

5. **KALIDIUM** Moquin-Tandon in Candolle, Prodr. 13(2): 46, 146. 1849.

盐爪爪属 *yan zhua zhua shu*

Shrubs small, much branched; branches not jointed. Leaves alternate, terete or undeveloped, fleshy, basally decurrent. Inflorescence pedunculate, spicate. Flowers spirally arranged, (1 or)3 borne in axil of a fleshy bract, appearing sunken into fleshy rachis, without bractlets, bisexual. Perianth 4- or 5-lobed, spongy in fruit, flat on top surface. Stamens 2. Ovary ovoid; stigmas 2, papillate. Fruit a utricle, enclosed by perianth. Seed vertical, compressed; testa subleathery; embryo semi-annular; perisperm present.

Five species: C and SW Asia, SE Europe; five species in China.

- 1a. Leaves 4–10 mm; spikes 3–4 mm in diam. 1. *K. foliatum*
- 1b. Leaves less than 3 mm or undeveloped; spikes 1.5–3 mm in diam.
 - 2a. Branchlets slender; flowers 1 per bract 5. *K. gracile*
 - 2b. Branchlets stout; flowers 3 per bract.
 - 3a. Leaves developed, 1–3 mm, ovate, adaxially curved, apex acute 2. *K. cuspidatum*
 - 3b. Leaves undeveloped, tuberculate, less than 1 mm, apex obtuse.
 - 4a. Plants 10–25 cm tall, branched from base; leaves of branchlets narrow and obconic at base 3. *K. schrenkianum*
 - 4b. Plants 20–70 cm tall, branched from middle; leaves of branchlets sheathing at base 4. *K. caspicum*

1. *Kalidium foliatum* (Pallas) Moquin-Tandon in Candolle, Prodr. 13(2): 147. 1849.

盐爪爪 *yan zhua zhua*

Salicornia foliata Pallas, Reise Russ. Reich. 1: 482. 1771; *Halocnemum foliatum* (Pallas) Sprengel; *Kalidium foliatum* var. *longifolium* Fenzl.

Plants 20–50 cm tall. Stems erect or prostrate, much branched; branches gray-brown, annual ones yellow-green, nearly herbaceous. Leaves gray-green, terete, spreading or slightly adaxially curved, 4–10 × 2–3 mm, base decurrent, semiamplexicaul, apex obtuse. Spikes sessile, 8–15 × 3–4 mm. Flowers 3 per scale-like bract. Perianth pentagonal on top surface, margin narrowly winged. Stamens 2. Seed vertical, globose, ca. 1 mm in diam., with dense, papillate processes. Fl. and fr. Jul–Aug.

Alkaline soils, salt-lake shores. N Gansu, N Hebei, Heilongjiang, Nei Mongol, Ningxia, Qinghai, Xinjiang [Mongolia, Russia (S Siberia); C and SW Asia, SE Europe].

2. *Kalidium cuspidatum* (Ungern-Sternberg) Grubov, Bot. Mater. Gerb. Bot. Inst. Komarova Acad. Nauk SSSR 19: 103. 1959.

尖叶盐爪爪 *jian ye yan zhua zhua*

Plants 20–40 cm tall. Stems branched from base, branches suberect, gray-brown, annual ones yellow-green. Leaves ovate, slightly adaxially curved, 1.5–3 × 1–1.5 mm, base decurrent and semiamplexicaul, apex acute. Spikes terminal on upper branches, 5–15 × 2–3 mm. Flowers densely arranged, 3 per bract. Perianth top surface pentagonal in fruit, margin narrowly winged. Utricle subglobose; pericarp membranous. Seed light red-brown, subglobose, ca. 1 mm in diam., papillate. Fl. and fr. Jul–Sep.

Hills, slopes, margins of alluvial fans, salt-lake shores, alkaline soils. Gansu, Hebei, Nei Mongol, Ningxia, Qinghai, Shaanxi, Xinjiang [Mongolia].

