

22. CHAMAESIUM H. Wolff, Notizbl. Bot. Gart. Berlin-Dahlem 9: 275. 1925.

矮泽芹属 ai ze qin shu

Pan Zehui (潘泽惠); Mark F. Watson, Eugene V. Kljuykov

Herbs, perennial, small, glabrous. Stem solitary, ribbed, base usually covered by papery dark purple-brown remnant sheaths. Leaf blade oblong, pinnate; pinnae opposite, sessile, ovate to orbicular, entire or 3–6-lobed to serrate. Umbels compound, terminal and lateral. Bracts absent or few; rays unequal; bracteoles absent or few; pedicels many, short. Calyx teeth minute, semi-orbicular or ovate-triangular. Petals white, yellowish or greenish, obovate or suborbicular, base narrow, apex nearly plane, usually not inflexed. Stylopodium depressed, margins conspicuously extended into a broad undulate flange. Fruit ellipsoid-oblong, base slightly cordate, smooth; ribs 9, 5 primary and 4 secondary ribs all prominent to narrowly winged, wings undulate; vittae 1 in each furrow, 2 on commissure. Seed face concave. Carpophore parted to base, rather thick.

Eight species: mainly at high altitudes from E Himalayas to SW China; seven species (four endemic) in China.

- 1a. Ultimate segments of leaves linear, 1–2 mm wide 1. *C. wolffianum*
- 1b. Ultimate segments of leaves suborbicular, broadly ovate to ovate-lanceolate, 2–17 mm wide.
 - 2a. Bracts and bracteoles absent 2. *C. delavayi*
 - 2b. Bracts or bracteoles present.
 - 3a. Bracteoles absent, rarely 1–2, abortive; pinnae 2–4 pairs 3. *C. viridiflorum*
 - 3b. Bracteoles well developed; pinnae (2–)4–6 pairs.
 - 4a. Ultimate segments of leaves ovate to ovate-lanceolate; bracteoles linear, entire, often shorter than flowers 4. *C. paradoxum*
 - 4b. Ultimate segments of leaves long-ovate, broadly ovate to suborbicular; bracteoles linear to long-obovate, entire, lobed to pinnatifid, equal to or much longer than flowers.
 - 5a. Ribs of fruit extended into undulate wings (Xizang) 7. *C. malleaeum*
 - 5b. Ribs of fruit prominent, not undulate-winged.
 - 6a. Plants usually stemless, less than 15 cm tall, unbranched; bracteoles linear to long-obovate, entire to pinnatifid 5. *C. novemjugum*
 - 6b. Plants usually with long stems more than 15 cm tall, branched above; bracteoles linear, entire to 3-toothed 6. *C. thalictrifolium*

1. Chamaesium wolffianum Fedde ex H. Wolff, Repert. Spec. Nov. Regni Veg. 27: 305. 1930.

细叶矮泽芹 xi ye ai ze qin

Trachydium yunnanense M. Hiroe.

Plants 40–70 cm. Root short thick. Lower petioles nearly as long as blades; sheaths narrow, membranous; blades oblong-ovate in outline, 10–20 × 2–8 cm; ultimate segments linear, 1.5–4 × 0.1–0.2 cm, acute. Uppermost leaves sessile; sheaths slightly inflated, white-margined. Umbels 2–3 cm across; peduncles 3–6 cm; bracts and bracteoles absent or aborted (squamuliform); rays 5–8, slender, 8–50 mm, very unequal. Calyx teeth small, triangular-ovate, ca. 0.3 mm, partly hidden by stylopodium. Petals broadly obovate, greenish, ca. 1 × 0.8 mm, base long-clawed, apex obtuse or acute. Stylopodium depressed, margin conspicuously spreading, crenulate, dark green to deep purple; ovary glabrous, ribbed. Fruit ovoid, ca. 2.5 × 1.3 mm; ribs prominent. Fl. Aug, fr. Sep.

• Open stony grasslands, damp open woodlands; 3300–3600 m. NW Yunnan.

This poorly known taxon is recorded only from a few collections.

2. Chamaesium delavayi (Franchet) R. H. Shan & S. L. Liou in R. H. Shan & M. L. Sheh, Fl. Reipubl. Popularis Sin. 55(1): 130. 1979.

鹤庆矮泽芹 he qing ai ze qin

Trachydium delavayi Franchet, Bull. Soc. Philom. Paris, sér. 8, 6: 110. 1894; *Chamaesium novemjugum* (C. B. Clarke) C. Norman var. *delavayi* (Franchet). C. Norman.

