

91. PEUCEDANUM Linnaeus, Sp. Pl. 1: 245. 1753.

前胡属 qian hu shu

She Menglan (佘孟兰 Sheh Meng-lan); Mark F. Watson

Kitagawia Pimenov.

Herbs perennial. Rootstock short, crown usually bearing remnant leaf sheaths. Stem finely striate, dichotomously branched above. Leaves petiolate; petioles sheathing. Umbels loosely compound, terminal and lateral; bracts numerous or absent; rays numerous or few; bracteoles numerous, rarely few or absent. Calyx teeth short or obsolete. Petals usually white, occasionally pinkish or purplish, rarely pale yellow, orbicular to obovate, with a narrow inflexed apex. Stylopodium low-conic. Fruit ellipsoid, oblong to suborbicular, dorsally compressed; dorsal ribs filiform, slightly prominent, lateral ribs thickened and narrowly winged, wings closely appressed to one another; vittae 1 to several in each furrow, 2 to several on commissure. Seed face plane or slightly concave. Carpophore bipartite.

Between 100 and 200 species: Africa, Asia, Europe; 40 species (33 endemic) in China.

The taxonomy of this widespread, heterogeneous genus has long been problematic. The broad circumscription of *Peucedanum* adopted here includes some 100–120 species from many parts of the Old World that are weakly united by basic (especially external) fruit structure. These fruit characters are undoubtedly the result of several lines of convergent evolution, and some authors prefer to recognize several segregate genera and reduce *Peucedanum* to only 8–10 Eurasian species based around the nomenclatural type, *P. officinale* Linnaeus. As the taxonomy of this genus is still unresolved (it is currently the focus of an international, multi-disciplinary study), a traditional treatment is adopted for the following account. Several Chinese taxa are represented by only a few herbarium specimens, a few (particularly species nos. 32–40) are recorded only from the type gatherings, and specific boundaries are not always clear. The Chinese members of this genus would benefit from a detailed revision augmented with new collections. The following key excludes *P. lhasense* (species no. 40) because there are insufficient data.

- 1a. Calyx teeth obsolete or inconspicuous.
- 2a. Bracts several or numerous, persistent.
- 3a. Plants small, 5–20 cm, acaulescent; peduncles numerous; scapiform.
- 4a. Leaf blade 2–3-pinnate; bracteoles entire fruit hispid (Xizang) 2. *P. nanum*
- 4b. Leaf blade 3–4-pinnatisect; bracteoles pinnate; fruit glabrous (Yunnan) 3. *P. acaule*
- 3b. Plants tall, more than 20 cm, caulescent.
- 5a. Plants 50–100 cm; leaf blade 3-pinnately dissected, 3-lobed or 2-ternate.
- 6a. Ultimate segments of leaves linear, entire; fruit vittae 1 in each furrow, 2 on commissure (Heilongjiang, Jilin) 1. *P. elegans*
- 6b. Ultimate segments of leaves ovate or ovate-rhombic; fruit vittae 1–2 in each furrow, 2–4 on commissure (Guangxi, Jiangxi) 11. *P. longshengense*
- 5b. Plants 20–50 cm; leaf blade 1–2-pinnate.
- 7a. Bracteoles pinnate; fruit vittae (1–)2–3 in each furrow, 4–6 on the commissure (Yunnan) 4. *P. delavayi*
- 7b. Bracteoles entire; fruit vittae 1(–2) in each furrow, 2 on the commissure (Sichuan).
- 8a. Bracts large, 3-lobed or pinnate; fruit glabrous (N Sichuan) 12. *P. songpanense*
- 8b. Bracts small, undivided; fruit pubescent (W Sichuan) 32. *P. torilifolium*
- 2b. Bracts usually absent or few bracts and falling early.
- 9a. Stem stout, hollow.
- 10a. High altitude (above 2500 m) plants, leaves green; fruit ca. 8 × 6 mm, glabrous; vittae large, 1 in each furrow, 2 on commissure (SW China) 5. *P. angelicoides*
- 10b. Coastal plants, leaves glaucous; fruit to 6 × 4 mm, pubescent; vittae small, 3–5 in each furrow, 6–10 on commissure (E, S, and SE China) 13. *P. japonicum*
- 9b. Stem stout or slender, solid.
- 11a. Ultimate segments of leaves narrow, linear, less than 0.5 mm wide.
- 12a. Synflorescence many-branched, corymbose; fruit vittae 1 in each furrow, 2 on the commissure (NE China) 6. *P. stepposum*
- 12b. Synflorescence little-branched; fruit vittae 2–3 in each furrow, 6 on the commissure.
- 13a. Rays 3–6; lateral wings of fruit very narrow (Sichuan) 33. *P. veitchii*
- 13b. Rays 10–15; lateral wings of fruit broad (Nei Mongol) 34. *P. pricei*
- 11b. Ultimate segments of leaves variously shaped, more than 4 mm wide.
- 14a. Leaf blade 3–4-pinnate; petiole 15–33 cm.
- 15a. Bracteoles 8–12, ovate-lanceolate (Chongqing) 8. *P. wulongense*
- 15b. Bracteoles less than 7, linear or subulate.
- 16a. Rays 12–16; umbellules 10–20-flowered (Chongqing, Hubei) 7. *P. dielsianum*
- 16b. Rays 5–7; umbellules 5–10-flowered (SW China) 35. *P. chinense*

- 14b. Leaf blade 1–2-ternate or 2–3-pinnate; petioles 3–15 cm.
- 17a. Leaf blade narrowly ovate; ultimate segments narrow, linear, oblanceolate or obovate, 1–2.5 × 0.5–1 cm (Gansu, Sichuan) 9. *P. turgeniifolium*
- 17b. Leaf blade triangular-ovate or broadly triangular; ultimate segments usually large, rhombic-obovate or long-ovate, 1.5–7 × 1.2–5 cm.
- 18a. Leaflets sharply serrate with setaceous teeth; bracteoles longer than flowers; fruit densely hispid (S and SE China) 10. *P. formosanum*
- 18b. Leaflets coarsely toothed or crenate-dentate; bracteoles shorter than flowers; fruit sparsely puberulent (widespread in China) 14. *P. praeruptorum*
- 1b. Calyx teeth conspicuous.
- 19a. Lateral wings of fruit very narrow, less than 1/3 width of the body, thick.
- 20a. Leaf blade 1- to several-pinnate or pinnately dissected.
- 21a. Leaf dissection diffuse; ultimate segments of basal leaves linear elongate, usually 3–10 × 0.1–0.3 cm; flowers pale yellow (Xinjiang) 31. *P. morisonii*
- 21b. Leaf dissection compact; ultimate segments of basal leaves much shorter and broader; flowers white.
- 22a. Stems many, often diffuse-caespitose; fruit vittae 1–2 in each furrow, 2 on commissure (N China) 17. *P. caespitosum*
- 22b. Stems several or solitary, not diffuse-caespitose; fruit vittae (1–)2–4 in each furrow (2–)4–6 on commissure (SW China).
- 23a. Leaf sheath auriculate at apex; bracts 2–3, unequal, occasionally pinnate; rays 12–20; bracteoles 6–8, linear, undivided or 3-incised to pinnate (Sichuan, Yunnan) 19. *P. macilentum*
- 23b. Leaf sheath not auriculate at apex; bracts 6–10, linear, equal; rays 24–40; bracteoles 10, linear or linear-lanceolate (Sichuan, Yunnan) 20. *P. rubricaulis*
- 20b. Leaf blade ternate-1–2-pinnate or 2–3-ternate.
- 24a. Basal leaves densely pubescent on both surfaces; rays 10–15, densely tomentose or hispid all round (Sichuan, Yunnan) 18. *P. pubescens*
- 24b. Basal leaves glabrous sparsely pubescent; rays 5–8 or 15–34, inner faces pubescent or glabrous, outer faces glabrous.
- 25a. Umbels small, 1–4 cm across; rays less than 2 cm (Anhui, Jiangsu, Shandong) 16. *P. wawrae*
- 25b. Umbels large, 8–15 cm across; rays more than 5 cm.
- 26a. Rays 15–34; bracteoles 10–16 (Shaanxi) 15. *P. ampliatum*
- 26b. Rays 5–6; bracteoles absent (Hubei) 36. *P. henryi*
- 19b. Lateral wings of fruit rather broad, thin, ca. 1/3 as wide as body.
- 27a. Bracts 3–10, persistent.
- 28a. Bracteoles pinnate (NE China) 37. *P. piliferum*
- 28b. Bracteoles linear, entire (Henan, Shaanxi) 38. *P. ledebourielloides*
- 27b. Bracts absent, occasionally few but falling early.
- 29a. Leaf blade 2–3-ternate, rarely 2-pinnate; primary umbels large, 7–15 cm across (C and S China) 30. *P. medicum*
- 29b. Leaf blade 1- to several-pinnate or pinnately dissected; primary umbels smaller, usually less than 7 cm across.
- 30a. Rays roughened or pubescent on all sides, or glabrous.
- 31a. Whole plant glabrous; ultimate segments of leaves elongate-linear (Xinjiang) 24. *P. falcaria*
- 31b. Plant puberulent, at least around nodes and rays; ultimate segments of leaves not elongate-linear.
- 32a. Stem solid, with pith (Guangxi) 28. *P. mshanense*
- 32b. Stem hollow.
- 33a. Fruit vittae 3–4 in each furrow, 8 on commissure (Xizang) 27. *P. violaceum*
- 33b. Fruit vittae 1 in each furrow, 2 on commissure (Yunnan) 39. *P. yunnanense*
- 30b. Inner faces of rays strigose or pubescent, outer faces glabrous.
- 34a. Leaf blade 2–3-pinnately dissected; ultimate segments small, linear and entire (N and NE China) ... 23. *P. baicalense*
- 34b. Leaf blade 1–4-pinnate or pinnately dissected; ultimate segments large, ovate, rhombic, obovate or ovate-lanceolate.
- 35a. Fruit vittae 1 in each furrow, 2–4 on commissure.
- 36a. Plants large, 30–120 cm; stem solid, with pith; leaf blade 2–3-pinnate/pinnatifid (N and NE China) 21. *P. terebinthaceum*
- 36b. Plant small, 20–30 cm; stem hollow; leaf blade pinnate (Yunnan) 22. *P. franchetii*
- 35b. Fruit vittae 1–4 in each furrow, 4–10 on commissure.
- 37a. Fruit large, 6–8 × 3.5–4.2 mm, glabrous (Chongqing, Guizhou, Sichuan) 25. *P. dissolutum*
- 37b. Fruit smaller 4–5 × 3–4 mm, pubescent.
- 38a. Leaf blade broadly triangular-ovate, 3-pinnate/pinnatifid, pubescent (sometimes sparsely), papery (N, NE, and NW China) 26. *P. harry-smithii*

