

83. OSTERICUM Hoffmann, Gen. Pl. Umbell., ed. 2, 162. 1816.

山芹属 shan qin shu

Pan Zehui (潘泽惠); Mark F. Watson

Gomphopetalum Turczaninow.

Herbs, perennial. Stem hollow, ribbed. Petiole sheaths inflated; leaf blade 2–3-ternate-pinnate. Umbels compound, terminal and lateral; bracts few, lanceolate or linear-lanceolate; bracteoles several, linear to linear-lanceolate. Calyx teeth conspicuous, triangular or ovate. Fruit oblong-ovoid, base cordate, flattened dorsally; surface covered with many convex and shining dots; dorsal ribs prominent, the lateral broadly thin-winged; vittae 1–3 in each furrow, 2–8 on commissure; mesocarp thin, hollow in mature fruit. Seed face plane. Carpophore 2-cleft to base.

About ten species: C and E Asia, E Europe; seven species (three endemic) in China.

Ostericum is closely allied to *Angelica*; see the taxonomic comment under that genus.

- 1a. Ultimate leaf segments linear or oblong-lanceolate, entire or inconspicuously serrulate.
 - 2a. Ultimate leaf segments entire; bracts 1–3, 5–8 mm 1. *O. maximowiczii*
 - 2b. Ultimate leaf segments margin inconspicuously serrate; bracts 6–8, ca. 4 mm 2. *O. citriodorum*
- 1b. Ultimate leaf segments ovate to broad-elliptic, margin serrate, crenate or incised.
 - 3a. Central umbels with short peduncles, lateral umbels opposite or cyclic with long peduncles; petals green ... 3. *O. viridiflorum*
 - 3b. Central umbels with long peduncles, lateral umbels not opposite nor cyclic, with short peduncles; petals white.
 - 4a. Fruit vittae 1–3 in each furrow, 4–8 on commissure.
 - 5a. Bracts 2–5; fruit suborbicular, 5–7 mm 4. *O. scaberulum*
 - 5b. Bracts 1–2; fruit ellipsoid, 4–5.5 mm 5. *O. sieboldii*
 - 4b. Fruit vittae 1 in each furrow, 2 on commissure.
 - 6a. Petioles acute-triangular; bracts 1–4, unequal, apex long-aristate 6. *O. huadongense*
 - 6b. Petioles rounded; bracts 4–8, equal, apex acute 7. *O. grosseserratum*

1. *Ostericum maximowiczii* (F. Schmidt ex Maximowicz) Kitagawa, J. Jap. Bot. 12: 232. 1936.

全叶山芹 quan ye shan qin

Plants 40–100 cm. Rhizome inconspicuous or slender and creeping. Stem 2–5 mm thick, thinly ribbed, sparingly branched above, glabrous or sparsely hispidulous. Basal and lower leaves petiolate, petioles 3–10 cm, sheaths narrow; blade triangular-ovate, 7–16 × 5–13 cm, 2–4-ternate-pinnate; ultimate segments linear to ovate-lanceolate, 1–4 × 0.5–0.9 mm, glabrous or hispidulous along nerves. Middle and upper leaves reduced, sheaths purplish, inflated. Umbels 3.5–7 cm across; bracts 1–3, broad-lanceolate, 5–8 mm, scarious-margined; rays 10–17, hispidulous; bracteoles 5–7, linear-lanceolate, acuminate; umbellules 10–30-flowered; pedicels glabrous. Calyx teeth broadly triangular-ovate, hispidulous. Petals suborbicular, base clawed. Fruit broad-ovoid, 4–5.5 × 3.5–5 mm; dorsal ribs prominent, marginal ribs broad-winged, broader than the body; vittae 1 in each furrow, 2–4 on commissure. Fl. Aug–Sep, fr. Sep–Oct.

Forests, grasslands, damp meadows, river banks; 2200–2300 m. Heilongjiang, Jilin, Sichuan [Korea, Russia].