Plants 10–20(–33) cm. Root branched. Basal petioles 2.5–5 cm; sheaths broad, long-ovate; blade oblong in outline, 3–6 × 1.5–2.5 cm; pinnae 4–6 pairs, overlapping; ultimate segments broadly ovate or suborbicular, 8–15 × 6–13 mm, base truncate, apex obtuse, 2–3-crenulate. Umbels 4–5 cm across; bracts and bracteoles absent; rays 5–6, 1–3 cm, unequal; pedicels 8–17, 2–4 mm. Calyx teeth suborbicular, small, obscured by stylopodium. Petals obovate or orbicular, white or yellowish, ca. 1.8 × 1.2 mm. Fruit oblong-ellipsoid, 2–2.5 × ca. 2 mm; ribs prominent. Fl. and fr. Aug–Oct.

• Grassy slopes; 3500–4000 m. Sichuan, Yunnan.

3. Chamaesium viridiflorum (Franchet) H. Wolff ex R. H. Shan, Sinensia 8: 87. 1937.

绿花矮泽芹 lu hua ai ze qin

Trachydium viridiflorum Franchet, Bull. Soc. Philom. Paris, sér. 8, 6: 111. 1894; *Chamaesium markgrafianum* (Fedde ex H. Wolff) C. Norman; *Trachydium affine* W. Smith; *T. markgrafianum* Fedde ex H. Wolff.

Plants (3–)8–20(–32) cm. Rhizome slender, torulose. Basal and lower petioles 1.5–6 cm, sheaths narrowly oblong; blade oblong, 1.5–3.5 × 0.8–2.5 cm; pinnae 2–4 pairs, remote; ultimate segments ovate, broadly ovate or ovate-oblong, 4–12 × 2–

6 mm, apex 3-toothed, rarely entire; terminal pinnae broadly obovate to fan-shaped, 3–5-lobed. Leaves reduced upwards, uppermost with linear-elliptic ultimate segments. Umbels 1–5 cm across; peduncles slender, 1.5–8 cm; bracts 2–5, linear, entire or pinnatifid, leaf-like; rays 6–11, slender, 0.5–3.5 cm, unequal, spreading; bracteoles absent or 1–2, abortive (squamulate or occasionally linear). Calyx teeth minute, orbicular, ca. 0.3 mm, obscured by spreading stylopodium. Petals obovate, ca. 1 × 0.8 mm, greenish, apex obtuse. Fruit oblong-ellipsoid, 1.3–1.8 × 1–1.3 mm; ribs prominent. Fl. Jul–Aug, fr. Aug–Sep.

Forests, scrubland slopes, damp moorland; 3200–4300 m. Sichuan, Xizang, NW Yunnan [Sikkim].

4. *Chamaesium paradoxum* H. Wolff, Notizbl. Bot. Gart. Berlin-Dahlem. 9: 275. 1925.

矮泽芹 ai ze qin

Trachydium paradoxum (H. Wolff) M. Hiroe.

Plants 5–35 cm, biennial. Root long-conic, 3–9 cm. Basal and lower petioles 4–7 cm, sheaths long and broad; blade oblong, 3–5 × 1.5–3 cm; pinnae 4–6 pairs, remote; ultimate segments ovate to ovate-lanceolate, 7–15 × 5–8 mm, entire or shallowly 2–3-toothed, base rounded-truncate or slightly cordate. Leaves reduced upwards, ultimate segments becoming narrow. Umbels 3–5 cm across; bracts 3–5, linear, entire or pinnate and leaf-like; rays 6–12(–17), 0.5–10 cm, very unequal; bracteoles 3–5, linear, 2–4 mm, entire, usually shorter than flowers; pedicels numerous, 2–5 mm. Calyx teeth minute, triangular-ovate, often hidden under the spreading stylopodium. Petals obovate, white or greenish-yellow, ca. 1.5 × 1 mm. Fruit oblong-ellipsoid, 1.8–2.9 × 1–1.5 mm; ribs prominent, sometimes obscure. Fl. Jul–Aug, fr. Aug–Sep.

• Damp grassy slopes; 3200–4800 m. Qinghai, Sichuan, Xizang, NW Yunnan.

This species has reputed medicinal value.

5. *Chamaesium novemjugum* (C. B. Clarke) C. Norman, J. Bot. 76: 231. 1938.