38b. Leaf blade ovate-oblong, 2-pinnate, glabrous, thinly coriaceous (Guangxi) 29. *P. guangxiense*

1. *Peucedanum elegans* Komarov, Trudy Imp. S.-Peterburgsk. Bot. Sada 18: 430. 1900.

刺尖前胡 ci jian qian hu

Kitagawia komarovii Pimenov.

Plants 70–80 cm. Stem solitary, glabrous. Basal leaf blade ovate-oblong, 8–10 × 6–8 cm, 3-pinnatisect, both surfaces glabrous; ultimate segments linear, 4–20 × ca. 1 mm, entire, apex spinose-apiculate; petiole sheath narrow. Cauline leaves reduced upwards, less divided, upper leaves 3-lobed or reduced to sheath, linear. Synflorescence subcorymbosely branched; umbels 5–7 cm across; bracts numerous, lanceolate, 8–12 × 1–1.2 mm, apex caudate; rays 20–25, 2–3 cm, rigid, inner faces strigose; bracteoles 7–9, linear-lanceolate, slightly shorter than or equaling flowers; umbellules ca. 20-flowered. Calyx teeth inconspicuous or obsolete. Petals white or purplish-tinged, obovate-orbicular. Styles short. Fruit oblong-ellipsoid, 3–4 × 2–2.5 mm, smooth; dorsal ribs filiform, slightly prominent, lateral ribs broadly winged; vittae 1 in each furrow, 2 on commissure. Fl. and fr. Jul–Sep.

Sparse *Acer* forests, valley sides, stony mountain slopes; 300–800 m. S Heilongjiang (Shangzhi), S Jilin (Antu, Changbai, Hunchun) [Japan, Korea, Russia].

2. *Peucedanum nanum* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 18: 377. 1980.

矮前胡 ai qian hu

Plants 15–20 cm, hispid throughout, acaulescent, scapiform. Basal leaves sessile, with broad long-ovate sheaths; leaf blade ovate-oblong, 2–3-pinnate/pinnatisect, pinnae 3–6 pairs; ultimate segments linear, 3–5 × ca. 1 mm. Cauline leaves 1–2 or absent, reduced upwards. Umbels 4–9 cm across; peduncles stout, 5–12 cm; bracts 3–5, linear, 6–12 × 0.5–1 mm; rays 8–16, stout, unequal; bracteoles 5–10, linear; umbellules 10–20-flowered. Calyx teeth obsolete or inconspicuous. Petals white, obovate, midrib pale yellow, abaxially sparsely pubescent. Anthers purplish-tinged. Styles short. Fruit ovoid, 3.5–4 × 2.5–3 mm, apex purplish, squamose-pubescent; dorsal ribs prominent, densely hispid, lateral ribs narrowly winged; vittae 3–4 in each furrow, 6 on commissure. Fl. and fr. Aug–Sep.

• Dry mountain slopes; 3500–3800 m. S Xizang (Lhasa, Xigazê).

3. *Peucedanum acaule* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 24: 308. 1986.

会泽前胡 hui ze qian hu

Plants 5–10 cm, acaulescent, scapiform. Leaves numerous sessile or subsessile, with broad sheaths; leaf blade ovate-oblong, 3–4-pinnate/pinnatisect; pinnae 4–7 pairs; ultimate segments linear, 1–2.5 × 0.4–1 mm, adaxially glabrous, abaxially roughened and tomentose, margin narrowly reflexed. Umbels numerous; peduncles stout, 2–7 cm, scaly-tomentose, especially toward the apex; bracts 2–6, linear, entire or pinnate, about half as long as the rays; rays 5–12, unequal, 0.8–2.5 cm, inner faces white scaly-tomentose; bracteoles 6–8, longer than flowers,

pinnate, ultimate segments 1–4 × ca. 0.3 mm, white puberulent; umbellules 12–18-flowered. Petals white or purplish, ovate-oblong. Anthers dark purple. Fruit oblong-ovoid, 3–4 × 2–2.5 mm, glabrous; lateral ribs narrowly winged, wings thickened; vittae 1–3 in each furrow, 6 on commissure. Fl. and fr. Sep.

• Alpine meadows; ca. 3500 m. NE Yunnan (Huize).

4. *Peucedanum delavayi* Franchet, Bull. Soc. Philom. Paris, sér. 8, 6: 143. 1894.

滇西前胡 dian xi qian hu

Sinodielsia delavayi (Franchet) Pimenov & Kljuykov.

Plants 20–50 cm. Stems several, erect, grayish-purple, distally fluted, puberulent; caudex stout, densely clothed with fibrous remnant sheaths. Basal leaves numerous; leaf blade ovate-oblong, 2-pinnate, pinnae 3–4 pairs; basal pinnae shortly petiolulate, others sessile; ultimate segments ovate to linear, 6–10 × 3–6 mm, 1–3-toothed, apex mucronate, pubescent abaxially on rachises and veins. Cauline leaves reduced upwards; petioles wholly sheathing. Umbels terminal, 6–10 cm across; peduncles densely hispid; bracts 3–4, linear, lanceolate or pinnate; rays 6–15(–24), subequal, 2–5 cm, hirsute; bracteoles 4–7, longer than flowers, pinnate; ultimate segments linear-lanceolate, hirsute. Calyx teeth absent. Petals white, obovate. Styles short. Fruit ellipsoid, ca. 4 × 2.5 mm; lateral ribs narrowly winged, wings slightly thickened; vittae (1–)2–3 in each furrow, 4–6 on commissure. Fl. Jul–Aug, fr. Aug–Sep.

• Mountain slopes, grasslands, rock crevices; 2600–3400 m. NW Yunnan (Eryuan, Lijiang).

This poorly known species is recorded only from a few collections. Its taxonomic placement is not fully resolved, and some authors consider it to be synonymous with *Sinodielsia yunnanensis* (*Meeboldia yunnanensis* in the present account).

5. *Peucedanum angelicoides* H. Wolff, Repert. Spec. Nov. Regni Veg. 27: 313. 1929.

芷叶前胡 zhi ye qian hu

Plants stout, to 1 m. Stem hollow, fluted above especially around nodes. Petioles pubescent, broadly sheathing; leaf blade broadly triangular-ovate, 2–3-ternate, ultimate segments large, hispid on rachises and veins, especially abaxially, base cuneate, irregularly doubly serrate, terminal segments elliptic, 3–6 × 2–4 cm, lateral segments often oblique-ovate, 1.5–3.5 × 1–2.5 cm. Leaves reducing upwards. Umbels 8–12 cm across; peduncles stout; bracts absent or 1, ovate-lanceolate; rays 10–15, 1.5–5 cm, unequal, tomentose; bracteoles several, linear-lanceolate, longer than flowers; umbellules 10–18-flowered. Calyx teeth obsolete. Styles short. Petals white. Fruit ellipsoid, ca. 8 × 6 mm, glabrous; dorsal ribs prominent, rounded, lateral ribs broadly winged; vittae very large, 1 in each furrow, 2 on commissure, very large. Fl. and fr. Aug–Sep.

