34. BUPLEURUM Linnaeus, Sp. Pl. 1: 236. 1753.

柴胡属 chái hú shǔ

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

Herbs perennial, rarely annual, glabrous. Rootstock usually short, woody. Stem alternate or dichotomously branched, green or glaucous, base with or without fibrous remnant sheaths. Leaves entire, petioles sheathing; blade membranous, herbaceous or coriaceous, usually with parallel venation, base usually tapering into petiole. Cauline leaves often sessile, clasping, auriculate or perfoliate. Inflorescence loose, umbels compound, terminal and lateral; bracts several, conspicuous, often similar to uppermost leaves; rays few to many; bracteoles several, conspicuous. Calyx teeth obsolete. Petals yellow, greenish-yellow, tinged purple or purple, oblong to orbicular, apex narrowly inflexed. Stylodia conic, low-conic or discoid; styles short, often reflexed. Fruit oblong to ovoid-oblong or ellipsoid, slightly laterally compressed, mericarps subpentagonal (rarely rounded) in cross section; ribs 5, filiform, prominent or obscure; vittae 1–3(–6) in each furrow, 2–6(–8) on commissure, sometimes obscure. Seed face plane. Carpophore 2-cleft to base.

About 180 species: widespread in the N temperate zone, one species (B. mundtii Chamisso & Schlechtendal) in S Africa; introduced in Australasia; 42 species (22 endemic) in China.

This distinctive genus is easily recognized by the simple leaves and conspicuous bracts and bracteoles. Species within Bupleurum are, however, notoriously difficult to identify on account of wide morphological variation within a species, often spread across wide geographic distributions. Many Bupleurum species are difficult to characterize, as is evident by complex classifications where all possible taxonomic ranks have been used. Several taxa are recorded only from a few collections, and it is likely that future work will reduce the number of species. The roots of several species of Bupleurum are famous for their use as the traditional Chinese medicine “chai hu” for treatment of coughs, fevers, and influenza. Almost all of the species are recorded in the literature as regional substitutes for “chai hu” or for other local medicinal purposes. However, caution should be applied as a very few species are toxic (e.g., B. longiradiatum) and can result in “toxic strike” if misused as such substitutes.

1a. Bracteoles large and conspicuous, mostly exceeding the umbellule.
1b. Bracteoles mostly not exceeding the umbellule.

2a. Cauline leaves broadly ovate, 10–20 × 3–5.5 cm, base dilated, rounded, perfoliate (Xinjiang) .................................. 3. B. aureum
2b. Cauline leaves linear, lanceolate or narrowly ovate, 1–15 × 0.1–1 cm, base dilated or not, but never perfoliate.

3a. Plants small, 7–20(–25 cm).
3b. Plants tall, 25–125 cm.

4a. Bracteoles yellow or tinged purple.
4b. Bracteoles green.

5a. Plants erect; bracteoles 5–8, yellow-green; stylodium dark yellow (NW China) .................................. 4. B. triradiatum
5b. Plants decumbent; bracteoles 6–10, tinged purple; stylodium dark purple (NW and SW China) ... 9. B. dalhousieanum

6a. Leaves and bracteoles abaxially glaucous, 3–5-nerved; umbellules 10–20-flowered (Qinghai, Xinjiang) ........................................................... 5. B. densiflorum
6b. Leaves and bracteoles abaxially not glaucous, 9–15-nerved; umbellules 8–14-flowered (Sichuan, Xizang, Yunnan) .......................................................... 10. B. yunnanense

7a. Middle and upper leaves base dilated, cordate and clasping.
7b. Middle and upper leaves base not dilated nor cordate.

8a. Root dark brown; bracteoles usually 6–9; petals yellow-green (NC and NW China) ......................... 8. B. smithii
8b. Root gray-brown; bracteoles usually 10–12; petals usually dark purple (C, NW, and SW China) ........ 16. B. longicaule

9a. Inflorescence many-branched, forming a panicule (Yunnan) ............................................................. 11. B. luxiense
9b. Inflorescence little-branched, not forming a panicule.

10a. Petals purple or dark purple (at least abaxially).
10b. Petals yellow.

11a. Bracteoles 5(–7), green, broadly ovate, apex rounded or acute, apiculate (Jilin) .................. 7. B. euphorbioides
11b. Bracteoles 7–9, bluish-purple, elliptic, apex acuminate, long-apiculate (NW and SW China) .................................. 13. B. commelynoides

12a. Lateral umbel present at base of terminal umbel and overtopping it (Guizhou) ................. 17. B. kweichowense
12b. Terminal umbel without a lateral umbel at base.

13a. Bracts 1–2, linear-lanceolate, usually deciduous (NC and NE China) ........................................ 6. B. sibiricum
13b. Bracts 1–5, elliptic or ovate, persistent.

14a. Bracts elliptic, apex acuminate; rays 8–11(NW and SW China) ........................................... 15. B. petiolulatum
14b. Bracts ovate or suborbicular, apex rounded or obtuse; rays 4–12.

15a. Leaves thin-papery, abaxially greyish-white-green, margin not thickened, green; rays 4–8 (Sichuan, Xizang, Yunnan) ......................................................... 12. B. candollei
15b. Leaves thick-papery, often tinged reddish-brown, abaxially green, margins thickened and reddish; rays 7–12 (Sichuan, Yunnan) ......................................................... 14. B. rockii
1b. Bracteoles small, narrow, usually shorter than, equaling or slightly exceeding the umbellules.

16a. Leaves 8–25 × 2.5–10 cm, base dilated, cordate and claspig.
17a. Petals and stamens usually yellow; fruit dark brown (NE and NW China) .......................... 18. B. bicaule
17b. Petals and stamens purplish or purple; fruit dark purplish-brown (Gansu, Henan, Hubei, Shaanxi, Sichuan) .... 2. B. boissieuanum
16b. Leaves 2–16× (20) × 0.1–1(–3) cm, base not dilated nor cordate and claspig.
18a. Plants small, 2–20(–30) cm (sometimes more in B. gracilimum).
19a. Stem base densely clothed with fibrous remnant sheaths.
20a. Plants 15–30 cm; fruit 2–5–3 mm, ribs prominent; altitude 650–1550 m (NC and NE China) .................. 18. B. bicaule
20b. Plants 2–10 cm; fruit 3.5–4 mm, ribs conspicuous or narrowly winged; altitude 2300–3500 m (Nei Mongol, Ningxia, Qinghai, Xinjiang) ................................................................. 19. B. pusillum
19b. Stem base without fibrous remnant sheaths (Qinghai, Sichuan, Xizang).
21a. Plants gray-green; fruit ribs broadly winged (Xizang) .......................................................................... 20. B. alatum
21b. Plants tinged red; fruit ribs rounded or slightly prominent.
22a. Basal leaves very numerous, rosette-caespitose; rays 4–7, 3–6 cm; petals usually yellow or yellow-green (Qinghai) ........................................................................................................................................... 21. B. condensatum
22b. Basal leaves few, not rosette-caespitose; rays ca. 3, 0.5–1.7 cm; petals yellow or dark purple (Sichuan) ......................................................................................................................................................... 23. B. gracilimum
18b. Plants tall, (25–)30–125 cm (or less in B. angustissimum and B. hamiltonii).
23a. Root surface reddish-brown.
24a. Stem base without fibrous remnant sheaths (Gansu, Nei Mongol, Ningxia, Shannxi) ................. 29. B. yinchowense
24b. Stem base clothed in fibrous remnant sheaths.
25a. Leaves linear, 6–16 × 2–7 mm (E, NC, NW, and SC China) ................................................................. 27. B. scorzonerifolium
25b. Leaves narrow-linear, 6–18 × 0.8–1 mm (NC and NW China) ......................................................... 28. B. angustissimum
23b. Root surface usually gray-yellow or brown, not reddish-brown.
26a. Fruit vittae 1 in each furrow, 2 on commissure (C, SC, and SW China) ........................................ 34. B. hamiltonii
26b. Fruit vittae 1–3 in each furrow, 2–4 on commissure.
27a. Leaves lanceolate or oblunct-elliptic, (0.5–)0.8–3 cm wide.
28a. Rootstock short, tuberous, with many fibrous fascicled roots (Heilongjiang, Jilin) .................. 24. B. komarovicum
28b. Taproot little-branched or unbranched.
29a. Leaf margin white cartilaginous (C, NW, and SW China) ......................................................... 35. B. marginatum
29b. Leaf margin not white cartilaginous.
30a. Fruit vittae 1(rarely 2–3) in each furrow, 2 on commissure (Xinjiang) ............................................... 25. B. krylovianum
30b. Fruit vittae 3–4 in each furrow, 4 on commissure.
31a. Stem and branches usually slender and flexuose; bractts narrowly linear, 1–5 × 0.5–1 mm (C, E, NC, NE, and NW China) .............................................................................................. 38. B. chinense
31b. Stem and branches rigid, not flexuous; bracts lanceolate, ovate, elliptic or obovate, 3–10 × 1–5 mm.
32a. Bracts 3–5, ovate, elliptic or obovate; fruit brown, glaucous (Chongqing) ................................. 37. B. gracilipes
32b. Bracts 2–3, lanceolate; fruit brown but not glaucous (Taiwan) ...................................................... 42. B. kaoi
27b. Leaves linear, 0.2–0.5(–7) cm wide (to 1 cm in B. microcephalum).
33a. Stem solitary.
34a. Rays 1–3, filiform, very unequal, remote (NW Sichuan) ............................................................. 33. B. wenchaunanense
34b. Rays (3–)4–10, not slender, moderately equal.
35a. Fruit oblong; ribs prominent.
36a. Stem little-branched (W Xinjiang) .............................................................................................. 26. B. thianschanicum
36b. Stem many-branched (Yunnan) ................................................................................................. 39. B. polyclonum
35b. Stem little–branched; fruit ovoid or ellipsoid; ribs inconspicuous.
37a. Pedicels 1–1.5 mm; fruit ovoid; mericarp pentagonal in cross section (Gansu, Sichuan, Xizang) ................................................................................................................................. 31. B. microcephalum
37b. Pedicels 5–10 mm; fruit ellipsoid; mericarp near round in cross section (Shaanxi) ............... 32. B. dielsianum
33b. Stems numerous, often caespitose from a thickened woody caudex.
38a. Leaves margin white cartilaginous (Sichuan) ................................................................. 36. B. chaishou
38b. Leaves margin not white cartilaginous.
39a. Fruit vittae 1 in each furrow, 2 on commissure (Xinjiang) ......................................................... 22. B. exaltatum
39b. Fruit vittae 3 in each furrow, 4 on commissure.
40a. Bracts 1–3, small, linear or squamose; bracteoles shorter than or equaling umbellules (Gansu, Qinghai, Sichuan, Xizang) ........................................................................................................ 30. B. malconense
40b. Bracts 3–8, oblong or narrowly elliptic; bracteoles longer than the umbellules.