粗棱矮泽芹 cu leng ai ze qin

Trachydium novemjugum C. B. Clarke in J. D. Hooker, Fl. Brit. India 2: 672. 1879; *Chamaesium spatuliferum* (W. W. Smith) C. Norman; *C. spatuliferum* var. *minus* R. H. Shan & S. L. Liou; *Trachydium novemjugum* var. *tongolense* H. de Boissieu; *T. spatuliferum* W. W. Smith.

Plants 5–12 cm. Taproot stout, 5–23 cm. Stem shortened, plants usually acaulous. Basal petioles 1.5–5 cm, sheaths long, broad; blade oblong, 2–4 × 1–2 cm, pinnate; pinnae sessile, (3–) 4–6 pairs, remote; ultimate segments long-ovate to suborbicular, 5–10 × 3–8 mm, base subtruncate or rounded, entire or apex shallowly 1–3-toothed, sometimes 3–4-crenate; terminal pinnae obovate or orbicular, base cuneate, apex more deeply 3-lobed. Umbels usually sessile, 5–17 cm across; bracts 4–5, pinnate, leaf-like; rays 9–18, 2–8 cm, unequal, ribbed; bracteoles 3–7, linear, oblanceolate or long-obovate, entire, 3–5-lobed to pinnatisect, nearly equal to much longer than flowers. Calyx teeth minute, hidden under the spreading stylopodium. Petals obovate or orbicular, ca. 1.5 × 1 mm, white or greenish, apex ob-

tuse. Fruit oblong-ellipsoid ca. 3.5 × 2 mm, ribs prominent. Fl. Jun–Aug, fr. Aug–Sep.

Grassy slopes, riversides; 3400–4700 m. Sichuan, Xizang, Yunnan [Bhutan, Nepal, Sikkim].

This species has reputed medicinal value.

6. *Chamaesium thalictrifolium* H. Wolff, Acta Horti Gothob. 2: 302. 1926.

松潘矮泽芹 song pan ai ze qin

Trachydium thalictrifolium (H. Wolff) M. Hiroe.

Plants 15–40 cm. Root slender, brown. Stem branched above. Basal and lower petioles 4–15 cm; sheaths long, membranous; blade oblong, 2.5–8 × 1.5–3.5 cm, pinnate; pinnae 2–6 pairs, remote; ultimate segments ovate or broad-ovate, 0.8–2 × 0.7–1.7 cm, base truncate to broad-cuneate, apex 3–5-toothed or irregularly serrate; terminal pinnae broadly obovate or suborbicular, base cuneate, apex often 3-lobed. Umbels ca. 5 cm across; bracts 2–4, linear to linear-lanceolate, pinnate; rays 6–13, unequal, spreading, ribbed; bracteoles 2–5, linear, entire or 3-toothed, longer than flowers; pedicels many, 2.5–3 mm. Calyx teeth minute, hidden by stylopodium. Petals white or greenish, obovate or suborbicular, apex slightly incurved. Fruit oblong-ellipsoid, ca. 2.5 × 2 mm; ribs all prominent. Fl. and fr. Jul–Aug. $n = 6^*$.

• Grassy slopes; 3200–4000 m. Gansu, Sichuan, Xizang, Yunnan.

This species has reputed medicinal value.

7. *Chamaesium mallaeanum* Farille & S. B. Malla, Candollea 40: 537. 1985.

聂拉木矮泽芹 nie la mu ai ze qin

Plants 30–50 cm. Stem stout, unbranched. Lower petioles 6–8 cm; sheaths small; blade oblong to oval, 3–5 cm; pinnae 2–5 pairs; ultimate segments broadly ovate, 1–1.5 × 1–1.2 cm,

base cuneate, margin irregularly dentate or serrate lobed, apex acute. Terminal umbels ca. 5 cm across, much larger than the lateral; peduncles stout, ca. 10 cm; bracts several, 2–3.5 cm, leaf-like; rays 8–14, 2.5–7 cm, unequal; bracteoles 4–6, 4–8 mm, 3–5-serrate lobed; umbellules 15–20-flowered; pedicels unequal, 2–10 mm. Calyx teeth ovate, mostly hidden by stylopodium. Petals obovate, indistinctly clawed. Stylopodium low-conic. Fruit narrow-ovoid, $3\text{--}4 \times 1.5\text{--}2$ mm; ribs all extended into undulate wings. Fl. & fr. Aug–Sep.

Dwarf *Rhododendron* scrub, grasslands; 4200–4400 m. S Xizang (Nyalam) [C Nepal].

This poorly known species is recorded only from a few collections.

