
**矮泽芹属 ai 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-ovaribucal 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-ovate, entire, lobed to pinnatifid, equal to or much longer than flowers.

5a. ribs of fruit extended into undulate wings (Xizang) .................................................................................. 7. *C. mallaeanum*

5b. Ribs of fruit prominent, not undulate-winged.

6a. Plants usually stemless, less than 15 cm tall, unbranched; bracteoles linear to long-ovate, 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. *Trachydium thalictrifolium*


**细叶矮泽芹 xi ye ai 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, upper part less 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 × 1.5 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.


**鹤庆矮泽芹 he qing ai qin**


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, 2.2–2.5 × 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 qin**


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, unequally spreading; bracteoles absent or 1–2, abortive (squamate 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].


Chamaesium 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; pinnate 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.


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; pinnate 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 pinnate 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-ovate, 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 obtuse. Fruit oblong-ellipsoid ca. 3.5 × 2 mm, ribs prominent. Fl. Jun–Aug, fr. Aug–Sep.

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

This species has reputed medicinal value.


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; pinnate 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 pinnate broadly obovate or suborbicular, 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 cm. 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.


Nerla mala ze Qin Nie la mu aze Qin


Plants 30–50 cm. Stem stout, unbranched. Lower petioles 6–8 cm; sheaths small; blade oblong to oval, 3–5 cm; pinnate 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, 3–4 × 1.5–2 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.