• Forest margins, scrub; 2500–3000 m. SW Guizhou (Xingyi), NC and SW Sichuan (Lixian, Muli), NW Yunnan (Dêqên, Zhongdian).

6. *Peucedanum stepposum* Y. Huei Huang, Fl. Pl. Herb. Chin.

Bor.-Orient. 6: 294. 1977.

草原前胡 cao yuan qian hu

Plants 30–60 cm. Basal leaves numerous; leaf blade broadly ovate in outline, 3-pinnatisect, glabrous; pinnae 4–6 pairs, sessile; ultimate segments linear, 7–28 × ca. 0.5 mm, entire, margins narrowly reflexed, apex apiculate. Stem leaves reduced upwards. Synflorescence corymbosely branched; bracts 1–3, lanceolate, deciduous; rays 4–6(–12), unequal, 4-angled, inner faces hispidulous; bracteoles 5–8, linear-lanceolate, apex long-acuminate, scarioso-margined, unequal, often longer than flowers. Calyx teeth inconspicuous. Petals white, obovate. Styles longer than the stylopodium, ca. 1.5 mm. Fruit ovate-ellipsoid, ca. 4 × 2.5–3 mm, glabrous; lateral ribs winged, wings rather thick; vittae large, 1 in each furrow, 2 on commissure. Fl. Aug–Sep, fr. Sep–Oct.

• Grasslands; 100–1300 m. W Heilongjiang (Anda, Zhaodong), W Jilin (Shuangliao, Qian Gorlos), N Liaoning (Faku).

7. *Peucedanum dielsianum* Fedde ex H. Wolff, Repert. Spec. Nov. Regni Veg. 33: 246. 1933.

竹节前胡 zhu jie qian hu

Plants 60–90 cm, essentially glabrous. Rootstock elongate, woody, bearing annular leaf scars. Basal leaves several; petioles rigid; leaf blade broadly triangular, 3-pinnatisect, pinnae 5–7 pairs; ultimate segments ovate-lanceolate (sometimes oblong or linear), base cuneate or decurrent, 1–3-toothed or -lobed, 1–3(–4) × 0.4–1.5 cm, thinly coriaceous, abaxially glaucous. Umbels 4–8 cm across; peduncles stout; bracts absent or occasionally 1–2, linear, membranous; rays 12–26, unequal, 1–4 cm, 4-angled, inner faces scaberulous; bracteoles 2–4, linear or subulate, shorter than flowers; umbellules 10–20-flowered. Calyx teeth obsolete. Petals white. Fruit long-ellipsoid, 3–5 × 2.5–3 mm, glabrous; lateral ribs broadly winged, wings rather thick; vittae 1–2 in each furrow, 4–6 on commissure. Fl. Jul–Aug, fr. Sep–Oct.

• Moist rocky slopes; 600–1500 m. Chongqing, SW Hubei.

The root is used in Chongqing as a regional substitute, known as “zhu jie fang feng,” for the traditional Chinese medicine “fang feng” (see *Saposhnikovia divaricata*).

8. *Peucedanum wulongense* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 24: 309. 1986.

武隆前胡 wu long qian hu

Plants to 1 m, essentially glabrous. Stem solitary, much branched above, branches long and slender. Basal leaf blade broadly triangular-ovate, 3–4-pinnate, pinnae 3–4 pairs; petiole long, 17–33 cm; ultimate segments long-obovate, 1.5–4.5 × 0.4–1.4 cm, base cuneate, 1–2-lobed or toothed towards apex, apex apiculate. Stem leaves reduced upwards, petioles short or wholly sheathing, segments linear or oblanceolate, 10–20 × 3–5 mm. Umbels 1–8 cm across; bracts absent or 2–3, linear, 5–7 × ca. 0.5 mm; rays 8–13, unequal, 4-ridged, sparsely pubescent; bracteoles 8–12, ovate-lanceolate, as long as or slightly longer than flowers. Calyx teeth obsolete. Petals white. Styles short. Fruit oblong-ellipsoid, 3–4 × 2.5–3 mm, glabrous; lateral ribs

winged, wings thick; vittae 2–3 in each furrow, 4 on commissure. Fl. and fr. Aug–Oct.

• Riversides, stony slopes; ca. 600 m. Chongqing.

9. *Peucedanum turgeniifolium* H. Wolff, Acta Horti Gothob. 2: 323. 1926.

长前胡 chang qian hu

Peucedanum pulchrum H. Wolff.

Plants 40–70 cm. Stem solitary, often purplish, erect, puberulent. Basal leaf blade long-ovate in outline, 2–3-pinnate, pinnae 3–4 pairs; petiole 8–15 cm; ultimate segments obovate or oblong, 1–2.5 × 0.5–1.5 cm, abaxially more or less glaucous and hispidulous, base cuneate, 2–4-irregularly-toothed or lobed, margin ciliate. Synflorescence little-branched; peduncles hispid; umbels 2–10 cm across; bracts absent; rays 5–12(–20), 0.3–4 cm, very unequal, pubescent; bracteoles 8–12, linear or lanceolate, longer than flowers, densely pubescent; umbellules 10–20-flowered. Calyx teeth obsolete. Petals white, suborbicular, abaxially pubescent. Styles short. Fruit ovate-ellipsoid, 3–3.5 × 2–3 mm, sparsely puberulous; lateral ribs narrowly winged; vittae 3–4 in each furrow, 6–8(–10) on commissure. Fl. and fr. Jul–Oct. $n = 11^*$.

• Scrub, valley sides, open grasslands; 2000–3600 m. S Gansu (Jone, Tèwo), N Sichuan.

This species has reputed medicinal value.

10. *Peucedanum formosanum* Hayata, Icon. Pl. Formos. 10: 22. 1921.

台湾前胡 tai wan qian hu

Peucedanum terebinthaceum (Fischer ex Treviranus) Ledebour subsp. *formosanum* (Hayata) Kitagawa.

Plant robust, 1–3 m. Stem tomentose in upper parts. Leaf blade broadly triangular, ternate or ternate-pinnate; ultimate segments ovate or long-ovate, irregularly parted or lobed, sharply serrate with setaceous teeth, base cuneate or truncate. Umbels 3–8 cm across; peduncles stout, tomentose; bracts few or absent, linear to lanceolate, 10–15 × 1–2 mm; rays 10–18, 2–4 cm, unequal, densely tomentose; bracteoles 10–12, ovate-lanceolate, caudate or 3-lobed, mostly longer than flowers, abaxially tomentose, margins white-ciliate; umbellules 15–25-flowered. Calyx teeth obsolete or inconspicuous. Petals white. Style short. Fruit oblong-ovate or suborbicular, 3–4 × 2–2.5 mm, densely hispid; lateral ribs winged, wings narrow and thick; vittae 3–5 in each furrow, 7–8 on commissure. Fl. and fr. Jul–Oct.

• Forest margins, grasslands; 600–2000 m. Guangdong, Guangxi, S Jiangxi, C Taiwan (Nantou).

This species has reputed medicinal value.

11. *Peucedanum longshengense* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 24: 306. 1986.

南岭前胡 nan ling qian hu

Plants 60–100 cm. Stem solitary. Basal leaves numerous; leaf blade broadly triangular in outline, ternate or ternate-pinnate, thickly chartaceous; terminal segments often 3-lobed, base

decurent, lateral segments broadly rhombic-ovate, often 2–3-pinnately divided, base rounded or truncate, $2-6 \times 1.5-3.5$ cm, adaxially pubescent along veins, abaxially glabrous, margins irregular dentate, short ciliate. Synflorescence many-branched, umbels 3–7 cm across; peduncles hispid; bracts 1–8, occasionally absent, linear-lanceolate, 0.8–1 cm, abaxially pubescent; rays 14–25, 1.5–4 cm, inner faces white hirsute; bracteoles 6–8, linear, as long as or slightly longer than flowers, abaxially puberulous; umbellules 14–18-flowered. Styles short, reflexed. Fruit oblong-ellipsoid, ca. 6×3 mm, smooth; dorsal ribs filiform, acute prominent, lateral ribs winged; vittae 1–2 in each furrow, 4–6 on commissure, rather large. Fl. and fr. Jul–Sep.

• Forest margins, mountain slopes, grasslands; 800–2100 m. NE Guangxi, S Jiangxi (Shangyou, Xunwu).

12. *Peucedanum songpanense* R. H. Shan & F. T. Pu, Acta Phytotax. Sin. 27: 65. 1989.

