Nov. Regni Veg. Beih. 12: 408. 1922.

下江委陵菜 *xia jiang wei ling cai*

Herbs perennial. Roots stout, terete, slightly fleshy. Flowering stems subspreading to ascending, slender, 15–30 cm tall, together with petioles pilose and sparsely tomentose, usually glabrescent in lower part. Radical leaves 6–20 cm including petiole; stipules tinged brown, membranous, abaxially pilose, rarely glabrescent; leaf blade pinnate with 4–8 pairs of leaflets; leaflets opposite, rarely alternate, at intervals of 1–2.5 cm, shortly petiolulate or sessile, ovate, elliptic-ovate, or oblong-obovate, 1–2.5 × 0.5–1.5 cm, thinly papery, abaxially grayish white tomentose and pilose, adaxially appressed pilose or glabrescent, base cuneate or broadly so, margin distally 4–7-dentate-lobed or -serrate, on basal leaflets only 2- or 3-dentate-lobed; cauline leaves: stipules green, ovate, papery, margin entire; leaf blade 3-foliolate; leaflets resembling those of radical leaves. Inflorescence laxly several flowered. Flowers 1–1.5 cm in diam.; pedicel slender, 3–4 cm, pilose or tomentose. Sepals triangular-ovate, apex acute or acuminate; epicalyx segments fasciated lanceolate or elliptic-lanceolate, shorter than or rarely nearly equaling sepals, abaxially pilose and white tomentose. Petals yellow, obovate, 0.5–1 × as long as sepals, apex emarginate. Style subterminal, base slightly thickened; stigma capitate. Achenes smooth. Fl. and fr. Oct.

Rock crevices in ravines. Guangdong, Hubei, Jiangxi, Sichuan [Vietnam].

42. *Potentilla chinensis* Seringe in Candolle, Prodr. 2: 581. 1825.

委陵菜 *wei ling cai*

Herbs perennial. Roots robust, terete, slightly woody. Flowering stems erect or ascending, 20–70 cm tall, sparsely pubescent and sericeous-villous. Radical leaves 4–25 cm including petiole; stipules brown, submembranous, abaxially white sericeous-villous; petiole pubescent and sericeous-vil-

lous; leaf blade pinnate with 5–15 pairs of leaflets; leaflets opposite or alternate, at intervals of 5–8 mm, sessile, oblong, obovate, or oblong-lanceolate, 1–5 × 0.5–1.5 cm, gradually becoming smaller toward leaf blade base, abaxially white tomentose, white sericeous-villous on veins, adaxially pubescent or glabrescent, midvein concave, margin revolute, pinnatifid or parted to midvein or nearly so, apex obtuse or acute; segments triangular-ovate, triangular-lanceolate, oblong-lanceolate, or linear; cauline leaves resembling radical ones but leaflets fewer; stipules green, herbaceous, margin sharply serrate. Inflorescence corymbose-cymose. Flowers 0.8–1(–1.3) cm in diam.; pedicel 0.5–1.5 cm, densely pubescent, with lanceolate bracts at base. Sepals triangular-ovate, apex acute; epicalyx segments fasciated or lanceolate, ca. 1/2 as long as sepals, abaxially pubescent and slightly sericeous-pilose, apex narrowly acute. Petals yellow, broadly obovate, slightly longer than sepals, apex emarginate. Style subterminal, base slightly thickened, slightly papillate; stigma dilated. Achenes dark brown, ovoid, markedly rugose. Fl. and fr. Apr–Oct.

Sparse forests, forest margins, thickets, meadows, grasslands, mountain slopes, ravines; 400–3200 m. Anhui, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Xizang, Yunnan [Japan, Korea, Mongolia, Russia (Far East)].

- 1a. Leaflets pinnatifid, segments triangular-ovate, triangular-lanceolate, or oblong-lanceolate 42a. var. *chinensis*
- 1b. Leaflets parted to midvein or nearly so, segments linear 42b. var. *lineariloba*

42a. *Potentilla chinensis* var. *chinensis*

委陵菜(原变种) *wei ling cai* (*yuan bian zhong*)

Potentilla chinensis subsp. *trigonodonta* Handel-Mazzetti; *P. chinensis* var. *xerogenes* Handel-Mazzetti; *P. exaltata* Bunge.

Leaflets pinnatifid; segments triangular-ovate, triangular-lanceolate, or oblong-lanceolate.

Sparse forests, forest margins, thickets, meadows on mountain slopes, ravines; 400–3200 m. Anhui, Gansu, Guangdong, Guangxi, Guizhou, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Xizang, Yunnan [Japan, Korea, Mongolia, Russia (Far East)].

This variety is used medicinally.

42b. *Potentilla chinensis* var. *lineariloba* Franchet & Savatier, Enum. Fl. Jap. 2: 339. 1878.

细裂委陵菜 *xi lie wei ling cai*

Leaflets parted to midvein or nearly so; segments linear.

Meadows, grasslands, sunny mountain slopes; 800–1400 m. Hebei, Heilongjiang, Henan, Jiangsu, Liaoning, Shandong [Japan, Korea].

43. *Potentilla conferta* Bunge in Ledebour, Fl. Altaic. 2: 240. 1830.

大萼委陵菜 *da e wei ling cai*

Herbs perennial. Roots terete, woody. Flowering stems erect, ascending, or low and spreading, 4–45 cm tall, together with petioles pubescent and spreading white sericeous-villous, hairs to 4 mm. Radical leaves 2–20 cm including petiole; stipules brown, submembranous, abaxially white sericeous-villous; leaf blade pinnate with 3–6 pairs of leaflets; leaflets opposite or alternate, at intervals of 3–5 mm, lanceolate or oblong-elliptic, 1–5 × 0.5–2 cm, abaxially canescent tomentose, spreading white sericeous or villous on veins, adaxially appressed pubescent, pilose, or glabrescent, margin revolute, sometimes inconspicuously so, pinnatifid or pinnately parted, apex obtuse or ligulate; segments usually triangular-oblong, triangular-lanceolate, or fasciated oblong, often dilated at base; cauline leaves resembling radical ones but with fewer leaflets; stipules green, herbaceous, margin dentate-lobed or not, apex acuminate. Inflorescence cymose, 3- to many flowered. Flowers 1–1.5 cm in diam.; pedicel 1–2.5 cm, densely pubescent. Sepals triangular-ovate or elliptic, apex acute or acuminate; epicalyx segments lanceolate or oblong-lanceolate, slightly shorter than sepals, markedly dilated in fruit, apex obtuse or acute. Petals yellow, obovate, slightly longer than sepals, apex rounded or emarginate. Style conic, base thickened; stigma slightly dilated. Achenes ovoid or hemispheric, ca. 1 mm in diam., rugose, rarely inconspicuously so. Fl. and fr. Jun–Sep.

Thickets, meadows on mountain slopes, ravines, field margins; below 3500 m. Gansu, Hebei, Heilongjiang, Nei Mongol, Shanxi, Sichuan, Xizang, Yunnan [Mongolia, Russia].

- 1a. Stems erect or ascending, 20–45 cm tall; radical leaves 6–20 cm including petiole, leaf blade with 3–6 pairs of leaflets, leaflets pinnatifid but not parted to midvein; cymes few to many flowered; flowers 1.2–1.5 cm in diam. 43a. var. *conferta*
- 1b. Stems low and spreading, 4–6 cm tall; radical leaves 2–3 cm including petiole, leaf blade with 3 pairs of leaflets, leaflets pinnately parted; cymes 3–5-flowered; flowers ca. 1 cm in diam. 43b. var. *trijuga*

43a. *Potentilla conferta* var. *conferta*

大萼委陵菜(原变种) da e wei ling cai (yuan bian zhong)

Potentilla approximata Bunge; *P. pennsylvanica* Linnaeus var. *conferta* (Bunge) Ledebour; *P. sibirica* Th. Wolf. var. *longipila* Th. Wolf.

Stems erect or ascending, 20–45 cm tall. Radical leaves 6–20 cm including petiole; leaf blade with 3–6 pairs of leaflets; leaflets pinnatifid but not parted to midvein. Cymes few to many flowered. Flowers 1.2–1.5 cm in diam. Fl. and fr. Jun–Sep.

Thickets, meadows on mountain slopes, ravines, field margins; below 3500 m. Gansu, Hebei, Heilongjiang, Nei Mongol, Shanxi, Sichuan, Xizang, Yunnan [Mongolia, Russia].

43b. *Potentilla conferta* var. *trijuga* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 10. 1980.

矮生大萼委陵菜 ai sheng da e wei ling cai

Stems low and spreading, 4–6 cm tall. Radical leaves 2–3 cm including petiole; leaf blade with 3 pairs of leaflets; leaflets pinnately parted. Cymes 3–5-flowered. Flowers ca. 1 cm in diam. Fl. and fr. Sep.

- Meadows on mountain slopes; ca. 3500 m. Xizang.

44. *Potentilla strigosa* Pallas ex Pursh, Fl. Amer. Sept. 1: 356. 1814.

茸毛委陵菜 rong mao wei ling cai

Potentilla pennsylvanica Linnaeus var. *strigosa* (Pallas ex Pursh) Lehmann; *P. sibirica* Th. Wolf.

Herbs perennial. Roots robust, terete, woody. Flowering stems erect, tinged yellow or gray, 10–50 cm tall, together with petioles spreading pilose and strigose. Radical leaves 5–10 cm including petiole; stipules yellow-brown, membranous, abaxially strigose and pubescent; leaf blade pinnate with 3 or 4 pairs of leaflets; leaflets opposite or alternate, at intervals of 1–1.5 cm, adaxially yellowish or grayish green, oblong, obovate-oblong, or obovate-lanceolate, 2–5 × 0.5–1.5 cm, adaxially densely strigose and pubescent, densely villous along midvein and lateral veins, base cuneate or broadly so, margin pectinate, apex obtuse; lobes fasciated oblong or oblong-lanceolate; cauline leaves resembling radical ones but petiole shorter and leaflets fewer higher up stem; stipules yellowish green, herbaceous, margin dentate-parted. Inflorescence corymbose-cymose, compact, many flowered. Flowers ca. 1 cm in diam.; pedicel 0.8–1.5 cm, strigose and pubescent. Sepals triangular-ovate, apex acute; epicalyx segments elliptic-lanceolate, nearly equaling sepals, markedly dilated in fruit, abaxially densely strigose and pubescent, apex acute. Petals yellow, obovate, slightly longer than sepals, apex rounded or emarginate. Style subterminal, base thickened. Achenes ellipsoid-reniform, markedly rugose. Fl. and fr. Jun–Aug.

Grassy mountain slopes, dunes; 600–700 m. Heilongjiang, Nei Mongol, Xinjiang [Mongolia, Russia].

45. *Potentilla discolor* Bunge, Mém. Acad. Imp. Sci. St.-Petersbourg, Sér. 6, Sci. Math. 2: 99. 1833.

翻白草 fan bai cao

Potentilla discolor var. *formosana* (Hance) Franchet; *P. formosana* Hance.

Herbs perennial. Roots robust, lower parts often enlarged and fusiform. Flowering stems erect, ascending, or subspreading, 10–45 cm tall, together with petioles densely white lanate, sometimes also villous. Radical leaves 4–20 cm including petiole; stipules brown, membranous, white villous; leaf blade with 2–4 pairs of leaflets; leaflets opposite or alternate, at intervals of 0.8–1.5 cm, adaxially dark green, oblong or oblong-lanceolate, 1–5 cm × 5–8 mm, abaxially densely white or grayish white lanate, inconspicuously veined, adaxially sparsely white lanate or glabrescent, base cuneate, broadly cuneate, or obliquely rounded, margin obtusely serrate, rarely acutely so, apex obtuse, rarely acute; cauline leaves 1 or 2; stipules green, ovate or broadly so, herbaceous, abaxially densely white lanate, margin incised dentate, rarely entire; leaf blade palmately 3–5-foliolate. Inflorescence cymose, laxly several to many flowered.

Flowers 1–2 cm in diam.; pedicel 1–2.5 cm, lanate. Sepals triangular-ovate; epicalyx segments lanceolate, shorter than sepals, abaxially white lanate. Petals yellow, obovate, longer than sepals, apex rounded or emarginate. Style subterminal, base thickened, papillate; stigma slightly dilated. Achenes subreniform, ca. 1 mm wide, smooth. Fl. and fr. May–Sep.

Sparse forests, meadows, valleys, ravines. Anhui, Fujian, Gansu, Guangdong, Hebei, Heilongjiang, Henan, Jiangxi, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Japan, Korea].

This species is used medicinally.

46. *Potentilla potaninii* Th. Wolf, Biblioth. Bot. 16(Heft 71): 166. 1908.

华西委陵菜 hua xi wei ling cai

Herbs perennial. Roots usually branched. Flowering stems tufted, erect or ascending, 10–30 cm tall, together with petioles white tomentose and pilose. Radical leaves 2–10 cm including petiole; stipules brown, membranous, abaxially pilose; leaf blade pinnate with 2 or 3 pairs of leaflets; leaflets opposite, at intervals of 3–5 mm, sessile or subsessile, adaxially green, obovate or obovate-elliptic, 0.5–2.5 × 0.3–1.5 cm, abaxially white lanate, appressed villous on veins, adaxially appressed pilose, base cuneate, margin obtusely or acutely serrate, or pectinately parted, apex obtuse; teeth oblong or segments fasciated ligulate; cauline leaves: stipules green, lanceolate or ovate-lanceolate, herbaceous, abaxially white tomentose and pilose, margin entire, apex acuminate; leaf blade pinnate with 2 pairs of leaflets, or 3-foliolate. Inflorescence cymose, laxly many flowered. Flowers 1–1.5 cm in diam.; pedicel 1.5–2.5 cm, white tomentose. Sepals ovate-lanceolate or oblong-ovate, apex acuminate; epicalyx segments lanceolate or elliptic-lanceolate, nearly equaling or rarely slightly shorter than sepals, abaxially pilose. Petals yellow, obovate, 0.5–1 × as long as sepals, apex emarginate. Style subterminal, base slightly thickened; stigma dilated. Achenes smooth. Fl. and fr. Jun–Sep.