大叶柴胡 da ye chai hu

Plants (50–)80–150 cm, perennial. Rhizome thick, little-branched. Stem usually solitary, much-branched above, base without fibrous remnant sheaths. Leaves several, basal leaves petiolate, 8–12 cm, tinged purple; blade broadly ovate-elliptic or lanceolate, 8–17 × 2.5–5(–8) cm, 9–11-nerved. Middle leaves sessile; blade ovate or narrowly ovate. Upper leaves sessile; blade broadly lanceolate, base cordate, clasping, apex acuminate. Inflorescence much-branched, remote, umbels 3–10 cm across; bracts 1–5, lanceolate, 2–10 × 1–2 mm, unequal, yellowish-green; rays 3–9, 3–35 mm, unequal, very slender; bracteoles 5–6, ovate-lanceolate, 1.5–5 × 0.5–1.2 mm, unequal; umbellules 10–15 mm across, 5–16-flowered; pedicels long, 4–8 mm, unequal, 7–15 mm in fruit. Petals yellow or purple, short-ovate, apex notched. Stylopodium conic, dark yellow. Fruit oblong-ellipsoid, 4–7 × 2–2.5 mm, glaucous; mericarp sub-orbicular, apex notched. Fruit small, reddish brown.


1a. Plants 80–150 cm; rays long, usually

B. longiradiatum var. longiradiatum

1b. Plants 50–80 cm; rays short, 10–20 mm; fruit reddish-brown

B. longiradiatum var. breviradiatum


紫花闾叶柴胡 zi hua kuo ye chai hu

**Bupleurum longiradiatum** Turczaninow var. *porphyranthum* R. H. Shan & Yin Li.

Plants 80–120 cm, perennial. Stem rigid, erect, solid, much-branched from base, with profuse elongate and slender branches, base without fibrous remnant sheaths. Lower leaves many; blade lanceolate, slightly falcate, base tapering into petiole. Cauline leaves many; blade broadly ovate elliptic or broadly Lanceolate, 8–25 × ca. 10 cm, base narrow, clasping, margins slightly incrassate. Apical leaves small and narrow, lanceolate, sessile. Inflorescence much-branched, branches remote and slender; umbels 2–9 cm across; bracts 5, narrowly lanceolate, ca. 2 × 1 mm; rays 5–8, 2–7 cm, unequal, filiform; bracteoles 5–6, lanceolate, ca. 2 × 1 mm, equal, apex acute; umbellules 5–15 mm across, 10–15-flowered; pedicels 8–10 mm in flower, 14–18 mm in fruit, very slender. Petals dark purple. Stylodium low-conic, dark purple. Fruit oblong, dark purplish-brown, 4.5–6 × 2.8–3.3 mm; vittae 3 in each furrrow, 6 on commissure.


- Woods, shady slopes, wet places; 800–1500 m. Gansu, Henan, Hebei, Shanxi, Sichuan.

This rather poorly known taxon is recorded only from a few collections. It is similar to, and perhaps conspecific with, *Bupleurum longiradiatum*. It also has reputed medicinal value.


金黄柴胡 jin huang chai hu

*Plants 50–120 cm, perennial. Rhizomes thin, dark brown, creeping, little-branched. Stems 1–2–(3), little-branched, lustrous, often tinged purple, base without fibrous remnant sheaths. Lower leaves many, petiolate; blade broadly ovate or obovate, 4.6–5 × 3–5 cm, 9–11-nerved, base tapering into petiole, apex rounded or acute. Middle leaves sessile; blade lyrate, base auriculate, clasping, apex obtuse-acute. Upper leaf blades perfoliate, 12–20 × 3–5.5 cm. Uppermost leaf ovate, small, base cordate, clasping. Terminal umbel 6–10 cm across, lateral umbels 3–5 cm; bracts 3–5, ovate to ovate-oblanceolate, 6–28 × 3–16 mm, unequal; rays 6–10, 1.5–6 mm, unequal; bracteoles auricate, 5–6 (–7), broadly ovate or elliptic, 4–9 × 3–8 mm, equal; umbellules 6–10 mm across, 15–20-flowered; pedicels 2–4 mm. Petals yellow, obovate, midvein dark yellow. Stylodium low-conic or discoid, pale yellow. Fruit oblong, dark brown, 4.6 × 2.5–3 mm; ribs prominent; vittae 3 in each furrow, 4 on commissure.


Open forests, forest margins, among shrubs, mountain slopes, rivers

banks; 1300–1900 m. W Xinjiang (Tian Shan) [Kazakhstan, Kyrgyzstan, Mongolia, Russia].

Two varieties occur in China. Both have reputed medicinal value.

1a. Bracteoles broad-ovate or elliptic, 5–12 × 7–9
mm, exceeding flowers, base obtuse .......... 3a. var. aureum

1b. Bracteoles narrowly ovate or linear-lanceolate, 2–3 × 0.7–2 mm, equaling or shorter than flowers, base tapering .......... 3b. var. breviiinvolucratum

3a. Bupleurum aureum var. aureum

金黄柴胡 (原变种) jin huang chai hu (yuan bian zhong)

Bupleurum longifolium Linnaeus var. aureum (Fischer ex Hoffmann) H. Wolff.

Bracteoles broadly ovate or elliptic, 5–12 × 7–9 mm, usually exceeding flowers, base obtuse, 5–9-nerved.

Forest margins, among shrubs, mountain slopes, river banks; 1300–1900 m. W Xinjiang (Tian Shan) [Kazakhstan, Kyrgyzstan, Mongolia, Russia].


短苞金黄柴胡 duan bao jin huang chai hu


Bracteoles narrowly ovate or linear-lanceolate, 2–3 × 0.7–2 mm, shorter than flowers, base tapering, 3-nerved.

● Open forests, among shrubs, mountain slopes; 1400–1600 m. W Xinjiang (Tian Shan).

This is a variant with narrow bracteoles at the southernmost limit of this C Asian species.


