

## 15. AGRIOPHYLLUM Marschall von Bieberstein, Fl. Taur.-Caucas. 3: 6. 1819–1820.

沙蓬属 sha peng shu

Herbs annual. Stem erect, branched from base, covered with ramified hairs, becoming glabrous. Leaves alternate, sessile or petiolate; leaf blade flattened, linear to lanceolate or ovate, base attenuate or rounded-cuneate, margin entire, apex mucronate; veins 3 to numerous. Inflorescence a bracteate spike; bracts imbricate, base broad, apex aristate, reflexed; bractlets absent. Flowers solitary in bract axils, sessile, bisexual. Perianth segments 1–5, free, white, oblong or lanceolate, membranous, apex erose. Stamens 1–5; filaments flattened, united only at base; anthers oblong. Ovary sessile, ovoid, compressed; style short; stigmas 2, filiform. Utricle cylindrical to subglobose, sometimes with lateral wings, apex with a 2-fid beak; pericarp free from testa. Seed vertical, globose or ellipsoid, compressed; embryo annular; radicle inferior; perisperm copious.

Five or six species: C and SW Asia; three species in China.

- 1a. Utricle beak parted into 2 slightly recurved, linear, compressed beaks, each usually with a subapical, small, flattened tooth ..... 1. *A. squarrosum*  
1b. Utricle beak above middle divided into 2 small, acicular beaks, each with a proximal, lateral, recurved or inflexed, firm, spinelike, glabrous process.  
2a. Utricle not wing-margined distally ..... 2. *A. lateriflorum*  
2b. Utricle distinctly irregularly wing-margined apically ..... 3. *A. minus*

**1. *Agriophyllum squarrosum*** (Linnaeus) Moquin-Tandon in Candolle, Prodr. 13(2): 139. 1849.

沙蓬 sha peng

*Corispermum squarrosum* Linnaeus, Sp. Pl. 1: 4. 1753; *Agriophyllum arenarium* Marschall von Bieberstein; *A. gobicum* Bunge; *A. pungens* (Vahl) Link ex A. Dietrich; *Corispermum pungens* Vahl.

Plants 15–50 cm tall. Stem erect, light green, firm, obscurely ribbed, covered with ramified hairs when young, branched from base; lowest branches often opposite or whorled, spreading; upper branches opposite, obliquely spreading. Leaves sessile, lanceolate to linear, 1.3–7 cm × 1–10 mm, base attenuate, apex acute; longitudinal veins 3–9, prominent. Spikes axillary, sessile, dense, ovoid or ellipsoid; bracts broadly ovate, reflexed in fruit, abaxially hairy, apex abruptly acute, mucronate. Perianth segments 1–3, membranous. Stamens 2 or 3; filaments subulate, pellucid; anthers ovoid. Utricle ovoid or ellipsoid, compressed, slightly convex abaxially, hairy when young, slightly wing-margined distally; beak parted into 2 slightly recurved, linear, compressed beaks, each usually with a subapical, small, flattened tooth. Seed subglobose, glabrous, sometimes speckled with light brown. Fl. and fr. Aug–Oct.

Dunes, sandy places. Gansu, Hebei, Heilongjiang, Henan, Jilin, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Xinjiang, Xizang [Kazakhstan, Mongolia, Russia; SW Asia (Azerbaijan)].

**2. *Agriophyllum lateriflorum*** (Lamarck) Moquin-Tandon in Candolle, Prodr. 13(2): 139. 1849.

侧花沙蓬 ce hua sha peng

*Eryngium lateriflorum* Lamarck, Encycl. 4: 726. 1798.

Plants 10–40 cm tall. Stem green, obscurely ribbed, densely covered with ramified hairs, becoming glabrous, branched from base; lowest branches whorled; upper branches alternate, obliquely spreading. Leaves sessile, narrowly lanceolate or linear, 1.5–4 cm × 1–7 mm, base attenuate; longitudinal veins 5–7. Spikes axillary, usually 1–3, tower-shaped; bracts ovate, slightly inflexed in fruit, apex acuminate, mucronate. Perianth segments usually 3, narrowly oblong, membranous, apex sometimes 2-lobed. Stamens 5; filaments united at base; anthers oblong, exerted. Utricle cylindrical, compressed, not wing-margined distally; beak divided above middle into 2 small, acicular beaks, each with a proximal, lateral, recurved, firm, spinelike, glabrous process. Seed globose, with colored speckles. Fl. and fr. Jun–Sep.

Dunes. N Xinjiang [C Asia, SW Asia (S Caucasus, Iran)].

**3. *Agriophyllum minus*** Fischer & C. A. Meyer, Bull. Soc. Imp. Naturalistes Moscou 12: 170. 1839.

小沙蓬 xiao sha peng

Plants 5–40 cm tall. Stem erect, slender, ribbed, covered with ramified hairs when young. Leaves linear to subulate, 0.6–3.3 cm × 1–3 mm; longitudinal veins 5–7, prominent. Spikes axillary, usually 1–3, tower-shaped; bracts ovate, inflexed in fruit, apex acuminate, mucronate. Perianth segments small, membranous. Stamens 5, exerted. Utricle ovoid, compressed, abaxially convex, glabrous, distinctly irregularly wing-margined apically; beak apically divided into 2 small, acicular beaks, each with a proximal, inflexed, flat, firm, spinelike, glabrous process. Seed oblong, abaxially convex, adaxially plane or concave. Fl. and fr. May–Sep.

Deserts. N Xinjiang (Manas) [Afghanistan, Kazakhstan; C and SW Asia].