Forests, forest margins, meadows on mountain slopes; 1700–4700 m. Gansu, Qinghai, Sichuan, Xizang, Yunnan [Bhutan].

- 1a. Leaflet margin obtusely or acutely serrate, teeth oblong 46a. var. *potaninii*
- 1b. Leaflet margin pectinately parted, segments fasciated ligulate 46b. var. *compsophylla*

46a. *Potentilla potaninii* var. *potaninii*

华西委陵菜(原变种) hua xi wei ling cai (yuan bian zhong)

Potentilla saundersiana Royle var. *potaninii* (Th. Wolf) Handel-Mazzetti.

Leaflet margin obtusely or acutely serrate, teeth oblong. Fl. and fr. Jun–Aug.

Forests, forest margins, meadows on mountain slopes; 1700–3000 m. Gansu, Qinghai, Sichuan, Xizang, Yunnan [Bhutan].

46b. *Potentilla potaninii* var. *compsophylla* (Handel-Mazzetti) T. T. Yu & C. L. Li in T. T. Yu, Fl. Reipubl. Popularis Sin. 37: 294. 1985.

裂叶华西委陵菜 lie ye hua xi wei ling cai

Potentilla compsophylla Handel-Mazzetti, Acta Horti Gothob. 13: 306. 1939.

Leaflet margin pectinately parted, segments fasciated ligulate. Fl. and fr. Jun–Sep.

- Meadows on mountain slopes; 3300–4700 m. Sichuan, Xizang.

47. *Potentilla griffithii* J. D. Hooker, Fl. Brit. India 2: 351. 1878.

柔毛委陵菜 rou mao wei ling cai

Herbs perennial. Roots robust, terete, sometimes much branched. Flowering stems erect or ascending, 10–60 cm tall, together with petioles spreading villous and pubescent or tomentose. Radical leaves 3–10 cm including petiole; stipules brown, membranous, abaxially villous or glabrescent; leaf blade pinnate with 2 or 3(or 4) pairs of leaflets; leaflets usually opposite, rarely proximal ones alternate, at intervals of 0.8–1.2 cm, sessile or subsessile, adaxially green, elliptic or obovate-elliptic, 0.5–3 × 0.5–1.5 cm, abaxially white tomentose and villous, densely villous on veins, sometimes white tomentum deciduous, adaxially appressed pilose, base cuneate or broadly so, margin obtusely or acutely incised serrate, apex obtuse, rarely acute; cauline leaves: stipules herbaceous, sometimes abaxially densely white tomentose and villous, margin 2- or 3-fid, dentate-lobed, or entire; leaf blade pinnate with 2 pairs of leaflets, or 3-foliolate; leaflets resembling those of radical leaves. Inflorescence corymbose-cymose, laxly few flowered. Flowers 1.5–2.5 cm in diam. Sepals triangular-ovate, apex acute to acuminate; epicalyx segments lanceolate, oblong-lanceolate, or oblong-elliptic, shorter than or nearly equaling sepals, green and pilose or sometimes white tomentose abaxially. Petals yellow, rarely white, obovate, 1–2 × as long as sepals, apex emarginate. Style subterminal, conic, base thickened; stigma minute, not dilated. Achenes smooth. Fl. and fr. May–Oct.

Forests, forest margins, meadows on mountain slopes; 2000–4000 m. Guizhou, Sichuan, Xizang, Yunnan [Bhutan, Nepal, Sikkim].

- 1a. Flowering stems and petioles spreading villous and pubescent; leaflets abaxially white tomentose and white villous, densely villous on veins, stipules of cauline leaves green, herbaceous, margin dentate-lobed or entire 47a. var. *griffithii*
- 1b. Flowering stems and petioles spreading white villous, usually also interwoven white tomentose; leaflets abaxially densely white tomentose, appressed white villous on veins, stipules of cauline leaves abaxially densely white tomentose and villous, margin 2- or 3-fid or entire 47b. var. *velutina*

47a. *Potentilla griffithii* var. *griffithii*

柔毛委陵菜(原变种) rou mao wei ling cai (yuan bian zhong)

Potentilla leschenaultiana Seringe var. *pumila* Franchet; *P. leschenaultiana* var. *reticulata* Franchet; *P. sikkimensis* Th. Wolf (1908), not Prain (1904).

Flowering stems and petioles spreading villous and pubescent. Leaflets abaxially white tomentose and white villous, densely villous on veins; stipules of cauline leaves green, herbaceous, margin dentate-lobed or entire.

Forests, forest margins, meadows on mountain slopes; 2000–3600 m. Guizhou, Sichuan, Xizang, Yunnan [Bhutan, Nepal, Sikkim].

47b. *Potentilla griffithii* var. *velutina* Cardot, Notul. Syst. (Paris) 3: 235. 1916.

长柔毛委陵菜 chang rou mao wei ling cai

Potentilla beauvaisii Cardot; *P. leschenaultiana* var. *concolor* Cardot.

Flowering stems and petioles spreading white villous, usually also interwoven white tomentose. Leaflets abaxially densely white tomentose, appressed white villous on veins; stipules of cauline leaves abaxially densely white tomentose and villous, margin entire or 2- or 3-fid.

• Forest margins, mountain meadows; 3000–4000 m. Sichuan, Xizang, Yunnan.

This variety is used medicinally.

48. *Potentilla hololeuca* Boissier ex Lehmann, Del. Sem. Hort. Hamburg. 1849: 8. 1849.

全白委陵菜 quan bai wei ling cai

Herbs perennial. Roots robust, terete. Flowering stems erect or ascending, 5–25 cm tall, together with petioles canescent tomentose and villous. Radical leaves 2–6 cm including petiole; stipules brown, membranous, sparsely villous; leaf blade pinnate with 2 pairs of leaflets; leaflets opposite, usually adjacent, subsessile, adaxially green, oblong to obovate-oblong, 1–2.5 × 0.8–1.5 cm, abaxially densely canescent tomentose or villous, white tomentose and villous on veins, adaxially white pilose, base cuneate or broadly so, margin pectinatifid, apex obtuse; segments oblong, apex obtuse or acute; cauline leaves undeveloped; stipules margin entire, rarely 2-fid. Inflorescence terminal, cymose, 3–7-flowered. Flowers 1.5–2 cm in diam. Sepals triangular-ovate, apex acuminate; epicalyx segments narrowly oblong, shorter than sepals, abaxially tomentose and sericeous, apex subobtuse. Petals obcordate, usually 1–2 × as long as sepals, apex emarginate. Style terminal, base slightly thickened; stigma dilated. Achenes not seen. Fl. Aug.

Alpine meadows, ravines near snow line; 3000–3600 m. Xinjiang [Russia; SW Asia (Iran)].

49. *Potentilla nivea* Linnaeus, Sp. Pl. 1: 499. 1753.

雪白委陵菜 xue bai wei ling cai

Herbs perennial. Roots terete. Flowering stems erect or ascending, 5–25 cm tall, together with petioles white tomentose. Radical leaves 15–80 cm including petiole; stipules brown, membranous, abaxially sparsely pilose or glabrescent; leaf blade 3-foliolate; leaflets sessile or sometimes terminal one shortly petiolulate, ovate, obovate, or elliptic, 1–2 × 0.8–1.3 cm, abaxially white tomentose, inconspicuously veined, adaxially appressed pilose, base rounded or broadly cuneate, margin obtusely 3–6(or 7)-crenate or (6 or)7–14-serrate on each side,

apex obtuse or acute; cauline leaves 1 or 2; stipules green, ovate, herbaceous, abaxially densely white tomentose, margin usually entire, rarely serrate; leaflets smaller than those of radical leaves. Inflorescence terminal, cymose, few flowered, rarely a solitary flower. Flowers 1–1.8 cm in diam.; pedicel 1–2 cm, white tomentose. Sepals triangular-ovate, apex acuminate or acute; epicalyx segments linear-lanceolate, shorter than sepals, abaxially spreading sericeous-pilose, apex obtuse. Petals yellow, obovate, apex emarginate. Style subterminal, base thickened and papillate, or inconspicuously thickened; stigma dilated. Achenes smooth. Fl. and fr. May–Sep.

Alpine thickets, meadows on mountain slopes, grassy slopes, marsh margins, rocks; 1600–3400 m. Hebei, Jilin, Nei Mongol, Shanxi, Xinjiang [Japan, Korea, Mongolia, Russia; Europe].

- 1a. Leaflet margin obtusely 3–6(or 7)-crenate on each side; style base thickened, papillate 49a. var. *nivea*
1b. Leaflet margin (6 or)7–14-serrate on each side; style base inconspicuously thickened 49b. var. *elongata*

49a. *Potentilla nivea* var. *nivea*

雪白委陵菜(原变种) xue bai wei ling cai (yuan bian zhong)

Potentilla nivea var. *camtschatica* Chamisso & Schlechtendal; *P. nivea* var. *polyphylla* Yong Zhang & Z. T. Yin.

Leaflet margin obtusely 3–6(or 7)-crenate on each side, Style base thickened, papillate. Fl. and fr. Jun–Aug.

Alpine thickets, meadows on mountain slopes, marsh margins; 2100–3200 m. Hebei, Jilin, Nei Mongol, Shanxi, Xinjiang [Japan, Korea, Russia; Europe].

49b. *Potentilla nivea* var. *elongata* Th. Wolf, Biblioth. Bot. 16(Heft 71): 237. 1908.

多齿雪白委陵菜 duo chi xue bai wei ling cai

Potentilla crebridens Juzepczuk; *P. nivea* var. *macrantha* Ledebour.

Leaflet margin (6 or)7–14-serrate on each side; style base inconspicuously thickened. Fl. and fr. May–Sep.

Grassy slopes, rocks; 1600–3400 m. Hebei, Shanxi [Mongolia, Russia (Baikal region)].

50. *Potentilla betonicifolia* Poirlet in Lamarck, Encycl. 5: 601. 1804.

白萼委陵菜 bai e wei ling cai

Potentilla leucophylla Pallas; *P. nivea* Linnaeus var. *angustifolia* Ledebour.

Herbs perennial. Roots robust, terete, usually woody. Flowering stems erect or ascending, 8–16 cm tall, together with petioles white tomentose when young, later glabrescent. Radical leaves 5–12 cm including petiole; stipules brown, membranous, abaxially white sericeous-villous; leaf blade 3-foliolate; leaflets sessile, adaxially green, oblong-lanceolate or ovate-lanceolate, 1–5 × 0.5–1.5 cm, leathery, abaxially densely white tomentose, sparsely sericeous pilose along midvein, adaxially

ially white tomentose initially, later glabrescent, base cuneate or subrounded, margin obtusely or acutely coarsely many dentate, apex acute; cauline leaves undeveloped, bractlike; stipules minute, oblong-ovate, leathery, abaxially white tomentose, margin entire. Inflorescences cymose-paniculate, laxly many flowered. Flowers ca. 1 cm in diam.; pedicel 1–1.5 cm, white tomentose. Sepals triangular-ovate, apex acute; epicalyx segments lanceolate or elliptic, shorter than or nearly equaling sepals, abaxially white tomentose and pilose, apex acute. Petals yellow, obovate, apex rounded. Style subterminal, base thickened; stigma slightly dilated. Achenes rugose. Fl. and fr. May–Jun.

Meadows on mountain slopes, rock crevices; 700–1600 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol [Mongolia, Russia].

51. *Potentilla zhangbeiensis* Yong Zhang & Z. T. Yin, *Acta Phytotax. Sin.* 32: 482. 1994.

张北委陵菜 zhang bei wei ling cai

Herbs perennial. Roots black-brown, robust, terete. Flowering stems erect or ascending, 6–20 cm tall, densely white tomentose and sparsely villous when young, later glabrescent. Radical leaves 1.5–8 cm including petiole; stipules brown, membranous, abaxially villous; leaf blade palmately 3-foliolate, sometimes pinnately 5-foliolate; leaflets sessile, adaxially green, lanceolate or ovate-lanceolate, 0.5–3.5 × 0.2–1.5 cm (basal pair extremely small), abaxially densely white tomentose, adaxially sparsely pubescent or subglabrous, base cuneate, margin pinnately parted, apex acute; lobes triangular or linear-lanceolate; cauline leaves bractlike, small; stipules ovate, small, subleathery, abaxially densely white tomentose, margin entire. Inflorescence terminal, cymose. Flowers ca. 1 cm in diam.; pedicel 1–2.5 cm, densely tomentose and sparsely villous. Sepals ovate-lanceolate, ca. 4.5 × 3 mm, abaxially white tomentose and sparsely villous; epicalyx segments lanceolate, ca. 3 × 1 mm, abaxially white tomentose and sparsely villous. Petals yellow, obovate, ca. 5 mm, apex emarginate or obtuse. Receptacle densely villous. Style subterminal, base thickened; stigma slightly dilated. Achenes black-brown, ovoid, rugose. Fl. and fr. May–Aug.

- Grassy slopes; ca. 1600 m. NW Hebei (Zhangbei Xian).

One of us (Ohba) believes this species may be synonymous with *Potentilla betonicifolia*.