松潘前胡 song pan qian hu

Plants 30–40 cm. Stem purplish, unbranched or 1–2-branched above. Leaf blade pinnate (sometimes with 3 leaflets); ultimate segments ovate to long-ovate, $1.5-4 \times 0.5-2$ cm. Cauline leaves reduced upwards, petioles sheathing throughout. Umbels terminal and lateral, loosely compound, terminal umbels often 1–2 branched; umbels 4–9 cm across; bracts 1–8, lanceolate, unequal, $5-50 \times 1-5$ mm, entire, apex 3-lobed or pinnate; rays 8–25, purplish-red, unequal, 2–6 cm; bracteoles linear or lanceolate, unequal, $3-10 \times 0.5-1$ mm; umbellules 8–20-flowered. Pedicels 3–12 mm, unequal. Calyx teeth absent. Petals white, obovate unequal. Styles short. Fruit oblong, $5-7 \times 4-5$ mm; vittae 1 in each furrow, 2 on commissure. Fl. and fr. Sep–Oct.

• Sparse *Betula* forests, margins of cultivated areas; 2800–3000 m. N Sichuan (Songpan).

13. *Peucedanum japonicum* Thunberg in Murray, Syst. Veg., ed. 14, 280. 1784.

滨海前胡 bin hai qian hu

Anethum japonicum (Thunberg) Koso-Poljansky.

Plants stout, (30–)40–70(–100)cm, essentially glabrous. Stem often flexuous. Leaf blade broadly ovate-triangular, to 35×25 cm, thinly coriaceous, 1–2-ternate; leaflets ovate-orbicular, 3-parted, 7–9 cm broad, glaucous; central segments obovate-cuneate, lateral segments oblique-ovate. Umbels (4–)5–10 cm across; bracts 2–3 or absent, ovate-lanceolate, $5-10 \times$ ca. 2 mm, pubescent; rays 15–30, 1–5 cm, unequal, puberulous; bracteoles 8–10, linear-lanceolate, equaling or longer than flowers; umbellules ca. 20-flowered. Calyx teeth obsolete. Petals purple or white, abaxially hispidulous. Styles short. Fruit oblong-ovate or ellipsoid, $4-6 \times 2.5-4$ mm, hirsute, especially on dorsal ribs; lateral ribs winged, wings very thick; vittae small, 3–5 in each furrow, 6–10 on commissure. Fl. Jun–Jul, fr. Aug–Sep.

Coastal areas, seashores; below 100 m. Fujian, Hong Kong, Jiangsu, Shandong, Taiwan, Zhejiang [Japan, Korea, Philippines].

14. *Peucedanum praeruptorum* Dunn, J. Linn. Soc., Bot. 35: 497. 1903.

前胡 qian hu

Plants 10–100 cm. Stem solitary, branched above, branchlets puberulous. Basal leaf blade triangular-ovate, 2–3-ternate; pinnae long-petiolulate, pinnules long-ovate, 3–5-lobed, $1.5-6 \times 1.2-4$ cm, both surfaces glabrous, occasionally puberulous, abaxially nerves prominent, base cuneate, margins irregular serrate, apex acuminate. Synflorescence much-branched; umbels 3.5–9 cm across; bracts absent or few, linear; rays 6–15, unequal, 0.5–4.5 cm, inner faces pubescent; bracteoles 8–12, ovate-lanceolate, shorter than flowers, rough-puberulous; umbellules 15–20-flowered. Calyx teeth obsolete. Petals white. Styles short. Fruit ovoid, ca. 4×3 mm, sparsely pubescent; lateral ribs winged, wings rather thick; vittae 3–5 in each furrow, 6–10 on commissure. Fl. Aug–Sep, fr. Oct–Nov. $n = 11^*$.

• Forest margins, grassy slopes; 200–2000 m. Anhui, Fujian, Gansu, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Zhejiang.

The root is used as the important traditional Chinese medicine “qian hu.”

15. *Peucedanum ampliatum* K. T. Fu, Fl. Tsinling. 1(3): 462. 1981.

天竺山前胡 tian zhu shan qian hu

Plants 6–100 cm. Stem pubescent. Basal leaf blade ternate/1–2-pinnate broadly ovate, both surfaces glabrous; basal pinnules often 2–3-lobed or parted; middle pinnules 3-lobed or undivided, sessile, $6-7 \times 3-4.5$ cm, coarsely serrate; terminal pinnules broadly ovate, $6-7 \times 6.5-8$ cm, 3-parted, base broadly cuneate, decurrent. Upper stem leaves reduced above, 3-dissected, lobules 3-lobed or parted, sharply serrate. Umbels 8–15 cm across; peduncles stout, densely pubescent; bracts absent or few, linear-lanceolate, ca. $15 \times 0.5-1$ mm, puberulous; rays 15–34, unequal, 1–7 cm, densely pubescent; bracteoles 10–16, linear or lanceolate, unequal, abaxially puberulous; umbellules 14–26-flowered. Calyx teeth conspicuous, subulate. Petals white. Styles about twice as long as stylopodium. Fruit ellipsoid, ca. 5×3 mm, densely pubescent; vittae 3 in each furrow, 6–8 on commissure. Fl. and fr. Jul–Sep.

• Grassy slopes; 1600–2000 m. SE Shaanxi (Shanyang).

16. *Peucedanum wawrae* (H. Wolff) Su ex M. L. Sheh in R. H. Shan & M. L. Sheh, Fl. Reipubl. Popularis Sin. 55(3): 149. 1992.

泰山前胡 tai shan qian hu

Seseli wawrae H. Wolff, Repert. Spec. Nov. Regni Veg. 27: 315. 1930.

Plants 30–100 cm. Stem glabrous, dichotomously branching above. Basal leaf blade triangular-orbicular in outline, 2–3-ternate; basal pinnae long-petiolulate; ultimate segments obovate-cuneate, $1.2-3.5 \times 0.8-2.5$ cm, 3-parted, lobed or undivided, abaxially glaucous, both surfaces glabrous, sharply serrate, apex mucronate. Upper leaves reduced, 3-lobed, petioles wholly sheathing, tomentose. Synflorescence branched; umbels 1–4 cm; peduncles tomentose; bracts 1–3 or absent, linear, $3-4 \times 0.5-1$ mm; rays 6–8, unequal, 0.5–2 cm; bracteoles 4–6,

linear, longer than flowers; umbellules ca. 10-flowered. Calyx teeth conspicuous subulate. Petals white. Fruit ovate-orbicular or oblong, ca. 3×1.2 mm, tomentose; vittae 2–3 in each furrow, 2–4 on commissure. Fl. and fr. Aug–Nov. $n = 11^*$.

• Forest margins, grassy slopes; below 500 m. Anhui (Chaohu, Chuxian, Xiaoxian), N and W Jiangsu, Shandong (Tai Shan, Zhifu).

The root is used in Shandong as a regional substitute for the traditional Chinese medicine “qian hu” (see *Peucedanum praeruptorum*).

17. *Peucedanum caespitosum* H. Wolff, Acta Horti Gothob. 2: 323. 1926.

北京前胡 bei jing qian hu

Peucedanum trinioides H. Wolff.

Plants 20–60 cm. Stems several, central stem erect, others ascending-caespitose, much branched, glabrous and purplish. Basal leaves numerous; petioles fluted, with short, broadly ovate scarious-margined sheaths; leaf blade ovate-oblong, 2–3-pinnate/pinnatisect, pinnae 4–7 pairs; ultimate segments narrow, linear, $5–10 \times$ ca. 1 mm, both surfaces glabrous, margins narrowly reflexed. Synflorescence much branched; umbels 2–4 cm across; bracts 3–7, ovate-lanceolate, $4–5 \times 2–3$ mm, broadly scarious-margined; rays 10–12, 1.1–1.5 cm, 4-angled, inner faces hirsute; bracteoles numerous, elliptic-lanceolate, longer than flowers; umbellules 15–20-flowered. Calyx teeth conspicuous. Petals white. Styles moderate, ca. 2 mm. Fruit ovate-ellipsoid, ca. 5×2.5 mm, smooth; dorsal ribs prominent; lateral ribs winged, wings thick, very narrow; vittae 1–2 in each furrow, 2 on commissure. Fl. and fr. Aug–Sep.

• Upland stony areas; 1300–2500 m. Hebei.

18. *Peucedanum pubescens* Handel-Mazzetti, Symb. Sin. 7: 728. 1933.

毛前胡 mao qian hu

Plants 30–70 cm, densely pubescent throughout. Stem solitary, hollow, branches few, short and stout. Basal leaves few; petioles with broadly scarious-margined sheaths; leaf blade triangular-ovate in outline, $8–10 \times 8–10$ cm, 2–3-ternate, pinnae sessile or subsessile; ultimate segments obovate, $1–4.5 \times 0.8–2$ cm, rather thick, both surfaces tomentose, more densely so on abaxial nerves, coarsely serrate or crenate, base cuneate or truncate. Leaves reduced upwards, uppermost very small, 3-lobed or toothed, petioles wholly sheathing. Synflorescence subcorymbosely branched; umbels 2.5–4 cm across; peduncles angled; bracts 6–8, linear-lanceolate; rays 10–15, subequal, 1–2 cm; bracteoles 5–7, linear-lanceolate, longer than flowers; umbellules ca. 10-flowered. Calyx teeth subulate. Petals white. Styles long, ca. 2 mm. Fruit ovoid or obovate-orbicular, ca. 4×3 mm, hispid; vittae large, 2–3 in each furrow, 6 on commissure. Fl. and fr. Aug–Oct.