- 1a. Rhizome inconspicuous; rays less than 10 1d. var. *alpinum*
- 1b. Rhizome slender, creeping; rays 10–17.
 - 2a. Leaf rachis geniculate, ultimate segments linear, 0.5–1 mm wide ... 1c. var. *filisectum*
 - 2b. Leaf rachis not geniculate, ultimate segments linear, linear-lanceolate to ovate-lanceolate, 1–9 mm wide.
 - 3a. Stem 40–100 cm; ultimate leaf

- segments linear or linear-lanceolate, 1–4 mm wide 1a. var. *maximowiczii*
- 3b. Stem up to 150 cm; ultimate leaf segments ovate-lanceolate, 5–9 mm wide 1b. var. *australe*

1a. *Ostericum maximowiczii* var. *maximowiczii*

全叶山芹(原变种) quan ye shan qin (yuan bian zhong)

Gomphopetalum maximowiczii F. Schmidt ex Maximowicz, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 9 [Prim. Fl. Amur.]: 126. 1859; *Angelica maximowiczii* (F. Schmidt ex Maximowicz) Bentham ex Maximowicz.

Ultimate leaf segments linear or linear-lanceolate, 1–4 mm wide. *n* = 11*.

Forests, damp meadows. Heilongjiang, Jilin [Korea, Russia].

1b. *Ostericum maximowiczii* var. *australe* (Komarov) Kitagawa, Lin. Fl. Manshur. 3: 1. 340. 1939.

大全叶山芹 da quan ye shan qin

Angelica maximowiczii f. *australis* Komarov, Trudy Imp. S.-Peterburgsk. Bot. Sada 25: 165. 1905; *A. maximowiczii* var. *australis* (Komarov) Gorovoj; *Ostericum maximowiczii* f. *australe* (Komarov) Kitagawa.

Ultimate leaf segments 5–9 mm wide.

Forests, damp meadows. Heilongjiang, Jilin [Korea, Russia].

1c. *Ostericum maximowiczii* var. *filisectum* (Y. C. Chu) C. Q. Yuan & R. H. Shan, Bull. Nanjing Bot. Gard. Mem. Sun Yat Sen 1984–1985: 3. 1985 [“1984”].

丝叶山芹 *si ye shan qin*

Ostericum filisectum Y. C. Chu, Pl. Herb. Chin. Bor.-Orient. 6: 245, 294. 1977.

Rachis, petioles and petiolules geniculate.

- Forests, damp grasslands, river banks. Heilongjiang.

1d. *Ostericum maximowiczii* var. *alpinum* C. Q. Yuan & R. H. Shan, Bull. Nanjing Bot. Gard. Mem. Sun Yat Sen 1984–1985: 3. 1985 [“1984”].

高山全叶山芹 *gao shan quan ye shan qin*

Rhizome inconspicuous, root slender, brown; rays less than 10.

- Grasslands in mountains; 2200–2300 m. Sichuan.

This is a rather poorly known taxon, and recent work suggests that it is conspecific with *Pachypleurum muliense*; see the note under that species.

2. *Ostericum citriodorum* (Hance) C. Q. Yuan & R. H. Shan, Bull. Nanjing Bot. Gard. Mem. Sun Yat Sen 1984–1985: 3. 1985 [“1984”].

隔山香 *ge shan xiang*

Angelica citriodora Hance, J. Bot. 131. 1871.

Plants 0.5–1.3 m, glabrous. Root short-conic, brown, crown surrounded by fibrous remnant sheaths. Stem 2–5 mm thick, branched above. Petioles 5–30 cm, sheaths triangular-ovate, 0.5–1.5 cm; blade oblong-ovate to broadly triangular-ovate, 15–22 × 13–20 cm, 2–3-ternate-pinnate; leaflets subsessile, oblong-lanceolate to lanceolate, 3–6.5 × 0.4–2.5 cm, margin inconspicuously serrulate, apex acute and mucronate. Peduncles 6–9 cm; bracts 6–8, lanceolate, ca. 4 mm, multi-striate; rays 5–12; bracteoles 5–8, linear, 2–3 mm, reflexed. Calyx teeth conspicuous, triangular-ovate. Petals white, obovate, apex inflexed. Fruit ellipsoid to broad-ovoid, 3–4 × 3–3.5 mm, yellowish brown; dorsal ribs prominent, lateral ribs broad-winged, wings wider than the body; vittae 1–3 in each furrow, 2 on commissure. Fl. Jun–Aug, fr. Aug–Oct. *n* = 11*.