三辐柴胡 san fu chai hu

Bupleurum ranunculoides Linnaeus var. triradiatum (Adams ex Hoffmann) Regel; Diaphylum triradiatum (Adams ex Hoffmann) Hoffmann.

Plants 7–20(–25) cm, perennial. Rhizome dark brown, creeping, little-branched. Stem erect, tinged purple at base, base without fibrous remnant sheaths. Basal leaves several, linear or lanceolate, 2.5–10 × 0.3–1 cm, 3–5-nerved, base tapering, apex obtuse-acute. Cauline leaves few, 1–4, sessile; blade narrowly-ovate, 1.5–6 × 0.3–0.7 cm, base obtuse, clasping. Umbels 1–3, 2–5 cm across; bracts 1–3, ovate or broad-ovate, 5–15 × 4–14 mm, unequal, shorter than rays, 7–19-nerved; rays 2–3, erect, 1–2.5 cm; bracteoles 5–8, 3–7 × 2–6 mm, yellowish, reddish-tinged or purplish-tinged, distinctly longer than flowers, base subrounded, apex obtuse or acute; umbellules 8–15 mm across; flowers 18–26, crowded; pedicels 2–3 mm. Petals yellow or abaxially purplish, apex obtuse, inflexed. Stylododium low-conic or discoïd, dark yellow. Fruit ellipsoid, brownish-red, 2.5–3 × 1.5–2 mm; ribs prominent; vitellae 1–3 in each furrow, 2–4 on commissure. Fl. and fr. Jul–Sep.

Forest margins, alpine meadows, sunny slopes, rock crevices; 2300–4900 m. Qinghai, W Sichuan, Xinjiang, Xizang, NW Yunnan [?N Japan, Russia].

This species has reputed medicinal value.


密花柴胡 mi hua chai hu

Plants 10–30 cm, perennial. Rhizome short, horizontal. Stems few or several, slender, base without fibrous remnant sheaths. Basal leaves many; blade narrow-lanceolate or linear, 6–13 × 0.3–0.7 cm, thin, abaxially glaucous, 3–5-nerved, base tapering into a long petiole. Cauline leaves 1–3, lanceolate, sessile, base clasping, apex obtuse-acute, 5–7-nerved. Umbels terminal, ca. 3 cm across; bracts 1–3, ovate-lanceolate, 5–15 × 3–5 mm, unequal, base embracing; rays 2–3(–4), slender, 1.5–5 cm, unequal; bracteoles 5–6, ovate to broadly ovate, 5–7 × 3–7 mm, exceeding flowers, 7–9-nerved; umbellules ca. 10 mm across, 10–20-flowered; pedicels ca. 2 mm. Petals yellow, mid-vein purplish, prominent. Stylododium low-conic, discoïd, dark purple. Fruit oblong, dark brown, 3–4 × 2–2.5 mm; ribs acute; vitellae large, 2 in each furrow, 2 on commissure. Fl. and fr. Jul–Sep.

Alpine meadows, gravelly slopes; 2500–3100 m. Qinghai, Xinjiang [Kazakhstan, Kyrgyzstan, Tajikistan].

This species has reputed medicinal value (in Xinjiang). It is considered to be closely related to Bupleurum triradiatum, and in C Asia the two taxa intergrade.


兴安柴胡 xing an chai hu

Plants 30–70 cm, perennial. Stems few or many, base often purplish-red, with or without fibrous remnant sheaths. Basal leaves many; blade narrowly lanceolate, 12–25 × 0.7–1.6 cm, 7–9 nerved, apex short-acuminate, apiculate, base tapering into petioles; petioles 5–10 cm. Upper leaves sessile; blades lanceolate, 2.5–6 × 0.8–1.1 cm, base rounded-cuneate, embracing, apex acuminate. Umbels 4–6 cm across; bracts 1–2, lanceolate, 5–10 × 1–3 mm, similar to upper leaves, deciduous; rays 5–14, 1.5–3(–5) cm, unequal, stout, slightly incurved; bracteoles (5–) 7–12, elliptic-lanceolate, 5–7 × 2–3 mm, 5–7-nerved, exceeding flowers and fruit, base cuneate; umbellules 8–15 mm across, 10–20-flowered; pedicels 0.5–1.5 mm. Petals yellow. Stylododium low-conic, discoïd, yellow. Fruit broad-ellipsoid, dark brown, 3–4 × 2.5–3 mm, slightly glaucous; ribs prominent, narrowly winged; vitellae 3 in each furrow, 4–6 on commissure. Fl. and fr. Jul–Sep. n = 32*.

Mountain slopes; 300–2000 m. Hebei, Heilongjiang, Liaoning, Nei Mongol [Mongolia, SE Russia].

Two varieties occur in China. Both have reputed medicinal value.

1a. Leaf blade narrowly lanceolate; bracteoles

7–12 ........................................................  6a. var. sibiricum

1b. Leaf blade broad, ovate-lanceolate;

bracteoles 5 ............................................. 6b. var. jeholense
6a. Bupleurum sibiricum var. sibiricum

兴安柴胡 (原变种) xing an chai hu (yu an bian zhong)

_Bupleurum dahluricum_ Fischer & C. A. Meyer ex Turczanzinow.

Leaf blade narrowly lanceolate; bracteoles 7–12, pale yellow, usually 5-nerved.

Mountain slopes; 300–800 m. Heilongjiang, Liaoning, Nei Mongolia [Mongolia, SE Russia].


雾灵柴胡 wu ling chai hu


Leaf blade ovate-lanceolate; bracteoles 5, yellowish-green, usually 7-nerved.

- Mountain slopes; 1500–2000 m. Hebei (Wuling Shan)

This rather poorly known taxon is recorded only from a few collections.


大苞柴胡 da bao chai hu

_Bupleurum tatudinense_ I. V. Baranov.

Plants (8–)12–60 cm, annual or biennial. Taproot slender. Stem often tinged purple, 1–2-branched above, base without fibrous remnant sheaths. Basal leaf blades linear 7–15 × 0.1–0.3 cm, base tapering into petiole, 5–7-nerved. Cauline leaves narrowly lanceolate, claspering, apical leaf ovate. Umbels 2–11 cm across; bracts 2–5, ovate, 3–30 × 2–12 mm, very unequal; rays 4–11, 0.5–10 cm, very unequal, slender; bracteoles 5–7, broadly elliptic or obovate, green, 4–9 × 1.5–5 mm, apex acute, apiculate, exceeding flowers and fruit; umbellules 6–15 mm across, 16–24-flowered; pedicels 2–3 mm. Petals yellow, abaxially purplish. Stylodium low-conic, discoid, purple. Fruit ovoid, brown, 3.5–4 × 2.5 mm; ribs acute, prominent; vittae 3 in each furrow, 3–4 on commissure. Fl. and fr. Jul–Sep.

- Mountain slopes, grassy places, sunny riverside shingle; 1400–3700 m. Gansu, Hebei, Henan, Nei Mongolia, Ningxia, Qinghai, Shaanxi, Shanxi.

8a. Bupleurum smithii var. smithii

黑柴胡 (原变种) hei chai hu (yu an bian zhong)

_Bupleurum borealistenense_ Nakai.

Leaf blade broadly lanceolate or oblong, 10–20 × 1–2 cm, thinly papery, base shallowly caudate, semi-embracing.

- Mountain slopes in valleys, grassy places; 1400–3400 m. Gansu, Hebei, Henan, Nei Mongolia, Shaanxi, Shanxi.


耳叶黑柴胡 er ye hei chai hu

Leaf blade broadly lanceolate or oblong, 10–20 × 2–2.6 cm, thinly papery, base deep-cordate or deep-auriculate, embracing.

- Mountain slopes, sunny riverside shingle; 2100–2400 m. N Shanxi (Ningwu).


小叶黑柴胡 xiao ye hei chai hu

Basal leaves narrowly lanceolate, 6–11 × 0.3–0.7 cm, thickly papery, base tapered into petiole, not embracing.

- Grassy places on mountain slopes; 2700–3700 m. Gansu, Nei Mongolia, Ningxia, Qinghai.

This variety is widely used in Gansu and Qinghai as a substitute for the Chinese medicine “chai hu” (see _B. chinense_ and _B. scorzoneri-folium_).