• Alpine meadows; 1900–3000 m. SW Sichuan (Huili, Miyi), Yunnan (Lufeng, Luquan, Wuding).

19. *Peucedanum macilentum* Franchet, Bull. Soc. Philom. Paris, sér. 8, 6: 142. 1894.

细裂前胡 xi lie qian hu

Plants 30–70 cm. Stems solitary or several, not caespitose, branched above, branches hollow, puberulous, nodes densely tomentose. Basal leaves numerous; petioles 5–10 cm, sheaths large, purplish, apex broadly auriculate, often pubescent and scarious-margined; leaf blade triangular-ovate in outline, 3–4-pinnatisect, pinnae 5–6 pairs; ultimate segments linear or obovate-cuneate, $1.5–3 \times 0.8–1.2$ mm. Inflorescences terminal; umbels 4–7 cm across; bracts 2–3, linear, entire or occasionally 3-lobed; rays 12–20(–30), 2–3 cm, slender, inner faces sparsely pubescent; bracteoles 6–8, linear, 3-lobed or pinnate, pubescent; umbellules 12–16-flowered. Calyx teeth conspicuous, lanceolate. Petals white, obovate. Styles short. Fruit ovoid-ellipsoid, ca. 3×2 mm; dorsal ribs prominent, lateral ribs narrowly winged; vittae 1–2 in each furrow, 4 on commissure. Fl. and fr. Aug–Sep.

• Grassy places on mountain slopes; 3000–4200 m. SW Sichuan (Miyi, Yanyuan), NW Yunnan (Heqing, Tengchong, Weixi).

20. *Peucedanum rubricaulis* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 24: 305. 1986.

红前胡 hong qian hu

Plants 30–80 cm. Taproot and rootstock stout, reddish-brown. Stem solitary, erect, purplish, hollow, pubescent. Basal petioles with purplish, puberulous and scarious-margined sheaths, not auriculate at apex; leaf blade triangular-ovate, 3-pinnatisect; pinnae 3–5 pairs, pinnules 3–4 pairs; ultimate segments linear, $3–10 \times 1–1.6$ mm, both surfaces glabrous, apex mucronate. Umbels 5–10 cm across; bracts 6–10, linear, $10–15 \times$ ca. 0.5 mm, puberulous; rays numerous, 24–40, subequal, 3–5 cm; bracteoles ca. 10, linear-lanceolate; umbellules ca. 20-flowered. Calyx teeth conspicuous, triangular, acute. Fruit ellipsoid, $4–6 \times 3–4$ mm, glabrous; dorsal ribs slightly prominent, lateral ribs narrowly winged, wings rather thick; vittae 1–2(–3) in each furrow, 4–6 on commissure. Fl. Jul–Aug, fr. Sep–Oct.

• Scrub, grassy slopes, rock crevices; 2000–3000 m. S Sichuan, NW Yunnan.

21. *Peucedanum terebinthaceum* (Fischer ex Treviranus) Ledebour, Fl. Ross. 2: 314. 1844.

石防风 shi fang feng

Plants 30–120 cm. Stem puberulous above. Basal leaf blade elliptic or triangular-ovate, 2-pinnate/pinnatisect; pinnae 3–5-paired; ultimate segments lanceolate, $0.8–3 \times 0.5–1.2$ cm, both surfaces glabrous, sometimes pubescent near basal veins, base cuneate, margins lobed or 2–3-toothed. Synflorescence much branched, apex of peduncles hispid; umbels 3–10(–15) cm across; bracts absent or 1–2, linear-lanceolate; rays 8–20(or more), unequal, 4-angled, inner faces hispid, outer faces glabrous; bracteoles 6–10, linear, shorter than flowers. Calyx teeth long-subulate. Petals white, midvein pale yellow. Styles longer than stylopodium. Fruit ellipsoid or ovoid-ellipsoid, $3.5–4 \times 2.5–3.5$ mm, glabrous; dorsal ribs prominent, lateral ribs winged, wings ca. 1 mm, ca. 1/3 width of body, thin; vittae 1 in each furrow, 2 on commissure. Fl. Jul–Sep, fr. Sep–Oct.

Mixed forests, forest margins, scrub, grassy slopes; 200–1200 m. NE Hebei, Heilongjiang, S Jilin, Liaoning, E Nei Mongol (Da Hinggan

Ling) [Japan, Korea, Russia].

- 1a. Leaf blade elliptic to triangular-ovate; ultimate segments lanceolate or ovate-lanceolate 21a. var. *terebinthaceum*
- 1b. Leaf blade broadly triangular-ovate; ultimate segments ovate 21b. var. *deltoideum*

21a. *Peucedanum terebinthaceum* var. *terebinthaceum*

石防风(原变种) shi fang feng (yuan bian zhong)

Selinum terebinthaceum Fischer ex Treviranus, Ind. Sem. Hort. Vratisl. App. 3: 3. 1821; *Kitagawia terebinthacea* (Fischer ex Treviranus) Pimenov; *Peucedanum paishanense* Nakai; *P. terebinthaceum* var. *paishanense* (Nakai) Y. Huei Huang.

Leaf blade elliptic to triangular-ovate; ultimate segments lanceolate or ovate-lanceolate, 0.8–3 × 0.5–1.2 cm. *n* = 11*.

Forest margins, grassy slopes; 200–1200 m. NE Hebei, Heilongjiang (Lebei, Shangzhi), S Jilin (Antu), Liaoning (Anshan, Qian Shan), E Nei Mongol (Da Hinggan Ling) [Russia (Siberia)].

The root is used as a regional substitute for the traditional Chinese medicine “qian hu” (see *Peucedanum praeruptorum*).

21b. *Peucedanum terebinthaceum* var. *deltoideum* (Makino ex Y. Yabe) Makino, Bot. Mag. (Tokyo) 22: 173. 1908.
宽叶石防风 kuan ye shi fang feng

Peucedanum deltoideum Makino ex Y. Yabe, J. Coll. Sci. Imp. Univ. Tokyo 16(4): 99. 1902.

Leaf blade broadly triangular-ovate; ultimate segments ovate, 3–6 × 2–3.5 cm, rather thick and rigid, irregularly coarsely toothed.

Mixed forests, scrub; 200–600 m. NE Hebei (Xinglong), Heilongjiang (Yichun), S Jilin (Antu), Liaoning (Qian Shan) [Japan, Korea, Russia].

22. *Peucedanum franchetii* C. Y. Wu & F. T. Pu, Novon 8: 70. 1998.

异叶前胡 yi ye qian hu

Peucedanum heterophyllum Franchet, Bull. Soc. Philom. Paris, sér. 8, 6: 141. 1894, not Visiani (1836).

Plants 20–30 cm, pallid-green, often purplish-tinged. Stems several, hollow, puberulous above. Leaf blade long-ovate, pinnate, thinly coriaceous, abaxially strongly reticulate, white villous, margins dentate and slightly reflexed; pinnae 1–2 × 0.5–1 cm, 2–3 pairs, lateral pinnae rhombic or oblique-ovate, base cuneate or truncate, apical pinnae ovate, base cuneate, decurrent. Umbels terminal, 2–3 cm across; peduncles elongate, straight, apex villous; bracts absent; rays 8–14, 1–2 cm, 4-angled, inner faces white hispid, outer faces glabrous; bracteoles 8–10, linear, entire or 3-lobed, lobules linear or subulate; umbellules 12–16-flowered. Calyx teeth short, triangular. Petals white. Styles longer than stylopodium. Fruit ovoid-oblong, ca. 3 × 2 mm, glabrous; dorsal ribs prominent, lateral ribs winged, wings ca. 1 mm, ca. 1/3 width of body, thin; vittae 1 in each furrow, 4 on commissure. Fl. and fr. Aug–Oct.

• Alpine meadows in limestone areas; ca. 3000 m. NW Yunnan (Eryuan, Heqing, Lijiang).

23. *Peucedanum baicalense* (I. Redowsky ex Willdenow) W. D. J. Koch, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12(1): 94. 1824.

兴安前胡 xing an qian hu

Selinum baicalense I. Redowsky ex Willdenow, Enum. Pl. 1: 306. 1809; *Kitagawia baicalensis* (I. Redowsky ex Willdenow) Pimenov; *Peucedanum polyphyllum* Ledebour.