- Forest margins, shrubby thickets, grasslands; 800–1200 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang.

The roots are used in traditional Chinese medicine as an analgesic and antipyretic.

3. *Ostericum viridiflorum* (Turczaninow) Kitagawa, J. Jap. Bot. 12: 235. 1936.

绿花山芹 *lü hua shan qin*

Gomphopetalum viridiflorum Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 14: 540. 1841; *Angelica viridiflora* (Turczaninow) Bentham ex Maximowicz.

Plants 0.5–1 m. Root conic, yellowish brown, branched. Stem purplish green, acute-angled, pubescent. Petioles ca. 10 cm, acute-triangular, sheaths triangular-ovate; leaf blade triangular-ovate, 10–15 × 15–20 cm, 2-pinnate, pinnae long-petiolulate; leaflets subsessile, ovate or oblong, 4–7(–10) × 2–4(–6) cm, base truncate or obliquely broad-cuneate, margin white-cuspidate-serrate, apex acuminate, scabrous along nerves abax-

ially. Central umbels 4–9 across, peduncle very short, lateral umbels opposite or cyclic, peduncles longer, scabrous; bracts 2–3, lanceolate, ca. 1 cm; rays 10–18, 1–2 cm, unequal, hispidulous; bracteoles 3–9, linear-lanceolate; umbellules 10–20-flowered; pedicels hispidulous. Calyx teeth ovate. Petals green or greenish white, ovate. Fruit ellipsoid-orbicular, 4–6 × 2.5–4 mm; dorsal ribs acute-prominent, lateral ribs broad-winged; vittae 1 in each furrow, 2 on commissure. Fl. Jul–Aug, fr. Aug–Sep. *n* = 11*.

Damp meadows, riversides, stream banks; 800–1100 m. Heilongjiang, Jilin, Liaoning [Russia (Siberia)].

The young plants are eaten as a spring vegetable.

4. *Ostericum scaberulum* (Franchet) C. Q. Yuan & R. H. Shan, Bull. Nanjing Bot. Gard. Mem. Sun Yat Sen 1984–1985: 3. 1985 [“1984”].

疏毛山芹 *shu mao shan qin*

Plants 50–70(–100) cm. Root cylindric, brown, ramentaceous, punctate on branches. Stem 0.3–0.6 cm thick, purplish green, thinly ribbed. Petioles 6–10(–18) cm, sheaths oblong; leaf blade broad-ovate, 15–25 × 15–20 cm, 2–3-ternate-pinnate; leaflets ovate to oblong-elliptic, 3.5–6.5 × 2.5–5 cm, base oblique, margin coarse-serrate and ciliate, apex long-caudate-acuminate, sparse pubescent along nerves abaxially. Peduncles 7–15 cm; bracts 2–5, lanceolate, scabrous; rays 13–19(–29), scabrous; bracteoles 6–12, linear-lanceolate, purplish, scabrous, apex acuminate, inflexed. Calyx teeth triangular-ovate. Petals white or yellowish white, ovate. Fruit suborbicular, 5–7 × 4–6.5 mm; dorsal ribs prominent, lateral ribs winged, wings much broader than the body; vittae 2 in each furrow, 4 on commissure. Fl. Jul–Sep, fr. Sep–Oct.

- Forests, shrubby thickets, grasslands, meadows; 2500–3400 m. Yunnan.

The roots have reputed medicinal properties.