柴枝柴胡 pu zhi chai hu

_Bupleurum longicaule_ de Candolle var. _dalhousieanum_ C. B. Clarke in J. D. Hooker, Fl. Brit. India 2: 677. 1879 [“dalhousieana”].
Plants (5–)10–20 cm, perennial. Rootstock long, woody, branched. Stems purplish-red, numerous, usually decumbent, base without fibrous remnant sheaths. Basal leaves few; blade linear, 3–8 × 0.2–0.4 cm, 5–7-nerved, tapering into petiole. Upper leaves sessile; blade lanceolate or ovate, 1.5–5 × 0.3–0.8 cm, base rounded, clasping, apex acuminate, sometimes caudate. Umbels few, 1.5–2.5 cm across; terminal; bracts 1–3, ovate, 5–18 × 4–8 mm, unequal; rays 2–4, 1–2 cm, unequal; bracteoles (4–)6–10, broadly ovate or obovate, tinged purple, 4–8 × 3.5–5.5 mm, slightly exceeding flowers, apex apiculate; umbellules 11–13 mm across, 16–24-flowered; pedicels 1–2 mm. Petals purplish. Stylodium low-conic, dark purple. Fruit oblong-ovoid, brown, ca. 4 × 2 mm; ribs narrowly winged; vittae 3 in each furrow, 4 on commissure. Fl. and fr. Jun–Sep.

Alpine regions, mountain summits, rock crevices; 3700–4800 m. W Sichuan, S and W Xizang, NW Yunnan [Bhutan, NE India, N Myanmar, Sikkim].

This species has reputed medicinal value.


云南柴胡 yun nan chai hu

Plants 12–35 cm, perennial. Taproot fusiform, vertical, thickened, often branched. Stems several, slender, erect, base without fibrous remnant sheaths. Lower leaves sessile; blade linear, 4–8 × 0.15–0.4 cm, base clasping. Middle leaves sessile; blade lanceolate, 5–10 × 0.3–0.7 cm, 9–15-nerved, base rounded, embracing, apex caudate. Upper leaves small, ovate-lanceolate. Umbels few, 1.5–2.7 cm across; bracts 2–4, ovate-lanceolate, 0.2–2.5 mm, unequal; rays (2–)3–5–7, 3–25 mm, unequal; bracteoles 5, elliptic, 3–5 × 1–2 mm, equal, apex acuminate, about 1.5–2 times as long as flowers; umbellules ca. 10 mm across, 8–14-flowered; pedicels ca. 2 mm. Petals yellow or purplish. Stylodium low-conic, disoid, yellow or purplish. Fruit oblong, gray-brown, ca. 2.5 × 1.1 mm; ribs prominent; vittae 3 in each furrow, 4 on commissure. Fl. and fr. Jul–Sep.

● Mountain slopes; 2500–5000 m. Sichuan, SE Xizang (Dinggyê), Yunnan.

This species has reputed medicinal value (in Yunnan). It is very similar to the C Asian Bupleurum falcatus Linnaeus.


泸西柴胡 lu xi chai hu

Plants 55–125 cm, stout, perennial. Taproot dark brown, thick, woody, little-branched, densely marked with annular leaf scars. Stem usually tinged purple at base, base without fibrous remnant sheaths. Basal leaves caespitose, lanceolate, 10–20 × 1.6–3 cm, abaxially glaucescent, 5–7-nerved, base tapering into long petiole, margins usually reddish-brown. Cauline leaves narrow-lanceolate, 8–18 × 1.2–2.5 cm, petiolar, clasp ing, 7–9-nerved. Apical leaves sessile, obovate, clasp ing, 9–11-nerved. Inflorescence profusely dichotomously branched forming a large panicle, branches spreading and rigid; umbels 2.5–4 cm across; bracts 5, obovate, 4–7 × 3–4 mm, unequal; rays 2–9, 1–4 cm; bracteoles 5, elliptic or obovate, ca. 3 × 2.5 mm, green, exceeding flowers; umbellules ca. 10 mm across, 8–17-flow ered; pedicels 0.5–1 mm. Petals yellow. Stylodium low-conic, discoid, yellow. Fruit oblong, brown, 2–3.5 × 1–2 mm; ribs prominent; vittae 3 in each furrow, 4 on commissure. Fl. and fr. Jul–Oct.

● Mountain slopes; ca. 1800 m. SE Yunnan (Jianshui, Luxi).

The roots are used in traditional Chinese medicine. This rather poorly known taxon is recorded only from a few collections.

12. Bupleurum candollei Wallich ex de Candolle, Prodr. 4: 131. 1830 ["candollii"].

川滇柴胡 chuan dian chai hu

Plants 40–100 cm, perennial. Taproot stout, woody, branched. Stem erect, much-branched above, branches spreading-ascending, base without fibrous remnant sheaths. Lower leaves linear-lanceolate or long-elliptic, 12–15 × 0.5–0.8 cm, 11–15-nerved, abaxially glaucous, apex rounded-obtuse, apiculate. Upper leaves long-obovate, base cuneate. Umbels 2.5–4 cm across; bracts 3–5, ovate, 3–20 × 2–10 mm, unequal; rays 4–8, 1–3 cm, unequal, slender; bracteoles 5, broadly elliptic or sub-ovate, 3–6 × 1.8–4 mm, apex rounded, apiculate, greatly exceeding flowers; umbellules 8–12 mm across, 10–15-flowered; pedicels 0.5–1.5 mm. Petals pale yellow or dark purple. Stylodium low-conic, discoid, dark yellow or dark purple. Fruit oblong, brown, 2.7–3.5 × 1.7–1.9 mm; ribs prominent, narrowly winged; vittae 3 in each furrow, 4 on commissure. Fl. Jul–Aug, fr. Sep–Oct.

Mixed forests on shady slopes, open forests, mountain slopes, grassy places; 1800–3200 m. W Sichuan, S Xizang, Yunnan [Bhutan, N India, Kashmir, N Myanmar, Nepal, Pakistan, Sikkim].

This widespread species exhibits wide variation across its geographic range. Several infraspecific taxa have been described, but these are not always distinct. This, and the following four species are morphologically very similar and further work is needed to define the taxa clearly. At least var. candollei has reputed medicinal value.

1a. Stem, bracts and bracteoles purplish-red; leaf blade abaxially not glaucous .................................................. 12b. var. atropurpureum

1b. Stem, bracts and bracteoles green; leaf blade abaxially glaucous.

2a. Stem moderately branched; basal leaves not spatulate, petioles short ............................................. 12a. var. candollei

2b. Stem copiously branched, branches slender; basal leaves spatulate or oblancoate, tapering into a long petiole ....................... 12c. var. virgatissimum

12a. Bupleurum candollei var. candollei 川滇柴胡(变种) chuan dian chai hu (yuan bian zhong)


Open forests, mountain slopes, grassy places; 1800–3200 m. W Sichuan, S Xizang, NW Yunnan [Bhutan, N India, Kashmir, N Myanmar, Nepal, Pakistan, Sikkim].

黄花鸭跖柴胡  huang hua ya zhi chai hu

*Bupleurum atropurpureum* (C. Y. Wu) C. Y. Wu.

Stem, bracts and bracteoles purplish-red, thickly papery. Leaves green on both surfaces. Petals dark purple. Stylopodium dark yellow.

- Mixed forests on shady slopes; 2500–3000 m. SW Sichuan (Huidong, Miyi), Yunnan (Kunming).


丽江柴胡  li jiang chai hu

*Bupleurum handelii* H. Wolff.

Plants 60–100 cm, perennial. Taproot branching, dark brown, woody. Stem erect, sometimes purplish-red, few-branched above, base without fibrous remnant sheaths. Basal leaves many, linear-oblong, 10–15 × 0.8–1 cm, thick-papery, often reddish brown-tinged, 11-nerved, base tapering into a long petiole, margins reddish and thickened. Cauline leaves often few, sessile; blade ovate-lanceolate, 2.5–7 × 8–12 mm, base rounded, clasping, margins purple, apex obtuse-acute. Terminal umbel 6–8 cm across; peduncles elongate and rigid; bracts 1–3, ovate-lanceolate, 7–20 × 0.5–1 cm, unequal, green or tinged red, apex obtuse-rounded; rays (3–)7–12, 1–4 cm, unequal; bracteoles 5, elliptic-ovate, 3–4 × 1.8–2.5 mm, often reddish, equaling or slightly exceeding flowers, shorter than umbellules in fruit; umbellules ca. 8 mm across, 10–12-flowered; pedicels 0.5–1.5 mm. Petals yellow. Stylopodium shape low-conic, color dark yellow. Fruit ovoid, reddish-brown when mature, 4.5–5 × 2.2–2.6 mm; vittae 3 in each furrow, 4 on commissure. Fl. and fr. Jul.–Oct.