52. *Potentilla saundersiana* Royle, *Ill. Bot. Himal. Mts.* 1: 207. 1835.

钉柱委陵菜 ding zhu wei ling cai

Herbs perennial. Roots robust, terete, rarely slender. Flowering stems erect or ascending, rarely low and tufted, 10–20 cm tall, together with petioles white tomentose and pilose. Radical leaves 2–5 cm including petiole; stipules brown, membranous, abaxially white villous or glabrescent; leaf blade subpinnately or palmately 3–7(or 8)-foliolate; leaflets sessile, adaxially green or grayish green, oblong-obovate, rarely broadly obovate, 0.5–2 cm × 4–10 mm, abaxially densely white tomentose, appressed pilose on veins, adaxially sparsely appressed pilose or densely appressed sericeous, base cuneate, margin slightly obtusely or acutely many incised serrate, rarely lobed to parted, apex obtuse, rarely acute; cauline leaves 1 or 2; stipules green, ovate or

ovate-lanceolate, herbaceous, abaxially white tomentose and pilose, margin usually entire, apex acute or acuminate; leaf blade 3–5-foliolate; leaflets resembling those of radical leaves. Inflorescence terminal, laxly cymose, 1(or 2)- or many flowered. Flowers 1–1.4 cm in diam.; pedicel 1–3 cm, white tomentose. Sepals triangular-ovate or triangular-lanceolate; epicalyx segments lanceolate or elliptic, shorter than or nearly equaling sepals, abaxially white tomentose and pilose, apex acute or 1–3(–5)-fid. Petals yellow, obovate, slightly longer than or ca. 2 × as long as sepals, apex emarginate. Style subterminal, base inconspicuously thickened; stigma slightly dilated. Achenes smooth. Fl. and fr. Jun–Aug.

Alpine thickets and meadows, gravel fields; 2600–5200 m. Gansu, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan [Bhutan, India, Nepal, Sikkim].

- 1a. Inflorescence 1(or 2)-flowered 52d. var. *caespitosa*
- 1b. Inflorescence a many-flowered cyme.
 - 2a. Radical leaves subpinnately (3–)5–7(or 8)-foliolate 52c. var. *subpinnata*
 - 2b. Radical leaves palmately 3–5-foliolate.
 - 3a. Leaflets adaxially green, sparsely appressed pilose; epicalyx segments shorter than or nearly equaling sepals, apex acute 52a. var. *saundersiana*
 - 3b. Leaflets adaxially grayish green, densely appressed sericeous; epicalyx segments nearly equaling sepals, apex 2- or 3(–5)-fid 52b. var. *jacquemontii*

52a. *Potentilla saundersiana* var. *saundersiana*

钉柱委陵菜(原变种) ding zhu wei ling cai (yuan bian zhong)

Potentilla griffithii J. D. Hooker var. *pumila* (Franchet) Handel-Mazzetti; *P. leschenaultiana* Seringe var. *pumila* Franchet; *P. multifida* Linnaeus var. *saundersiana* (Royle) J. D. Hooker; *P. potaninii* Th. Wolf var. *subdigitata* Th. Wolf; *P. tibetica* Cardot.

Radical leaves palmately 3–5-foliolate; leaflets adaxially green, sparsely appressed pilose. Inflorescence many flowered. Epicalyx segments shorter than or nearly equaling sepals, apex acute.

Alpine thickets and meadows; 2600–5200 m. Gansu, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xizang, Yunnan [Bhutan, India, Nepal, Sikkim].

52b. *Potentilla saundersiana* var. *jacquemontii* Franchet, *Pl. Delavay.* 3: 215. 1890.

裂萼钉柱委陵菜 lie e ding zhu wei ling cai

Potentilla forrestii W. W. Smith.

Radical leaves palmately 3–5-foliolate; leaflets adaxially grayish green, densely appressed sericeous. Inflorescence many flowered. Epicalyx segments nearly equaling sepals, apex 2- or 3(–5)-fid.

- Alpine thickets and meadows; 3400–4100 m. Xizang, Yunnan.

52c. *Potentilla saundersiana* var. *subpinnata* Handel-Mazzetti, Symb. Sin. 7: 513. 1933.

羽叶钉柱委陵菜 yu ye ding zhu wei ling cai

Potentilla forrestii var. *subpinnata* (Handel-Mazzetti) Handel-Mazzetti.

Radical leaves subpinnately (3–)5–7(or 8)-foliolate. Inflorescence a many-flowered cyme. Epicalyx segments acute or 1- or 2-fid at apex.

• Alpine meadows, gravel fields; 3100–3600 m. Sichuan, Yunnan.

52d. *Potentilla saundersiana* var. *caespitosa* (Lehmann) Th. Wolf, Biblioth. Bot. 16(Heft 71): 243. 1908.

丛生钉柱委陵菜 cong sheng ding zhu wei ling cai

Potentilla caespitosa Lehmann, Del. Sem. Hort. Hamburg. 1849: 10. 1849; *P. sinonivea* Hultén.

Plants low and tufted. Roots slender. Radical leaves usually 3-foliolate; leaflets broadly obovate, margin lobed to parted. Inflorescence 1(or 2)-flowered.

• Alpine thickets and meadows; 2700–5200 m. Gansu, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Yunnan, Xinjiang, Xizang.

53. *Potentilla pendula* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 10. 1980.

垂花委陵菜 chui hua wei ling cai

Herbs perennial. Roots slender. Flowering stems erect or ascending, purplish, 5–10 cm tall, together with petioles canescent tomentose, rarely pilose. Radical leaves 3–6 cm including petiole; stipules brown, membranous, abaxially white villous or glabrescent; leaf blade 3-foliolate; leaflets sessile or terminal one shortly petiolulate, adaxially green, elliptic to ovate, 1.5–2 × 0.5–1 cm, abaxially densely canescent tomentose, appressed sericeous on veins, adaxially appressed sericeous, base broadly cuneate, margin lobed, apex obtuse; lobes fasciated, apex obtuse or acute; cauline leaves 1 or 2, shortly petiolate, small; stipules ovate-lanceolate, margin entire or 1- or 2-serrate. Inflorescence terminal, cymose, many flowered. Flowers usually nodding, 1–1.4 cm in diam.; pedicel 1.5–2 cm, tomentose. Sepals triangular-lanceolate, apex acute; epicalyx segments fasciated, slightly shorter than sepals, abaxially densely canescent tomentose and pilose, apex subobtusely. Petals yellow, obovate, nearly 2 × as long as sepals, apex emarginate. Stamens ca. 18. Carpels numerous; style subterminal, nearly 3 × as long as ovary; stigma slightly dilated, capitate. Achenes not seen. Fl. Jul.

• Rocks; ca. 2600 m. Chongqing (Wuxi Xian).

54. *Potentilla delavayi* Franchet, Pl. Delavay. 3: 215. 1890.

滇西委陵菜 dian xi wei ling cai

Herbs perennial. Roots robust, terete. Flowering stems erect or ascending, 15–35 cm tall, densely yellowish villous. Radical leaves 4–18 cm including petiole; stipules purple-brown, membranous, abaxially villous; petiole spreading villous; leaf blade 3-foliolate; leaflets sessile or subsessile, obo-

vate, 1–4 × 0.5–2 cm, abaxially densely white tomentose, markedly sparsely villous on veins, adaxially densely spreading villous, base cuneate or broadly so, margin obtusely or acutely serrate, apex obtuse; cauline leaves 3 or 4; stipules green, herbaceous, abaxially densely white tomentose and sparsely villous, margin lobed or parted; leaflets resembling those of radical leaves. Inflorescence terminal, cymose, few flowered. Flowers 2–2.5 cm in diam.; pedicel 1–2.5 cm, tomentose and villous. Sepals triangular-ovate, abaxially green and spreading villous, apex acute or acuminate; epicalyx segments elliptic, nearly equaling sepals, abaxially usually white tomentose and pilose, base sometimes with very short stipe, apex obtuse or acute. Petals yellow, apex markedly emarginate. Style terminal, base prominently thickened; stigma slightly dilated. Achenes smooth. Fl. and fr. Jul–Sep.

• Meadows on mountain slopes; 3000–3500 m. Yunnan.

55. *Potentilla nervosa* Juzepczuk in Komarov, Fl. URSS 10: 610. 1941.

显脉委陵菜 xian mai wei ling cai

Herbs perennial. Roots robust, terete. Flowering stems erect or slightly curved at base, 16–30 cm tall, together with petioles grayish white tomentose and pilose. Radical leaves 3–10 cm including petiole; stipules brown, membranous, abaxially appressed villous; leaf blade 3-foliolate; leaflets sessile or terminal one shortly petiolulate, oblong-elliptic or obovate-elliptic, 1–3.5 × 0.7–1.5 cm, abaxially canescent tomentose, appressed white villous on veins, adaxially appressed pilose, sometimes sparsely canescent tomentose, base cuneate or broadly so, margin acutely or obtusely 6–10-serrate, apex acute or obtuse; cauline leaves 1–3; stipules ovate-lanceolate, herbaceous, abaxially densely white tomentose and villous, margin entire, apex rarely 2- or 3-fid; leaflets resembling those of radical leaves. Inflorescence terminal, laxly cymose-corymbose, many flowered. Flowers 1.5–1.8 cm in diam.; pedicel 1.5–2.5 cm, densely tomentose. Sepals triangular-ovate, apex acuminate; epicalyx segments fasciated or lanceolate, nearly equaling sepals, abaxially appressed pilose, apex subobtusely or acuminate. Petals yellow, obovate, 0.5–1 × as long as sepals, apex emarginate. Style subterminal, base inconspicuously thickened; stigma dilated. Achenes not seen. Fl. and fr. Jun–Jul.

Forest margins, grassy slopes; 1900–2500 m. Xinjiang [Russia].

56. *Potentilla evestita* Th. Wolf, Biblioth. Bot. 16(Heft 71): 248. 1908.

脱绒委陵菜 tuo rong wei ling cai

Herbs perennial. Roots terete. Flowering stems erect or ascending, 15–30 cm tall, sparsely pilose or glabrescent. Radical leaves 5–15 cm including petiole; stipules brown, membranous, abaxially pilose; petiole sparsely pilose, sometimes sparsely glandular hairy; leaf blade 3-foliolate; leaflets adaxially green, broadly obovate or rhombic-elliptic, 1.5–4.5 × 1–3 cm, abaxially initially canescent tomentose, later glabrescent, villous and glandular along midvein, adaxially pilose and glandular, base broadly cuneate or subrounded, margin obtusely 3–6-incised serrate or lobed, apex obtuse; cauline leaves: stipules brown, ovate, herbaceous, abaxially pilose and glandular, mar-

gin entire or apex 2-fid; leaflets resembling those of radical leaves. Inflorescence laxly corymbose-cymose. Flowers ca. 1.5 cm in diam.; pedicel 1.5–2.5 cm, pilose and glandular hairy. Sepals ovate-oblong or triangular-lanceolate, apex obtuse or acute; epicalyx segments linear-lanceolate, abaxially pilose and glandular, apex obtuse. Petals yellow, obovate, apex emarginate. Style subterminal, base thickened; stigma slightly dilated. Achenes sparsely rugose. Fl. and fr. Jun–Sep.

Stream sides, alpine rock crevices; 2000–2600 m. Xinjiang [Mongolia, Russia (Siberia); C Asia].

57. *Potentilla argyrophylla* Wallich ex Lehmann, Nov. Stirp. Pug. 3: 36. 1831.

银光委陵菜 yin guang wei ling cai

Herbs perennial. Roots terete. Flowering stems erect or basally slightly curved, 15–20 cm tall, together with petioles densely silvery tomentose and villous. Radical leaves 5–10 cm including petiole; stipules brown, membranous, abaxially appressed white sericeous, later glabrescent; leaf blade 3-foliolate; leaflets sessile or terminal one very shortly petiolulate, obovate, elliptic, or broadly ovate, 1.5–2 × 1–1.5 cm, abaxially densely silvery tomentose, appressed silvery sericeous on veins, adaxially appressed silvery sericeous, base cuneate or broadly so, margin sharply incised serrate, apex obtuse; cauline leaves 2 or 3, shortly petiolate, small; stipules green, ovate or ovate-lanceolate, herbaceous, abaxially tomentose and villous, margin entire, apex acuminate. Inflorescence terminal, 2- or 3-flowered. Flowers ca. 2 cm in diam.; pedicel 2–2.5 cm, tomentose and villous. Sepals triangular-lanceolate, apex acuminate; epicalyx segments elliptic-ovate or elliptic-lanceolate, nearly equaling sepals, abaxially appressed white sericeous. Petals yellow, sometimes purple at base, obcordate, ca. 2 × as long as sepals, apex markedly emarginate. Stamens yellow or purple. Style subterminal, yellow or purple, ca. 2.5 × as long as ovary; stigma slightly dilated, capitate. Achenes not seen. Fl. May.

Forests, thickets, sandy river banks, ditch sides; 3700–4000 m. Xizang [Afghanistan, Kashmir, Nepal, Pakistan, Sikkim].

- 1a. Petals, stamens, and styles yellow 57a. var. *argyrophylla*
- 1b. Petals basally, stamens, and styles purple 57b. var. *atrosanguinea*

57a. *Potentilla argyrophylla* var. *argyrophylla*

银光委陵菜(原变种) yin guang wei ling cai (yuan bian zhong)

Petals, stamens, and styles yellow.

Forests, thickets, sandy river banks; 3700–4000 m. Xizang [Afghanistan, Kashmir, Nepal, Pakistan, Sikkim].

57b. *Potentilla argyrophylla* var. *atrosanguinea* (Loddiges) J. D. Hooker, Fl. Brit. India 2: 357. 1878.