Plants 30–100 cm. Stem solitary, erect. Basal leaves numerous; blade oblong, 2–3-pinnatisect; pinnae 4–5 pairs, long-ovate, pinnatisect, pinnules 2–3 pairs; ultimate segments narrowly linear, 2–10 × 0.8–1 mm, both surfaces glabrous, glaucous, entire, apex apiculate, petioles sheathing throughout, rachises pubescent. Leaves reduced upwards, uppermost subulate. Synflorescence corymbosely branched; umbels 3–4(–10) cm across; bracts 1–3, lanceolate, glabrous and scarious; rays 10–15, 1–2(–4) cm, inner face puberulent, outer face glabrous; bracteoles 6–8, linear-lanceolate, white scarious, longer than or about equaling flowers; umbellules 8–10-flowered. Calyx teeth small, acute. Petals white. Styles longer than stylopodium. Fruit ellipsoid, 3–4 × 2.5–3 mm, glabrous; dorsal ribs prominent, lateral ribs winged, wings ca. 1 mm, ca. 1/3 width of body, thin; vittae 1 in each furrow, 2 on commissure. Fl. and fr. Jul–Sep.

Sandy or stony slopes in *Pinus* woods; 200–800 m. Heilongjiang, Nei Mongol [Mongolia, Russia (Siberia)].

24. *Peucedanum falcaria* Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 5: 192. 1832.

镰叶前胡 lian ye qian hu

Plants 40–60, completely glabrous. Stem solitary, usually unbranched, thinly fluted. Basal leaves few; petioles short, sheathing throughout, scarious-margined; leaf blade long-ovate or elliptic, 1–2-pinnate/pinnatisect; pinnae 2–4 pairs, remote; ultimate segments linear-lanceolate, often slightly falcate, 10–35 × 1–3 mm, glaucous-green. Stem leaves few, reduced upwards, blade usually 3-parted. Umbels 3–6 cm across; bracts absent or 1–2, subulate, caducous; rays 7–12, 2.5–4 cm, unequal, glabrous; bracteoles 10–13, lanceolate-linear, unequal, shorter than flowers, scarious-margined; umbellules 15–20-flowered; pedicels unequal. Calyx teeth triangular-lanceolate, acute. Petals white. Stylopodium deep purplish-red; styles longer than stylopodium. Fruit obovoid or ovoid, 5–6 × 4–4.5 mm; dorsal ribs prominent, lateral ribs winged, wings ca. 1 mm, ca. 1/3 width of body, thin; vittae 3 in each furrow, 4–6 on commissure. Fl. Jul, fr. Aug.

Dry grassy slopes; ca. 1900 m. NE Xinjiang (Barkol) [N Mongolia, Russia (Siberia)].

25. *Peucedanum dissolutum* (Diels) H. Wolff, Repert. Spec. Nov. Regni Veg. 21: 246. 1925.

南川前胡 nan chuan qian hu

Angelica dissoluta Diels, Bot. Jahrb. Syst. 29: 499. 1901.

Plants 50–80 cm. Rootstock elongate, annular leaf scars

numerous and prominent, often deep purplish. Stem base purplish and shallowly fluted. Leaf blade triangular-ovate in outline, 2-pinnate; pinnae 4–6 pairs, both surfaces glabrous or occasionally adaxially pubescent on veins, abaxially glaucous, nerves reticulation conspicuous, margins 1–3-lobed, irregularly serrate; pinnules 2–3 pairs; ultimate segments 3–4.5 × 1–3 cm, lateral segments ovate, 2–3-lobed, base round-obtuse, apical pinnules obovate, base cuneate. Synflorescence much branched; umbels 8–12 cm across; bracts absent or 1, linear or ovate; rays 10–23, 3–6 cm, pubescent on inner face; bracteoles 8–14, narrowly ovate or linear, unequal; umbellules ca. 20-flowered. Calyx teeth ovate, small. Petals white. Styles longer than stylopodium. Fruit narrowly ovoid, 6.5–8 × 3.5–4.2 mm, glabrous; dorsal ribs indistinct, lateral ribs winged, wings ca. 1/3 width of body, thin; vittae 1–3 in each furrow, 4–6 on commissure. Fl. and fr. Jun–Sep.

• Forest margins, wet shady rocky slopes; 1100–2200 m. Chongqing, NE Guizhou (Yanhe), SE Sichuan (Hejiang).

26. *Peucedanum harry-smithii* Fedde ex H. Wolff, Repert. Spec. Nov. Regni Veg. 33: 247. 1933.

华北前胡 hua bei qian hu

Plants (30–)60–100 cm. Stem white tomentose, especially above, with fibrous collar. Leaf blade triangular-ovate, ternate-2-pinnate; ultimate segments rhombic-obovate or ovate, 1–4 × 1.2–3 cm, adaxially sparsely pubescent, abaxially roughened, densely pubescent, gray-green. Synflorescence much branched; umbels 2.5–8(–16) cm across; bracts absent or few, linear, ca. 5 mm, deciduous; rays 8–15(–22), 1–3(–10) cm, unequal, inner faces hispid, outer faces glabrous; bracteoles 6–10, lanceolate, unequal, shorter than flowers, densely pubescent; umbellules 12–20-flowered. Calyx teeth small, triangular. Petals white, adaxially finely papillose, abaxially white pubescent. Styles longer than stylopodium. Fruit ovoid-ellipsoid, 4–5 × 3–4 mm, densely hispid; dorsal ribs somewhat prominent, lateral ribs winged, wings ca. 1/3 width of body, thin; vittae 3–4 in each furrow, 6–8 on commissure. Fl. and fr. Aug–Oct.

• Forest margins, valleys, river banks, gaps among rocks in dry valleys, waste places; 300–2600 m. SE Gansu, Hebei, S and W Henan, S Nei Mongol, S Shaanxi, C and NE Shanxi, NE Sichuan.

- 1a. Leaf blade abaxially densely white pubescent, dark gray-green when dry 26a. var. *harry-smithii*
- 1b. Leaf blade abaxially glabrous or sparsely pubescent, yellowish-green when dry.
 - 2a. Umbels small, 3–8(–10) cm across; rays 1–3 cm 26b. var. *subglabrum*
 - 2b. Umbels large, 10–16 cm across; rays 0.5–10 cm 26c. var. *grande*

26a. *Peucedanum harry-smithii* var. *harry-smithii*

华北前胡(原变种) hua bei qian hu (yuan bian zhong)

Peucedanum hirsutiusculum (Y. C. Ma) V. M. Vinogradova; *P. praeruptorum* Dunn subsp. *hirsutiusculum* Y. C. Ma.

Leaf blade abaxially densely white pubescent, dark gray-

green when dry. Umbels small, 3–8(–10) cm across; rays 8–15, 1–3 cm, unequal.

• Forest margins, valleys, river banks; 600–2600 m. SE Gansu (Pingliang), Hebei, W Henan (Lingbao, Luoning), S Nei Mongol (Daqing Shan, Liangcheng), S Shaanxi (Qin Ling), C Shanxi (Taiyuan), NE Sichuan (Guangyuan).

26b. *Peucedanum harry-smithii* var. *subglabrum* (R. H. Shan & M. L. Sheh) R. H. Shan & M. L. Sheh, Fl. Reipubl. Popularis Sin. 55(3): 164. 1992.

少毛北前胡 shao mao bei qian hu

Peucedanum hirsutiusculum var. *subglabrum* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 24: 310. 1986.

Plants including stem, leaves, inflorescence, etc., very sparsely pubescent or subglabrous. Umbels small, 3–8(–10) cm across; rays 8–15, 1–3 cm, unequal.

• Forest margins, waste places; ca. 1000 m. S and W Henan, S Shaanxi (Hu Xian, Shang Xian).

26c. *Peucedanum harry-smithii* var. *grande* (K. T. Fu) R. H. Shan & M. L. Sheh, Fl. Reipubl. Popularis Sin. 55(3): 164. 1992.

广序北前胡 guang xu bei qian hu

Peucedanum praeruptorum var. *grande* K. T. Fu, Fl. Tsinling. 1(3): 463. 1981.

Plant sparsely pubescent. Primary umbel 10–16 cm across; rays 8–22, 0.5–10 cm, very unequal.

• Gaps among rocks in dry valleys; 300–2000 m. W Hebei (Xiaowutai Shan), S Shaanxi, NE Shanxi (Wutai).

27. *Peucedanum violaceum* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 18: 378. 1980.

紫茎前胡 zi jing qian hu

Plants 50–90 cm. Stem solitary, hollow, purplish-tinged, rough-puberulous. Basal leaves numerous, sheaths pubescent; leaf blade ovate, 3–4-pinnatisect; pinnae 4–5-paired; ultimate segments obovate-cuneate, 1.5–5 × 1–2 mm, usually 3-lobed, hispid on both surfaces. Synflorescence much branched, terminal umbel 6–9 cm across, lateral umbels 2–5 cm; bracts absent or 1–2, subulate, deciduous; rays 10–20, unequal, 1–5 cm, sparsely pubescent; bracteoles 8–12, linear-lanceolate, puberulous. Calyx teeth subulate. Petals white. Styles slender, longer than stylopodium. Fruit ellipsoid, 3–4 × 2.5–3 mm; dorsal ribs filiform, prominent, lateral ribs narrowly winged, wings ca. 1/3 width of body, thin; vittae 3–4 in each furrow, 8 on commissure. Fl. and fr. Jul–Sep.