- Open forests, grassy places on mountain slopes; 1900–4200 m. Sichuan, NW Yunnan.

This species has reputed medicinal value. See the taxonomic note under *Bupleurum candollei*.


有柄柴胡  you bing chai hu

Plants 50–70 cm, perennial. Taproot long-fusiform, dark brown. Stem usually solitary, erect, usually little-branched above, base without fibrous remnant sheaths. Basal leaves several, narrowly long-lanceolate or long-elliptic, 9–14 × 1–1.3 cm, thinly papery, 7–9-nerved, margin tinged red, base tapering into long petioles, clasping. Upper leaves short-petiolate; blade elliptic or lanceolate, 7–12 × 1–2 cm, apex obtuse-acute, apiculate. Apical leaf small, sessile. Umbels few, 4–8 cm across; bracts 1–3, elliptic, 4–9 × 2–4 mm, apiculate; rays 8–11, 0.5–4 cm, unequal, slender; bracteoles 5–7, ovate-lanceolate, 5–11 × 1.5–3 mm, unequal, membranous, apex acute, apiculate, equaling or slightly exceeding the flowers; umbellules 4–6 mm across, 8–16-flowered; pedicels 1.2–2.2 mm. Petals yellow. Stylopodium low-conic, yellow. Fruit ellipsoid, dark brown, 3.5–5 × 1.6–2.1 mm; ribs pale brown, slightly prominent; vittae...
1a. Stem stout, branching above; bracteoles 2.8–5 × 1.2–1.5 mm, shorter than the flowers .................................................. 15a. var. petiolulatum

1b. Stem slender, branching from base; bracteoles 4–6 × 1.6–3.2 mm, usually exceeding the flowers ........................................ 15b. var. tenerum

15a. Bupleurum petiolulatum var. petiolulatum

Bupleurum longicaule (H. Wolff) Koso-Poljansky.


Plants 50–70 cm, perennial. Rhizome horizontal, little-branched, gray-brown. Stems solitary or several, erect, little-branched above, branches short or elongate, base without fibrous remnant sheaths. Basal leaves narrow-linear, lanceolate or oblanceolate, 10–12 × 0.5–2 cm, 5–11-nerved, base tapering into a conspicuous petiole, apex acute or acuminate. Cauline leaves sessile; blade linear-lanceolate to ovate-lanceolate, smaller, base broad-cordate and clasping, apex long-acuminate or acute. Umbels 3–8 cm across; bracts 0 or 2–3, lanceolate or ovate, 4–15 × 3–8 mm, unequal, 9–15-nerved; rays 3–12, 2.5–6 cm, unequal, somewhat stout, ribbed; bracteoles (5–)10–12, narrow-lanceolate or suborbicular, ca. 7 × 5 mm, longer than the flowers; umbellules ca. 8 mm across, ca. 20-flowered; pedicels 1.5–2 mm. Petals dark purple or yellow. Stylodium loculicidium, discoid, dark purple. Fruit ovoid or ellipsoid-ovoid, gray-brown, 3.5–5 × 1–1.5 mm; ribs prominent, acute; vittae 3 in each furrow, 4 on commissure. Fl. and fr. Jul–Sep.

Forests, grassy places on mountain slopes; 1000–4000 m. S Gansu, W Hubei, Ningxia, Shaanxi, NE and W Sichuan, NW Yunnan.

All four varieties have reputed medicinal value. See the taxonom-
bracteoles 5–7, broad-ovate, slightly exceeding the flowers. Petals yellow.

- Grassy places on mountain slopes; 2600–3300 m. Ningxia, Qinghai, Shaanxi, Shanxi.


贵州柴胡 gui zhou chai hu

Plants 20–40 cm, perennial. Rhizome slender. Stem solitary, erect, tinged purple, especially upper parts and around nodes, base without fibrous remnant sheaths. Basal leaves numerous; blades narrowly spatulate to lanceolate, base tapering into a long petiole. Middle leaves usually in two rows, sessile; blades obovate-lanceolate, 7–12 × 1–1.5 cm, nerves 7–9, base narrow and clasping, apex obtuse-acute, often tinged purple. Upper leaves long-elliptic, 1–4 × 0.5–1 cm. Umbels 2.5–4 cm across, terminal and axillary, base of terminal umbel often bearing a lateral umbel which overtops the terminal; bracts 1, broad-ovolate, 5–12 × 2–6 mm, deciduous; rays 5–6, 1.5–2.5 cm, unequal; bracteoles 5, broad-ovolate, 4–5 × 2–2.3 mm, apex rounded, mucronate, tinged purple, equaling or slightly shorter than umbellules in fruit; umbellules ca. 8 mm across, 10–14-flowered; pedicels ca. 2 mm. Fruit ovoid or ellipsoid, brown, 3.5–4.5 × 2.5–2.7 mm; ribs thick, pale brown; vittae (3–)4–5 in each furrow, 4–6 on commissure. Fl. and fr. Aug–Oct.

- Gravelly slopes in sunny places; ca. 2100 m. NE Guizhou (Fanjing Shan).

This poorly known taxon is recorded only from a few collections.


锥叶柴胡 zhui ye chai hu

Plants 15–30 cm, perennial. Rootstock, branched, thickened and woody at apex. Stems many, slender, few-branched above, base densely clothed with remnant fibrous sheaths. Leaves all linear, 7–16 × 0.1–0.3 cm, 3–5-nerved, base slightly tapering into a short petiole, apex mucronate. Cauline leaves sessile, slightly clasping. Umbels 1–2 cm across; bracts 1–3, or absent, 1–3 × ca. 1 mm; rays 4–7, 4–15 mm; bracteoles 5, lanceolate, 1–3 × 0.5–0.7 mm, shorter than flowers; umbellules 3–6 mm across, 7–13-flowered; pedicels 0.7–1.3 mm. Petals bright yellow, tip shallowly 2-lobed. Stylodium low-conic, dark yellow. Fruit broadly ovoid, bluish-brown, 2.5–3 × ca. 2 mm; ribs prominent; vittae 3 in each furrow, 2–4 on commissure, very small, obscure when mature. Fl. and fr. Jul–Sep.

Forest margins, gravelly or sunny mountain slopes, dry stony grasslands; 600–1600 m. Hebei, N Heilongjiang, Nei Mongol, N Shaanxi, N Shanxi [Afghanistan, Japan, Korea, Mongolia, Russia].

The roots of at least var. bicaule are used in traditional Chinese medicine.

a. Stems several to many, leaves linear, 0.1–0.3 cm broad ..................................... 18a. var. bicaule
b. Stems very numerous, usually ca. 20, caespitose, leaves linear-lanceolate, ca. 4 mm broad ..................................... 18b. var. latifolium

18a. Bupleurum bicaule var. bicaule
锥叶柴胡(原变种) zhui ye chai hu (yuan bian zhong)

*Bupleurum falcatum* Linnaeus var. bicaule (Helm) H. Wolff.

Stems several to many. Leaves all linear, 0.1–0.3 cm broad.

Sunny mountain slopes, dry stony grasslands; 600–1600 m. Hebei, Nei Mongol, N Shaanxi, N Shanxi [Afghanistan, Japan, Korea, Mongolia, Russia].


呼玛柴胡 hu ma chai hu

*Bupleurum bicaule f. latifolium* (Y. C. Chu) Y. C. Chu.

Stems very numerous, usually ca. 20 cm, caespitose. Leaves linear-lanceolate, ca. 4 mm broad.

- Forest margins, gravelly mountain slopes; ca. 600 m. N Heilongjiang (Da Hinggan Ling).

This poorly known taxon is recorded only from a few collections.


短茎柴胡 duan jing chai hu

Plants 2–10 cm, bluish gray-green, perennial. Root thickened at apex into woody caudex. Stem decumbent or ascending, branches flexuose, base densely clothed with remnant sheaths. Basal leaves numerous; petiole tinged purple; blade linear-lanceolate, ca. 20 × 2.5 mm, nerves 11–13, apex acuminate. Cauline leaves sessile, clasping; blades shorter, slightly broader. Umbels 1–2.5 cm across; bracts 1–4, ovate-lanceolate, 4–9 × 1–2.5 mm, unequal; rays 3–6, 1.5–4 mm, unequal; bracteoles 5–7, ovate, 4.5–5 × 1.2–2 mm, equaling or slightly exceeding umbellules, 3-nerved, apex acuminate, abaxially glaucous; umbellules 4–6 mm across, 10–15-flowered; pedicels ca. 1 mm. Petals yellow. Stylodium low-conic, dark yellow. Fruit ovoid-ellipsoid, brown, 3.5–4 × 1.8–2.5 mm; ribs prominent; vittae 3–4 in each furrow, 4 on commissure. Fl. Jun–Jul, fr. Aug–Sep.