- 1a. Bracteoles linear, ca. 0.5 mm wide, usually shorter than pedicels 4a. var. *scaberulum*
- 1b. Bracteoles linear, ca. 1 mm wide, 1–1.5 × pedicels 4b. var. *longiinvolutellatum*

4a. *Ostericum scaberulum* var. *scaberulum*

疏毛山芹(原变种) *shu mao shan qin* (yuan bian zhong)

Angelica scaberula Franchet, Bull. Soc. Philom. Paris, sér. 8, 6: 144. 1894.

Bracteoles linear, ca. 0.5 mm wide, usually shorter than pedicels.

- Forests, grasslands; 2500–3300 m. Yunnan.

4b. *Ostericum scaberulum* var. *longiinvolutellatum* C. Y. Wu & F. T. Pu, Novon 8: 70. 1998.

长苞山芹 *chang bao shan qin*

Bracteoles linear, ca. 1 mm wide, 1–1.5 × pedicels.

- Shrubby thickets, meadows; 2700–3400 m. Yunnan.

5. *Ostericum sieboldii* (Miquel) Nakai, J. Jap. Bot. 18: 219. 1942.

山芹 shan qin

Plants 0.5–1.5 m. Root stout, brown, 2–3-branched. Stem ribbed, glabrous or sparsely pubescent. Petioles acute-triangular in cross section, 5–20 cm, sheaths triangular-ovate; leaf blade triangular-ovate, 20–45 × 17–40 cm, 2–3-ternate-pinnate; leaflets subsessile or short-petiolate, long-ovate to elliptic, 2.5–12 × 1–6 cm, base obliquely cordate to cuneate, margin coarse-toothed or serrate, apex acuminate, glabrous or hispidulous along nerves. Umbels 4–8 cm across; bracts 1–2, narrow-lanceolate; rays 7–13, unequal, scabrous; bracteoles 6–10, linear-lanceolate, unequal; umbellules ca. 20-flowered; pedicels glabrous. Calyx teeth ovate. Petals white, broad-ovate. Fruit ellipsoid, 4–5.5 × 3.5–4 mm; dorsal ribs prominent, lateral ribs broad-winged; vittae 1–3 in each furrow, 4–6(–8) on commissure. Fl. Aug–Sep, fr. Sep–Oct.

Forests, ravines, grassy slopes, grasslands; 600–1200 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong [Japan, Korea, Russia].

- 1a. Leaflets short-petiolate, ovate, 3–6 cm wide, base cordate to truncate 5a. var. *sieboldii*
- 1b. Leaflets sessile, elliptic to rhombic-ovate, 1–3 cm wide, base cuneate 5b. var. *praeteritum*

5a. *Ostericum sieboldii* var. *sieboldii*

山芹(原变种) shan qin (yuan bian zhong)

Peucedanum sieboldii Miquel, Ann. Mus. Bot. Lugduno-Batavi 3: 63. 1867; *Angelica miqueliana* Maximowicz; *A. urticifoliata* H. Wolff; *Ostericum miquelianum* (Maximowicz) Kitagawa; *O. sieboldii* var. *microphyllum* Y. C. Ma; *Peucedanum miquelianum* (Maximowicz) H. Wolff.

Leaflets short-petiolate, ovate, 5–12 × 3–6 cm, base oblique cordate. *n* = 11*.

Forests, ravines, grassy slopes; 600–1200 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shandong [Japan, Korea, Russia].

The young plants are eaten as a spring vegetable, and the roots have reputed medicinal value as a regional substitute for the traditional Chinese medicine “du huo” (see *Angelica biserrata*).

5b. *Ostericum sieboldii* var. *praeteritum* (Kitagawa) Y. Hwei Huang, Pl. Herb. Chin. Bor.-Orient. 6: 252. 1977.

狭叶山芹 xia ye shan qin

Ostericum praeteritum Kitagawa, J. Jap. Bot. 46: 369. 1971; *O. praeteritum* f. *piliferum* Kitagawa.