紫花银光委陵菜 zi hua yin guang wei ling cai

Potentilla atrosanguinea Loddiges, Bot. Cab. 8: t. 786. 1824.

Petals basally, stamens, and styles purple.

Ditch sides; ca. 4000 m. Xizang [Nepal, Pakistan].

58. *Potentilla virgata* Lehmann, Monogr. Potentill. 75. 1820.

密枝委陵菜 mi zhi wei ling cai

Herbs perennial. Roots terete. Flowering stems erect or ascending, or low and spreading, much branched from base, 15–60 cm tall, together with petioles densely appressed villous or sericeous-pilose. Radical leaves 5–20 cm including petiole; stipules dark brown, membranous, subglabrous; leaf blade palmately 3–5-foliolate; leaflets adaxially green, oblong-lanceolate or obovate-lanceolate, 1.5–10 × 1–2 cm, abaxially densely white tomentose, appressed villous on veins, adaxially densely appressed villous, sometimes glabrescent, base cuneate, margin revolute, 2–8-parted to 2–8-fid on each side, apex acute or acuminate; segments triangular-lanceolate or oblong-lanceolate, 1–3 mm wide, apex acute or acuminate; cauline leaves: stipules green, ovate-lanceolate, herbaceous, abaxially white tomentose, margin entire, rarely dentate. Inflorescence corymbose-cymose, laxly few or many flowered. Flowers 0.8–1 cm in diam.; pedicel slender, 0.8–1.5 cm, tomentose. Sepals triangular-ovate or ovate-lanceolate, apex acuminate; epicalyx segments lanceolate or linear, shorter than sepals, apex obtuse or acute. Petals yellow, obovate, slightly longer than or nearly 2 × as long as sepals, apex emarginate or rounded. Style subterminal, base thickened; stigma slightly dilated. Achenes rugose. Fl. and fr. Jun–Sep.

Sunny mountain slopes, valleys, grasslands, flood lands, Gobi desert sands; 1000–3700 m. Gansu, Qinghai, Xinjiang [Mongolia].

- 1a. Stems erect or ascending; radical leaves 5-foliolate, segments 5–8 on each side; inflorescences many flowered 58a. var. *virgata*
- 1b. Stems low and spreading, almost on ground, or ascending; radical leaves 3–5-foliolate, segments 2–4(or 5) on each side; inflorescences few flowered 58b. var. *pinnatifida*

58a. *Potentilla virgata* var. *virgata*

密枝委陵菜(原变种) mi zhi wei ling cai (yuan bian zhong)

Potentilla dealbata Bunge.

Stems erect or ascending. Radical leaves 5-foliolate; segments 5–8 on each side. Inflorescences many flowered. Fl. and fr. Jun–Sep.

Grasslands, Gobi desert sands; 1500–1700 m. Xinjiang [Mongolia].

58b. *Potentilla virgata* var. *pinnatifida* (Lehmann) T. T. Yu & C. L. Li in T. T. Yu, Fl. Reipubl. Popularis Sin. 37: 304. 1985.

羽裂密枝委陵菜 yu lie mi zhi wei ling cai

Potentilla nivea Linnaeus var. *pinnatifida* Lehmann, Nov. Stirp. Pug. 9: 67. 1851; *P. altaica* Bunge.

Stems low and spreading, almost on ground, or ascending. Radical leaves 3–5-foliolate; segments 2–4(or 5) on each side. Inflorescences few flowered. Fl. Jun, fr. Sep.

• Sunny mountain slopes, valleys, grasslands, flood lands; 1000–3700 m. Gansu, Qinghai, Xinjiang.

59. *Potentilla angustiloba* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 11. 1980.

窄裂委陵菜 zhai lie wei ling cai

Herbs perennial. Roots terete, upper parts thick, lower parts prolonged, slender. Flowering stems spreading or ascending, 8–30 cm tall, together with petioles sparsely villous or hirtellous. Radical leaves 3–12 cm including petiole; stipules dark brown, membranous, pilose or glabrescent; leaf blade palmately 5-foliolate; leaflets obovate-elliptic or oblong-elliptic, abaxially densely white tomentose, appressed white villous on veins, adaxially appressed pilose or glabrescent, margin 2–4-parted to midvein, apex acute or acuminate; segments fasciated, 0.5–1.5 cm × 0.8–1 mm, apex acute or acuminate; cauline leaves 1–3, resembling radical ones but petioles becoming shorter higher up stem; stipules green, ovate-lanceolate, herbaceous, abaxially densely appressed villous, margin entire or 1- or 2-dentate; leaflet margin 3–5-fid. Inflorescence terminal, corymbose-cymose, 3–12-flowered. Flowers 0.8–1 cm in diam.; pedicel 0.5–1 cm, appressed villous. Sepals triangular-ovate or ovate-oblong, apex acuminate; epicalyx segments fasciated lanceolate, slightly shorter than sepals, abaxially appressed villous, apex acuminate. Petals yellow, obovate, nearly equaling or longer than sepals, apex emarginate. Stamens ca. 20. Carpels numerous; style subterminal, base thickened; stigma slightly dilated. Achenes not seen. Fl. and fr. Jun–Sep.

• Grasslands, valleys, sandy river banks; 2500–3200 m. Gansu, Qinghai, Xinjiang.

60. *Potentilla argentea* Linnaeus, Sp. Pl. 1: 479. 1753.

银背委陵菜 yin bei wei ling cai

Herbs perennial. Roots robust, terete. Flowering stems erect or ascending, 15–40 cm tall, together with petioles white tomentose and sparsely villous. Radical leaves 2–10 cm including petiole; stipules brown, membranous, abaxially white pilose and pubescent; leaf blade palmately 5-foliolate; leaflets adaxially green, oblong-obovate, 1–3 × 0.5–1 cm, abaxially densely white tomentose, adaxially appressed pilose, base cuneate, margin revolute, proximally entire, distally irregularly 2–5-serrate on each side; cauline leaves many, resembling radical ones but petioles becoming shorter higher up stem, uppermost leaves sessile; stipules green, ovate-lanceolate, herbaceous, abaxially densely white tomentose, apex acuminate, entire or 2- or 3-dentate. Inflorescence corymbose-cymose or paniculate-cymose, laxly many flowered. Flowers ca. 1 cm in diam.; pedicel 1.5–2.5 cm, tomentose. Sepals triangular-ovate, apex acute to acuminate; epicalyx segments oblong-lanceolate, shorter than sepals, abaxially canescent tomentose and villous, apex acute. Petals yellow, obovate, slightly longer than sepals, apex emarginate. Style subterminal, base thickened and papillate; stigma dilated. Achenes smooth or slightly rugose. Fl. and fr. May–Aug.

Sunny mountain slopes, gravel fields; ca. 1100 m. Xinjiang [Mongolia, Russia (Siberia); C Asia, Europe].

61. *Potentilla inclinata* Villars, Hist. Pl. Dauphiné 3: 567. 1788.

薄毛委陵菜 bo mao wei ling cai

Potentilla canescens Besser.

Herbs perennial. Roots robust, terete. Flowering stems erect or ascending, 12–40 cm tall, together with petioles villous, pubescent, and sparsely tomentose. Radical leaves usually withered after anthesis; stipules brown, membranous, abaxially villous; leaf blade palmately 5(–7)-foliolate; leaflets adaxially green, obovate-oblong or obovate-lanceolate, abaxially canescent tomentose, glabrescent, adaxially appressed pilose, base cuneate, margin coarsely regularly serrate, apex obtuse; cauline leaves resembling radical ones but smaller and petiole shorter or absent; stipules green, ovate-lanceolate, herbaceous, abaxially tomentose and villous, margin entire or 1- or 2-serrate. Inflorescence corymbose-cymose or paniculate-cymose, laxly many flowered. Flowers ca. 1 cm in diam.; pedicel 1–1.5 cm, sparsely tomentose and villous. Sepals triangular-lanceolate to oblong-ovate, apex acute to acuminate; epicalyx segments linear-lanceolate, shorter than or rarely nearly equaling sepals, abaxially villous and pubescent, apex acute. Petals yellow, ovate, slightly longer than sepals, apex emarginate or subrounded. Style subterminal, base thickened; stigma slightly thickened. Achenes rugose. Fl. and fr. Jun–Sep.

Wet places on mountain slopes, flood lands; 1000–1300 m. Xinjiang [C Asia, C and S Europe].

62. *Potentilla coriandrifolia* D. Don, Prodr. Fl. Nepal. 232. 1825.

萎叶委陵菜 sui ye wei ling cai

Herbs perennial. Roots robust, terete. Rhizome enlarged. Flowering stems erect or ascending or low and tufted, 4–13 cm tall, together with petioles pilose or glabrescent. Radical leaves 7–16 cm including petiole; stipules brown, membranous, subglabrous; leaf blade pinnate with 2–8 pairs of leaflets; leaflets opposite, at intervals of 5–8 mm, subsessile, abaxially densely appressed villous, or glabrescent and hairy only along midvein, adaxially sparsely appressed pilose or later glabrescent, margin pectinate to midvein; segments fasciated to fasciated lanceolate, apex acuminate; cauline leaves 1 or 2; stipules green, herbaceous, abaxially appressed villous, margin dissected into linear segments; leaf blade 2-pinnately dissected into linear segments. Inflorescence terminal, 1–3(–5)-flowered. Flowers 0.8–1.5 cm in diam.; pedicel 1.5–3 cm, appressed pubescent. Sepals triangular-ovate, apex acute or acuminate; epicalyx segments lanceolate, nearly equaling sepals, abaxially appressed pilose, apex acute or acuminate. Petals white and purple-red at base or yellow throughout, obovate, nearly 1/2 as long as sepals, apex emarginate. Style subterminal, base slightly thickened; stigma dilated. Achenes smooth. Fl. and fr. Jul–Sep.

Meadows on mountain slopes, rock crevices; 3300–4200 m. Sichuan, Xizang, Yunnan [Bhutan, Myanmar, Nepal, Sikkim].

- 1a. Stems erect or ascending; leaflets in 5–8 pairs; inflorescence 2- or 3(–5)-flowered; petals white, purple-red at base 62a. var. *coriandrifolia*
- 1b. Stems low and tufted; leaflets usually in 2–4 pairs; inflorescence 1(–3)-flowered; petals yellow throughout, not purple-red at base 62b. var. *dumosa*

62a. *Potentilla coriandrifolia* var. *coriandrifolia*

菱叶委陵菜(原变种) sui ye wei ling cai (yuan bian zhong)

Stems erect or ascending. Leaflets in 5–8 pairs. Inflorescence 2- or 3(-5)-flowered. Petals white, purple-red at base.

Meadows on mountain slopes; 4100–4200 m. Xizang [Bhutan, Nepal, Sikkim].

62b. *Potentilla coriandrifolia* var. *dumosa* Franchet, Pl. Delavay, 3: 214. 1890.

丛生菱叶委陵菜 cong sheng sui ye wei ling cai

Potentilla dumosa (Franchet) Handel-Mazzetti; *P. dumosa* subsp. *salwinensis* Soják; *P. dumosa* var. *stromatodes* (Melchior) H. R. Fletcher; *P. pulvinata* (T. T. Yu & C. L. Li) Soják; *P. salwinensis* (Soják) Soják; *P. salwinensis* var. *latiuscula* Soják; *P. salwinensis* var. *parviflora* Soják; *P. stromatodes* Melchior; *Sibbaldia pulvinata* T. T. Yu & C. L. Li.

Stems low and tufted. Leaflets usually in 2–4 pairs. Inflorescence 1(-3)-flowered. Petals yellow throughout, not purple-red at base.

Alpine meadows, rock crevices; 3300–4500 m. Sichuan, Xizang, Yunnan [Myanmar].

63. *Potentilla hypargyrea* Handel-Mazzetti, Symb. Sin. 7: 514. 1933.

白背委陵菜 bai bei wei ling cai

Herbs perennial. Roots robust, terete. Rhizomes often enlarged. Flowering stems tufted, ascending, 5–16 cm tall, recumbent white villous. Radical leaves 6–10 cm including petiole; stipules brown, membranous, abaxially white pilose, apex acuminate; petiole villous; leaf blade 3-foliolate or subpinnate; terminal leaflet shortly petiolulate, lateral ones sessile or subsessile, all leaflets orbicular to ovate, 1–3 cm, abaxially sparsely white villous, adaxially densely white sericeous, margin irregularly parted or lobed, or pinnately parted, usually 2-parted on lateral leaflets; segments acute at apex; cauline leaves 1 or 2; stipules herbaceous, abaxially white sericeous, margin parted into acuminate segments; leaflet margin parted into linear-lanceolate, acuminate segments. Inflorescence cymose, (1 or)2- or 3-flowered. Flowers 0.6–1.3 cm in diam.; pedicel 1.5–3 cm, villous. Sepals triangular-ovate, apex acute; epicalyx segments elliptic-lanceolate, shorter than or nearly equaling sepals, abaxially densely appressed villous, apex acute. Petals yellow, obovate, nearly 1/2 as long as sepals, apex emarginate. Style subterminal, base slightly thickened; stigma not dilated. Achenes smooth. Fl. and fr. Aug–Sep.

• Thickets on grassy slopes, meadows on mountain slopes, rocky slopes; 3300–4800 m. Xizang, Yunnan.

- 1a. Radical leaves 3-foliolate, central leaflet irregularly parted or lobed 63a. var. *hypargyrea*
- 1b. Radical leaves subpinnate, terminal leaflet pinnately parted 63b. var. *subpinnata*

63a. *Potentilla hypargyrea* var. *hypargyrea*

白背委陵菜(原变种) bai bei wei ling cai (yuan bian zhong)

Radical leaves 3-foliolate; central leaflet irregularly parted

or lobed.