Scrub or grassland on sunny mountain slopes; 2300–3500 m. Nei Mongol, Ningsia, Qinghai, Xinjiang [Mongolia, Russia].


翅果柴胡 chi guo chai hu

Plants ca. 20 cm, perennial. Root slender, pale brown, little-branched. Stems several, slender, erect, base without fibrous remnant sheath. Lower leaves sessile, clasping; blade oblong-lanceolate, ca. 20 × 2.5 mm, nerves 11–13, apex acuminate. Middle leaves elliptic-lanceolate, apex obtuse-acute. Umbels 2–5 cm across, lax; bracts 2–3, elliptic, 7–10 × 1.8–3 mm, 5–7-nerved, apex acute or acuminate; rays of terminal umbel 3, 2–5 cm, unequal, rays of lateral and lower umbels 1–2, ca. 2 cm; bracteoles 3–5, linear-lanceolate, 4–5 × 1.2–1.5 mm, shorter than umbellules in fruit; umbellules 3–8 mm across, (4–)8–10-

Plants 40–80 cm, perennial. Rootstock woody, tawny, thickened and branched at apex forming caudex. Stems numerous, branched above, base without fibrous remnant sheaths.
Basal leaves lanceolate, 10–20 × 1–2 cm including petioles, 5–7-nerved, thinly coriaceous, adaxially yellow-green, abaxially greenish-white, base tapering into long petioles, apex acute to rounded, rigidly apiculate. Middle leaves short-petiolate or sessile; blade lanceolate, sometimes slightly falcate, 4–17 × 0.7–1.5 cm. Apical leaves small, elliptic, rigid. Umbels 3–7 cm across; bracts 4–6(–8), 4–11 × 0.5–3 mm, unequal; rays of terminal umbels 10–20, lateral umbels 6–8-rayed, 5–35 mm, unequal; bracteoles 5, ovate-lanceolate, 4–7 × 1–2 mm, equaling or slightly shorter than umbellules, yellowish-green, rigid, often reflexed; umbellules 3–5 mm across, 18–22-flowered; pedicels 1–2.5 mm. Petals yellow, tips 2-lobed. Stylopodium low-conic, dark yellow. Fruit ellipsoid, ca. 2 × 1 mm; ribs prominent; vittae not recorded. Fl. and fr. Jun–Jul, fr. Aug–Sep.

Under shrubs, dry stony mountain slopes; 1200–2000 m. Xinjiang [Kazakhstan, Kyrgyzstan, Russia].

This species has reputed medicinal value.


天山柴胡  tian shan chai hu

This species is widely used as a substitute for the Chinese medicine “chai hu.” (see also B. chinense).

Two forms are endemic in China: f. longiradiatum R. H. Shan & Yin Li (Acta Phytotax. Sin. 12: 282. 1974), distinguished by having rays longer, 11–35 mm, and bracts larger, 4–7 mm (Hebei, Liaoning, Qinghai); and f. pauciflorum R. H. Shan & Yin Li (loc. cit.), distinguished by having rays usually fewer, 2–3(–5), and shorter, 3–12 mm, and umbellules only 4–6(–8)-flowered (Jiangsu, n = 6*).


线叶柴胡  xian ye chai hu

Bupleurum falcatum Linnaeus var. angustissimum Franchet, Pl. David. 1: 138. 1883; B. falcatum f. angustissimum (Franchet) C. Pei & R. H. Shan; B. falcatum subf. angustissimum (Franchet) H. Wolff; B. scorzonerifolium Willdenow subsp. angustissimum (Franchet) Kitagawa; B. scorzonerifolium var. angustissimum (Franchet) Y. H. Huang.

Plants 15–80 cm, perennial. Taproot long, slender, woody, reddish-brown. Stem slender, dichotomous-branched throughout, base clothed with fibrous remnant sheaths. Lower leaves sessile, linear, 6–18 × 0.8–1 cm, thick, rigid, 3–5-nerved, margins narrowly reflexed, apex and base tapering. Apical leaves short. Umbels numerous, 1.5–2 cm across, bracts 1 or absent, subulate, 0.5–2 × 0.2–0.5 mm, unequal; rays 5–7, 1.5–3 cm, unequal; bracteoles 5, linear-lanceolate, 1.2–2.5 × 0.5–0.7 mm, longer than pedicels in fruit; umbellules ca. 5 mm across, 12–16-flowered; pedicels ca. 0.8 mm. Petals yellow, midvein dark. Stylodium low-conic, dark yellow. Fruit ellipsoid, ca. 2 × 1 mm; ribs prominent; vittae not recorded. Fl. Jun–Jul, fr. Aug–Sep.

Dry grasslands; 1600–2000 m. Gansu, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi [Mongolia].

This species is widely used as a substitute for the Chinese medicine “chai hu.”


银州柴胡  yin zhou chai hu

Plants 25–50 cm, perennial. Taproot long, stout, woody, pale reddish-brown, digitate-branched, thickened at apex. Stems numerous, slender, tinged purple at base, branching above, base without fibrous remnant sheaths. Basal leaves oblanceolate, 5–8 × 0.2–0.5 cm, 3–5-nerved, deciduous, base tapering into long petioles, apex acute, apiculate. Middle leaves short-petiolate.
Umbels numerous, 10–18 mm across; bracts 1 or 2, or absent, subulate, ca. 2 mm; rays (3–)4–6–9, slender, 4–11 mm; bracteoles 5, linear, 1–2 × ca. 0.2 mm, shorter than pedicels in fruit; umbrellules 2.5–4 mm across, 6–9-flowered; pedicels ca. 2 mm. Petals yellow, midvein brown. Stylopodium low-conic, pale yellow. Fruit broadly ovoid, brown, 2.8–3.2 × 2–2.2 mm; ribs prominent; vittae 3 in each furrow, 4 on commissure. Fl. Aug–Oct.

- Among shrubs, open slopes, roadsides; 1400–3200 m. S Gansu, W Sichuan, SE Xizang.

This species is used as a regional substitute for the Chinese Medicine “chai hu.” It is similar to Bupleurum malconense but differs in the unbranched rootstock and the narrow, longer leaf blades.


太白柴胡 tai bai chai hu

Plant 50–75 cm, perennial. Taproot long-terete, unbranched. Stem solitary, erect, slender, branched above, base tinged purple, without fibrous remnant sheaths. Basal leaves linear, 5–7 × 0.3–0.5 cm including petioles, 5–7-nerved, thinly papery, abaxially greenish-white. Cauleine leaves similar to basal, shortly petiolate. Apical leaves small, sessile. Umbels 3–4 cm across; bracts 1–2, lanceolate, 1–4 × 0.5–1.5 mm, unequal; rays (4–)6–10, 1–3 cm, unequal, very slender, spreading; bracteoles 5–6, elliptic, 1–2 × 0.5–1 mm, membranous; umbrellules 4–5 mm across, 10–14-flowered; pedicels very slender, 5–7 mm in flower, up to 10 mm in fruit, greatly exceeding the bracteoles. Petals yellow. Stylopodium low-conic, discoid, yellow. Fruit ellipsoid, brown, ca. 4 × 2 mm, slightly glaucous; ribs inconspicuous; mericarps near round in cross section; vittae 3 in each furrow, 4 on commissure. Fl. and fr. Aug–Sep.

- Mountain slopes; ca. 2000 m. SW Shaanxi (Taibai Shan).

This species is used as a regional substitute for the Chinese Medicine “chai hu.” It is a rather poorly known taxon, recorded only from a few collections.