Leaflets sessile, elliptic or rhombic-ovate, 2.5–8 × 1–3 cm, base cuneate.

Forests, grasslands; 800–1000 m. Heilongjiang, Jilin, Nei Mongol, Shaanxi [Korea].

6. *Ostericum huadongense* Z. H. Pan & X. H. Li, J. Pl. Resources Environm. 5(2): 48. 1996.

华东山芹 hua dong shan qin

Plants 60–90 cm. Stem ribbed, branched. Basal and lower leaves petiolate, petioles 6–15 cm, acute-triangular, sheaths small, narrow-ovate; blade triangular-ovate, 15–20 × 12–18 cm,

2-ternate-pinnate, pinnae petiolulate; leaflets subsessile, broad-ovate to rhombic-ovate, 2.5–5 × 1.8–3 cm, base oblique cuneate or broad-cuneate, margin cartilaginous, not divided or 1–2-lobed, coarsely cuspidate-dentate, apex short-acuminate, slightly scabrous along nerves abaxially. Umbels 5–8 cm across; peduncles 4–6 cm; bracts 1–4, linear to lanceolate, 3.5–9 mm, unequal, apex long-aristate; rays 10–14, 1.5–3.5 cm, unequal, scabrous; bracteoles 6–8, linear, 3–5 mm; umbellules 14–28-flowered; pedicels 4–12 mm, unequal, scabrid. Calyx teeth tri-

angular-ovate. Petals white obovate, notched. Anthers purple. Fruit ellipsoid, 7–8 × 4–5 mm; dorsal ribs prominent, lateral ribs broad-winged; vittae 1 in each furrow, 2 on commissure. Fl. and fr. Aug–Oct. $n = 11^*$.

• Forests or grasslands in ravines; 400–600 m. Anhui, Jiangsu, Zhejiang.

7. *Ostericum grosseserratum* (Maximowicz) Kitagawa, J. Jap. Bot. 12: 233. 1936.

大齿山芹 da chi shan qin

Angelica grosseserrata Maximowicz, Melanges Biol. Bull. Phys.-Math. Acad. Imp. Sci. Saint-Petersbourg 9: 253. 1873; *A. koreana* Maximowicz; *A. mongolica* Franchet; *A. peucedanooides* H. Wolff; *A. smithii* H. Wolff.

Plants 80–120 cm. Root cylindrical, brown, simple or branched. Stem thinly ribbed, base purplish green, branched above. Basal and lower petioles 4–18 cm, sheaths narrow-ovate, white-membranous-margined; leaf blade broadly triangular-ovate, 2–3-ternate-pinnate, primary and secondary pinnae petiolulate; leaflets subsessile, broad-ovate to rhombic-ovate, 2–5 × 1.5–3 cm, base cuneate, margin 2–4-lobed, coarsely white-mucronate-toothed, apex acute to long-acuminate, hispidulous along nerves on both surfaces. Umbels 2–10 cm across; bracts 4–8, linear-lanceolate to lanceolate, 5–8 mm; rays 6–14, 1.5–3 cm, unequal, scabrous; bracteoles 5–10, subulate to linear-lanceolate. Calyx teeth triangular-ovate, acute. Petals white, obovate, base clawed. Fruit broad-ellipsoid, 4–6 × 4–5.5 mm; dorsal ribs prominent, lateral ribs broad-winged; vittae 1 in each furrow, 2 on commissure. Fl. Jul–Sep, fr. Aug–Oct. $n = 9^*$.

Grassy slopes, meadows, stream banks; 300–2400 m. Anhui, Fujian, Hebei, Henan, Jiangsu, Jilin, Liaoning, Qinghai, Shaanxi, Shanxi, Sichuan, Zhejiang [Korea, Mongolia].

All parts of the species contain aromatic oil and the roots have reputed medicinal value. In some regions they are used as a substitute for the traditional Chinese medicine “du huo” (see *Angelica biserrata*).