• Meadows on mountain slopes; 3300–4000 m. Yunnan.

63b. *Potentilla hypargyrea* var. *subpinnata* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 11. 1980.

假羽白背委陵菜 jia yu bai bei wei ling cai

Radical leaves subpinnate; terminal leaflet pinnately parted.

• Thickets on grassy slopes, meadows on mountain slopes, rocky slopes; 3900–4800 m. Xizang, Yunnan.

64. *Potentilla granulosa* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 11. 1980.

腺粒委陵菜 xian li wei ling cai

Herbs perennial. Roots robust, terete. Flowering stems erect or ascending, 10–20 cm tall, together with petioles pilose, pubescent, and glandular hairy. Radical leaves 4–10 cm including petiole; stipules dark brown, membranous, abaxially pilose, pubescent, and glandular; leaf blade pinnate with 4–8 pairs of leaflets; leaflets opposite or alternate, at intervals of 3–8 mm, elliptic, oblong, or oblong-lanceolate, usually 1–2 × 0.5–1 cm, abaxially pubescent and glandular, adaxially pilose and granular glandular, base ± decurrent and adnate to rachis in apical 2 or 3 pairs of leaflets, margin pinnately parted nearly to midvein; segments fasciated, apex obtuse; cauline leaves resembling radical ones but leaflets reduced to 2 pairs in upper leaves; stipules green, herbaceous, abaxially pilose and glandular, margin entire or 1- or 2-fid, apex acuminate. Inflorescence laxly corymbose-cymose. Flowers ca. 1.5 cm in diam.; pedicel 1–3.5 cm, pubescent and glandular. Sepals triangular-ovate, apex acute; epicalyx segments elliptic-lanceolate, shorter than or nearly equaling sepals, pilose and granular glandular, apex obtuse or acute. Petals yellow, broadly obovate, 0.5–1 × as long as sepals, apex emarginate. Stamens ca. 20. Carpels numerous; style thickened at base; stigma dilated. Achenes not seen. Fl. and fr. Jul–Aug.

• Alpine meadows; 3400–4200 m. Sichuan, Xizang.

This species is used medicinally.

65. *Potentilla tanacetifolia* Willdenow ex Schlechtendal, Ges. Naturf. Freunde Berlin Mag. Neuesten Entdeck. Gesamnten Naturk. 7: 286. 1816.

菊叶委陵菜 ju ye wei ling cai

Potentilla acervata Soják; *P. filipendula* Willdenow ex Schlechtendal; *P. nudicaulis* Willdenow ex Schlechtendal; *P. strigosa* Pallas var. *conferta* Kitagawa; *P. tanacetifolia* f. *decumbens* Krylov; *P. tanacetifolia* var. *decumbens* (Krylov) Th. Wolf; *P. tanacetifolia* f. *erecta* Krylov; *P. tanacetifolia* var. *erecta* (Krylov) Th. Wolf.

Herbs perennial. Roots robust, terete. Flowering stems erect or ascending, 15–65 cm tall, together with petioles villous, pubescent, or floccose and sparsely glandular with hairs sometimes deciduous. Radical leaves 5–20 cm including petiole; stipules brown, membranous, abaxially pilose; leaf blade pinnate with 5–8 pairs of leaflets; leaflets alternate or opposite, at

intervals of 3–10 mm, terminal one shortly petiolulate or sessile, all leaflets oblong, oblong-lanceolate, or narrowly oblong-obovate, 1–5 × 0.5–1.5 cm, abaxially pubescent, appressed pilose on veins, or sparsely glandular hairy, adaxially appressed pilose, villous, or glabrescent, base cuneate, decurrent and adnate to rachis in apical 1–3 pairs of leaflets, margin incised serrate, apex obtuse; cauline leaves resembling radical ones but with fewer leaflets; stipules green, leathery, abaxially pubescent or villous, margin deeply lacerate. Inflorescence corymbose-cymose, many flowered. Flowers 1–1.5 cm in diam.; pedicel 0.5–2 cm, pubescent. Sepals triangular-ovate, apex acute or acuminate; epicalyx segments lanceolate or elliptic-lanceolate, shorter than or nearly equaling sepals, abaxially pubescent and glandular hairy, apex obtuse or acute. Petals yellow, obovate, nearly 2 × as long as sepals, apex emarginate. Style subterminal, conic; stigma slightly dilated. Achenes ovoid, ca. 2.5 mm, rugose. Fl. and fr. May–Oct.

Forest margins, grasslands, meadows on mountain slopes, loess plateau lands, low-lying and sandy lands, gravels; 400–2600 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi [Mongolia, Russia (Siberia)].

This species is used medicinally.

66. *Potentilla longifolia* Willdenow ex Schlechtendal, Ges. Naturf. Freunde Berlin Mag. Neuesten Entdeck. Gesammten Naturk. 7: 287. 1816.

腺毛委陵菜 xian mao wei ling cai

Potentilla viscosa Donn ex Lehmann; *P. viscosa* var. *macrophylla* Komarov.

Herbs perennial. Roots robust, terete. Flowering stems erect or slightly ascending, 30–90 cm tall, together with petioles villous, pubescent, and glandular. Radical leaves 10–30 cm including petiole; stipules brown, membranous, abaxially pubescent and villous; leaf blade pinnate with 4 or 5 pairs of leaflets; leaflets opposite, rarely alternate, sessile, oblong-lanceolate or oblanceolate, 1.5–8 × 0.5–2.5 cm, abaxially pubescent and glandular, pilose on veins, adaxially pilose or glabrescent, base decurrent and adnate to rachis in apical 1–3 pairs of leaflets, margin incised serrate, apex obtuse or acute; cauline leaves resembling radical ones; stipules green, herbaceous, abaxially pubescent or villous, margin entire or parted. Inflorescence terminal, corymbose, congested, few flowered. Flowers 1.5–1.8 cm in diam.; pedicel short. Sepals triangular-lanceolate, apex usually acuminate; epicalyx segments oblong-lanceolate, shorter than or nearly equaling sepals, abaxially densely pubescent and glandular, apex obtuse or acuminate. Petals erect and enlarged in fruit, broadly obovate, nearly equaling sepals, apex emarginate. Style subterminal, conic, base thickened, markedly papillate; stigma not dilated. Achenes subreniform or ovoid, ca. 1 mm, smooth. Fl. and fr. Jul–Sep.

Sparse forests, forest margins, alpine thickets, meadows on mountain slopes; 300–3200 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Qinghai, Shandong, Shanxi, Sichuan, Xizang [Korea, Mongolia, Russia].

This species is used medicinally.

67. *Potentilla lancinata* Cardot, Notul. Syst. (Paris) 3: 236. 1916.

条裂委陵菜 tiao lie wei ling cai

Potentilla lancinata var. *minor* H. R. Fletcher; *P. rhytidocarpa* Cardot.

Herbs perennial. Roots terete. Flowering stems erect or ascending, 15–55 cm tall, together with petioles pubescent and pilose. Radical leaves 6–15 cm including petiole; stipules brown, membranous, abaxially pilose; leaf blade pinnate, rarely interrupted pinnate, with 2–4 pairs of leaflets; leaflets usually opposite, at intervals of 1–2 cm, sessile or subsessile, elliptic or oblong-elliptic, 1–4 × 0.5–2 cm, abaxially pubescent, villous on veins, adaxially appressed pilose, base cuneate or broadly so, margin coarsely acutely or obtusely incised serrate, apex obtuse or acute; cauline leaves: stipules green, large, herbaceous, abaxially densely pubescent or villous, margin 2- or 3-incised parted, rarely entire; leaf blade 3-foliolate or pinnate with 2 pairs of leaflets; leaflets resembling those of radical leaves. Inflorescence laxly cymose. Flowers ca. 2 cm in diam.; pedicel 1–2 cm, pubescent, proximally with ovate bract. Sepals triangular-ovate, apex acute; epicalyx segments elliptic, nearly equaling sepals, abaxially pubescent and pilose. Petals yellow, obovate or orbiculate, ca. 2 × as long as sepals, apex emarginate. Style terminal, base thickened; stigma minute, not dilated. Achenes yellow-brown, ovoid, rugose. Fl. and fr. Jun–Sep.

• Forest margins, meadows on mountain slopes, stream sides, rocks; 3200–4100 m. Sichuan, Yunnan.

68. *Potentilla crenulata* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 12. 1980.

圆齿委陵菜 yuan chi wei ling cai

Herbs perennial. Roots terete. Flowering stems ascending, ca. 15 cm tall, together with petioles spreading villous and pubescent. Radical leaves 3–5 cm including petiole; stipules brown, membranous, abaxially villous; leaf blade pinnate with 2 pairs of leaflets; leaflets opposite, at intervals of 5–8 mm, sessile, obovate or oblong, apical 3 large, abaxially densely spreading white villous, adaxially appressed pilose, base cuneate, margin obtusely serrulate, apex obtuse; cauline leaves: stipules green, herbaceous, abaxially densely pubescent and villous, margin entire or 2- or 3-serrate; leaf blade 3-foliolate; leaflets resembling apical 3 of radical leaves. Inflorescence laxly cymose. Flowers 1–1.6 cm in diam.; pedicel 0.5–1.5 cm, densely pubescent. Sepals triangular-ovate, apex acute to acuminate; epicalyx segments elliptic, shorter than sepals, abaxially villous and pubescent, apex obtuse or acute. Petals yellow, obovate, nearly 2 × as long as sepals, apex emarginate. Stamens ca. 20. Style subterminal, base thickened; stigma not dilated. Achenes not seen.

• Meadows, sandy mountain slopes; ca. 2800 m. Yunnan.

69. *Potentilla kleiniana* Wight & Arnott, Prodr. Fl. Ind. Orient. 300. 1834.

蛇含委陵菜 she han wei ling cai

Potentilla anemonifolia Lehmann; *P. bodinieri* H. Léveillé.

Herbs annual, biennial, or perennial. Flowering stems prostrate or ascending, 10–50 cm tall, together with petioles

pilose or spreading villous, usually rooting at nodes and developing new plants. Radical leaves 3–20 cm including petiole; stipules tinged brown, membranous, abaxially pilose or glabrescent; leaf blade subpedately 5-foliolate; leaflets subsessile or shortly petiolulate, both surfaces green, obovate or oblong-obovate, 0.5–4 × 0.4–2 cm, both surfaces pilose, abaxially densely appressed villous on veins, adaxially sometimes glabrescent, base cuneate, margin acutely or obtusely many serrate, apex obtuse; lower cauline leaves 5-foliolate, upper ones 3-foliolate; stipules green, ovate or ovate-lanceolate, herbaceous, abaxially sparsely villous, margin entire, rarely acutely or acuminate 1- or 2-serrate; petiole gradually shorter higher up stem; leaflets resembling those of radical leaves. Inflorescence terminal, cymose, congested, pseudumbellate. Flowers 0.8–1 cm in diam.; pedicel 1–1.5 cm, densely spreading villous, bracteate. Sepals triangular-ovate, apex acute or acuminate; epicalyx segments lanceolate or elliptic-lanceolate, shorter than sepals at anthesis, nearly equaling or slightly longer than sepals in fruit, abaxially pilose, apex acute or acuminate. Petals yellow, obovate, longer than sepals, apex emarginate. Style subterminal, conic, base thickened; stigma dilated. Achenes subglobose, flattened on 1 side, ca. 0.5 mm in diam., rugose. Fl. and fr. Apr–Sep.

Meadows, grasslands on mountain slopes, field margins; 400–3000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Shaanxi, Shandong, Sichuan, Xizang, Yunnan, Zhejiang [Bhutan, India, Indonesia, Japan, Korea, Malaysia, Nepal, Sikkim].

This species is used medicinally.

70. *Potentilla supina* Linnaeus, Sp. Pl. 1: 497. 1753.

朝天委陵菜 *chao tian wei ling cai*

Herbs annual or biennial. Roots slender, with sparse lateral rootlets. Flowering stems spreading, ascending, or erect, dichotomously branched, 20–50 cm tall, together with petioles pilose or glabrescent. Radical leaves 4–15 cm including petiole; stipules brown, membranous, abaxially pilose or glabrescent; leaf blade 3-foliolate or pinnate with 2–5 pairs of leaflets; leaflets alternate or opposite, sessile, or terminal leaflet shortly petiolulate or subsessile, both surfaces green, oblong or obovate-oblong, 1–2.5 × 0.5–1.5 cm, both surfaces pilose or glabrescent, base cuneate or broadly so, often decurrent and adnate to rachis in apical 1 or 2 pairs of leaflets, margin obtusely serrate, incised serrate, or 2- or 3-parted, apex obtuse or acute; cauline leaves resembling radical ones but pairs of leaflets fewer higher up stem; stipules green, herbaceous, margin entire, serrate, or parted. Inflorescence terminal, corymbose-cymose, with axillary flowers on lower part of flowering stem. Flowers 6–8 mm in diam.; pedicel 0.8–1.5 cm, densely pubescent. Sepals triangular-ovate, apex acute; epicalyx segments oblong-elliptic or elliptic-lanceolate, nearly equaling or slightly longer than sepals, apex acute. Petals yellow, obovate, slightly shorter than sepals, apex emarginate. Style subterminal, base thickened, papillate; stigma dilated. Achenes cylindrical, rugose, apex acute. Fl. and fr. Mar–Oct.

Meadows, wet places on mountain slopes, sandy river banks, field margins, saline deserts; 100–2000 m. Anhui, Gansu, Guangdong, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan, Zhejiang [widespread in N hemi-

sphere and subtropical regions].