汶川柴胡 wen chuan chai hu

Plant 40–90 cm, perennial. Taproot long, thickened, yellow-brown, fusiform, little-branched. Stem solitary, much-branched throughout, branches long, slender, remote, base clothed with fibrous remnant sheaths. Basal leaves numerous, rosette-caespitose; blades oblanceolate, 5–12 × 0.2–0.4 cm, 3–5-nerved, tapering into petiole, base dilated, clasping. Lower leaves linear. Middle and upper leaves 1–8, subulate to squamose, 0.5–1 mm. Umbels numerous, remote, very small, ca. 4 mm across; bracts 2–3, subulate or squamose, 0.3–1.5 × 0.1–0.3 mm, unequal, rigid; rays (1–)2–3, 2–35 mm, filiform, very unequal; bracteoles 5–6(–7), obovate or elliptic, 0.6–1 × 0.3–0.5 mm, thick, shorter than flowers; umbrellules 2–3 mm across, 1–4-flowered; pedicels 3–6 mm in flower, elongating in fruit. Petals yellow, midvein dark yellow. Stylopodium low-conic, yellow. Fruit ovoid, brown, ca. 2 × 1.5 mm; ribs prominent; vittae 2–3 in each furrow, 3–4 on commissure. Fl. and fr. Aug–Oct.

- Mountain slopes, grasslands; 1400–1800 m. NW Sichuan (upward from Min Jiang drainage basin).

This species is used as a regional substitute for the Chinese Medicine “chai hu.”


馬尾柴胡 ma er kang chai hu

Bupleurum sichuanense S. L. Pan & P. S. Hsu.

Plants 30–65 cm, perennial. Taproot stout, woody, purplish-brown, digitate-branched. Stems numerous, usually erect, base purplish, without fibrous remnant sheaths. Basal leaves numerous, linear, 10–15 × 0.25–0.5 cm, thick and rigid, 5–7-nerved, base clasping. Middle and upper leaves linear-lanceolate, 3–5-nerved. Umbels numerous, small, 1–2 cm across; peduncles usually purplish-tinged; bracts 2–3, linear or squamose, 1–5 × 0.5–1 mm, unequal; rays 3–5, 1–2 cm; bracteoles 5, lanceolate, 2–2.5 × 0.6–0.8 mm, slightly shorter than or equaling umbrellules; umbrellules very small, 4–6 mm across, 7–11-flowered; pedicels 0.5–1 mm. Petals yellow. Stylopodium low-conic, yellow. Fruit ellipsoid, brown, 2.5–3 × 1.5–1.8 mm; vittae 3 in each furrow, 4 on commissure. Fl. Jul–Sep, fr. Sep–Oct. n = 6*.
小柴胡 xiao chai hu

Herbs 10–100 cm, annual, or short-lived perennial. Root grayish-yellow, thin, woody, branched. Stem tinged purple, much branched throughout, branches slender, ascending, base without fibrous remnant sheaths. Leaves sessile, oblong-lanceolate or linear, 3–8 × 0.4–0.8 cm, 7–9-nerved, base slightly narrow, sometimes punctate with oil glands along veins and margin. Inflorescence profusely branched, umbels numerous, small, 1–2 cm across; lax, bracts 2–4, lanceolate or elliptic, 3–6 × 1–2 mm, unequal, 5–7-nerved; rays 2–5(–7), 0.5–2 cm, unequal, very slender; bracteoles 5, lanceolate or elliptic, 3–4 × 1–1.5 mm, equal, 3-nerved, apex apiculate, equaling or slightly longer than flowers; umbellules 1–1.3 mm across, 5–11-flowered; pedicels 0.5–1.5 mm. Petals yellow-green, suborbicular, longer than flowers; umbellules 1–1.3 mm across, 5–11-flowered; pedicels 0.5–1.5 mm. Petals yellow-green, suborbicular, midvein dark. Stylopodium low-conic, dark yellow. Fruit oblong, brown, 2–2.5 × ca. 1.5 mm, ribs pale yellow, prominent; vitiae 3 in each furrow, 2 on commissure.


Plants ca. 1 m, perennial. Stem stout. Leaves large, 6–8 × ca. 0.8 cm. Bracts 2–3; bracteoles usually 3, unequal, exceeding the flowers.

- Mountain slopes, shady wet places; ca. 1300 m. W Guizhou (Bijie).

35. Bupleurum marginatum Wallich ex de Candolle, Prodr. 4: 132. 1830.

竹叶柴胡 zhu ye chai hu

Plants 25–120 cm high, perennial. Taproot stout, woody, branched. Stem rigid, base woody, usually tinged purple, without fibrous remnant sheaths. Leaves long-lanceolate to linear, 10–16 × 0.6–1.4 cm, thinly coriaceous, nerves 9–13, base tapering and elapsing, margin conspicuously white-cartilaginous, apex acute or acuminate, apiculate. Upper leaves small. Inflorescence much-branched, umbels numerous, 1.5–4 cm across, lateral umbels often overtopping the terminal; bracts 2–5, lanceolate or squamos, 1–4 × 0.2–1 mm, unequal; rays 3–4(–7), 1–3 cm, unequal; bracteoles 5, lanceolate, 1.5–2.5 × 0.5–1 mm, shorter than pedicels, apex apiculate, margin white-scarious; umbellules 4–9 mm across, (6–8)–12(–14)-flowered. Petals pale yellow. Stylopodium low-conic, dark yellow. Fruit oblong, brown, 3.5–4.5 × 1.8–2.2 mm; ribs prominent; vitiae 3 in each furrow, 4 on commissure. Fl. Jun–Sep, fr. Sep–Nov. n = 12*.

Forests, alpine forests, mountain slopes, grasslands, river banks, roadsides; 700–3100 m. S Gansu, Guizhou, Hubei, Qinghai, Sichuan, Xizang, Yunnan [Bhutan, NE India, Kashmir, Myanmar, Nepal, Pakistan, Sikkim].

The root is widely used as a substitute for the Chinese medicine “chai hu.”

35a. Bupleurum marginatum var. stenophyllum (H. Wolff) C. B. Clarke.

竹叶柴胡原变种 zhu ye chai hu (yan bian zhong)

Plants 50–120 cm; leaves broad, 10–16 × 0.6–1.4 cm, cartilaginous margin broad ............................................. 35a. var. marginatum

1a. Plants 50–120 cm; leaves broad, 10–16 × 0.6–1.4 cm, cartilaginous margin broad ............................................. 35a. var. marginatum

Plants 50–80 cm; bracts usually 4; bracteoles 5, equaling or slightly exceeding the flowers. 


小柴胡(原变种) xiao chai hu


Plants 10–25 cm, usually reddish throughout. "chai hu."

The root is widely used as a substitute for the Chinese medicine “chai hu.”


Plants 25–60 cm. Leaves narrow, 3–10 × 0.3–0.6 cm, cartilaginous margin narrow. Bracteoles longer than the pedicels. Fl. Aug–Sep, fr. Sep–Oct. n = 7*.

- Alpine forests, river banks, roadsides; 2300–4000 m. Qinghai, Sichuan, Xizang, Yunnan. [?Bhutan, ?NE Nepal].

The taxonomic status of var. stenophyllum requires further study. Some authors treat it as conspecific with Bupleurum marginatum without any infraspecific designation, but the difference in chromosome numbers favors treating it as a separate taxon, perhaps as a separate species.


柴首  chai shou

Plants 0.5–1 m, perennial. Taproot gray-brown, stout, digitate-branched, capitate, woody when old forming a thickened caudex. Stems many, tufted, base without fibrous remnant sheaths. Basal leaves numerous, subsessile or shortly petiolate; blade oblanceolate, 4–6 × ca. 0.5 cm, dark gray-green, glabrous, nerves 7, margin white cartilaginous, apex obtuse. Cauline leaves lanceolate to elliptic, very unequal at the same node, 1.2–9 × 0.3–1.2 cm, 5-nerved, usually reflexed. Umbels numerous, small; and f.

- Grasslands, stream banks, sunny slopes; 100–2700 m. Anhui, Gansu, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Zhejiang.


细柄柴胡  xi bing chai hu

Plants 50–90 cm, perennial. Root long, thickened, branchy. Stem usually solitary, erect, branched at base, without fibrous remnant sheaths. Basal leaves oblanceolate, 8–18 × 1–1.4 cm including petioles, base narrow, clasping, apex acute. Cauline leaves subsessile, oblanceolate or narrowly long-elliptic, 5–9 × 0.7–1 cm, abaxially grayish-green, 5–7-nerved, apex obtuse, apiculate. Upper leaves sessile, small, lanceolate. Umbels 1.5–4 cm across; bracts 3–5, elliptic or ovate, 3–7 × 1–3 mm, unequal; rays 2–3(–5), thin and rigid, 1–3 cm, unequal; bracteoles 4–5, green, 3–4 × 2–2.5 mm, margin membranous, exceeding umbellules in flower, but shorter in fruit; umbellules ca. 5 mm across, 5–10-flowered; pedicels ca. 1 mm. Petals pale yellow, midvein dark. Stylopodium low-conic, yellow. Fruit oblong-ellipsoid, brown, ca. 4 × 1.5 mm, glaucous; ribs prominent; vitiae 3 in each furrow, 2–4 on commissure. Fl. and fr. Jun–Aug.