• Sparse forests, grassy places on river banks; 2100–3500 m. SE Xizang (Mainling, Nyingchi).

This species has reputed medicinal value.

28. *Peucedanum mshanense* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 24: 304. 1986.

马山前胡 ma shan qian hu

Plants 40–70 cm. Stem rigid, solid, tomentose near apex.

Basal leaves numerous; leaf blade broadly triangular-ovate, 2–3-pinnatisect/pinnate; pinnae 2–4 pairs, pinnules 1–2 pairs; ultimate divisions long-ovate or long-rhombic, 1–3.5 × 0.3–3 cm, coriaceous, both surfaces glabrous, occasionally tawny tomentose along veins, base cuneate, margins irregularly incised. Upper leaves reduced, 2-pinnatisect; petioles sheathing throughout. Umbels 2–5 cm across; peduncles stout, apex densely tawny tomentose or hispid; bract absent; rays 9–18, spreading widely, 0.8–2 cm, tawny tomentose; bracteoles 4–5, linear-lanceolate, shorter than flowers; umbellules 10–15-flowered. Calyx teeth triangular-subulate. Petals white. Styles longer than stylopodium. Fruit ellipsoid, ca. 4 × 3 mm, dorsal ribs slightly prominent, lateral ribs winged, wing about 1/3 width of body, thin; vittae 3–4 in each furrow, 6 on commissure. Fl. and fr. Aug–Nov.

• Scrub, mountain slopes, rock crevices; ca. 300 m. WC Guangxi (Mashan).

29. *Peucedanum guangxiense* R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 24: 308. 1986 [*“guangxiense”*].

广西前胡 *guang xi qian hu*

Plants 30–80 cm. Rootstock elongate, woody, digitately branched, gray-brown. Stems numerous, rigid, glabrous, without fibrous collar. Basal leaves numerous; blade ovate-oblong, ternate-2-pinnate; pinnae 2–3 pairs; ultimate segments ovate or ovate-orbicular, 2–3-lobed, 1–4 × 0.6–3 cm, both surfaces glabrous, adaxially shiny, irregularly apiculate-serrate. Synflorescence branched; peduncles brown-tomentose; umbels 3–7 cm across; bracts absent or 1 deciduous, linear, membranous; rays 7–13, 4-angled, brown-tomentose on inner faces, glabrous on outside; bracteoles 3–5, linear-lanceolate, unequal, shorter than flowers. Calyx teeth subulate. Petals white, midvein yellowish, abaxially pubescent. Fruit narrowly ellipsoid, 4–5 × 2–2.5 mm, tomentose when young, becoming glabrescent; dorsal ribs somewhat prominent, lateral ribs narrowly winged, wings ca. 1/3 width of body, thin; vittae 3–4 in each furrow, 6–10 on commissure. Fl. Sep–Oct, fr. Oct–Dec.

• Sparse scrub, limestone areas on mountain slopes, rock crevices; ca. 300 m. W Guangxi (Jingxi, Wuming).

30. *Peucedanum medicum* Dunn, J. Linn. Soc., Bot. 35: 496. 1903.

华中前胡 *hua zhong qian hu*

Plants 50–200 cm. Taproot roughened; rootstock stout, gray-brown, often purplish-tinged, annular leaf scars numerous and conspicuous. Leaf blade triangular-ovate in outline, 2–3-ternate, rarely 2-pinnate; pinnae 3 pairs, ternate or pinnate; terminal pinnules ovate-rhombic, 3-lobed, base cuneate, apex long acuminate, lateral pinnules oblique-ovate, 3-lobed or undivided, 2–5 × 1.5–5 cm, abaxially glaucous, margins coarsely toothed. Umbels 7–15(–20) cm across; bracts absent or 1, deciduous; rays 15–30, unequal, pubescent; bracteoles numerous, linear-lanceolate, shorter than the flowers; umbellules 10–30-flowered. Calyx teeth triangular-ovate, ca. 1.2 mm. Petals white. Styles slender, ca. 1.5 mm. Fruit ovoid-ellipsoid, 6–7 × 3–4 mm, tawny or gray-tawny, dorsal ribs slightly prominent, lateral ribs winged, wing ca. 1/3 width of body, thin; vittae 3 in each fur-

row, 8–10 on commissure. Fl. Jul–Sep, fr. Oct–Nov.

• Wet rocky slopes, grassy places; 700–2000 m. Chongqing, N Guangdong, NE Guangxi, E Guizhou, W Hubei, Hunan, W Jiangxi, NE Sichuan.

1a. Plants stout; leaf blade broadly triangular-ovate, subcoriaceous, adaxially shiny ... 30a. var. *medicum*

1b. Plants slender; leaf blade triangular-ovate, narrower and thinner, adaxially not shiny 30b. var. *gracile*

30a. *Peucedanum medicum* var. *medicum*

华中前胡(原变种) *hua zhong qian hu* (*yuan bian zhong*)

Plants tall and stout; leaf blade broadly triangular-ovate in outline, 20–40 × 10–20 cm, subcoriaceous, shiny adaxially.

• Wet rocky slopes, grassy places; 700–2000 m. Chongqing, N Guangdong (Lian Xian), NE Guangxi (Guanyang), E Guizhou (Zhenyuan), W Hubei (Badong, Jianshi), Hunan (Jishou, Shaoyang), W Jiangxi (Lianhua, Wugong Shan), NE Sichuan (Wanyuan).

The root is used in Hebei as a regional substitute for the traditional Chinese medicine “qian hu” (see *Peucedanum praeruptorum*).

30b. *Peucedanum medicum* var. *gracile* Dunn ex R. H. Shan & M. L. Sheh, Acta Phytotax. Sin. 24: 310. 1986.

岩前胡 *yan qian hu*

Plants slender; leaf blade triangular-ovate in outline, 14–25 × 7–12 cm, narrower and thinner, not shiny adaxially.

• Wet rocky slopes, grassy places; ca. 1100 m. Chongqing, SW Hubei (Hefeng, Lichuan).

31. *Peucedanum morisonii* Besser ex Sprengel in Roemer & Schultes, Syst. Veg. 6: 567. 1820 [*“morisoni”*].

准噶尔前胡 *zhun ga er qian hu*

Plants 5–130 cm. Stem glabrous. Basal leaf blade broadly triangular in outline, ternate/3–4-pinnatisect; ultimate segments elongate, narrowly linear, (1–)3–10 × 0.1–0.3 cm, glabrous. Stem leaves less divided than basal, upper leaves with bladeless, lanceolate sheaths. Umbels 5–15 cm across; bracts 3–7, subulate to linear, unequal; rays 15–25(–30), unequal, spreading in flower, becoming rigidly contracted; bracteoles 5–13, linear to subulate, unequal, shorter than flowers; umbellules 25–30-flowered. Calyx teeth conspicuous, triangular. Petals pale yellow, elliptic, with a narrowly inflexed apex. Stylopodium styles short. Fruit ellipsoid, 8–9 × 4–5 mm; dorsal ribs filiform, slightly prominent, lateral narrow-winged; vittae 1 in each furrow, 2 on commissure. Fl. Jul–Aug, fr. Aug–Sep.

Scrub, grassy places; 1200–1700 m. N Xinjiang [Kazakhstan, Russia (Siberia)].

The following nine species are incompletely known and their treatment here is tentative. In many cases these species are recorded only from a few rather poor collections, often the type gathering only.

32. *Peucedanum torilifolium* H. de Boissieu, Bull. Herb. Boissier, sér. 2, 3: 852. 1903.

窃衣叶前胡 *qie yi ye qian hu*

Plants to 50 cm. Stem terete, lower parts densely retrorse-villous. Basal leaves numerous, villose; petiole elongate; leaf blade lanceolate-linear, 2-pinnate, ultimate segments lanceolate, base cuneate, slightly crispate, entire or rarely parted. Peduncle elongate, glabrous; bracts numerous, small; rays 5–12, crispate-pubescent; bracteoles linear, longer than pedicels. Calyx teeth obsolete. Petals white, elongate. Fruit ovoid, pubescent; dorsal and intermediate ribs slightly prominent, lateral ribs broadly winged; vittae 1(–2) in each furrow, 2 on commissure, sometimes extending only part-way to base of the mericarp. Fl. and fr. Jul–Sep.

• Forest margins and roadsides on mountain slopes. W Sichuan (Kangding).

This species is recorded only from the holotype (*J. A. Soulié s.n.*, P).

33. *Peucedanum veitchii* H. de Boissieu, Bull. Soc. Bot. France 53: 436. 1906.