- 1a. Flowering stems horizontally spreading, ascending, or erect; radical leaf blade pinnate with 2–5 pairs leaflets, leaflets sessile with base decurrent and adnate to rachis in apical 1 or 2 pairs, margin obtusely serrate or incised serrate 70a. var. *supina*
- 1b. Flowering stems low and spreading or slightly ascending, rarely erect; radical leaf blade 3-foliolate, central leaflet shortly petiolulate or subsessile, margin often 2- or 3-parted 70b. var. *ternata*

70a. *Potentilla supina* var. *supina*

朝天委陵菜(原变种) *chao tian wei ling cai* (yuan bian zhong)

Potentilla fauriei H. Léveillé; *P. paradoxa* Nuttall ex Torrey & A. Gray; *P. supina* var. *egibbosa* Th. Wolf; *P. supina* subsp. *paradoxa* (Nuttall ex Torrey & A. Gray) Soják; *P. supina* var. *paradoxa* (Nuttall ex Torrey & A. Gray) Th. Wolf.

Flowering stems horizontally spreading, ascending, or erect. Radical leaf blade pinnate with 2–5 pairs leaflets; leaflets sessile with base decurrent and adnate to rachis in apical 1 or 2 pairs, margin obtusely serrate or incised serrate.

Meadows, wet places on mountain slopes, sandy river banks, field margins; 100–2000 m. Anhui, Gansu, Guangdong, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan, Zhejiang [widespread in N hemisphere and subtropical regions].

70b. *Potentilla supina* var. *ternata* Petermann, Anal. Pfl.-Schlüss. 125. 1846.

三叶朝天委陵菜 *san ye chao tian wei ling cai*

Potentilla amurensis Maximowicz; *P. supina* var. *campestris* Cardot.

Flowering stems low and spreading or slightly ascending, rarely erect. Radical leaf blade 3-foliolate; central leaflet shortly petiolulate or subsessile, margin often 2- or 3-parted.

Sandy river banks, field margins, saline deserts; 100–1900 m. Anhui, Gansu, Guangdong, Guizhou, Hebei, Heilongjiang, Henan, Jiangsu, Jiangxi, Liaoning, Shaanxi, Shanxi, Sichuan, Xinjiang, Yunnan, Zhejiang [Russia (Far East)].

71. *Potentilla centigrana* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 18: 163. 1874.

蛇莓委陵菜 *she mei wei ling cai*

Herbs annual or biennial. Rootlets numerous, fibrous. Flowering stems prostrate, ascending, or suberect, 20–50 cm tall, together with petioles glabrous or pilose, sometimes with adventitious roots at nodes in lower part. Radical leaves usually withered at anthesis; stipules brown, membranous, glabrous or pilose; leaf blade 3-foliolate; cauline leaves: stipules pale green, ovate, margin usually serrate, rarely entire; petiole long; leaf blade 3-foliolate; leaflets shortly petiolulate or subsessile, both surfaces green, elliptic or obovate, 0.5–1.5 × 0.4–1.5 cm, both surfaces glabrous or pilose, base cuneate to rounded, margin

obtusely or acutely incised serrate, apex rounded. Flowers solitary, opposite leaves in lower part of flowering stem, axillary in upper part, 4–8 mm in diam.; pedicel slender, 0.5–2 cm, glabrous or subglabrous. Sepals broadly ovate or ovate-lanceolate, apex acute or acuminate; epicalyx segments lanceolate, shorter than or nearly equaling sepals, apex acuminate. Petals tinged yellow, obovate, shorter than sepals, apex emarginate or rounded. Style subterminal, base thickened; stigma not dilated. Achenes obovoid, ca. 1 mm in diam., smooth. Fl. and fr. Apr–Aug.

Damp forests, forest margins, fields; 400–2300 m. Guizhou, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shaanxi, Sichuan, Yunnan [Japan, Korea, Russia].

72. *Potentilla cryptotaeniae* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 18: 162. 1874.

狼牙委陵菜 lang ya wei ling cai

Potentilla aegopodiifolia H. Léveillé; *P. cryptotaeniae* var. *obovata* Th. Wolf; *P. cryptotaeniae* var. *obtusata* Th. Wolf.

Herbs annual or biennial. Roots fibrous. Flowering stems erect or ascending, 50–100 cm tall, hirsute, villous, or glabrescent. Radical leaves withered at anthesis; stipules brown, membranous, abaxially densely villous; leaf blade 3-foliolate; cauline leaves: stipules green, lanceolate, usually adnate to petiole with adnate part 1–3 × as long as free part, herbaceous, margin entire, apex acuminate; petiole spreading villous and pubescent, sometimes glabrescent; leaf blade 3-foliolate; leaflets green on both surfaces, oblong to ovate-lanceolate, 2–6 × 1–2.5 cm, usually widest at middle, both surfaces pilose, sometimes glabrescent, abaxially hairs denser and spreading on veins, base cuneate, margin acutely many serrate, apex acuminate or caudate-acuminate. Inflorescence terminal, corymbose-cymose, many flowered. Flowers ca. 1 cm in diam.; pedicel slender, 1–2 cm, villous or pubescent. Sepals oblong-ovate, apex acute or acuminate; epicalyx segments lanceolate, nearly equaling sepals at anthesis, longer than sepals in fruit, abaxially pilose, apex acuminate. Petals yellow, obovate, nearly equaling or longer than sepals, apex rounded or emarginate. Style subterminal, base slightly thickened; stigma slightly dilated. Achenes ovoid, smooth. Fl. and fr. Jul–Sep.

Forest margins, grasslands, meadows, valleys, ravines; 1000–2500 m. Gansu, Heilongjiang, Jilin, Liaoning, Shaanxi, Sichuan [Japan, Korea, Russia (Far East)].

Potentilla cryptotaeniae var. *radicans* T. T. Yu & C. L. Li was described in FRPS (p. 319), but the name is invalid because no Latin description or diagnosis was provided (St. Louis Code, Art. 36.1).

73. *Potentilla asperrima* Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 16: 609. 1843.

刚毛委陵菜 gang mao wei ling cai

Herbs perennial. Roots terete. Flowering stems erect or ascending, 8–13 cm tall, together with petioles setose, sparsely pubescent, and stipitate or sessile glandular. Radical leaves 4–9 cm including petiole; stipules brown, membranous, abaxially setose, pubescent, and sparsely glandular; leaf blade 3-foliolate;

leaflets subsessile or shortly petiolulate, obovate, 1–2.5 × 0.7–1.5 cm, abaxially setose, pubescent, and sessile glandular, adaxially setose, base cuneate, margin acutely incised serrate, occasionally doubly serrate, apex obtuse; cauline leaves 1 or 2, resembling radical ones; stipules herbaceous, abaxially setose, pubescent, and glandular. Inflorescence terminal, corymbose-cymose, few flowered. Flowers ca. 1 cm in diam.; pedicel 1–1.5 cm, villous and glandular hairy. Sepals triangular-ovate, apex acuminate; epicalyx segments lanceolate, abaxially setose, margin serrate, apex acuminate. Petals yellow, obcordate, nearly equaling or longer than sepals, apex emarginate. Style subterminal, base thickened; stigma dilated. Achenes subreniform, rugose. Fl. and fr. Jun–Sep.

Forest margins, meadows, gravels. Heilongjiang [E Russia].

74. *Potentilla macrosepala* Cardot, Notul. Syst. (Paris) 3: 239. 1916.

大花委陵菜 da hua wei ling cai

Potentilla concolor (Franchet) Rolfe (1908), not Zimmermann (1887); *P. griffithii* J. D. Hooker var. *concolor* Franchet.

Herbs perennial. Roots terete, with fibrous rootlets. Flowering stems erect or ascending, 15–55 cm tall, pubescent and sparsely villous. Radical leaves 6–25 cm including petiole; stipules brown, membranous, abaxially pilose or glabrescent; petiole pubescent and pilose; leaf blade 3-foliolate; leaflets sessile or shortly petiolulate, elliptic, ovate, or obovate, abaxially pubescent, pilose on veins, adaxially appressed pilose, base rounded or broadly cuneate, margin coarsely obtusely many serrate, apex obtuse, rarely acute; cauline leaves petiolate, becoming sessile higher up stem; stipules green, herbaceous, abaxially pilose, margin 2–4-serrate; leaflets resembling those of radical leaves. Inflorescence corymbose-cymose, laxly few flowered. Flowers 2.5–4 cm in diam.; pedicel 2–3 cm, pubescent. Sepals triangular-ovate or oblong-ovate, apex acute, rarely acuminate; epicalyx segments elliptic or oblong-elliptic, nearly equaling or longer than sepals, margin entire or sometimes parted, apex obtuse or acute. Petals yellow, obcordate, apex emarginate. Style terminal, base markedly thickened; stigma dilated. Achenes rugose. Fl. and fr. Jul–Dec.

• Meadows on mountain slopes; 3200–4100 m. Xizang, Yunnan.

75. *Potentilla xizangensis* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 12. 1980.

西藏委陵菜 xi zang wei ling cai

Herbs perennial. Roots thin terete, with fibrous rootlets. Flowering stems erect, ascending, or spreading, 6–35 cm tall, sparsely pubescent or glabrescent. Radical leaves 4–8 cm including petiole; stipules brown, membranous, abaxially sparsely pubescent; leaf blade 3-foliolate; petiole pilose and glandular hairy, or glabrescent; leaflets sessile or shortly petiolulate, green on both surfaces, obovate, broadly elliptic, or flabellate, both surfaces sparsely pubescent or glabrescent, base broadly cuneate, margin crenate, apex obtuse; cauline leaves 3 or 4, resembling radical ones; stipules green, ovate, herbaceous, abaxially pubescent and glandular hairy, margin entire, apex obtuse or acute. Inflorescence terminal, compact, congested, 3–5-flowered, laxly cymose after anthesis. Flowers 1–1.2 cm in

diam.; pedicel 1–2 cm, pubescent. Sepals ovate, apex acute; epicalyx segments elliptic, shorter than or nearly equaling sepals, apex obtuse. Petals obovate, apex emarginate. Stamens ca. 20, sometimes 12 or 13. Style subterminal, conic, base markedly thickened and papillate; stigma slightly dilated. Achenes not seen. Fl. Jun–Jul.

• Thickets, bamboo stands, valleys, meadows on mountain slopes; 3600–4800 m. Xizang (Kata He, Nyalam Xian).

76. *Potentilla chrysantha* Treviranus, Index Seminum Hort. Vratislav. 1818: 5. 1818.

黄花委陵菜 *huang hua wei ling cai*

Potentilla asiatica (Th. Wolf) Juzepczuk; *P. chrysantha* var. *asiatica* Th. Wolf.

Herbs perennial. Roots robust, terete. Flowering stems erect or ascending, 15–55 cm tall, together with petioles spreading or appressed pilose or glabrescent. Radical leaves 5–20 cm including petiole; stipules brown, membranous, villous or glabrescent; leaf blade pinnate with 2 pairs of leaflets; leaflets sessile or subsessile, green on both surfaces, obovate-oblong, usually $1.5\text{--}7 \times 1\text{--}3$ cm, both surfaces appressed or subspreading pilose, or abaxially sometimes villous on veins, base cuneate, margin acutely serrate, apex obtuse or acute; cauline leaves: stipules herbaceous, abaxially villous, margin entire, apex acuminate; lower leaf blades 3-foliolate, upper ones 5-foliolate; leaflets resembling those of radical leaves. Inflorescence corymbose-cymose, laxly many flowered. Flowers 1.2–1.5 cm in diam.; pedicel 1–2 cm, densely pubescent. Sepals long triangular-ovate, apex acute or acuminate; epicalyx segments lanceolate or elliptic-lanceolate, slightly shorter than sepals, abaxially pubescent and pilose, apex acute or acuminate. Petals obovate, $0.5\text{--}1 \times$ as long as sepals, apex emarginate. Style slightly thickened at base; stigma dilated. Achenes smooth or obscurely rugose. Fl. and fr. May–Aug.

Forest margins, meadows, river valleys, ditch banks; 1000–2200 m. Xinjiang [Mongolia, Russia; E Europe].

77. *Potentilla recta* Linnaeus, Sp. Pl. 1: 497. 1753.

直立委陵菜 *zhi li wei ling cai*

Herbs perennial. Roots terete. Flowering stems erect, 30–40 cm tall, together with petioles white villous, rarely glabrescent. Radical leaves usually withered at anthesis; stipules tinged brown, membranous, margin white villous; leaf blade palmately 5-foliolate; cauline leaves: stipules green, herbaceous, abaxially appressed villous, margin entire, apex acuminate; petiole gradually shorter higher up stem, almost absent on uppermost leaves; leaf blade 5–7-foliolate; leaflets obovate-lanceolate, $2\text{--}5 \times 0.5\text{--}1.5$ cm, abaxially white villous, more densely so on veins, adaxially appressed white villous or glabrescent, base cuneate, margin acutely or obtusely incised serrate, apex obtuse. Inflorescence terminal, compact, corymbose-cymose. Flowers ca. 1.5 cm in diam.; pedicel 0.5–1 cm, white villous and white pubescent. Sepals ovate-oblong, apex acuminate; epicalyx segments lanceolate, nearly equaling sepals, abaxially white villous, apex acuminate. Petals yellow, obovate-elliptic, nearly equaling sepals, apex emarginate or subrounded. Style slightly thickened at base; stigma not dilated. Achenes rugose. Fl. and fr. Jul–Aug.

River valleys, dry mountain slopes; 1000–1200 m. Xinjiang [C and SW Asia, Europe].