- Forests, shady valleys; 1400–1700 m. Chongqing (Nanchuan).

This poorly known taxon is recorded only from a few collections.


北柴胡  bei chai hu

Bupleurum chinense Franchet (1883), not de Candolle (1830); B. chinense de Candolle f. vanheurckii (Müller Argoviensis) R. H. Shan & Yin Li; B. falcatum Linnaeus f. ensifolium H. Wolff; B. togasii Kitagawa; B. vanheurckii Müller Argoviensis.

Plants 50–85 cm, perennial. Root stout, elongate, brown, woody, usually branched. Stem solitary or several, dichotomously much-branched above, base without fibrous remnant sheaths. Basal leaves oblanceolate or narrow-elliptic, 4–7 × 0.6–0.8 cm, base tapering into petioles, apex acuminate. Middle leaves broadly linear-lanceolate, 4–12 × 0.6–1.8(–3) cm, 7–9-nerved, abaxially glaucous, apex apiculate. Apical leaves small. Umbels numerous, 2–6 cm across; peduncles slender, generally spreading forming a large loose panicle; bracts 0 or 2–3, linear, 1–5 × 0.5–1 mm, 3-nerved; rays 3–8, very slender, 1–3 cm, unequal; bracteoles 5, lanceolate, 3–3.5 × 0.6–1 mm, shorter than flowers; umbellules 4–6 mm across, 5–10-flowered. Petal bright yellow. Stylopodium low-conic, discoid, dark yellow. Fruit oblong, brown, ca. 3 × 2 mm; ribs prominent, narrowly winged, wings pale brown; vitiae 3(–4) in each furrow, 4 on commissure. Fl. and fr. Sep–Oct. n = 6*.

- Alpine forests, river banks, roadsides; 2300–4000 m. Qinghai, Gansu, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Zhejiang.

This Bupleurum is one of two primary species of the roots of which are used for the major traditional Chinese medicine “chai hu” (see also B. scorzonerifolium). It is a very widespread species, within which three forms are currently recognized: f. pekinense (Franchet ex Hemsley) H. R. Shan & Yin Li (Acta Phytotax. Sin. 12: 293. 1974; B. pekinense Franchet ex Hemsley, J. Linn. Soc., Bot. 23: 327. 1887), distinguished by having leaves rigid, papery, both surfaces gray-green; f. chiliosciadium (H. Wolff) R. H. Shan & Yin Li (loc. cit.; B. falcatum Linnaeus var. chiliosciadium H. Wolff, Acta Horti Gothob. 2: 303. 1926), distinguished by having peduncles much-branched and umbel- lules numerous, small; and f. octoradiatum (Bunge) R. H. Shan & M. L. Sheh (Fl. Reipubl. Popularis Sin. 55(1): 293. 1979; B. octoradiatum Bunge, Mém. Acad. Imp. Sci. St.-Pétersbourg Divers Savans 2: 106. 1835), distinguished by having branches non-flexuous, bracteoles elliptic-lanceolate, usually exceeding umbellules in flower and longer than pedicels in fruit, and chromosome number n = 6 + 1–2B*.


多枝柴胡  duo zhi chai hu

Plants 15–40 cm, perennial. Taproot slender, woody, annual leaf scars dense. Stem much branched throughout, base without fibrous remnant sheaths. Basal leaves caespitose, linear,
10–20 × 0.2–0.3 cm. Cauline leaves remote, linear, 13–15 × 0.15–0.3 cm. Apical leaves subulate, 3–5-nerved. Inflorescence much dichotomously branched, forming a large panicle; umbels numerous, 1.5–3 cm across; bracts 4–5, elliptic or obovate, 2–8 × 1–3 mm, unequal, 5–7-nerved; rays 3–6, 1–3 cm, unequal, very slender; bracteoles ca. 5, obovate, 3–4 × 2–3 mm, exceeding the flowers; umbellules 1.5–4 mm across, 7–15-flowered; pedicels ca. 1.5 mm. Petals yellow. Stylopodium low-conic, yellow. Fruit oblong, brown, 2–3 × 1–1.5 mm; ribs prominent; vittae 3 in each furrow, 4 on commissure. Fl. and fr. Jul–Sep.

Mountain slopes; ca. 2200 m. NE Yunnan (Huize).

The roots are used in traditional Chinese medicine. This poorly known taxon is recorded only from a few collections.


韭叶柴胡 jiu ye chai hu

Plant 60–100 cm, perennial. Taproot slender, woody, rarely branched. Stem green, erect, base densely marked with annular leaf scars, without fibrous remnant sheaths. Basal leaves numerous, linear, 10–15 × 0.3–0.5 cm, abaxially glaucous, 3–7-nerved, thinly papery, base tapering, apex acuminate. Cauline leaves remote; blade narrowly lanceolate. Apical leaves small, 8–10 × 1.5–5 mm, 3–5-nerved, clasping. Umbels 1.5–4.5 cm across; bracts 5–8, narrow-elliptic, 1.5–5 × 1–2 mm, unequal; rays 4–11, 1–2.5 cm, unequal, slender; bracteoles 5, obovate or broad-elliptic, 2.5–3.5 × 1–2 mm, 3–5-nerved, greenish, exceeding the flowers; umbellules 4–6 mm across, 8–14-flowered; pedicels 1–1.5 mm, slender. Petals yellow. Stylopodium low-conic, yellow. Fruit oblong, brown, 2–3 × 1–1.5 mm; vittae 3 in each furrow, 4 on commissure. Fl. Jul–Sep, fr. Aug–Oct.

Upland slopes; ca. 2000 m. E Yunnan (Kunming, Luxi).

The roots are used in traditional Chinese medicine. This rather poorly known taxon is recorded only from a few collections.


青海柴胡 qing hai chai hu

Plants 30–80 cm, perennial. Root yellowish-brown, woody, slender. Stem several, erect, much-branched from base, base without fibrous remnant sheaths. Basal leaves numerous, sessile, oblanceolate to oblong-spatulate, 1–3 × 0.3–0.7 cm, almost embracing, 5–7-nerved. Umbels 3–5 cm across; bracts 2–3, lanceolate, 5–10 × 3–5 mm; rays 5–6, 1–3 cm, unequal; bracteoles 4–5, linear-lanceolate, 1–5 mm; umbellules ca. 1 cm across, 5-flowered; pedicels 1–3 mm. Petals yellow. Stylopodium low-conic, yellow. Fruit oblong, brown, 2–3 × 1–1.5 mm; vittae large, usually 2–3 in each furrow, 4 on commissure. Fl. and fr. Jun–Aug. 

Mountain slopes; ca. 100 m. C and N Taiwan.

This species has reputed medicinal value. It is the only species of Bupleurum reported from Taiwan, but is rather poorly known and is recorded only from a few collections.


台湾柴胡 tai wan chai hu

Plants 30–70 cm, perennial. Rootstock slender, branched. Stems several, erect, much-branched from base, base without fibrous remnant sheaths. Basal and lower leaves petiolate; blade oblong-lanceolate or spatulate, 5–10 × 0.5–1 cm, apex acute. Upper leaves numerous, sessile, oblanceolate to oblong-spatulate, 1–3 × 0.3–0.7 cm, almost embracing, 5–7-nerved. Umbels 3–5 cm across; bracts 2–3, lanceolate, 5–10 × 3–5 mm; rays 5–6, 1–3 cm, unequal; bracteoles 4–5, linear-lanceolate, 1–5 mm; umbellules ca. 1 cm across, 5-flowered; pedicels 1–3 mm. Petals yellow. Stylopodium low-conic, yellow. Fruit oblong, brown, 2–3 × 1–1.5 mm; vittae 3 in each furrow, 4 on commissure. Fl. and fr. Jun–Aug. n = 12*.

Mountain slopes; ca. 2000 m. E Yunnan (Kunming, Luxi).

The roots are used in traditional Chinese medicine. This rather poorly known taxon is recorded only from a few collections.