- 1a. Leaves 1.5–3 mm; plants sparsely branched 2a. var. *cuspidatum*

- 1b. Leaves 1–1.5 mm; plants densely branched 2b. var. *sinicum*

2a. *Kalidium cuspidatum* var. *cuspidatum*

尖叶盐爪爪(原变种) *jian ye yan zhua zhua* (yuan bian zhong)

Kalidium arabicum (Linnaeus) Moquin-Tandon var. *cuspidatum* Ungern-Sternberg, Vers. Syst. Salicorn. 93. 1866.

Plants sparsely branched. Leaves 1.5–3 mm.

Salt-lake shores, alkaline soils. Hebei, Nei Mongol, Xinjiang [Mongolia].

2b. *Kalidium cuspidatum* var. *sinicum* A. J. Li, Acta Phytotax. Sin. 16(1): 117. 1978.

黄毛头 *huang mao tou*

Plants densely branched. Leaves 1–1.5 mm.

- Hills, slopes, margins of alluvial fans. Gansu, Ningxia, Qinghai.

3. *Kalidium schrenkianum* Bunge ex Ungern-Sternberg, Vers. Syst. Salicorn. 95. 1866.

圆叶盐爪爪 *yuan ye yan zhua zhua*

Plants 10–25 cm tall. Stems branched from base; branches decumbent, gray-brown, with longitudinal fissures; annual branches dense, whitish, slender, easily broken. Leaves undeveloped, tuberculate, base decurrent, semiamplexicaul, apex obtuse-rounded; leaves of branchlets narrow and obconic at

base. Spikes terete, ovoid, or subglobose, $3-8 \times 1.5-3$ mm. Flowers 3 per bract. Perianth top surface flattened in fruit, pentagonal. Seed subovoid, 0.7-1 mm in diam.; testa red-brown, densely papillate. Fl. and fr. Jun-Aug.

Saline and alkaline mud flats, salt-lake shores. Xinjiang [Kazakhstan].

4. *Kalidium caspicum* (Linnaeus) Ungern-Sternberg, Atti Congr. Bot. Intern. Firenze 1874: 317. 1876.

里海盐爪爪 li hai yan zhua zhua

Salicornia caspica Linnaeus, Sp. Pl. 1: 4. 1753.

Plants 20-70 cm tall. Stems suberect, usually branched from middle; branches gray-white, with longitudinal fissures; branchlets usually bearing inflorescences at apex. Leaves undeveloped, tuberculate, ca. 1 mm, base convex, decurrent, adnate to branch, distally touching base of next higher leaf, apex obtuse; leaves of branchlets sheathing and amplexicaul at base. Spikes terete, $5-25 \times 1.5-3$ mm. Flowers 3 per bract. Perianth top surface flattened in fruit, pentagonal, with 4 small teeth. Seed red-brown, ovoid or globose, 1.2-1.5 mm in diam., papillate. Fr. and fl. Jul-Aug.

Saline and alkaline mud flats, salt-lake shores. N Xinjiang [C and SW Asia, SE Europe].

5. *Kalidium gracile* Fenzl in Ledebour, Fl. Ross. 3(2): 769. 1851.

细枝盐爪爪 xi zhi yan zhua zhua

Plants 20-50 cm tall. Stems erect, much branched; older branches gray-brown, bark dehiscent; annual branches yellow-brown, slender, easily broken. Leaves yellow-green, undeveloped, tuberculate, base narrowed, decurrent, apex obtuse. Spikes terete, slender, $10-30 \times$ ca. 1.5 mm. Flower 1 per bract. Perianth top surface flattened in fruit, pentagonal, with 4 membranous teeth. Seed light red-brown, ovoid, 0.7-1 mm in diam., densely papillate. Fl. and fr. Jul-Sep.

Alkaline plains, salt-lake shores. Nei Mongol, Xinjiang [Mongolia].

Flora of China 5: 355-356. 2003.