78. *Potentilla desertorum* Bunge in Ledebour, Fl. Altaic. 2: 267. 1830.

荒漠委陵菜 *huang mo wei ling cai*

Herbs perennial. Roots robust, terete. Flowering stems erect or ascending, 20–50 cm tall, together with petioles pubescent, villous, and stipitate or sessile red glandular. Radical leaves 8–20 cm including petiole; stipules dark brown to purple, membranous, abaxially densely pubescent, villous, and stipitate or sessile red glandular; leaf blade palmately or subpedately 5-foliolate; leaflets sessile or shortly petiolulate, obovate-cuneate or obovate, abaxially pubescent, villous, and stipitate or sessile red glandular, adaxially pilose or glabrescent, margin coarsely obtusely many serrate; cauline leaves: stipules herbaceous, abaxially densely pubescent and glandular, margin entire or 2-parted, apex acuminate; leaf blade 5-foliolate, uppermost ones 3-foliolate; leaflets resembling those of radical leaves, shortly petiolulate. Inflorescence terminal, corymbose-cymose. Flowers 1.5–2 cm in diam.; pedicel 1–2 cm, pubescent, villous, and stipitate or sessile glandular. Sepals ovate-lanceolate or ovate-oblong, apex acute or acuminate; epicalyx segments erect after flowering, lanceolate, nearly equaling sepals, abaxially pubescent, villous, and stipitate or sessile glandular, apex acuminate, usually 2-fid. Petals yellow, obovate, apex emarginate. Style subterminal, base markedly thickened; stigma dilated. Achenes smooth or inconspicuously rugose. Fl. and fr. Jun–Aug.

Ravines, river banks; ca. 1700 m. Xinjiang [India, Mongolia, Russia].

79. *Potentilla subdigitata* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 12. 1980.

混叶委陵菜 *hun ye wei ling cai*

Herbs perennial. Roots robust, terete, usually woody. Flowering stems erect or ascending, together with petioles pubescent, sparsely villous, and sessile glandular. Radical leaves 4–12 cm including petiole; stipules brown, membranous, abaxially densely sessile glandular, pubescent, and pilose; leaf blade 3-foliolate or pedately (rarely subpinnately) 5-foliolate; central 3 leaflets shortly petiolulate, the lateral two (if present) sessile, all leaflets obovate-cuneate or obovate, both surfaces densely spreading pubescent and sessile glandular, abaxially more densely so on veins, base cuneate, margin markedly revolute, obtusely serrate proximally, apex truncate or obtuse; cauline leaves: stipules ovate-elliptic, herbaceous, margin entire, apex obtuse or 2- or 3-serrate; petiole gradually shorter higher up stem; leaf blade 3- or 5-foliolate; leaflets resembling those of radical leaves. Inflorescence corymbose-cymose, laxly few flowered. Flowers 1.2–1.5 cm in diam.; pedicel slender, 2–2.5 cm, densely pubescent and sessile glandular. Sepals triangular-lanceolate, apex acuminate; epicalyx segments lanceolate or elliptic-lanceolate, slightly shorter than sepals, apex acute. Petals yellow, obovate, ca. $1/2$ as long as sepals, apex rounded. Style markedly thickened at base; stigma dilated. Achenes slightly rugose. Fl. and fr. Jul–Aug.

• Sunny slopes at *Pinus* forest margins, dry gravelly slopes; 2000–2500 m. Xinjiang.

6. *Potentilla* sect. *Potentilla*

钉状花柱组 ding zhuang hua zhu zu

Herbs perennial. Basal leaves palmate or 3-foliolate, rarely pinnate. Ovary glabrous; style subterminal, clavate, tapered toward base, thickened at apex.

About 20 species: mainly temperate and subarctic regions of N hemisphere; nine species (two endemic) in China.

- 1a. Flowering stems erect or ascending.
 - 2a. Leaves pinnate with 2 or 3(or 4) pairs of leaflets 82. *P. fragarioides*
 - 2b. Leaves 3-foliolate.
 - 3a. Plants stellate hairy throughout 81. *P. acaulis*
 - 3b. Plants pilose or glabrescent throughout, not stellate hairy.
 - 4a. Leaflets abaxially pilose or glabrescent; flowers 1–2 cm in diam.; epicalyx segments oblong, apex rounded; anthers basifixed, subglobose or ovoid, minute 80. *P. gelida*
 - 4b. Leaflets abaxially spreading strigose or densely hairy; flowers 0.8–1 cm in diam.; epicalyx segments lanceolate, apex acuminate; anthers dorsifixed, ellipsoid, larger 83. *P. freyniana*
- 1b. Flowering stems prostrate or horizontally creeping.
 - 5a. Leaves palmately 5-foliolate.
 - 6a. Flowers 1.5–2.2 cm in diam.; epicalyx segments usually broad, enlarged and leaflike after anthesis, apex obtuse or acute; leaflets obovate-oblong, margin regularly obtusely or rarely acutely serrate 85. *P. reptans*
 - 6b. Flowers 1–1.5 cm in diam.; epicalyx segments narrow, not enlarged after anthesis, apex acuminate, rarely acute; leaflets oblong-lanceolate, margin irregularly acutely or acuminately serrate 87. *P. flagellaris*
 - 5b. Leaves 3-foliolate.
 - 7a. Lateral leaflets 2-lobed or 2-parted 85. *P. reptans*
 - 7b. Leaflets neither lobed nor parted.
 - 8a. Plants not stoloniferous, but flowering stems sometimes prostrate 88. *P. pseudosimulatrix*
 - 8b. Plants stoloniferous; stolons curved and zigzagged or not, with adventitious roots at nodes or only at base.
 - 9a. Inflorescence terminal, 6–8-flowered; leaflets rhombic-ovate, rhombic-obovate, or broadly elliptic, margin sharply serrate (teeth fasciated ovate) or doubly serrate; stolons curved and zigzagged; flowers 1.5–2 cm in diam. 84. *P. rosulifera*
 - 9b. Inflorescence axillary, a solitary flower; leaflets obovate or elliptic, margin regularly acutely or obtusely serrate; stolons neither curved nor zigzagged; flowers 0.7–1 cm in diam. 86. *P. simulatrix*

80. *Potentilla gelida* C. A. Meyer, Verz. Pfl. Casp. Meer. 167. 1831.

Marshes, valley grasslands, alpine meadows, rock crevices; 2200–4800 m. Xinjiang [N Asia to Himalayas; Europe].

耐寒委陵菜 nai han wei ling cai

Herbs perennial. Roots terete, slender; rootlets usually fibrous. Flowering stems erect, ascending, or spreading, 6–30 cm tall, together with petioles pilose and sessile glandular, or sericeous, rarely glabrescent. Radical leaves 25–70 cm including petiole; stipules brown, membranous, abaxially villous or glabrescent; leaf blade 3-foliolate; leaflets shortly petiolulate or sessile, obovate, elliptic, or ovate-elliptic, 0.8–2 × 0.6–1.5 cm, abaxially pilose and sessile glandular, or sericeous, adaxially pilose, sericeous, or glabrescent, base cuneate or broadly so, margin acutely or obtusely 3–5-serrate on each side but entire near base, apex obtuse; cauline leaves 1 or 2; stipules green, ovate, herbaceous, abaxially pilose and glandular, margin entire, apex obtuse or acuminate; petiole very short; leaflets resembling those of radical leaves. Inflorescence laxly cymose, 3–5-flowered. Flowers 1–2 cm in diam.; pedicel 1–2.5 cm, pilose. Sepals triangular-ovate, sometimes sericeous, apex acute; epicalyx segments oblong-elliptic, slightly shorter than sepals, apex obtuse. Petals yellow, obovate, 0.5–1 × as long as sepals, apex emarginate. Style subterminal, thin at base, thickened distally; stigma dilated. Mature achenes rugose. Fl. and fr. Jun–Aug.

- 1a. Flowering stems erect or ascending, together with petioles and abaxial surface of leaflets pilose and sessile glandular, rarely glabrescent; leaflets adaxially pilose or glabrescent 80a. var. *gelida*
- 1b. Flowering stems spreading, together with petioles, both surfaces of leaflets, and sepals sericeous 80b. var. *sericea*

80a. *Potentilla gelida* var. *gelida*

耐寒委陵菜(原变种) nai han wei ling cai (yuan bian zhong)

Potentilla fragiformis Willdenow ex Schlechtendal var. *gelida* (C. A. Meyer) Trautvetter.

Flowering stems erect or ascending, together with petioles and abaxial surface of leaflets pilose and sessile glandular, rarely glabrescent. Leaflets adaxially pilose or glabrescent. Fl. and fr. Jun–Aug.

Marshes, valley grasslands, rock crevices; 2200–4800 m. Xinjiang [N Asia to Himalayas; Europe].

One of us (Ohba) believes that *Potentilla morrisonensis* Hayata (Icon. Pl. Formosan. 3: 96. 1913), described from Taiwan, may be synonymous with this variety.

80b. *Potentilla gelida* var. *sericea* T. T. Yu & C. L. Li, Acta Phytotax. Sin. 18: 13. 1980.

绢毛耐寒委陵菜 juan mao nai han wei ling cai

Flowering stems spreading, together with petioles, both surfaces of leaflets, and sepals sericeous. Fl. Jun.

- Alpine meadows; ca. 3200 m. Xinjiang.

81. *Potentilla acaulis* Linnaeus, Sp. Pl. 1: 500. 1753.

星毛委陵菜 xing mao wei ling cai

Potentilla subacaulis Linnaeus.

Herbs perennial, grayish green. Roots terete, much branched. Flowering stems tufted, 2–15 cm tall, together with petioles densely stellate hairy and spreading hirtellous. Radical leaves 15–70 cm including petiole; stipules tinged brown, membranous, stellate hairy and spreading hirtellous; leaf blade 3-foliolate; leaflets usually shortly petiolulate or subsessile, grayish green on both surfaces, obovate-elliptic or rhombic-obovate, 0.8–3 × 0.4–1.5 cm, both surfaces densely stellate hairy and spreading hirtellous, abaxially more densely so on veins, base cuneate, margin obtusely 4–6-serrate on each side, apex obtuse; cauline leaves 1–3; stipules grayish green, linear or linear-lanceolate, herbaceous, abaxially stellate hairy; petiole very short; leaflets resembling those of radical leaves. Inflorescence terminal, cymose, 1–5-flowered. Flowers ca. 1.5 cm in diam.; pedicel 1–2 cm, densely stellate hairy and pilose. Sepals triangular-ovate, apex acute; epicalyx segments elliptic, abaxially densely stellate hairy and pilose, apex obtuse, rarely 2-fid. Petals yellow, obovate, about 2 × as long as sepals, apex emarginate or obtuse. Style subterminal, base papillate; stigma slightly dilated. Achenes subreniform, ca. 1 mm in diam., inconspicuously rugose. Fl. and fr. Apr–Aug.

Meadows on mountain slopes, loess slopes, gravelly slopes; 600–3000 m. Gansu, Hebei, Heilongjiang, Nei Mongol, Qinghai, Shaanxi, Shanxi, Xinjiang [Mongolia, Russia].

82. *Potentilla fragarioides* Linnaeus, Sp. Pl. 1: 496. 1753.

莓叶委陵菜 mei ye wei ling cai

Potentilla fragarioides var. *major* Maximowicz; *P. fragarioides* var. *sprengeliana* (Lehmann) Maximowicz; *P. sprengeliana* Lehmann.

Herbs perennial. Roots numerous. Flowering stems tufted, ascending or spreading, 8–25 cm, together with petioles spreading villous. Radical leaves 5–22 cm including petiole; stipules brown, membranous, abaxially sparsely spreading villous; leaf blade pinnate with 2 or 3 (or 4) pairs of leaflets; leaflets at intervals of 0.8–1.5 cm, shortly petiolulate or subsessile, green on both surfaces, obovate, elliptic, or oblong-elliptic, 0.5–7 × 0.4–3 cm, both surfaces appressed pilose, abaxially more densely so on veins, sometimes densely ciliate on teeth, base cuneate or broadly so, margin obtusely or acutely many serrate but entire near base, apex obtuse or acute; cauline leaves: stipules green, ovate, herbaceous, abaxially spreading pilose, margin entire, apex acute; petiole very short or almost absent; leaf blade usually 3-foliolate; leaflets resembling those of radical leaves, or oblong, margin entire proximally, and apex serrate. Inflo-

rescence terminal, laxly corymbose-cymose, many flowered. Flowers 1–1.7 cm in diam.; pedicel slender, 1.5–2 cm, pilose. Sepals triangular-ovate, apex acute to acuminate; epicalyx segments oblong-lanceolate, slightly shorter than sepals, apex acute. Petals yellow, obovate, apex rounded or emarginate. Style subterminal, thin at base, thickened distally. Mature achenes subreniform, ca. 1 mm in diam., rugose. Fl. Apr–Jun, fr. Jun–Aug.

Thinned forests, thickets, meadows, ditches, field banks; 300–2400 m. Anhui, Fujian, Gansu, Guangxi, Hebei, Heilongjiang, Henan, Hunan, Jiangsu, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang [Japan, Korea, Mongolia, Russia (Siberia)].

83. *Potentilla freyniana* Bormüller, Mitth. Thüring. Bot. Vereins 20: 12. 1904.