华西前胡 hua xi qian hu

Plants glabrous throughout, pale green. Stem slender, many-branched. Lower leaves long-petiolate, sheaths slightly dilated; leaf blade triangular, 2-pinnate; pinnae pinnatifid, with 2–7 narrow linear segments, thinly coriaceous. Segments of stem leaves much longer than those of basal leaves, upper leaves 1–3-divided, petioles wholly sheathing. Synflorescence little-branched; peduncles elongate; bracts absent; rays 3–6, rigid, unequal; bracteoles 8–10. Pedicels very short. Calyx teeth obsolete. Petals white, broadly obovate. Fruit ellipsoid, small; dorsal ribs filiform, obtuse, lateral ribs narrowly winged, closely appressed to one another; vittae 3 in dorsal furrow, 2–3 in lateral furrows, 6 on commissure. Fl. and fr. Jul–Sep.

• Mountain slopes; ca. 2900 m. N Sichuan (Songpan).

This species is recorded only from the holotype (*E. H. Wilson 3705*, P).

34. *Peucedanum pricei* N. D. Simpson, J. Linn. Soc., Bot. 41: 419. 1913.

蒙古前胡 meng gu qian hu

Plants ca. 50 cm, glabrous. Rootstock stout. Stem solitary, shallowly fluted above. Basal leaves 6–12 cm; petioles ca. 3 cm, sheaths dilated; blade 2-pinnate, pinnae 3-paired, 2–3-pinnatifid; ultimate segments narrowly lanceolate or linear, acute, 10–15(–20) × 1–2 mm. Stem leaves few, reduced above. Bracts 1(–2), linear, ca. 4 mm; rays 10–15, fluted, unequal, up to 3.2 cm; bracteoles numerous, linear, ca. 4.5 mm, unequal, scarious-margined; umbellules numerous-flowered. Pedicels ca. 1 cm. Calyx teeth obsolete. Petals white, broadly spoon-shaped, with a inflexed apex. Fruit obcordate, ca. 5.5 × 4 mm, lateral wings white, ca. 1 mm broad; vittae 2–3 in each furrow, 6 on commissure. Fl. and fr. Jul–Sep.

Grasslands. Nei Mongol [N and W Mongolia].

35. *Peucedanum chinense* M. Hiroe, Umbell. World, 1572. 1979 [“*chinensis*”].

林地前胡 lin di qian hu

Peucedanum diversifolium H. Wolff, Repert. Spec. Nov. Regni Veg. 33: 247. 1933, not Bentham & J. D. Hooker (1867).

Basal leaf blade broadly rhombic, 4-pinnatisect; pinnae 7–9 pairs, long-petiolulate, lower pinnae broadly ovate-lanceolate, with 6 pairs of pinnules; pinnules with divisions in 3–4 pairs, subdecussate, ultimate segments lanceolate-linear, 3–4-parted or -lobed, 3–4 × ca. 1 cm, thin, papery, acute, mucronate; distal pinnae smaller and less divided. Leaves reducing upwards to a bladeless leaf, petioles wholly sheathing. Umbels few; peduncles elongate and erect; bracts absent; rays 5–7, unequal, ca. 3 cm, roughened; bracteoles few, linear, short and acute; umbellules 5–10-flowered. Calyx teeth obsolete. Styles short. Fruit ellipsoid; lateral ribs narrow-winged; vittae 1–3 in each furrow, 4–6 on commissure. Fl. and fr. unknown.

• Forests. W Sichuan.

This species is recorded only from the type gatherings (*Wilson 3671 & 3705*).

36. *Peucedanum henryi* H. Wolff, Repert. Spec. Nov. Regni Veg. 33: 248. 1933.

鄂西前胡 e xi qian hu

Plants to 50 cm. Stem rigid, hollow, sparingly branched, branches slender and elongate. Basal leaves small; petioles about equaling leaf blades, sheaths very short; leaf blade 3-ternate, pinnae long-petiolulate; pinnules sessile or subsessile, cuneate-obovate or ovate, ca. 20 × 14 mm, abaxially glaucous, parted or lobed. Synflorescence little-branched; peduncles equaling rays; bracts absent; rays 5–6, unequal, spreading in fruit; bracteoles absent; umbellules ca. 20-flowered; pedicels filiform, subequal. Calyx teeth conspicuous, small. Petals yellowish, oblong, with a narrow and very inflexed apex. Styles long. Mature fruit unknown, developing fruit ellipsoid, smooth; dorsal ribs filiform, lateral ribs narrowly winged; vittae 3–4 in each furrow, 4 on commissure. Fl. Jul.

• Mountain slopes. W Hubei (Yichang).

This species is recorded only from the holotype (*A. Henry 3604*, K).

37. *Peucedanum piliferum* Handel-Mazzetti, Oesterr. Bot. Z. 82: 252. 1933.

乳头前胡 ru tou qian hu

Kitagawia pilifera (Handel-Mazzetti) Pimenov.

Plants ca. 45 cm. Stem terete, hollow, glabrous. Basal leaf petioles ca. 8 cm; leaf blade ovate in outline, 3–4-pinnate, ca. 11 × 8 cm; pinnae 6 pairs, sessile, remote; ultimate segments linear-oblong, 1.5–7 × ca. 1 mm, rather thick, apex obtuse. Peduncles ca. 6.5 cm; bracts ca. 10, linear, very acute, about equaling rays, margins pale tawny; rays 20, ca. 3 cm, rays and pedicels densely papillose-pubescent; bracteoles 12, pinnately lobed, pubescent, exceeding flowers; umbellules ca. 30-flowered, pedicels ca. 7 mm in fruit. Calyx teeth conspicuous, small. Ovary papillose. Styles slender. Mature fruit unknown. Fl. and fr. Jul–Sep.

• Grassy slopes at forest margins. NE China.

This species is recorded only from the holotype (*Fenzl 352*, unlocalized).

38. *Peucedanum ledebourielloides* K. F. Fu, Fl. Tsinling. 1(3): 463. 1981.

华山前胡 hua shan qian hu

Plants 40–90 cm, essentially glabrous. Basal leaves numerous, oblong-ovate, 2-pinnate or pinnatisect, 10–20 cm; pinnae petiolulate, 5–6 pairs, pinnules 1–2 pairs, ovate, 3-lobed or parted, lobules acute, apiculate. Stem leaves reduced upwards. Synflorescence copiously dichotomously branched; umbels 1–2.5 cm across; peduncles 4–10 cm, granular-roughened or hispidulous; bracts 3–4, linear-lanceolate, 1–3 mm; rays 3–5, 2–4 cm; bracteoles 2–5, linear, 1–2 mm; umbellules 3–8-flowered, pedicels 1–2 mm. Calyx teeth triangular, minute. Petals white, obovate. Ovary pulverous-hispid. Fruit obovate-oblong, 4–5

mm, granular-hispidulous; dorsal ribs filiform, prominent, lateral ribs narrowly winged, wings thin; vittae 1 in each furrow, 2 on commissure. Fl. Aug–Sep, fr. Oct.

• Rock crevices or sandy places in mountain valleys; 400–1000 m. W Henan (Lingbao), SE Shaanxi (Hua Shan).

The root is used in Shaanxi as a regional substitute for the traditional Chinese medicine “fang feng” (see *Saposhnikovia divaricata*).

39. *Peucedanum yunnanense* H. Wolff, Repert. Spec. Nov. Regni Veg. 21: 247. 1925.

云南前胡 yun nan qian hu

Herbs stout. Stem hollow, slightly roughened, little-branched, hispidulous. Basal leaves numerous, very remote. Cauline leaves 2–3-pinnatisect; ultimate segments lanceolate, entire or finely serrate, apex acute, sessile, petioles wholly sheathing, sheaths very broad. Umbels with long peduncles, hispidulous; bracts absent; terminal umbel with rays ca. 25, ca. 4 cm, subequal, pulverous-roughened; bracteoles numerous, narrow-linear, longer than flowers; umbellules ca. 30-flowered, pedicels unequal, ca. 10 mm, roughened. Calyx teeth conspicuous. Developing fruit ellipsoid (mature fruit unknown); dorsal ribs slightly prominent, lateral ribs thinly winged; vittae 1 in each furrow, (2–)2–4 on commissure. Fl. and fr. Jul–Sep.

• Mountain slopes; ca. 2000 m. Yunnan (Kunming).

This species is recorded only from the holotype (*Cavalerie s.n.*, P).

40. *Peucedanum lhasense* C. B. Clarke ex H. Wolff, Repert. Spec. Nov. Regni Veg. 33: 249. 1933.

拉萨前胡 la sa qian hu

Stem slender, branched above. Basal leaves shortly petiolate; blade ternate-2-pinnate, pinnae 5–6, pinnately lobed; ultimate segments narrowly lanceolate, to 25 × 4 mm, shortly acuminate, margin scabrous. Upper leaves reduced upwards. Bracts absent; rays ca. 10, to 7 cm, slender, divaricate; bracteoles absent. Styles shorter than stylopodium. Mature fruit unknown. Fl. Aug.

• Hillsides. Xizang (Lhasa).

This species is recorded only from the holotype (Xixang: hills above Lhasa, Aug 1904, *Walton s.n.*, K) and has not been included in the key because data are deficient.