三叶委陵菜 san ye wei ling cai

Herbs perennial, with slender or inconspicuous stolons. Roots much branched, tufted. Flowering stems slender, erect or ascending, 8–25 cm tall, together with petioles spreading pilose or densely spreading villous. Radical leaves 4–30 × 1–4 cm including petiole; stipules brown, membranous, abaxially sparsely villous; leaf blade 3-foliolate; leaflets green on both surfaces, oblong, elliptic, ovate, broadly ovate, or rhombic-ovate, both surfaces appressed to spreading pilose, abaxially more densely so on veins, base cuneate or broadly so, margin acutely many serrate or obtusely crenate, apex obtuse or acute; cauline leaves 1 or 2; stipules green, herbaceous, sparsely villous, apex acutely incised serrate, entire, or very rarely 2-fid; leaflets resembling those of radical leaves but very shortly petiolulate and margin less serrate. Inflorescence terminal, laxly corymbose-cymose, many flowered. Flowers 0.8–1 cm in diam.; pedicel slender, 1–1.5 cm, pilose. Sepals triangular-ovate, apex acuminate; epicalyx segments lanceolate, nearly equaling sepals, abaxially appressed pilose, apex acuminate. Petals pale yellow, oblong-obovate, apex emarginate or rounded. Style subterminal, thin at base, thickened distally. Mature achenes ovoid, 0.5–1 mm in diam., markedly rugose. Fl. and fr. Mar–Jun.

Grassy and damp places in forests, meadows on mountain slopes, stream sides; 300–2100 m. Anhui, Fujian, Gansu, Guizhou, Hebei, Heilongjiang, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea, Russia].

- 1a. Flowering stems and petioles spreading pilose; leaflets oblong, elliptic, or ovate, both surfaces sparsely appressed pilose, abaxially more densely so on veins, margin acutely serrate, stipules of cauline leaves acutely incised serrate at apex 83a. var. *freyniana*
- 1b. Flowering stems and petioles densely spreading villous; leaflets rhombic-ovate or broadly ovate, both surfaces spreading or subspreading pilose, more densely so on veins, margin obtusely crenate, stipules of cauline leaves or those on stolons ovate, margin entire, very rarely 2-fid at apex 83b. var. *sinica*

83a. *Potentilla freyniana* var. *freyniana*

三叶委陵菜(原变种) san ye wei ling cai (yuan bian zhong)

Potentilla fragarioides Linnaeus var. *ternata* Maximowicz; *P. freyniana* var. *nitens* Pampanini; *P. longepetiolata* H. Léveillé; *P. morii* Hayata; *P. sutchuenica* Cardot.

Flowering stems and petioles spreading pilose. Leaflets oblong, elliptic, or ovate, both surfaces sparsely appressed pilose, abaxially more densely so on veins, margin acutely serrate; stipules of cauline leaves acutely incised serrate at apex. Fl. and fr. Mar–Jun.

Grassy and damp places in thinned forests, meadows on mountain slopes, stream sides; 300–2100 m. Fujian, Gansu, Guizhou, Hebei, Heilongjiang, Hubei, Hunan, Jiangxi, Jilin, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea, Russia].

This variety is used medicinally.

83b. *Potentilla freyniana* var. *sinica* Migo, Bull. Shanghai Sci. Inst. 14: 310. 1944.

中华三叶委陵菜 zhong hua san ye wei ling cai

Flowering stems and petioles densely spreading villous. Leaflets rhombic-ovate or broadly ovate, both surfaces spreading or subspreading pilose, more densely so on veins, margin obtusely crenate; stipules of cauline leaves or those on stolons ovate, margin entire, very rarely 2-fid at apex. Fl. and fr. Apr–May.

• Grassy and damp place in forests; 600–800 m. Anhui, Hubei, Hunan, Jiangsu, Jiangxi, Zhejiang.

84. *Potentilla rosulifera* H. Léveillé, Repert. Spec. Nov. Regni Veg. 7: 198. 1909.

曲枝委陵菜 qu zhi wei ling cai

Potentilla freyniana Bornmüller var. *grandiflora* Th. Wolf; *P. querpertensis* Cardot; *P. yokusaiana* Makino.

Herbs perennial, stoloniferous. Roots fibrous. Stolons curved and zigzagged, with adventitious roots at nodes. Radical leaves 4–7 cm including petiole; stipules brown, membranous, abaxially sparsely villous; petiole sparsely spreading villous; leaf blade 3-foliolate, rarely also with 1 or 2 minute segments on petiole; leaflets shortly petiolulate or sessile, adaxially green, rhombic-ovate, rhombic-obovate, or broadly elliptic, 1–3.5 × 1–2 cm, adaxially sparsely spreading villous, margin many serrate with teeth ovate and dissected into linear lobes, sometimes acutely doubly serrate, apex acute, rarely obtuse; stolon leaves resembling radical ones; stipules pale brown, lanceolate, thinly membranous, margin entire; cauline leaves: stipules ovate, herbaceous, abaxially sparsely villous, margin entire, very rarely serrate at apex; leaf blade 1- or 2-foliolate; leaflets reduced, obovate-elliptic, apex 3- or 4-serrate. Inflorescence terminal, laxly corymbose, 6–8-flowered. Flower 1.5–2 cm in diam. Sepals ovate-lanceolate, apex acuminate; epicalyx segments lanceolate, nearly equaling sepals, apex acuminate. Petals yellow, obovate-oblong, ca. 1/2 as long as sepals, apex emarginate. Style subterminal, thin at base; stigma dilated, capitate. Achenes not seen. Fl. May.

Mountain forest margins, thickets on mountain slopes. Liaoning [Japan, Korea].

This species is used medicinally.

85. *Potentilla reptans* Linnaeus, Sp. Pl. 1: 499. 1753.

匍匐委陵菜 pu fu wei ling cai

Herbs perennial, stoloniferous. Roots much branched, usually with fusiform tubers. Stolons 20–100 cm, sparsely pilose or glabrescent, with adventitious roots at nodes. Radical leaves 7–12 cm including petiole; stipules brown, membranous, abaxially glabrescent; petiole sparsely pilose, appressed sericeous, or glabrescent; leaf blade pedately 5-foliolate, or 3-foliolate; leaflets shortly petiolulate or sessile, obovate to obovate-oblong, abaxially pilose or appressed sericeous, rarely glabrescent, adaxially subglabrous, base cuneate, margin acutely or obtusely serrate or lobed to parted, sometimes entire, apex obtuse; stolon leaves resembling radical ones; stipules green, ovate-oblong or ovate-lanceolate, herbaceous, margin entire, rarely 1- or 2-serrate, apex acute or acuminate. Flowers solitary, axillary or opposite leaves, 1.5–2.2 cm in diam.; pedicel 6–9 mm, pilose. Sepals ovate-lanceolate, apex acute; epicalyx segments oblong-elliptic or elliptic-lanceolate, nearly equaling sepals, markedly enlarged in fruit, abaxially pilose, apex obtuse or acute. Petals yellow, broadly obovate, slightly longer than sepals, apex markedly emarginate. Style subterminal, thin at base; stigma dilated. Achenes yellow-brown, ovoid, markedly rugose. Fl. and fr. Apr–Sep.

Forest margins, thickets by streams, meadows on mountain slopes, ditch banks, damp field margins; 300–3500 m. Gansu, Hebei, Henan, Jiangsu, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang, Yunnan, Zhejiang [Russia (Siberia); N Africa, C and SW Asia, Europe].

- 1a. Petiole pilose or glabrescent, leaf blade pedately 5-foliolate, leaflets abaxially pilose, margin acutely or obtusely serrate 85a. var. *reptans*
- 1b. Petiole appressed sericeous, leaf blade 3-foliolate, leaflets abaxially appressed sericeous, rarely glabrescent or pilose, margin of lateral leaflets lobed to parted, sometimes entire 85b. var. *sericophylla*

85a. *Potentilla reptans* var. *reptans*

匍匐委陵菜(原变种) pu fu wei ling cai (yuan bian zhong)

Potentilla procumbens Sibthorp (1794), not (Linnaeus) Clairville (1811); *Tormentilla reptans* Linnaeus.

Petiole pilose or glabrescent; leaf blade pedately 5-foliolate; leaflets abaxially pilose, margin acutely or obtusely serrate. Fl. and fr. Jun–Aug.

Damp field margins; 500–600 m. Xinjiang [Russia (Siberia); N Africa, C and SW Asia, Europe].

85b. *Potentilla reptans* var. *sericophylla* Franchet, Pl. David. 1: 113. 1883.

绢毛匍匐委陵菜 juan mao pu fu wei ling cai

Fragaria filipendula Hemsley; *Potentilla hemsleyana* Th. Wolf; *P. reptans* var. *incisa* Franchet.

Petiole appressed sericeous; leaf blade 3-foliolate; leaflets abaxially appressed sericeous, rarely glabrescent or pilose, margin of lateral leaflets lobed to parted, sometimes entire. Fl. and fr. Apr–Sep.

• Forest margins, thickets by streams, meadows on mountain slopes, ditch banks, damp field margins; 300–3500 m. Gansu, Hebei, Henan, Jiangsu, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang.

86. *Potentilla simulatrix* Th. Wolf, Biblioth. Bot. 16(Heft 71): 663. 1908.

等齿委陵菜 *deng chi wei ling cai*

Herbs perennial, stoloniferous. Roots slender, much branched. Stolons slender, 15–30 cm, together with petioles pubescent and villous, usually with adventitious roots at base. Radical leaves 3–10 cm including long, slender petiole; stipules submembranous, densely pilose; leaf blade 3-foliolate; leaflets subsessile, green on both surfaces, cuneate-obovate, oblong-obovate, or subrhomboid, central one ca. 2 cm, lateral ones shorter with strongly oblique base, abaxially somewhat densely appressed pilose especially on veins, adaxially sparsely pilose or glabrescent, margin coarsely crenate-dentate, sometimes somewhat deeply incised, apex hardly prominent; teeth broadly ovate or oblong, apex rounded or shortly apiculate; stolon leaves similar to radical ones but petiole shorter and leaf blade gradually smaller higher up stem; stipules ovate or oblong and entire on lower leaves, often larger and dentate or 2–5-fid on upper leaves. Flower solitary, axillary, 0.7–1 cm in diam.; pedicel slender, 1.5–3 cm, pubescent and pilose. Sepals ovate-lanceolate, apex acute; epicalyx segments oblong-elliptic, nearly equaling or rarely slightly longer than sepals, abaxially pilose, apex obtuse or acute. Petals yellow, obovate, longer than sepals, apex emarginate or rounded. Style subterminal, thin at base; stigma dilated. Achenes inconspicuously rugose. Fl. and fr. Apr–Oct.

• Stream sides in damp forests; 300–2200 m. Gansu, Hebei, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan.

87. *Potentilla flagellaris* Willdenow ex Schlechtendal, Ges. Naturf. Freunde Berlin Mag. Neuesten Entdeck. Gesammten Naturk. 7: 291. 1816.

匍枝委陵菜 *pu zhi wei ling cai*

Potentilla reptans Linnaeus var. *angustiloba* Seringe.

Herbs perennial, stoloniferous. Roots tufted, slender. Stolons 8–60 cm, together with petioles appressed pubescent or pilose. Radical leaves 4–10 cm including petiole; stipules brown, membranous, abaxially sparsely hirsute; leaf blade palmately 5-foliolate; leaflets sessile, green on both surfaces, lanceolate, ovate-lanceolate, or oblong-elliptic, 1.5–3 × 0.7–1.5 cm, both surfaces sparsely appressed pubescent, later glabrescent or abaxially appressed pilose on veins, base broadly cuneate, margin irregularly acutely incised 3–6-serrate, sometimes 2-fid on outer 2 leaflets, apex acute or acuminate; stolon leaves resembling radical ones; stipules green, ovate-lanceolate, herbaceous, margin usually parted. Flowers solitary, opposite leaves, 1–1.5 cm in diam.; pedicel 1.5–4 cm, pubescent. Sepals ovate-oblong, apex acute; epicalyx segments slightly shorter than sepals, abaxially pubescent and pilose. Petals yellow, slightly longer than sepals, apex emarginate or rounded. Style subterminal, thin at base; stigma slightly dilated. Mature achenes cylindrical-ovoid, bullate. Fl. and fr. May–Sep.

Thinned forests, damp meadows, lake shores, river banks; 300–2100 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Shandong, Shanxi [Korea, Mongolia, Russia].

This species is used for food and forage.

88. *Potentilla pseudosimulatrix* W. B. Liao et al., Bull. Bot. Res., Harbin 10(4): 21. 1990.

粗齿委陵菜 *cu chi wei ling cai*

Herbs perennial. Roots much branched, slender; rootlets usually fibrous. Flowering stems prostrate or ascending, 20–60 cm, pilose. Radical leaves: stipules lanceolate, margin entire; petiole 8–15 cm, villous; leaflets 3, abaxially grayish green, adaxially green, rhombic-ovate or rhombic-elliptic, 3–5 × 2–3.5 cm, both surfaces sparsely pubescent, rarely sericeous, base strongly obliquely cuneate, margin coarsely dentate with 7–11 pairs of teeth, apex acute; cauline leaves 1 or 2; stipules ovate, herbaceous, margin entire or 2- or 3-lobed; petiole 2–4 cm, densely villous; leaflets similar to radical ones but smaller, 1.5–3.6 × 1–1.5 cm. Inflorescence cymose, 2–4-flowered. Flowers 1–1.4 cm in diam.; pedicel slender, 0.6–6 cm, pubescent. Sepals broadly ovate, ca. 6 × 3 mm, abaxially villous, apex acute; epicalyx segments lanceolate, slightly longer than sepals, abaxially villous, apex acute. Petals yellow, suborbicular, ca. 3 mm, apex emarginate. Ovary lanate at base; style subterminal, thin at base, thickened distally. Fl. Apr–Jun.

• Forest margins; 1200–1400 m. S Shaanxi (Ningshan Xian).

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